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

Sundry Print Report

09/18/2023

Well Name: BO HOWARD 1211 FED COM

Well Location: T21S / R27E / SEC 12 / NESE / 32.4922686 / -104.1361812

County or Parish/State: EDDY / NM

Well Number: 124H

Type of Well: OIL WELL

Allottee or Tribe Name:

Lease Number: NMNM109425

Unit or CA Name:

Unit or CA Number:

US Well Number: 300155414100X1

Well Status: Drilling Well

Operator: MATADOR PRODUCTION COMPANY

Notice of Intent

Sundry ID: 2751569

Type of Submission: Notice of Intent

Type of Action: APD Change

Date Sundry Submitted: 09/15/2023

Time Sundry Submitted: 04:39

Date proposed operation will begin: 09/15/2023

Procedure Description: BLM Bond NMB001079 Surety Bond No.: RLB0015172 As previously discussed with the BLM, while drilling this well we became stuck and will be skidding over to spud the well using a new surface hole location, as reflected in this sundry. As reflected in the attached, the completed lateral and bottom hole location for the well remains the same. Based on our communications with the NMOCD, we understand the NMOCD will then assign the replacement well under this sundry a new API number, leaving the original, partially-drilled wellbore with its same API number. The original well will be named BO HOWARD 1211 FED COM 124Y (API 30-015-54141). The well we will skid to spud will be named BO HOWARD 1211 FED COM 124H and will be assigned a new API # from NMOCD. Please see the attached supporting documents.

NOI Attachments

Procedure Description

3160_003_20230915124404_20230915142530.pdf

Bo_Howard_1211_Fed_Com_124H___AC_v4_20230915142327.pdf

Bo_Howard_1211_Fed_Com_124H___Well_Plan_v4__20230915142326.pdf

LO_BO_HOWARD_1211_FED_COM_124H_REV5_S_20230915142308.pdf

Well Name: BO HOWARD 1211 FED COM

Well Location: T21S / R27E / SEC 12 / NESE / 32.4922686 / -104.1361812

County or Parish/State: EDDY / NM

Well Number: 124H

Type of Well: OIL WELL

Allottee or Tribe Name:

Lease Number: NMNM109425

Unit or CA Name:

Unit or CA Number:

US Well Number: 300155414100X1

Well Status: Drilling Well

Operator: MATADOR PRODUCTION COMPANY

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: NICKY FITZGERALD

Signed on: SEP 15, 2023 12:45 PM

Name: MATADOR PRODUCTION COMPANY

Title: Regulatory Consultant

Street Address: 5400 LBJ FREEWAY STE 1500

City: DALLAS **State:** TX

Phone: (972) 371-5448

Email address: nicky.fitzgerald@matadorresources.com

Field

Representative Name:

Street Address:

City: **State:** **Zip:**

Phone:

Email address:

BLM Point of Contact

BLM POC Name: LONG VO

BLM POC Title: Petroleum Engineer

BLM POC Phone: 5752345972

BLM POC Email Address: LVO@BLM.GOV

Disposition: Approved

Disposition Date: 09/18/2023

Signature: Long Vo

Form 3160-5
(June 2019)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
OMB No. 1004-0137
Expires: October 31, 2021

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to re-enter an abandoned well. Use Form 3160-3 (APD) for such proposals.

SUBMIT IN TRIPLICATE *- Other instructions on page 2*

5. Lease Serial No.

6. If Indian, Allottee or Tribe Name

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

1. Type of Well
☐ Oil Well ☐ Gas Well ☐ Other

8. Well Name and No.

2. Name of Operator

9. API Well No.

3a. Address

3b. Phone No. *(include area code)*

10. Field and Pool or Exploratory Area

4. Location of Well *(Footage, Sec., T.,R.,M., or Survey Description)*

11. Country or Parish, State

12. CHECK THE APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
☐ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off
	☐ Alter Casing	☐ Hydraulic Fracturing	☐ Reclamation	☐ Well Integrity
☐ Subsequent Report	☐ Casing Repair	☐ New Construction	☐ Recomplete	☐ Other
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	
☐ Final Abandonment Notice	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal	

13. Describe Proposed or Completed Operation: Clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recomplete horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be perfonned or provide the Bond No. on file with BLM/BIA. Required subsequent reports must be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 must be filed once testing has been completed. Final Abandonment Notices must be filed only after all requirements, including reclamation, have been completed and the operator has detennined that the site is ready for final inspection.)

14. I hereby certify that the foregoing is true and correct. Name *(Printed/Typed)*

Title

Signature

Date

THE SPACE FOR FEDERAL OR STATE OFICE USE

Approved by

Title

Date

Conditions of approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

Office

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.

(Instructions on page 2)

GENERAL INSTRUCTIONS

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

SPECIFIC INSTRUCTIONS

Item 4 - Locations on Federal or Indian land should be described in accordance with Federal requirements. Consult the local Federal office for specific instructions.

Item 13: Proposals to abandon a well and subsequent reports of abandonment should include such special information as is required by the local Federal office. In addition, such proposals and reports should include reasons for the abandonment; data on any former or present productive zones or other zones with present significant fluid contents not sealed off by cement or otherwise; depths (top and bottom) and method of placement of cement plugs; mud or other material placed below, between and above plugs; amount, size, method of parting of any casing, liner or tubing pulled and the depth to the top of any tubing left in the hole; method of closing top of well and date well site conditioned for final inspection looking for approval of the abandonment. If the proposal will involve **hydraulic fracturing operations**, you must comply with 43 CFR 3162.3-3, including providing information about the protection of usable water. Operators should provide the best available information about all formations containing water and their depths. This information could include data and interpretation of resistivity logs run on nearby wells. Information may also be obtained from state or tribal regulatory agencies and from local BLM offices.

NOTICES

The privacy Act of 1974 and the regulation in 43 CFR 2.48(d) provide that you be furnished the following information in connection with information required by this application.
AUTHORITY: 30 U.S.C. 181 et seq., 351 et seq., 25 U.S.C. 396; 43 CFR 3160.
PRINCIPAL PURPOSE: The information is used to: (1) Evaluate, when appropriate, approve applications, and report completion of subsequent well operations, on a Federal or Indian lease; and (2) document for administrative use, information for the management, disposal and use of National Resource lands and resources, such as: (a) evaluating the equipment and procedures to be used during a proposed subsequent well operation and reviewing the completed well operations for compliance with the approved plan; (b) requesting and granting approval to perform those actions covered by 43 CFR 3162.3-2, 3162.3-3, and 3162.3-4; (c) reporting the beginning or resumption of production, as required by 43 CFR 3162.4-1(c)and (d) analyzing future applications to drill or modify operations in light of data obtained and methods used.
ROUTINE USES: Information from the record and/or the record will be transferred to appropriate Federal, State, local or foreign agencies, when relevant to civil, criminal or regulatory investigations or prosecutions in connection with congressional inquiries or to consumer reporting agencies to facilitate collection of debts owed the Government.
EFFECT OF NOT PROVIDING THE INFORMATION: Filing of this notice and report and disclosure of the information is mandatory for those subsequent well operations specified in 43 CFR 3162.3-2, 3162.3-3, 3162.3-4.

The Paperwork Reduction Act of 1995 requires us to inform you that:
The BLM collects this information to evaluate proposed and/or completed subsequent well operations on Federal or Indian oil and gas leases.
Response to this request is mandatory.
The BLM would like you to know that you do not have to respond to this or any other Federal agency-sponsored information collection unless it displays a currently valid OMB control number.

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

Additional Information

Location of Well

0. SHL: NESE / 1693 FSL / 535 FEL / TWSP: 21S / RANGE: 27E / SECTION: 12 / LAT: 32.4922686 / LONG: -104.1361812 (TVD: 0 feet, MD: 0 feet)

PPP: SWSW / 989 FSL / 0 FEL / TWSP: 21S / RANGE: 27E / SECTION: 12 / LAT: 32.4902757 / LONG: -104.1518498 (TVD: 7661 feet, MD: 12913 feet)

PPP: SESW / 989 FSL / 1344 FWL / TWSP: 21S / RANGE: 27E / SECTION: 12 / LAT: 32.4902919 / LONG: -104.1474898 (TVD: 7695 feet, MD: 11569 feet)

BHL: SESW / 989 FSL / 2543 FEL / TWSP: 21S / RANGE: 27E / SECTION: 11 / LAT: 32.4902448 / LONG: -104.1600984 (TVD: 7598 feet, MD: 15459 feet)

Form 3160-3
(June 2015)

FORM APPROVED
OMB No. 1004-0137
Expires: January 31, 2018

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.

6. If Indian, Allotee or Tribe Name

1a. Type of work: ☐ DRILL ☐ REENTER

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

1c. Type of Completion: ☐ Hydraulic Fracturing ☐ Single Zone ☐ Multiple Zone

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

8. Lease Name and Well No.

2. Name of Operator

9. API Well No. 30-015-54223

3a. Address

3b. Phone No. *(include area code)*

10. Field and Pool, or Exploratory

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

At surface

At proposed prod. zone

11. Sec., T. R. M. or Blk. and Survey or Area

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

12. County or Parish

13. State

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)	16. No of acres in lease	17. Spacing Unit dedicated to this well
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.	19. Proposed Depth	20. BLM/BIA Bond No. in file
21. Elevations (Show whether DF, KDB, RT, GL, etc.)	22. Approximate date work will start*	23. Estimated duration

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No. 1, and the Hydraulic Fracturing rule per 43 CFR 3162.3-3 (as applicable)

1. Well plat certified by a registered surveyor.
2. A Drilling Plan.
3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO must be filed with the appropriate Forest Service Office).
4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
5. Operator certification.
6. Such other site specific information and/or plans as may be requested by the BLM.

25. Signature Nicky Fitzgerald	Name *(Printed/Typed)*	Date
Title		

Approved by *(Signature)*	Name *(Printed/Typed)*	Date
Title	Office	

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.
Conditions of approval, if any, are attached.

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

(Continued on page 2)

*(Instructions on page 2)

INSTRUCTIONS

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

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

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

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

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

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

ITEM 24: If the proposal will involve hydraulic fracturing operations, you must comply with 43 CFR 3162.3-3, including providing information about the protection of usable water. Operators should provide the best available information about all formations containing water and their depths. This information could include data and interpretation of resistivity logs run on nearby wells. Information may also be obtained from state or tribal regulatory agencies and from local BLM offices.

NOTICES

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

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

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

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

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

The Paperwork Reduction Act of 1995 requires us to inform you that:
The BLM conects this information to anow evaluation of the technical, safety, and environmental factors involved with drilling for oil and/or gas on Federal and Indian oil and gas leases. This information will be used to analyze and approve applications. Response to this request is mandatory only if the operator elects to initiate drilling or reentry operations on an oil and gas lease. The BLM would like you to know that you do not have to respond to this or any other Federal agency-sponsored information collection unless it displays a currently valid OMB control number.

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

Matador Production Company

Ranger/Arrowhead
Bo Howard 1211
Bo Howard 1211 Fed Com #124H

Wellbore #1
BLM Plan #1

Anticollision Report

15 September, 2023

Anticollision Report

Company:	Matador Production Company	**Local Co-ordinate Reference:**	Well Bo Howard 1211 Fed Com #124H
Project:	Ranger/Arrowhead	**TVD Reference:**	KB @ 3199.5usft
Reference Site:	Bo Howard 1211	**MD Reference:**	KB @ 3199.5usft
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Bo Howard 1211 Fed Com #124H	**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 usft	**Error Surface:**	Pedal Curve
Warning Levels Evaluated at:	2.00 **Sigma**	**Casing Method:**	Not applied

Survey Tool Program **Date** 9/15/2023

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.0	15,463.1	BLM Plan #1 (Wellbore #1)	MWD	OWSG MWD - Standard

Summary

Site Name / Offset Well - Wellbore - Design	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Bo Howard 1211						
Bo Howard 1211 Fed Com #113H - Wellbore #1 - BLM P	1,504.5	1,500.8	40.2	30.0	3.942	CC, ES
Bo Howard 1211 Fed Com #113H - Wellbore #1 - BLM P	1,600.0	1,594.6	42.4	31.6	3.910	SF
Bo Howard 1211 Fed Com #114H - Wellbore #1 - BLM P	1,000.0	1,000.0	42.5	35.8	6.339	CC
Bo Howard 1211 Fed Com #114H - Wellbore #1 - BLM P	1,100.0	1,099.5	43.1	35.7	5.823	ES
Bo Howard 1211 Fed Com #114H - Wellbore #1 - BLM P	1,200.0	1,198.7	45.3	37.2	5.597	SF
Bo Howard 1211 Fed Com #121H - Wellbore #1 - BLM P	1,200.0	1,222.0	2,933.4	2,925.2	356.797	CC, ES
Bo Howard 1211 Fed Com #121H - Wellbore #1 - BLM P	15,463.1	15,427.5	3,962.5	3,582.0	10.414	SF
Bo Howard 1211 Fed Com #122H - Wellbore #1 - BLM P	6,404.8	6,818.4	2,552.8	2,504.0	52.309	CC
Bo Howard 1211 Fed Com #122H - Wellbore #1 - BLM P	15,463.1	15,522.8	2,644.1	2,263.5	6.947	ES, SF
Bo Howard 1211 Fed Com #124Y - Wellbore #1 - Actual	0.0	0.0	29.6			
Bo Howard 1211 Fed Com #124Y - Wellbore #1 - Actual	500.0	397.0	108.2	100.9	14.891	SF
Bo Howard 1211 Fed Com #131H - Wellbore #1 - BLM P	1,200.0	1,222.0	2,962.8	2,954.6	360.370	CC, ES
Bo Howard 1211 Fed Com #131H - Wellbore #1 - BLM P	15,463.1	16,559.5	4,161.6	3,797.4	11.426	SF
Bo Howard 1211 Fed Com #132H - Wellbore #1 - BLM P	7,784.0	8,023.5	2,712.6	2,655.2	47.262	CC
Bo Howard 1211 Fed Com #132H - Wellbore #1 - BLM P	15,463.1	16,606.2	2,934.2	2,584.9	8.400	ES, SF
Cholula 12/11 W0IJ Fed Com 2H - Wellbore #1 - Actual	3,850.1	3,808.6	146.0	118.1	5.249	CC, ES
Cholula 12/11 W0IJ Fed Com 2H - Wellbore #1 - Actual	3,900.0	3,856.7	146.6	118.3	5.190	SF
Cholula 12/11 W0PO Fed Com #1H - Wellbore #1 - Actu	6,712.1	6,639.7	186.5	138.1	3.859	CC
Cholula 12/11 W0PO Fed Com #1H - Wellbore #1 - Actu	6,800.0	6,728.4	187.1	138.1	3.814	ES
Cholula 12/11 W0PO Fed Com #1H - Wellbore #1 - Actu	7,000.0	6,932.6	191.2	140.6	3.775	SF

Offset Design Bo Howard 1211 - Bo Howard 1211 Fed Com #113H - Wellbore #1 - BLM Plan #1 — **Offset Site Error:** 0.0 usft

Survey Program: 0-MWD — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.0	0.0	1.0	-1.0	0.0	0.0	134.17	-29.5	30.4	42.4				
100.0	100.0	101.0	99.0	0.1	0.1	134.17	-29.5	30.4	42.4	42.1	0.26	163.081	
200.0	200.0	201.0	199.0	0.5	0.5	134.17	-29.5	30.4	42.4	41.4	0.98	43.388	
300.0	300.0	301.0	299.0	0.8	0.8	134.17	-29.5	30.4	42.4	40.7	1.69	25.023	
400.0	400.0	401.0	399.0	1.2	1.2	134.17	-29.5	30.4	42.4	40.0	2.41	17.581	
500.0	500.0	501.0	499.0	1.6	1.6	134.17	-29.5	30.4	42.4	39.3	3.13	13.551	
600.0	600.0	601.0	599.0	1.9	1.9	134.17	-29.5	30.4	42.4	38.5	3.84	11.024	
700.0	700.0	701.0	699.0	2.3	2.3	134.17	-29.5	30.4	42.4	37.8	4.56	9.291	

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 Bo Howard 1211 Fed Com #124H
Project:	Ranger/Arrowhead	**TVD Reference:**	KB @ 3199.5usft
Reference Site:	Bo Howard 1211	**MD Reference:**	KB @ 3199.5usft
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Bo Howard 1211 Fed Com #124H	**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 Bo Howard 1211 - Bo Howard 1211 Fed Com #113H - Wellbore #1 - BLM Plan #1

Offset Site Error: 0.0 usft

Survey Program: 0-MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
800.0	800.0	801.0	799.0	2.6	2.6	134.17	-29.5	30.4	42.4	37.1	5.28	8.029	
900.0	900.0	901.0	899.0	3.0	3.0	134.17	-29.5	30.4	42.4	36.4	6.00	7.069	
1,000.0	1,000.0	999.0	999.0	3.4	3.4	134.17	-29.5	30.4	42.4	35.7	6.71	6.321	
1,100.0	1,100.0	1,098.8	1,098.8	3.7	3.7	133.05	-29.1	31.1	42.6	35.2	7.42	5.742	
1,200.0	1,200.0	1,198.6	1,198.5	4.1	4.1	129.74	-27.7	33.3	43.3	35.2	8.13	5.330	
1,300.0	1,300.0	1,298.2	1,298.1	4.4	4.4	-22.71	-25.4	36.9	43.2	34.4	8.82	4.900	
1,400.0	1,399.8	1,397.5	1,397.2	4.7	4.8	-33.15	-22.1	42.0	41.5	32.0	9.50	4.374	
1,500.0	1,499.5	1,496.4	1,495.8	5.1	5.1	-49.12	-18.0	48.5	40.2	30.0	10.17	3.954	
1,504.5	1,503.9	1,500.8	1,500.1	5.1	5.1	-49.96	-17.8	48.9	40.2	30.0	10.20	3.942	CC, ES
1,600.0	1,598.7	1,594.6	1,593.5	5.4	5.5	-69.78	-13.0	56.4	42.4	31.6	10.85	3.910	SF
1,656.4	1,654.4	1,649.6	1,648.2	5.6	5.7	-81.68	-9.8	61.4	46.4	35.1	11.23	4.128	
1,700.0	1,697.5	1,692.1	1,690.4	5.8	5.8	-89.89	-7.1	65.6	51.0	39.5	11.54	4.424	
1,800.0	1,796.3	1,789.0	1,786.6	6.2	6.2	-103.28	-0.4	76.2	65.9	53.6	12.24	5.379	
1,900.0	1,895.0	1,886.7	1,883.3	6.5	6.6	-111.33	6.9	87.6	83.9	70.9	12.97	6.464	
2,000.0	1,993.7	1,984.6	1,980.2	6.9	7.0	-116.50	14.2	99.1	102.9	89.2	13.71	7.507	
2,100.0	2,092.5	2,082.4	2,077.0	7.3	7.3	-120.05	21.5	110.6	122.5	108.1	14.45	8.479	
2,200.0	2,191.2	2,180.2	2,173.9	7.7	7.7	-122.61	28.8	122.1	142.5	127.3	15.20	9.376	
2,300.0	2,289.9	2,278.0	2,270.8	8.1	8.1	-124.54	36.1	133.6	162.6	146.7	15.95	10.199	
2,400.0	2,388.7	2,375.8	2,367.6	8.5	8.5	-126.05	43.4	145.0	182.9	166.2	16.70	10.954	
2,500.0	2,487.4	2,473.7	2,464.5	8.9	8.9	-127.26	50.8	156.5	203.3	185.9	17.45	11.648	
2,600.0	2,586.1	2,571.5	2,561.4	9.4	9.3	-128.24	58.1	168.0	223.8	205.6	18.21	12.286	
2,700.0	2,684.9	2,669.3	2,658.2	9.8	9.7	-129.06	65.4	179.5	244.3	225.3	18.97	12.874	
2,800.0	2,783.6	2,767.1	2,755.1	10.2	10.1	-129.76	72.7	191.0	264.8	245.1	19.74	13.417	
2,900.0	2,882.3	2,864.9	2,852.0	10.6	10.5	-130.35	80.0	202.5	285.4	264.9	20.50	13.920	
3,000.0	2,981.1	2,962.7	2,948.8	11.0	10.9	-130.86	87.3	214.0	306.0	284.7	21.27	14.387	
3,100.0	3,079.8	3,060.6	3,045.7	11.5	11.3	-131.31	94.6	225.4	326.6	304.6	22.04	14.821	
3,200.0	3,178.5	3,158.4	3,142.6	11.9	11.7	-131.71	101.9	236.9	347.3	324.5	22.81	15.226	
3,300.0	3,277.3	3,256.2	3,239.4	12.3	12.1	-132.06	109.2	248.4	368.0	344.4	23.58	15.604	
3,400.0	3,376.0	3,354.0	3,336.3	12.7	12.5	-132.37	116.6	259.9	388.6	364.3	24.35	15.957	
3,500.0	3,474.7	3,451.8	3,433.2	13.2	12.9	-132.65	123.9	271.4	409.3	384.2	25.13	16.289	
3,600.0	3,573.5	3,549.7	3,530.0	13.6	13.3	-132.91	131.2	282.9	430.0	404.1	25.90	16.601	
3,700.0	3,672.2	3,647.5	3,626.9	14.0	13.7	-133.14	138.5	294.3	450.7	424.0	26.68	16.894	
3,800.0	3,770.9	3,745.3	3,723.8	14.5	14.1	-133.35	145.8	305.8	471.4	443.9	27.46	17.170	
3,900.0	3,869.7	3,843.1	3,820.6	14.9	14.5	-133.55	153.1	317.3	492.1	463.9	28.23	17.430	
4,000.0	3,968.4	3,940.9	3,917.5	15.3	14.9	-133.72	160.4	328.8	512.8	483.8	29.01	17.677	
4,100.0	4,067.1	4,038.8	4,014.4	15.8	15.3	-133.89	167.7	340.3	533.5	503.8	29.79	17.910	
4,200.0	4,165.9	4,136.6	4,111.2	16.2	15.7	-134.04	175.0	351.8	554.3	523.7	30.57	18.131	
4,300.0	4,264.6	4,234.4	4,208.1	16.6	16.1	-134.18	182.3	363.2	575.0	543.6	31.35	18.341	
4,400.0	4,363.3	4,332.2	4,305.0	17.1	16.5	-134.31	189.7	374.7	595.7	563.6	32.13	18.541	
4,500.0	4,462.1	4,430.0	4,401.8	17.5	16.9	-134.43	197.0	386.2	616.5	583.5	32.91	18.731	
4,600.0	4,560.8	4,527.9	4,498.7	17.9	17.3	-134.55	204.3	397.7	637.2	603.5	33.69	18.912	
4,700.0	4,659.5	4,625.7	4,595.6	18.4	17.7	-134.65	211.6	409.2	657.9	623.5	34.47	19.084	
4,800.0	4,758.3	4,723.5	4,692.4	18.8	18.1	-134.76	218.9	420.7	678.7	643.4	35.26	19.249	
4,900.0	4,857.0	4,821.3	4,789.3	19.2	18.5	-134.85	226.2	432.2	699.4	663.4	36.04	19.406	
5,000.0	4,955.7	4,919.1	4,886.2	19.7	18.9	-134.94	233.5	443.6	720.2	683.3	36.82	19.557	
5,100.0	5,054.5	5,019.6	4,985.6	20.1	19.4	-135.03	241.0	455.4	740.9	703.2	37.63	19.689	
5,200.0	5,153.2	5,132.8	5,098.1	20.5	19.8	-135.25	248.3	466.8	760.3	721.7	38.53	19.732	
5,300.0	5,251.9	5,246.7	5,211.5	21.0	20.2	-135.64	253.7	475.4	777.7	738.3	39.40	19.737	
5,400.0	5,350.7	5,361.2	5,325.7	21.4	20.7	-136.20	257.4	481.2	793.2	753.0	40.25	19.708	
5,500.0	5,449.4	5,475.9	5,440.4	21.9	21.1	-136.92	259.3	484.1	806.8	765.7	41.06	19.649	
5,600.0	5,548.1	5,582.6	5,547.1	22.3	21.4	-137.71	259.5	484.5	818.8	777.0	41.81	19.582	
5,700.0	5,646.9	5,681.3	5,645.9	22.7	21.7	-138.44	259.5	484.5	830.6	788.1	42.53	19.532	

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 Bo Howard 1211 Fed Com #124H
Project:	Ranger/Arrowhead	**TVD Reference:**	KB @ 3199.5usft
Reference Site:	Bo Howard 1211	**MD Reference:**	KB @ 3199.5usft
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Bo Howard 1211 Fed Com #124H	**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 Bo Howard 1211 - Bo Howard 1211 Fed Com #113H - Wellbore #1 - BLM Plan #1

Offset Site Error: 0.0 usft

Survey Program: 0-MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,800.0	5,745.6	5,780.1	5,744.6	23.2	22.1	-139.16	259.5	484.5	842.6	799.4	43.24	19.487	
5,900.0	5,844.3	5,878.8	5,843.3	23.6	22.4	-139.85	259.5	484.5	854.8	810.8	43.95	19.447	
6,000.0	5,943.1	5,977.5	5,942.1	24.1	22.7	-140.52	259.5	484.5	867.0	822.3	44.67	19.411	
6,100.0	6,041.8	6,076.3	6,040.8	24.5	23.0	-141.17	259.5	484.5	879.4	834.0	45.38	19.379	
6,200.0	6,140.5	6,175.0	6,139.5	24.9	23.3	-141.81	259.5	484.5	891.9	845.8	46.09	19.351	
6,300.0	6,239.3	6,275.3	6,239.8	25.4	23.7	-142.45	259.5	484.3	904.4	857.6	46.80	19.325	
6,400.0	6,338.0	6,381.8	6,345.5	25.8	24.0	-143.88	259.4	471.8	916.5	869.1	47.45	19.314	
6,500.0	6,436.7	6,477.6	6,437.0	26.2	24.2	-146.13	259.3	444.0	928.9	880.9	47.98	19.361	
6,600.0	6,535.5	6,559.6	6,510.8	26.7	24.3	-148.71	259.1	408.4	943.3	894.9	48.38	19.500	
6,664.9	6,599.6	6,605.5	6,549.6	27.0	24.3	-150.39	258.9	384.0	954.7	906.1	48.56	19.660	
6,700.0	6,634.2	6,628.1	6,568.0	27.1	24.4	-151.33	258.9	370.8	961.5	912.8	48.62	19.773	
6,800.0	6,733.3	6,685.3	6,612.1	27.5	24.5	-153.83	258.7	334.4	982.9	934.3	48.67	20.195	
6,900.0	6,832.7	6,733.5	6,646.2	27.9	24.5	-156.08	258.5	300.4	1,008.0	959.6	48.48	20.792	
7,000.0	6,932.3	6,774.2	6,672.8	28.3	24.6	-158.09	258.3	269.6	1,037.2	989.2	48.04	21.590	
7,100.0	7,032.1	6,809.0	6,693.7	28.7	24.6	-159.88	258.2	241.8	1,070.7	1,023.3	47.36	22.609	
7,200.0	7,132.1	6,839.1	6,710.4	29.0	24.7	-161.47	258.0	216.7	1,108.3	1,061.8	46.45	23.860	
7,273.4	7,205.5	6,850.0	6,716.1	29.2	24.7	-15.80	258.0	207.4	1,138.5	1,092.9	45.55	24.994	
7,300.0	7,232.1	6,865.6	6,724.0	29.3	24.8	72.58	257.9	194.0	1,149.8	1,104.4	45.35	25.356	
7,350.0	7,281.9	6,879.2	6,730.6	29.4	24.8	69.74	257.8	182.1	1,171.3	1,126.6	44.75	26.175	
7,400.0	7,331.1	6,900.0	6,740.0	29.6	24.9	66.71	257.7	163.6	1,192.9	1,148.7	44.22	26.978	
7,450.0	7,379.3	6,900.0	6,740.0	29.7	24.9	64.55	257.7	163.6	1,214.3	1,170.9	43.43	27.962	
7,500.0	7,426.2	6,924.2	6,750.2	29.7	25.0	61.70	257.6	141.6	1,235.1	1,192.2	42.93	28.769	
7,550.0	7,471.5	6,950.0	6,760.1	29.8	25.1	59.03	257.5	117.7	1,255.5	1,213.0	42.46	29.570	
7,600.0	7,514.7	6,950.0	6,760.1	29.9	25.1	57.25	257.5	117.7	1,274.8	1,233.1	41.70	30.572	
7,650.0	7,555.6	6,973.5	6,768.1	29.9	25.2	55.07	257.3	95.6	1,293.1	1,251.8	41.25	31.347	
7,700.0	7,593.8	7,000.0	6,776.0	29.9	25.3	53.07	257.2	70.4	1,310.3	1,269.4	40.86	32.065	
7,750.0	7,629.0	7,000.0	6,776.0	30.0	25.3	51.75	257.2	70.4	1,326.1	1,285.8	40.24	32.951	
7,800.0	7,661.0	7,025.7	6,782.6	30.0	25.5	50.19	257.1	45.5	1,340.4	1,300.4	39.97	33.534	
7,850.0	7,689.6	7,050.0	6,787.7	30.0	25.6	48.89	256.9	21.8	1,353.2	1,313.5	39.74	34.051	
7,900.0	7,714.5	7,050.0	6,787.7	30.0	25.6	48.02	256.9	21.8	1,364.4	1,325.0	39.38	34.650	
7,950.0	7,735.4	7,079.8	6,792.7	29.9	25.8	47.06	256.8	-7.6	1,373.7	1,334.3	39.38	34.883	
8,000.0	7,752.4	7,100.0	6,795.2	29.9	25.9	46.36	256.6	-27.6	1,381.3	1,341.9	39.39	35.066	
8,050.0	7,765.2	7,116.4	6,796.7	29.9	26.1	45.87	256.6	-44.0	1,387.0	1,347.5	39.49	35.127	
8,100.0	7,773.8	7,134.8	6,797.9	29.9	26.2	45.53	256.5	-62.3	1,390.8	1,351.1	39.70	35.031	
8,150.0	7,778.0	7,153.3	6,798.4	29.9	26.4	45.37	256.4	-80.8	1,392.7	1,352.7	40.03	34.795	
8,173.4	7,778.5	7,161.0	6,798.5	29.9	26.4	45.35	256.3	-88.5	1,393.0	1,352.8	40.21	34.641	
8,200.0	7,778.3	7,182.8	6,798.4	30.0	26.6	45.35	256.2	-110.3	1,393.0	1,352.4	40.51	34.384	
8,244.5	7,777.6	7,225.6	6,798.0	30.2	27.0	45.35	256.0	-142.3	1,392.8	1,351.7	41.11	33.881	
8,300.0	7,776.2	7,270.3	6,796.8	30.7	27.4	45.36	255.7	-197.8	1,392.7	1,350.8	41.83	33.291	
8,400.0	7,773.7	7,370.3	6,794.7	31.7	28.6	45.37	255.1	-297.8	1,392.4	1,348.9	43.48	32.022	
8,500.0	7,771.2	7,470.3	6,792.7	32.9	29.9	45.38	254.5	-397.7	1,392.1	1,346.7	45.37	30.685	
8,600.0	7,768.8	7,570.3	6,790.6	34.2	31.3	45.39	253.9	-497.7	1,391.8	1,344.3	47.46	29.324	
8,700.0	7,766.3	7,670.3	6,788.5	35.7	32.8	45.41	253.3	-597.7	1,391.5	1,341.8	49.74	27.973	
8,800.0	7,763.8	7,770.3	6,786.5	37.2	34.5	45.42	252.7	-697.7	1,391.2	1,339.0	52.19	26.659	
8,900.0	7,761.3	7,870.3	6,784.4	38.9	36.2	45.43	252.1	-797.6	1,390.9	1,336.2	54.77	25.396	
9,000.0	7,758.8	7,970.3	6,782.3	40.6	38.0	45.44	251.5	-897.6	1,390.7	1,333.2	57.47	24.197	
9,100.0	7,756.4	8,070.3	6,780.3	42.4	39.9	45.46	250.8	-997.6	1,390.4	1,330.1	60.28	23.065	
9,200.0	7,753.9	8,170.3	6,778.2	44.3	41.9	45.47	250.2	-1,097.6	1,390.1	1,326.9	63.18	22.001	
9,300.0	7,751.4	8,270.3	6,776.1	46.2	43.9	45.48	249.6	-1,197.5	1,389.8	1,323.6	66.16	21.006	
9,400.0	7,748.9	8,370.3	6,774.1	48.1	45.9	45.49	249.0	-1,297.5	1,389.5	1,320.3	69.21	20.076	
9,500.0	7,746.4	8,470.3	6,772.0	50.1	48.0	45.50	248.4	-1,397.5	1,389.2	1,316.9	72.32	19.209	
9,600.0	7,743.9	8,570.3	6,769.9	52.2	50.1	45.52	247.8	-1,497.5	1,388.9	1,313.4	75.48	18.400	

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 Bo Howard 1211 Fed Com #124H
Project:	Ranger/Arrowhead	**TVD Reference:**	KB @ 3199.5usft
Reference Site:	Bo Howard 1211	**MD Reference:**	KB @ 3199.5usft
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Bo Howard 1211 Fed Com #124H	**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 Bo Howard 1211 - Bo Howard 1211 Fed Com #113H - Wellbore #1 - BLM Plan #1

Offset Site Error: 0.0 usft

Survey Program: 0-MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
9,700.0	7,741.5	8,670.3	6,767.9	54.3	52.3	45.53	247.2	-1,597.5	1,388.6	1,309.9	78.69	17.646	
9,800.0	7,739.0	8,770.3	6,765.8	56.4	54.4	45.54	246.6	-1,697.4	1,388.3	1,306.4	81.95	16.942	
9,900.0	7,736.5	8,870.3	6,763.7	58.5	56.6	45.55	246.0	-1,797.4	1,388.1	1,302.8	85.24	16.285	
10,000.0	7,734.0	8,970.3	6,761.7	60.7	58.9	45.57	245.4	-1,897.4	1,387.8	1,299.2	88.56	15.670	
10,100.0	7,731.5	9,070.3	6,759.6	62.8	61.1	45.58	244.8	-1,997.4	1,387.5	1,295.6	91.91	15.095	
10,200.0	7,729.1	9,170.3	6,757.5	65.0	63.3	45.59	244.2	-2,097.3	1,387.2	1,291.9	95.29	14.557	
10,300.0	7,726.6	9,270.3	6,755.5	67.3	65.6	45.60	243.6	-2,197.3	1,386.9	1,288.2	98.70	14.052	
10,400.0	7,724.1	9,370.3	6,753.4	69.5	67.9	45.61	243.0	-2,297.3	1,386.6	1,284.5	102.12	13.578	
10,500.0	7,721.6	9,470.3	6,751.3	71.7	70.2	45.63	242.4	-2,397.3	1,386.3	1,280.8	105.57	13.132	
10,600.0	7,719.1	9,570.3	6,749.3	74.0	72.5	45.64	241.8	-2,497.2	1,386.0	1,277.0	109.03	12.712	
10,700.0	7,716.7	9,670.3	6,747.2	76.3	74.8	45.65	241.2	-2,597.2	1,385.7	1,273.2	112.51	12.316	
10,800.0	7,714.2	9,770.3	6,745.1	78.6	77.1	45.66	240.6	-2,697.2	1,385.5	1,269.5	116.01	11.943	
10,900.0	7,711.7	9,870.3	6,743.1	80.9	79.4	45.68	240.0	-2,797.2	1,385.2	1,265.7	119.52	11.590	
11,000.0	7,709.2	9,970.3	6,741.0	83.2	81.8	45.69	239.4	-2,897.1	1,384.9	1,261.8	123.04	11.256	
11,100.0	7,706.7	10,070.3	6,738.9	85.5	84.1	45.70	238.8	-2,997.1	1,384.6	1,258.0	126.57	10.939	
11,200.0	7,704.3	10,170.3	6,736.8	87.8	86.5	45.71	238.2	-3,097.1	1,384.3	1,254.2	130.12	10.639	
11,300.0	7,701.8	10,270.3	6,734.8	90.1	88.8	45.72	237.6	-3,197.1	1,384.0	1,250.3	133.68	10.354	
11,400.0	7,699.3	10,370.3	6,732.7	92.5	91.2	45.74	237.0	-3,297.0	1,383.7	1,246.5	137.24	10.083	
11,500.0	7,696.8	10,470.3	6,730.6	94.8	93.6	45.75	236.4	-3,397.0	1,383.4	1,242.6	140.82	9.825	
11,600.0	7,694.3	10,570.3	6,728.6	97.1	95.9	45.76	235.8	-3,497.0	1,383.2	1,238.8	144.40	9.579	
11,700.0	7,691.9	10,670.3	6,726.5	99.5	98.3	45.77	235.2	-3,597.0	1,382.9	1,234.9	147.99	9.344	
11,800.0	7,689.4	10,770.3	6,724.4	101.8	100.7	45.79	234.6	-3,696.9	1,382.6	1,231.0	151.59	9.121	
11,900.0	7,686.9	10,870.3	6,722.4	104.2	103.1	45.80	234.0	-3,796.9	1,382.3	1,227.1	155.19	8.907	
12,000.0	7,684.4	10,970.3	6,720.3	106.6	105.5	45.81	233.4	-3,896.9	1,382.0	1,223.2	158.80	8.703	
12,100.0	7,681.9	11,070.3	6,718.2	108.9	107.8	45.82	232.8	-3,996.9	1,381.7	1,219.3	162.42	8.507	
12,200.0	7,679.4	11,170.3	6,716.2	111.3	110.2	45.84	232.2	-4,096.9	1,381.4	1,215.4	166.04	8.320	
12,300.0	7,677.0	11,270.3	6,714.1	113.7	112.6	45.85	231.6	-4,196.8	1,381.1	1,211.5	169.67	8.140	
12,400.0	7,674.5	11,370.3	6,712.0	116.1	115.0	45.86	231.0	-4,296.8	1,380.9	1,207.6	173.31	7.968	
12,500.0	7,672.0	11,470.3	6,710.0	118.5	117.4	45.87	230.4	-4,396.8	1,380.6	1,203.6	176.95	7.802	
12,600.0	7,669.5	11,570.3	6,707.9	120.9	119.8	45.88	229.8	-4,496.8	1,380.3	1,199.7	180.59	7.643	
12,700.0	7,667.0	11,670.3	6,705.8	123.2	122.2	45.90	229.2	-4,596.7	1,380.0	1,195.8	184.24	7.490	
12,800.0	7,664.6	11,770.3	6,703.8	125.6	124.6	45.91	228.6	-4,696.7	1,379.7	1,191.8	187.90	7.343	
12,900.0	7,662.1	11,870.3	6,701.7	128.0	127.1	45.92	228.0	-4,796.7	1,379.4	1,187.9	191.56	7.201	
13,000.0	7,659.6	11,970.3	6,699.6	130.4	129.5	45.93	227.4	-4,896.7	1,379.1	1,183.9	195.22	7.065	
13,100.0	7,657.1	12,070.3	6,697.6	132.8	131.9	45.95	226.8	-4,996.6	1,378.9	1,180.0	198.88	6.933	
13,200.0	7,654.6	12,170.2	6,695.5	135.2	134.3	45.96	226.2	-5,096.6	1,378.6	1,176.0	202.55	6.806	
13,300.0	7,652.2	12,270.2	6,693.4	137.6	136.7	45.97	225.6	-5,196.6	1,378.3	1,172.1	206.23	6.683	
13,400.0	7,649.7	12,370.2	6,691.4	140.0	139.1	45.98	225.0	-5,296.6	1,378.0	1,168.1	209.91	6.565	
13,500.0	7,647.2	12,470.2	6,689.3	142.4	141.5	46.00	224.4	-5,396.5	1,377.7	1,164.1	213.59	6.450	
13,600.0	7,644.7	12,570.2	6,687.2	144.9	144.0	46.01	223.8	-5,496.5	1,377.4	1,160.2	217.27	6.340	
13,700.0	7,642.2	12,670.2	6,685.2	147.3	146.4	46.02	223.2	-5,596.5	1,377.1	1,156.2	220.96	6.233	
13,800.0	7,639.8	12,770.2	6,683.1	149.7	148.8	46.03	222.6	-5,696.5	1,376.9	1,152.2	224.65	6.129	
13,900.0	7,637.3	12,870.2	6,681.0	152.1	151.2	46.05	222.0	-5,796.4	1,376.6	1,148.2	228.34	6.029	
14,000.0	7,634.8	12,970.2	6,679.0	154.5	153.6	46.06	221.3	-5,896.4	1,376.3	1,144.2	232.04	5.931	
14,100.0	7,632.3	13,070.2	6,676.9	156.9	156.1	46.07	220.7	-5,996.4	1,376.0	1,140.3	235.74	5.837	
14,200.0	7,629.8	13,170.2	6,674.8	159.3	158.5	46.08	220.1	-6,096.4	1,375.7	1,136.3	239.44	5.746	
14,300.0	7,627.4	13,270.2	6,672.8	161.8	160.9	46.10	219.5	-6,196.3	1,375.4	1,132.3	243.15	5.657	
14,400.0	7,624.9	13,370.2	6,670.7	164.2	163.4	46.11	218.9	-6,296.3	1,375.1	1,128.3	246.85	5.571	
14,500.0	7,622.4	13,470.2	6,668.6	166.6	165.8	46.12	218.3	-6,396.3	1,374.9	1,124.3	250.56	5.487	
14,600.0	7,619.9	13,570.2	6,666.5	169.0	168.2	46.13	217.7	-6,496.3	1,374.6	1,120.3	254.28	5.406	
14,700.0	7,617.4	13,670.2	6,664.5	171.5	170.6	46.15	217.1	-6,596.2	1,374.3	1,116.3	257.99	5.327	
14,800.0	7,614.9	13,770.2	6,662.4	173.9	173.1	46.16	216.5	-6,696.2	1,374.0	1,112.3	261.71	5.250	

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 Bo Howard 1211 Fed Com #124H
Project:	Ranger/Arrowhead	**TVD Reference:**	KB @ 3199.5usft
Reference Site:	Bo Howard 1211	**MD Reference:**	KB @ 3199.5usft
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Bo Howard 1211 Fed Com #124H	**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 Bo Howard 1211 - Bo Howard 1211 Fed Com #113H - Wellbore #1 - BLM Plan #1

Offset Site Error: 0.0 usft

Survey Program: 0-MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
14,900.0	7,612.5	13,870.2	6,660.3	176.3	175.5	46.17	215.9	-6,796.2	1,373.7	1,108.3	265.43	5.175	
15,000.0	7,610.0	13,970.2	6,658.3	178.7	177.9	46.18	215.3	-6,896.2	1,373.4	1,104.3	269.15	5.103	
15,100.0	7,607.5	14,070.2	6,656.2	181.2	180.4	46.20	214.7	-6,996.2	1,373.1	1,100.3	272.88	5.032	
15,200.0	7,605.0	14,170.2	6,654.1	183.6	182.8	46.21	214.1	-7,096.1	1,372.9	1,096.2	276.60	4.963	
15,300.0	7,602.5	14,270.2	6,652.1	186.0	185.2	46.22	213.5	-7,196.1	1,372.6	1,092.2	280.33	4.896	
15,400.0	7,600.1	14,370.2	6,650.0	188.4	187.7	46.23	212.9	-7,296.1	1,372.3	1,088.2	284.07	4.831	
15,463.1	7,598.5	14,433.3	6,648.7	190.0	189.2	46.24	212.5	-7,359.2	1,372.1	1,085.7	286.42	4.790	

Anticollision Report

Company:	Matador Production Company	**Local Co-ordinate Reference:**	Well Bo Howard 1211 Fed Com #124H
Project:	Ranger/Arrowhead	**TVD Reference:**	KB @ 3199.5usft
Reference Site:	Bo Howard 1211	**MD Reference:**	KB @ 3199.5usft
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Bo Howard 1211 Fed Com #124H	**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 Bo Howard 1211 - Bo Howard 1211 Fed Com #114H - Wellbore #1 - BLM Plan #1

