

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

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		5. Lease Serial No. 6. If Indian, Allottee or Tribe Name 7. If Unit or CA Agreement, Name and No. 8. Lease Name and Well No. [332472]
2. Name of Operator [373910]		9. API Well No. 30-025-49811
3a. Address	3b. Phone No. (include area code)	10. Field and Pool, or Exploratory [97779]
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	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.

NGMP Rec 03/03/2022

SL

(Continued on page 2)



Approval Date: 02/11/2022

KZ
03/04/2022

*(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 well, and any other required information, should be furnished when required by Federal agency offices.

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

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

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 well or to reenter a plugged and abandoned well; and (2) document, for administrative use, information for the management, disposal and use of National Resource Lands and resources including (a) analyzing your proposal to discover and extract the Federal or Indian resources encountered; (b) reviewing procedures and equipment and the projected impact on the land involved; and (c) evaluating the effects of the proposed operation on the surface and subsurface water and other environmental impacts.

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

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

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

The BLM connects this information to an 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 Connection Clearance Officer (WO-630), 1849 C Street, N.W., Mail Stop 401 LS, Washington, D.C. 20240.

Additional Operator Remarks

Location of Well

0. SHL: TR O / 345 FSL / 2027 FEL / TWSP: 24S / RANGE: 35E / SECTION: 36 / LAT: 32.167667 / LONG: -103.31927 (TVD: 0 feet, MD: 0 feet)

PPP: SWSE / 0 FSL / 1877 FEL / TWSP: 24S / RANGE: 35E / SECTION: 25 / LAT: 32.181242 / LONG: -103.318787 (TVD: 8394 feet, MD: 13300 feet)

PPP: TR O / 692 FSL / 1877 FEL / TWSP: 24S / RANGE: 35E / SECTION: 36 / LAT: 32.16862 / LONG: -103.318786 (TVD: 8273 feet, MD: 8350 feet)

BHL: TR B / 150 FNL / 1877 FEL / TWSP: 24S / RANGE: 35E / SECTION: 25 / LAT: 32.195341 / LONG: -103.318787 (TVD: 8394 feet, MD: 18449 feet)

BLM Point of Contact

Name: TENILLE ORTIZ

Title: Legal Instruments Examiner

Phone: (575) 234-2224

Email: tortiz@blm.gov

CONFIDENTIAL

Review and Appeal Rights

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

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

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

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

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-025-49810		² Pool Code 97779		³ Pool Name DOGIE DRAW;DELAWARE	
⁴ Property Code 332472		⁵ Property Name FMM FED COM			⁶ Well Number 103H
⁷ OGRID No. 373910		⁸ Operator Name FRANKLIN MOUNTAIN ENERGY LLC			⁹ Elevation 3333.3'

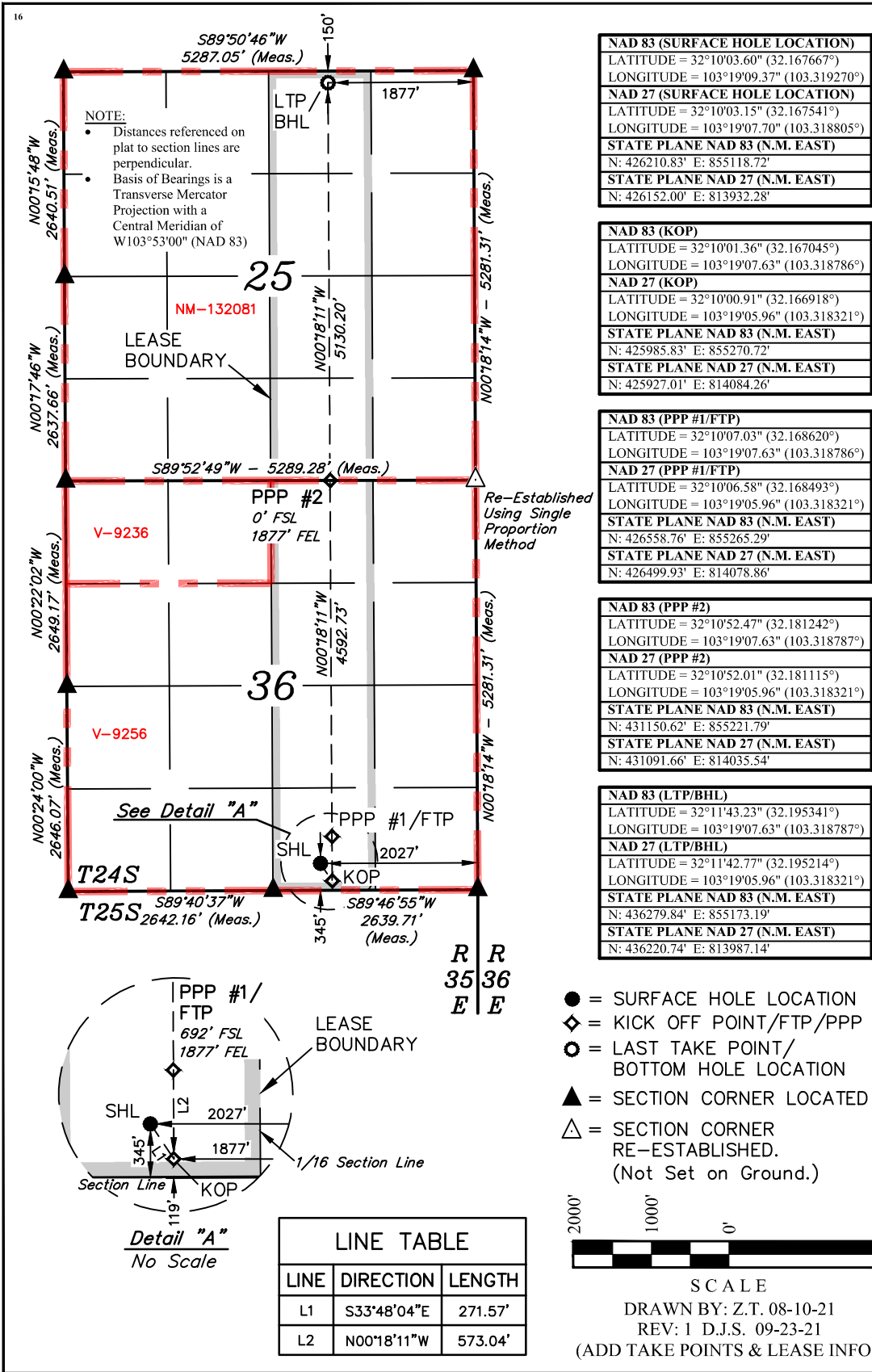
¹⁰ Surface Location

UL or lot no. O	Section 36	Township 24S	Range 35E	Lot Idn	Feet from the 345	North/South line SOUTH	Feet from the 2027	East/West line EAST	County LEA
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¹¹ Bottom Hole Location If Different From Surface

UL or lot no. B	Section 25	Township 24S	Range 35E	Lot Idn	Feet from the 150	North/South line NORTH	Feet from the 1877	East/West line EAST	County LEA
¹² Dedicated Acres 320		¹³ Joint or Infill		¹⁴ Consolidation Code		¹⁵ Order No.			

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



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.

Signature: *Shelly Albrecht* Date: 9/24/2021

Printed Name: Shelly Albrecht

salbrecht@fmmllc.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 and correct to the best of my belief.

JULY 31, 2021

Date of Survey

Signature and Seal of Professional Surveyor:

PAUL BUCHELE
NEW MEXICO
23782
09-23-21
PROFESSIONAL SURVEYOR

Certificate Number:

State of New Mexico
Energy, Minerals and Natural Resources Department

Submit Electronically
Via E-permitting

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

NATURAL GAS MANAGEMENT PLAN

This Natural Gas Management Plan must be submitted with each Application for Permit to Drill (APD) for a new or recompleted well.

Section 1 – Plan Description

Effective May 25, 2021

I. Operator: Franklin Mountain Energy, LLC **OGRID:** 373910 **Date:** 02/24/2022

II. Type: ☒ Original ☐ Amendment due to ☐ 19.15.27.9.D(6)(a) NMAC ☐ 19.15.27.9.D(6)(b) NMAC ☐ Other.

If Other, please describe: _____

III. Well(s): Provide the following information for each new or recompleted well or set of wells proposed to be drilled or proposed to be recompleted from a single well pad or connected to a central delivery point.

Well Name	API	ULSTR	Footages	Anticipated Oil BBL/D	Anticipated Gas MCF/D	Anticipated Produced Water BBL/D
See Attached Well List						

IV. Central Delivery Point Name: FMM CTB: (##) fAPP2203348319 [See 19.15.27.9(D)(1) NMAC]

V. Anticipated Schedule: Provide the following information for each new or recompleted well or set of wells proposed to be drilled or proposed to be recompleted from a single well pad or connected to a central delivery point.