Offset Site Error: 0.0 usft

Survey Program: 0-MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-135.88	-30.5	-29.6	42.5				
100.0	100.0	100.0	100.0	0.1	0.1	-135.88	-30.5	-29.6	42.5	42.3	0.26	165.926	
200.0	200.0	200.0	200.0	0.5	0.5	-135.88	-30.5	-29.6	42.5	41.6	0.97	43.697	
300.0	300.0	300.0	300.0	0.8	0.8	-135.88	-30.5	-29.6	42.5	40.8	1.69	25.162	
400.0	400.0	400.0	400.0	1.2	1.2	-135.88	-30.5	-29.6	42.5	40.1	2.41	17.668	
500.0	500.0	500.0	500.0	1.6	1.6	-135.88	-30.5	-29.6	42.5	39.4	3.12	13.613	
600.0	600.0	600.0	600.0	1.9	1.9	-135.88	-30.5	-29.6	42.5	38.7	3.84	11.072	
700.0	700.0	700.0	700.0	2.3	2.3	-135.88	-30.5	-29.6	42.5	38.0	4.56	9.330	
800.0	800.0	800.0	800.0	2.6	2.6	-135.88	-30.5	-29.6	42.5	37.3	5.27	8.062	
900.0	900.0	900.0	900.0	3.0	3.0	-135.88	-30.5	-29.6	42.5	36.5	5.99	7.098	
1,000.0	1,000.0	1,000.0	1,000.0	3.4	3.4	-135.88	-30.5	-29.6	42.5	35.8	6.71	6.339	CC
1,100.0	1,100.0	1,099.5	1,099.5	3.7	3.7	-138.05	-32.1	-28.8	43.1	35.7	7.41	5.823	ES
1,200.0	1,200.0	1,198.7	1,198.6	4.1	4.0	-144.15	-36.7	-26.5	45.3	37.2	8.09	5.597	SF
1,300.0	1,300.0	1,297.6	1,297.1	4.4	4.4	62.44	-44.3	-22.7	49.0	40.3	8.76	5.598	
1,400.0	1,399.8	1,396.3	1,395.0	4.7	4.7	56.74	-55.0	-17.3	53.8	44.3	9.42	5.708	
1,500.0	1,499.5	1,494.8	1,492.3	5.1	5.1	52.28	-68.6	-10.5	59.2	49.1	10.08	5.873	
1,600.0	1,598.7	1,593.0	1,588.7	5.4	5.4	48.87	-85.2	-2.1	65.2	54.4	10.74	6.066	
1,656.4	1,654.4	1,648.2	1,642.7	5.6	5.7	47.33	-95.8	3.2	68.7	57.6	11.12	6.181	
1,700.0	1,697.5	1,690.9	1,684.2	5.8	5.8	46.15	-104.6	7.6	71.8	60.4	11.41	6.292	
1,800.0	1,796.3	1,789.4	1,779.6	6.2	6.3	42.93	-126.7	18.8	80.6	68.5	12.10	6.659	
1,900.0	1,895.0	1,888.9	1,875.7	6.5	6.7	40.15	-149.5	30.2	89.9	77.1	12.83	7.013	
2,000.0	1,993.7	1,988.4	1,971.9	6.9	7.2	37.90	-172.2	41.6	99.5	85.9	13.56	7.338	
2,100.0	2,092.5	2,087.8	2,068.1	7.3	7.7	36.05	-194.9	53.1	109.1	94.8	14.29	7.635	
2,200.0	2,191.2	2,187.3	2,164.2	7.7	8.1	34.50	-217.7	64.5	118.9	103.8	15.04	7.907	
2,300.0	2,289.9	2,286.8	2,260.4	8.1	8.6	33.18	-240.4	76.0	128.7	112.9	15.78	8.155	
2,400.0	2,388.7	2,386.3	2,356.6	8.5	9.1	32.06	-263.2	87.4	138.6	122.1	16.53	8.383	
2,500.0	2,487.4	2,485.7	2,452.7	8.9	9.6	31.08	-285.9	98.8	148.5	131.2	17.28	8.593	
2,600.0	2,586.1	2,585.2	2,548.9	9.4	10.1	30.22	-308.6	110.3	158.5	140.4	18.04	8.785	
2,700.0	2,684.9	2,684.7	2,645.1	9.8	10.7	29.47	-331.4	121.7	168.5	149.7	18.80	8.963	
2,800.0	2,783.6	2,784.2	2,741.2	10.2	11.2	28.80	-354.1	133.1	178.5	158.9	19.56	9.127	
2,900.0	2,882.3	2,883.7	2,837.4	10.6	11.7	28.20	-376.8	144.6	188.5	168.2	20.32	9.279	
3,000.0	2,981.1	2,983.1	2,933.6	11.0	12.2	27.66	-399.6	156.0	198.6	177.5	21.08	9.421	
3,100.0	3,079.8	3,082.6	3,029.7	11.5	12.7	27.18	-422.3	167.4	208.7	186.8	21.85	9.552	
3,200.0	3,178.5	3,182.1	3,125.9	11.9	13.3	26.74	-445.1	178.9	218.8	196.2	22.61	9.675	
3,300.0	3,277.3	3,281.6	3,222.0	12.3	13.8	26.33	-467.8	190.3	228.9	205.5	23.38	9.790	
3,400.0	3,376.0	3,381.0	3,318.2	12.7	14.3	25.97	-490.5	201.7	239.0	214.8	24.15	9.897	
3,500.0	3,474.7	3,480.5	3,414.4	13.2	14.8	25.63	-513.3	213.2	249.1	224.2	24.92	9.998	
3,600.0	3,573.5	3,580.0	3,510.5	13.6	15.4	25.32	-536.0	224.6	259.2	233.5	25.69	10.092	
3,700.0	3,672.2	3,679.5	3,606.7	14.0	15.9	25.03	-558.7	236.0	269.4	242.9	26.46	10.181	
3,800.0	3,770.9	3,778.9	3,702.9	14.5	16.4	24.76	-581.5	247.5	279.5	252.3	27.23	10.265	
3,900.0	3,869.7	3,878.4	3,799.0	14.9	17.0	24.51	-604.2	258.9	289.7	261.7	28.00	10.344	
4,000.0	3,968.4	3,977.9	3,895.2	15.3	17.5	24.28	-627.0	270.3	299.8	271.0	28.78	10.419	
4,100.0	4,067.1	4,077.4	3,991.4	15.8	18.1	24.06	-649.7	281.8	310.0	280.4	29.55	10.490	
4,200.0	4,165.9	4,176.8	4,087.5	16.2	18.6	23.86	-672.4	293.2	320.1	289.8	30.32	10.558	
4,300.0	4,264.6	4,276.3	4,183.7	16.6	19.1	23.67	-695.2	304.6	330.3	299.2	31.10	10.621	
4,400.0	4,363.3	4,375.8	4,279.9	17.1	19.7	23.49	-717.9	316.1	340.5	308.6	31.87	10.682	
4,500.0	4,462.1	4,475.3	4,376.0	17.5	20.2	23.32	-740.6	327.5	350.6	318.0	32.65	10.740	
4,600.0	4,560.8	4,574.7	4,472.2	17.9	20.8	23.16	-763.4	339.0	360.8	327.4	33.43	10.795	
4,700.0	4,659.5	4,674.2	4,568.4	18.4	21.3	23.01	-786.1	350.4	371.0	336.8	34.20	10.847	
4,800.0	4,758.3	4,773.7	4,664.5	18.8	21.8	22.87	-808.8	361.8	381.2	346.2	34.98	10.897	
4,900.0	4,857.0	4,873.2	4,760.7	19.2	22.4	22.74	-831.6	373.3	391.4	355.6	35.76	10.945	
5,000.0	4,955.7	4,972.7	4,856.9	19.7	22.9	22.61	-854.3	384.7	401.5	365.0	36.53	10.991	

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 Bo Howard 1211 Fed Com #124H
Project:	Ranger/Arrowhead	**TVD Reference:**	KB @ 3199.5usft
Reference Site:	Bo Howard 1211	**MD Reference:**	KB @ 3199.5usft
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Bo Howard 1211 Fed Com #124H	**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 Bo Howard 1211 - Bo Howard 1211 Fed Com #114H - Wellbore #1 - BLM Plan #1

Offset Site Error: 0.0 usft

Survey Program: 0-MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,100.0	5,054.5	5,072.1	4,953.0	20.1	23.5	22.49	-877.1	396.1	411.7	374.4	37.31	11.035	
5,200.0	5,153.2	5,171.6	5,049.2	20.5	24.0	22.37	-899.8	407.6	421.9	383.8	38.09	11.077	
5,300.0	5,251.9	5,271.1	5,145.4	21.0	24.5	22.26	-922.5	419.0	432.1	393.2	38.87	11.117	
5,400.0	5,350.7	5,370.6	5,241.5	21.4	25.1	22.15	-945.3	430.4	442.3	402.7	39.65	11.156	
5,500.0	5,449.4	5,481.8	5,349.4	21.9	25.7	22.09	-969.5	442.6	451.3	410.7	40.56	11.128	
5,600.0	5,548.1	5,594.6	5,459.5	22.3	26.2	22.13	-991.2	453.5	457.5	416.0	41.45	11.037	
5,700.0	5,646.9	5,707.6	5,570.6	22.7	26.8	22.29	-1,010.0	463.0	460.8	418.5	42.31	10.890	
5,800.0	5,745.6	5,820.8	5,682.3	23.2	27.3	22.55	-1,025.9	471.0	461.3	418.1	43.14	10.693	
5,900.0	5,844.3	5,933.8	5,794.4	23.6	27.7	22.93	-1,038.8	477.5	458.9	415.0	43.93	10.446	
6,000.0	5,943.1	6,046.5	5,906.6	24.1	28.1	23.42	-1,048.7	482.4	453.7	409.1	44.69	10.152	
6,100.0	6,041.8	6,158.8	6,018.6	24.5	28.5	24.06	-1,055.6	485.9	445.8	400.4	45.42	9.815	
6,200.0	6,140.5	6,270.4	6,130.1	24.9	28.9	24.84	-1,059.6	487.9	435.1	389.0	46.12	9.435	
6,300.0	6,239.3	6,381.0	6,240.7	25.4	29.2	25.83	-1,060.7	488.3	421.7	375.0	46.78	9.015	
6,400.0	6,338.0	6,487.0	6,345.8	25.8	29.4	28.61	-1,060.7	475.9	406.3	358.6	47.64	8.528	
6,500.0	6,436.7	6,582.2	6,436.9	26.2	29.5	33.67	-1,060.9	448.4	391.3	342.3	48.96	7.992	
6,600.0	6,535.5	6,664.0	6,510.5	26.7	29.6	39.96	-1,061.1	413.1	381.4	330.7	50.63	7.532	
6,650.2	6,585.0	6,699.8	6,541.1	26.9	29.6	43.22	-1,061.1	394.4	379.9	328.5	51.41	7.389	
6,664.9	6,599.6	6,709.8	6,549.3	27.0	29.6	44.18	-1,061.2	388.8	380.0	328.4	51.61	7.363	
6,700.0	6,634.2	6,732.3	6,567.7	27.1	29.7	46.41	-1,061.2	375.8	381.6	329.6	52.00	7.338	
6,800.0	6,733.3	6,789.5	6,611.9	27.5	29.7	52.48	-1,061.4	339.5	396.9	344.6	52.28	7.593	
6,900.0	6,832.7	6,837.6	6,646.1	27.9	29.7	57.94	-1,061.6	305.6	428.3	377.1	51.17	8.369	
7,000.0	6,932.3	6,878.4	6,672.8	28.3	29.7	62.83	-1,061.8	274.8	474.0	425.0	49.04	9.667	
7,100.0	7,032.1	6,913.3	6,693.8	28.7	29.7	67.26	-1,061.9	247.0	531.5	485.1	46.42	11.451	
7,200.0	7,132.1	6,950.0	6,714.1	29.0	29.6	71.93	-1,062.0	216.4	598.0	553.9	44.03	13.579	
7,273.4	7,205.5	6,963.1	6,720.9	29.2	29.6	-139.50	-1,062.1	205.2	651.0	609.1	41.87	15.548	
7,300.0	7,232.1	6,970.0	6,724.3	29.3	29.6	-46.46	-1,062.1	199.2	670.7	629.5	41.22	16.272	
7,350.0	7,281.9	6,983.7	6,730.9	29.4	29.6	-41.83	-1,062.2	187.2	707.0	667.0	40.00	17.676	
7,400.0	7,331.1	7,000.0	6,738.5	29.6	29.6	-37.74	-1,062.3	172.8	742.2	703.4	38.88	19.092	
7,450.0	7,379.3	7,013.1	6,744.2	29.7	29.6	-34.45	-1,062.3	161.0	776.1	738.5	37.63	20.626	
7,500.0	7,426.2	7,028.7	6,750.7	29.7	29.6	-31.57	-1,062.4	146.8	808.4	771.9	36.49	22.156	
7,550.0	7,471.5	7,050.0	6,758.9	29.8	29.6	-29.00	-1,062.5	127.2	839.0	803.4	35.57	23.588	
7,600.0	7,514.7	7,050.0	6,758.9	29.9	29.6	-27.34	-1,062.5	127.2	867.8	833.8	33.96	25.556	
7,650.0	7,555.6	7,078.1	6,768.7	29.9	29.5	-25.37	-1,062.6	100.8	894.3	861.0	33.33	26.828	
7,700.0	7,593.8	7,100.0	6,775.4	29.9	29.5	-23.85	-1,062.7	80.0	918.9	886.4	32.55	28.235	
7,750.0	7,629.0	7,100.0	6,775.4	30.0	29.5	-22.85	-1,062.7	80.0	941.4	910.2	31.22	30.152	
7,800.0	7,661.0	7,130.4	6,783.3	30.0	29.5	-21.69	-1,062.9	50.7	961.3	930.5	30.81	31.197	
7,850.0	7,689.6	7,150.0	6,787.6	30.0	29.5	-20.84	-1,063.0	31.5	979.0	948.8	30.21	32.403	
7,900.0	7,714.5	7,166.2	6,790.7	30.0	29.5	-20.16	-1,063.1	15.5	994.2	964.6	29.66	33.522	
7,950.0	7,735.4	7,184.4	6,793.5	29.9	29.4	-19.62	-1,063.2	-2.4	1,007.0	977.7	29.28	34.392	
8,000.0	7,752.4	7,200.0	6,795.6	29.9	29.4	-19.20	-1,063.2	-17.8	1,017.2	988.2	29.01	35.063	
8,050.0	7,765.2	7,221.0	6,797.6	29.9	29.4	-18.88	-1,063.3	-38.8	1,024.9	995.9	28.97	35.373	
8,100.0	7,773.8	7,250.0	6,799.2	29.9	29.4	-18.66	-1,063.5	-67.7	1,030.2	1,001.0	29.14	35.351	
8,150.0	7,778.0	7,257.9	6,799.4	29.9	29.4	-18.58	-1,063.5	-75.6	1,032.5	1,003.2	29.31	35.227	
8,173.4	7,778.5	7,266.8	6,799.5	29.9	29.4	-18.57	-1,063.6	-84.5	1,032.8	1,003.3	29.48	35.030	
8,200.0	7,778.3	7,286.0	6,799.4	30.0	29.3	-18.57	-1,063.7	-103.7	1,032.8	1,003.0	29.73	34.735	
8,244.5	7,777.6	7,319.1	6,799.0	30.2	29.3	-18.58	-1,063.9	-136.8	1,032.6	1,002.4	30.18	34.209	
8,300.0	7,776.2	7,372.2	6,797.9	30.7	29.2	-18.58	-1,064.2	-189.9	1,032.3	1,001.5	30.80	33.515	
8,400.0	7,773.7	7,472.2	6,795.8	31.7	29.2	-18.59	-1,064.8	-289.8	1,031.9	999.9	32.00	32.246	
8,500.0	7,771.2	7,572.2	6,793.8	32.9	30.3	-18.60	-1,065.4	-389.8	1,031.5	998.2	33.29	30.982	
8,600.0	7,768.8	7,672.2	6,791.7	34.2	31.7	-18.60	-1,066.0	-489.8	1,031.1	996.5	34.68	29.737	
8,700.0	7,766.3	7,772.2	6,789.6	35.7	33.3	-18.61	-1,066.6	-589.8	1,030.8	994.6	36.13	28.527	
8,800.0	7,763.8	7,872.2	6,787.6	37.2	34.9	-18.62	-1,067.2	-689.7	1,030.4	992.7	37.66	27.361	

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 Bo Howard 1211 Fed Com #124H
Project:	Ranger/Arrowhead	**TVD Reference:**	KB @ 3199.5usft
Reference Site:	Bo Howard 1211	**MD Reference:**	KB @ 3199.5usft
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Bo Howard 1211 Fed Com #124H	**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 Bo Howard 1211 - Bo Howard 1211 Fed Com #114H - Wellbore #1 - BLM Plan #1

Offset Site Error: 0.0 usft

Survey Program: 0-MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
8,900.0	7,761.3	7,972.2	6,785.5	38.9	36.6	-18.63	-1,067.8	-789.7	1,030.0	990.7	39.24	26.246	
9,000.0	7,758.8	8,072.2	6,783.4	40.6	38.4	-18.63	-1,068.4	-889.7	1,029.6	988.7	40.88	25.184	
9,100.0	7,756.4	8,172.2	6,781.4	42.4	40.3	-18.64	-1,069.0	-989.7	1,029.2	986.6	42.57	24.178	
9,200.0	7,753.9	8,272.2	6,779.3	44.3	42.2	-18.65	-1,069.6	-1,089.6	1,028.8	984.5	44.29	23.226	
9,300.0	7,751.4	8,372.2	6,777.2	46.2	44.2	-18.66	-1,070.2	-1,189.6	1,028.4	982.3	46.06	22.327	
9,400.0	7,748.9	8,472.2	6,775.2	48.1	46.2	-18.66	-1,070.8	-1,289.6	1,028.0	980.1	47.86	21.480	
9,500.0	7,746.4	8,572.2	6,773.1	50.1	48.3	-18.67	-1,071.4	-1,389.6	1,027.6	977.9	49.69	20.682	
9,600.0	7,743.9	8,672.2	6,771.1	52.2	50.4	-18.68	-1,072.0	-1,489.6	1,027.2	975.7	51.54	19.930	
9,700.0	7,741.5	8,772.2	6,769.0	54.3	52.5	-18.69	-1,072.6	-1,589.5	1,026.8	973.4	53.42	19.221	
9,800.0	7,739.0	8,872.2	6,766.9	56.4	54.7	-18.69	-1,073.2	-1,689.5	1,026.4	971.1	55.32	18.554	
9,900.0	7,736.5	8,972.2	6,764.9	58.5	56.8	-18.70	-1,073.8	-1,789.5	1,026.0	968.8	57.24	17.925	
10,000.0	7,734.0	9,072.2	6,762.8	60.7	59.0	-18.71	-1,074.4	-1,889.5	1,025.6	966.5	59.18	17.331	
10,100.0	7,731.5	9,172.2	6,760.7	62.8	61.2	-18.72	-1,075.1	-1,989.4	1,025.2	964.1	61.13	16.770	
10,200.0	7,729.1	9,272.2	6,758.7	65.0	63.5	-18.72	-1,075.7	-2,089.4	1,024.8	961.7	63.10	16.241	
10,300.0	7,726.6	9,372.2	6,756.6	67.3	65.7	-18.73	-1,076.3	-2,189.4	1,024.5	959.4	65.09	15.740	
10,400.0	7,724.1	9,472.2	6,754.5	69.5	68.0	-18.74	-1,076.9	-2,289.4	1,024.1	957.0	67.08	15.266	
10,500.0	7,721.6	9,572.2	6,752.5	71.7	70.3	-18.75	-1,077.5	-2,389.3	1,023.7	954.6	69.09	14.817	
10,600.0	7,719.1	9,672.2	6,750.4	74.0	72.6	-18.75	-1,078.1	-2,489.3	1,023.3	952.2	71.10	14.391	
10,700.0	7,716.7	9,772.2	6,748.3	76.3	74.9	-18.76	-1,078.7	-2,589.3	1,022.9	949.7	73.13	13.987	
10,800.0	7,714.2	9,872.2	6,746.3	78.6	77.2	-18.77	-1,079.3	-2,689.3	1,022.5	947.3	75.17	13.603	
10,900.0	7,711.7	9,972.2	6,744.2	80.9	79.5	-18.78	-1,079.9	-2,789.2	1,022.1	944.9	77.21	13.238	
11,000.0	7,709.2	10,072.2	6,742.1	83.2	81.8	-18.78	-1,080.5	-2,889.2	1,021.7	942.4	79.26	12.890	
11,100.0	7,706.7	10,172.2	6,740.1	85.5	84.1	-18.79	-1,081.1	-2,989.2	1,021.3	940.0	81.32	12.559	
11,200.0	7,704.3	10,272.2	6,738.0	87.8	86.5	-18.80	-1,081.7	-3,089.2	1,020.9	937.5	83.39	12.243	
11,300.0	7,701.8	10,372.2	6,735.9	90.1	88.8	-18.81	-1,082.3	-3,189.1	1,020.5	935.1	85.46	11.941	
11,400.0	7,699.3	10,472.2	6,733.9	92.5	91.2	-18.81	-1,082.9	-3,289.1	1,020.1	932.6	87.54	11.653	
11,500.0	7,696.8	10,572.2	6,731.8	94.8	93.5	-18.82	-1,083.5	-3,389.1	1,019.7	930.1	89.62	11.378	
11,600.0	7,694.3	10,672.2	6,729.8	97.1	95.9	-18.83	-1,084.1	-3,489.1	1,019.3	927.6	91.71	11.115	
11,700.0	7,691.9	10,772.2	6,727.7	99.5	98.3	-18.84	-1,084.7	-3,589.0	1,018.9	925.1	93.81	10.862	
11,800.0	7,689.4	10,872.2	6,725.6	101.8	100.6	-18.84	-1,085.3	-3,689.0	1,018.5	922.6	95.90	10.620	
11,900.0	7,686.9	10,972.2	6,723.6	104.2	103.0	-18.85	-1,085.9	-3,789.0	1,018.2	920.1	98.01	10.389	
12,000.0	7,684.4	11,072.2	6,721.5	106.6	105.4	-18.86	-1,086.5	-3,889.0	1,017.8	917.6	100.11	10.166	
12,100.0	7,681.9	11,172.1	6,719.4	108.9	107.8	-18.87	-1,087.1	-3,989.0	1,017.4	915.1	102.23	9.952	
12,200.0	7,679.4	11,272.1	6,717.4	111.3	110.1	-18.87	-1,087.7	-4,088.9	1,017.0	912.6	104.34	9.747	
12,300.0	7,677.0	11,372.1	6,715.3	113.7	112.5	-18.88	-1,088.3	-4,188.9	1,016.6	910.1	106.46	9.549	
12,400.0	7,674.5	11,472.1	6,713.2	116.1	114.9	-18.89	-1,088.9	-4,288.9	1,016.2	907.6	108.58	9.359	
12,500.0	7,672.0	11,572.1	6,711.2	118.5	117.3	-18.90	-1,089.6	-4,388.9	1,015.8	905.1	110.71	9.175	
12,600.0	7,669.5	11,672.1	6,709.1	120.9	119.7	-18.91	-1,090.2	-4,488.8	1,015.4	902.6	112.84	8.999	
12,700.0	7,667.0	11,772.1	6,707.0	123.2	122.1	-18.91	-1,090.8	-4,588.8	1,015.0	900.0	114.97	8.828	
12,800.0	7,664.6	11,872.1	6,705.0	125.6	124.5	-18.92	-1,091.4	-4,688.8	1,014.6	897.5	117.11	8.664	
12,900.0	7,662.1	11,972.1	6,702.9	128.0	126.9	-18.93	-1,092.0	-4,788.8	1,014.2	895.0	119.24	8.505	
13,000.0	7,659.6	12,072.1	6,700.8	130.4	129.3	-18.94	-1,092.6	-4,888.7	1,013.8	892.4	121.39	8.352	
13,100.0	7,657.1	12,172.1	6,698.8	132.8	131.7	-18.94	-1,093.2	-4,988.7	1,013.4	889.9	123.53	8.204	
13,200.0	7,654.6	12,272.1	6,696.7	135.2	134.1	-18.95	-1,093.8	-5,088.7	1,013.0	887.4	125.67	8.061	
13,300.0	7,652.2	12,372.1	6,694.7	137.6	136.5	-18.96	-1,094.4	-5,188.7	1,012.6	884.8	127.82	7.922	
13,400.0	7,649.7	12,472.1	6,692.6	140.0	139.0	-18.97	-1,095.0	-5,288.6	1,012.3	882.3	129.97	7.788	
13,500.0	7,647.2	12,572.1	6,690.5	142.4	141.4	-18.97	-1,095.6	-5,388.6	1,011.9	879.7	132.13	7.658	
13,600.0	7,644.7	12,672.1	6,688.5	144.9	143.8	-18.98	-1,096.2	-5,488.6	1,011.5	877.2	134.28	7.532	
13,700.0	7,642.2	12,772.1	6,686.4	147.3	146.2	-18.99	-1,096.8	-5,588.6	1,011.1	874.6	136.44	7.410	
13,800.0	7,639.8	12,872.1	6,684.3	149.7	148.6	-19.00	-1,097.4	-5,688.5	1,010.7	872.1	138.60	7.292	
13,900.0	7,637.3	12,972.1	6,682.3	152.1	151.0	-19.01	-1,098.0	-5,788.5	1,010.3	869.5	140.76	7.177	
14,000.0	7,634.8	13,072.1	6,680.2	154.5	153.5	-19.01	-1,098.6	-5,888.5	1,009.9	867.0	142.93	7.066	

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 Bo Howard 1211 Fed Com #124H
Project:	Ranger/Arrowhead	**TVD Reference:**	KB @ 3199.5usft
Reference Site:	Bo Howard 1211	**MD Reference:**	KB @ 3199.5usft
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Bo Howard 1211 Fed Com #124H	**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 Bo Howard 1211 - Bo Howard 1211 Fed Com #114H - Wellbore #1 - BLM Plan #1

Offset Site Error: 0.0 usft

Survey Program: 0-MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
14,100.0	7,632.3	13,172.1	6,678.1	156.9	155.9	-19.02	-1,099.2	-5,988.5	1,009.5	864.4	145.09	6.958	
14,200.0	7,629.8	13,272.1	6,676.1	159.3	158.3	-19.03	-1,099.8	-6,088.4	1,009.1	861.8	147.26	6.853	
14,300.0	7,627.4	13,372.1	6,674.0	161.8	160.7	-19.04	-1,100.4	-6,188.4	1,008.7	859.3	149.43	6.750	
14,400.0	7,624.9	13,472.1	6,671.9	164.2	163.1	-19.04	-1,101.0	-6,288.4	1,008.3	856.7	151.60	6.651	
14,500.0	7,622.4	13,572.1	6,669.9	166.6	165.6	-19.05	-1,101.6	-6,388.4	1,007.9	854.2	153.77	6.555	
14,600.0	7,619.9	13,672.1	6,667.8	169.0	168.0	-19.06	-1,102.2	-6,488.4	1,007.5	851.6	155.95	6.461	
14,700.0	7,617.4	13,772.1	6,665.7	171.5	170.4	-19.07	-1,102.8	-6,588.3	1,007.1	849.0	158.13	6.369	
14,800.0	7,614.9	13,872.1	6,663.7	173.9	172.9	-19.08	-1,103.4	-6,688.3	1,006.8	846.4	160.30	6.280	
14,900.0	7,612.5	13,972.1	6,661.6	176.3	175.3	-19.08	-1,104.1	-6,788.3	1,006.4	843.9	162.48	6.194	
15,000.0	7,610.0	14,072.1	6,659.6	178.7	177.7	-19.09	-1,104.7	-6,888.3	1,006.0	841.3	164.67	6.109	
15,100.0	7,607.5	14,172.1	6,657.5	181.2	180.1	-19.10	-1,105.3	-6,988.2	1,005.6	838.7	166.85	6.027	
15,200.0	7,605.0	14,272.1	6,655.4	183.6	182.6	-19.11	-1,105.9	-7,088.2	1,005.2	836.1	169.03	5.947	
15,300.0	7,602.5	14,372.1	6,653.4	186.0	185.0	-19.11	-1,106.5	-7,188.2	1,004.8	833.6	171.22	5.868	
15,400.0	7,600.1	14,472.1	6,651.3	188.4	187.4	-19.12	-1,107.1	-7,288.2	1,004.4	831.0	173.41	5.792	
15,463.1	7,598.5	14,535.2	6,650.0	190.0	189.0	-19.13	-1,107.5	-7,351.3	1,004.1	829.4	174.79	5.745	

Anticollision Report

Company:	Matador Production Company	**Local Co-ordinate Reference:**	Well Bo Howard 1211 Fed Com #124H
Project:	Ranger/Arrowhead	**TVD Reference:**	KB @ 3199.5usft
Reference Site:	Bo Howard 1211	**MD Reference:**	KB @ 3199.5usft
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Bo Howard 1211 Fed Com #124H	**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 Bo Howard 1211 - Bo Howard 1211 Fed Com #121H - Wellbore #1 - BLM Plan #1 — **Offset Site Error:** 0.0 usft

Survey Program: 0-MWD — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.0	0.0	22.0	22.0	0.0	0.0	4.85	2,922.9	248.2	2,933.4				
100.0	100.0	122.0	122.0	0.1	0.2	4.85	2,922.9	248.2	2,933.4	2,933.1	0.34	8,752.015	
200.0	200.0	222.0	222.0	0.5	0.6	4.85	2,922.9	248.2	2,933.4	2,932.4	1.05	2,788.123	
300.0	300.0	322.0	322.0	0.8	0.9	4.85	2,922.9	248.2	2,933.4	2,931.7	1.77	1,658.185	
400.0	400.0	422.0	422.0	1.2	1.3	4.85	2,922.9	248.2	2,933.4	2,930.9	2.49	1,179.977	
500.0	500.0	522.0	522.0	1.6	1.6	4.85	2,922.9	248.2	2,933.4	2,930.2	3.20	915.852	
600.0	600.0	622.0	622.0	1.9	2.0	4.85	2,922.9	248.2	2,933.4	2,929.5	3.92	748.344	
700.0	700.0	722.0	722.0	2.3	2.4	4.85	2,922.9	248.2	2,933.4	2,928.8	4.64	632.636	
800.0	800.0	822.0	822.0	2.6	2.7	4.85	2,922.9	248.2	2,933.4	2,928.1	5.35	547.917	
900.0	900.0	922.0	922.0	3.0	3.1	4.85	2,922.9	248.2	2,933.4	2,927.4	6.07	483.209	
1,000.0	1,000.0	1,022.0	1,022.0	3.4	3.4	4.85	2,922.9	248.2	2,933.4	2,926.6	6.79	432.170	
1,100.0	1,100.0	1,122.0	1,122.0	3.7	3.8	4.85	2,922.9	248.2	2,933.4	2,925.9	7.50	390.883	
1,200.0	1,200.0	1,222.0	1,222.0	4.1	4.2	4.85	2,922.9	248.2	2,933.4	2,925.2	8.22	356.797	CC, ES
1,300.0	1,300.0	1,322.0	1,322.0	4.4	4.5	-141.48	2,922.9	248.2	2,934.8	2,925.9	8.92	328.925	
1,400.0	1,399.8	1,421.8	1,421.8	4.7	4.9	-141.49	2,922.9	248.2	2,938.9	2,929.3	9.61	305.774	
1,500.0	1,499.5	1,521.5	1,521.5	5.1	5.2	-141.51	2,922.9	248.2	2,945.7	2,935.4	10.30	285.854	
1,600.0	1,598.7	1,620.7	1,620.7	5.4	5.6	-141.54	2,922.9	248.2	2,955.3	2,944.3	11.00	268.582	
1,656.4	1,654.4	1,676.4	1,676.4	5.6	5.8	-141.55	2,922.9	248.2	2,961.9	2,950.5	11.40	259.821	
1,700.0	1,697.5	1,719.5	1,719.5	5.8	5.9	-141.64	2,922.9	248.2	2,967.3	2,955.6	11.71	253.469	
1,800.0	1,796.3	1,818.3	1,818.3	6.2	6.3	-141.83	2,922.9	248.2	2,979.9	2,967.4	12.41	240.055	
1,900.0	1,895.0	1,917.0	1,917.0	6.5	6.6	-142.01	2,922.9	248.2	2,992.4	2,979.3	13.12	228.000	
2,000.0	1,993.7	2,015.7	2,015.7	6.9	7.0	-142.20	2,922.9	248.2	3,005.0	2,991.1	13.84	217.120	
2,100.0	2,092.5	2,114.5	2,114.5	7.3	7.3	-142.38	2,922.9	248.2	3,017.6	3,003.0	14.56	207.263	
2,200.0	2,191.2	2,209.1	2,209.1	7.7	7.7	-142.56	2,922.9	248.2	3,030.2	3,015.0	15.27	198.493	
2,300.0	2,289.9	2,277.4	2,277.4	8.1	7.9	-142.68	2,923.3	248.5	3,043.5	3,027.7	15.88	191.703	
2,400.0	2,388.7	2,345.6	2,345.6	8.5	8.2	-142.79	2,924.4	249.2	3,057.8	3,041.3	16.48	185.492	
2,500.0	2,487.4	2,413.7	2,413.6	8.9	8.4	-142.89	2,926.1	250.5	3,073.1	3,056.1	17.09	179.799	
2,600.0	2,586.1	2,481.6	2,481.4	9.4	8.7	-142.98	2,928.5	252.2	3,089.4	3,071.7	17.70	174.567	
2,700.0	2,684.9	2,549.3	2,549.1	9.8	8.9	-143.06	2,931.5	254.4	3,106.7	3,088.4	18.30	169.751	
2,800.0	2,783.6	2,616.8	2,616.5	10.2	9.1	-143.14	2,935.1	257.1	3,125.0	3,106.1	18.90	165.313	
2,900.0	2,882.3	2,684.2	2,683.6	10.6	9.4	-143.20	2,939.4	260.2	3,144.2	3,124.7	19.50	161.218	
3,000.0	2,981.1	2,751.3	2,750.4	11.0	9.6	-143.26	2,944.3	263.8	3,164.4	3,144.3	20.10	157.433	
3,100.0	3,079.8	2,818.2	2,817.0	11.5	9.9	-143.31	2,949.8	267.8	3,185.6	3,164.9	20.69	153.934	
3,200.0	3,178.5	2,884.8	2,883.2	11.9	10.1	-143.34	2,955.9	272.3	3,207.7	3,186.4	21.29	150.693	
3,300.0	3,277.3	2,951.1	2,949.0	12.3	10.3	-143.37	2,962.6	277.2	3,230.8	3,208.9	21.88	147.689	
3,400.0	3,376.0	3,025.3	3,022.5	12.7	10.6	-143.40	2,970.7	283.2	3,254.7	3,232.2	22.50	144.660	
3,500.0	3,474.7	3,122.3	3,118.5	13.2	11.0	-143.43	2,981.6	291.1	3,278.9	3,255.7	23.23	141.152	
3,600.0	3,573.5	3,219.3	3,214.6	13.6	11.3	-143.46	2,992.5	299.1	3,303.1	3,279.1	23.96	137.846	
3,700.0	3,672.2	3,316.4	3,310.7	14.0	11.7	-143.49	3,003.4	307.1	3,327.3	3,302.6	24.70	134.726	
3,800.0	3,770.9	3,413.4	3,406.8	14.5	12.1	-143.52	3,014.3	315.1	3,351.5	3,326.1	25.43	131.777	
3,900.0	3,869.7	3,510.4	3,502.8	14.9	12.4	-143.54	3,025.2	323.0	3,375.7	3,349.5	26.17	128.986	
4,000.0	3,968.4	3,607.4	3,598.9	15.3	12.8	-143.57	3,036.1	331.0	3,399.9	3,373.0	26.91	126.341	
4,100.0	4,067.1	3,704.4	3,695.0	15.8	13.2	-143.60	3,047.0	339.0	3,424.1	3,396.5	27.65	123.831	
4,200.0	4,165.9	3,801.4	3,791.0	16.2	13.6	-143.62	3,057.9	347.0	3,448.3	3,419.9	28.39	121.447	
4,300.0	4,264.6	3,898.4	3,887.1	16.6	14.0	-143.65	3,068.8	354.9	3,472.5	3,443.4	29.14	119.180	
4,400.0	4,363.3	4,004.5	3,983.2	17.1	14.4	-143.68	3,079.7	362.9	3,496.7	3,466.8	29.92	116.888	
4,500.0	4,462.1	4,107.5	4,079.2	17.5	14.8	-143.70	3,090.6	370.9	3,521.0	3,490.3	30.68	114.752	
4,600.0	4,560.8	4,189.5	4,175.3	17.9	15.1	-143.73	3,101.5	378.9	3,545.2	3,513.8	31.37	113.001	
4,700.0	4,659.5	4,286.5	4,271.4	18.4	15.5	-143.75	3,112.4	386.9	3,569.4	3,537.3	32.12	111.126	
4,800.0	4,758.3	4,383.5	4,367.4	18.8	15.9	-143.78	3,123.3	394.8	3,593.6	3,560.7	32.87	109.334	
4,900.0	4,857.0	4,480.5	4,463.5	19.2	16.2	-143.80	3,134.2	402.8	3,617.8	3,584.2	33.62	107.619	
5,000.0	4,955.7	4,577.5	4,559.6	19.7	16.6	-143.83	3,145.1	410.8	3,642.0	3,607.6	34.37	105.977	

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 Bo Howard 1211 Fed Com #124H
Project:	Ranger/Arrowhead	**TVD Reference:**	KB @ 3199.5usft
Reference Site:	Bo Howard 1211	**MD Reference:**	KB @ 3199.5usft
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Bo Howard 1211 Fed Com #124H	**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 Bo Howard 1211 - Bo Howard 1211 Fed Com #121H - Wellbore #1 - BLM Plan #1

Offset Site Error: 0.0 usft

Survey Program: 0-MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,100.0	5,054.5	4,674.6	4,655.7	20.1	17.0	-143.85	3,155.9	418.8	3,666.2	3,631.1	35.12	104.403	
5,200.0	5,153.2	4,771.6	4,751.7	20.5	17.4	-143.87	3,166.8	426.7	3,690.4	3,654.6	35.87	102.893	
5,300.0	5,251.9	4,868.6	4,847.8	21.0	17.8	-143.90	3,177.7	434.7	3,714.6	3,678.0	36.62	101.443	
5,400.0	5,350.7	4,965.6	4,943.9	21.4	18.2	-143.92	3,188.6	442.7	3,738.9	3,701.5	37.37	100.050	
5,500.0	5,449.4	5,062.6	5,039.9	21.9	18.6	-143.94	3,199.5	450.7	3,763.1	3,725.0	38.12	98.711	
5,600.0	5,548.1	5,383.4	5,358.7	22.3	19.8	-144.10	3,227.7	471.3	3,785.8	3,745.9	39.95	94.773	
5,700.0	5,646.9	5,706.3	5,668.9	22.7	21.0	-144.46	3,234.8	476.4	3,800.1	3,758.5	41.58	91.383	
5,800.0	5,745.6	5,807.5	5,767.6	23.2	21.3	-144.60	3,234.8	476.4	3,813.1	3,770.7	42.33	90.088	
5,900.0	5,844.3	5,908.8	5,866.3	23.6	21.7	-144.74	3,234.8	476.4	3,826.1	3,783.0	43.07	88.838	
6,000.0	5,943.1	5,989.9	5,965.1	24.1	21.9	-144.87	3,234.8	476.4	3,839.1	3,795.3	43.74	87.772	
6,100.0	6,041.8	6,088.7	6,063.8	24.5	22.3	-145.01	3,234.8	476.4	3,852.1	3,807.6	44.47	86.618	
6,200.0	6,140.5	6,187.4	6,162.5	24.9	22.6	-145.14	3,234.8	476.4	3,865.2	3,820.0	45.21	85.502	
6,300.0	6,239.3	6,286.1	6,261.3	25.4	23.0	-145.28	3,234.8	476.4	3,878.3	3,832.3	45.94	84.422	
6,400.0	6,338.0	6,384.9	6,360.0	25.8	23.3	-145.41	3,234.8	476.4	3,891.4	3,844.7	46.67	83.376	
6,500.0	6,436.7	6,483.6	6,458.7	26.2	23.6	-145.54	3,234.8	476.4	3,904.5	3,857.1	47.41	82.364	
6,600.0	6,535.5	6,582.3	6,557.5	26.7	24.0	-145.67	3,234.8	476.4	3,917.6	3,869.5	48.14	81.382	
6,664.9	6,599.6	6,646.4	6,621.6	27.0	24.2	-145.76	3,234.8	476.4	3,926.2	3,877.5	48.61	80.760	
6,700.0	6,634.2	6,681.1	6,656.2	27.1	24.3	-145.84	3,234.8	476.4	3,930.6	3,881.8	48.87	80.428	
6,800.0	6,733.3	6,780.2	6,755.3	27.5	24.7	-146.05	3,234.8	476.4	3,942.0	3,892.4	49.60	79.478	
6,900.0	6,832.7	6,879.5	6,854.7	27.9	25.0	-146.21	3,234.8	476.4	3,951.2	3,900.9	50.32	78.524	
7,000.0	6,932.3	6,979.2	6,954.3	28.3	25.4	-146.34	3,234.8	476.4	3,958.2	3,907.2	51.03	77.566	
7,100.0	7,032.1	7,079.0	7,054.1	28.7	25.7	-146.43	3,234.8	476.4	3,963.1	3,911.4	51.73	76.604	
7,200.0	7,132.1	7,178.9	7,154.1	29.0	26.0	-146.47	3,234.8	476.4	3,965.8	3,913.4	52.43	75.639	
7,273.4	7,205.5	7,258.8	7,234.0	29.2	26.3	-0.17	3,234.7	476.0	3,966.4	3,913.4	52.95	74.910	
7,300.0	7,232.1	7,295.8	7,270.8	29.3	26.4	90.12	3,234.6	473.3	3,966.3	3,913.2	53.15	74.626	
7,350.0	7,281.9	7,364.7	7,338.8	29.4	26.6	90.07	3,234.1	462.0	3,966.0	3,912.5	53.50	74.134	
7,400.0	7,331.1	7,432.7	7,404.0	29.6	26.8	90.02	3,233.3	443.0	3,965.4	3,911.6	53.81	73.693	
7,450.0	7,379.3	7,499.5	7,465.4	29.7	27.0	89.97	3,232.2	416.9	3,964.7	3,910.6	54.09	73.293	
7,500.0	7,426.2	7,564.8	7,522.2	29.7	27.1	89.91	3,230.8	384.7	3,963.7	3,909.4	54.35	72.925	
7,550.0	7,471.5	7,628.5	7,573.6	29.8	27.2	89.85	3,229.1	347.2	3,962.6	3,908.0	54.60	72.573	
7,600.0	7,514.7	7,690.5	7,619.4	29.9	27.4	89.79	3,227.3	305.5	3,961.3	3,906.5	54.85	72.222	
7,650.0	7,555.6	7,750.8	7,659.3	29.9	27.5	89.73	3,225.3	260.4	3,959.9	3,904.8	55.11	71.854	
7,700.0	7,593.8	7,809.3	7,693.4	29.9	27.7	89.67	3,223.3	212.9	3,958.3	3,902.9	55.40	71.450	
7,750.0	7,629.0	7,866.0	7,721.6	30.0	27.9	89.62	3,221.1	163.8	3,956.7	3,901.0	55.73	71.000	
7,800.0	7,661.0	7,921.1	7,744.2	30.0	28.2	89.58	3,218.9	113.6	3,955.0	3,898.9	56.10	70.496	
7,850.0	7,689.6	7,974.6	7,761.4	30.0	28.5	89.55	3,216.7	63.0	3,953.2	3,896.7	56.53	69.930	
7,900.0	7,714.5	8,026.7	7,773.6	30.0	28.8	89.52	3,214.5	12.5	3,951.4	3,894.4	57.02	69.301	
7,950.0	7,735.4	8,077.3	7,781.0	29.9	29.2	89.49	3,212.3	-37.6	3,949.5	3,892.0	57.56	68.612	
8,000.0	7,752.4	8,126.6	7,783.9	29.9	29.6	89.48	3,210.2	-86.8	3,947.7	3,889.5	58.16	67.871	
8,050.0	7,765.2	8,152.4	7,784.0	29.9	29.8	89.55	3,209.1	-112.4	3,945.9	3,887.3	58.64	67.285	
8,100.0	7,773.8	8,173.1	7,784.0	29.9	30.0	89.64	3,208.4	-133.1	3,944.5	3,885.4	59.13	66.713	
8,150.0	7,778.0	8,200.0	7,784.0	29.9	30.3	89.72	3,207.7	-160.1	3,943.4	3,883.7	59.70	66.058	
8,173.4	7,778.5	8,200.0	7,784.0	29.9	30.3	89.76	3,207.7	-160.1	3,943.0	3,883.2	59.86	65.866	
8,200.0	7,778.3	8,215.0	7,784.0	30.0	30.4	89.77	3,207.4	-175.1	3,942.7	3,882.5	60.21	65.481	
8,244.5	7,777.6	8,233.8	7,784.0	30.2	30.6	89.78	3,207.2	-193.9	3,942.4	3,881.6	60.76	64.887	
8,275.0	7,776.8	8,250.3	7,784.0	30.4	30.8	89.78	3,207.1	-210.3	3,942.4	3,881.2	61.19	64.424	
8,300.0	7,776.2	8,266.6	7,784.0	30.7	31.0	89.79	3,207.0	-226.6	3,942.4	3,880.8	61.59	64.009	
8,400.0	7,773.7	8,366.6	7,784.0	31.7	32.1	89.83	3,206.6	-326.6	3,942.6	3,878.9	63.76	61.836	
8,500.0	7,771.2	8,466.5	7,784.0	32.9	33.4	89.86	3,206.3	-426.6	3,942.9	3,876.6	66.21	59.551	
8,600.0	7,768.8	8,566.5	7,784.0	34.2	34.8	89.90	3,205.9	-526.6	3,943.1	3,874.2	68.92	57.211	
8,700.0	7,766.3	8,666.5	7,784.0	35.7	36.3	89.93	3,205.5	-626.5	3,943.3	3,871.4	71.87	54.869	
8,800.0	7,763.8	8,766.4	7,784.0	37.2	37.9	89.97	3,205.2	-726.5	3,943.5	3,868.5	75.02	52.567	