Well Name	API	Spud Date	TD Reached Date	Completion Commencement Date	Initial Flow Back Date	First Production Date
See Attached Well List						

VI. Separation Equipment: ☒ Attach a complete description of how Operator will size separation equipment to optimize gas capture.

VII. Operational Practices: ☒ Attach a complete description of the actions Operator will take to comply with the requirements of Subsection A through F of 19.15.27.8 NMAC.

VIII. Best Management Practices: ☒ Attach a complete description of Operator's best management practices to minimize venting during active and planned maintenance.

Section 2 – Enhanced Plan

EFFECTIVE APRIL 1, 2022

Beginning April 1, 2022, an operator that is not in compliance with its statewide natural gas capture requirement for the applicable reporting area must complete this section.

☒ Operator certifies that it is not required to complete this section because Operator is in compliance with its statewide natural gas capture requirement for the applicable reporting area.

IX. Anticipated Natural Gas Production:

Well	API	Anticipated Average Natural Gas Rate MCF/D	Anticipated Volume of Natural Gas for the First Year MCF

X. Natural Gas Gathering System (NGGS):

Operator	System	ULSTR of Tie-in	Anticipated Gathering Start Date	Available Maximum Daily Capacity of System Segment Tie-in

XI. Map. ☐ Attach an accurate and legible map depicting the location of the well(s), the anticipated pipeline route(s) connecting the production operations to the existing or planned interconnect of the natural gas gathering system(s), and the maximum daily capacity of the segment or portion of the natural gas gathering system(s) to which the well(s) will be connected.

XII. Line Capacity. The natural gas gathering system ☐ will ☐ will not have capacity to gather 100% of the anticipated natural gas production volume from the well prior to the date of first production.

XIII. Line Pressure. Operator ☐ does ☐ does not anticipate that its existing well(s) connected to the same segment, or portion, of the natural gas gathering system(s) described above will continue to meet anticipated increases in line pressure caused by the new well(s).

☐ Attach Operator's plan to manage production in response to the increased line pressure.

XIV. Confidentiality: ☐ Operator asserts confidentiality pursuant to Section 71-2-8 NMSA 1978 for the information provided in Section 2 as provided in Paragraph (2) of Subsection D of 19.15.27.9 NMAC, and attaches a full description of the specific information for which confidentiality is asserted and the basis for such assertion.

Section 3 - Certifications

Effective May 25, 2021

Operator certifies that, after reasonable inquiry and based on the available information at the time of submittal:

☒ Operator will be able to connect the well(s) to a natural gas gathering system in the general area with sufficient capacity to transport one hundred percent of the anticipated volume of natural gas produced from the well(s) commencing on the date of first production, taking into account the current and anticipated volumes of produced natural gas from other wells connected to the pipeline gathering system; or

☐ Operator will not be able to connect to a natural gas gathering system in the general area with sufficient capacity to transport one hundred percent of the anticipated volume of natural gas produced from the well(s) commencing on the date of first production, taking into account the current and anticipated volumes of produced natural gas from other wells connected to the pipeline gathering system.

If Operator checks this box, Operator will select one of the following:

Well Shut-In. ☐ Operator will shut-in and not produce the well until it submits the certification required by Paragraph (4) of Subsection D of 19.15.27.9 NMAC; or

Venting and Flaring Plan. ☐ Operator has attached a venting and flaring plan that evaluates and selects one or more of the potential alternative beneficial uses for the natural gas until a natural gas gathering system is available, including:

- (a) power generation on lease;
- (b) power generation for grid;
- (c) compression on lease;
- (d) liquids removal on lease;
- (e) reinjection for underground storage;
- (f) reinjection for temporary storage;
- (g) reinjection for enhanced oil recovery;
- (h) fuel cell production; and
- (i) other alternative beneficial uses approved by the division.

Section 4 - Notices

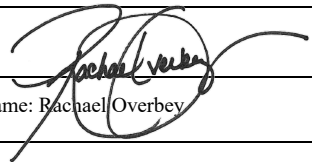
1. If, at any time after Operator submits this Natural Gas Management Plan and before the well is spud:

(a) Operator becomes aware that the natural gas gathering system it planned to connect the well(s) to has become unavailable or will not have capacity to transport one hundred percent of the production from the well(s), no later than 20 days after becoming aware of such information, Operator shall submit for OCD's approval a new or revised venting and flaring plan containing the information specified in Paragraph (5) of Subsection D of 19.15.27.9 NMAC; or

(b) Operator becomes aware that it has, cumulatively for the year, become out of compliance with its baseline natural gas capture rate or natural gas capture requirement, no later than 20 days after becoming aware of such information, Operator shall submit for OCD's approval a new or revised Natural Gas Management Plan for each well it plans to spud during the next 90 days containing the information specified in Paragraph (2) of Subsection D of 19.15.27.9 NMAC, and shall file an update for each Natural Gas Management Plan until Operator is back in compliance with its baseline natural gas capture rate or natural gas capture requirement.

2. OCD may deny or conditionally approve an APD if Operator does not make a certification, fails to submit an adequate venting and flaring plan which includes alternative beneficial uses for the anticipated volume of natural gas produced, or if OCD determines that Operator will not have adequate natural gas takeaway capacity at the time a well will be spud.

I certify that, after reasonable inquiry, the statements in and attached to this Natural Gas Management Plan are true and correct to the best of my knowledge and acknowledge that a false statement may be subject to civil and criminal penalties under the Oil and Gas Act.

Signature: 
Printed Name: Rachael Overbey
Title: Director Operations Planning & Regulatory
E-mail Address: roverbey@fmelle.com
Date: 2/24/2022
Phone: 720-414-7868
OIL CONSERVATION DIVISION (Only applicable when submitted as a standalone form)
Approved By:
Title:
Approval Date:
Conditions of Approval:

NATURAL GAS MANAGEMENT PLAN

III. Well(s): Provide the following information for each new or recompleted well or set of wells proposed to be drilled or proposed to be recompleted from a single well pad or connected to a central delivery point.

Well Name	API 14 Digit	ULSTR	Surface Location FTG	Anticipated Oil BBL/D	Anticipated Gas MCF/D	Anticipated Produced Water BBL/D
FMM Fed Com 101H	TBD	M-36-24S-35E	345 FSL 1269 FWL	800 +/-	700 +/-	600 +/-
FMM Fed Com 102H	TBD	M-36-24S-35E	345 FSL 1319 FWL	800 +/-	700 +/-	600 +/-
FMM Fed Com 301H	TBD	M-36-24S-35E	345 FSL 1294 FWL	800 +/-	700 +/-	600 +/-
FMM Fed Com 302H	TBD	N-36-24S-35E	345 FSL 1344 FWL	800 +/-	700 +/-	600 +/-
FMM Fed Com 801H	TBD	M-36-24S-35E	270 FSL 1281 FWL	800 +/-	700 +/-	600 +/-
FMM Fed Com 802H	TBD	M-36-24S-35E	270 FSL 1306 FWL	800 +/-	700 +/-	600 +/-
FMM Fed Com 803H	TBD	N-36-24S-35E	270 FSL 1331 FWL	800 +/-	700 +/-	600 +/-
FMM Fed Com 103H	TBD	O-36-24S-35E	345 FSL 2027 FEL	800 +/-	700 +/-	600 +/-
FMM Fed Com 104H	TBD	O-36-24S-35E	345 FSL 1977 FEL	800 +/-	700 +/-	600 +/-
FMM Fed Com 303H	TBD	O-36-24S-35E	345 FSL 2002 FEL	800 +/-	700 +/-	600 +/-
FMM Fed Com 304H	TBD	O-36-24S-35E	345 FSL 1952 FEL	800 +/-	700 +/-	600 +/-
FMM Fed Com 804H	TBD	O-36-24S-35E	270 FSL 2015 FEL	800 +/-	700 +/-	600 +/-
FMM Fed Com 805H	TBD	O-36-24S-35E	270 FSL 1990 FEL	800 +/-	700 +/-	600 +/-
FMM Fed Com 806H	TBD	O-36-24S-35E	270 FSL 1965 FEL	800 +/-	700 +/-	600 +/-

V. Anticipated Schedule: Provide the following information for each new or recompleted well or set of wells proposed to be drilled or proposed to be recompleted from a single well pad or connected to a central delivery point.

Well Name	API 14 Digit	Spud Date (Batch Drilling)	TD Reached Date	Completion Commencement Date	Initial Flowback Date	First Production Date
FMM Fed Com 101H	TBD	6/27/2022	7/31/2022	11/14/2022	12/31/2022	1/2/2023
FMM Fed Com 102H	TBD	6/27/2022	7/31/2022	11/14/2022	12/31/2022	1/2/2023
FMM Fed Com 301H	TBD	6/27/2022	7/31/2022	11/14/2022	12/31/2022	1/2/2023
FMM Fed Com 302H	TBD	6/27/2022	7/31/2022	11/14/2022	12/31/2022	1/2/2023
FMM Fed Com 801H	TBD	6/27/2022	7/31/2022	11/14/2022	12/31/2022	1/2/2023
FMM Fed Com 802H	TBD	6/27/2022	7/31/2022	11/14/2022	12/31/2022	1/2/2023
FMM Fed Com 803H	TBD	6/27/2022	7/31/2022	11/14/2022	12/31/2022	1/2/2023
FMM Fed Com 103H	TBD	7/25/2022	8/27/2022	12/1/2022	1/4/2023	1/7/2023
FMM Fed Com 104H	TBD	7/25/2022	8/27/2022	12/1/2022	1/4/2023	1/7/2023
FMM Fed Com 303H	TBD	7/25/2022	8/27/2022	12/1/2022	1/4/2023	1/7/2023
FMM Fed Com 304H	TBD	7/25/2022	8/27/2022	12/1/2022	1/4/2023	1/7/2023
FMM Fed Com 804H	TBD	7/25/2022	8/27/2022	12/1/2022	1/4/2023	1/7/2023
FMM Fed Com 805H	TBD	7/25/2022	8/27/2022	12/1/2022	1/4/2023	1/7/2023
FMM Fed Com 806H	TBD	7/25/2022	8/27/2022	12/1/2022	1/4/2023	1/7/2023



Natural Gas Management Plan

Items VI-VIII

VI. Separation Equipment: Attach a complete description of how Operator will size separation equipment to optimize gas capture.

- Data from surrounding wells is used to generate type curves which provides the basis for expected gas rates during initial production, peak production and then the natural decline.
- Separation equipment will be sized to provide adequate separation for peak production.
- Facility design includes multiple stages of separation to minimize gas waste. Wells flow through a high pressure 2-phase separator to remove bulk gas, liquid from the 2-phase separator is sent to a 3-phase separator where additional gas is separated. Gas from the 2 Phase and 3 Phase separators are then sent through a gas scrubber before being route to treatment and/or sales. As production declines the 2-phase separator may be removed.
- Industry standard sizing calculations are used for gas-liquid separation and liquid-liquid separation.

VII. Operational Practices: Attach a complete description of the actions Operator will take to comply with the requirements of Subsection A through F 19.15.27.8 NMAC.

- Drilling, completion and production setup is designed to minimize the waste of natural gas and to flare instead of vent.
- *Drilling Operations:*
 - Natural gas encountered will be flared instead of vented unless there is an equipment malfunction and/or to avoid risking safety or the environment.
 - Flares will be properly sized and placed at least 100' from the nearest surface hole on the pad.
- *Completions/Recompletions Operations:*
 - Flowback operations will not commence until connected to a properly sized gas gathering system.
 - During initial flowback wells are routed to the separation equipment as soon as technically feasible to minimize gas waste.
 - During separation flowback wells are routed to the separation equipment to minimize gas waste.
 - Gas sales is maximized. Gas will be flared instead of vented during an emergency or malfunction to avoid posing a risk to operations or personnel safety.
 - Flares are properly sized with a continuous pilot.
- *Production Operations:*
 - Gas sales will be maximized. Gas will be flared instead of vented during an emergency or malfunction to avoid posing a risk to operations or personnel safety.
 - After a well is stabilized from liquid unloading, the well will be turned back into the collection system.
- *Performance Standards:*
 - The facility will be designed to handle peak production rates and pressures.
 - All tanks will have automatic gauging equipment.
 - Flares will be designed to ensure proper combustion and will have continuous pilots. Flares will be located 100' from nearest surface hole on the pad and storage tanks.
 - Weekly AVOs will be performed, and any leaking thief hatches will be cleaned and properly re-sealed.



- **Measurement and Calibration:**
 - All volume that is flared and vented that is not measured will be estimated.
 - When metering is not practical due to low pressure/rate, all vented or flared volumes will be estimated.
 - Measurement will conform to industry standards. Measurement will not be bypassed except for purposes of inspection or calibration.

VIII. Best Management Practices: Attach a complete description of Operator's best management practices to minimize venting during active and planned maintenance.

- Venting will be minimized during active and planned maintenance.
- Systems and equipment requiring maintenance will be isolated and blown down to sales and then flare before any remaining gas is vented in an effort to minimize waste and venting.
- Downhole maintenance will use best management practices to minimize vent.



FMM Fed Com 103H

1. Geologic name of surface location: Permian
2. Estimated tops of important geological markers:

Formations	PROG SS	PROG TVD	Picked TVD	delta	Potential/Issues
Cenozoic Alluvium (surface)	3,333'	30'	30'	0	Sand/Gravels/unconsolidated
Rustler	2,104'	1,259'			Carbonates
Salado	1,884'	1,479'			Salt, Carbonate & Clastics
Base Salt	83'	3,280'			Shaley Carbonate & Shale
Capitan	-715'	4,078'			Carbonates
Lamar	-1,877'	5,240'			Carbonate & Clastics
Bell Canyon	-2,004'	5,367'			Sandstone - oil/gas/water
Cherry Canyon	-2,676'	6,039'			Sandstone - oil/gas/water
Brushy Canyon	-3,985'	7,348'			Sand/carb/shales - oil/gas/water
Leonard	-4,883'	8,246'			Sand/carb/shales - oil/gas/water
HZ Target at Landing	-5,031'	8,394'			Sand/carb/shales - oil/gas/water
Bone Spring Lime	-5,145'	8,508'			Shale/Carbonates - oil/gas
Avalon	-5,211'	8,574'			Shale/Carbonates - oil/gas

3. Estimated depth of anticipated fresh water, oil or gas:

Upper Permian Sands	0- 400'	Fresh Water
Delaware Sands	5,367'	Oil
Leonard	8,246'	Oil
Avalon	8,574'	Oil

No other formations are expected to give up oil, gas or fresh water in measurable quantities. Surface freshwater sands will be protected by setting 13 3/8" casing at 1,300' and circulating cement back to surface.

4. Casing Program:

All casing strings will be run new. Safety factors calculated assuming the well is vertical.

Casing string	Weight	Grade	Burst	Collapse	Tension	Conn	Length	API design factor			
								Burst	Collapse	Tension	Coupling
Surface 13 3/8"	54.5	J-55	2730	1130	853	BTC 909	1300	1.18	1.67	4.99	5.32
Intermediate 9 5/8"	40	HCL-80	7430	4230	916	BTC 1042	5280	1.75	1.71	2.94	3.35
Intermediate 7 5/8"	29.7	HCP-110	8280	7150	827	Stinger 564	8728	1.52	1.75	2.30	1.57
Long string 5 1/2"	23	P-110	14520	14520	729	Eagle 606 TVD	18449 8394	1.32	1.68	1.39	1.16 2.07

7 5/8" casing will be set at 8,728' MD/8,394' TVD at 90° Inc. Stress calculations on 5 1/2" casing performed assuming 18,449' depth. Actual max vertical depth is 8,394'.



Cementing Program:

Cementing Stage tool can be placed in the 1st Intermediate string as a contingency to ensure required TOC to surface.

String Type	Hole Size	Casing Size	Setting Depth	Sacks	Type of cmt	Lead Yield ft ³ /sk	Water gal/sk	TOC ft	Sacks	Type of cmt	Tail Yield ft ³ /sk	Water gal/sk	TOC	Excess
Surf	17.5	13.375	1300	803	Extenda Cem, 12.8 ppg Class C, 3lb/sk Kol-Seal	1.747	9.06	0	330	Tail, 14.8 ppg, Class C,	1.349	6.51	1000	100%
Int1	12.25	9.625	5280	1551	0.125pps Poly-E-Flake Lead, 12.8 ppg, Class C 5% Salt,	1.79	9.74	0	154	1% CaCl ₂ , 0.125pps Celo-Flake Tail, 14.8 ppg, Class C,	1.33	6.37	4980	100%
Int2	8.75	7.625	8728	183	0.125 pps Poly-E-Flake, 3lb/sk Kol-Seal Lite Fill, 9.5 ppg, Class C 3lb/sk Bridgemaker Gel, 5% Salt, 5pps LCM, 0.25pps Cello-Flake	2.13	5.97	4280	94	NeoCem 14.8 ppg, Class C 0.25 pps Cello-Flake, 2% CaCl ₂	1.33	6.29	7728	50%
Prod	6.75	5.5	18449	800	Tail, 14.5 ppg, Gas Migration Control	1.34	6.22	7728						20%

5. Minimum Specifications for Pressure Control:

The minimum blowout preventer equipment (BOPE) shown in Exhibit #1 will consist of a single ram, mud cross and double ram-type (10,000 psi WP) preventer and an annular preventer (5,000-psi WP). Both units will be hydraulically operated, and the ram-type will be equipped with blind rams on bottom and 4 ½" x 7" variable pipe rams on top. All BOPE will be tested in accordance with Onshore Oil & Gas order No. 2.