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 Bo Howard 1211 Fed Com #124H
Project:	Ranger/Arrowhead	**TVD Reference:**	KB @ 3199.5usft
Reference Site:	Bo Howard 1211	**MD Reference:**	KB @ 3199.5usft
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Bo Howard 1211 Fed Com #124H	**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 Bo Howard 1211 - Bo Howard 1211 Fed Com #121H - Wellbore #1 - BLM Plan #1

Offset Site Error: 0.0 usft

Survey Program: 0-MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
8,900.0	7,761.3	8,866.4	7,784.0	38.9	39.6	90.01	3,204.8	-826.5	3,943.8	3,865.4	78.35	50.335	
9,000.0	7,758.8	8,966.4	7,784.0	40.6	41.4	90.04	3,204.4	-926.4	3,944.0	3,862.2	81.84	48.191	
9,100.0	7,756.4	9,066.3	7,784.0	42.4	43.3	90.08	3,204.0	-1,026.4	3,944.2	3,858.8	85.47	46.146	
9,200.0	7,753.9	9,166.3	7,784.0	44.3	45.2	90.11	3,203.7	-1,126.4	3,944.5	3,855.3	89.23	44.208	
9,300.0	7,751.4	9,266.3	7,784.0	46.2	47.1	90.15	3,203.3	-1,226.3	3,944.7	3,851.6	93.09	42.377	
9,400.0	7,748.9	9,366.2	7,784.0	48.1	49.1	90.19	3,202.9	-1,326.3	3,945.0	3,847.9	97.04	40.653	
9,500.0	7,746.4	9,466.2	7,784.0	50.1	51.1	90.22	3,202.6	-1,426.3	3,945.2	3,844.1	101.08	39.031	
9,600.0	7,743.9	9,566.2	7,784.0	52.2	53.2	90.26	3,202.2	-1,526.2	3,945.5	3,840.3	105.19	37.507	
9,700.0	7,741.5	9,666.1	7,784.0	54.3	55.3	90.29	3,201.8	-1,626.2	3,945.7	3,836.3	109.37	36.077	
9,800.0	7,739.0	9,766.1	7,784.0	56.4	57.4	90.33	3,201.5	-1,726.2	3,945.9	3,832.3	113.61	34.734	
9,900.0	7,736.5	9,866.1	7,784.0	58.5	59.6	90.37	3,201.1	-1,826.1	3,946.2	3,828.3	117.89	33.472	
10,000.0	7,734.0	9,966.1	7,784.0	60.7	61.8	90.40	3,200.7	-1,926.1	3,946.4	3,824.2	122.23	32.287	
10,100.0	7,731.5	10,066.0	7,784.0	62.8	64.0	90.44	3,200.3	-2,026.1	3,946.7	3,820.1	126.61	31.173	
10,200.0	7,729.1	10,166.0	7,784.0	65.0	66.2	90.47	3,200.0	-2,126.0	3,946.9	3,815.9	131.02	30.125	
10,300.0	7,726.6	10,266.0	7,784.0	67.3	68.4	90.51	3,199.6	-2,226.0	3,947.2	3,811.7	135.47	29.138	
10,400.0	7,724.1	10,365.9	7,784.0	69.5	70.6	90.55	3,199.2	-2,326.0	3,947.5	3,807.5	139.95	28.207	
10,500.0	7,721.6	10,465.9	7,784.0	71.7	72.9	90.58	3,198.9	-2,426.0	3,947.7	3,803.3	144.45	27.329	
10,600.0	7,719.1	10,565.9	7,784.0	74.0	75.2	90.62	3,198.5	-2,525.9	3,948.0	3,799.0	148.98	26.499	
10,700.0	7,716.7	10,665.8	7,784.0	76.3	77.4	90.65	3,198.1	-2,625.9	3,948.2	3,794.7	153.54	25.715	
10,800.0	7,714.2	10,765.8	7,784.0	78.6	79.7	90.69	3,197.8	-2,725.9	3,948.5	3,790.4	158.11	24.973	
10,900.0	7,711.7	10,865.8	7,784.0	80.9	82.0	90.73	3,197.4	-2,825.8	3,948.8	3,786.1	162.71	24.269	
11,000.0	7,709.2	10,965.7	7,784.0	83.2	84.3	90.76	3,197.0	-2,925.8	3,949.0	3,781.7	167.32	23.602	
11,100.0	7,706.7	11,065.7	7,784.0	85.5	86.6	90.80	3,196.6	-3,025.8	3,949.3	3,777.3	171.95	22.968	
11,200.0	7,704.3	11,165.7	7,784.0	87.8	89.0	90.83	3,196.3	-3,125.7	3,949.6	3,773.0	176.59	22.366	
11,300.0	7,701.8	11,265.6	7,784.0	90.1	91.3	90.87	3,195.9	-3,225.7	3,949.8	3,768.6	181.25	21.792	
11,400.0	7,699.3	11,365.6	7,784.0	92.5	93.6	90.91	3,195.5	-3,325.7	3,950.1	3,764.2	185.92	21.247	
11,500.0	7,696.8	11,465.6	7,784.0	94.8	96.0	90.94	3,195.2	-3,425.6	3,950.4	3,759.8	190.60	20.726	
11,600.0	7,694.3	11,565.6	7,784.0	97.1	98.3	90.98	3,194.8	-3,525.6	3,950.7	3,755.4	195.29	20.230	
11,700.0	7,691.9	11,665.5	7,784.0	99.5	100.7	91.01	3,194.4	-3,625.6	3,950.9	3,750.9	199.99	19.755	
11,800.0	7,689.4	11,765.5	7,784.0	101.8	103.0	91.05	3,194.1	-3,725.5	3,951.2	3,746.5	204.70	19.302	
11,900.0	7,686.9	11,865.5	7,784.0	104.2	105.4	91.09	3,193.7	-3,825.5	3,951.5	3,742.1	209.42	18.868	
12,000.0	7,684.4	11,965.4	7,784.0	106.6	107.7	91.12	3,193.3	-3,925.5	3,951.8	3,737.6	214.15	18.453	
12,100.0	7,681.9	12,065.4	7,784.0	108.9	110.1	91.16	3,192.9	-4,025.4	3,952.0	3,733.2	218.89	18.055	
12,200.0	7,679.4	12,165.4	7,784.0	111.3	112.5	91.19	3,192.6	-4,125.4	3,952.3	3,728.7	223.63	17.674	
12,300.0	7,677.0	12,265.3	7,784.0	113.7	114.8	91.23	3,192.2	-4,225.4	3,952.6	3,724.2	228.38	17.307	
12,400.0	7,674.5	12,365.3	7,784.0	116.1	117.2	91.26	3,191.8	-4,325.3	3,952.9	3,719.8	233.13	16.955	
12,500.0	7,672.0	12,465.3	7,784.0	118.5	119.6	91.30	3,191.5	-4,425.3	3,953.2	3,715.3	237.90	16.617	
12,600.0	7,669.5	12,565.2	7,784.0	120.9	122.0	91.34	3,191.1	-4,525.3	3,953.5	3,710.8	242.66	16.292	
12,700.0	7,667.0	12,665.2	7,784.0	123.2	124.4	91.37	3,190.7	-4,625.3	3,953.8	3,706.3	247.43	15.979	
12,800.0	7,664.6	12,765.2	7,784.0	125.6	126.8	91.41	3,190.4	-4,725.2	3,954.1	3,701.9	252.21	15.678	
12,900.0	7,662.1	12,865.2	7,784.0	128.0	129.1	91.44	3,190.0	-4,825.2	3,954.4	3,697.4	256.99	15.387	
13,000.0	7,659.6	12,965.1	7,784.0	130.4	131.5	91.48	3,189.6	-4,925.2	3,954.7	3,692.9	261.78	15.107	
13,100.0	7,657.1	13,065.1	7,784.0	132.8	133.9	91.52	3,189.2	-5,025.1	3,955.0	3,688.4	266.57	14.837	
13,200.0	7,654.6	13,165.1	7,784.0	135.2	136.3	91.55	3,188.9	-5,125.1	3,955.3	3,683.9	271.36	14.576	
13,300.0	7,652.2	13,265.0	7,784.0	137.6	138.7	91.59	3,188.5	-5,225.1	3,955.6	3,679.4	276.16	14.324	
13,400.0	7,649.7	13,365.0	7,784.0	140.0	141.1	91.62	3,188.1	-5,325.0	3,955.9	3,674.9	280.96	14.080	
13,500.0	7,647.2	13,465.0	7,784.0	142.4	143.5	91.66	3,187.8	-5,425.0	3,956.2	3,670.4	285.76	13.844	
13,600.0	7,644.7	13,564.9	7,784.0	144.9	145.9	91.69	3,187.4	-5,525.0	3,956.5	3,665.9	290.57	13.616	
13,700.0	7,642.2	13,664.9	7,784.0	147.3	148.3	91.73	3,187.0	-5,624.9	3,956.8	3,661.4	295.38	13.396	
13,800.0	7,639.8	13,764.9	7,784.0	149.7	150.7	91.77	3,186.6	-5,724.9	3,957.1	3,656.9	300.19	13.182	
13,900.0	7,637.3	13,864.8	7,784.0	152.1	153.1	91.80	3,186.3	-5,824.9	3,957.4	3,652.4	305.00	12.975	
14,000.0	7,634.8	13,964.8	7,784.0	154.5	155.5	91.84	3,185.9	-5,924.8	3,957.7	3,647.9	309.82	12.774	

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 Bo Howard 1211 Fed Com #124H
Project:	Ranger/Arrowhead	**TVD Reference:**	KB @ 3199.5usft
Reference Site:	Bo Howard 1211	**MD Reference:**	KB @ 3199.5usft
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Bo Howard 1211 Fed Com #124H	**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 Bo Howard 1211 - Bo Howard 1211 Fed Com #121H - Wellbore #1 - BLM Plan #1

Offset Site Error: 0.0 usft

Survey Program: 0-MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
14,100.0	7,632.3	14,064.8	7,784.0	156.9	158.0	91.87	3,185.5	-6,024.8	3,958.0	3,643.4	314.64	12.580	
14,200.0	7,629.8	14,164.7	7,784.0	159.3	160.4	91.91	3,185.2	-6,124.8	3,958.3	3,638.9	319.46	12.391	
14,300.0	7,627.4	14,264.7	7,784.0	161.8	162.8	91.95	3,184.8	-6,224.7	3,958.7	3,634.4	324.28	12.207	
14,400.0	7,624.9	14,364.7	7,784.0	164.2	165.2	91.98	3,184.4	-6,324.7	3,959.0	3,629.9	329.11	12.029	
14,500.0	7,622.4	14,464.7	7,784.0	166.6	167.6	92.02	3,184.1	-6,424.7	3,959.3	3,625.4	333.93	11.857	
14,600.0	7,619.9	14,564.6	7,784.0	169.0	170.0	92.05	3,183.7	-6,524.6	3,959.6	3,620.9	338.76	11.689	
14,700.0	7,617.4	14,664.6	7,784.0	171.5	172.4	92.09	3,183.3	-6,624.6	3,959.9	3,616.3	343.59	11.525	
14,800.0	7,614.9	14,764.6	7,784.0	173.9	174.8	92.12	3,182.9	-6,724.6	3,960.3	3,611.8	348.42	11.366	
14,900.0	7,612.5	14,864.5	7,784.0	176.3	177.3	92.16	3,182.6	-6,824.6	3,960.6	3,607.3	353.26	11.212	
15,000.0	7,610.0	14,964.5	7,784.0	178.7	179.7	92.20	3,182.2	-6,924.5	3,960.9	3,602.8	358.09	11.061	
15,100.0	7,607.5	15,064.5	7,784.0	181.2	182.1	92.23	3,181.8	-7,024.5	3,961.2	3,598.3	362.93	10.915	
15,200.0	7,605.0	15,164.4	7,784.0	183.6	184.5	92.27	3,181.5	-7,124.5	3,961.6	3,593.8	367.76	10.772	
15,300.0	7,602.5	15,264.4	7,784.0	186.0	186.9	92.30	3,181.1	-7,224.4	3,961.9	3,589.3	372.60	10.633	
15,400.0	7,600.1	15,364.4	7,784.0	188.4	189.4	92.34	3,180.7	-7,324.4	3,962.2	3,584.8	377.44	10.498	
15,463.1	7,598.5	15,427.5	7,784.0	190.0	190.9	92.36	3,180.5	-7,387.5	3,962.5	3,582.0	380.50	10.414	SF

Anticollision Report

Company:	Matador Production Company	**Local Co-ordinate Reference:**	Well Bo Howard 1211 Fed Com #124H
Project:	Ranger/Arrowhead	**TVD Reference:**	KB @ 3199.5usft
Reference Site:	Bo Howard 1211	**MD Reference:**	KB @ 3199.5usft
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Bo Howard 1211 Fed Com #124H	**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 Bo Howard 1211 - Bo Howard 1211 Fed Com #122H - Wellbore #1 - BLM Plan #1

Offset Site Error: 0.0 usft

Survey Program: 0-MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.0	0.0	22.0	22.0	0.0	0.0	5.46	2,922.9	279.2	2,936.2				
100.0	100.0	122.0	122.0	0.1	0.2	5.46	2,922.9	279.2	2,936.2	2,935.8	0.34	8,760.194	
200.0	200.0	222.0	222.0	0.5	0.6	5.46	2,922.9	279.2	2,936.2	2,935.1	1.05	2,790.728	
300.0	300.0	322.0	322.0	0.8	0.9	5.46	2,922.9	279.2	2,936.2	2,934.4	1.77	1,659.734	
400.0	400.0	422.0	422.0	1.2	1.3	5.46	2,922.9	279.2	2,936.2	2,933.7	2.49	1,181.080	
500.0	500.0	522.0	522.0	1.6	1.6	5.46	2,922.9	279.2	2,936.2	2,933.0	3.20	916.708	
600.0	600.0	622.0	622.0	1.9	2.0	5.46	2,922.9	279.2	2,936.2	2,932.2	3.92	749.043	
700.0	700.0	722.0	722.0	2.3	2.4	5.46	2,922.9	279.2	2,936.2	2,931.5	4.64	633.227	
800.0	800.0	822.0	822.0	2.6	2.7	5.46	2,922.9	279.2	2,936.2	2,930.8	5.35	548.429	
900.0	900.0	922.0	922.0	3.0	3.1	5.46	2,922.9	279.2	2,936.2	2,930.1	6.07	483.660	
1,000.0	1,000.0	1,022.0	1,022.0	3.4	3.4	5.46	2,922.9	279.2	2,936.2	2,929.4	6.79	432.574	
1,100.0	1,100.0	1,122.0	1,122.0	3.7	3.8	5.46	2,922.9	279.2	2,936.2	2,928.7	7.50	391.249	
1,200.0	1,200.0	1,222.0	1,222.0	4.1	4.2	5.46	2,922.9	279.2	2,936.2	2,927.9	8.22	357.131	
1,300.0	1,300.0	1,322.0	1,322.0	4.4	4.5	-140.87	2,922.9	279.2	2,937.5	2,928.6	8.92	329.231	
1,400.0	1,399.8	1,421.8	1,421.8	4.7	4.9	-140.89	2,922.9	279.2	2,941.6	2,932.0	9.61	306.054	
1,500.0	1,499.5	1,542.5	1,542.5	5.1	5.3	-140.93	2,922.7	279.3	2,948.3	2,937.9	10.37	284.240	
1,600.0	1,598.7	1,739.9	1,739.8	5.4	5.9	-141.11	2,917.9	280.1	2,955.4	2,944.0	11.36	260.126	
1,656.4	1,654.4	1,851.4	1,851.1	5.6	6.3	-141.24	2,912.3	281.2	2,959.2	2,947.3	11.92	248.276	
1,700.0	1,697.5	1,937.8	1,937.4	5.8	6.6	-141.37	2,906.4	282.3	2,961.7	2,949.4	12.35	239.782	
1,800.0	1,796.3	2,136.6	2,135.3	6.2	7.3	-141.66	2,888.1	285.7	2,965.1	2,951.8	13.35	222.111	
1,900.0	1,895.0	2,335.9	2,332.9	6.5	8.0	-141.91	2,863.0	290.3	2,965.2	2,950.9	14.35	206.606	
2,000.0	1,993.7	2,535.2	2,529.5	6.9	8.7	-142.12	2,831.2	296.3	2,962.0	2,946.7	15.35	192.906	
2,100.0	2,092.5	2,734.0	2,724.4	7.3	9.5	-142.31	2,792.7	303.4	2,955.4	2,939.1	16.35	180.714	
2,200.0	2,191.2	2,892.8	2,879.1	7.7	10.2	-142.43	2,757.4	310.0	2,945.8	2,928.6	17.24	170.825	
2,300.0	2,289.9	3,007.8	2,975.8	8.1	10.7	-142.50	2,734.5	314.2	2,935.6	2,917.5	18.04	162.740	
2,400.0	2,388.7	3,108.4	3,072.4	8.5	11.2	-142.57	2,711.6	318.5	2,925.4	2,906.6	18.78	155.734	
2,500.0	2,487.4	3,209.0	3,169.1	8.9	11.6	-142.65	2,688.8	322.7	2,915.1	2,895.6	19.53	149.230	
2,600.0	2,586.1	3,309.6	3,265.7	9.4	12.1	-142.72	2,665.9	327.0	2,904.9	2,884.6	20.29	143.181	
2,700.0	2,684.9	3,389.8	3,362.4	9.8	12.4	-142.80	2,643.0	331.2	2,894.7	2,873.8	20.97	138.048	
2,800.0	2,783.6	3,489.2	3,459.0	10.2	12.9	-142.87	2,620.2	335.5	2,884.5	2,862.8	21.72	132.777	
2,900.0	2,882.3	3,588.6	3,555.6	10.6	13.4	-142.95	2,597.3	339.7	2,874.3	2,851.8	22.48	127.845	
3,000.0	2,981.1	3,688.0	3,652.3	11.0	13.8	-143.03	2,574.4	344.0	2,864.1	2,840.9	23.24	123.223	
3,100.0	3,079.8	3,787.4	3,748.9	11.5	14.3	-143.10	2,551.6	348.2	2,853.9	2,829.9	24.01	118.884	
3,200.0	3,178.5	3,886.8	3,845.6	11.9	14.8	-143.18	2,528.7	352.4	2,843.8	2,819.0	24.77	114.804	
3,300.0	3,277.3	3,986.2	3,942.2	12.3	15.3	-143.26	2,505.8	356.7	2,833.6	2,808.0	25.54	110.961	
3,400.0	3,376.0	4,085.6	4,038.9	12.7	15.8	-143.34	2,483.0	360.9	2,823.4	2,797.1	26.30	107.336	
3,500.0	3,474.7	4,185.0	4,135.5	13.2	16.2	-143.42	2,460.1	365.2	2,813.2	2,786.2	27.07	103.912	
3,600.0	3,573.5	4,284.4	4,232.2	13.6	16.7	-143.50	2,437.2	369.4	2,803.1	2,775.2	27.84	100.673	
3,700.0	3,672.2	4,383.8	4,328.8	14.0	17.2	-143.58	2,414.3	373.7	2,792.9	2,764.3	28.61	97.605	
3,800.0	3,770.9	4,483.3	4,425.5	14.5	17.7	-143.66	2,391.5	377.9	2,782.8	2,753.4	29.39	94.694	
3,900.0	3,869.7	4,582.7	4,522.1	14.9	18.2	-143.74	2,368.6	382.2	2,772.6	2,742.5	30.16	91.931	
4,000.0	3,968.4	4,682.1	4,618.8	15.3	18.7	-143.82	2,345.7	386.4	2,762.5	2,731.6	30.93	89.304	
4,100.0	4,067.1	4,781.5	4,715.4	15.8	19.2	-143.91	2,322.9	390.7	2,752.4	2,720.7	31.71	86.803	
4,200.0	4,165.9	4,880.9	4,812.0	16.2	19.7	-143.99	2,300.0	394.9	2,742.2	2,709.8	32.48	84.420	
4,300.0	4,264.6	4,980.3	4,908.7	16.6	20.2	-144.07	2,277.1	399.2	2,732.1	2,698.9	33.26	82.148	
4,400.0	4,363.3	5,079.7	5,005.3	17.1	20.7	-144.16	2,254.3	403.4	2,722.0	2,688.0	34.03	79.978	
4,500.0	4,462.1	5,179.1	5,102.0	17.5	21.2	-144.24	2,231.4	407.7	2,711.9	2,677.1	34.81	77.903	
4,600.0	4,560.8	5,278.5	5,198.6	17.9	21.7	-144.33	2,208.5	411.9	2,701.8	2,666.2	35.59	75.919	
4,700.0	4,659.5	5,377.9	5,295.3	18.4	22.2	-144.42	2,185.7	416.2	2,691.7	2,655.3	36.36	74.019	
4,800.0	4,758.3	5,477.3	5,391.9	18.8	22.7	-144.50	2,162.8	420.4	2,681.6	2,644.5	37.14	72.199	
4,900.0	4,857.0	5,576.7	5,488.6	19.2	23.2	-144.59	2,139.9	424.7	2,671.5	2,633.6	37.92	70.452	
5,000.0	4,955.7	5,676.1	5,585.2	19.7	23.7	-144.68	2,117.1	428.9	2,661.4	2,622.7	38.70	68.776	

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 Bo Howard 1211 Fed Com #124H
Project:	Ranger/Arrowhead	**TVD Reference:**	KB @ 3199.5usft
Reference Site:	Bo Howard 1211	**MD Reference:**	KB @ 3199.5usft
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Bo Howard 1211 Fed Com #124H	**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 Bo Howard 1211 - Bo Howard 1211 Fed Com #122H - Wellbore #1 - BLM Plan #1 — **Offset Site Error:** 0.0 usft

Survey Program: 0-MWD — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,100.0	5,054.5	5,775.5	5,681.9	20.1	24.2	-144.77	2,094.2	433.2	2,651.4	2,611.9	39.47	67.166	
5,200.0	5,153.2	5,874.9	5,778.5	20.5	24.7	-144.86	2,071.3	437.4	2,641.3	2,601.0	40.25	65.618	
5,300.0	5,251.9	5,974.3	5,875.2	21.0	25.2	-144.95	2,048.5	441.7	2,631.2	2,590.2	41.03	64.129	
5,400.0	5,350.7	6,073.7	5,971.8	21.4	25.7	-145.04	2,025.6	445.9	2,621.2	2,579.4	41.81	62.695	
5,500.0	5,449.4	6,173.2	6,068.4	21.9	26.2	-145.14	2,002.7	450.1	2,611.1	2,568.6	42.59	61.314	
5,600.0	5,548.1	6,272.6	6,165.1	22.3	26.7	-145.23	1,979.9	454.4	2,601.1	2,557.7	43.36	59.982	
5,700.0	5,646.9	6,372.0	6,261.7	22.7	27.2	-145.32	1,957.0	458.6	2,591.1	2,546.9	44.14	58.698	
5,800.0	5,745.6	6,454.5	6,342.0	23.2	27.6	-145.40	1,938.1	462.2	2,581.2	2,536.3	44.88	57.511	
5,900.0	5,844.3	6,514.5	6,400.5	23.6	27.9	-145.46	1,925.1	464.6	2,572.6	2,527.0	45.56	56.465	
6,000.0	5,943.1	6,574.6	6,459.3	24.1	28.2	-145.53	1,913.0	466.8	2,565.5	2,519.3	46.23	55.497	
6,100.0	6,041.8	6,634.7	6,518.4	24.5	28.5	-145.60	1,901.8	468.9	2,560.0	2,513.1	46.88	54.604	
6,200.0	6,140.5	6,700.0	6,582.7	24.9	28.8	-145.68	1,890.8	470.9	2,556.0	2,508.5	47.54	53.763	
6,300.0	6,239.3	6,755.3	6,637.3	25.4	29.1	-145.75	1,882.2	472.5	2,553.6	2,505.5	48.16	53.028	
6,400.0	6,338.0	6,815.6	6,696.9	25.8	29.3	-145.84	1,873.8	474.1	2,552.8	2,504.0	48.77	52.341	
6,404.8	6,342.7	6,818.4	6,699.8	25.8	29.3	-145.84	1,873.4	474.2	2,552.8	2,504.0	48.80	52.309	CC
6,500.0	6,436.7	6,875.8	6,756.7	26.2	29.6	-145.92	1,866.3	475.5	2,553.5	2,504.1	49.37	51.717	
6,600.0	6,535.5	6,936.0	6,816.6	26.7	29.8	-146.02	1,859.7	476.7	2,555.7	2,505.8	49.96	51.154	
6,664.9	6,599.6	6,975.1	6,855.4	27.0	30.0	-146.08	1,855.9	477.4	2,558.0	2,507.7	50.34	50.820	
6,700.0	6,634.2	7,000.0	6,880.2	27.1	30.0	-146.13	1,853.7	477.8	2,559.4	2,508.9	50.55	50.631	
6,800.0	6,733.3	7,056.3	6,936.4	27.5	30.2	-146.23	1,849.3	478.6	2,563.0	2,511.9	51.09	50.170	
6,900.0	6,832.7	7,116.5	6,996.4	27.9	30.5	-146.33	1,845.5	479.3	2,565.9	2,514.3	51.62	49.711	
7,000.0	6,932.3	7,176.6	7,056.5	28.3	30.7	-146.40	1,842.7	479.9	2,568.2	2,516.1	52.12	49.271	
7,100.0	7,032.1	7,236.8	7,116.6	28.7	30.9	-146.45	1,840.7	480.2	2,569.8	2,517.2	52.61	48.848	
7,200.0	7,132.1	7,300.0	7,179.8	29.0	31.1	-146.47	1,839.7	480.4	2,570.9	2,517.8	53.09	48.425	
7,273.4	7,205.5	7,343.6	7,223.4	29.2	31.2	-0.16	1,839.6	480.3	2,571.2	2,517.8	53.40	48.150	
7,300.0	7,232.1	7,363.7	7,243.5	29.3	31.2	90.13	1,839.7	479.5	2,571.3	2,517.8	53.53	48.038	
7,350.0	7,281.9	7,400.0	7,279.7	29.4	31.3	90.09	1,839.9	476.3	2,571.6	2,517.9	53.74	47.850	
7,400.0	7,331.1	7,439.1	7,318.3	29.6	31.4	90.05	1,840.3	470.3	2,572.2	2,518.3	53.96	47.673	
7,450.0	7,379.3	7,476.8	7,355.1	29.7	31.5	90.01	1,840.9	462.1	2,573.1	2,518.9	54.14	47.522	
7,500.0	7,426.2	7,514.7	7,391.4	29.7	31.6	89.96	1,841.6	451.4	2,574.1	2,519.8	54.32	47.389	
7,550.0	7,471.5	7,552.6	7,427.0	29.8	31.7	89.90	1,842.5	438.3	2,575.4	2,520.9	54.48	47.271	
7,600.0	7,514.7	7,590.8	7,461.8	29.9	31.7	89.84	1,843.6	422.8	2,576.9	2,522.3	54.64	47.164	
7,650.0	7,555.6	7,629.1	7,495.7	29.9	31.8	89.77	1,844.9	404.9	2,578.7	2,523.9	54.79	47.062	
7,700.0	7,593.8	7,667.6	7,528.5	29.9	31.9	89.70	1,846.3	384.7	2,580.6	2,525.7	54.95	46.960	
7,750.0	7,629.0	7,706.5	7,560.0	30.0	31.9	89.63	1,847.9	362.2	2,582.8	2,527.7	55.13	46.851	
7,800.0	7,661.0	7,745.6	7,590.3	30.0	31.9	89.56	1,849.6	337.3	2,585.2	2,529.8	55.32	46.728	
7,850.0	7,689.6	7,785.2	7,619.0	30.0	32.0	89.48	1,851.5	310.2	2,587.7	2,532.2	55.55	46.584	
7,900.0	7,714.5	7,825.2	7,646.0	30.0	32.0	89.41	1,853.6	280.8	2,590.4	2,534.6	55.82	46.411	
7,950.0	7,735.4	7,865.6	7,671.3	29.9	32.0	89.33	1,855.8	249.3	2,593.3	2,537.2	56.13	46.204	
8,000.0	7,752.4	7,906.7	7,694.5	29.9	32.1	89.26	1,858.1	215.6	2,596.3	2,539.9	56.49	45.959	
8,050.0	7,765.2	7,948.3	7,715.5	29.9	32.1	89.19	1,860.6	179.7	2,599.5	2,542.6	56.92	45.671	
8,100.0	7,773.8	7,990.7	7,734.2	29.9	32.1	89.13	1,863.3	141.8	2,602.8	2,545.4	57.41	45.334	
8,150.0	7,778.0	8,033.8	7,750.3	29.9	32.1	89.07	1,866.1	101.9	2,606.2	2,548.2	57.97	44.959	
8,173.4	7,778.5	8,054.3	7,756.9	29.9	32.1	89.04	1,867.4	82.5	2,607.8	2,549.6	58.25	44.771	
8,200.0	7,778.3	8,078.0	7,763.6	30.0	32.1	89.15	1,869.0	59.9	2,609.7	2,551.1	58.59	44.541	
8,244.5	7,777.6	8,118.7	7,773.0	30.2	32.2	89.31	1,871.8	20.4	2,612.9	2,553.7	59.21	44.129	
8,300.0	7,776.2	8,171.1	7,780.8	30.7	32.2	89.51	1,875.4	-31.3	2,617.0	2,557.0	60.07	43.567	
8,400.0	7,773.7	8,461.9	7,784.0	31.7	33.6	89.74	1,886.5	-321.7	2,622.4	2,558.4	64.07	40.931	
8,500.0	7,771.2	8,561.9	7,784.0	32.9	34.7	89.79	1,886.1	-421.6	2,622.7	2,556.1	66.54	39.417	
8,600.0	7,768.8	8,661.8	7,784.0	34.2	36.0	89.85	1,885.7	-521.6	2,622.9	2,553.6	69.25	37.873	
8,700.0	7,766.3	8,761.8	7,784.0	35.7	37.4	89.90	1,885.3	-621.6	2,623.1	2,550.9	72.20	36.329	
8,800.0	7,763.8	8,861.8	7,784.0	37.2	39.0	89.96	1,885.0	-721.5	2,623.4	2,548.0	75.36	34.811	

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 Bo Howard 1211 Fed Com #124H
Project:	Ranger/Arrowhead	**TVD Reference:**	KB @ 3199.5usft
Reference Site:	Bo Howard 1211	**MD Reference:**	KB @ 3199.5usft
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Bo Howard 1211 Fed Com #124H	**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 Bo Howard 1211 - Bo Howard 1211 Fed Com #122H - Wellbore #1 - BLM Plan #1 — **Offset Site Error:** 0.0 usft

Survey Program: 0-MWD — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
8,900.0	7,761.3	8,961.7	7,784.0	38.9	40.6	90.01	1,884.6	-821.5	2,623.6	2,544.9	78.69	33.339	
9,000.0	7,758.8	9,061.7	7,784.0	40.6	42.4	90.06	1,884.2	-921.5	2,623.8	2,541.6	82.19	31.925	
9,100.0	7,756.4	9,161.7	7,784.0	42.4	44.2	90.12	1,883.9	-1,021.4	2,624.1	2,538.3	85.82	30.576	
9,200.0	7,753.9	9,261.6	7,784.0	44.3	46.1	90.17	1,883.5	-1,121.4	2,624.3	2,534.7	89.58	29.297	
9,300.0	7,751.4	9,361.6	7,784.0	46.2	48.0	90.23	1,883.1	-1,221.4	2,624.6	2,531.1	93.44	28.089	
9,400.0	7,748.9	9,461.6	7,784.0	48.1	49.9	90.28	1,882.8	-1,321.4	2,624.8	2,527.4	97.39	26.951	
9,500.0	7,746.4	9,561.5	7,784.0	50.1	52.0	90.34	1,882.4	-1,421.3	2,625.1	2,523.6	101.43	25.880	
9,600.0	7,743.9	9,661.5	7,784.0	52.2	54.0	90.39	1,882.0	-1,521.3	2,625.3	2,519.8	105.55	24.873	
9,700.0	7,741.5	9,761.5	7,784.0	54.3	56.1	90.44	1,881.7	-1,621.3	2,625.6	2,515.8	109.73	23.928	
9,800.0	7,739.0	9,861.5	7,784.0	56.4	58.2	90.50	1,881.3	-1,721.2	2,625.8	2,511.9	113.96	23.041	
9,900.0	7,736.5	9,961.4	7,784.0	58.5	60.3	90.55	1,880.9	-1,821.2	2,626.1	2,507.8	118.25	22.207	
10,000.0	7,734.0	10,061.4	7,784.0	60.7	62.5	90.61	1,880.6	-1,921.2	2,626.3	2,503.7	122.59	21.424	
10,100.0	7,731.5	10,161.4	7,784.0	62.8	64.7	90.66	1,880.2	-2,021.1	2,626.6	2,499.6	126.97	20.687	
10,200.0	7,729.1	10,261.3	7,784.0	65.0	66.9	90.71	1,879.8	-2,121.1	2,626.9	2,495.5	131.38	19.994	
10,300.0	7,726.6	10,361.3	7,784.0	67.3	69.1	90.77	1,879.5	-2,221.1	2,627.1	2,491.3	135.83	19.341	
10,400.0	7,724.1	10,461.3	7,784.0	69.5	71.3	90.82	1,879.1	-2,321.0	2,627.4	2,487.1	140.31	18.726	
10,500.0	7,721.6	10,561.2	7,784.0	71.7	73.5	90.88	1,878.7	-2,421.0	2,627.7	2,482.9	144.82	18.145	
10,600.0	7,719.1	10,661.2	7,784.0	74.0	75.8	90.93	1,878.4	-2,521.0	2,628.0	2,478.6	149.35	17.596	
10,700.0	7,716.7	10,761.2	7,784.0	76.3	78.1	90.98	1,878.0	-2,620.9	2,628.2	2,474.3	153.90	17.077	
10,800.0	7,714.2	10,861.1	7,784.0	78.6	80.3	91.04	1,877.6	-2,720.9	2,628.5	2,470.0	158.48	16.586	
10,900.0	7,711.7	10,961.1	7,784.0	80.9	82.6	91.09	1,877.3	-2,820.9	2,628.8	2,465.7	163.07	16.120	
11,000.0	7,709.2	11,061.1	7,784.0	83.2	84.9	91.15	1,876.9	-2,920.8	2,629.1	2,461.4	167.68	15.679	
11,100.0	7,706.7	11,161.0	7,784.0	85.5	87.2	91.20	1,876.5	-3,020.8	2,629.4	2,457.0	172.31	15.259	
11,200.0	7,704.3	11,261.0	7,784.0	87.8	89.5	91.25	1,876.2	-3,120.8	2,629.6	2,452.7	176.95	14.861	
11,300.0	7,701.8	11,361.0	7,784.0	90.1	91.9	91.31	1,875.8	-3,220.7	2,629.9	2,448.3	181.61	14.481	
11,400.0	7,699.3	11,461.0	7,784.0	92.5	94.2	91.36	1,875.4	-3,320.7	2,630.2	2,444.0	186.28	14.120	
11,500.0	7,696.8	11,560.9	7,784.0	94.8	96.5	91.42	1,875.1	-3,420.7	2,630.5	2,439.6	190.96	13.775	
11,600.0	7,694.3	11,660.9	7,784.0	97.1	98.9	91.47	1,874.7	-3,520.7	2,630.8	2,435.2	195.65	13.446	
11,700.0	7,691.9	11,760.9	7,784.0	99.5	101.2	91.52	1,874.3	-3,620.6	2,631.1	2,430.8	200.35	13.132	
11,800.0	7,689.4	11,860.8	7,784.0	101.8	103.5	91.58	1,874.0	-3,720.6	2,631.4	2,426.4	205.06	12.832	
11,900.0	7,686.9	11,960.8	7,784.0	104.2	105.9	91.63	1,873.6	-3,820.6	2,631.7	2,422.0	209.78	12.545	
12,000.0	7,684.4	12,060.8	7,784.0	106.6	108.2	91.68	1,873.2	-3,920.5	2,632.0	2,417.5	214.51	12.270	
12,100.0	7,681.9	12,160.7	7,784.0	108.9	110.6	91.74	1,872.8	-4,020.5	2,632.4	2,413.1	219.24	12.007	
12,200.0	7,679.4	12,260.7	7,784.0	111.3	113.0	91.79	1,872.5	-4,120.5	2,632.7	2,408.7	223.98	11.754	
12,300.0	7,677.0	12,360.7	7,784.0	113.7	115.3	91.85	1,872.1	-4,220.4	2,633.0	2,404.2	228.73	11.511	
12,400.0	7,674.5	12,460.6	7,784.0	116.1	117.7	91.90	1,871.7	-4,320.4	2,633.3	2,399.8	233.48	11.278	
12,500.0	7,672.0	12,560.6	7,784.0	118.5	120.1	91.95	1,871.4	-4,420.4	2,633.6	2,395.4	238.24	11.054	
12,600.0	7,669.5	12,660.6	7,784.0	120.9	122.5	92.01	1,871.0	-4,520.3	2,633.9	2,390.9	243.01	10.839	
12,700.0	7,667.0	12,760.6	7,784.0	123.2	124.8	92.06	1,870.6	-4,620.3	2,634.3	2,386.5	247.77	10.632	
12,800.0	7,664.6	12,860.5	7,784.0	125.6	127.2	92.12	1,870.3	-4,720.3	2,634.6	2,382.0	252.55	10.432	
12,900.0	7,662.1	12,960.5	7,784.0	128.0	129.6	92.17	1,869.9	-4,820.2	2,634.9	2,377.6	257.32	10.240	
13,000.0	7,659.6	13,060.5	7,784.0	130.4	132.0	92.22	1,869.5	-4,920.2	2,635.2	2,373.1	262.11	10.054	
13,100.0	7,657.1	13,160.4	7,784.0	132.8	134.4	92.28	1,869.2	-5,020.2	2,635.6	2,368.7	266.89	9.875	
13,200.0	7,654.6	13,260.4	7,784.0	135.2	136.8	92.33	1,868.8	-5,120.1	2,635.9	2,364.2	271.68	9.702	
13,300.0	7,652.2	13,360.4	7,784.0	137.6	139.2	92.38	1,868.4	-5,220.1	2,636.2	2,359.8	276.47	9.535	
13,400.0	7,649.7	13,460.3	7,784.0	140.0	141.6	92.44	1,868.1	-5,320.1	2,636.6	2,355.3	281.27	9.374	
13,500.0	7,647.2	13,560.3	7,784.0	142.4	144.0	92.49	1,867.7	-5,420.0	2,636.9	2,350.9	286.07	9.218	
13,600.0	7,644.7	13,660.3	7,784.0	144.9	146.4	92.54	1,867.3	-5,520.0	2,637.3	2,346.4	290.87	9.067	
13,700.0	7,642.2	13,760.2	7,784.0	147.3	148.8	92.60	1,867.0	-5,620.0	2,637.6	2,342.0	295.67	8.921	
13,800.0	7,639.8	13,860.2	7,784.0	149.7	151.2	92.65	1,866.6	-5,720.0	2,638.0	2,337.5	300.47	8.779	
13,900.0	7,637.3	13,960.2	7,784.0	152.1	153.6	92.71	1,866.2	-5,819.9	2,638.3	2,333.0	305.28	8.642	
14,000.0	7,634.8	14,060.1	7,784.0	154.5	156.0	92.76	1,865.9	-5,919.9	2,638.7	2,328.6	310.09	8.509	

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 Bo Howard 1211 Fed Com #124H
Project:	Ranger/Arrowhead	**TVD Reference:**	KB @ 3199.5usft
Reference Site:	Bo Howard 1211	**MD Reference:**	KB @ 3199.5usft
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Bo Howard 1211 Fed Com #124H	**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 Bo Howard 1211 - Bo Howard 1211 Fed Com #122H - Wellbore #1 - BLM Plan #1

Offset Site Error: 0.0 usft

Survey Program: 0-MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
14,100.0	7,632.3	14,160.1	7,784.0	156.9	158.4	92.81	1,865.5	-6,019.9	2,639.0	2,324.1	314.90	8.380	
14,200.0	7,629.8	14,260.1	7,784.0	159.3	160.8	92.87	1,865.1	-6,119.8	2,639.4	2,319.7	319.72	8.255	
14,300.0	7,627.4	14,360.1	7,784.0	161.8	163.2	92.92	1,864.8	-6,219.8	2,639.7	2,315.2	324.53	8.134	
14,400.0	7,624.9	14,460.0	7,784.0	164.2	165.6	92.97	1,864.4	-6,319.8	2,640.1	2,310.8	329.35	8.016	
14,500.0	7,622.4	14,560.0	7,784.0	166.6	168.0	93.03	1,864.0	-6,419.7	2,640.5	2,306.3	334.17	7.902	
14,600.0	7,619.9	14,660.0	7,784.0	169.0	170.4	93.08	1,863.7	-6,519.7	2,640.8	2,301.9	338.99	7.790	
14,700.0	7,617.4	14,759.9	7,784.0	171.5	172.8	93.13	1,863.3	-6,619.7	2,641.2	2,297.4	343.81	7.682	
14,800.0	7,614.9	14,859.9	7,784.0	173.9	175.2	93.19	1,862.9	-6,719.6	2,641.6	2,293.0	348.63	7.577	
14,900.0	7,612.5	14,959.9	7,784.0	176.3	177.7	93.24	1,862.6	-6,819.6	2,642.0	2,288.5	353.45	7.475	
15,000.0	7,610.0	15,059.8	7,784.0	178.7	180.1	93.29	1,862.2	-6,919.6	2,642.3	2,284.1	358.28	7.375	
15,100.0	7,607.5	15,159.8	7,784.0	181.2	182.5	93.35	1,861.8	-7,019.5	2,642.7	2,279.6	363.10	7.278	
15,200.0	7,605.0	15,259.8	7,784.0	183.6	184.9	93.40	1,861.4	-7,119.5	2,643.1	2,275.2	367.93	7.184	
15,300.0	7,602.5	15,359.7	7,784.0	186.0	187.3	93.45	1,861.1	-7,219.5	2,643.5	2,270.7	372.75	7.092	
15,400.0	7,600.1	15,459.7	7,784.0	188.4	189.7	93.51	1,860.7	-7,319.4	2,643.9	2,266.3	377.58	7.002	
15,463.1	7,598.5	15,522.8	7,784.0	190.0	191.3	93.54	1,860.5	-7,382.5	2,644.1	2,263.5	380.63	6.947	ES, SF

Anticollision Report

Company:	Matador Production Company	**Local Co-ordinate Reference:**	Well Bo Howard 1211 Fed Com #124H
Project:	Ranger/Arrowhead	**TVD Reference:**	KB @ 3199.5usft
Reference Site:	Bo Howard 1211	**MD Reference:**	KB @ 3199.5usft
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Bo Howard 1211 Fed Com #124H	**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 Bo Howard 1211 - Bo Howard 1211 Fed Com #124Y - Wellbore #1 - Actual — **Offset Site Error:** 0.0 usft