Before drilling out of the surface casing, the ram-type BOP and accessory equipment will be tested to 5,000/250 psig and the annular preventer to 5,000/250 psig. The surface casing will be tested to 1500 psi for 30 minutes.

Before drilling out of the second intermediate casing, the ram-type BOP and accessory equipment will be tested to 10,000/250 psig and the annular preventer to 5,000/250 psig. The second intermediate casing will be tested to 2000 psi for 30 minutes prior to drillout.

Pipe rams will be operationally checked each 24-hour period. Blind rams will be operationally checked on each trip out of the hole. These checks will be noted on the daily tour sheets.

A hydraulically operated choke will be installed prior to drilling out of the intermediate casing shoe.



6. Types and characteristics of the proposed mud system:

During this procedure we plan to use a Closed-Loop System and haul contents to the required disposal. The applicable depths and properties of the drilling fluid systems are as follows.

Depth	Type	Weight (ppg)	Viscosity	Water Loss
0 – 1,300'	Fresh - Gel	8.6-8.8	28-34	N/c
1,300' – 8,728'	Brine	8.8-10.2	28-34	N/c
8,728' – 18,449' Lateral	Oil Base	10.0-12.0	58-68	3 - 6

The highest mud weight needed to balance formation is expected to be 10-11 ppg. In order to maintain hole stability, mud weights up to 12 ppg may be utilized.

An electronic pit volume totalizer (PVT) will be utilized on the circulating system, to monitor pit volume, flow rate, pump pressure and stroke rate.

Sufficient mud materials to maintain mud properties and meet minimum lost circulation and weight increase requirements will be kept at the wellsite at all times.

7. Auxiliary well control and monitoring equipment:

(A) A kelly cock will be kept in the drill string at all times.

(B) A full opening drill pipe-stabbing valve (inside BOP) with proper drill pipe connections will be on the rig floor at all times.

(C) H₂S monitoring and detection equipment will be utilized from surface casing point to TD.

(D) A wear bushing will be installed in the wellhead prior to drilling out of the surface casing.

8. Logging, testing and coring program:

GR–CCL–CNL Will be run in cased hole during completions phase of operations.

Open-hole logs are not planned for this well.

9. Abnormal conditions, pressures, temperatures and potential hazards:

The estimated bottom-hole temperature at 8,394' TVD (deepest point of the well) is 160F with an estimated maximum bottom-hole pressure (BHP) at the same point of 5,237 psig (based on 12 ppg MW). Hydrogen sulfate may be present in the area. All necessary precautions will be taken before drilling operations commence. See Hydrogen Sulfide Plan below:

10. Hydrogen Sulfide Plan:

A. All personnel shall receive proper awareness H₂S training.

B. Briefing Area: two perpendicular areas will be designated by signs and readily accessible.

C. Required Emergency Equipment

a. Well Control Equipment

i. Flare line 150' from wellhead to be ignited by auto ignition sparking system.

ii. Choke manifold with a remotely operated hydraulic choke.

iii. Mud/gas separator

b. Protective equipment for essential personnel

i. Breathing Apparatus

1. Rescue packs (SCBA) – 1 unit shall be placed at each briefing area, 2 shall be stored in a safety trailer on site.

2. Work/Escapes packs – 4 packs shall be stored on the rig floor with sufficient air hose not to restrict work activity



3. Emergency Escape Packs – 4 packs shall be stored in the doghouse for emergency evacuation.
- ii. Auxiliary Rescue Equipment
 1. Stretcher
 2. Two OSHA full body harnesses
 3. 100 feet of 5/8 inches OSHA approved rope
 4. 1-20# class ABC fire extinguisher
- c. H2S Detection and Monitoring Equipment
 - i. A stationary detector with three sensors will be placed in the doghouse if equipped, set to visually alarm at 10 ppm and audible at 14 ppm. The detector will be calibrated a minimum of every 30 days or as needed. The sensors will be placed in the following places:
 1. Rig Floor
 2. Below Rig Floor / Near BOPs
 3. End of flow line or where well bore fluid is being discharged (near shakers)
 - ii. If H2S is encountered, measured values and formations will be provided to the BLM.
- d. Visual Warning Systems
 - i. One color code condition sign will be placed at the entrance to the site reflecting the possible conditions at the site.
 - ii. A colored condition flag will be on display, reflecting the current condition at the site at the time.
 - iii. Two windsocks will be placed in strategic locations, visible from all angles.
- e. Mud Program
 - i. The Mud program will be designed to minimize the volume of H2S circulated to surface. The operator will have the necessary mud products to minimize hazards while drilling in H2S bearing zones.
- f. Metallurgy
 - i. All drill strings, casings, tubing, wellhead, blowout preventer, drilling spool, kill lines, choke manifold and lines, and valves shall be suitable for H2S service at the anticipated operating pressures to prevent sour sulfide stress cracking.
- g. Communication
 - i. Communication will be via cell phones and walkie talkies on location.

Franklin Mountain Energy has conducted a review of offset operated wells to determine if an H2S contingency plan is required for the proposed well. Based on concentrations of offset wells, proximity to main roads, and distance to populated areas, the radius of exposure created by a potential release was determined to be minimal and low enough to not necessitate an H2S contingency plan. This will be reevaluated during wellbore construction if H2S is observed and after the well is on production.

11. Anticipated starting date and duration of operations:

The drilling operations on the well should be finished in approximately one month. However, in order to minimize disturbance in the area and to improve efficiency Franklin Mountain is planning to drill all the wells on the pad prior to commence completion operations. To even further reduce the time heavy machinery is used the “batch drilling” method may be used. A batch drilling sequence sundry will be submitted for BLM approval prior to spud. A drilling rig with walking/skidding capabilities will be used.

**12. Disposal/environmental concerns:**

- (A) Drilled cuttings will be hauled to and disposed of in a state-certified disposal site.
- (B) Non-hazardous waste mud/cement from the drilling process will also be hauled to and disposed of in a state-certified disposal site.
- (C) Garbage will be hauled to the Pecos City Landfill.
- (D) Sewage (grey water) will be hauled to the Carlsbad City Landfill

13. Wellhead:

A multi-bowl wellhead system will be utilized.

After running the 13 3/8" surface casing, a 13-5/8" BOP/BOPE system with a minimum working pressure of 10,000 psi will be installed on the wellhead system and will be pressure tested to 250 psi low followed by a 5,000 psi pressure test. This pressure test will be repeated at least every 21 days, as per Onshore Order No. 2

The minimum working pressure of the BOP and related BOPE required for drilling below the surface casing shoe shall be 5,000 psi.

After running the 2nd intermediate casing, and before drilling out, the wellhead, BOP, and related equipment will be tested to 10,000/250 psig.

The multi-bowl wellhead will be installed by vendor's representative(s). A copy of the installation instructions for the Cactus Multi-Bowl WH system has been sent to the BLM office in Carlsbad.

The wellhead will be installed by a third party welder while being monitored by WH vendor's representative.

All BOP equipment will be tested utilizing a conventional test plug. Not a cup or J-packer type.

A solid steel body pack-off will be utilized after running and cementing the intermediate casing strings. After installation of the first intermediate string the pack-off and lower flanges will be pressure tested to 5000 psi. After installation of the second intermediate string, the pack-off and upper flange will be pressure tested to 10,000 psi.

Both the surface and intermediate casing strings will be tested as per Onshore Order No. 2 to at least 0.22 psi/ft or 1500 psi, whichever is greater.

14. Additional variance requests**A. Casing.**

In order to minimize potential environmental and technical hazards, this well is planned with two intermediate strings of casing.

1. Variance is requested to wave the centralizer requirements for the 7 5/8" casing due to the tight clearance with 9 5/8" string.
2. Variance is requested to wave/reduce the centralizer requirements for the 5 1/2" casing due to the tight clearance with 6 3/4" hole and 5 1/2" casing due to tight clearances.