Survey Program: 397-MWD — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	179.23	-29.5	0.4	29.6				
100.0	100.0	98.8	98.8	0.1	0.2	179.24	-29.9	0.4	29.9	29.6	0.30	100.279	
200.0	200.0	198.5	198.5	0.5	0.3	179.27	-31.1	0.4	31.1	30.3	0.82	37.784	
300.0	300.0	298.2	298.2	0.8	0.5	179.31	-33.1	0.4	33.1	31.7	1.35	24.532	
400.0	400.0	397.9	397.9	1.2	0.7	179.36	-35.8	0.4	35.8	33.9	1.87	19.128	
500.0	500.0	397.0	396.9	1.6	0.7	179.36	-35.8	0.4	108.2	100.9	7.26	14.891	SF
600.0	600.0	397.0	396.9	1.9	0.7	179.36	-35.8	0.4	205.2	197.7	7.48	27.417	
700.0	700.0	397.0	396.9	2.3	0.7	179.36	-35.8	0.4	304.2	296.7	7.46	40.751	
800.0	800.0	397.0	396.9	2.6	0.7	179.36	-35.8	0.4	403.7	396.2	7.40	54.516	
900.0	900.0	397.0	396.9	3.0	0.7	179.36	-35.8	0.4	503.3	496.0	7.33	68.634	
1,000.0	1,000.0	397.0	396.9	3.4	0.7	179.36	-35.8	0.4	603.1	595.9	7.26	83.081	
1,100.0	1,100.0	397.0	396.9	3.7	0.7	179.36	-35.8	0.4	703.0	695.8	7.18	97.845	
1,200.0	1,200.0	397.0	396.9	4.1	0.7	179.36	-35.8	0.4	802.9	795.8	7.11	112.920	
1,300.0	1,300.0	397.0	396.9	4.4	0.7	18.09	-35.8	0.4	902.7	895.7	7.04	128.304	
1,400.0	1,399.8	397.0	396.9	4.7	0.7	11.86	-35.8	0.4	1,002.4	995.4	6.96	143.987	
1,500.0	1,499.5	397.0	396.9	5.1	0.7	8.57	-35.8	0.4	1,101.8	1,094.9	6.89	159.956	
1,600.0	1,598.7	397.0	396.9	5.4	0.7	6.57	-35.8	0.4	1,200.9	1,194.1	6.82	176.205	
1,656.4	1,654.4	397.0	396.9	5.6	0.7	5.77	-35.8	0.4	1,256.7	1,249.9	6.77	185.532	
1,700.0	1,697.5	397.0	396.9	5.8	0.7	5.77	-35.8	0.4	1,299.8	1,293.1	6.74	192.747	
1,800.0	1,796.3	397.0	396.9	6.2	0.7	5.77	-35.8	0.4	1,398.8	1,392.1	6.68	209.330	
1,900.0	1,895.0	397.0	396.9	6.5	0.7	5.77	-35.8	0.4	1,497.9	1,491.2	6.62	226.180	
2,000.0	1,993.7	397.0	396.9	6.9	0.7	5.77	-35.8	0.4	1,597.1	1,590.5	6.56	243.270	
2,100.0	2,092.5	397.0	396.9	7.3	0.7	5.77	-35.8	0.4	1,696.4	1,689.9	6.51	260.569	
2,200.0	2,191.2	397.0	396.9	7.7	0.7	5.77	-35.8	0.4	1,795.7	1,789.3	6.46	278.042	
2,300.0	2,289.9	397.0	396.9	8.1	0.7	5.77	-35.8	0.4	1,895.2	1,888.8	6.41	295.650	
2,400.0	2,388.7	397.0	396.9	8.5	0.7	5.77	-35.8	0.4	1,994.7	1,988.3	6.37	313.349	
2,500.0	2,487.4	397.0	396.9	8.9	0.7	5.77	-35.8	0.4	2,094.2	2,087.9	6.33	331.089	
2,600.0	2,586.1	397.0	396.9	9.4	0.7	5.77	-35.8	0.4	2,193.8	2,187.5	6.29	348.818	
2,700.0	2,684.9	397.0	396.9	9.8	0.7	5.77	-35.8	0.4	2,293.5	2,287.2	6.26	366.476	
2,800.0	2,783.6	397.0	396.9	10.2	0.7	5.77	-35.8	0.4	2,393.1	2,386.9	6.23	384.001	
2,900.0	2,882.3	397.0	396.9	10.6	0.7	5.77	-35.8	0.4	2,492.8	2,486.6	6.21	401.326	
3,000.0	2,981.1	397.0	396.9	11.0	0.7	5.77	-35.8	0.4	2,592.5	2,586.3	6.20	418.383	
3,100.0	3,079.8	397.0	396.9	11.5	0.7	5.77	-35.8	0.4	2,692.2	2,686.0	6.19	435.102	
3,200.0	3,178.5	397.0	396.9	11.9	0.7	5.77	-35.8	0.4	2,792.0	2,785.8	6.18	451.417	
3,300.0	3,277.3	397.0	396.9	12.3	0.7	5.77	-35.8	0.4	2,891.7	2,885.6	6.19	467.260	
3,400.0	3,376.0	397.0	396.9	12.7	0.7	5.77	-35.8	0.4	2,991.5	2,985.3	6.20	482.571	
3,500.0	3,474.7	397.0	396.9	13.2	0.7	5.77	-35.8	0.4	3,091.3	3,085.1	6.22	497.294	
3,600.0	3,573.5	397.0	396.9	13.6	0.7	5.77	-35.8	0.4	3,191.1	3,184.9	6.24	511.381	
3,700.0	3,672.2	397.0	396.9	14.0	0.7	5.77	-35.8	0.4	3,291.0	3,284.7	6.27	524.792	
3,800.0	3,770.9	397.0	396.9	14.5	0.7	5.77	-35.8	0.4	3,390.8	3,384.5	6.31	537.496	
3,900.0	3,869.7	397.0	396.9	14.9	0.7	5.77	-35.8	0.4	3,490.6	3,484.3	6.35	549.471	
4,000.0	3,968.4	397.0	396.9	15.3	0.7	5.77	-35.8	0.4	3,590.5	3,584.1	6.40	560.704	
4,100.0	4,067.1	397.0	396.9	15.8	0.7	5.77	-35.8	0.4	3,690.3	3,683.9	6.46	571.192	
4,200.0	4,165.9	397.0	396.9	16.2	0.7	5.77	-35.8	0.4	3,790.2	3,783.7	6.52	580.938	
4,300.0	4,264.6	397.0	396.9	16.6	0.7	5.77	-35.8	0.4	3,890.1	3,883.5	6.59	589.952	
4,400.0	4,363.3	397.0	396.9	17.1	0.7	5.77	-35.8	0.4	3,989.9	3,983.3	6.67	598.250	
4,500.0	4,462.1	397.0	396.9	17.5	0.7	5.77	-35.8	0.4	4,089.8	4,083.1	6.75	605.853	
4,600.0	4,560.8	397.0	396.9	17.9	0.7	5.77	-35.8	0.4	4,189.7	4,182.9	6.84	612.786	
4,700.0	4,659.5	397.0	396.9	18.4	0.7	5.77	-35.8	0.4	4,289.6	4,282.7	6.93	619.075	
4,800.0	4,758.3	397.0	396.9	18.8	0.7	5.77	-35.8	0.4	4,389.5	4,382.5	7.03	624.749	
4,900.0	4,857.0	397.0	396.9	19.2	0.7	5.77	-35.8	0.4	4,489.4	4,482.3	7.13	629.837	
5,000.0	4,955.7	397.0	396.9	19.7	0.7	5.77	-35.8	0.4	4,589.3	4,582.1	7.23	634.372	

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 Bo Howard 1211 Fed Com #124H
Project:	Ranger/Arrowhead	**TVD Reference:**	KB @ 3199.5usft
Reference Site:	Bo Howard 1211	**MD Reference:**	KB @ 3199.5usft
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Bo Howard 1211 Fed Com #124H	**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 Bo Howard 1211 - Bo Howard 1211 Fed Com #124Y - Wellbore #1 - Actual

Offset Site Error: 0.0 usft

Survey Program: 397-MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,100.0	5,054.5	397.0	396.9	20.1	0.7	5.77	-35.8	0.4	4,689.2	4,681.9	7.35	638.381	
5,200.0	5,153.2	397.0	396.9	20.5	0.7	5.77	-35.8	0.4	4,789.2	4,781.7	7.46	641.897	
5,300.0	5,251.9	397.0	396.9	21.0	0.7	5.77	-35.8	0.4	4,889.1	4,881.5	7.58	644.946	
5,400.0	5,350.7	397.0	396.9	21.4	0.7	5.77	-35.8	0.4	4,989.0	4,981.3	7.70	647.559	
5,500.0	5,449.4	397.0	396.9	21.9	0.7	5.77	-35.8	0.4	5,088.9	5,081.1	7.83	649.761	
5,600.0	5,548.1	397.0	396.9	22.3	0.7	5.77	-35.8	0.4	5,188.9	5,180.9	7.96	651.579	
5,700.0	5,646.9	397.0	396.9	22.7	0.7	5.77	-35.8	0.4	5,288.8	5,280.7	8.10	653.037	
5,800.0	5,745.6	397.0	396.9	23.2	0.7	5.77	-35.8	0.4	5,388.7	5,380.5	8.24	654.158	
5,900.0	5,844.3	397.0	396.9	23.6	0.7	5.77	-35.8	0.4	5,488.7	5,480.3	8.38	654.965	
6,000.0	5,943.1	397.0	396.9	24.1	0.7	5.77	-35.8	0.4	5,588.6	5,580.1	8.53	655.478	
6,100.0	6,041.8	397.0	396.9	24.5	0.7	5.77	-35.8	0.4	5,688.5	5,679.9	8.68	655.717	
6,200.0	6,140.5	397.0	396.9	24.9	0.7	5.77	-35.8	0.4	5,788.5	5,779.7	8.83	655.701	
6,300.0	6,239.3	397.0	396.9	25.4	0.7	5.77	-35.8	0.4	5,888.4	5,879.4	8.98	655.445	
6,400.0	6,338.0	397.0	396.9	25.8	0.7	5.77	-35.8	0.4	5,988.4	5,979.2	9.14	654.968	
6,500.0	6,436.7	397.0	396.9	26.2	0.7	5.77	-35.8	0.4	6,088.3	6,079.0	9.31	654.283	
6,600.0	6,535.5	397.0	396.9	26.7	0.7	5.77	-35.8	0.4	6,188.3	6,178.8	9.47	653.404	
6,664.9	6,599.6	397.0	396.9	27.0	0.7	5.77	-35.8	0.4	6,253.2	6,243.6	9.58	652.737	
6,700.0	6,634.2	397.0	396.9	27.1	0.7	8.19	-35.8	0.4	6,288.2	6,278.6	9.64	652.339	
6,800.0	6,733.3	397.0	396.9	27.5	0.7	147.29	-35.8	0.4	6,388.2	6,378.4	9.81	651.097	
6,900.0	6,832.7	397.0	396.9	27.9	0.7	174.40	-35.8	0.4	6,488.2	6,478.2	9.99	649.715	
7,000.0	6,932.3	397.0	396.9	28.3	0.7	176.98	-35.8	0.4	6,588.1	6,577.9	10.16	648.215	
7,100.0	7,032.1	397.0	396.9	28.7	0.7	177.94	-35.8	0.4	6,687.9	6,677.5	10.34	646.603	
7,200.0	7,132.1	397.0	396.9	29.0	0.7	178.45	-35.8	0.4	6,787.4	6,776.9	10.53	644.884	
7,273.4	7,205.5	397.0	396.9	29.2	0.7	-34.99	-35.8	0.4	6,860.3	6,849.7	10.66	643.559	
7,300.0	7,232.1	397.0	396.9	29.3	0.7	41.15	-35.8	0.4	6,886.7	6,876.0	10.71	643.168	
7,350.0	7,281.9	397.0	396.9	29.4	0.7	26.65	-35.8	0.4	6,935.8	6,925.0	10.79	642.519	
7,400.0	7,331.1	397.0	396.9	29.6	0.7	19.45	-35.8	0.4	6,984.0	6,973.1	10.88	642.157	
7,450.0	7,379.3	397.0	396.9	29.7	0.7	15.30	-35.8	0.4	7,031.0	7,020.1	10.95	641.984	
7,500.0	7,426.2	397.0	396.9	29.7	0.7	12.65	-35.8	0.4	7,076.5	7,065.5	11.02	641.936	
7,550.0	7,471.5	397.0	396.9	29.8	0.7	10.82	-35.8	0.4	7,120.2	7,109.1	11.09	641.927	
7,600.0	7,514.7	397.0	396.9	29.9	0.7	9.51	-35.8	0.4	7,161.7	7,150.6	11.16	641.847	
7,650.0	7,555.6	397.0	396.9	29.9	0.7	8.52	-35.8	0.4	7,200.8	7,189.6	11.22	641.561	
7,700.0	7,593.8	397.0	396.9	29.9	0.7	7.77	-35.8	0.4	7,237.2	7,225.9	11.29	640.911	
7,750.0	7,629.0	397.0	396.9	30.0	0.7	7.18	-35.8	0.4	7,270.8	7,259.4	11.37	639.722	
7,800.0	7,661.0	397.0	396.9	30.0	0.7	6.72	-35.8	0.4	7,301.1	7,289.7	11.45	637.809	
7,850.0	7,689.6	397.0	396.9	30.0	0.7	6.35	-35.8	0.4	7,328.2	7,316.7	11.54	634.996	
7,900.0	7,714.5	397.0	396.9	30.0	0.7	6.06	-35.8	0.4	7,351.8	7,340.2	11.65	631.128	
7,950.0	7,735.4	397.0	396.9	29.9	0.7	5.83	-35.8	0.4	7,371.8	7,360.0	11.77	626.092	
8,000.0	7,752.4	397.0	396.9	29.9	0.7	5.66	-35.8	0.4	7,388.0	7,376.1	11.92	619.830	
8,050.0	7,765.2	397.0	396.9	29.9	0.7	5.54	-35.8	0.4	7,400.4	7,388.3	12.09	612.346	
8,100.0	7,773.8	397.0	396.9	29.9	0.7	5.45	-35.8	0.4	7,408.8	7,396.6	12.27	603.715	
8,150.0	7,778.0	397.0	396.9	29.9	0.7	5.41	-35.8	0.4	7,413.3	7,400.8	12.48	594.070	
8,173.4	7,778.5	397.0	396.9	29.9	0.7	5.41	-35.8	0.4	7,414.0	7,401.5	12.58	589.272	
8,200.0	7,778.3	397.0	396.9	30.0	0.7	5.40	-35.8	0.4	7,414.3	7,401.6	12.70	583.639	
8,244.5	7,777.6	397.0	396.9	30.2	0.7	5.40	-35.8	0.4	7,414.4	7,401.4	12.92	573.977	
8,266.4	7,777.0	397.0	396.9	30.4	0.7	5.40	-35.8	0.4	7,414.3	7,401.3	13.03	569.069	
8,300.0	7,776.2	397.0	396.9	30.7	0.7	5.40	-35.8	0.4	7,414.4	7,401.2	13.20	561.661	
8,400.0	7,773.7	397.0	396.9	31.7	0.7	5.40	-35.8	0.4	7,415.5	7,401.8	13.76	539.089	
8,500.0	7,771.2	397.0	396.9	32.9	0.7	5.40	-35.8	0.4	7,418.0	7,403.6	14.36	516.622	
8,600.0	7,768.8	397.0	396.9	34.2	0.7	5.40	-35.8	0.4	7,421.8	7,406.8	15.00	494.749	
8,700.0	7,766.3	397.0	396.9	35.7	0.7	5.40	-35.8	0.4	7,427.0	7,411.3	15.68	473.789	
8,800.0	7,763.8	397.0	396.9	37.2	0.7	5.40	-35.8	0.4	7,433.5	7,417.1	16.38	453.923	

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 Bo Howard 1211 Fed Com #124H
Project:	Ranger/Arrowhead	**TVD Reference:**	KB @ 3199.5usft
Reference Site:	Bo Howard 1211	**MD Reference:**	KB @ 3199.5usft
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Bo Howard 1211 Fed Com #124H	**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 Bo Howard 1211 - Bo Howard 1211 Fed Com #124Y - Wellbore #1 - Actual

Offset Site Error: 0.0 usft

Survey Program: 397-MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
8,900.0	7,761.3	397.0	396.9	38.9	0.7	5.40	-35.8	0.4	7,441.3	7,424.2	17.10	435.240	
9,000.0	7,758.8	397.0	396.9	40.6	0.7	5.40	-35.8	0.4	7,450.5	7,432.7	17.83	417.762	
9,100.0	7,756.4	397.0	396.9	42.4	0.7	5.40	-35.8	0.4	7,461.0	7,442.5	18.58	401.472	
9,200.0	7,753.9	397.0	396.9	44.3	0.7	5.40	-35.8	0.4	7,472.9	7,453.5	19.34	386.322	
9,300.0	7,751.4	397.0	396.9	46.2	0.7	5.40	-35.8	0.4	7,486.0	7,465.9	20.11	372.254	
9,400.0	7,748.9	397.0	396.9	48.1	0.7	5.40	-35.8	0.4	7,500.5	7,479.6	20.88	359.199	
9,500.0	7,746.4	397.0	396.9	50.1	0.7	5.40	-35.8	0.4	7,516.2	7,494.6	21.66	347.088	
9,600.0	7,743.9	397.0	396.9	52.2	0.7	5.40	-35.8	0.4	7,533.3	7,510.9	22.43	335.851	
9,700.0	7,741.5	397.0	396.9	54.3	0.7	5.40	-35.8	0.4	7,551.6	7,528.4	23.21	325.422	
9,800.0	7,739.0	397.0	396.9	56.4	0.7	5.40	-35.8	0.4	7,571.3	7,547.3	23.98	315.739	
9,900.0	7,736.5	397.0	396.9	58.5	0.7	5.40	-35.8	0.4	7,592.2	7,567.4	24.75	306.742	
10,000.0	7,734.0	397.0	396.9	60.7	0.7	5.40	-35.8	0.4	7,614.3	7,588.8	25.52	298.377	
10,100.0	7,731.5	397.0	396.9	62.8	0.7	5.40	-35.8	0.4	7,637.7	7,611.4	26.28	290.595	
10,200.0	7,729.1	397.0	396.9	65.0	0.7	5.40	-35.8	0.4	7,662.3	7,635.3	27.04	283.350	
10,300.0	7,726.6	397.0	396.9	67.3	0.7	5.40	-35.8	0.4	7,688.1	7,660.4	27.80	276.600	
10,400.0	7,724.1	397.0	396.9	69.5	0.7	5.40	-35.8	0.4	7,715.2	7,686.7	28.54	270.308	
10,500.0	7,721.6	397.0	396.9	71.7	0.7	5.40	-35.8	0.4	7,743.5	7,714.2	29.28	264.437	
10,600.0	7,719.1	397.0	396.9	74.0	0.7	5.40	-35.8	0.4	7,772.9	7,742.9	30.02	258.958	
10,700.0	7,716.7	397.0	396.9	76.3	0.7	5.40	-35.8	0.4	7,803.5	7,772.7	30.74	253.840	
10,800.0	7,714.2	397.0	396.9	78.6	0.7	5.40	-35.8	0.4	7,835.3	7,803.8	31.46	249.058	
10,900.0	7,711.7	397.0	396.9	80.9	0.7	5.40	-35.8	0.4	7,868.2	7,836.0	32.17	244.588	
11,000.0	7,709.2	397.0	396.9	83.2	0.7	5.40	-35.8	0.4	7,902.2	7,869.3	32.87	240.407	
11,100.0	7,706.7	397.0	396.9	85.5	0.7	5.40	-35.8	0.4	7,937.3	7,903.8	33.56	236.496	
11,200.0	7,704.3	397.0	396.9	87.8	0.7	5.40	-35.8	0.4	7,973.6	7,939.3	34.25	232.837	
11,300.0	7,701.8	397.0	396.9	90.1	0.7	5.40	-35.8	0.4	8,010.9	7,976.0	34.92	229.413	
11,400.0	7,699.3	397.0	396.9	92.5	0.7	5.40	-35.8	0.4	8,049.3	8,013.7	35.58	226.208	
11,500.0	7,696.8	397.0	396.9	94.8	0.7	5.40	-35.8	0.4	8,088.8	8,052.5	36.24	223.208	
11,600.0	7,694.3	397.0	396.9	97.1	0.7	5.40	-35.8	0.4	8,129.3	8,092.4	36.88	220.400	
11,700.0	7,691.9	397.0	396.9	99.5	0.7	5.40	-35.8	0.4	8,170.8	8,133.3	37.52	217.772	
11,800.0	7,689.4	397.0	396.9	101.8	0.7	5.40	-35.8	0.4	8,213.3	8,175.2	38.15	215.314	
11,900.0	7,686.9	397.0	396.9	104.2	0.7	5.40	-35.8	0.4	8,256.8	8,218.1	38.76	213.014	
12,000.0	7,684.4	397.0	396.9	106.6	0.7	5.40	-35.8	0.4	8,301.3	8,261.9	39.37	210.865	
12,100.0	7,681.9	397.0	396.9	108.9	0.7	5.40	-35.8	0.4	8,346.8	8,306.8	39.96	208.856	
12,200.0	7,679.4	397.0	396.9	111.3	0.7	5.40	-35.8	0.4	8,393.2	8,352.6	40.55	206.979	
12,300.0	7,677.0	397.0	396.9	113.7	0.7	5.40	-35.8	0.4	8,440.5	8,399.4	41.13	205.229	
12,400.0	7,674.5	397.0	396.9	116.1	0.7	5.40	-35.8	0.4	8,488.7	8,447.0	41.69	203.596	
12,500.0	7,672.0	397.0	396.9	118.5	0.7	5.40	-35.8	0.4	8,537.9	8,495.6	42.25	202.076	
12,600.0	7,669.5	397.0	396.9	120.9	0.7	5.40	-35.8	0.4	8,587.9	8,545.1	42.80	200.661	
12,700.0	7,667.0	397.0	396.9	123.2	0.7	5.40	-35.8	0.4	8,638.8	8,595.5	43.34	199.346	
12,800.0	7,664.6	397.0	396.9	125.6	0.7	5.40	-35.8	0.4	8,690.5	8,646.7	43.86	198.127	
12,900.0	7,662.1	397.0	396.9	128.0	0.7	5.40	-35.8	0.4	8,743.1	8,698.7	44.38	196.998	
13,000.0	7,659.6	397.0	396.9	130.4	0.7	5.40	-35.8	0.4	8,796.5	8,751.6	44.89	195.954	
13,100.0	7,657.1	397.0	396.9	132.8	0.7	5.40	-35.8	0.4	8,850.7	8,805.3	45.39	194.992	
13,200.0	7,654.6	397.0	396.9	135.2	0.7	5.40	-35.8	0.4	8,905.7	8,859.9	45.88	194.107	
13,300.0	7,652.2	397.0	396.9	137.6	0.7	5.40	-35.8	0.4	8,961.5	8,915.2	46.36	193.295	
13,400.0	7,649.7	397.0	396.9	140.0	0.7	5.40	-35.8	0.4	9,018.1	8,971.2	46.83	192.554	
13,500.0	7,647.2	397.0	396.9	142.4	0.7	5.40	-35.8	0.4	9,075.4	9,028.1	47.30	191.879	
13,600.0	7,644.7	397.0	396.9	144.9	0.7	5.40	-35.8	0.4	9,133.4	9,085.7	47.75	191.268	
13,700.0	7,642.2	397.0	396.9	147.3	0.7	5.40	-35.8	0.4	9,192.2	9,144.0	48.20	190.717	
13,800.0	7,639.8	397.0	396.9	149.7	0.7	5.40	-35.8	0.4	9,251.6	9,203.0	48.64	190.224	
13,900.0	7,637.3	397.0	396.9	152.1	0.7	5.40	-35.8	0.4	9,311.8	9,262.7	49.06	189.787	
14,000.0	7,634.8	397.0	396.9	154.5	0.7	5.40	-35.8	0.4	9,372.6	9,323.1	49.49	189.403	

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 Bo Howard 1211 Fed Com #124H
Project:	Ranger/Arrowhead	**TVD Reference:**	KB @ 3199.5usft
Reference Site:	Bo Howard 1211	**MD Reference:**	KB @ 3199.5usft
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Bo Howard 1211 Fed Com #124H	**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 Bo Howard 1211 - Bo Howard 1211 Fed Com #124Y - Wellbore #1 - Actual

Offset Site Error: 0.0 usft

Survey Program: 397-MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
14,100.0	7,632.3	397.0	396.9	156.9	0.7	5.40	-35.8	0.4	9,434.1	9,384.2	49.90	189.069	
14,200.0	7,629.8	397.0	396.9	159.3	0.7	5.40	-35.8	0.4	9,496.3	9,446.0	50.30	188.783	
14,300.0	7,627.4	397.0	396.9	161.8	0.7	5.40	-35.8	0.4	9,559.1	9,508.4	50.70	188.544	
14,400.0	7,624.9	397.0	396.9	164.2	0.7	5.40	-35.8	0.4	9,622.5	9,571.4	51.09	188.348	
14,500.0	7,622.4	397.0	396.9	166.6	0.7	5.40	-35.8	0.4	9,686.6	9,635.1	51.47	188.196	
14,600.0	7,619.9	397.0	396.9	169.0	0.7	5.40	-35.8	0.4	9,751.2	9,699.4	51.85	188.084	
14,700.0	7,617.4	397.0	396.9	171.5	0.7	5.40	-35.8	0.4	9,816.5	9,764.3	52.21	188.011	
14,800.0	7,614.9	397.0	396.9	173.9	0.7	5.40	-35.8	0.4	9,882.3	9,829.7	52.57	187.975	
14,900.0	7,612.5	397.0	396.9	176.3	0.7	5.40	-35.8	0.4	9,948.7	9,895.8	52.93	187.976	

Anticollision Report

Company:	Matador Production Company	**Local Co-ordinate Reference:**	Well Bo Howard 1211 Fed Com #124H
Project:	Ranger/Arrowhead	**TVD Reference:**	KB @ 3199.5usft
Reference Site:	Bo Howard 1211	**MD Reference:**	KB @ 3199.5usft
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Bo Howard 1211 Fed Com #124H	**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 Bo Howard 1211 - Bo Howard 1211 Fed Com #131H - Wellbore #1 - BLM Plan #1 — **Offset Site Error:** 0.0 usft

Survey Program: 0-MWD — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.0	0.0	22.0	22.0	0.0	0.0	4.64	2,953.1	239.7	2,962.8				
100.0	100.0	122.0	122.0	0.1	0.2	4.64	2,953.1	239.7	2,962.8	2,962.5	0.34	8,839.662	
200.0	200.0	222.0	222.0	0.5	0.6	4.64	2,953.1	239.7	2,962.8	2,961.7	1.05	2,816.044	
300.0	300.0	322.0	322.0	0.8	0.9	4.64	2,953.1	239.7	2,962.8	2,961.0	1.77	1,674.790	
400.0	400.0	422.0	422.0	1.2	1.3	4.64	2,953.1	239.7	2,962.8	2,960.3	2.49	1,191.794	
500.0	500.0	522.0	522.0	1.6	1.6	4.64	2,953.1	239.7	2,962.8	2,959.6	3.20	925.024	
600.0	600.0	622.0	622.0	1.9	2.0	4.64	2,953.1	239.7	2,962.8	2,958.9	3.92	755.838	
700.0	700.0	722.0	722.0	2.3	2.4	4.64	2,953.1	239.7	2,962.8	2,958.2	4.64	638.971	
800.0	800.0	822.0	822.0	2.6	2.7	4.64	2,953.1	239.7	2,962.8	2,957.4	5.35	553.404	
900.0	900.0	922.0	922.0	3.0	3.1	4.64	2,953.1	239.7	2,962.8	2,956.7	6.07	488.048	
1,000.0	1,000.0	1,022.0	1,022.0	3.4	3.4	4.64	2,953.1	239.7	2,962.8	2,956.0	6.79	436.498	
1,100.0	1,100.0	1,122.0	1,122.0	3.7	3.8	4.64	2,953.1	239.7	2,962.8	2,955.3	7.50	394.798	
1,200.0	1,200.0	1,222.0	1,222.0	4.1	4.2	4.64	2,953.1	239.7	2,962.8	2,954.6	8.22	360.370	CC, ES
1,300.0	1,300.0	1,322.0	1,322.0	4.4	4.5	-141.69	2,953.1	239.7	2,964.2	2,955.2	8.92	332.217	
1,400.0	1,399.8	1,421.8	1,421.8	4.7	4.9	-141.70	2,953.1	239.7	2,968.3	2,958.7	9.61	308.832	
1,500.0	1,499.5	1,514.7	1,514.7	5.1	5.2	-141.71	2,953.1	239.7	2,975.2	2,964.9	10.28	289.397	
1,600.0	1,598.7	1,582.6	1,582.5	5.4	5.4	-141.68	2,953.6	240.0	2,985.5	2,974.6	10.86	274.783	
1,656.4	1,654.4	1,620.6	1,620.6	5.6	5.6	-141.64	2,954.2	240.3	2,993.0	2,981.8	11.20	267.318	
1,700.0	1,697.5	1,650.0	1,650.0	5.8	5.7	-141.69	2,954.8	240.7	2,999.4	2,987.9	11.45	261.895	
1,800.0	1,796.3	1,717.2	1,717.2	6.2	5.9	-141.80	2,956.6	241.8	3,014.7	3,002.7	12.04	250.400	
1,900.0	1,895.0	1,784.3	1,784.2	6.5	6.2	-141.90	2,959.1	243.4	3,031.1	3,018.4	12.63	240.013	
2,000.0	1,993.7	1,851.2	1,851.0	6.9	6.4	-141.99	2,962.2	245.4	3,048.5	3,035.3	13.22	230.606	
2,100.0	2,092.5	1,917.9	1,917.5	7.3	6.6	-142.08	2,966.0	247.7	3,066.9	3,053.1	13.81	222.073	
2,200.0	2,191.2	1,984.4	1,983.8	7.7	6.9	-142.15	2,970.5	250.5	3,086.4	3,072.0	14.40	214.313	
2,300.0	2,289.9	2,050.6	2,049.8	8.1	7.1	-142.22	2,975.6	253.6	3,106.8	3,091.9	14.99	207.239	
2,400.0	2,388.7	2,116.6	2,115.4	8.5	7.4	-142.28	2,981.3	257.2	3,128.3	3,112.7	15.58	200.781	
2,500.0	2,487.4	2,182.3	2,180.7	8.9	7.6	-142.34	2,987.6	261.1	3,150.8	3,134.6	16.17	194.872	
2,600.0	2,586.1	2,247.8	2,245.6	9.4	7.8	-142.38	2,994.5	265.4	3,174.2	3,157.4	16.75	189.454	
2,700.0	2,684.9	2,319.2	2,316.4	9.8	8.1	-142.43	3,002.7	270.5	3,198.6	3,181.2	17.37	184.187	
2,800.0	2,783.6	2,416.1	2,412.4	10.2	8.5	-142.48	3,014.2	277.6	3,223.3	3,205.2	18.09	178.173	
2,900.0	2,882.3	2,512.9	2,508.3	10.6	8.8	-142.53	3,025.7	284.7	3,248.0	3,229.2	18.82	172.598	
3,000.0	2,981.1	2,609.8	2,604.2	11.0	9.2	-142.58	3,037.1	291.8	3,272.7	3,253.2	19.55	167.417	
3,100.0	3,079.8	2,706.7	2,700.1	11.5	9.6	-142.64	3,048.6	298.9	3,297.4	3,277.1	20.28	162.592	
3,200.0	3,178.5	2,803.5	2,796.0	11.9	10.0	-142.69	3,060.0	306.0	3,322.1	3,301.1	21.01	158.088	
3,300.0	3,277.3	2,900.4	2,891.9	12.3	10.3	-142.74	3,071.5	313.1	3,346.8	3,325.1	21.75	153.876	
3,400.0	3,376.0	3,002.8	2,987.8	12.7	10.7	-142.78	3,082.9	320.2	3,371.6	3,349.0	22.51	149.791	
3,500.0	3,474.7	3,094.1	3,083.8	13.2	11.1	-142.83	3,094.4	327.3	3,396.3	3,373.0	23.23	146.224	
3,600.0	3,573.5	3,209.1	3,179.7	13.6	11.6	-142.88	3,105.8	334.4	3,421.0	3,397.0	24.03	142.337	
3,700.0	3,672.2	3,287.8	3,275.6	14.0	11.9	-142.93	3,117.3	341.5	3,445.7	3,421.0	24.71	139.458	
3,800.0	3,770.9	3,384.6	3,371.5	14.5	12.3	-142.97	3,128.8	348.6	3,470.4	3,445.0	25.45	136.361	
3,900.0	3,869.7	3,481.5	3,467.4	14.9	12.6	-143.02	3,140.2	355.8	3,495.2	3,469.0	26.19	133.435	
4,000.0	3,968.4	3,578.4	3,563.3	15.3	13.0	-143.06	3,151.7	362.9	3,519.9	3,493.0	26.94	130.667	
4,100.0	4,067.1	3,675.2	3,659.2	15.8	13.4	-143.11	3,163.1	370.0	3,544.6	3,517.0	27.68	128.043	
4,200.0	4,165.9	3,772.1	3,755.2	16.2	13.8	-143.15	3,174.6	377.1	3,569.4	3,540.9	28.43	125.554	
4,300.0	4,264.6	3,868.9	3,851.1	16.6	14.2	-143.20	3,186.0	384.2	3,594.1	3,564.9	29.18	123.188	
4,400.0	4,363.3	3,965.8	3,947.0	17.1	14.6	-143.24	3,197.5	391.3	3,618.8	3,588.9	29.92	120.939	
4,500.0	4,462.1	4,062.6	4,042.9	17.5	15.0	-143.28	3,208.9	398.4	3,643.6	3,612.9	30.67	118.797	
4,600.0	4,560.8	4,159.5	4,138.8	17.9	15.4	-143.32	3,220.4	405.5	3,668.3	3,636.9	31.42	116.754	
4,700.0	4,659.5	4,256.4	4,234.7	18.4	15.8	-143.36	3,231.8	412.6	3,693.1	3,660.9	32.17	114.805	
4,800.0	4,758.3	4,353.2	4,330.6	18.8	16.2	-143.40	3,243.3	419.7	3,717.8	3,684.9	32.92	112.943	
4,900.0	4,857.0	4,450.1	4,426.6	19.2	16.6	-143.44	3,254.8	426.8	3,742.6	3,708.9	33.67	111.162	
5,000.0	4,955.7	4,546.9	4,522.5	19.7	17.0	-143.48	3,266.2	433.9	3,767.3	3,732.9	34.42	109.458	

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 Bo Howard 1211 Fed Com #124H
Project:	Ranger/Arrowhead	**TVD Reference:**	KB @ 3199.5usft
Reference Site:	Bo Howard 1211	**MD Reference:**	KB @ 3199.5usft
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Bo Howard 1211 Fed Com #124H	**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 Bo Howard 1211 - Bo Howard 1211 Fed Com #131H - Wellbore #1 - BLM Plan #1 — **Offset Site Error:** 0.0 usft

Survey Program: 0-MWD — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,100.0	5,054.5	4,643.8	4,618.4	20.1	17.4	-143.52	3,277.7	441.0	3,792.1	3,756.9	35.17	107.825	
5,200.0	5,153.2	4,740.6	4,714.3	20.5	17.7	-143.56	3,289.1	448.1	3,816.8	3,780.9	35.92	106.259	
5,300.0	5,251.9	4,837.5	4,810.2	21.0	18.1	-143.60	3,300.6	455.2	3,841.6	3,804.9	36.67	104.756	
5,400.0	5,350.7	5,401.9	5,372.7	21.4	20.2	-144.09	3,334.8	476.4	3,861.2	3,821.8	39.43	97.922	
5,500.0	5,449.4	5,500.6	5,471.4	21.9	20.6	-144.23	3,334.8	476.4	3,874.2	3,834.0	40.16	96.461	
5,600.0	5,548.1	5,600.6	5,570.1	22.3	20.9	-144.37	3,334.8	476.4	3,887.1	3,846.2	40.90	95.042	
5,700.0	5,646.9	5,701.9	5,668.9	22.7	21.3	-144.50	3,334.8	476.4	3,900.0	3,858.4	41.64	93.663	
5,800.0	5,745.6	5,803.2	5,767.6	23.2	21.6	-144.64	3,334.8	476.4	3,913.0	3,870.7	42.38	92.333	
5,900.0	5,844.3	5,904.4	5,866.3	23.6	21.9	-144.77	3,334.8	476.4	3,926.0	3,882.9	43.12	91.048	
6,000.0	5,943.1	6,005.7	5,965.1	24.1	22.3	-144.90	3,334.8	476.4	3,939.1	3,895.2	43.86	89.807	
6,100.0	6,041.8	6,107.0	6,063.8	24.5	22.6	-145.03	3,334.8	476.4	3,952.1	3,907.5	44.60	88.607	
6,200.0	6,140.5	6,208.2	6,162.5	24.9	23.0	-145.16	3,334.8	476.4	3,965.2	3,919.8	45.34	87.447	
6,300.0	6,239.3	6,309.5	6,261.3	25.4	23.3	-145.29	3,334.8	476.4	3,978.2	3,932.2	46.08	86.324	
6,400.0	6,338.0	6,389.2	6,360.0	25.8	23.6	-145.42	3,334.8	476.4	3,991.3	3,944.6	46.75	85.375	
6,500.0	6,436.7	6,488.0	6,458.7	26.2	23.9	-145.55	3,334.8	476.4	4,004.5	3,957.0	47.48	84.334	
6,600.0	6,535.5	6,586.7	6,557.5	26.7	24.3	-145.68	3,334.8	476.4	4,017.6	3,969.4	48.22	83.325	
6,664.9	6,599.6	6,650.8	6,621.6	27.0	24.5	-145.76	3,334.8	476.4	4,026.2	3,977.5	48.69	82.687	
6,700.0	6,634.2	6,685.5	6,656.2	27.1	24.6	-145.84	3,334.8	476.4	4,030.6	3,981.7	48.95	82.345	
6,800.0	6,733.3	6,784.5	6,755.3	27.5	24.9	-146.05	3,334.8	476.4	4,042.0	3,992.3	49.67	81.370	
6,900.0	6,832.7	6,883.9	6,854.7	27.9	25.3	-146.21	3,334.8	476.4	4,051.2	4,000.8	50.39	80.391	
7,000.0	6,932.3	6,983.6	6,954.3	28.3	25.6	-146.34	3,334.8	476.4	4,058.2	4,007.1	51.10	79.410	
7,100.0	7,032.1	7,083.4	7,054.1	28.7	26.0	-146.42	3,334.8	476.4	4,063.1	4,011.3	51.81	78.426	
7,200.0	7,132.1	7,183.3	7,154.1	29.0	26.3	-146.47	3,334.8	476.4	4,065.8	4,013.3	52.50	77.440	
7,273.4	7,205.5	7,256.7	7,227.5	29.2	26.5	-0.16	3,334.8	476.4	4,066.4	4,013.4	53.00	76.724	
7,300.0	7,232.1	7,283.3	7,254.1	29.3	26.6	90.15	3,334.8	476.4	4,066.4	4,013.2	53.17	76.473	
7,350.0	7,281.9	7,333.1	7,303.9	29.4	26.8	90.21	3,334.8	476.4	4,066.4	4,012.9	53.49	76.021	
7,400.0	7,331.1	7,382.3	7,353.1	29.6	27.0	90.33	3,334.8	476.4	4,066.5	4,012.7	53.79	75.598	
7,450.0	7,379.3	7,430.5	7,401.3	29.7	27.1	90.50	3,334.8	476.4	4,066.6	4,012.5	54.07	75.203	
7,500.0	7,426.2	7,477.5	7,448.2	29.7	27.3	90.71	3,334.8	476.4	4,066.7	4,012.4	54.34	74.837	
7,550.0	7,471.5	7,522.7	7,493.5	29.8	27.5	90.95	3,334.8	476.4	4,067.1	4,012.5	54.59	74.497	
7,600.0	7,514.7	7,565.9	7,536.7	29.9	27.6	91.20	3,334.8	476.4	4,067.6	4,012.8	54.83	74.184	
7,650.0	7,555.6	7,606.8	7,577.6	29.9	27.8	91.45	3,334.8	476.4	4,068.4	4,013.4	55.06	73.893	
7,700.0	7,593.8	7,645.0	7,615.8	29.9	27.9	91.68	3,334.8	476.4	4,069.6	4,014.3	55.28	73.621	
7,750.0	7,629.0	7,680.2	7,651.0	30.0	28.0	91.87	3,334.8	476.4	4,071.2	4,015.7	55.49	73.363	
7,800.0	7,661.0	7,712.3	7,683.0	30.0	28.1	92.01	3,334.8	476.4	4,073.2	4,017.5	55.71	73.114	
7,850.0	7,689.6	7,740.8	7,711.6	30.0	28.2	92.08	3,334.8	476.4	4,075.8	4,019.9	55.93	72.871	
7,900.0	7,714.5	7,765.7	7,736.5	30.0	28.3	92.07	3,334.8	476.4	4,079.0	4,022.8	56.16	72.627	
7,950.0	7,735.4	7,786.7	7,757.4	29.9	28.4	91.96	3,334.8	476.4	4,082.8	4,026.4	56.41	72.380	
8,000.0	7,752.4	7,803.7	7,774.4	29.9	28.4	91.73	3,334.8	476.4	4,087.2	4,030.6	56.67	72.127	
8,050.0	7,765.2	7,816.5	7,787.2	29.9	28.5	91.39	3,334.8	476.4	4,092.4	4,035.5	56.94	71.870	
8,100.0	7,773.8	7,825.0	7,795.8	29.9	28.5	90.92	3,334.8	476.4	4,098.2	4,041.0	57.23	71.608	
8,150.0	7,778.0	7,829.2	7,800.0	29.9	28.5	90.32	3,334.8	476.4	4,104.7	4,047.2	57.53	71.346	
8,173.4	7,778.5	9,526.7	8,903.0	29.9	35.8	105.60	3,212.1	-354.6	4,106.6	4,043.0	63.61	64.561	
8,200.0	7,778.3	9,537.8	8,903.0	30.0	35.9	105.63	3,211.3	-365.8	4,105.1	4,041.1	63.93	64.213	
8,244.5	7,777.6	9,556.5	8,903.0	30.2	36.1	105.68	3,210.2	-384.4	4,102.9	4,038.4	64.49	63.619	
8,300.0	7,776.2	9,600.0	8,903.0	30.7	36.6	105.71	3,208.0	-427.9	4,100.9	4,035.4	65.46	62.649	
8,400.0	7,773.7	9,600.0	8,903.0	31.7	36.6	105.71	3,208.0	-427.9	4,098.1	4,031.6	66.45	61.675	
8,500.0	7,771.2	9,663.8	8,903.0	32.9	37.4	105.73	3,206.0	-491.7	4,096.5	4,028.2	68.35	59.932	
8,564.5	7,769.6	9,700.0	8,903.0	33.8	37.9	105.75	3,205.5	-527.8	4,096.4	4,026.8	69.60	58.858	
8,600.0	7,768.8	9,705.9	8,903.0	34.2	38.0	105.75	3,205.5	-533.7	4,096.5	4,026.4	70.11	58.431	
8,700.0	7,766.3	9,801.5	8,903.0	35.7	39.3	105.78	3,205.1	-626.3	4,097.4	4,024.7	72.76	56.316	
8,800.0	7,763.8	9,901.6	8,903.0	37.2	40.8	105.81	3,204.8	-726.3	4,098.3	4,022.7	75.67	54.164	

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 Bo Howard 1211 Fed Com #124H
Project:	Ranger/Arrowhead	**TVD Reference:**	KB @ 3199.5usft
Reference Site:	Bo Howard 1211	**MD Reference:**	KB @ 3199.5usft
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Bo Howard 1211 Fed Com #124H	**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 Bo Howard 1211 - Bo Howard 1211 Fed Com #131H - Wellbore #1 - BLM Plan #1 — **Offset Site Error:** 0.0 usft