Released for Imaging: 3/7/2022 10:43:35 AM

Franklin Mountain Energy

Project: Lea County, NM (NAD83)
Site: FMM Fed Com
Well: FMM Fed Com 103H
Wellbore: OH
Design: Plan #1



Azimuths to Grid North
True North: -0.54°
Magnetic North: 5.86°

Magnetic Field
Strength: 47462.3nT
Dip Angle: 59.88°
Date: 9/7/2021
Model: IGRF2020

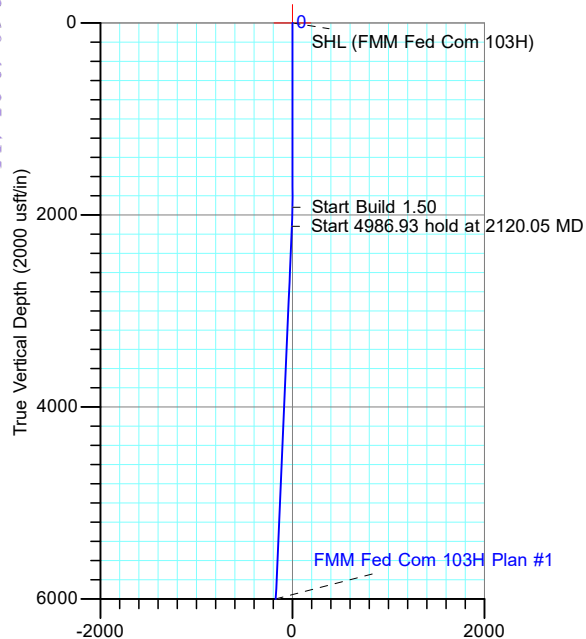
PROJECT DETAILS: Lea County, NM (NAD83)

Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: New Mexico Eastern Zone



Received by OCD: 3/3/2022 1:03:25 PM

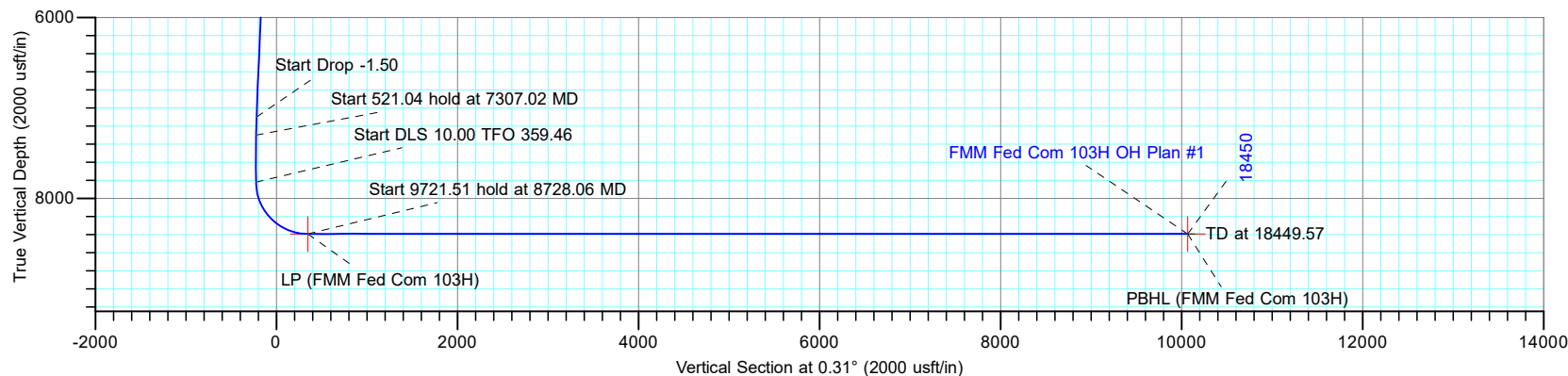
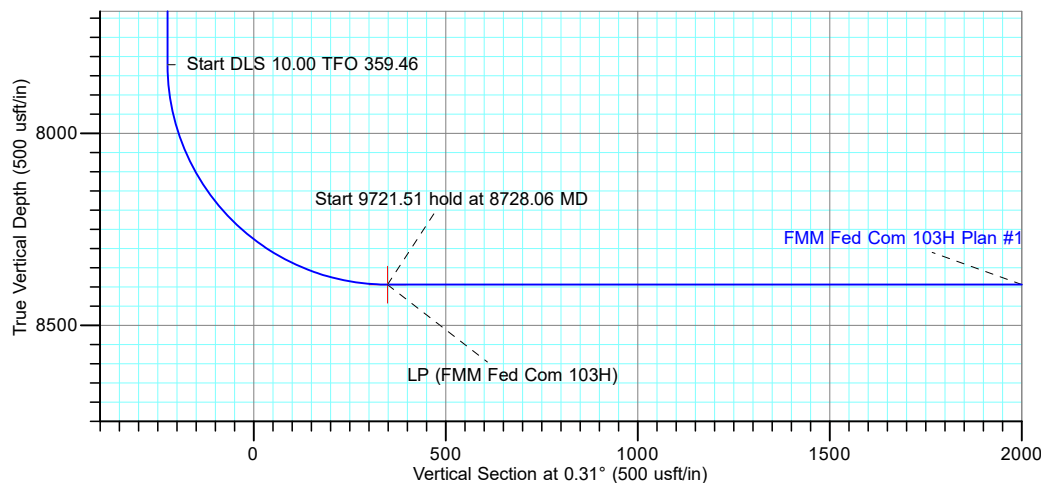
3333.3' GE + 30' KB @ 3363.30usft



SECTION DETAILS									
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Annotation
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1920.00	0.00	0.00	1920.00	0.00	0.00	0.00	0.00	0.00	Start Build 1.50
2120.05	3.00	145.96	2119.96	-4.34	2.93	1.50	145.96	-4.32	Start 4986.93 hold at 2120.05 MD
7106.97	3.00	145.96	7100.04	-220.66	149.07	0.00	0.00	-219.85	Start Drop -1.50
7307.02	0.00	0.00	7300.00	-225.00	152.00	1.50	180.00	-224.17	Start 521.04 hold at 7307.02 MD
7828.06	0.00	0.00	7821.04	-225.00	152.00	0.00	0.00	-224.17	Start DLS 10.00 TFO 359.46
8728.06	90.00	359.46	8394.00	347.93	146.57	10.00	359.46	348.72	Start 9721.51 hold at 8728.06 MD
18449.57	90.00	359.46	8394.00	10069.01	54.47	0.00	0.00	10069.16	TD at 18449.57

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Latitude	Longitude
LP (FMM Fed Com 103H)	8394.00	347.93	146.57	32.168620	-103.318786
PBHL (FMM Fed Com 103H)	8394.00	10069.01	54.47	32.195341	-103.318787
SHL (FMM Fed Com 103H)	0.00	0.00	0.00	32.167667	-103.319270



TOTAL DIRECTIONAL SERVICES LLC

Plan: Plan #1 (FMM Fed Com 103H/OH)
Created By: Dustin Ault
Date: 19:07, September 07 2021
Approved: _____ Date: _____

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Released to Imaging: 3/7/2022 10:43:35 AM

Franklin Mountain Energy

Project: Lea County, NM (NAD83)
Site: FMM Fed Com
Well: FMM Fed Com 103H
Wellbore: OH
Design: Plan #1

T

G

M

Azimuths to Grid North

True North: -0.54°

Magnetic North: 5.86°

Magnetic Field

Strength: 47462.3nT

Dip Angle: 59.88°

Date: 9/7/2021

Model: IGRF2020

PROJECT DETAILS: Lea County, NM (NAD83)
Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: New Mexico Eastern Zone

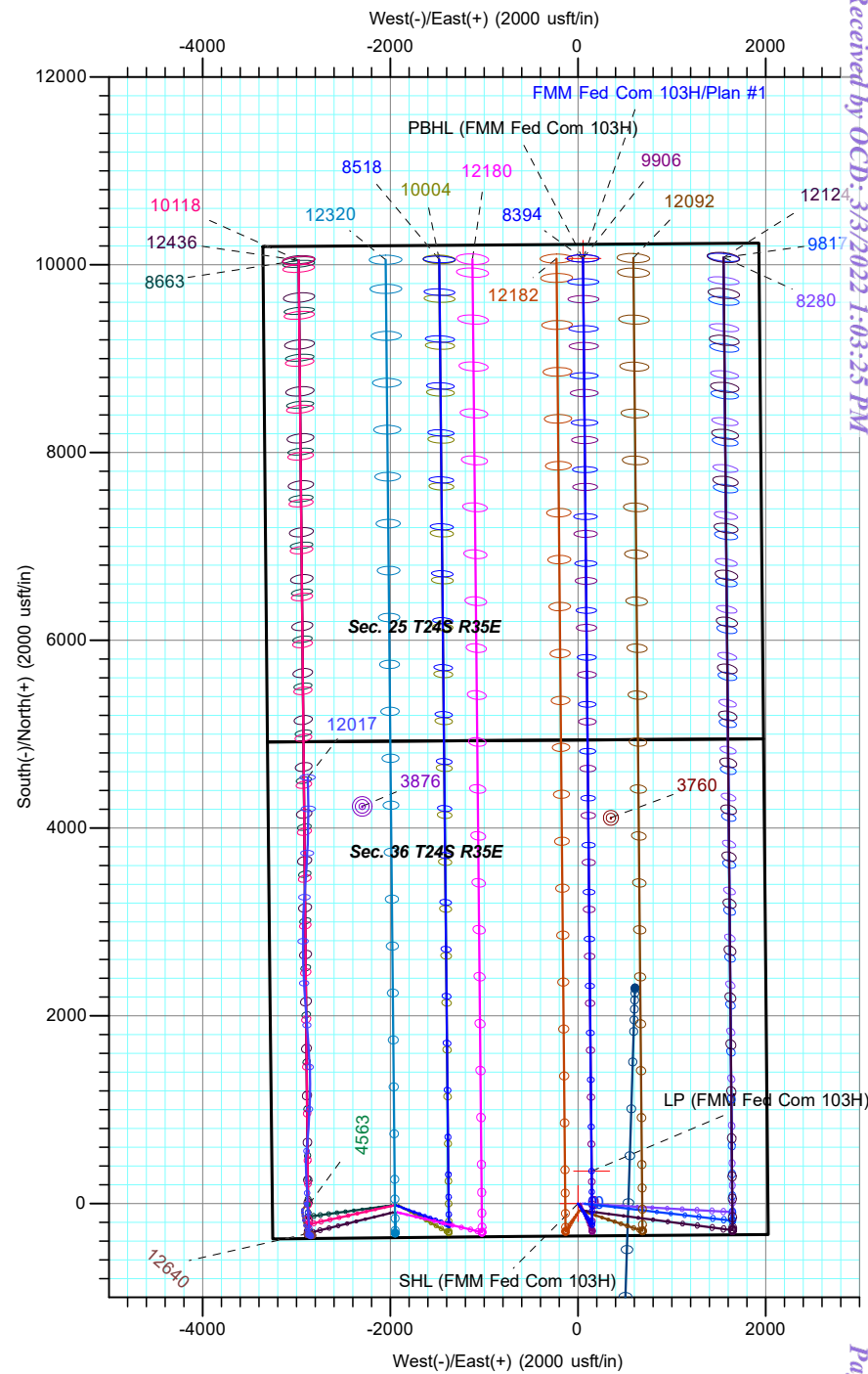
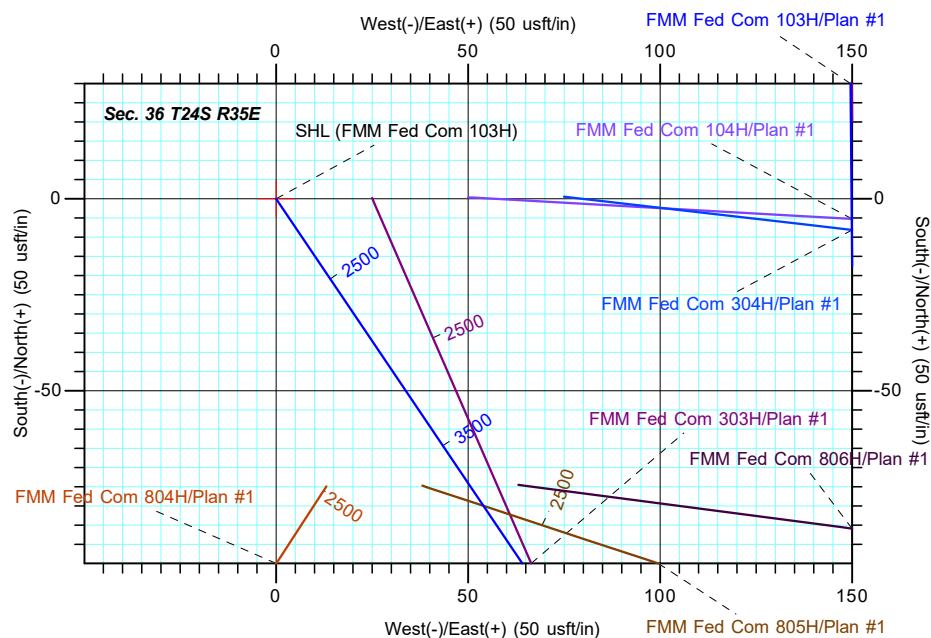


DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
LP (FMM Fed Com 103H)	8394.00	347.93	146.57	426558.76	855265.29	32.168620	-103.318786
PBHL (FMM Fed Com 103H)	8394.00	10069.01	54.47	436279.84	855173.19	32.195341	-103.318787
SHL (FMM Fed Com 103H)	0.00	0.00	0.00	426210.83	855118.72	32.167667	-103.319270

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Annotation
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1920.00	0.00	0.00	1920.00	0.00	0.00	0.00	0.00	0.00	Start Build 1.50
2120.05	3.00	145.96	2119.96	-4.34	2.93	1.50	145.96	-4.32	Start 4986.93 hold at 2120.05 MD
7106.97	3.00	145.96	7100.04	-220.66	149.07	0.00	0.00	-219.85	Start Drop -1.50
7307.02	0.00	0.00	7300.00	-225.00	152.00	1.50	180.00	-224.17	Start 521.04 hold at 7307.02 MD
7828.06	0.00	0.00	7821.04	-225.00	152.00	0.00	0.00	-224.17	Start DLS 10.00 TFO 359.46
8728.06	90.00	359.46	8394.00	347.93	146.57	10.00	359.46	348.72	Start 9721.51 hold at 8728.06 MD
18449.57	90.00	359.46	8394.00	10069.01	54.47	0.00	0.00	10069.16	TD at 18449.57



TOTAL DIRECTIONAL SERVICES LLC

Plan: Plan #1 (FMM Fed Com 103H/OH)
Created By: Dustin Ault
Date: 19:12, September 07 2021
Approved: _____ Date: _____

Received by OCD: 3/3/2022 1:03:25 PM

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Franklin Mountain Energy

Lea County, NM (NAD83)

FMM Fed Com

FMM Fed Com 103H

OH

Plan: Plan #1

Standard Planning Report

07 September, 2021





Total Directional Services

Planning Report



Database:	EDM 5000.15 Single User Db	Local Co-ordinate Reference:	Well FMM Fed Com 103H
Company:	Franklin Mountain Energy	TVD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Project:	Lea County, NM (NAD83)	MD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Site:	FMM Fed Com	North Reference:	Grid
Well:	FMM Fed Com 103H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Project	Lea County, NM (NAD83)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site	FMM Fed Com				
Site Position:		Northing:	426,192.39 usft	Latitude:	32.167668
From:	Lat/Long	Easting:	853,132.79 usft	Longitude:	-103.325688
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.54

Well	FMM Fed Com 103H					
Well Position	+N/-S	18.44 usft	Northing:	426,210.83 usft	Latitude:	32.167667
	+E/-W	1,985.93 usft	Easting:	855,118.72 usft	Longitude:	-103.319271
Position Uncertainty		0.00 usft	Wellhead Elevation:		Ground Level:	3,333.30 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2020	9/7/2021	6.40	59.88	47,462.31236499

Design	Plan #1			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	0.31

Plan Survey Tool Program	Date	9/7/2021		
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	18,449.55 Plan #1 (OH)	OWSG (Rev2) 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
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,920.00	0.00	0.01	1,920.00	0.00	0.00	0.00	0.00	0.00	0.01	
2,120.05	3.00	145.96	2,119.96	-4.34	2.93	1.50	1.50	0.00	145.96	
7,106.97	3.00	145.96	7,100.04	-220.66	149.07	0.00	0.00	0.00	0.00	
7,307.02	0.00	0.00	7,300.00	-225.00	152.00	1.50	-1.50	0.00	180.00	
7,828.06	0.00	0.00	7,821.04	-225.00	152.00	0.00	0.00	0.00	0.00	
8,728.06	90.00	359.46	8,394.00	347.93	146.57	10.00	10.00	-0.06	359.46	
18,449.58	90.00	359.46	8,394.00	10,069.01	54.47	0.00	0.00	0.00	0.00	PBHL (FMM Fed Corr)