Survey Program: 0-MWD — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
8,900.0	7,761.3	10,001.6	8,903.0	38.9	42.3	105.84	3,204.4	-826.2	4,099.3	4,020.5	78.75	52.054	
9,000.0	7,758.8	10,101.6	8,903.0	40.6	44.0	105.88	3,204.0	-926.2	4,100.2	4,018.2	81.99	50.008	
9,100.0	7,756.4	10,201.7	8,903.0	42.4	45.7	105.91	3,203.7	-1,026.2	4,101.1	4,015.7	85.37	48.039	
9,200.0	7,753.9	10,301.7	8,903.0	44.3	47.5	105.94	3,203.3	-1,126.1	4,102.0	4,013.1	88.87	46.157	
9,300.0	7,751.4	10,401.7	8,903.0	46.2	49.4	105.97	3,202.9	-1,226.1	4,102.9	4,010.4	92.48	44.365	
9,400.0	7,748.9	10,501.8	8,903.0	48.1	51.3	106.01	3,202.6	-1,326.1	4,103.8	4,007.6	96.18	42.666	
9,500.0	7,746.4	10,601.8	8,903.0	50.1	53.2	106.04	3,202.2	-1,426.0	4,104.7	4,004.7	99.97	41.058	
9,600.0	7,743.9	10,701.8	8,903.0	52.2	55.2	106.07	3,201.8	-1,526.0	4,105.6	4,001.8	103.84	39.538	
9,700.0	7,741.5	10,801.8	8,903.0	54.3	57.2	106.10	3,201.5	-1,626.0	4,106.6	3,998.8	107.77	38.104	
9,800.0	7,739.0	10,901.9	8,903.0	56.4	59.3	106.13	3,201.1	-1,725.9	4,107.5	3,995.7	111.76	36.751	
9,900.0	7,736.5	11,001.9	8,903.0	58.5	61.3	106.17	3,200.7	-1,825.9	4,108.4	3,992.6	115.81	35.475	
10,000.0	7,734.0	11,101.9	8,903.0	60.7	63.4	106.20	3,200.4	-1,925.9	4,109.3	3,989.4	119.90	34.272	
10,100.0	7,731.5	11,202.0	8,903.0	62.8	65.6	106.23	3,200.0	-2,025.8	4,110.2	3,986.2	124.04	33.136	
10,200.0	7,729.1	11,302.0	8,903.0	65.0	67.7	106.26	3,199.7	-2,125.8	4,111.2	3,982.9	128.22	32.064	
10,300.0	7,726.6	11,402.0	8,903.0	67.3	69.9	106.30	3,199.3	-2,225.8	4,112.1	3,979.7	132.43	31.052	
10,400.0	7,724.1	11,502.1	8,903.0	69.5	72.1	106.33	3,198.9	-2,325.7	4,113.0	3,976.3	136.67	30.095	
10,500.0	7,721.6	11,602.1	8,903.0	71.7	74.3	106.36	3,198.6	-2,425.7	4,113.9	3,973.0	140.94	29.189	
10,600.0	7,719.1	11,702.1	8,903.0	74.0	76.5	106.39	3,198.2	-2,525.7	4,114.9	3,969.6	145.24	28.332	
10,700.0	7,716.7	11,802.2	8,903.0	76.3	78.7	106.42	3,197.8	-2,625.7	4,115.8	3,966.2	149.56	27.520	
10,800.0	7,714.2	11,902.2	8,903.0	78.6	81.0	106.46	3,197.5	-2,725.6	4,116.7	3,962.8	153.90	26.750	
10,900.0	7,711.7	12,002.2	8,903.0	80.9	83.3	106.49	3,197.1	-2,825.6	4,117.7	3,959.4	158.26	26.019	
11,000.0	7,709.2	12,102.3	8,903.0	83.2	85.5	106.52	3,196.7	-2,925.6	4,118.6	3,956.0	162.64	25.324	
11,100.0	7,706.7	12,202.3	8,903.0	85.5	87.8	106.55	3,196.4	-3,025.5	4,119.5	3,952.5	167.03	24.663	
11,200.0	7,704.3	12,302.3	8,903.0	87.8	90.1	106.59	3,196.0	-3,125.5	4,120.5	3,949.0	171.44	24.034	
11,300.0	7,701.8	12,402.3	8,903.0	90.1	92.4	106.62	3,195.6	-3,225.5	4,121.4	3,945.5	175.86	23.435	
11,400.0	7,699.3	12,502.4	8,903.0	92.5	94.7	106.65	3,195.3	-3,325.4	4,122.3	3,942.0	180.30	22.864	
11,500.0	7,696.8	12,602.4	8,903.0	94.8	97.0	106.68	3,194.9	-3,425.4	4,123.3	3,938.5	184.75	22.319	
11,600.0	7,694.3	12,702.4	8,903.0	97.1	99.3	106.71	3,194.6	-3,525.4	4,124.2	3,935.0	189.20	21.798	
11,700.0	7,691.9	12,802.5	8,903.0	99.5	101.6	106.75	3,194.2	-3,625.3	4,125.2	3,931.5	193.67	21.300	
11,800.0	7,689.4	12,902.5	8,903.0	101.8	104.0	106.78	3,193.8	-3,725.3	4,126.1	3,928.0	198.15	20.823	
11,900.0	7,686.9	13,002.5	8,903.0	104.2	106.3	106.81	3,193.5	-3,825.3	4,127.1	3,924.4	202.63	20.367	
12,000.0	7,684.4	13,102.6	8,903.0	106.6	108.6	106.84	3,193.1	-3,925.2	4,128.0	3,920.9	207.13	19.930	
12,100.0	7,681.9	13,202.6	8,903.0	108.9	111.0	106.87	3,192.7	-4,025.2	4,129.0	3,917.3	211.63	19.511	
12,200.0	7,679.4	13,302.6	8,903.0	111.3	113.3	106.91	3,192.4	-4,125.2	4,129.9	3,913.8	216.13	19.108	
12,300.0	7,677.0	13,402.7	8,903.0	113.7	115.7	106.94	3,192.0	-4,225.1	4,130.9	3,910.2	220.65	18.722	
12,400.0	7,674.5	13,502.7	8,903.0	116.1	118.0	106.97	3,191.6	-4,325.1	4,131.8	3,906.7	225.16	18.350	
12,500.0	7,672.0	13,602.7	8,903.0	118.5	120.4	107.00	3,191.3	-4,425.1	4,132.8	3,903.1	229.69	17.993	
12,600.0	7,669.5	13,702.7	8,903.0	120.9	122.8	107.03	3,190.9	-4,525.0	4,133.7	3,899.5	234.21	17.649	
12,700.0	7,667.0	13,802.8	8,903.0	123.2	125.1	107.07	3,190.5	-4,625.0	4,134.7	3,895.9	238.75	17.318	
12,800.0	7,664.6	13,902.8	8,903.0	125.6	127.5	107.10	3,190.2	-4,725.0	4,135.6	3,892.4	243.28	16.999	
12,900.0	7,662.1	14,002.8	8,903.0	128.0	129.9	107.13	3,189.8	-4,825.0	4,136.6	3,888.8	247.82	16.692	
13,000.0	7,659.6	14,097.1	8,903.0	130.4	132.1	107.16	3,189.5	-4,924.9	4,137.6	3,885.3	252.24	16.404	
13,100.0	7,657.1	14,197.1	8,903.0	132.8	134.5	107.19	3,189.1	-5,024.9	4,138.5	3,881.7	256.78	16.117	
13,200.0	7,654.6	14,302.9	8,903.0	135.2	137.0	107.22	3,188.7	-5,124.9	4,139.5	3,878.0	261.46	15.832	
13,300.0	7,652.2	14,403.0	8,903.0	137.6	139.4	107.26	3,188.4	-5,224.8	4,140.4	3,874.4	266.02	15.565	
13,400.0	7,649.7	14,503.0	8,903.0	140.0	141.8	107.29	3,188.0	-5,324.8	4,141.4	3,870.8	270.57	15.306	
13,500.0	7,647.2	14,603.0	8,903.0	142.4	144.2	107.32	3,187.6	-5,424.8	4,142.4	3,867.2	275.13	15.056	
13,600.0	7,644.7	14,703.1	8,903.0	144.9	146.6	107.35	3,187.3	-5,524.7	4,143.3	3,863.7	279.69	14.814	
13,700.0	7,642.2	14,803.1	8,903.0	147.3	149.0	107.38	3,186.9	-5,624.7	4,144.3	3,860.1	284.25	14.580	
13,800.0	7,639.8	14,896.9	8,903.0	149.7	151.2	107.42	3,186.5	-5,724.7	4,145.3	3,856.6	288.67	14.360	
13,900.0	7,637.3	15,003.2	8,903.0	152.1	153.7	107.45	3,186.2	-5,824.6	4,146.3	3,852.9	293.38	14.133	
14,000.0	7,634.8	15,103.2	8,903.0	154.5	156.1	107.48	3,185.8	-5,924.6	4,147.2	3,849.3	297.94	13.920	

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 Bo Howard 1211 Fed Com #124H
Project:	Ranger/Arrowhead	**TVD Reference:**	KB @ 3199.5usft
Reference Site:	Bo Howard 1211	**MD Reference:**	KB @ 3199.5usft
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Bo Howard 1211 Fed Com #124H	**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 Bo Howard 1211 - Bo Howard 1211 Fed Com #131H - Wellbore #1 - BLM Plan #1

Offset Site Error: 0.0 usft

Survey Program: 0-MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
14,100.0	7,632.3	15,203.2	8,903.0	156.9	158.5	107.51	3,185.4	-6,024.6	4,148.2	3,845.7	302.51	13.713	
14,200.0	7,629.8	15,303.2	8,903.0	159.3	160.9	107.54	3,185.1	-6,124.5	4,149.2	3,842.1	307.08	13.512	
14,300.0	7,627.4	15,403.3	8,903.0	161.8	163.3	107.57	3,184.7	-6,224.5	4,150.2	3,838.5	311.65	13.317	
14,400.0	7,624.9	15,503.3	8,903.0	164.2	165.7	107.61	3,184.4	-6,324.5	4,151.1	3,834.9	316.22	13.127	
14,500.0	7,622.4	15,603.3	8,903.0	166.6	168.1	107.64	3,184.0	-6,424.4	4,152.1	3,831.3	320.79	12.943	
14,600.0	7,619.9	15,703.4	8,903.0	169.0	170.6	107.67	3,183.6	-6,524.4	4,153.1	3,827.7	325.36	12.765	
14,700.0	7,617.4	15,803.4	8,903.0	171.5	173.0	107.70	3,183.3	-6,624.4	4,154.1	3,824.1	329.94	12.591	
14,800.0	7,614.9	15,903.4	8,903.0	173.9	175.4	107.73	3,182.9	-6,724.3	4,155.1	3,820.5	334.51	12.421	
14,900.0	7,612.5	16,003.5	8,903.0	176.3	177.8	107.76	3,182.5	-6,824.3	4,156.0	3,817.0	339.08	12.257	
15,000.0	7,610.0	16,103.5	8,903.0	178.7	180.2	107.80	3,182.2	-6,924.3	4,157.0	3,813.4	343.66	12.096	
15,100.0	7,607.5	16,203.5	8,903.0	181.2	182.6	107.83	3,181.8	-7,024.3	4,158.0	3,809.8	348.23	11.940	
15,200.0	7,605.0	16,303.6	8,903.0	183.6	185.0	107.86	3,181.4	-7,124.2	4,159.0	3,806.2	352.81	11.788	
15,300.0	7,602.5	16,403.6	8,903.0	186.0	187.4	107.89	3,181.1	-7,224.2	4,160.0	3,802.6	357.38	11.640	
15,400.0	7,600.1	16,503.6	8,903.0	188.4	189.8	107.92	3,180.7	-7,324.2	4,161.0	3,799.1	361.93	11.497	
15,463.1	7,598.5	16,559.5	8,903.0	190.0	190.7	107.94	3,180.5	-7,387.2	4,161.6	3,797.4	364.23	11.426	SF

Anticollision Report

Company:	Matador Production Company	**Local Co-ordinate Reference:**	Well Bo Howard 1211 Fed Com #124H
Project:	Ranger/Arrowhead	**TVD Reference:**	KB @ 3199.5usft
Reference Site:	Bo Howard 1211	**MD Reference:**	KB @ 3199.5usft
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Bo Howard 1211 Fed Com #124H	**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 Bo Howard 1211 - Bo Howard 1211 Fed Com #132H - Wellbore #1 - BLM Plan #1

Offset Site Error: 0.0 usft

Survey Program: 0-MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.0	0.0	22.0	22.0	0.0	0.0	5.24	2,953.1	270.8	2,965.5				
100.0	100.0	122.0	122.0	0.1	0.2	5.24	2,953.1	270.8	2,965.5	2,965.2	0.34	8,847.727	
200.0	200.0	222.0	222.0	0.5	0.6	5.24	2,953.1	270.8	2,965.5	2,964.5	1.05	2,818.613	
300.0	300.0	322.0	322.0	0.8	0.9	5.24	2,953.1	270.8	2,965.5	2,963.7	1.77	1,676.318	
400.0	400.0	422.0	422.0	1.2	1.3	5.24	2,953.1	270.8	2,965.5	2,963.0	2.49	1,192.881	
500.0	500.0	522.0	522.0	1.6	1.6	5.24	2,953.1	270.8	2,965.5	2,962.3	3.20	925.868	
600.0	600.0	622.0	622.0	1.9	2.0	5.24	2,953.1	270.8	2,965.5	2,961.6	3.92	756.528	
700.0	700.0	722.0	722.0	2.3	2.4	5.24	2,953.1	270.8	2,965.5	2,960.9	4.64	639.554	
800.0	800.0	822.0	822.0	2.6	2.7	5.24	2,953.1	270.8	2,965.5	2,960.1	5.35	553.909	
900.0	900.0	922.0	922.0	3.0	3.1	5.24	2,953.1	270.8	2,965.5	2,959.4	6.07	488.493	
1,000.0	1,000.0	1,022.0	1,022.0	3.4	3.4	5.24	2,953.1	270.8	2,965.5	2,958.7	6.79	436.896	
1,100.0	1,100.0	1,122.0	1,122.0	3.7	3.8	5.24	2,953.1	270.8	2,965.5	2,958.0	7.50	395.158	
1,200.0	1,200.0	1,222.0	1,222.0	4.1	4.2	5.24	2,953.1	270.8	2,965.5	2,957.3	8.22	360.699	
1,300.0	1,300.0	1,322.0	1,322.0	4.4	4.5	-141.09	2,953.1	270.8	2,966.9	2,957.9	8.92	332.519	
1,400.0	1,399.8	1,421.8	1,421.8	4.7	4.9	-141.10	2,953.1	270.8	2,970.9	2,961.3	9.61	309.108	
1,500.0	1,499.5	1,542.7	1,542.7	5.1	5.3	-141.15	2,953.0	270.9	2,977.7	2,967.3	10.37	287.052	
1,600.0	1,598.7	1,741.1	1,741.0	5.4	5.9	-141.32	2,948.1	271.8	2,984.8	2,973.4	11.37	262.619	
1,656.4	1,654.4	1,853.1	1,852.9	5.6	6.3	-141.44	2,942.5	273.0	2,988.6	2,976.7	11.92	250.616	
1,700.0	1,697.5	1,940.1	1,939.6	5.8	6.6	-141.58	2,936.6	274.2	2,991.1	2,978.8	12.36	242.014	
1,800.0	1,796.3	2,139.9	2,138.6	6.2	7.3	-141.85	2,918.2	278.0	2,994.6	2,981.2	13.36	224.125	
1,900.0	1,895.0	2,340.2	2,337.2	6.5	8.0	-142.09	2,892.9	283.3	2,994.7	2,980.4	14.37	208.434	
2,000.0	1,993.7	2,508.4	2,503.2	6.9	8.6	-142.26	2,866.5	288.7	2,991.7	2,976.4	15.28	195.773	
2,100.0	2,092.5	2,608.2	2,601.5	7.3	9.0	-142.36	2,850.0	292.2	2,987.9	2,971.9	16.00	186.719	
2,200.0	2,191.2	2,708.0	2,699.9	7.7	9.4	-142.46	2,833.4	295.6	2,984.1	2,967.4	16.73	178.388	
2,300.0	2,289.9	2,807.8	2,798.2	8.1	9.8	-142.56	2,816.8	299.0	2,980.3	2,962.9	17.46	170.705	
2,400.0	2,388.7	2,907.6	2,896.6	8.5	10.2	-142.65	2,800.2	302.4	2,976.5	2,958.4	18.19	163.602	
2,500.0	2,487.4	3,007.3	2,994.9	8.9	10.6	-142.75	2,783.7	305.9	2,972.8	2,953.8	18.93	157.022	
2,600.0	2,586.1	3,107.1	3,093.3	9.4	11.0	-142.85	2,767.1	309.3	2,969.0	2,949.3	19.67	150.912	
2,700.0	2,684.9	3,206.9	3,191.6	9.8	11.4	-142.95	2,750.5	312.7	2,965.3	2,944.9	20.42	145.227	
2,800.0	2,783.6	3,306.7	3,290.0	10.2	11.9	-143.05	2,733.9	316.2	2,961.5	2,940.4	21.16	139.927	
2,900.0	2,882.3	3,406.5	3,388.4	10.6	12.3	-143.15	2,717.4	319.6	2,957.8	2,935.9	21.91	134.974	
3,000.0	2,981.1	3,506.3	3,486.7	11.0	12.7	-143.25	2,700.8	323.0	2,954.1	2,931.4	22.66	130.340	
3,100.0	3,079.8	3,606.1	3,585.1	11.5	13.1	-143.35	2,684.2	326.4	2,950.4	2,926.9	23.42	125.993	
3,200.0	3,178.5	3,705.9	3,683.4	11.9	13.5	-143.45	2,667.7	329.9	2,946.7	2,922.5	24.17	121.911	
3,300.0	3,277.3	3,805.7	3,781.8	12.3	14.0	-143.55	2,651.1	333.3	2,943.0	2,918.0	24.93	118.069	
3,400.0	3,376.0	3,905.5	3,880.1	12.7	14.4	-143.65	2,634.5	336.7	2,939.3	2,913.6	25.68	114.449	
3,500.0	3,474.7	4,005.3	3,978.5	13.2	14.8	-143.75	2,617.9	340.1	2,935.6	2,909.2	26.44	111.032	
3,600.0	3,573.5	4,105.1	4,076.8	13.6	15.2	-143.85	2,601.4	343.6	2,931.9	2,904.7	27.20	107.802	
3,700.0	3,672.2	4,204.9	4,175.2	14.0	15.7	-143.95	2,584.8	347.0	2,928.3	2,900.3	27.96	104.745	
3,800.0	3,770.9	4,304.7	4,273.5	14.5	16.1	-144.06	2,568.2	350.4	2,924.6	2,895.9	28.72	101.847	
3,900.0	3,869.7	4,404.5	4,371.9	14.9	16.5	-144.16	2,551.6	353.9	2,921.0	2,891.5	29.48	99.096	
4,000.0	3,968.4	4,504.3	4,470.2	15.3	17.0	-144.26	2,535.1	357.3	2,917.3	2,887.1	30.24	96.483	
4,100.0	4,067.1	4,604.1	4,568.6	15.8	17.4	-144.36	2,518.5	360.7	2,913.7	2,882.7	31.00	93.997	
4,200.0	4,165.9	4,703.9	4,666.9	16.2	17.8	-144.46	2,501.9	364.1	2,910.1	2,878.4	31.76	91.628	
4,300.0	4,264.6	4,803.7	4,765.3	16.6	18.3	-144.57	2,485.3	367.6	2,906.5	2,874.0	32.52	89.371	
4,400.0	4,363.3	4,903.5	4,863.6	17.1	18.7	-144.67	2,468.8	371.0	2,902.9	2,869.6	33.28	87.216	
4,500.0	4,462.1	5,003.3	4,962.0	17.5	19.2	-144.77	2,452.2	374.4	2,899.3	2,865.3	34.05	85.157	
4,600.0	4,560.8	5,103.1	5,060.3	17.9	19.6	-144.88	2,435.6	377.9	2,895.8	2,860.9	34.81	83.188	
4,700.0	4,659.5	5,202.9	5,158.7	18.4	20.0	-144.98	2,419.1	381.3	2,892.2	2,856.6	35.57	81.303	
4,800.0	4,758.3	5,302.7	5,257.1	18.8	20.5	-145.09	2,402.5	384.7	2,888.6	2,852.3	36.34	79.497	
4,900.0	4,857.0	5,402.5	5,355.4	19.2	20.9	-145.19	2,385.9	388.1	2,885.1	2,848.0	37.10	77.766	
5,000.0	4,955.7	5,502.3	5,453.8	19.7	21.4	-145.30	2,369.3	391.6	2,881.6	2,843.7	37.86	76.105	

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 Bo Howard 1211 Fed Com #124H
Project:	Ranger/Arrowhead	**TVD Reference:**	KB @ 3199.5usft
Reference Site:	Bo Howard 1211	**MD Reference:**	KB @ 3199.5usft
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Bo Howard 1211 Fed Com #124H	**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 Bo Howard 1211 - Bo Howard 1211 Fed Com #132H - Wellbore #1 - BLM Plan #1 — **Offset Site Error:** 0.0 usft

Survey Program: 0-MWD — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,100.0	5,054.5	5,602.1	5,552.1	20.1	21.8	-145.40	2,352.8	395.0	2,878.0	2,839.4	38.63	74.509	
5,200.0	5,153.2	5,701.9	5,650.5	20.5	22.2	-145.51	2,336.2	398.4	2,874.5	2,835.1	39.39	72.975	
5,300.0	5,251.9	5,801.7	5,748.8	21.0	22.7	-145.61	2,319.6	401.8	2,871.0	2,830.8	40.15	71.500	
5,400.0	5,350.7	5,901.5	5,847.2	21.4	23.1	-145.72	2,303.0	405.3	2,867.5	2,826.6	40.92	70.080	
5,500.0	5,449.4	6,001.3	5,945.5	21.9	23.6	-145.82	2,286.5	408.7	2,864.0	2,822.3	41.68	68.713	
5,600.0	5,548.1	6,101.1	6,043.9	22.3	24.0	-145.93	2,269.9	412.1	2,860.5	2,818.1	42.44	67.395	
5,700.0	5,646.9	6,200.9	6,142.2	22.7	24.5	-146.04	2,253.3	415.6	2,857.1	2,813.9	43.21	66.123	
5,800.0	5,745.6	6,300.7	6,240.6	23.2	24.9	-146.14	2,236.7	419.0	2,853.6	2,809.6	43.97	64.897	
5,900.0	5,844.3	6,400.5	6,338.9	23.6	25.3	-146.25	2,220.2	422.4	2,850.2	2,805.4	44.73	63.712	
6,000.0	5,943.1	6,500.3	6,437.3	24.1	25.8	-146.36	2,203.6	425.8	2,846.7	2,801.2	45.50	62.568	
6,100.0	6,041.8	6,600.1	6,535.6	24.5	26.2	-146.46	2,187.0	429.3	2,843.3	2,797.0	46.26	61.461	
6,200.0	6,140.5	6,700.1	6,634.0	24.9	26.7	-146.57	2,170.5	432.7	2,839.9	2,792.9	47.03	60.390	
6,300.0	6,239.3	6,800.3	6,732.3	25.4	27.1	-146.68	2,153.9	436.1	2,836.5	2,788.7	47.79	59.353	
6,400.0	6,338.0	6,900.5	6,830.7	25.8	27.6	-146.79	2,137.3	439.6	2,833.1	2,784.5	48.55	58.348	
6,500.0	6,436.7	7,000.7	6,929.0	26.2	28.0	-146.90	2,120.7	443.0	2,829.7	2,780.4	49.32	57.376	
6,600.0	6,535.5	7,099.1	7,027.4	26.7	28.5	-147.01	2,104.2	446.4	2,826.3	2,776.2	50.08	56.441	
6,664.9	6,599.6	7,163.9	7,091.3	27.0	28.8	-147.08	2,093.4	448.6	2,824.1	2,773.5	50.57	55.845	
6,700.0	6,634.2	7,198.9	7,125.8	27.1	28.9	-147.10	2,087.6	449.8	2,822.8	2,772.0	50.84	55.526	
6,800.0	6,733.3	7,301.4	7,224.1	27.5	29.4	-147.14	2,071.0	453.3	2,817.6	2,766.0	51.60	54.601	
6,900.0	6,832.7	7,401.7	7,322.3	27.9	29.8	-147.14	2,054.5	456.7	2,810.2	2,757.8	52.35	53.677	
7,000.0	6,932.3	7,502.1	7,420.4	28.3	30.3	-147.09	2,037.9	460.1	2,800.6	2,747.5	53.09	52.746	
7,100.0	7,032.1	7,602.8	7,518.3	28.7	30.7	-146.99	2,021.4	463.5	2,788.8	2,734.9	53.83	51.808	
7,200.0	7,132.1	7,703.8	7,615.8	29.0	31.2	-146.84	2,005.0	466.9	2,774.8	2,720.2	54.56	50.862	
7,273.4	7,205.5	7,768.6	7,687.2	29.2	31.5	-0.38	1,993.0	469.4	2,763.2	2,708.1	55.04	50.202	
7,300.0	7,232.1	7,781.8	7,700.3	29.3	31.5	90.38	1,990.8	469.9	2,758.8	2,703.6	55.19	49.991	
7,350.0	7,281.9	7,800.0	7,718.2	29.4	31.6	91.21	1,987.9	470.5	2,751.0	2,695.6	55.43	49.632	
7,400.0	7,331.1	7,838.9	7,756.6	29.6	31.8	92.12	1,982.0	471.7	2,743.6	2,687.8	55.72	49.241	
7,450.0	7,379.3	7,866.7	7,784.1	29.7	31.9	92.98	1,978.0	472.5	2,736.7	2,680.8	55.96	48.903	
7,500.0	7,426.2	7,900.0	7,817.1	29.7	32.0	93.87	1,973.5	473.4	2,730.6	2,674.3	56.22	48.572	
7,550.0	7,471.5	7,919.8	7,836.8	29.8	32.1	94.61	1,971.0	474.0	2,725.1	2,668.7	56.42	48.303	
7,600.0	7,514.7	7,944.8	7,861.5	29.9	32.2	95.35	1,967.9	474.6	2,720.5	2,663.9	56.63	48.041	
7,650.0	7,555.6	7,968.3	7,884.9	29.9	32.3	96.01	1,965.1	475.2	2,716.9	2,660.1	56.84	47.802	
7,700.0	7,593.8	8,000.0	7,916.4	29.9	32.4	96.71	1,961.6	475.9	2,714.4	2,657.3	57.08	47.556	
7,750.0	7,629.0	8,000.0	7,916.4	30.0	32.4	96.86	1,961.6	475.9	2,712.9	2,655.7	57.21	47.422	
7,784.0	7,651.1	8,023.5	7,939.7	30.0	32.5	97.26	1,959.2	476.4	2,712.6	2,655.2	57.40	47.262	CC
7,800.0	7,661.0	8,029.2	7,945.4	30.0	32.6	97.35	1,958.6	476.5	2,712.7	2,655.2	57.46	47.207	
7,850.0	7,689.6	8,045.6	7,961.7	30.0	32.6	97.54	1,957.1	476.8	2,713.8	2,656.1	57.69	47.040	
7,900.0	7,714.5	8,059.9	7,975.9	30.0	32.7	97.56	1,955.7	477.1	2,716.2	2,658.2	57.93	46.885	
7,950.0	7,735.4	8,071.9	7,987.9	29.9	32.7	97.42	1,954.7	477.3	2,720.0	2,661.8	58.19	46.740	
8,000.0	7,752.4	8,081.5	7,997.5	29.9	32.8	97.09	1,953.8	477.5	2,725.2	2,666.7	58.48	46.604	
8,050.0	7,765.2	8,100.0	8,015.9	29.9	32.8	96.81	1,952.3	477.8	2,731.8	2,673.0	58.82	46.440	
8,100.0	7,773.8	8,100.0	8,015.9	29.9	32.8	96.01	1,952.3	477.8	2,739.7	2,680.6	59.12	46.338	
8,150.0	7,778.0	8,100.0	8,015.9	29.9	32.8	95.08	1,952.3	477.8	2,749.0	2,689.6	59.45	46.241	
8,173.4	7,778.5	8,100.0	8,015.9	29.9	32.8	94.59	1,952.3	477.8	2,753.8	2,694.2	59.61	46.198	
8,200.0	7,778.3	8,100.0	8,015.9	30.0	32.8	94.47	1,952.3	477.8	2,759.5	2,699.7	59.80	46.149	
8,244.5	7,777.6	8,100.0	8,015.9	30.2	32.8	94.27	1,952.3	477.8	2,769.7	2,709.5	60.13	46.060	
8,300.0	7,776.2	8,100.0	8,015.9	30.7	32.8	94.27	1,952.3	477.8	2,783.3	2,722.7	60.58	45.943	
8,400.0	7,773.7	8,100.0	8,015.9	31.7	32.8	94.27	1,952.3	477.8	2,810.5	2,749.0	61.48	45.715	
8,500.0	7,771.2	8,100.0	8,015.9	32.9	32.8	94.27	1,952.3	477.8	2,841.0	2,778.5	62.46	45.484	
8,600.0	7,768.8	9,745.3	8,903.0	34.2	39.5	112.97	1,885.1	-521.3	2,848.4	2,778.3	70.06	40.657	
8,700.0	7,766.3	9,845.2	8,903.0	35.7	40.7	113.02	1,884.7	-621.3	2,849.6	2,776.9	72.67	39.215	
8,800.0	7,763.8	9,945.2	8,903.0	37.2	42.2	113.06	1,884.4	-721.3	2,850.8	2,775.3	75.46	37.781	

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 Bo Howard 1211 Fed Com #124H
Project:	Ranger/Arrowhead	**TVD Reference:**	KB @ 3199.5usft
Reference Site:	Bo Howard 1211	**MD Reference:**	KB @ 3199.5usft
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Bo Howard 1211 Fed Com #124H	**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 Bo Howard 1211 - Bo Howard 1211 Fed Com #132H - Wellbore #1 - BLM Plan #1

Offset Site Error: 0.0 usft

Survey Program: 0-MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
8,900.0	7,761.3	10,045.2	8,903.0	38.9	43.7	113.11	1,884.0	-821.3	2,852.0	2,773.6	78.41	36.373	
9,000.0	7,758.8	10,145.1	8,903.0	40.6	45.3	113.15	1,883.7	-921.2	2,853.2	2,771.7	81.51	35.006	
9,100.0	7,756.4	10,245.1	8,903.0	42.4	47.0	113.19	1,883.3	-1,021.2	2,854.4	2,769.6	84.73	33.687	
9,200.0	7,753.9	10,345.1	8,903.0	44.3	48.7	113.24	1,882.9	-1,121.2	2,855.6	2,767.5	88.07	32.424	
9,300.0	7,751.4	10,445.1	8,903.0	46.2	50.5	113.28	1,882.6	-1,221.1	2,856.8	2,765.3	91.51	31.218	
9,400.0	7,748.9	10,545.0	8,903.0	48.1	52.4	113.33	1,882.2	-1,321.1	2,858.0	2,763.0	95.04	30.071	
9,500.0	7,746.4	10,645.0	8,903.0	50.1	54.3	113.37	1,881.9	-1,421.1	2,859.2	2,760.6	98.65	28.983	
9,600.0	7,743.9	10,745.0	8,903.0	52.2	56.2	113.41	1,881.5	-1,521.0	2,860.4	2,758.1	102.33	27.953	
9,700.0	7,741.5	10,844.9	8,903.0	54.3	58.2	113.46	1,881.2	-1,621.0	2,861.6	2,755.6	106.07	26.978	
9,800.0	7,739.0	10,944.9	8,903.0	56.4	60.2	113.50	1,880.8	-1,721.0	2,862.8	2,753.0	109.87	26.056	
9,900.0	7,736.5	11,044.9	8,903.0	58.5	62.3	113.54	1,880.4	-1,820.9	2,864.1	2,750.3	113.72	25.185	
10,000.0	7,734.0	11,144.8	8,903.0	60.7	64.4	113.59	1,880.1	-1,920.9	2,865.3	2,747.7	117.61	24.362	
10,100.0	7,731.5	11,244.8	8,903.0	62.8	66.5	113.63	1,879.7	-2,020.9	2,866.5	2,744.9	121.55	23.583	
10,200.0	7,729.1	11,344.8	8,903.0	65.0	68.6	113.67	1,879.4	-2,120.8	2,867.7	2,742.2	125.52	22.847	
10,300.0	7,726.6	11,444.7	8,903.0	67.3	70.8	113.72	1,879.0	-2,220.8	2,868.9	2,739.4	129.52	22.150	
10,400.0	7,724.1	11,544.7	8,903.0	69.5	72.9	113.76	1,878.6	-2,320.8	2,870.2	2,736.6	133.55	21.491	
10,500.0	7,721.6	11,644.7	8,903.0	71.7	75.1	113.80	1,878.3	-2,420.7	2,871.4	2,733.8	137.61	20.866	
10,600.0	7,719.1	11,744.6	8,903.0	74.0	77.3	113.85	1,877.9	-2,520.7	2,872.6	2,730.9	141.70	20.273	
10,700.0	7,716.7	11,844.6	8,903.0	76.3	79.5	113.89	1,877.6	-2,620.7	2,873.8	2,728.0	145.80	19.711	
10,800.0	7,714.2	11,944.6	8,903.0	78.6	81.8	113.93	1,877.2	-2,720.6	2,875.1	2,725.1	149.93	19.177	
10,900.0	7,711.7	12,044.6	8,903.0	80.9	84.0	113.98	1,876.9	-2,820.6	2,876.3	2,722.2	154.07	18.669	
11,000.0	7,709.2	12,144.5	8,903.0	83.2	86.3	114.02	1,876.5	-2,920.6	2,877.5	2,719.3	158.23	18.186	
11,100.0	7,706.7	12,244.5	8,903.0	85.5	88.5	114.06	1,876.1	-3,020.6	2,878.8	2,716.4	162.40	17.726	
11,200.0	7,704.3	12,344.5	8,903.0	87.8	90.8	114.11	1,875.8	-3,120.5	2,880.0	2,713.4	166.59	17.288	
11,300.0	7,701.8	12,444.4	8,903.0	90.1	93.1	114.15	1,875.4	-3,220.5	2,881.2	2,710.5	170.79	16.870	
11,400.0	7,699.3	12,544.4	8,903.0	92.5	95.4	114.19	1,875.1	-3,320.5	2,882.5	2,707.5	175.00	16.472	
11,500.0	7,696.8	12,644.4	8,903.0	94.8	97.7	114.24	1,874.7	-3,420.4	2,883.7	2,704.5	179.22	16.091	
11,600.0	7,694.3	12,744.3	8,903.0	97.1	100.0	114.28	1,874.4	-3,520.4	2,885.0	2,701.5	183.45	15.726	
11,700.0	7,691.9	12,844.3	8,903.0	99.5	102.3	114.32	1,874.0	-3,620.4	2,886.2	2,698.5	187.69	15.378	
11,800.0	7,689.4	12,944.3	8,903.0	101.8	104.6	114.36	1,873.6	-3,720.3	2,887.5	2,695.5	191.93	15.044	
11,900.0	7,686.9	13,044.2	8,903.0	104.2	106.9	114.41	1,873.3	-3,820.3	2,888.7	2,692.5	196.18	14.724	
12,000.0	7,684.4	13,144.2	8,903.0	106.6	109.2	114.45	1,872.9	-3,920.3	2,890.0	2,689.5	200.44	14.418	
12,100.0	7,681.9	13,244.2	8,903.0	108.9	111.6	114.49	1,872.6	-4,020.2	2,891.2	2,686.5	204.71	14.123	
12,200.0	7,679.4	13,344.2	8,903.0	111.3	113.9	114.54	1,872.2	-4,120.2	2,892.5	2,683.5	208.98	13.841	
12,300.0	7,677.0	13,444.1	8,903.0	113.7	116.3	114.58	1,871.8	-4,220.2	2,893.7	2,680.5	213.26	13.569	
12,400.0	7,674.5	13,544.1	8,903.0	116.1	118.6	114.62	1,871.5	-4,320.1	2,895.0	2,677.4	217.53	13.308	
12,500.0	7,672.0	13,644.1	8,903.0	118.5	121.0	114.66	1,871.1	-4,420.1	2,896.2	2,674.4	221.82	13.057	
12,600.0	7,669.5	13,744.0	8,903.0	120.9	123.3	114.71	1,870.8	-4,520.1	2,897.5	2,671.4	226.11	12.815	
12,700.0	7,667.0	13,844.0	8,903.0	123.2	125.7	114.75	1,870.4	-4,620.0	2,898.7	2,668.4	230.40	12.582	
12,800.0	7,664.6	13,944.0	8,903.0	125.6	128.0	114.79	1,870.1	-4,720.0	2,900.0	2,665.3	234.69	12.357	
12,900.0	7,662.1	14,043.9	8,903.0	128.0	130.4	114.83	1,869.7	-4,820.0	2,901.3	2,662.3	238.98	12.140	
13,000.0	7,659.6	14,143.9	8,903.0	130.4	132.8	114.88	1,869.3	-4,919.9	2,902.5	2,659.3	243.28	11.931	
13,100.0	7,657.1	14,243.9	8,903.0	132.8	135.1	114.92	1,869.0	-5,019.9	2,903.8	2,656.2	247.58	11.729	
13,200.0	7,654.6	14,343.8	8,903.0	135.2	137.5	114.96	1,868.6	-5,119.9	2,905.1	2,653.2	251.88	11.533	
13,300.0	7,652.2	14,443.8	8,903.0	137.6	139.9	115.00	1,868.3	-5,219.9	2,906.3	2,650.2	256.18	11.345	
13,400.0	7,649.7	14,543.8	8,903.0	140.0	142.3	115.04	1,867.9	-5,319.8	2,907.6	2,647.1	260.49	11.162	
13,500.0	7,647.2	14,643.7	8,903.0	142.4	144.6	115.09	1,867.5	-5,419.8	2,908.9	2,644.1	264.79	10.985	
13,600.0	7,644.7	14,743.7	8,903.0	144.9	147.0	115.13	1,867.2	-5,519.8	2,910.2	2,641.1	269.10	10.814	
13,700.0	7,642.2	14,843.7	8,903.0	147.3	149.4	115.17	1,866.8	-5,619.7	2,911.4	2,638.0	273.41	10.649	
13,800.0	7,639.8	14,943.7	8,903.0	149.7	151.8	115.21	1,866.5	-5,719.7	2,912.7	2,635.0	277.71	10.488	
13,900.0	7,637.3	15,043.6	8,903.0	152.1	154.2	115.26	1,866.1	-5,819.7	2,914.0	2,632.0	282.02	10.333	
14,000.0	7,634.8	15,143.6	8,903.0	154.5	156.6	115.30	1,865.8	-5,919.6	2,915.3	2,629.0	286.33	10.182	

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 Bo Howard 1211 Fed Com #124H
Project:	Ranger/Arrowhead	**TVD Reference:**	KB @ 3199.5usft
Reference Site:	Bo Howard 1211	**MD Reference:**	KB @ 3199.5usft
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Bo Howard 1211 Fed Com #124H	**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 Bo Howard 1211 - Bo Howard 1211 Fed Com #132H - Wellbore #1 - BLM Plan #1

Offset Site Error: 0.0 usft

Survey Program: 0-MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
14,100.0	7,632.3	15,243.6	8,903.0	156.9	159.0	115.34	1,865.4	-6,019.6	2,916.6	2,625.9	290.64	10.035	
14,200.0	7,629.8	15,343.5	8,903.0	159.3	161.4	115.38	1,865.0	-6,119.6	2,917.8	2,622.9	294.95	9.893	
14,300.0	7,627.4	15,443.5	8,903.0	161.8	163.8	115.42	1,864.7	-6,219.5	2,919.1	2,619.9	299.25	9.755	
14,400.0	7,624.9	15,543.5	8,903.0	164.2	166.2	115.47	1,864.3	-6,319.5	2,920.4	2,616.9	303.56	9.621	
14,500.0	7,622.4	15,643.4	8,903.0	166.6	168.6	115.51	1,864.0	-6,419.5	2,921.7	2,613.8	307.87	9.490	
14,600.0	7,619.9	15,743.4	8,903.0	169.0	171.0	115.55	1,863.6	-6,519.4	2,923.0	2,610.8	312.17	9.363	
14,700.0	7,617.4	15,843.4	8,903.0	171.5	173.4	115.59	1,863.2	-6,619.4	2,924.3	2,607.8	316.48	9.240	
14,800.0	7,614.9	15,943.3	8,903.0	173.9	175.8	115.63	1,862.9	-6,719.4	2,925.6	2,604.8	320.78	9.120	
14,900.0	7,612.5	16,043.3	8,903.0	176.3	178.2	115.67	1,862.5	-6,819.3	2,926.9	2,601.8	325.09	9.003	
15,000.0	7,610.0	16,143.3	8,903.0	178.7	180.6	115.72	1,862.2	-6,919.3	2,928.2	2,598.8	329.39	8.890	
15,100.0	7,607.5	16,243.2	8,903.0	181.2	183.0	115.76	1,861.8	-7,019.3	2,929.5	2,595.8	333.69	8.779	
15,200.0	7,605.0	16,343.2	8,903.0	183.6	185.4	115.80	1,861.5	-7,119.3	2,930.8	2,592.8	338.00	8.671	
15,300.0	7,602.5	16,443.2	8,903.0	186.0	187.8	115.84	1,861.1	-7,219.2	2,932.1	2,589.8	342.30	8.566	
15,400.0	7,600.1	16,543.2	8,903.0	188.4	190.2	115.88	1,860.7	-7,319.2	2,933.4	2,586.8	346.60	8.463	
15,463.1	7,598.5	16,606.2	8,903.0	190.0	191.7	115.91	1,860.5	-7,382.3	2,934.2	2,584.9	349.31	8.400	ES, SF

Anticollision Report

Company:	Matador Production Company	**Local Co-ordinate Reference:**	Well Bo Howard 1211 Fed Com #124H
Project:	Ranger/Arrowhead	**TVD Reference:**	KB @ 3199.5usft
Reference Site:	Bo Howard 1211	**MD Reference:**	KB @ 3199.5usft
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Bo Howard 1211 Fed Com #124H	**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 Bo Howard 1211 - Cholula 12/11 W0IJ Fed Com 2H - Wellbore #1 - Actual — **Offset Site Error:** 0.0 usft