Total Directional Services

Planning Report



Database:	EDM 5000.15 Single User Db	Local Co-ordinate Reference:	Well FMM Fed Com 103H
Company:	Franklin Mountain Energy	TVD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Project:	Lea County, NM (NAD83)	MD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Site:	FMM Fed Com	North Reference:	Grid
Well:	FMM Fed Com 103H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	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)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SHL (FMM Fed Com 103H)									
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,920.00	0.00	0.00	1,920.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 1.50									
2,000.00	1.20	145.96	1,999.99	-0.69	0.47	-0.69	1.50	1.50	0.00
2,100.00	2.70	145.96	2,099.93	-3.51	2.37	-3.50	1.50	1.50	0.00
2,120.05	3.00	145.96	2,119.96	-4.34	2.93	-4.32	1.50	1.50	0.00
Start 4986.93 hold at 2120.05 MD									
2,200.00	3.00	145.96	2,199.80	-7.81	5.27	-7.78	0.00	0.00	0.00
2,300.00	3.00	145.96	2,299.66	-12.15	8.21	-12.10	0.00	0.00	0.00
2,400.00	3.00	145.96	2,399.52	-16.48	11.14	-16.42	0.00	0.00	0.00
2,500.00	3.00	145.96	2,499.39	-20.82	14.07	-20.74	0.00	0.00	0.00
2,600.00	3.00	145.96	2,599.25	-25.16	17.00	-25.07	0.00	0.00	0.00
2,700.00	3.00	145.96	2,699.11	-29.50	19.93	-29.39	0.00	0.00	0.00
2,800.00	3.00	145.96	2,798.98	-33.83	22.86	-33.71	0.00	0.00	0.00
2,900.00	3.00	145.96	2,898.84	-38.17	25.79	-38.03	0.00	0.00	0.00
3,000.00	3.00	145.96	2,998.70	-42.51	28.72	-42.35	0.00	0.00	0.00
3,100.00	3.00	145.96	3,098.57	-46.85	31.65	-46.68	0.00	0.00	0.00
3,200.00	3.00	145.96	3,198.43	-51.19	34.58	-51.00	0.00	0.00	0.00
3,300.00	3.00	145.96	3,298.29	-55.52	37.51	-55.32	0.00	0.00	0.00
3,400.00	3.00	145.96	3,398.15	-59.86	40.44	-59.64	0.00	0.00	0.00
3,500.00	3.00	145.96	3,498.02	-64.20	43.37	-63.96	0.00	0.00	0.00
3,600.00	3.00	145.96	3,597.88	-68.54	46.30	-68.29	0.00	0.00	0.00
3,700.00	3.00	145.96	3,697.74	-72.87	49.23	-72.61	0.00	0.00	0.00
3,800.00	3.00	145.96	3,797.61	-77.21	52.16	-76.93	0.00	0.00	0.00
3,900.00	3.00	145.96	3,897.47	-81.55	55.09	-81.25	0.00	0.00	0.00
4,000.00	3.00	145.96	3,997.33	-85.89	58.02	-85.57	0.00	0.00	0.00
4,100.00	3.00	145.96	4,097.19	-90.23	60.95	-89.89	0.00	0.00	0.00
4,200.00	3.00	145.96	4,197.06	-94.56	63.88	-94.22	0.00	0.00	0.00
4,300.00	3.00	145.96	4,296.92	-98.90	66.81	-98.54	0.00	0.00	0.00
4,400.00	3.00	145.96	4,396.78	-103.24	69.74	-102.86	0.00	0.00	0.00
4,500.00	3.00	145.96	4,496.65	-107.58	72.67	-107.18	0.00	0.00	0.00
4,600.00	3.00	145.96	4,596.51	-111.91	75.60	-111.50	0.00	0.00	0.00
4,700.00	3.00	145.96	4,696.37	-116.25	78.53	-115.83	0.00	0.00	0.00



Total Directional Services

Planning Report



Database:	EDM 5000.15 Single User Db	Local Co-ordinate Reference:	Well FMM Fed Com 103H
Company:	Franklin Mountain Energy	TVD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Project:	Lea County, NM (NAD83)	MD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Site:	FMM Fed Com	North Reference:	Grid
Well:	FMM Fed Com 103H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	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)
4,800.00	3.00	145.96	4,796.23	-120.59	81.46	-120.15	0.00	0.00	0.00
4,900.00	3.00	145.96	4,896.10	-124.93	84.40	-124.47	0.00	0.00	0.00
5,000.00	3.00	145.96	4,995.96	-129.26	87.33	-128.79	0.00	0.00	0.00
5,100.00	3.00	145.96	5,095.82	-133.60	90.26	-133.11	0.00	0.00	0.00
5,200.00	3.00	145.96	5,195.69	-137.94	93.19	-137.43	0.00	0.00	0.00
5,300.00	3.00	145.96	5,295.55	-142.28	96.12	-141.76	0.00	0.00	0.00
5,400.00	3.00	145.96	5,395.41	-146.62	99.05	-146.08	0.00	0.00	0.00
5,500.00	3.00	145.96	5,495.27	-150.95	101.98	-150.40	0.00	0.00	0.00
5,600.00	3.00	145.96	5,595.14	-155.29	104.91	-154.72	0.00	0.00	0.00
5,700.00	3.00	145.96	5,695.00	-159.63	107.84	-159.04	0.00	0.00	0.00
5,800.00	3.00	145.96	5,794.86	-163.97	110.77	-163.37	0.00	0.00	0.00
5,900.00	3.00	145.96	5,894.73	-168.30	113.70	-167.69	0.00	0.00	0.00
6,000.00	3.00	145.96	5,994.59	-172.64	116.63	-172.01	0.00	0.00	0.00
6,100.00	3.00	145.96	6,094.45	-176.98	119.56	-176.33	0.00	0.00	0.00
6,200.00	3.00	145.96	6,194.31	-181.32	122.49	-180.65	0.00	0.00	0.00
6,300.00	3.00	145.96	6,294.18	-185.66	125.42	-184.97	0.00	0.00	0.00
6,400.00	3.00	145.96	6,394.04	-189.99	128.35	-189.30	0.00	0.00	0.00
6,500.00	3.00	145.96	6,493.90	-194.33	131.28	-193.62	0.00	0.00	0.00
6,600.00	3.00	145.96	6,593.77	-198.67	134.21	-197.94	0.00	0.00	0.00
6,700.00	3.00	145.96	6,693.63	-203.01	137.14	-202.26	0.00	0.00	0.00
6,800.00	3.00	145.96	6,793.49	-207.34	140.07	-206.58	0.00	0.00	0.00
6,900.00	3.00	145.96	6,893.35	-211.68	143.00	-210.91	0.00	0.00	0.00
7,000.00	3.00	145.96	6,993.22	-216.02	145.93	-215.23	0.00	0.00	0.00
7,106.97	3.00	145.96	7,100.04	-220.66	149.07	-219.85	0.00	0.00	0.00
Start Drop -1.50									
7,200.00	1.61	145.96	7,192.99	-223.76	151.16	-222.94	1.50	-1.50	0.00
7,307.02	0.00	0.00	7,300.00	-225.00	152.00	-224.17	1.50	-1.50	0.00
Start 521.04 hold at 7307.02 MD									
7,400.00	0.00	0.00	7,392.98	-225.00	152.00	-224.17	0.00	0.00	0.00
7,500.00	0.00	0.00	7,492.98	-225.00	152.00	-224.17	0.00	0.00	0.00
7,600.00	0.00	0.00	7,592.98	-225.00	152.00	-224.17	0.00	0.00	0.00
7,700.00	0.00	0.00	7,692.98	-225.00	152.00	-224.17	0.00	0.00	0.00
7,800.00	0.00	0.00	7,792.98	-225.00	152.00	-224.17	0.00	0.00	0.00
7,828.06	0.00	0.00	7,821.04	-225.00	152.00	-224.17	0.00	0.00	0.00
Start DLS 10.00 TFO 359.46									
7,850.00	2.19	359.46	7,842.97	-224.58	152.00	-223.75	10.00	10.00	0.00
7,900.00	7.19	359.46	7,892.79	-220.49	151.96	-219.66	10.00	10.00	0.00
7,950.00	12.19	359.46	7,942.06	-212.07	151.88	-211.25	10.00	10.00	0.00
8,000.00	17.19	359.46	7,990.41	-199.40	151.76	-198.57	10.00	10.00	0.00
8,050.00	22.19	359.46	8,037.47	-182.55	151.60	-181.73	10.00	10.00	0.00
8,100.00	27.19	359.46	8,082.88	-161.67	151.40	-160.85	10.00	10.00	0.00
8,150.00	32.19	359.46	8,126.30	-136.91	151.17	-136.09	10.00	10.00	0.00
8,200.00	37.19	359.46	8,167.40	-108.46	150.90	-107.64	10.00	10.00	0.00
8,250.00	42.19	359.46	8,205.86	-76.54	150.59	-75.72	10.00	10.00	0.00
8,300.00	47.19	359.46	8,241.40	-41.39	150.26	-40.57	10.00	10.00	0.00
8,350.00	52.19	359.46	8,273.73	-3.27	149.90	-2.46	10.00	10.00	0.00
8,400.00	57.19	359.46	8,302.62	37.52	149.51	38.33	10.00	10.00	0.00
8,450.00	62.19	359.46	8,327.84	80.67	149.10	81.48	10.00	10.00	0.00
8,500.00	67.19	359.46	8,349.21	125.86	148.68	126.66	10.00	10.00	0.00
8,550.00	72.19	359.46	8,366.55	172.73	148.23	173.53	10.00	10.00	0.00
8,600.00	77.19	359.46	8,379.75	220.94	147.77	221.74	10.00	10.00	0.00
8,650.00	82.19	359.46	8,388.69	270.12	147.31	270.91	10.00	10.00	0.00
8,700.00	87.19	359.46	8,393.31	319.88	146.84	320.67	10.00	10.00	0.00