Survey Program: 157-MWD — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	141.75	-421.7	332.4	537.0				
100.0	100.0	93.7	93.7	0.1	0.1	141.78	-421.6	332.0	536.7	536.4	0.27	1,995.114	
200.0	200.0	197.2	197.2	0.5	0.4	141.89	-421.5	330.7	535.8	534.9	0.87	618.840	
300.0	300.0	297.7	297.7	0.8	0.7	142.05	-421.4	328.6	534.4	532.8	1.58	337.258	
400.0	400.0	399.7	399.6	1.2	1.1	142.21	-421.1	326.5	533.0	530.6	2.31	230.708	
500.0	500.0	500.1	500.1	1.6	1.5	142.35	-420.5	324.4	531.2	528.2	3.03	175.415	
600.0	600.0	595.7	595.6	1.9	1.8	142.36	-419.6	323.5	529.8	526.1	3.72	142.340	
700.0	700.0	692.4	692.3	2.3	2.1	142.26	-418.5	323.9	529.2	524.8	4.41	119.949	
800.0	800.0	793.2	793.1	2.6	2.5	142.17	-417.7	324.4	528.9	523.8	5.12	103.336	
900.0	900.0	893.5	893.4	3.0	2.8	142.11	-416.9	324.5	528.3	522.5	5.83	90.621	
1,000.0	1,000.0	993.2	993.1	3.4	3.2	142.06	-416.3	324.5	527.8	521.3	6.54	80.698	
1,100.0	1,100.0	1,093.9	1,093.8	3.7	3.5	141.98	-415.4	324.7	527.3	520.0	7.26	72.673	
1,200.0	1,200.0	1,194.9	1,194.8	4.1	3.9	141.89	-414.3	325.0	526.6	518.6	7.97	66.049	
1,300.0	1,300.0	1,296.0	1,295.8	4.4	4.3	-4.56	-413.0	325.1	523.9	515.2	8.67	60.403	
1,400.0	1,399.8	1,396.9	1,396.8	4.7	4.6	-4.77	-411.2	325.5	517.5	508.2	9.36	55.271	
1,500.0	1,499.5	1,495.0	1,494.8	5.1	5.0	-5.09	-409.1	326.3	507.6	497.6	10.05	50.529	
1,600.0	1,598.7	1,592.1	1,591.9	5.4	5.3	-5.46	-407.4	327.4	494.9	484.2	10.73	46.130	
1,656.4	1,654.4	1,648.8	1,648.6	5.6	5.5	-5.70	-406.4	328.0	486.2	475.1	11.12	43.714	
1,700.0	1,697.5	1,691.9	1,691.7	5.8	5.7	-5.87	-405.7	328.4	479.0	467.5	11.42	41.928	
1,800.0	1,796.3	1,790.6	1,790.4	6.2	6.0	-6.27	-404.1	329.1	462.4	450.3	12.11	38.170	
1,900.0	1,895.0	1,887.4	1,887.2	6.5	6.4	-6.70	-402.6	329.9	446.0	433.2	12.80	34.835	
2,000.0	1,993.7	1,985.0	1,984.8	6.9	6.7	-7.17	-401.4	331.1	430.1	416.6	13.50	31.868	
2,100.0	2,092.5	2,083.1	2,082.8	7.3	7.1	-7.67	-400.2	332.2	414.3	400.1	14.19	29.187	
2,200.0	2,191.2	2,181.5	2,181.3	7.7	7.4	-8.16	-399.4	333.3	398.6	383.8	14.89	26.767	
2,300.0	2,289.9	2,282.2	2,281.9	8.1	7.8	-8.67	-398.7	334.0	382.9	367.3	15.60	24.538	
2,400.0	2,388.7	2,381.7	2,381.4	8.5	8.1	-9.20	-397.6	334.4	366.6	350.3	16.31	22.474	
2,500.0	2,487.4	2,479.3	2,479.0	8.9	8.5	-9.78	-396.5	334.8	350.5	333.5	17.02	20.590	
2,600.0	2,586.1	2,577.2	2,576.9	9.4	8.8	-10.43	-395.6	335.5	334.7	317.0	17.73	18.875	
2,700.0	2,684.9	2,675.3	2,675.0	9.8	9.2	-11.09	-395.1	336.1	319.1	300.7	18.45	17.302	
2,800.0	2,783.6	2,773.9	2,773.6	10.2	9.5	-11.80	-394.7	336.7	303.8	284.6	19.16	15.854	
2,900.0	2,882.3	2,876.2	2,875.9	10.6	9.9	-12.63	-393.9	337.1	288.0	268.1	19.88	14.488	
3,000.0	2,981.1	2,981.2	2,980.8	11.0	10.3	-14.37	-388.9	338.2	270.0	249.4	20.60	13.107	
3,100.0	3,079.8	3,081.3	3,080.6	11.5	10.6	-16.76	-381.6	339.7	251.2	229.8	21.33	11.773	
3,200.0	3,178.5	3,181.6	3,180.4	11.9	11.0	-19.99	-372.2	341.2	231.5	209.5	22.08	10.488	
3,300.0	3,277.3	3,279.8	3,278.0	12.3	11.3	-24.12	-361.4	342.9	211.9	189.0	22.85	9.273	
3,400.0	3,376.0	3,376.8	3,374.2	12.7	11.7	-29.52	-348.9	345.1	193.3	169.6	23.67	8.166	
3,500.0	3,474.7	3,473.4	3,469.9	13.2	12.1	-36.14	-335.9	347.4	176.6	152.1	24.54	7.196	
3,600.0	3,573.5	3,569.9	3,565.5	13.6	12.4	-43.80	-323.2	349.5	162.6	137.1	25.46	6.386	
3,700.0	3,672.2	3,665.5	3,660.3	14.0	12.8	-52.35	-311.1	351.5	152.1	125.7	26.40	5.759	
3,800.0	3,770.9	3,760.7	3,754.5	14.5	13.1	-62.15	-298.1	354.3	146.6	119.3	27.35	5.361	
3,850.1	3,820.4	3,808.6	3,802.0	14.7	13.3	-67.32	-291.3	355.9	146.0	118.1	27.81	5.249	CC, ES
3,900.0	3,869.7	3,856.7	3,849.6	14.9	13.5	-72.53	-284.5	357.5	146.6	118.3	28.24	5.190	SF
4,000.0	3,968.4	3,953.0	3,944.8	15.3	13.9	-82.65	-270.9	360.6	151.6	122.5	29.05	5.217	
4,100.0	4,067.1	4,048.3	4,039.2	15.8	14.3	-91.77	-257.4	363.8	161.3	131.5	29.75	5.420	
4,200.0	4,165.9	4,144.2	4,134.0	16.2	14.6	-99.49	-244.2	367.9	175.2	144.8	30.41	5.764	
4,300.0	4,264.6	4,240.6	4,229.5	16.6	15.0	-105.98	-231.2	372.3	192.0	161.0	31.05	6.185	
4,400.0	4,363.3	4,337.2	4,325.1	17.1	15.4	-111.44	-218.2	376.6	210.8	179.1	31.68	6.653	
4,500.0	4,462.1	4,434.4	4,421.3	17.5	15.8	-116.06	-205.2	380.6	230.9	198.6	32.33	7.143	
4,600.0	4,560.8	4,531.4	4,517.4	17.9	16.1	-119.94	-192.4	384.5	252.0	219.0	32.99	7.639	
4,700.0	4,659.5	4,628.3	4,613.4	18.4	16.5	-123.23	-179.9	388.2	273.8	240.2	33.65	8.138	
4,800.0	4,758.3	4,725.4	4,709.6	18.8	16.9	-126.06	-167.4	391.9	296.2	261.9	34.32	8.632	
4,900.0	4,857.0	4,823.4	4,806.8	19.2	17.3	-128.53	-155.1	395.3	318.9	283.9	35.01	9.108	

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 Bo Howard 1211 Fed Com #124H
Project:	Ranger/Arrowhead	**TVD Reference:**	KB @ 3199.5usft
Reference Site:	Bo Howard 1211	**MD Reference:**	KB @ 3199.5usft
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Bo Howard 1211 Fed Com #124H	**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 Bo Howard 1211 - Cholula 12/11 W0IJ Fed Com 2H - Wellbore #1 - Actual

Offset Site Error: 0.0 usft

Survey Program: 157-MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,000.0	4,955.7	4,922.3	4,904.9	19.7	17.7	-130.73	-143.2	398.5	341.5	305.8	35.72	9.559	
5,100.0	5,054.5	5,021.4	5,003.4	20.1	18.1	-132.70	-131.9	401.1	363.8	327.4	36.44	9.984	
5,200.0	5,153.2	5,123.8	5,105.2	20.5	18.5	-134.55	-121.1	403.4	385.5	348.3	37.20	10.362	
5,300.0	5,251.9	5,219.3	5,200.1	21.0	18.8	-136.03	-111.6	405.8	407.1	369.2	37.87	10.748	
5,400.0	5,350.7	5,322.8	5,303.2	21.4	19.2	-137.45	-101.9	408.5	428.3	389.6	38.65	11.079	
5,500.0	5,449.4	5,416.8	5,396.7	21.9	19.6	-138.57	-93.3	411.3	449.5	410.2	39.31	11.434	
5,600.0	5,548.1	5,516.2	5,495.6	22.3	20.0	-139.68	-84.3	413.9	470.9	430.8	40.04	11.759	
5,700.0	5,646.9	5,612.6	5,591.6	22.7	20.3	-140.76	-75.7	415.6	492.0	451.3	40.73	12.079	
5,800.0	5,745.6	5,699.4	5,678.0	23.2	20.7	-141.65	-66.8	417.4	514.7	473.4	41.31	12.461	
5,900.0	5,844.3	5,790.7	5,768.6	23.6	21.0	-142.39	-56.1	420.4	539.0	497.1	41.94	12.853	
6,000.0	5,943.1	5,893.1	5,870.3	24.1	21.4	-143.17	-44.4	423.5	563.2	520.5	42.73	13.181	
6,100.0	6,041.8	5,987.0	5,963.5	24.5	21.8	-143.88	-33.6	425.8	587.4	544.0	43.40	13.535	
6,200.0	6,140.5	6,083.5	6,059.4	24.9	22.2	-144.51	-22.4	428.7	611.8	567.7	44.11	13.869	
6,300.0	6,239.3	6,172.6	6,147.7	25.4	22.5	-144.94	-11.6	432.5	636.9	592.2	44.74	14.237	
6,400.0	6,338.0	6,255.5	6,229.7	25.8	22.9	-145.23	-0.1	437.1	663.7	618.4	45.27	14.659	
6,500.0	6,436.7	6,371.7	6,344.7	26.2	23.3	-145.65	15.0	442.7	689.5	643.2	46.27	14.902	
6,600.0	6,535.5	6,461.1	6,433.3	26.7	23.7	-145.95	26.2	447.1	715.1	668.2	46.91	15.245	
6,664.9	6,599.6	6,524.5	6,496.1	27.0	24.0	-146.14	34.4	450.4	731.9	684.5	47.39	15.445	
6,700.0	6,634.2	6,557.7	6,528.9	27.1	24.1	-146.30	38.7	452.1	740.9	693.3	47.64	15.553	
6,800.0	6,733.3	6,650.8	6,621.1	27.5	24.5	-146.72	51.1	456.4	765.4	717.0	48.32	15.841	
6,900.0	6,832.7	6,746.2	6,715.6	27.9	24.9	-147.05	64.1	460.0	788.1	739.1	49.01	16.079	
7,000.0	6,932.3	6,851.0	6,819.3	28.3	25.3	-147.19	78.3	464.9	808.6	758.8	49.82	16.229	
7,100.0	7,032.1	6,961.8	6,929.3	28.7	25.7	-147.25	91.4	469.4	825.2	774.5	50.69	16.280	
7,200.0	7,132.1	7,056.2	7,022.9	29.0	26.1	-147.20	102.2	473.3	839.3	788.0	51.35	16.345	
7,273.4	7,205.5	7,124.9	7,091.0	29.2	26.4	-0.75	110.7	476.4	848.9	797.1	51.82	16.381	
7,300.0	7,232.1	7,152.7	7,118.6	29.3	26.5	89.34	114.1	477.5	852.2	800.1	52.02	16.381	
7,350.0	7,281.9	7,204.7	7,170.2	29.4	26.7	89.17	120.4	479.1	858.2	805.8	52.39	16.380	
7,400.0	7,331.1	7,248.4	7,213.6	29.6	26.9	89.15	125.8	480.2	864.2	811.6	52.66	16.411	
7,450.0	7,379.3	7,292.1	7,256.9	29.7	27.0	89.31	131.3	481.0	870.7	817.7	52.94	16.447	
7,500.0	7,426.2	7,342.3	7,306.7	29.7	27.2	89.81	137.7	481.5	877.3	824.0	53.29	16.462	
7,550.0	7,471.5	7,391.5	7,355.5	29.8	27.4	90.46	143.8	481.2	884.2	830.5	53.64	16.482	
7,600.0	7,514.7	7,431.8	7,395.5	29.9	27.6	91.01	148.7	481.0	891.6	837.7	53.91	16.538	
7,650.0	7,555.6	7,469.7	7,433.1	29.9	27.8	91.57	153.4	481.3	900.0	845.8	54.18	16.612	
7,700.0	7,593.8	7,500.9	7,464.1	29.9	27.9	91.89	157.4	481.8	909.7	855.3	54.39	16.724	
7,750.0	7,629.0	7,527.1	7,490.0	30.0	28.0	91.93	160.9	482.6	921.0	866.4	54.59	16.873	
7,800.0	7,661.0	7,550.1	7,512.7	30.0	28.1	91.72	164.1	483.5	934.2	879.4	54.78	17.054	
7,850.0	7,689.6	7,569.8	7,532.2	30.0	28.2	91.18	166.9	484.5	949.3	894.3	54.97	17.270	
7,900.0	7,714.5	7,589.6	7,551.7	30.0	28.2	90.48	169.9	485.6	966.4	911.2	55.21	17.505	
7,950.0	7,735.4	7,610.4	7,572.3	29.9	28.3	89.64	173.0	486.6	985.3	929.8	55.50	17.753	
8,000.0	7,752.4	7,627.0	7,588.7	29.9	28.4	88.36	175.4	487.4	1,006.0	950.2	55.79	18.033	
8,050.0	7,765.2	7,639.2	7,600.7	29.9	28.4	86.60	177.2	488.0	1,028.4	972.4	56.06	18.347	
8,100.0	7,773.8	7,646.6	7,608.1	29.9	28.5	84.33	178.3	488.3	1,052.5	996.2	56.30	18.693	
8,150.0	7,778.0	7,649.1	7,610.6	29.9	28.5	81.56	178.7	488.4	1,077.9	1,021.4	56.52	19.071	
8,173.4	7,778.5	7,648.5	7,610.0	29.9	28.5	80.09	178.6	488.4	1,090.2	1,033.6	56.61	19.258	
8,200.0	7,778.3	7,647.0	7,608.5	30.0	28.5	79.66	178.4	488.3	1,104.5	1,047.8	56.71	19.477	
8,244.5	7,777.6	7,643.8	7,605.3	30.2	28.5	78.87	177.9	488.2	1,129.4	1,072.6	56.87	19.860	
8,300.0	7,776.2	7,639.1	7,600.7	30.7	28.4	78.58	177.2	488.0	1,162.0	1,105.0	57.07	20.362	
8,400.0	7,773.7	7,630.3	7,592.0	31.7	28.4	78.04	175.9	487.6	1,225.0	1,167.5	57.42	21.335	
8,500.0	7,771.2	7,621.0	7,582.8	32.9	28.4	77.47	174.5	487.1	1,292.5	1,234.8	57.74	22.386	
8,600.0	7,768.8	7,611.2	7,573.1	34.2	28.3	76.86	173.1	486.7	1,364.0	1,306.0	58.03	23.506	
8,700.0	7,766.3	7,600.7	7,562.8	35.7	28.3	76.22	171.5	486.1	1,438.8	1,380.5	58.28	24.687	
8,800.0	7,763.8	7,589.6	7,551.8	37.2	28.2	75.55	169.9	485.6	1,516.5	1,458.0	58.51	25.920	

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 Bo Howard 1211 Fed Com #124H
Project:	Ranger/Arrowhead	**TVD Reference:**	KB @ 3199.5usft
Reference Site:	Bo Howard 1211	**MD Reference:**	KB @ 3199.5usft
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Bo Howard 1211 Fed Com #124H	**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 Bo Howard 1211 - Cholula 12/11 W0IJ Fed Com 2H - Wellbore #1 - Actual

Offset Site Error: 0.0 usft

Survey Program: 157-MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
8,900.0	7,761.3	7,580.0	7,542.3	38.9	28.2	74.96	168.4	485.0	1,596.6	1,537.9	58.72	27.192	
9,000.0	7,758.8	7,580.0	7,542.3	40.6	28.2	74.96	168.4	485.0	1,678.9	1,619.9	58.98	28.467	
9,100.0	7,756.4	10,520.6	9,192.6	42.4	48.3	145.34	259.5	-1,050.3	1,758.1	1,701.0	57.12	30.780	
9,200.0	7,753.9	10,614.9	9,191.3	44.3	50.0	145.38	258.2	-1,144.6	1,758.6	1,699.2	59.32	29.646	
9,300.0	7,751.4	10,726.8	9,189.8	46.2	52.1	145.44	256.1	-1,256.4	1,758.8	1,697.0	61.77	28.475	
9,400.0	7,748.9	10,832.3	9,187.2	48.1	54.1	145.46	254.6	-1,361.9	1,758.4	1,694.1	64.24	27.372	
9,500.0	7,746.4	10,933.3	9,184.8	50.1	56.1	145.49	253.0	-1,462.9	1,757.9	1,691.2	66.70	26.353	
9,600.0	7,743.9	11,034.5	9,182.3	52.2	58.1	145.52	251.3	-1,564.0	1,757.3	1,688.1	69.21	25.390	
9,700.0	7,741.5	11,135.7	9,180.0	54.3	60.1	145.56	249.3	-1,665.2	1,756.7	1,684.9	71.75	24.484	
9,776.4	7,739.6	11,200.4	9,178.6	55.9	61.5	145.58	248.2	-1,729.9	1,756.4	1,682.8	73.55	23.880	
9,800.0	7,739.0	11,219.4	9,178.3	56.4	61.9	145.59	247.9	-1,748.9	1,756.4	1,682.3	74.10	23.705	
9,900.0	7,736.5	11,333.7	9,176.2	58.5	64.2	145.63	246.3	-1,863.1	1,756.6	1,679.7	76.87	22.851	
9,956.5	7,735.1	11,380.5	9,175.2	59.7	65.2	145.65	245.6	-1,910.0	1,756.4	1,678.2	78.22	22.454	
10,000.0	7,734.0	11,414.7	9,174.7	60.7	65.9	145.67	244.9	-1,944.1	1,756.5	1,677.3	79.23	22.171	
10,100.0	7,731.5	11,523.7	9,173.7	62.8	68.2	145.74	242.7	-2,053.1	1,757.0	1,675.1	81.93	21.446	
10,200.0	7,729.1	11,639.5	9,171.0	65.0	70.7	145.77	240.9	-2,168.8	1,756.5	1,671.7	84.81	20.711	
10,300.0	7,726.6	11,744.1	9,167.7	67.3	73.0	145.79	239.3	-2,273.4	1,755.5	1,667.9	87.59	20.043	
10,400.0	7,724.1	11,848.5	9,164.1	69.5	75.3	145.79	237.9	-2,377.7	1,754.2	1,663.9	90.40	19.406	
10,500.0	7,721.6	11,948.7	9,160.3	71.7	77.5	145.78	236.5	-2,477.8	1,752.8	1,659.6	93.17	18.812	
10,600.0	7,719.1	12,040.3	9,157.1	74.0	79.5	145.78	235.4	-2,569.3	1,751.6	1,655.7	95.85	18.274	
10,700.0	7,716.7	12,131.7	9,154.6	76.3	81.6	145.80	234.2	-2,660.7	1,750.9	1,652.4	98.51	17.775	
10,800.0	7,714.2	12,225.9	9,152.4	78.6	83.7	145.81	233.0	-2,754.9	1,750.7	1,649.4	101.20	17.298	
10,829.4	7,713.5	12,253.5	9,151.8	79.2	84.3	145.82	232.6	-2,782.5	1,750.6	1,648.6	101.99	17.164	
10,900.0	7,711.7	12,319.6	9,150.6	80.9	85.8	145.84	231.7	-2,848.5	1,750.7	1,646.8	103.88	16.853	
11,000.0	7,709.2	12,411.2	9,149.3	83.2	87.9	145.88	230.5	-2,940.2	1,751.2	1,644.7	106.52	16.440	
11,100.0	7,706.7	12,505.5	9,149.1	85.5	90.0	145.96	228.5	-3,034.4	1,752.2	1,643.1	109.13	16.057	
11,200.0	7,704.3	12,600.4	9,147.7	87.8	92.2	145.97	228.2	-3,129.3	1,753.2	1,641.3	111.88	15.671	
11,300.0	7,701.8	12,689.4	9,146.1	90.1	94.2	145.92	229.8	-3,218.3	1,755.1	1,640.5	114.67	15.306	
11,400.0	7,699.3	12,799.3	9,143.4	92.5	96.8	145.84	232.0	-3,328.1	1,756.5	1,638.7	117.87	14.903	
11,500.0	7,696.8	12,896.0	9,141.6	94.8	99.0	145.81	233.3	-3,424.8	1,758.2	1,637.4	120.79	14.556	
11,600.0	7,694.3	13,003.2	9,139.4	97.1	101.5	145.76	234.6	-3,532.0	1,759.6	1,635.7	123.90	14.201	
11,700.0	7,691.9	13,100.2	9,137.2	99.5	103.8	145.71	235.8	-3,628.9	1,760.8	1,633.9	126.86	13.879	
11,800.0	7,689.4	13,201.2	9,135.2	101.8	106.1	145.67	237.1	-3,729.9	1,762.2	1,632.3	129.89	13.567	
11,900.0	7,686.9	13,302.6	9,132.9	104.2	108.5	145.63	238.3	-3,831.2	1,763.4	1,630.5	132.94	13.264	
12,000.0	7,684.4	13,430.5	9,129.8	106.6	111.5	145.60	238.8	-3,959.2	1,764.0	1,627.7	136.38	12.934	
12,100.0	7,681.9	13,541.5	9,126.6	108.9	114.1	145.61	237.5	-4,070.0	1,763.4	1,623.9	139.46	12.644	
12,200.0	7,679.4	13,646.8	9,122.9	111.3	116.6	145.60	236.2	-4,175.3	1,762.3	1,619.8	142.49	12.368	
12,300.0	7,677.0	13,738.5	9,119.8	113.7	118.7	145.61	234.9	-4,266.9	1,761.0	1,615.7	145.29	12.120	
12,400.0	7,674.5	13,828.4	9,118.0	116.1	120.8	145.64	233.3	-4,356.8	1,760.8	1,612.8	148.00	11.897	
12,500.0	7,672.0	13,934.4	9,115.3	118.5	123.3	145.67	231.8	-4,462.7	1,760.1	1,609.2	150.98	11.658	
12,579.6	7,670.0	14,004.0	9,113.8	120.4	125.0	145.70	230.4	-4,532.3	1,759.9	1,606.8	153.10	11.495	
12,600.0	7,669.5	14,020.2	9,113.6	120.9	125.4	145.70	230.2	-4,548.5	1,759.9	1,606.3	153.62	11.457	
12,700.0	7,667.0	14,109.4	9,112.5	123.2	127.5	145.74	229.2	-4,637.7	1,760.7	1,604.3	156.31	11.264	
12,800.0	7,664.6	14,217.4	9,110.8	125.6	130.0	145.77	228.1	-4,745.7	1,761.1	1,601.8	159.31	11.055	
12,900.0	7,662.1	14,304.1	9,109.7	128.0	132.1	145.80	226.9	-4,832.4	1,761.8	1,599.8	161.95	10.879	
13,000.0	7,659.6	14,398.6	9,109.7	130.4	134.3	145.86	225.9	-4,926.9	1,763.5	1,598.8	164.65	10.710	
13,100.0	7,657.1	14,525.4	9,107.5	132.8	137.3	145.89	224.7	-5,053.6	1,763.9	1,595.9	167.95	10.502	
13,200.0	7,654.6	14,632.6	9,104.8	135.2	139.9	145.90	223.7	-5,160.8	1,763.6	1,592.6	170.99	10.314	
13,287.6	7,652.5	14,712.1	9,102.8	137.3	141.8	145.91	222.8	-5,240.3	1,763.3	1,589.9	173.43	10.168	
13,300.0	7,652.2	14,723.0	9,102.6	137.6	142.1	145.91	222.6	-5,251.1	1,763.4	1,589.6	173.76	10.148	
13,400.0	7,649.7	14,812.4	9,101.2	140.0	144.2	145.94	221.5	-5,340.5	1,763.7	1,587.3	176.46	9.995	
13,500.0	7,647.2	14,923.9	9,099.4	142.4	146.9	145.97	220.3	-5,452.0	1,764.3	1,584.8	179.50	9.829	

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 Bo Howard 1211 Fed Com #124H
Project:	Ranger/Arrowhead	**TVD Reference:**	KB @ 3199.5usft
Reference Site:	Bo Howard 1211	**MD Reference:**	KB @ 3199.5usft
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Bo Howard 1211 Fed Com #124H	**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 Bo Howard 1211 - Cholula 12/11 W0IJ Fed Com 2H - Wellbore #1 - Actual

Offset Site Error: 0.0 usft

Survey Program: 157-MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
13,600.0	7,644.7	15,023.3	9,097.3	144.9	149.2	145.99	219.2	-5,551.4	1,764.3	1,581.9	182.39	9.673	
13,700.0	7,642.2	15,116.3	9,095.8	147.3	151.5	146.03	218.0	-5,644.4	1,764.5	1,579.4	185.14	9.531	
13,800.0	7,639.8	15,238.3	9,092.6	149.7	154.4	146.05	216.4	-5,766.3	1,764.0	1,575.6	188.37	9.364	
13,865.8	7,638.1	15,290.3	9,091.3	151.3	155.6	146.06	215.7	-5,818.3	1,763.7	1,573.7	190.09	9.279	
13,900.0	7,637.3	15,322.2	9,090.7	152.1	156.4	146.06	215.3	-5,850.2	1,763.8	1,572.8	191.03	9.233	
14,000.0	7,634.8	15,430.6	9,088.1	154.5	159.0	146.08	214.2	-5,958.5	1,763.6	1,569.5	194.08	9.087	
14,082.1	7,632.8	15,506.5	9,086.1	156.5	160.8	146.08	213.5	-6,034.5	1,763.4	1,567.0	196.42	8.978	
14,100.0	7,632.3	15,519.7	9,085.8	156.9	161.1	146.08	213.4	-6,047.7	1,763.4	1,566.5	196.87	8.957	
14,200.0	7,629.8	15,602.5	9,084.9	159.3	163.1	146.11	212.7	-6,130.4	1,764.4	1,564.9	199.47	8.846	
14,288.8	7,627.6	15,713.3	9,081.9	161.5	165.8	146.10	212.1	-6,241.2	1,764.0	1,561.5	202.48	8.712	
14,300.0	7,627.4	15,719.6	9,081.8	161.8	165.9	146.10	212.1	-6,247.5	1,764.0	1,561.3	202.74	8.701	
14,400.0	7,624.9	15,778.0	9,081.5	164.2	167.3	146.13	211.5	-6,305.9	1,765.6	1,560.6	204.91	8.616	
14,500.0	7,622.4	15,911.2	9,080.9	166.6	170.6	146.19	210.4	-6,439.0	1,767.1	1,558.8	208.22	8.486	
14,600.0	7,619.9	16,014.9	9,079.7	169.0	173.1	146.24	208.9	-6,542.7	1,767.7	1,556.6	211.07	8.375	
14,700.0	7,617.4	16,160.2	9,075.6	171.5	176.6	146.23	207.9	-6,687.9	1,767.5	1,552.8	214.74	8.231	
14,800.0	7,614.9	16,245.8	9,072.1	173.9	178.6	146.21	207.1	-6,773.5	1,766.0	1,548.4	217.57	8.117	
14,900.0	7,612.5	16,346.2	9,068.6	176.3	181.0	146.22	205.7	-6,873.9	1,764.8	1,544.2	220.54	8.002	
14,955.7	7,611.1	16,380.3	9,067.5	177.7	181.9	146.21	205.6	-6,907.8	1,764.4	1,542.5	221.91	7.951	
15,000.0	7,610.0	16,407.7	9,066.7	178.7	182.5	146.20	205.8	-6,935.3	1,764.7	1,541.6	223.01	7.913	
15,100.0	7,607.5	16,498.9	9,064.5	181.2	184.7	146.12	208.0	-7,026.4	1,766.3	1,540.1	226.16	7.810	
15,200.0	7,605.0	16,582.2	9,062.4	183.6	186.8	146.06	209.8	-7,109.7	1,767.9	1,538.8	229.11	7.716	
15,300.0	7,602.5	16,697.0	9,061.3	186.0	189.5	146.01	212.2	-7,224.5	1,770.8	1,538.2	232.59	7.613	
15,400.0	7,600.1	16,795.3	9,058.7	188.4	191.9	145.94	214.0	-7,322.7	1,772.0	1,536.1	235.85	7.513	
15,463.1	7,598.5	16,845.0	9,057.7	190.0	193.1	145.91	215.0	-7,372.4	1,773.2	1,535.5	237.65	7.461	

Anticollision Report

Company:	Matador Production Company	**Local Co-ordinate Reference:**	Well Bo Howard 1211 Fed Com #124H
Project:	Ranger/Arrowhead	**TVD Reference:**	KB @ 3199.5usft
Reference Site:	Bo Howard 1211	**MD Reference:**	KB @ 3199.5usft
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Bo Howard 1211 Fed Com #124H	**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 Bo Howard 1211 - Cholula 12/11 W0PO Fed Com #1H - Wellbore #1 - Actual

Offset Site Error: 0.0 usft

Survey Program: 248-MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	143.65	-451.7	332.4	560.9				
100.0	100.0	90.8	90.8	0.1	0.1	143.66	-451.8	332.3	560.8	560.5	0.27	2,056.030	
200.0	200.0	191.2	191.2	0.5	0.3	143.71	-452.0	331.9	560.7	559.9	0.79	708.893	
300.0	300.0	293.7	293.7	0.8	0.6	143.78	-452.2	331.2	560.5	559.1	1.40	400.448	
400.0	400.0	395.6	395.6	1.2	0.9	143.75	-451.4	330.9	559.7	557.6	2.12	264.423	
500.0	500.0	496.7	496.7	1.6	1.3	143.77	-450.6	330.2	558.7	555.9	2.83	197.332	
600.0	600.0	594.7	594.7	1.9	1.6	143.79	-450.0	329.5	557.8	554.2	3.54	157.579	
700.0	700.0	695.0	695.0	2.3	2.0	143.83	-449.6	328.7	557.0	552.7	4.26	130.841	
800.0	800.0	795.3	795.3	2.6	2.3	143.87	-449.2	327.9	556.1	551.1	4.97	111.788	
900.0	900.0	894.5	894.5	3.0	2.7	143.91	-448.7	327.2	555.4	549.7	5.69	97.630	
997.3	997.3	987.8	987.8	3.3	3.0	143.93	-448.5	326.7	554.9	548.5	6.36	87.200	
1,000.0	1,000.0	990.3	990.3	3.4	3.0	143.93	-448.5	326.7	554.9	548.5	6.38	86.947	
1,100.0	1,100.0	1,083.7	1,083.7	3.7	3.3	143.94	-449.0	327.0	555.5	548.4	7.06	78.673	
1,200.0	1,200.0	1,181.5	1,181.4	4.1	3.7	143.99	-450.4	327.4	556.9	549.2	7.75	71.884	
1,300.0	1,300.0	1,278.7	1,278.7	4.4	4.0	-2.20	-452.7	327.3	557.0	548.6	8.42	66.132	
1,400.0	1,399.8	1,372.6	1,372.4	4.7	4.3	-2.13	-455.3	328.1	554.5	545.5	9.07	61.117	
1,500.0	1,499.5	1,474.7	1,474.6	5.1	4.7	-2.20	-457.7	330.1	548.8	539.1	9.76	56.243	
1,600.0	1,598.7	1,566.6	1,566.4	5.4	5.0	-2.38	-459.7	333.1	540.3	529.8	10.41	51.906	
1,656.4	1,654.4	1,620.1	1,619.8	5.6	5.2	-2.53	-461.0	335.3	534.4	523.6	10.78	49.553	
1,700.0	1,697.5	1,661.5	1,661.2	5.8	5.3	-2.65	-462.1	337.1	529.6	518.5	11.07	47.818	
1,800.0	1,796.3	1,759.6	1,759.0	6.2	5.7	-2.97	-465.1	342.0	519.0	507.3	11.76	44.151	
1,900.0	1,895.0	1,868.6	1,867.9	6.5	6.1	-3.34	-467.4	346.7	507.4	494.9	12.49	40.637	
2,000.0	1,993.7	1,970.4	1,969.7	6.9	6.4	-3.75	-468.4	350.6	494.7	481.5	13.19	37.502	
2,100.0	2,092.5	2,071.3	2,070.5	7.3	6.8	-4.13	-469.3	354.1	481.6	467.7	13.89	34.664	
2,200.0	2,191.2	2,172.3	2,171.4	7.7	7.1	-4.35	-470.8	356.0	468.1	453.5	14.60	32.060	
2,300.0	2,289.9	2,270.0	2,269.1	8.1	7.5	-4.39	-473.1	356.6	454.5	439.2	15.30	29.705	
2,400.0	2,388.7	2,365.5	2,364.6	8.5	7.8	-4.28	-476.5	356.7	441.5	425.5	16.00	27.604	
2,500.0	2,487.4	2,463.6	2,462.6	8.9	8.2	-4.03	-481.1	356.5	429.2	412.5	16.70	25.703	
2,600.0	2,586.1	2,565.6	2,564.5	9.4	8.5	-3.91	-485.0	357.0	416.7	399.3	17.42	23.922	
2,700.0	2,684.9	2,665.2	2,664.1	9.8	8.9	-4.14	-486.8	359.1	403.6	385.5	18.13	22.260	
2,800.0	2,783.6	2,766.5	2,765.3	10.2	9.2	-4.63	-487.6	362.4	390.3	371.5	18.85	20.712	
2,900.0	2,882.3	2,870.4	2,869.2	10.6	9.6	-5.20	-487.3	365.1	375.9	356.4	19.57	19.213	
3,000.0	2,981.1	2,963.1	2,961.8	11.0	9.9	-5.50	-488.2	366.6	361.9	341.7	20.27	17.859	
3,100.0	3,079.8	3,056.6	3,055.2	11.5	10.3	-5.37	-492.2	367.0	349.7	328.7	20.97	16.677	
3,200.0	3,178.5	3,154.9	3,153.4	11.9	10.6	-4.96	-498.1	366.8	338.3	316.7	21.68	15.606	
3,300.0	3,277.3	3,255.1	3,253.4	12.3	11.0	-4.51	-504.0	366.5	327.0	304.6	22.40	14.597	
3,400.0	3,376.0	3,354.8	3,352.9	12.7	11.3	-4.01	-509.9	366.0	315.5	292.3	23.12	13.645	
3,500.0	3,474.7	3,451.0	3,449.0	13.2	11.7	-3.48	-515.6	365.6	304.1	280.2	23.83	12.759	
3,600.0	3,573.5	3,540.4	3,538.0	13.6	12.0	-2.77	-523.3	365.8	295.2	270.7	24.51	12.045	
3,700.0	3,672.2	3,630.5	3,627.5	14.0	12.3	-1.81	-534.3	367.0	289.9	264.8	25.16	11.522	
3,800.0	3,770.9	3,726.8	3,722.7	14.5	12.7	-0.59	-548.2	368.8	287.0	261.2	25.86	11.101	
3,900.0	3,869.7	3,827.8	3,822.6	14.9	13.1	0.66	-562.8	371.1	284.5	257.9	26.60	10.696	
4,000.0	3,968.4	3,929.4	3,923.1	15.3	13.5	1.87	-577.0	373.4	281.7	254.3	27.34	10.301	
4,100.0	4,067.1	4,032.4	4,025.3	15.8	13.9	3.00	-590.2	375.8	277.9	249.8	28.10	9.889	
4,200.0	4,165.9	4,135.7	4,127.9	16.2	14.3	4.01	-602.1	378.2	273.2	244.3	28.86	9.465	
4,300.0	4,264.6	4,233.7	4,225.3	16.6	14.7	4.99	-612.5	380.2	267.6	238.0	29.58	9.046	
4,400.0	4,363.3	4,331.6	4,322.4	17.1	15.0	6.47	-625.3	380.9	263.6	233.3	30.30	8.700	
4,500.0	4,462.1	4,434.0	4,423.9	17.5	15.4	8.11	-638.3	381.3	259.5	228.4	31.07	8.352	
4,600.0	4,560.8	4,529.6	4,518.8	17.9	15.8	9.50	-649.9	382.4	255.2	223.5	31.77	8.033	
4,700.0	4,659.5	4,628.8	4,617.2	18.4	16.2	10.82	-663.1	384.8	252.8	220.3	32.51	7.775	
4,800.0	4,758.3	4,731.9	4,719.4	18.8	16.6	12.14	-675.9	387.3	249.7	216.4	33.29	7.499	
4,900.0	4,857.0	4,829.2	4,816.0	19.2	17.0	13.25	-687.5	390.2	246.3	212.3	34.02	7.240	

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 Bo Howard 1211 Fed Com #124H
Project:	Ranger/Arrowhead	**TVD Reference:**	KB @ 3199.5usft
Reference Site:	Bo Howard 1211	**MD Reference:**	KB @ 3199.5usft
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Bo Howard 1211 Fed Com #124H	**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 Bo Howard 1211 - Cholula 12/11 W0PO Fed Com #1H - Wellbore #1 - Actual — **Offset Site Error:** 0.0 usft

Survey Program: 248-MWD — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,000.0	4,955.7	4,930.8	4,916.8	19.7	17.4	14.04	-699.3	395.0	243.4	208.6	34.78	6.998	
5,100.0	5,054.5	5,034.8	5,020.1	20.1	17.8	14.86	-710.1	399.5	239.3	203.7	35.56	6.728	
5,200.0	5,153.2	5,136.1	5,120.9	20.5	18.2	15.82	-719.5	402.9	233.8	197.5	36.33	6.436	
5,300.0	5,251.9	5,231.8	5,216.1	21.0	18.6	17.02	-729.6	405.5	229.4	192.4	37.06	6.190	
5,400.0	5,350.7	5,333.7	5,317.3	21.4	19.0	18.52	-740.5	407.5	225.1	187.3	37.85	5.948	
5,500.0	5,449.4	5,432.2	5,415.2	21.9	19.3	20.14	-751.4	409.2	221.2	182.6	38.62	5.727	
5,600.0	5,548.1	5,532.2	5,514.6	22.3	19.7	21.88	-762.2	410.6	217.3	177.8	39.41	5.513	
5,700.0	5,646.9	5,629.4	5,611.2	22.7	20.1	23.40	-773.3	413.0	214.2	174.1	40.18	5.332	
5,800.0	5,745.6	5,728.5	5,709.5	23.2	20.5	24.88	-785.5	416.0	212.4	171.4	40.96	5.185	
5,900.0	5,844.3	5,829.4	5,809.5	23.6	20.9	26.51	-797.5	418.6	210.2	168.4	41.78	5.031	
6,000.0	5,943.1	5,930.0	5,909.4	24.1	21.3	27.77	-809.2	422.7	208.0	165.4	42.59	4.884	
6,100.0	6,041.8	6,031.2	6,010.0	24.5	21.7	29.04	-820.2	426.8	205.2	161.8	43.41	4.728	
6,200.0	6,140.5	6,131.6	6,109.6	24.9	22.1	29.99	-830.6	432.1	202.1	157.9	44.21	4.571	
6,300.0	6,239.3	6,233.6	6,211.0	25.4	22.5	30.97	-840.7	437.4	198.6	153.5	45.03	4.410	
6,400.0	6,338.0	6,333.5	6,310.4	25.8	22.9	32.15	-849.7	442.1	194.3	148.4	45.84	4.237	
6,500.0	6,436.7	6,430.7	6,407.0	26.2	23.3	33.11	-859.3	447.3	190.7	144.1	46.64	4.090	
6,600.0	6,535.5	6,530.4	6,505.9	26.7	23.7	33.86	-870.0	453.6	188.2	140.8	47.44	3.968	
6,664.9	6,599.6	6,593.7	6,568.7	27.0	23.9	34.37	-876.9	457.6	186.8	138.9	47.95	3.896	
6,700.0	6,634.2	6,627.7	6,602.4	27.1	24.1	34.71	-881.0	459.3	186.5	138.3	48.23	3.867	
6,712.1	6,646.2	6,639.7	6,614.3	27.2	24.1	34.84	-882.4	459.9	186.5	138.1	48.32	3.859	CC
6,800.0	6,733.3	6,728.4	6,702.3	27.5	24.5	35.74	-892.9	463.6	187.1	138.1	49.05	3.814	ES
6,900.0	6,832.7	6,831.7	6,804.9	27.9	24.9	36.56	-904.0	467.2	188.8	138.9	49.88	3.784	
7,000.0	6,932.3	6,932.6	6,905.3	28.3	25.3	37.14	-913.5	470.0	191.2	140.6	50.65	3.775	SF
7,100.0	7,032.1	7,028.9	7,001.1	28.7	25.7	37.32	-923.5	472.3	196.8	145.5	51.35	3.832	
7,200.0	7,132.1	7,129.6	7,101.2	29.0	26.1	37.07	-934.6	474.8	205.0	153.0	52.05	3.939	
7,273.4	7,205.5	7,204.6	7,175.8	29.2	26.4	-176.93	-942.1	476.2	211.8	159.2	52.55	4.030	
7,300.0	7,232.1	7,230.0	7,201.1	29.3	26.5	-86.68	-944.7	476.6	214.4	161.7	52.70	4.068	
7,350.0	7,281.9	7,278.0	7,248.8	29.4	26.7	-87.62	-949.7	477.5	219.4	166.5	52.91	4.146	
7,400.0	7,331.1	7,326.8	7,297.2	29.6	26.9	-89.60	-955.0	478.5	224.7	171.6	53.06	4.235	
7,450.0	7,379.3	7,375.3	7,345.5	29.7	27.0	-92.42	-960.1	479.5	230.5	177.3	53.17	4.335	
7,500.0	7,426.2	7,424.1	7,394.0	29.7	27.2	-96.00	-965.0	480.5	237.2	184.0	53.26	4.454	
7,550.0	7,471.5	7,471.6	7,441.3	29.8	27.4	-100.08	-969.1	481.7	245.5	192.1	53.35	4.601	
7,600.0	7,514.7	7,514.5	7,484.1	29.9	27.6	-103.99	-972.5	482.9	256.2	202.7	53.48	4.790	
7,650.0	7,555.6	7,554.0	7,523.4	29.9	27.7	-107.53	-975.5	484.1	270.5	216.8	53.70	5.037	
7,700.0	7,593.8	7,590.1	7,559.4	29.9	27.9	-110.50	-978.3	485.4	288.8	234.8	54.01	5.348	
7,750.0	7,629.0	7,622.1	7,591.3	30.0	28.0	-112.61	-980.8	486.7	311.6	257.2	54.39	5.730	
7,800.0	7,661.0	7,650.3	7,619.4	30.0	28.1	-113.78	-983.0	488.1	338.8	283.9	54.81	6.180	
7,850.0	7,689.6	7,674.6	7,643.6	30.0	28.2	-113.87	-984.9	489.5	370.0	314.7	55.25	6.697	
7,900.0	7,714.5	7,695.5	7,664.4	30.0	28.3	-112.79	-986.6	490.8	404.9	349.2	55.68	7.271	
7,950.0	7,735.4	7,712.4	7,681.2	29.9	28.3	-110.29	-988.0	491.9	442.8	386.8	56.08	7.897	
8,000.0	7,752.4	7,725.3	7,694.0	29.9	28.4	-106.11	-989.1	492.7	483.3	426.9	56.43	8.565	
8,050.0	7,765.2	7,734.2	7,702.8	29.9	28.4	-100.00	-989.9	493.3	525.9	469.1	56.74	9.267	
8,100.0	7,773.8	7,738.9	7,707.5	29.9	28.5	-91.82	-990.3	493.6	569.8	512.8	57.01	9.995	
8,150.0	7,778.0	7,739.7	7,708.3	29.9	28.5	-81.76	-990.3	493.7	614.8	557.5	57.24	10.741	
8,173.4	7,778.5	7,738.7	7,707.3	29.9	28.5	-76.59	-990.2	493.6	636.0	578.7	57.33	11.094	
8,200.0	7,778.3	7,736.9	7,705.5	30.0	28.4	-75.09	-990.1	493.5	660.3	602.8	57.43	11.497	
8,244.5	7,777.6	7,733.5	7,702.2	30.2	28.4	-72.42	-989.8	493.3	701.1	643.6	57.57	12.178	
8,300.0	7,776.2	7,729.0	7,697.6	30.7	28.4	-71.48	-989.4	493.0	752.6	694.8	57.73	13.035	
8,400.0	7,773.7	7,720.9	7,689.6	31.7	28.4	-69.85	-988.7	492.4	846.5	788.6	57.97	14.603	
8,500.0	7,771.2	7,712.9	7,681.7	32.9	28.4	-68.27	-988.1	491.9	941.6	883.5	58.15	16.193	
8,600.0	7,768.8	7,705.2	7,674.0	34.2	28.3	-66.76	-987.4	491.4	1,037.6	979.3	58.30	17.799	
8,700.0	7,766.3	7,697.6	7,666.5	35.7	28.3	-65.30	-986.8	490.9	1,134.2	1,075.8	58.41	19.417	

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 Bo Howard 1211 Fed Com #124H
Project:	Ranger/Arrowhead	**TVD Reference:**	KB @ 3199.5usft
Reference Site:	Bo Howard 1211	**MD Reference:**	KB @ 3199.5usft
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Bo Howard 1211 Fed Com #124H	**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 Bo Howard 1211 - Cholula 12/11 W0PO Fed Com #1H - Wellbore #1 - Actual — **Offset Site Error:** 0.0 usft

Survey Program: 248-MWD — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
8,800.0	7,763.8	7,690.2	7,659.1	37.2	28.3	-63.90	-986.2	490.5	1,231.3	1,172.8	58.51	21.044	
8,900.0	7,761.3	7,683.0	7,651.9	38.9	28.2	-62.55	-985.6	490.0	1,328.8	1,270.2	58.59	22.680	
9,000.0	7,758.8	7,675.8	7,644.8	40.6	28.2	-61.26	-985.0	489.6	1,426.6	1,367.9	58.66	24.321	
9,100.0	7,756.4	10,538.3	9,195.5	42.4	47.7	-167.54	-1,060.4	-1,037.5	1,483.9	1,451.5	32.36	45.852	
9,200.0	7,753.9	10,641.1	9,194.1	44.3	49.6	-167.66	-1,058.2	-1,140.2	1,484.3	1,450.5	33.79	43.925	
9,300.0	7,751.4	10,790.6	9,191.1	46.2	52.4	-167.89	-1,053.1	-1,289.6	1,484.4	1,448.8	35.61	41.685	
9,400.0	7,748.9	10,901.1	9,185.4	48.1	54.5	-168.03	-1,049.4	-1,400.0	1,481.0	1,443.8	37.15	39.859	
9,500.0	7,746.4	11,000.2	9,180.0	50.1	56.5	-168.14	-1,046.5	-1,498.8	1,477.3	1,438.7	38.62	38.247	
9,600.0	7,743.9	11,094.4	9,174.8	52.2	58.4	-168.20	-1,044.9	-1,592.8	1,473.9	1,433.8	40.10	36.758	
9,700.0	7,741.5	11,184.7	9,169.8	54.3	60.2	-168.16	-1,045.9	-1,683.0	1,470.9	1,429.3	41.62	35.339	
9,800.0	7,739.0	11,274.5	9,165.1	56.4	62.1	-168.05	-1,048.9	-1,772.6	1,468.8	1,425.5	43.23	33.978	
9,900.0	7,736.5	11,371.5	9,160.2	58.5	64.1	-167.88	-1,053.3	-1,869.5	1,467.1	1,422.1	44.97	32.623	
10,000.0	7,734.0	11,466.7	9,155.4	60.7	66.2	-167.72	-1,057.6	-1,964.4	1,465.5	1,418.8	46.73	31.363	
10,100.0	7,731.5	11,551.7	9,151.7	62.8	68.0	-167.56	-1,062.1	-2,049.2	1,464.6	1,416.2	48.43	30.244	
10,123.1	7,731.0	11,570.6	9,151.0	63.3	68.4	-167.52	-1,063.2	-2,068.1	1,464.6	1,415.8	48.82	29.999	
10,200.0	7,729.1	11,640.2	9,148.7	65.0	69.9	-167.35	-1,067.7	-2,137.5	1,464.9	1,414.7	50.23	29.165	
10,300.0	7,726.6	11,747.9	9,144.9	67.3	72.2	-167.13	-1,074.0	-2,244.9	1,465.1	1,412.8	52.24	28.044	
10,400.0	7,724.1	11,851.0	9,141.9	69.5	74.5	-167.07	-1,076.1	-2,348.0	1,465.0	1,411.0	54.07	27.095	
10,500.0	7,721.6	11,949.8	9,139.3	71.7	76.7	-167.08	-1,076.4	-2,446.7	1,464.7	1,408.9	55.80	26.249	
10,527.0	7,721.0	11,974.8	9,138.6	72.3	77.2	-167.08	-1,076.6	-2,471.7	1,464.7	1,408.5	56.26	26.035	
10,600.0	7,719.1	12,049.4	9,136.7	74.0	78.9	-167.07	-1,077.2	-2,546.2	1,464.7	1,407.2	57.56	25.445	
10,666.7	7,717.5	12,114.6	9,135.1	75.5	80.4	-167.07	-1,077.5	-2,611.5	1,464.6	1,405.9	58.73	24.940	
10,700.0	7,716.7	12,144.0	9,134.4	76.3	81.0	-167.08	-1,077.5	-2,640.8	1,464.7	1,405.4	59.28	24.709	
10,800.0	7,714.2	12,244.4	9,132.4	78.6	83.3	-167.10	-1,077.8	-2,741.2	1,465.1	1,404.1	61.03	24.005	
10,900.0	7,711.7	12,356.1	9,129.5	80.9	85.8	-167.10	-1,078.3	-2,852.8	1,465.0	1,402.1	62.90	23.289	
10,981.2	7,709.7	12,429.1	9,127.5	82.7	87.5	-167.11	-1,078.5	-2,925.9	1,464.6	1,400.4	64.28	22.786	
11,000.0	7,709.2	12,445.1	9,127.1	83.2	87.8	-167.11	-1,078.6	-2,941.8	1,464.7	1,400.1	64.59	22.677	
11,100.0	7,706.7	12,542.4	9,125.1	85.5	90.1	-167.12	-1,078.9	-3,039.2	1,465.0	1,398.7	66.34	22.084	
11,200.0	7,704.3	12,646.2	9,122.8	87.8	92.4	-167.13	-1,079.4	-3,142.9	1,465.3	1,397.1	68.16	21.498	
11,300.0	7,701.8	12,751.6	9,120.3	90.1	94.9	-167.15	-1,079.5	-3,248.3	1,465.2	1,395.3	69.97	20.940	
11,350.4	7,700.5	12,798.3	9,119.1	91.3	95.9	-167.16	-1,079.5	-3,294.9	1,465.2	1,394.3	70.84	20.684	
11,400.0	7,699.3	12,844.5	9,118.1	92.5	97.0	-167.17	-1,079.7	-3,341.1	1,465.2	1,393.5	71.70	20.437	
11,500.0	7,696.8	12,932.0	9,116.5	94.8	99.0	-167.17	-1,080.2	-3,428.6	1,465.9	1,392.5	73.39	19.973	
11,600.0	7,694.3	13,022.8	9,115.4	97.1	101.1	-167.16	-1,081.3	-3,519.4	1,467.3	1,392.1	75.15	19.525	
11,700.0	7,691.9	13,112.3	9,114.8	99.5	103.2	-167.12	-1,083.3	-3,608.9	1,469.4	1,392.4	76.94	19.097	
11,800.0	7,689.4	13,185.6	9,115.0	101.8	104.9	-167.08	-1,085.3	-3,682.1	1,472.6	1,394.0	78.61	18.734	
11,900.0	7,686.9	13,289.7	9,116.8	104.2	107.3	-167.01	-1,088.7	-3,786.2	1,477.3	1,396.7	80.58	18.333	
12,000.0	7,684.4	13,383.3	9,117.5	106.6	109.5	-166.93	-1,092.1	-3,879.7	1,481.2	1,398.7	82.50	17.954	
12,100.0	7,681.9	13,481.6	9,118.7	108.9	111.8	-166.80	-1,097.1	-3,977.8	1,485.8	1,401.2	84.57	17.569	
12,200.0	7,679.4	13,636.6	9,118.6	111.3	115.5	-166.82	-1,098.3	-4,132.8	1,488.0	1,401.2	86.83	17.136	
12,300.0	7,677.0	13,731.1	9,118.1	113.7	117.7	-166.98	-1,094.9	-4,227.3	1,489.0	1,400.7	88.32	16.858	
12,400.0	7,674.5	13,822.3	9,117.9	116.1	119.9	-167.13	-1,092.1	-4,318.5	1,490.4	1,400.6	89.82	16.594	
12,500.0	7,672.0	13,914.9	9,118.0	118.5	122.0	-167.20	-1,091.3	-4,411.0	1,492.5	1,401.1	91.45	16.320	
12,600.0	7,669.5	14,009.6	9,117.6	120.9	124.3	-167.18	-1,092.8	-4,505.7	1,494.8	1,401.5	93.28	16.025	
12,700.0	7,667.0	14,095.5	9,117.9	123.2	126.3	-167.14	-1,095.0	-4,591.5	1,498.0	1,402.9	95.08	15.756	
12,800.0	7,664.6	14,205.0	9,118.4	125.6	128.9	-167.06	-1,098.4	-4,701.0	1,501.4	1,404.2	97.16	15.452	
12,900.0	7,662.1	14,322.6	9,117.7	128.0	131.7	-167.00	-1,101.3	-4,818.6	1,503.6	1,404.3	99.29	15.143	
13,000.0	7,659.6	14,430.9	9,116.5	130.4	134.3	-167.00	-1,102.3	-4,926.8	1,505.1	1,403.8	101.22	14.870	
13,100.0	7,657.1	14,531.7	9,115.0	132.8	136.7	-166.98	-1,103.7	-5,027.6	1,506.2	1,403.1	103.12	14.606	
13,200.0	7,654.6	14,657.6	9,111.7	135.2	139.7	-166.94	-1,105.4	-5,153.5	1,506.2	1,401.0	105.26	14.309	
13,231.2	7,653.9	14,680.1	9,111.1	136.0	140.2	-166.94	-1,105.8	-5,175.9	1,506.1	1,400.3	105.79	14.237	
13,300.0	7,652.2	14,736.0	9,109.9	137.6	141.6	-166.91	-1,106.8	-5,231.9	1,506.6	1,399.6	107.03	14.077	

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 Bo Howard 1211 Fed Com #124H
Project:	Ranger/Arrowhead	**TVD Reference:**	KB @ 3199.5usft
Reference Site:	Bo Howard 1211	**MD Reference:**	KB @ 3199.5usft
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Bo Howard 1211 Fed Com #124H	**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 Bo Howard 1211 - Cholula 12/11 W0PO Fed Com #1H - Wellbore #1 - Actual

Offset Site Error: 0.0 usft

Survey Program: 248-MWD

Offset Well Error: 0.0 usft

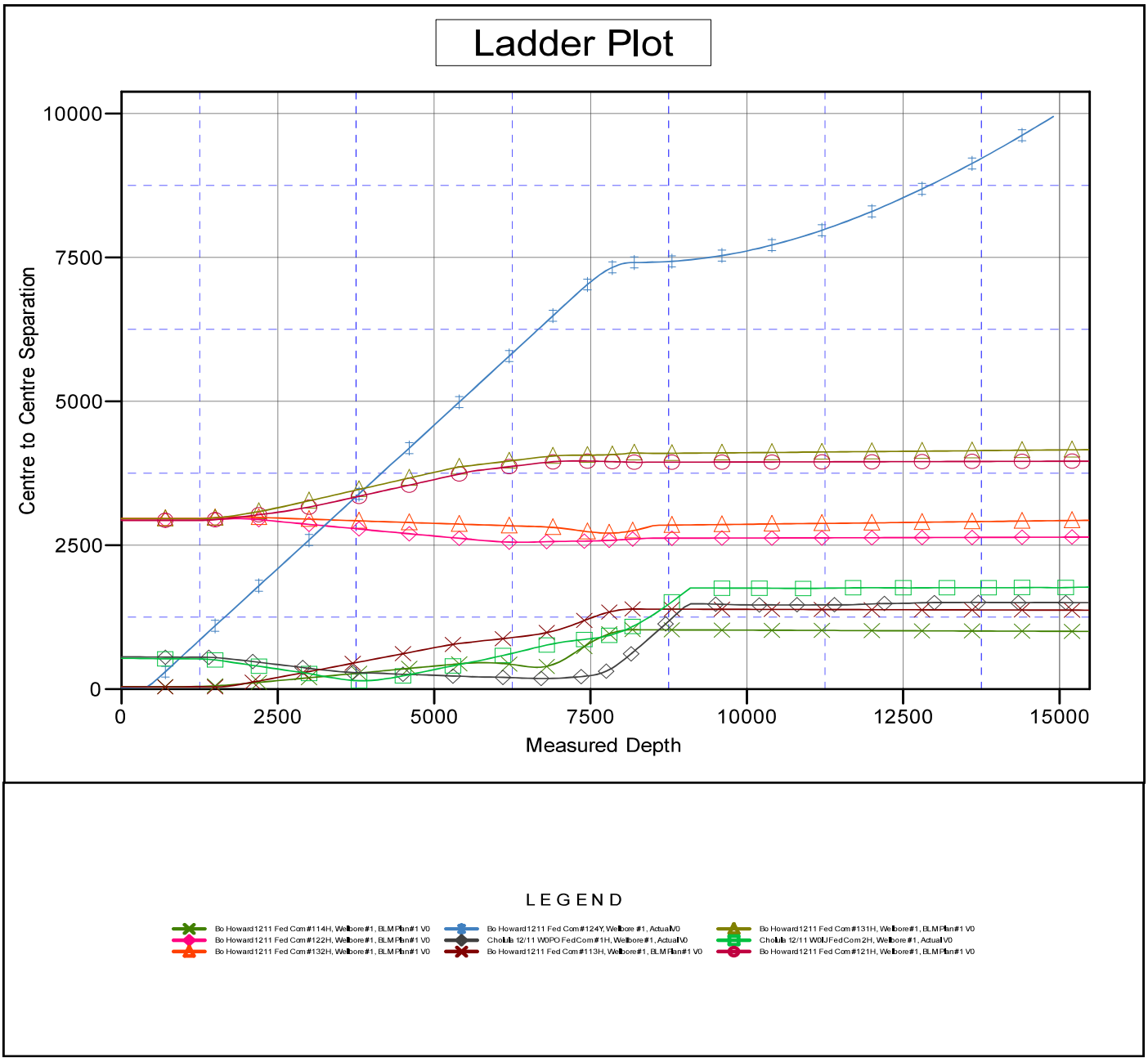
Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
13,400.0	7,649.7	14,843.6	9,108.0	140.0	144.1	-166.90	-1,108.0	-5,339.4	1,507.4	1,398.4	108.98	13.831	
13,500.0	7,647.2	14,931.0	9,106.7	142.4	146.2	-166.93	-1,107.8	-5,426.8	1,508.2	1,397.5	110.67	13.628	
13,600.0	7,644.7	15,042.4	9,105.3	144.9	148.9	-167.01	-1,106.6	-5,538.2	1,509.0	1,396.6	112.42	13.423	
13,700.0	7,642.2	15,153.4	9,103.3	147.3	151.6	-167.12	-1,104.5	-5,649.2	1,509.0	1,395.0	114.09	13.227	
13,800.0	7,639.8	15,274.4	9,100.0	149.7	154.5	-167.24	-1,102.0	-5,770.1	1,508.2	1,392.4	115.80	13.024	
13,900.0	7,637.3	15,368.2	9,096.4	152.1	156.7	-167.31	-1,100.5	-5,863.9	1,506.5	1,389.1	117.44	12.828	
14,000.0	7,634.8	15,452.1	9,093.8	154.5	158.7	-167.31	-1,100.7	-5,947.7	1,505.8	1,386.6	119.16	12.637	
14,018.9	7,634.3	15,467.9	9,093.3	155.0	159.1	-167.31	-1,101.0	-5,963.5	1,505.7	1,386.2	119.50	12.600	
14,100.0	7,632.3	15,555.0	9,090.8	156.9	161.2	-167.25	-1,102.9	-6,050.5	1,505.8	1,384.6	121.19	12.424	
14,200.0	7,629.8	15,662.2	9,087.1	159.3	163.8	-167.19	-1,105.0	-6,157.6	1,505.0	1,381.8	123.26	12.210	
14,300.0	7,627.4	15,753.4	9,083.9	161.8	166.0	-167.14	-1,106.7	-6,248.7	1,504.4	1,379.2	125.20	12.016	
14,344.8	7,626.2	15,793.9	9,082.7	162.8	166.9	-167.11	-1,107.5	-6,289.2	1,504.3	1,378.3	126.06	11.934	
14,400.0	7,624.9	15,844.8	9,081.4	164.2	168.2	-167.09	-1,108.5	-6,340.1	1,504.4	1,377.3	127.13	11.834	
14,500.0	7,622.4	15,942.3	9,079.0	166.6	170.5	-167.03	-1,110.7	-6,437.6	1,504.8	1,375.7	129.14	11.653	
14,600.0	7,619.9	16,047.9	9,076.3	169.0	173.1	-166.96	-1,113.1	-6,543.1	1,505.1	1,373.9	131.24	11.469	
14,700.0	7,617.4	16,136.2	9,074.3	171.5	175.2	-166.93	-1,114.5	-6,631.3	1,505.5	1,372.4	133.11	11.311	
14,800.0	7,614.9	16,231.2	9,072.8	173.9	177.5	-166.90	-1,116.1	-6,726.3	1,506.6	1,371.6	135.04	11.157	
14,900.0	7,612.5	16,354.7	9,070.3	176.3	180.5	-166.92	-1,116.5	-6,849.7	1,507.0	1,370.0	137.04	10.997	
15,000.0	7,610.0	16,463.8	9,067.6	178.7	183.1	-166.98	-1,115.4	-6,958.8	1,506.7	1,367.9	138.78	10.857	
15,100.0	7,607.5	16,574.3	9,063.4	181.2	185.8	-167.09	-1,112.8	-7,069.2	1,504.7	1,364.4	140.37	10.720	
15,200.0	7,605.0	16,656.1	9,061.0	183.6	187.8	-167.16	-1,111.5	-7,151.0	1,503.7	1,361.8	141.92	10.596	
15,256.9	7,603.6	16,706.2	9,059.9	185.0	189.0	-167.20	-1,110.8	-7,201.0	1,503.6	1,360.8	142.81	10.529	
15,300.0	7,602.5	16,742.5	9,059.2	186.0	189.8	-167.23	-1,110.2	-7,237.4	1,503.7	1,360.2	143.47	10.481	
15,400.0	7,600.1	16,869.3	9,057.0	188.4	192.9	-167.34	-1,108.2	-7,364.2	1,504.1	1,359.0	145.16	10.362	
15,430.7	7,599.3	16,880.0	9,056.7	189.2	193.2	-167.35	-1,107.9	-7,374.8	1,503.9	1,358.3	145.56	10.332	
15,463.1	7,598.5	16,880.0	9,056.7	190.0	193.2	-167.35	-1,107.9	-7,374.8	1,504.2	1,358.3	145.89	10.311	

Anticollision Report

Company:	Matador Production Company	**Local Co-ordinate Reference:**	Well Bo Howard 1211 Fed Com #124H
Project:	Ranger/Arrowhead	**TVD Reference:**	KB @ 3199.5usft
Reference Site:	Bo Howard 1211	**MD Reference:**	KB @ 3199.5usft
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Bo Howard 1211 Fed Com #124H	**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 @ 3199.5usft
Offset Depths are relative to Offset Datum
Central Meridian is 104° 20' 0.000 W

Coordinates are relative to: Bo Howard 1211 Fed Com #124H
Coordinate System is US State Plane 1927 (Exact solution), New Mexico East 30
Grid Convergence at Surface is: 0.11°

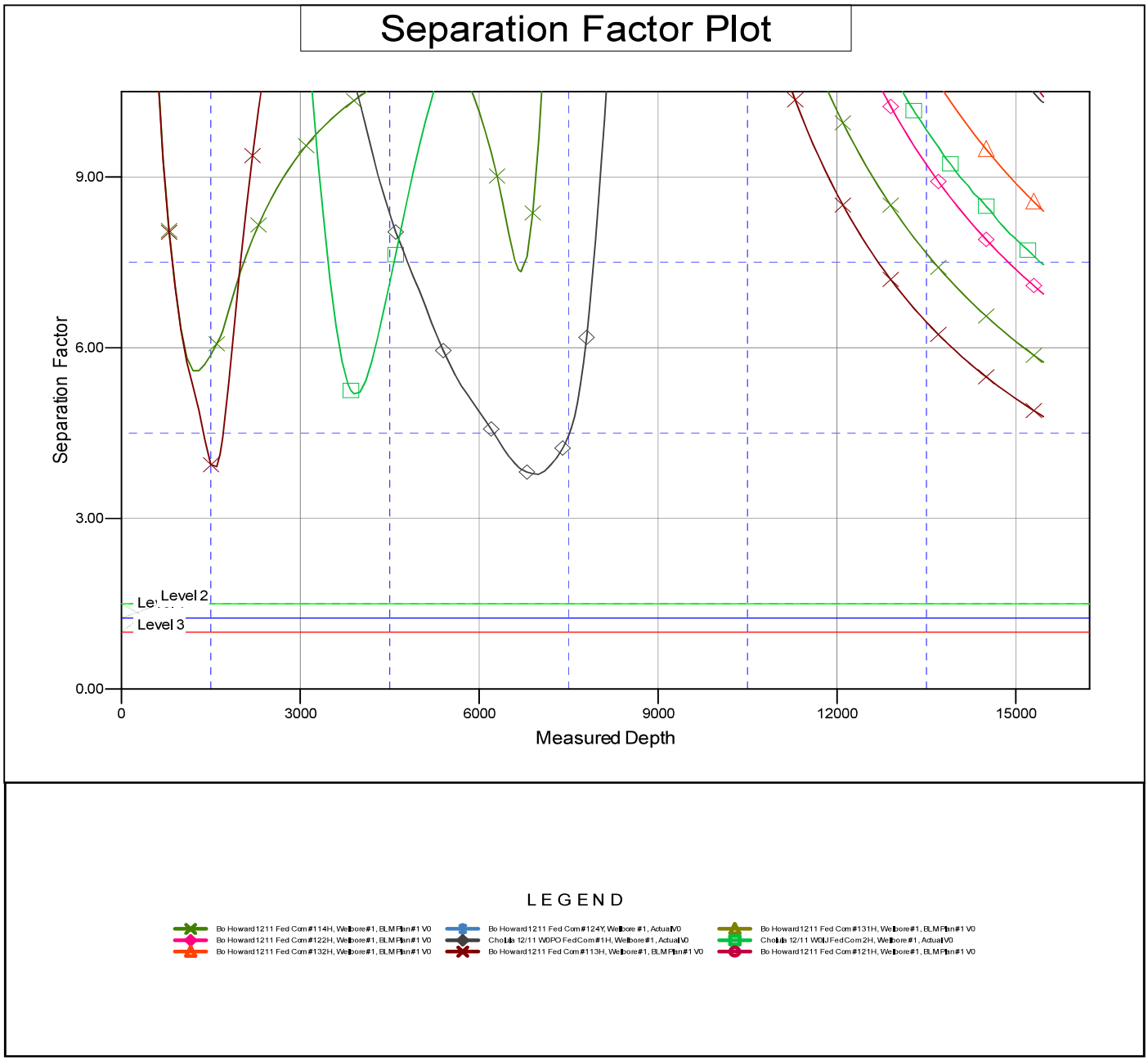


Anticollision Report

Company:	Matador Production Company	**Local Co-ordinate Reference:**	Well Bo Howard 1211 Fed Com #124H
Project:	Ranger/Arrowhead	**TVD Reference:**	KB @ 3199.5usft
Reference Site:	Bo Howard 1211	**MD Reference:**	KB @ 3199.5usft
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Bo Howard 1211 Fed Com #124H	**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 @ 3199.5usft
Offset Depths are relative to Offset Datum
Central Meridian is 104° 20' 0.000 W

Coordinates are relative to: Bo Howard 1211 Fed Com #124H
Coordinate System is US State Plane 1927 (Exact solution), New Mexico East 30
Grid Convergence at Surface is: 0.11°



Company: Matador Production Company
Well: Bo Howard 1211 Fed Com #124H
County: Eddy County, NM
Wellbore: Wellbore #1
Plan: BLM Plan #1
Date:

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 6.45°
To convert a Magnetic Direction to a True Direction, Add 6.56° East
To convert a True Direction to a Grid Direction, Subtract 0.11°

T G M

Azimuths to Grid North
True North: -0.11°
Magnetic North: 6.45°

Magnetic Field
Strength: 47397.0snT
Dip Angle: 60.14°
Date: 9/15/2023
Model: IGRF2015

SURVEY PROGRAM

Depth From	Depth To	Survey/Plan	Tool
0.0	15463.1	BLM Plan #1 (Wellbore #1)	MWD

WELL DETAILS: Bo Howard 1211 Fed Com #124H

GL @ 3171.0 KB @ 3199.5usft

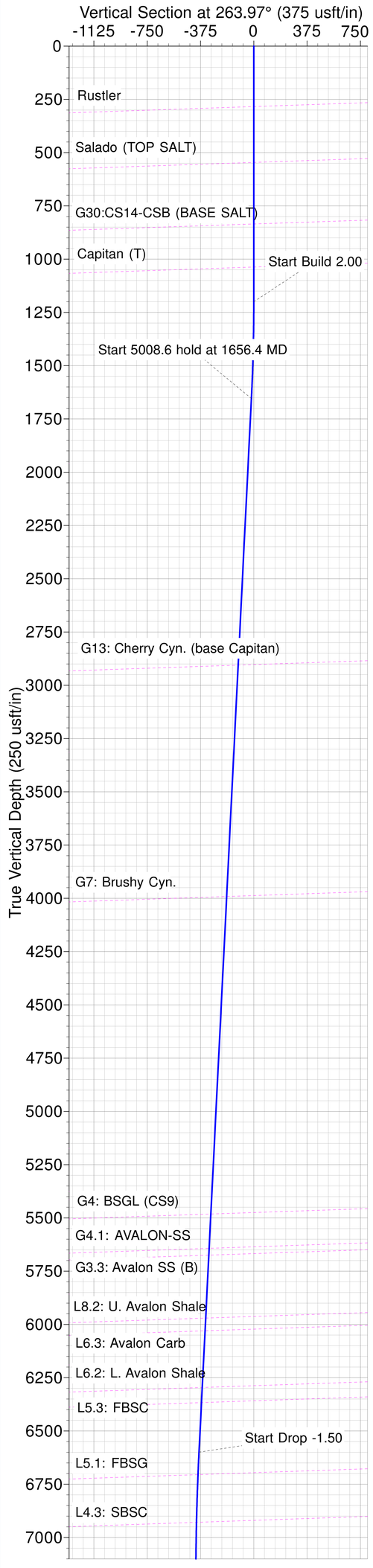
+N/-S	+E/-W	Northing	Easting	Latittude	Longitude	Slot
0.0	0.0	542843.53	560942.60	32° 29' 32.037 N	104° 8' 8.440 W	

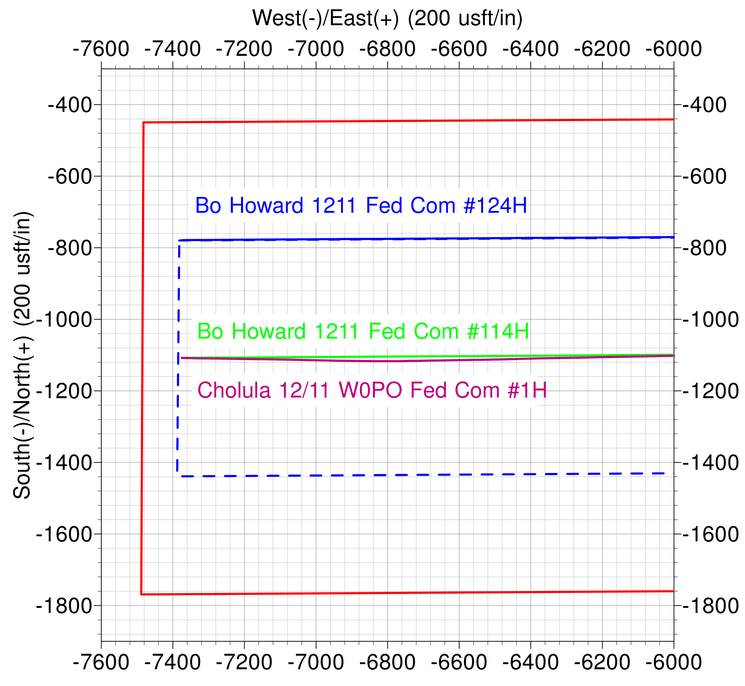
DESIGN TARGET DETAILS

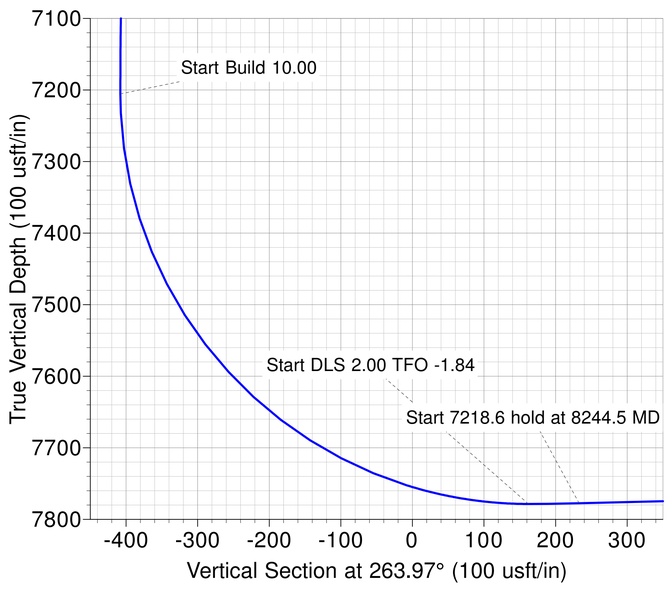
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
KOP - Bo Howard 1211 Fed Com #124H	7205.5	-731.6	487.5	542112.00	561430.00	32° 29' 24.789 N	104° 8' 2.766 W
BHL - Bo Howard 1211 Fed Com #124H	7598.5	-778.6	-7372.8	542065.00	553570.00	32° 29' 24.460 N	104° 9' 34.537 W
Exit NMNM 017095 - Bo Howard 1211 Fed Com #124H	7661.6	-763.0	-4828.6	542080.57	556114.22	32° 29' 24.572 N	104° 9' 4.831 W
Exit NMNM 109425 - Bo Howard 1211 Fed Com #124H	7695.0	-754.9	-3485.0	542088.69	557457.81	32° 29' 24.629 N	104° 8' 49.144 W
FTP - Bo Howard 1211 Fed Com #124H	7440.6	-731.7	436.9	542111.94	561379.43	32° 29' 24.789 N	104° 8' 3.356 W

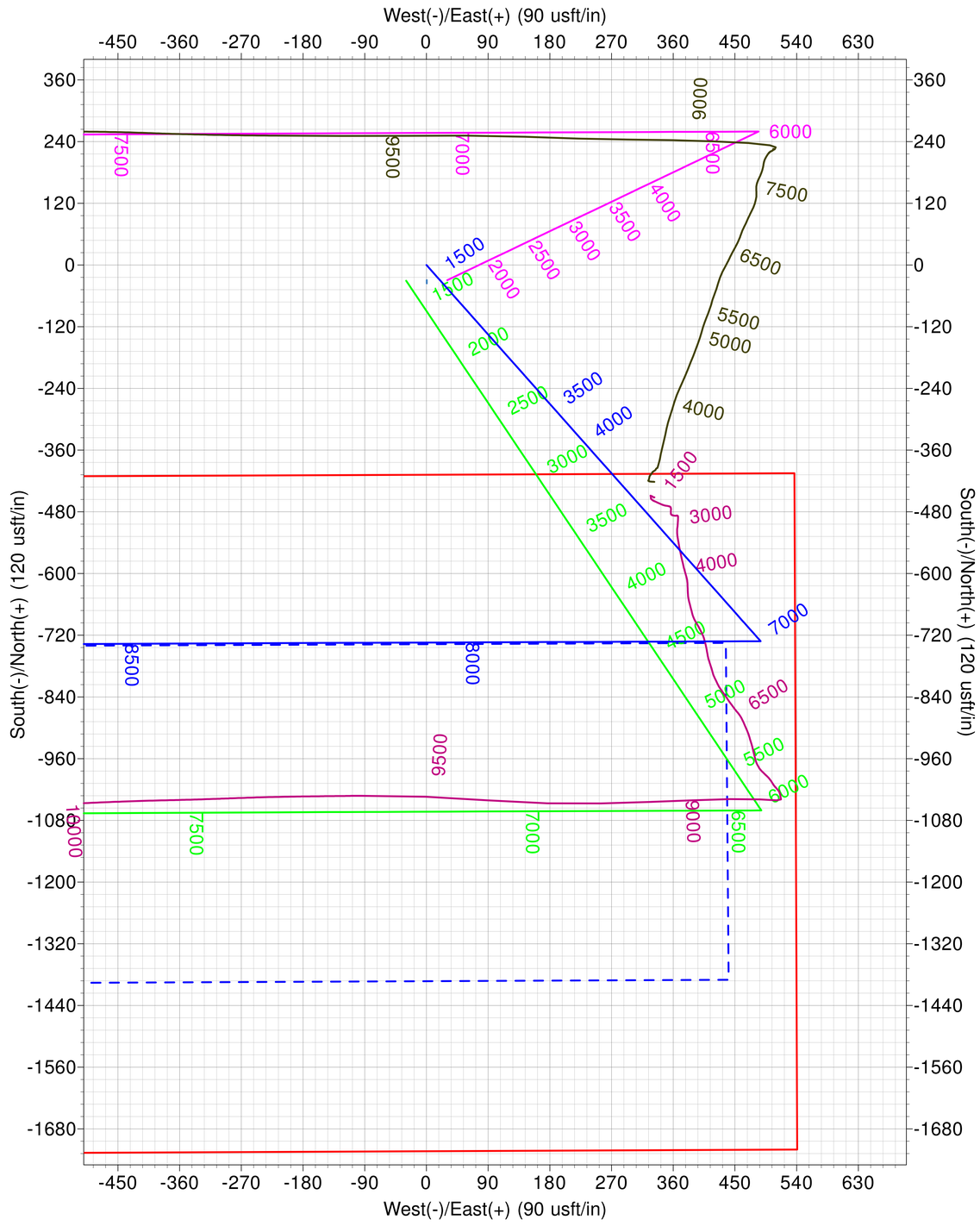
SECTION DETIALS

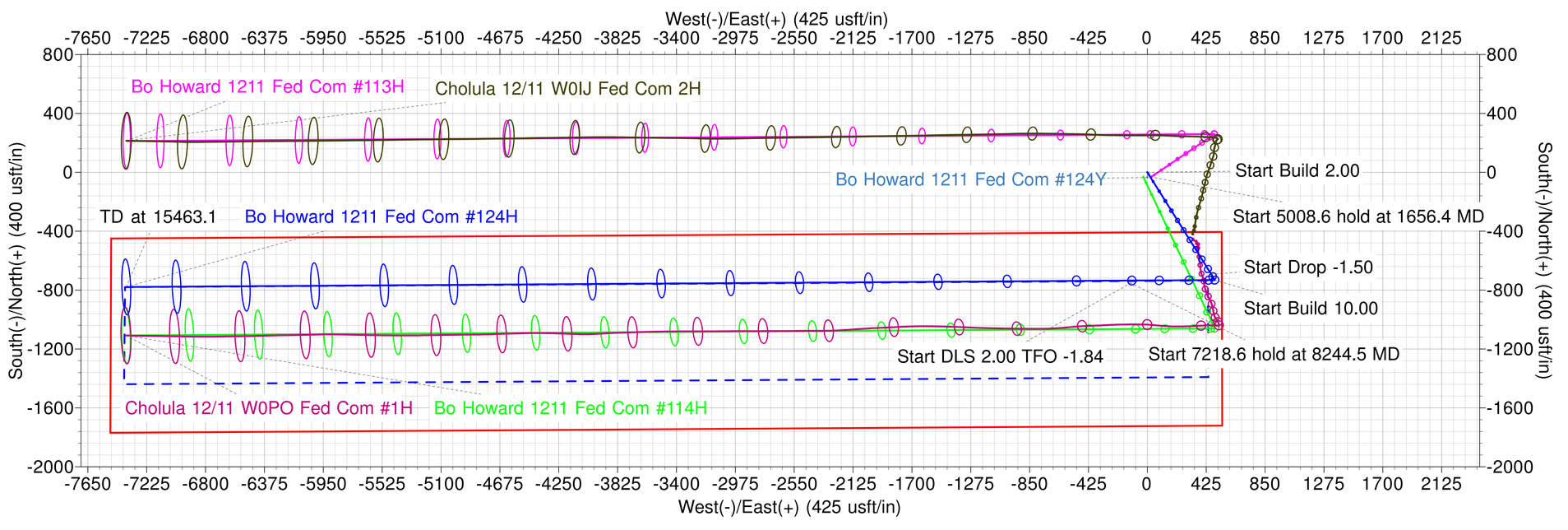
MD	Inc	Azi	TVD	+N/-S	+E/-W	DIeg	TFace	VSect	Annotation
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
1200.0	0.00	0.00	1200.0	0.0	0.0	0.00	0.00	0.0	Start Build 2.00
1656.4	9.13	146.33	1654.4	-30.2	20.1	2.00	146.33	-16.8	Start 5008.6 hold at 1656.4 MD
6664.9	9.13	146.33	6599.6	-691.4	460.6	0.00	0.00	-385.5	Start Drop -1.50
7273.4	0.00	0.00	7205.5	-731.6	487.5	1.50	180.00	-407.9	Start Build 10.00
8173.4	90.00	269.70	7778.5	-734.6	-85.5	10.00	269.70	162.2	Start DLS 2.00 TFO -1.84
8244.5	91.42	269.65	7777.6	-735.0	-156.6	2.00	-1.84	232.9	Start 7218.6 hold at 8244.5 MD
15463.1	91.42	269.65	7598.5	-778.6	-7372.8	0.00	0.00	7413.8	TD at 15463.1

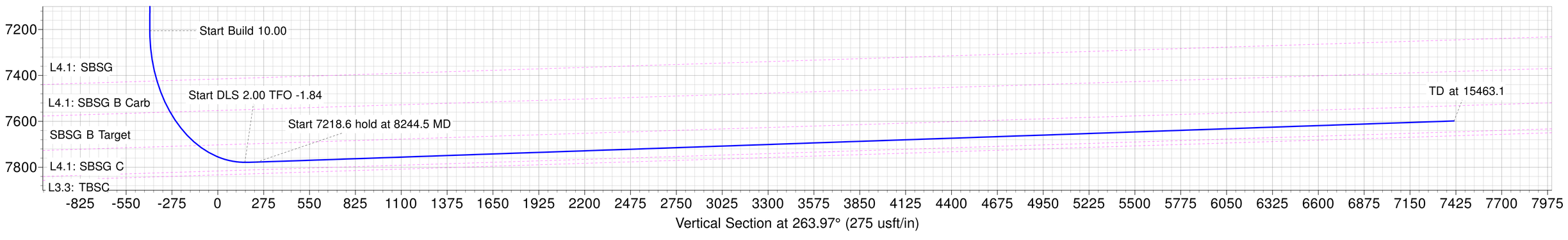












Matador Production Company

Ranger/Arrowhead
Bo Howard 1211
Bo Howard 1211 Fed Com #124H

Wellbore #1

Plan: BLM Plan #1

Standard Planning Report

15 September, 2023

Planning Report

Database:	EDM 5000.14 Server	**Local Co-ordinate Reference:**	Well Bo Howard 1211 Fed Com #124H
Company:	Matador Production Company	**TVD Reference:**	KB @ 3199.5usft
Project:	Ranger/Arrowhead	**MD Reference:**	KB @ 3199.5usft
Site:	Bo Howard 1211	**North Reference:**	Grid
Well:	Bo Howard 1211 Fed Com #124H	**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 Bo Howard 1211, 2/1/2023

Site Position:		**Northing:**	545,766.14 usft	**Latitude:**	32° 30' 0.954 N
From:	Lat/Long	**Easting:**	561,221.81 usft	**Longitude:**	104° 8' 5.117 W
Position Uncertainty:	0.0 usft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	0.11 °

Well Bo Howard 1211 Fed Com #124H

Well Position	**+N/-S**	-2,922.9 usft	**Northing:**	542,843.53 usft	**Latitude:**	32° 29' 32.037 N
	+E/-W	-279.2 usft	**Easting:**	560,942.60 usft	**Longitude:**	104° 8' 8.440 W
Position Uncertainty		0.0 usft	**Wellhead Elevation:**		**Ground Level:**	3,171.0 usft

Wellbore Wellbore #1

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	9/15/2023	6.56	60.14	47,396.98552837

Design BLM Plan #1

Audit Notes:

Version:		**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	263.97

Plan Survey Tool Program **Date** 9/15/2023

	Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.0	15,463.1	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	
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,656.4	9.13	146.33	1,654.4	-30.2	20.1	2.00	2.00	0.00	146.33	
6,664.9	9.13	146.33	6,599.6	-691.4	460.6	0.00	0.00	0.00	0.00	
7,273.4	0.00	0.00	7,205.5	-731.6	487.5	1.50	-1.50	0.00	180.00	KOP - Bo Howard 121
8,173.4	90.00	269.70	7,778.5	-734.6	-85.5	10.00	10.00	0.00	269.70	
8,244.5	91.42	269.65	7,777.6	-735.0	-156.6	2.00	2.00	-0.06	-1.84	
15,463.1	91.42	269.65	7,598.5	-778.6	-7,372.8	0.00	0.00	0.00	0.00	BHL - Bo Howard 121

Planning Report

Database:	EDM 5000.14 Server	**Local Co-ordinate Reference:**	Well Bo Howard 1211 Fed Com #124H
Company:	Matador Production Company	**TVD Reference:**	KB @ 3199.5usft
Project:	Ranger/Arrowhead	**MD Reference:**	KB @ 3199.5usft
Site:	Bo Howard 1211	**North Reference:**	Grid
Well:	Bo Howard 1211 Fed Com #124H	**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
283.9	0.00	0.00	283.9	0.0	0.0	0.0	0.00	0.00	0.00
Rustler									
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
546.0	0.00	0.00	546.0	0.0	0.0	0.0	0.00	0.00	0.00
Salado (TOP SALT)									
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
835.1	0.00	0.00	835.1	0.0	0.0	0.0	0.00	0.00	0.00
G30:CS14-CSB (BASE SALT)									
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
1,037.1	0.00	0.00	1,037.1	0.0	0.0	0.0	0.00	0.00	0.00
Capitan (T)									
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
Start Build 2.00									
1,300.0	2.00	146.33	1,300.0	-1.5	1.0	-0.8	2.00	2.00	0.00
1,400.0	4.00	146.33	1,399.8	-5.8	3.9	-3.2	2.00	2.00	0.00
1,500.0	6.00	146.33	1,499.5	-13.1	8.7	-7.3	2.00	2.00	0.00
1,600.0	8.00	146.33	1,598.7	-23.2	15.5	-12.9	2.00	2.00	0.00
1,656.4	9.13	146.33	1,654.4	-30.2	20.1	-16.8	2.00	2.00	0.00
Start 5008.6 hold at 1656.4 MD									
1,700.0	9.13	146.33	1,697.5	-35.9	24.0	-20.0	0.00	0.00	0.00
1,800.0	9.13	146.33	1,796.3	-49.1	32.7	-27.4	0.00	0.00	0.00
1,900.0	9.13	146.33	1,895.0	-62.3	41.5	-34.8	0.00	0.00	0.00
2,000.0	9.13	146.33	1,993.7	-75.5	50.3	-42.1	0.00	0.00	0.00
2,100.0	9.13	146.33	2,092.5	-88.8	59.1	-49.5	0.00	0.00	0.00
2,200.0	9.13	146.33	2,191.2	-102.0	67.9	-56.8	0.00	0.00	0.00
2,300.0	9.13	146.33	2,289.9	-115.2	76.7	-64.2	0.00	0.00	0.00
2,400.0	9.13	146.33	2,388.7	-128.4	85.5	-71.6	0.00	0.00	0.00
2,500.0	9.13	146.33	2,487.4	-141.6	94.3	-78.9	0.00	0.00	0.00
2,600.0	9.13	146.33	2,586.1	-154.8	103.1	-86.3	0.00	0.00	0.00
2,700.0	9.13	146.33	2,684.9	-168.0	111.9	-93.6	0.00	0.00	0.00
2,800.0	9.13	146.33	2,783.6	-181.2	120.7	-101.0	0.00	0.00	0.00
2,900.0	9.13	146.33	2,882.3	-194.4	129.5	-108.4	0.00	0.00	0.00
2,924.0	9.13	146.33	2,906.0	-197.5	131.6	-110.1	0.00	0.00	0.00
G13: Cherry Cyn. (base Capitan)									
3,000.0	9.13	146.33	2,981.1	-207.6	138.3	-115.7	0.00	0.00	0.00
3,100.0	9.13	146.33	3,079.8	-220.8	147.1	-123.1	0.00	0.00	0.00
3,200.0	9.13	146.33	3,178.5	-234.0	155.9	-130.5	0.00	0.00	0.00
3,300.0	9.13	146.33	3,277.3	-247.2	164.7	-137.8	0.00	0.00	0.00
3,400.0	9.13	146.33	3,376.0	-260.4	173.5	-145.2	0.00	0.00	0.00
3,500.0	9.13	146.33	3,474.7	-273.6	182.3	-152.5	0.00	0.00	0.00
3,600.0	9.13	146.33	3,573.5	-286.8	191.1	-159.9	0.00	0.00	0.00
3,700.0	9.13	146.33	3,672.2	-300.0	199.9	-167.3	0.00	0.00	0.00
3,800.0	9.13	146.33	3,770.9	-313.2	208.7	-174.6	0.00	0.00	0.00
3,900.0	9.13	146.33	3,869.7	-326.4	217.5	-182.0	0.00	0.00	0.00

Planning Report

Database:	EDM 5000.14 Server	**Local Co-ordinate Reference:**	Well Bo Howard 1211 Fed Com #124H
Company:	Matador Production Company	**TVD Reference:**	KB @ 3199.5usft
Project:	Ranger/Arrowhead	**MD Reference:**	KB @ 3199.5usft
Site:	Bo Howard 1211	**North Reference:**	Grid
Well:	Bo Howard 1211 Fed Com #124H	**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)
4,000.0	9.13	146.33	3,968.4	-339.6	226.2	-189.3	0.00	0.00	0.00
4,024.2	9.13	146.33	3,992.3	-342.8	228.4	-191.1	0.00	0.00	0.00
G7: Brushy Cyn.									
4,100.0	9.13	146.33	4,067.1	-352.8	235.0	-196.7	0.00	0.00	0.00
4,200.0	9.13	146.33	4,165.9	-366.0	243.8	-204.1	0.00	0.00	0.00
4,300.0	9.13	146.33	4,264.6	-379.2	252.6	-211.4	0.00	0.00	0.00
4,400.0	9.13	146.33	4,363.3	-392.4	261.4	-218.8	0.00	0.00	0.00
4,500.0	9.13	146.33	4,462.1	-405.6	270.2	-226.1	0.00	0.00	0.00
4,600.0	9.13	146.33	4,560.8	-418.8	279.0	-233.5	0.00	0.00	0.00
4,700.0	9.13	146.33	4,659.5	-432.0	287.8	-240.9	0.00	0.00	0.00
4,800.0	9.13	146.33	4,758.3	-445.2	296.6	-248.2	0.00	0.00	0.00
4,900.0	9.13	146.33	4,857.0	-458.4	305.4	-255.6	0.00	0.00	0.00
5,000.0	9.13	146.33	4,955.7	-471.6	314.2	-262.9	0.00	0.00	0.00
5,100.0	9.13	146.33	5,054.5	-484.8	323.0	-270.3	0.00	0.00	0.00
5,200.0	9.13	146.33	5,153.2	-498.0	331.8	-277.7	0.00	0.00	0.00
5,300.0	9.13	146.33	5,251.9	-511.2	340.6	-285.0	0.00	0.00	0.00
5,400.0	9.13	146.33	5,350.7	-524.4	349.4	-292.4	0.00	0.00	0.00
5,500.0	9.13	146.33	5,449.4	-537.6	358.2	-299.7	0.00	0.00	0.00
5,534.3	9.13	146.33	5,483.3	-542.1	361.2	-302.3	0.00	0.00	0.00
G4: BSGL (CS9)									
5,600.0	9.13	146.33	5,548.1	-550.8	367.0	-307.1	0.00	0.00	0.00
5,697.4	9.13	146.33	5,644.3	-563.6	375.5	-314.3	0.00	0.00	0.00
G4.1: AVALON-SS									
5,700.0	9.13	146.33	5,646.9	-564.0	375.8	-314.5	0.00	0.00	0.00
5,729.7	9.13	146.33	5,676.2	-567.9	378.4	-316.7	0.00	0.00	0.00
G3.3: Avalon SS (B)									
5,800.0	9.13	146.33	5,745.6	-577.2	384.6	-321.8	0.00	0.00	0.00
5,900.0	9.13	146.33	5,844.3	-590.4	393.4	-329.2	0.00	0.00	0.00
6,000.0	9.13	146.33	5,943.1	-603.6	402.2	-336.5	0.00	0.00	0.00
6,028.9	9.13	146.33	5,971.6	-607.4	404.7	-338.7	0.00	0.00	0.00
L8.2: U. Avalon Shale									
6,089.3	9.13	146.33	6,031.2	-615.4	410.0	-343.1	0.00	0.00	0.00
L6.3: Avalon Carb									
6,100.0	9.13	146.33	6,041.8	-616.8	411.0	-343.9	0.00	0.00	0.00
6,200.0	9.13	146.33	6,140.5	-630.0	419.7	-351.3	0.00	0.00	0.00
6,300.0	9.13	146.33	6,239.3	-643.2	428.5	-358.6	0.00	0.00	0.00
6,359.1	9.13	146.33	6,297.6	-651.0	433.7	-363.0	0.00	0.00	0.00
L6.2: L. Avalon Shale									
6,400.0	9.13	146.33	6,338.0	-656.4	437.3	-366.0	0.00	0.00	0.00
6,431.0	9.13	146.33	6,368.6	-660.5	440.1	-368.3	0.00	0.00	0.00
L5.3: FBSC									
6,500.0	9.13	146.33	6,436.7	-669.6	446.1	-373.3	0.00	0.00	0.00
6,600.0	9.13	146.33	6,535.5	-682.8	454.9	-380.7	0.00	0.00	0.00
6,664.9	9.13	146.33	6,599.6	-691.4	460.6	-385.5	0.00	0.00	0.00
Start Drop -1.50									
6,700.0	8.60	146.33	6,634.2	-695.9	463.6	-388.0	1.50	-1.50	0.00
6,772.9	7.51	146.33	6,706.4	-704.4	469.3	-392.7	1.50	-1.50	0.00
L5.1: FBSG									
6,800.0	7.10	146.33	6,733.3	-707.2	471.2	-394.3	1.50	-1.50	0.00
6,900.0	5.60	146.33	6,832.7	-716.4	477.3	-399.5	1.50	-1.50	0.00
6,998.5	4.12	146.33	6,930.8	-723.4	482.0	-403.3	1.50	-1.50	0.00
L4.3: SBSC									
7,000.0	4.10	146.33	6,932.3	-723.5	482.0	-403.4	1.50	-1.50	0.00

Planning Report

Database:	EDM 5000.14 Server	**Local Co-ordinate Reference:**	Well Bo Howard 1211 Fed Com #124H
Company:	Matador Production Company	**TVD Reference:**	KB @ 3199.5usft
Project:	Ranger/Arrowhead	**MD Reference:**	KB @ 3199.5usft
Site:	Bo Howard 1211	**North Reference:**	Grid
Well:	Bo Howard 1211 Fed Com #124H	**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)
7,100.0	2.60	146.33	7,032.1	-728.3	485.3	-406.1	1.50	-1.50	0.00
7,200.0	1.10	146.33	7,132.1	-731.0	487.1	-407.6	1.50	-1.50	0.00
7,273.4	0.00	0.00	7,205.5	-731.6	487.5	-407.9	1.50	-1.50	-199.32
Start Build 10.00 - KOP - Bo Howard 1211 Fed Com #124H									
7,300.0	2.66	269.70	7,232.1	-731.6	486.8	-407.3	10.00	10.00	-339.65
7,350.0	7.66	269.70	7,281.9	-731.6	482.3	-402.8	10.00	10.00	0.00
7,400.0	12.66	269.70	7,331.1	-731.7	473.5	-394.1	10.00	10.00	0.00
7,450.0	17.66	269.70	7,379.3	-731.8	460.5	-381.1	10.00	10.00	0.00
7,499.6	22.62	269.70	7,425.9	-731.8	443.4	-364.1	10.00	10.00	0.00
L4.1: SBSG									
7,500.0	22.66	269.70	7,426.2	-731.8	443.2	-363.9	10.00	10.00	0.00
7,515.7	24.23	269.70	7,440.6	-731.9	437.0	-357.7	10.00	10.00	0.00
FTP - Bo Howard 1211 Fed Com #124H									
7,550.0	27.66	269.70	7,471.5	-732.0	422.0	-342.8	10.00	10.00	0.00
7,600.0	32.66	269.70	7,514.7	-732.1	396.9	-317.8	10.00	10.00	0.00
7,650.0	37.66	269.70	7,555.6	-732.2	368.1	-289.2	10.00	10.00	0.00
7,657.4	38.40	269.70	7,561.4	-732.3	363.5	-284.6	10.00	10.00	0.00
L4.1: SBSG B Carb									
7,700.0	42.66	269.70	7,593.8	-732.4	335.9	-257.1	10.00	10.00	0.00
7,750.0	47.66	269.70	7,629.0	-732.6	300.4	-221.8	10.00	10.00	0.00
7,800.0	52.66	269.70	7,661.0	-732.8	262.0	-183.6	10.00	10.00	0.00
7,850.0	57.66	269.70	7,689.6	-733.0	221.0	-142.8	10.00	10.00	0.00
7,884.3	61.09	269.70	7,707.0	-733.2	191.5	-113.4	10.00	10.00	0.00
SBSG B Target									
7,900.0	62.66	269.70	7,714.5	-733.2	177.7	-99.7	10.00	10.00	0.00
7,950.0	67.66	269.70	7,735.4	-733.5	132.3	-54.5	10.00	10.00	0.00
8,000.0	72.66	269.70	7,752.4	-733.7	85.3	-7.8	10.00	10.00	0.00
8,050.0	77.66	269.70	7,765.2	-734.0	37.0	40.3	10.00	10.00	0.00
8,100.0	82.66	269.70	7,773.8	-734.2	-12.3	89.3	10.00	10.00	0.00
8,150.0	87.66	269.70	7,778.0	-734.5	-62.1	138.9	10.00	10.00	0.00
8,173.4	90.00	269.70	7,778.5	-734.6	-85.5	162.2	10.00	10.00	0.00
Start DLS 2.00 TFO -1.84									
8,200.0	90.53	269.68	7,778.3	-734.8	-112.1	188.6	2.00	2.00	-0.06
8,244.5	91.42	269.65	7,777.6	-735.0	-156.6	232.9	2.00	2.00	-0.06
Start 7218.6 hold at 8244.5 MD									
8,300.0	91.42	269.65	7,776.2	-735.3	-212.1	288.1	0.00	0.00	0.00
8,400.0	91.42	269.65	7,773.7	-736.0	-312.0	387.6	0.00	0.00	0.00
8,500.0	91.42	269.65	7,771.2	-736.6	-412.0	487.1	0.00	0.00	0.00
8,600.0	91.42	269.65	7,768.8	-737.2	-512.0	586.5	0.00	0.00	0.00
8,700.0	91.42	269.65	7,766.3	-737.8	-611.9	686.0	0.00	0.00	0.00
8,800.0	91.42	269.65	7,763.8	-738.4	-711.9	785.5	0.00	0.00	0.00
8,900.0	91.42	269.65	7,761.3	-739.0	-811.9	885.0	0.00	0.00	0.00
9,000.0	91.42	269.65	7,758.8	-739.6	-911.8	984.5	0.00	0.00	0.00
9,100.0	91.42	269.65	7,756.4	-740.2	-1,011.8	1,083.9	0.00	0.00	0.00
9,200.0	91.42	269.65	7,753.9	-740.8	-1,111.8	1,183.4	0.00	0.00	0.00
9,300.0	91.42	269.65	7,751.4	-741.4	-1,211.7	1,282.9	0.00	0.00	0.00
9,400.0	91.42	269.65	7,748.9	-742.0	-1,311.7	1,382.4	0.00	0.00	0.00
9,500.0	91.42	269.65	7,746.4	-742.6	-1,411.7	1,481.8	0.00	0.00	0.00
9,600.0	91.42	269.65	7,743.9	-743.2	-1,511.6	1,581.3	0.00	0.00	0.00
9,700.0	91.42	269.65	7,741.5	-743.8	-1,611.6	1,680.8	0.00	0.00	0.00
9,800.0	91.42	269.65	7,739.0	-744.4	-1,711.6	1,780.3	0.00	0.00	0.00
9,900.0	91.42	269.65	7,736.5	-745.0	-1,811.5	1,879.8	0.00	0.00	0.00
10,000.0	91.42	269.65	7,734.0	-745.6	-1,911.5	1,979.2	0.00	0.00	0.00

Planning Report

Database:	EDM 5000.14 Server	**Local Co-ordinate Reference:**	Well Bo Howard 1211 Fed Com #124H
Company:	Matador Production Company	**TVD Reference:**	KB @ 3199.5usft
Project:	Ranger/Arrowhead	**MD Reference:**	KB @ 3199.5usft
Site:	Bo Howard 1211	**North Reference:**	Grid
Well:	Bo Howard 1211 Fed Com #124H	**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	91.42	269.65	7,731.5	-746.2	-2,011.5	2,078.7	0.00	0.00	0.00
10,200.0	91.42	269.65	7,729.1	-746.8	-2,111.4	2,178.2	0.00	0.00	0.00
10,300.0	91.42	269.65	7,726.6	-747.4	-2,211.4	2,277.7	0.00	0.00	0.00
10,400.0	91.42	269.65	7,724.1	-748.0	-2,311.4	2,377.1	0.00	0.00	0.00
10,500.0	91.42	269.65	7,721.6	-748.6	-2,411.3	2,476.6	0.00	0.00	0.00
10,600.0	91.42	269.65	7,719.1	-749.2	-2,511.3	2,576.1	0.00	0.00	0.00
10,700.0	91.42	269.65	7,716.7	-749.8	-2,611.3	2,675.6	0.00	0.00	0.00
10,800.0	91.42	269.65	7,714.2	-750.4	-2,711.2	2,775.1	0.00	0.00	0.00
10,900.0	91.42	269.65	7,711.7	-751.0	-2,811.2	2,874.5	0.00	0.00	0.00
11,000.0	91.42	269.65	7,709.2	-751.6	-2,911.2	2,974.0	0.00	0.00	0.00
11,100.0	91.42	269.65	7,706.7	-752.2	-3,011.1	3,073.5	0.00	0.00	0.00
11,200.0	91.42	269.65	7,704.3	-752.8	-3,111.1	3,173.0	0.00	0.00	0.00
11,300.0	91.42	269.65	7,701.8	-753.4	-3,211.1	3,272.4	0.00	0.00	0.00
11,400.0	91.42	269.65	7,699.3	-754.0	-3,311.0	3,371.9	0.00	0.00	0.00
11,500.0	91.42	269.65	7,696.8	-754.7	-3,411.0	3,471.4	0.00	0.00	0.00
11,574.0	91.42	269.65	7,695.0	-755.1	-3,485.0	3,545.0	0.00	0.00	0.00
Exit NMNM 109425 - Bo Howard 1211 Fed Com #124H									
11,600.0	91.42	269.65	7,694.3	-755.3	-3,511.0	3,570.9	0.00	0.00	0.00
11,700.0	91.42	269.65	7,691.9	-755.9	-3,610.9	3,670.4	0.00	0.00	0.00
11,800.0	91.42	269.65	7,689.4	-756.5	-3,710.9	3,769.8	0.00	0.00	0.00
11,900.0	91.42	269.65	7,686.9	-757.1	-3,810.9	3,869.3	0.00	0.00	0.00
12,000.0	91.42	269.65	7,684.4	-757.7	-3,910.8	3,968.8	0.00	0.00	0.00
12,100.0	91.42	269.65	7,681.9	-758.3	-4,010.8	4,068.3	0.00	0.00	0.00
12,200.0	91.42	269.65	7,679.4	-758.9	-4,110.8	4,167.7	0.00	0.00	0.00
12,300.0	91.42	269.65	7,677.0	-759.5	-4,210.8	4,267.2	0.00	0.00	0.00
12,400.0	91.42	269.65	7,674.5	-760.1	-4,310.7	4,366.7	0.00	0.00	0.00
12,500.0	91.42	269.65	7,672.0	-760.7	-4,410.7	4,466.2	0.00	0.00	0.00
12,600.0	91.42	269.65	7,669.5	-761.3	-4,510.7	4,565.7	0.00	0.00	0.00
12,700.0	91.42	269.65	7,667.0	-761.9	-4,610.6	4,665.1	0.00	0.00	0.00
12,800.0	91.42	269.65	7,664.6	-762.5	-4,710.6	4,764.6	0.00	0.00	0.00
12,900.0	91.42	269.65	7,662.1	-763.1	-4,810.6	4,864.1	0.00	0.00	0.00
12,918.1	91.42	269.65	7,661.6	-763.2	-4,828.6	4,882.1	0.00	0.00	0.00
Exit NMNM 017095 - Bo Howard 1211 Fed Com #124H									
13,000.0	91.42	269.65	7,659.6	-763.7	-4,910.5	4,963.6	0.00	0.00	0.00
13,100.0	91.42	269.65	7,657.1	-764.3	-5,010.5	5,063.0	0.00	0.00	0.00
13,200.0	91.42	269.65	7,654.6	-764.9	-5,110.5	5,162.5	0.00	0.00	0.00
13,300.0	91.42	269.65	7,652.2	-765.5	-5,210.4	5,262.0	0.00	0.00	0.00
13,400.0	91.42	269.65	7,649.7	-766.1	-5,310.4	5,361.5	0.00	0.00	0.00
13,500.0	91.42	269.65	7,647.2	-766.7	-5,410.4	5,461.0	0.00	0.00	0.00
13,600.0	91.42	269.65	7,644.7	-767.3	-5,510.3	5,560.4	0.00	0.00	0.00
13,700.0	91.42	269.65	7,642.2	-767.9	-5,610.3	5,659.9	0.00	0.00	0.00
13,800.0	91.42	269.65	7,639.8	-768.5	-5,710.3	5,759.4	0.00	0.00	0.00
13,900.0	91.42	269.65	7,637.3	-769.1	-5,810.2	5,858.9	0.00	0.00	0.00
14,000.0	91.42	269.65	7,634.8	-769.7	-5,910.2	5,958.4	0.00	0.00	0.00
14,100.0	91.42	269.65	7,632.3	-770.3	-6,010.2	6,057.8	0.00	0.00	0.00
14,200.0	91.42	269.65	7,629.8	-770.9	-6,110.1	6,157.3	0.00	0.00	0.00
14,300.0	91.42	269.65	7,627.4	-771.5	-6,210.1	6,256.8	0.00	0.00	0.00
14,400.0	91.42	269.65	7,624.9	-772.1	-6,310.1	6,356.3	0.00	0.00	0.00
14,500.0	91.42	269.65	7,622.4	-772.7	-6,410.0	6,455.7	0.00	0.00	0.00
14,600.0	91.42	269.65	7,619.9	-773.3	-6,510.0	6,555.2	0.00	0.00	0.00
14,700.0	91.42	269.65	7,617.4	-774.0	-6,610.0	6,654.7	0.00	0.00	0.00
14,800.0	91.42	269.65	7,614.9	-774.6	-6,709.9	6,754.2	0.00	0.00	0.00
14,900.0	91.42	269.65	7,612.5	-775.2	-6,809.9	6,853.7	0.00	0.00	0.00

Planning Report

Database:	EDM 5000.14 Server	**Local Co-ordinate Reference:**	Well Bo Howard 1211 Fed Com #124H
Company:	Matador Production Company	**TVD Reference:**	KB @ 3199.5usft
Project:	Ranger/Arrowhead	**MD Reference:**	KB @ 3199.5usft
Site:	Bo Howard 1211	**North Reference:**	Grid
Well:	Bo Howard 1211 Fed Com #124H	**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	91.42	269.65	7,610.0	-775.8	-6,909.9	6,953.1	0.00	0.00	0.00
15,100.0	91.42	269.65	7,607.5	-776.4	-7,009.8	7,052.6	0.00	0.00	0.00
15,200.0	91.42	269.65	7,605.0	-777.0	-7,109.8	7,152.1	0.00	0.00	0.00
15,300.0	91.42	269.65	7,602.5	-777.6	-7,209.8	7,251.6	0.00	0.00	0.00
15,400.0	91.42	269.65	7,600.1	-778.2	-7,309.7	7,351.0	0.00	0.00	0.00
15,463.1	91.42	269.65	7,598.5	-778.6	-7,372.8	7,413.8	0.00	0.00	0.00
TD at 15463.1 - BHL - Bo Howard 1211 Fed Com #124H									

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
KOP - Bo Howard 1211 I - plan hits target center - Point	0.00	0.00	7,205.5	-731.6	487.5	542,112.00	561,430.00	32° 29' 24.789 N	104° 8' 2.766 W
FTP - Bo Howard 1211 - plan misses target center by 0.2usft at 7515.7usft MD (7440.6 TVD, -731.9 N, 437.0 E) - Point	0.00	0.00	7,440.6	-731.7	436.9	542,111.94	561,379.43	32° 29' 24.789 N	104° 8' 3.356 W
BHL - Bo Howard 1211 F - plan hits target center - Point	0.00	0.00	7,598.5	-778.6	-7,372.8	542,065.00	553,570.00	32° 29' 24.460 N	104° 9' 34.537 W
Exit NMNM 017095 - Bc - plan misses target center by 0.2usft at 12918.1usft MD (7661.6 TVD, -763.2 N, -4828.6 E) - Point	0.00	0.00	7,661.6	-763.0	-4,828.6	542,080.58	556,114.22	32° 29' 24.572 N	104° 9' 4.831 W
Exit NMNM 109425 - Bc - plan misses target center by 0.2usft at 11574.0usft MD (7695.0 TVD, -755.1 N, -3485.0 E) - Point	0.00	0.01	7,695.0	-754.9	-3,485.0	542,088.69	557,457.81	32° 29' 24.629 N	104° 8' 49.144 W

Planning Report

Database:	EDM 5000.14 Server	**Local Co-ordinate Reference:**	Well Bo Howard 1211 Fed Com #124H
Company:	Matador Production Company	**TVD Reference:**	KB @ 3199.5usft
Project:	Ranger/Arrowhead	**MD Reference:**	KB @ 3199.5usft
Site:	Bo Howard 1211	**North Reference:**	Grid
Well:	Bo Howard 1211 Fed Com #124H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	BLM Plan #1		

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
283.9	283.9	Rustler		-1.32	269.65
546.0	546.0	Salado (TOP SALT)		-1.32	269.65
835.1	835.1	G30:CS14-CSB (BASE SALT)		-1.32	269.65
1,037.1	1,037.1	Capitan (T)		-1.32	269.65
2,924.0	2,906.0	G13: Cherry Cyn. (base Capitan)		-1.32	269.65
4,024.2	3,992.3	G7: Brushy Cyn.		-1.32	269.65
5,534.3	5,483.3	G4: BSGL (CS9)		-1.32	269.65
5,697.4	5,644.3	G4.1: AVALON-SS		-1.32	269.65
5,729.7	5,676.2	G3.3: Avalon SS (B)		-1.32	269.65
6,028.9	5,971.6	L8.2: U. Avalon Shale		-1.32	269.65
6,089.3	6,031.2	L6.3: Avalon Carb		-1.32	269.65
6,359.1	6,297.6	L6.2: L. Avalon Shale		-1.32	269.65
6,431.0	6,368.6	L5.3: FBSC		-1.32	269.65
6,772.9	6,706.4	L5.1: FBSG		-1.32	269.65
6,998.5	6,930.8	L4.3: SBSC		-1.32	269.65
7,499.6	7,425.9	L4.1: SBSG		-1.32	269.65
7,657.4	7,561.4	L4.1: SBSG B Carb		-1.32	269.65
7,884.3	7,707.0	SBSG B Target		-1.32	269.65

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
1,200.0	1,200.0	0.0	0.0	Start Build 2.00
1,656.4	1,654.4	-30.2	20.1	Start 5008.6 hold at 1656.4 MD
6,664.9	6,599.6	-691.4	460.6	Start Drop -1.50
7,273.4	7,205.5	-731.6	487.5	Start Build 10.00
8,173.4	7,778.5	-734.6	-85.5	Start DLS 2.00 TFO -1.84
8,244.5	7,777.6	-735.0	-156.6	Start 7218.6 hold at 8244.5 MD
15,463.1	7,598.5	-778.6	-7,372.8	TD at 15463.1

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	[2]Pool Code	[3]Pool Name
30-015-54223	3713	Avalon; Bone Spring, East

[4]Property Code	[5]Property Name	[6]Well Number
332732	BO HOWARD 1211 FED COM	124H

[7]OGRID No.	[8]Operator Name	[9]Elevation
228937	MATADOR PRODUCTION COMPANY	3171'

[10]Surface Location

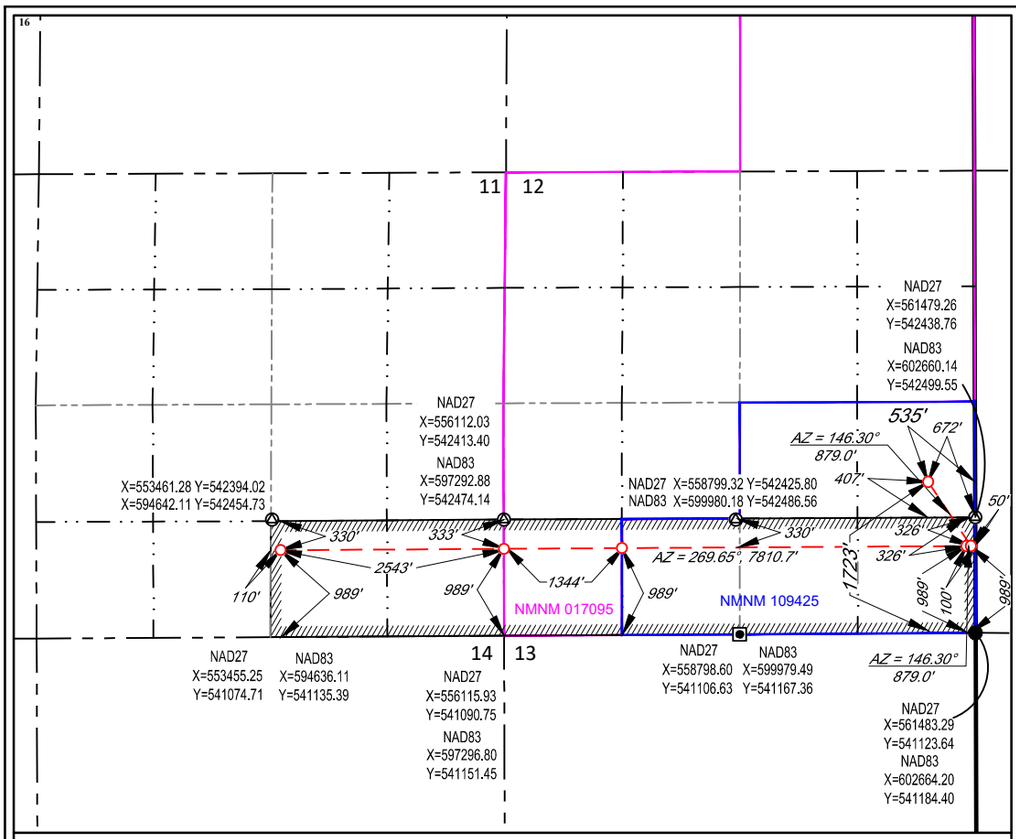
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
I	12	21-S	27-E	-	1723'	SOUTH	535'	EAST	EDDY

[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
O	11	21-S	27-E	-	989'	SOUTH	2543'	EAST	EDDY

[12]Dedicated Acres	[13]Joint or Infill	[14]Consolidation Code	[15]Order No.
240			

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.



NEW MEXICO EAST
NAD 1983

SURFACE LOCATION (SHL)
1723' FSL - SEC. 12
535' FEL - SEC. 12
X=602123 Y=542904
LAT.: N 32.4923512
LONG.: W 104.1361814

KICK OFF POINT (KOP)
989' FSL - SEC. 12
50' FEL - SEC. 12
X=602611 Y=542173
LAT.: N 32.4903386
LONG.: W 104.1346041

FIRST PERF. POINT (FPP)
989' FSL - SEC. 12
100' FEL - SEC. 12
X=602561 Y=542173
LAT.: N 32.4903380
LONG.: W 104.1347663

BLM PERF. POINT (BPP1)
989' FSL - SEC. 12
1344' FWL - SEC. 12
X=598638 Y=542149
LAT.: N 32.4902919
LONG.: W 104.1474898

BLM PERF. POINT (BPP2)
668' FSL - SEC. 12
0' FWL - SEC. 12
X=597294 Y=542141
LAT.: N 32.4902757
LONG.: W 104.1518498

LAST PERF. POINT (LPP)
BOTTOM HOLE LOCATION (BHL)
989' FSL - SEC. 11
2543' FEL - SEC. 11
X=594751 Y=542125
LAT.: N 32.4902448
LONG.: W 104.1600984

[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.

Nicky Fitzgerald 9/15/2023
Signature Date

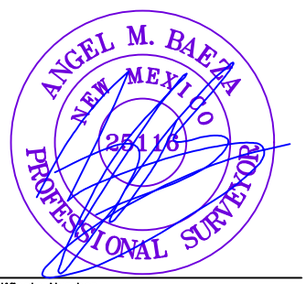
Nicky Fitzgerald
Printed Name

nicky.fitzgerald@matadorresources.com
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 to the best of my belief.

09/14/2023
Date of Survey
Signature and Seal of Professional Surveyor



Certificate Number

NEW MEXICO EAST
NAD 1927

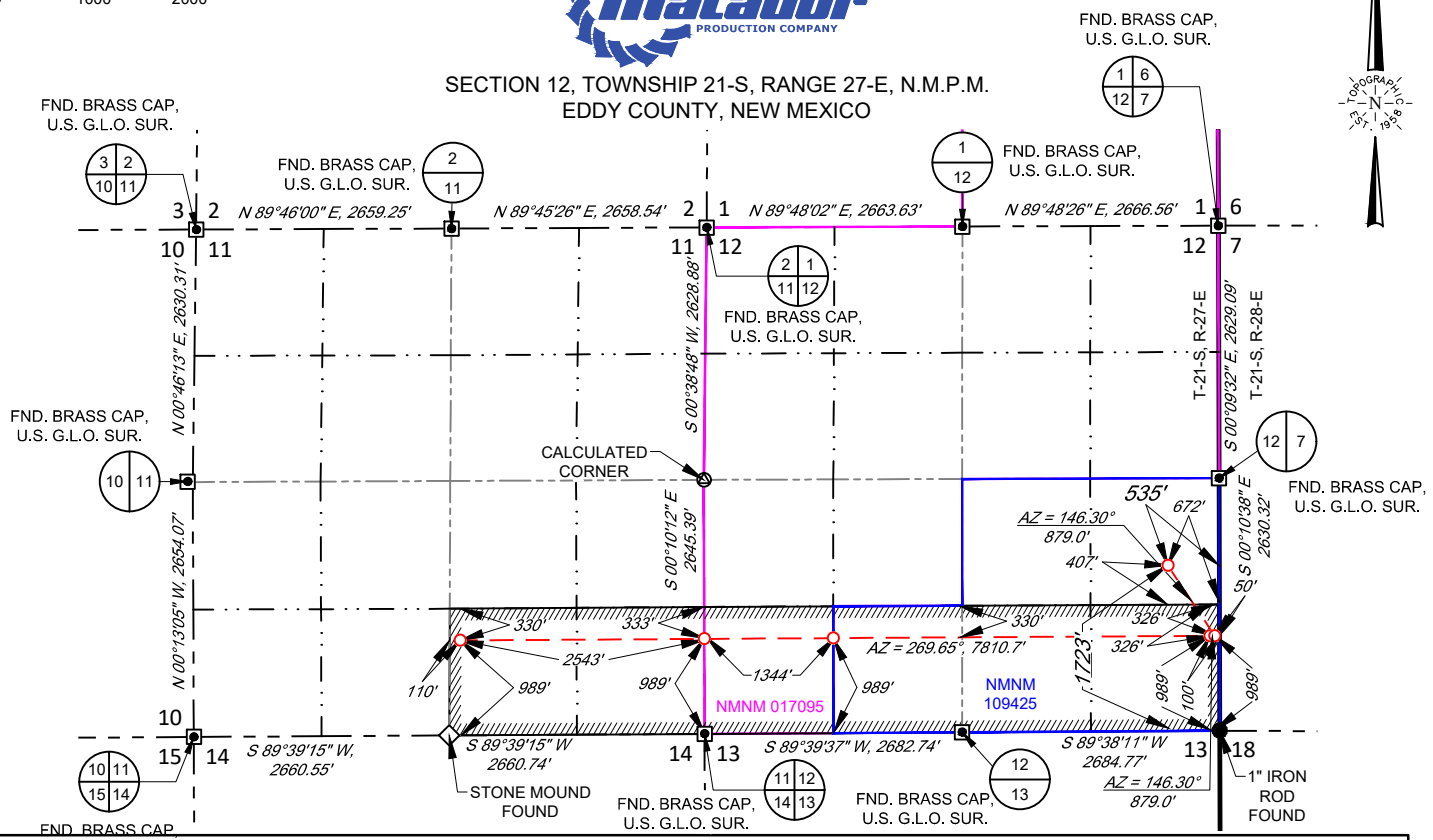
SURFACE LOCATION (SHL)	KICK OFF POINT (KOP)
X=560943 Y=542844 LAT.: N 32.4922325 LONG.: W 104.1356779	X=561430 Y=542112 LAT.: N 32.4902199 LONG.: W 104.1341007
FIRST PERF. POINT (FPP)	**BLM PERF. POINT (BPP1)**
X=561380 Y=542112 LAT.: N 32.4902193 LONG.: W 104.1342629	X=557457 Y=542088 LAT.: N 32.4901733 LONG.: W 104.1469861
BLM PERF. POINT (BPP2)	**LAST PERF. POINT (LPP) BOTTOM HOLE LOCATION (BHL)**
X=556113 Y=542080 LAT.: N 32.4901572 LONG.: W 104.1513459	X=553570 Y=542065 LAT.: N 32.4901264 LONG.: W 104.1595942

SCALE: 1" = 2000'

0' 1000' 2000'

Matador PRODUCTION COMPANY

SECTION 12, TOWNSHIP 21-S, RANGE 27-E, N.M.P.M.
EDDY COUNTY, NEW MEXICO



NEW MEXICO EAST
NAD 1983

SURFACE LOCATION (SHL)	KICK OFF POINT (KOP)	FIRST PERF. POINT (FPP)	BLM PERF. POINT (BPP1)
1723' FSL - SEC. 12	989' FSL - SEC. 12	989' FSL - SEC. 12	989' FSL - SEC. 12
535' FEL - SEC. 12	50' FEL - SEC. 12	100' FEL - SEC. 12	1344' FWL - SEC. 12
X=602123 Y=542904	X=602611 Y=542173	X=602561 Y=542173	X=598638 Y=542149
LAT.: N 32.4923512	LAT.: N 32.4903386	LAT.: N 32.4903380	LAT.: N 32.4902919
LONG.: W 104.1361814	LONG.: W 104.1346041	LONG.: W 104.1347663	LONG.: W 104.1474898

BLM PERF. POINT (BPP2)	LAST PERF. POINT (LPP) BOTTOM HOLE LOCATION (BHL)
668' FSL - SEC. 12	989' FSL - SEC. 11
0' FWL - SEC. 12	2543' FEL - SEC. 11
X=597294 Y=542141	X=594751 Y=542125
LAT.: N 32.4902757	LAT.: N 32.4902448
LONG.: W 104.1518498	LONG.: W 104.1600984

LEASE NAME & WELL NO.: BO HOWARD 1211 FED COM 124H

SECTION 12 TWP 21-S RGE 27-E SURVEY N.M.P.M.
COUNTY EDDY STATE NM
DESCRIPTION 1723' FNL & 535' FEL

DISTANCE & DIRECTION

FROM INT. OF GEORGE SHOUP RELIEF RTE. & US-180 E/US-62E/E GREENE ST., GO NORTHEAST ON US-180 E/US-62E/E GREENE ST. ±5.1 MILES, THENCE NORTHWEST (LEFT) ON MAGNUM RD. ±1.1 MILES, THENCE WEST (LEFT) ON A LEASE RD. ±1.0 MILE, THENCE SOUTH (LEFT) ON A PROPOSED RD. ±1301 FEET TO A POINT ±511 FEET NORTHEAST OF THE LOCATION.

ALL BEARINGS, DISTANCES, AND COORDINATE VALUES CONTAINED HEREON ARE GRID BASED UPON THE NEW MEXICO COORDINATE SYSTEM OF 1983, EAST ZONE, U.S. SURVEY FEET

THIS EASEMENT/SERVITUDE LOCATION SHOWN HEREON HAS BEEN SURVEYED ON THE GROUND UNDER MY SUPERVISION AND PREPARED ACCORDING TO THE EVIDENCE FOUND AT THE TIME OF SURVEY, AND DATA PROVIDED BY MATADOR PRODUCTION COMPANY. THIS CERTIFICATION IS MADE AND LIMITED TO THOSE PERSONS OR ENTITIES SHOWN ON THE FACE OF THIS PLAT AND IS NON-TRANSFERABLE. THIS SURVEY IS CERTIFIED FOR THIS TRANSACTION ONLY.

AS OF THE DATE OF SURVEY, ALL ABOVE GROUND APPURTENANCES WITHIN 300' OF THE STAKED LOCATION ARE SHOWN HEREON.

ANGEL M. BAEZA NEW MEXICO 25116 PROFESSIONAL SURVEYOR

Angel M. Baeza, P.S. No. 25116
September 14, 2023

TOPOGRAPHIC
LOYALTY INNOVATION LEGACY
481 WINSCOTT ROAD, Ste. 200 • BENBROOK, TEXAS 76126
TELEPHONE: (817) 744-7512 • FAX (817) 744-7554
TEXAS FIRM REGISTRATION NO. 10042504
WWW.TOPOGRAPHIC.COM

S:\SURVEY\MATADOR_RESOURCES\BO_HOWARD_1211_12-21S-27E\FINAL_PRODUCTS\LO_BO_HOWARD_1211_FED_COM_124H_REV5.DWG 9/14/2023 4:53:15 PM adisabella

LEGEND

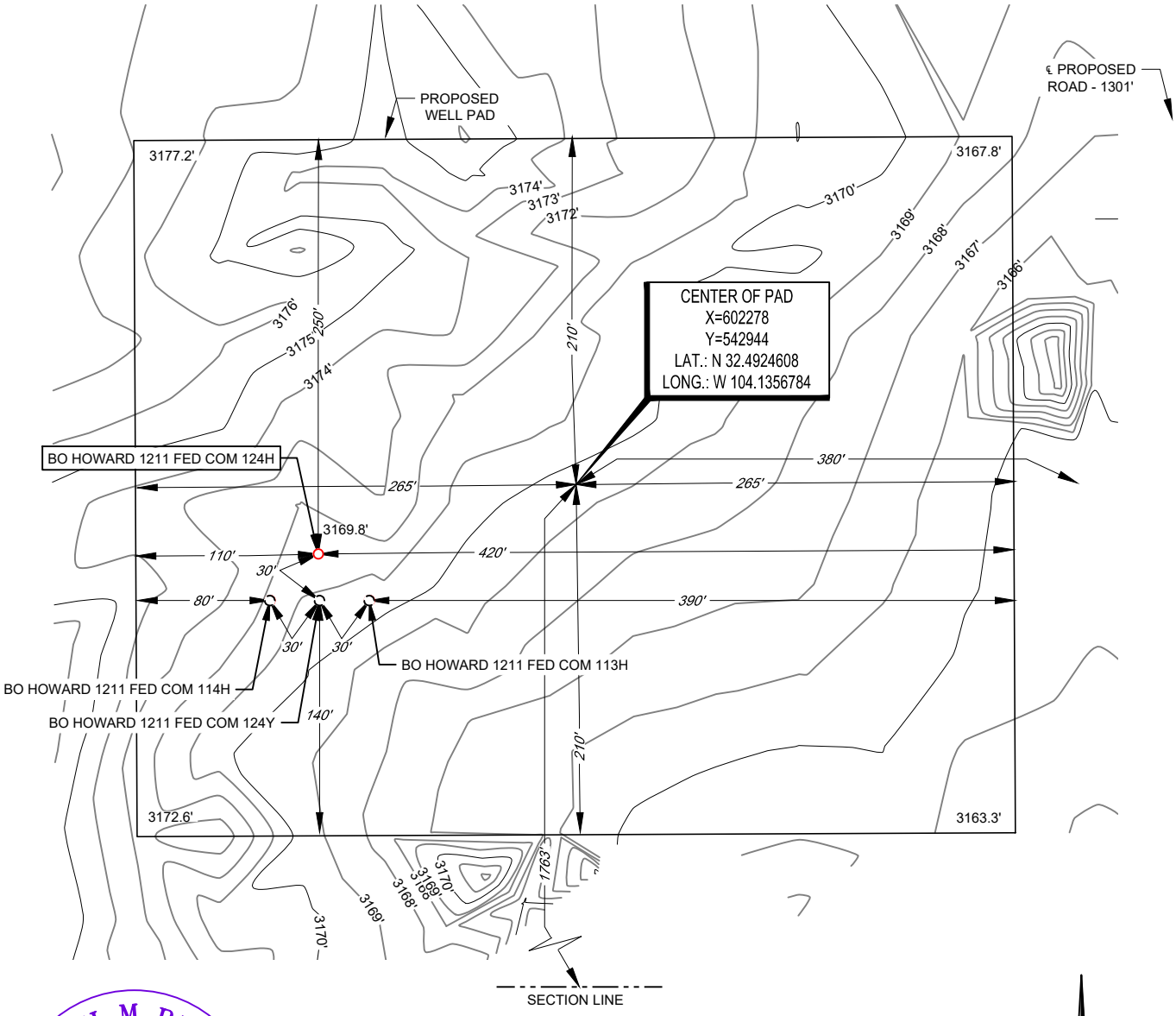
SECTION LINE

PROPOSED ROAD

Matador PRODUCTION COMPANY

SECTION 12, TOWNSHIP 21-S, RANGE 27-E, N.M.P.M.
EDDY COUNTY, NEW MEXICO

DETAIL VIEW
SCALE: 1" = 100'



LEASE NAME & WELL NO.: BO HOWARD 1211 FED COM 124H

124H LATITUDE N 32.4923512 124H LONGITUDE W 104.1361814

CENTER OF PAD IS 826' FNL & 655' FEL

SCALE: 1" = 100'

0' 50' 100'

ANGEL M. BAEZA NEW MEXICO 25116 PROFESSIONAL SURVEYOR

Angel M. Baeza, P.S. No. 25116

ALL BEARINGS, DISTANCES, AND COORDINATE VALUES CONTAINED HEREON ARE GRID BASED UPON THE NEW MEXICO COORDINATE SYSTEM OF 1983, EAST ZONE, U.S. SURVEY FEET. ELEVATIONS USED ARE NAVD88, OBTAINED THROUGH AN OPUS SOLUTION.

THIS PROPOSED PAD SITE LOCATION SHOWN HEREON HAS BEEN SURVEYED ON THE GROUND UNDER MY SUPERVISION AND PREPARED ACCORDING TO THE EVIDENCE FOUND AT THE TIME OF SURVEY, AND DATA PROVIDED BY MATADOR PRODUCTION COMPANY. ONLY THE DATA SHOWN ABOVE IS BEING CERTIFIED TO, ALL OTHER INFORMATION WAS INTENTIONALLY OMITTED. THIS PLAT IS ONLY INTENDED TO BE USED FOR A PERMIT AND IS NOT A BOUNDARY SURVEY. THIS CERTIFICATION IS MADE AND LIMITED TO THOSE PERSONS OR ENTITIES SHOWN ON THE FACE OF THIS PLAT AND IS NON-TRANSFERABLE. THIS SURVEY IS CERTIFIED FOR THIS TRANSACTION ONLY.

ORIGINAL DOCUMENT SIZE: 8.5" X 11"

TOPOGRAPHIC
LOYALTY INNOVATION LEGACY
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TELEPHONE: (817) 744-7512 • FAX (817) 744-7554
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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 Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

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

CONDITIONS

Action 266524

CONDITIONS

Operator: MATADOR PRODUCTION COMPANY One Lincoln Centre Dallas, TX 75240	OGRID: 228937
	Action Number: 266524
	Action Type: [C-103] NOI Change of Plans (C-103A)

CONDITIONS

Created By	Condition	Condition Date
ward.rikala	Original COA's still apply.	9/18/2023