Total Directional Services

Planning Report



Database:	EDM 5000.15 Single User Db	Local Co-ordinate Reference:	Well FMM Fed Com 103H
Company:	Franklin Mountain Energy	TVD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Project:	Lea County, NM (NAD83)	MD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Site:	FMM Fed Com	North Reference:	Grid
Well:	FMM Fed Com 103H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	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)
8,728.06	90.00	359.46	8,394.00	347.93	146.57	348.72	10.00	10.00	0.00
Start 9721.51 hold at 8728.06 MD - LP (FMM Fed Com 103H)									
8,800.00	90.00	359.46	8,394.00	419.87	145.89	420.65	0.00	0.00	0.00
8,900.00	90.00	359.46	8,394.00	519.86	144.94	520.64	0.00	0.00	0.00
9,000.00	90.00	359.46	8,394.00	619.86	144.00	620.63	0.00	0.00	0.00
9,100.00	90.00	359.46	8,394.00	719.85	143.05	720.62	0.00	0.00	0.00
9,200.00	90.00	359.46	8,394.00	819.85	142.10	820.61	0.00	0.00	0.00
9,300.00	90.00	359.46	8,394.00	919.85	141.15	920.60	0.00	0.00	0.00
9,400.00	90.00	359.46	8,394.00	1,019.84	140.21	1,020.58	0.00	0.00	0.00
9,500.00	90.00	359.46	8,394.00	1,119.84	139.26	1,120.57	0.00	0.00	0.00
9,600.00	90.00	359.46	8,394.00	1,219.83	138.31	1,220.56	0.00	0.00	0.00
9,700.00	90.00	359.46	8,394.00	1,319.83	137.36	1,320.55	0.00	0.00	0.00
9,800.00	90.00	359.46	8,394.00	1,419.82	136.42	1,420.54	0.00	0.00	0.00
9,900.00	90.00	359.46	8,394.00	1,519.82	135.47	1,520.53	0.00	0.00	0.00
10,000.00	90.00	359.46	8,394.00	1,619.81	134.52	1,620.52	0.00	0.00	0.00
10,100.00	90.00	359.46	8,394.00	1,719.81	133.57	1,720.51	0.00	0.00	0.00
10,200.00	90.00	359.46	8,394.00	1,819.81	132.63	1,820.50	0.00	0.00	0.00
10,300.00	90.00	359.46	8,394.00	1,919.80	131.68	1,920.49	0.00	0.00	0.00
10,400.00	90.00	359.46	8,394.00	2,019.80	130.73	2,020.47	0.00	0.00	0.00
10,500.00	90.00	359.46	8,394.00	2,119.79	129.78	2,120.46	0.00	0.00	0.00
10,600.00	90.00	359.46	8,394.00	2,219.79	128.84	2,220.45	0.00	0.00	0.00
10,700.00	90.00	359.46	8,394.00	2,319.78	127.89	2,320.44	0.00	0.00	0.00
10,800.00	90.00	359.46	8,394.00	2,419.78	126.94	2,420.43	0.00	0.00	0.00
10,900.00	90.00	359.46	8,394.00	2,519.77	125.99	2,520.42	0.00	0.00	0.00
11,000.00	90.00	359.46	8,394.00	2,619.77	125.05	2,620.41	0.00	0.00	0.00
11,100.00	90.00	359.46	8,394.00	2,719.77	124.10	2,720.40	0.00	0.00	0.00
11,200.00	90.00	359.46	8,394.00	2,819.76	123.15	2,820.39	0.00	0.00	0.00
11,300.00	90.00	359.46	8,394.00	2,919.76	122.21	2,920.37	0.00	0.00	0.00
11,400.00	90.00	359.46	8,394.00	3,019.75	121.26	3,020.36	0.00	0.00	0.00
11,500.00	90.00	359.46	8,394.00	3,119.75	120.31	3,120.35	0.00	0.00	0.00
11,600.00	90.00	359.46	8,394.00	3,219.74	119.36	3,220.34	0.00	0.00	0.00
11,700.00	90.00	359.46	8,394.00	3,319.74	118.42	3,320.33	0.00	0.00	0.00
11,800.00	90.00	359.46	8,394.00	3,419.73	117.47	3,420.32	0.00	0.00	0.00
11,900.00	90.00	359.46	8,394.00	3,519.73	116.52	3,520.31	0.00	0.00	0.00
12,000.00	90.00	359.46	8,394.00	3,619.72	115.57	3,620.30	0.00	0.00	0.00
12,100.00	90.00	359.46	8,394.00	3,719.72	114.63	3,720.29	0.00	0.00	0.00
12,200.00	90.00	359.46	8,394.00	3,819.72	113.68	3,820.27	0.00	0.00	0.00
12,300.00	90.00	359.46	8,394.00	3,919.71	112.73	3,920.26	0.00	0.00	0.00
12,400.00	90.00	359.46	8,394.00	4,019.71	111.78	4,020.25	0.00	0.00	0.00
12,500.00	90.00	359.46	8,394.00	4,119.70	110.84	4,120.24	0.00	0.00	0.00
12,600.00	90.00	359.46	8,394.00	4,219.70	109.89	4,220.23	0.00	0.00	0.00
12,700.00	90.00	359.46	8,394.00	4,319.69	108.94	4,320.22	0.00	0.00	0.00
12,800.00	90.00	359.46	8,394.00	4,419.69	107.99	4,420.21	0.00	0.00	0.00
12,900.00	90.00	359.46	8,394.00	4,519.68	107.05	4,520.20	0.00	0.00	0.00
13,000.00	90.00	359.46	8,394.00	4,619.68	106.10	4,620.19	0.00	0.00	0.00
13,100.00	90.00	359.46	8,394.00	4,719.68	105.15	4,720.18	0.00	0.00	0.00
13,200.00	90.00	359.46	8,394.00	4,819.67	104.20	4,820.16	0.00	0.00	0.00
13,300.00	90.00	359.46	8,394.00	4,919.67	103.26	4,920.15	0.00	0.00	0.00
13,400.00	90.00	359.46	8,394.00	5,019.66	102.31	5,020.14	0.00	0.00	0.00
13,500.00	90.00	359.46	8,394.00	5,119.66	101.36	5,120.13	0.00	0.00	0.00
13,600.00	90.00	359.46	8,394.00	5,219.65	100.41	5,220.12	0.00	0.00	0.00
13,700.00	90.00	359.46	8,394.00	5,319.65	99.47	5,320.11	0.00	0.00	0.00
13,800.00	90.00	359.46	8,394.00	5,419.64	98.52	5,420.10	0.00	0.00	0.00
13,900.00	90.00	359.46	8,394.00	5,519.64	97.57	5,520.09	0.00	0.00	0.00



Total Directional Services

Planning Report



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Company:	Franklin Mountain Energy	TVD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Project:	Lea County, NM (NAD83)	MD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Site:	FMM Fed Com	North Reference:	Grid
Well:	FMM Fed Com 103H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	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)
14,000.00	90.00	359.46	8,394.00	5,619.64	96.63	5,620.08	0.00	0.00	0.00
14,100.00	90.00	359.46	8,394.00	5,719.63	95.68	5,720.06	0.00	0.00	0.00
14,200.00	90.00	359.46	8,394.00	5,819.63	94.73	5,820.05	0.00	0.00	0.00
14,300.00	90.00	359.46	8,394.00	5,919.62	93.78	5,920.04	0.00	0.00	0.00
14,400.00	90.00	359.46	8,394.00	6,019.62	92.84	6,020.03	0.00	0.00	0.00
14,500.00	90.00	359.46	8,394.00	6,119.61	91.89	6,120.02	0.00	0.00	0.00
14,600.00	90.00	359.46	8,394.00	6,219.61	90.94	6,220.01	0.00	0.00	0.00
14,700.00	90.00	359.46	8,394.00	6,319.60	89.99	6,320.00	0.00	0.00	0.00
14,800.00	90.00	359.46	8,394.00	6,419.60	89.05	6,419.99	0.00	0.00	0.00
14,900.00	90.00	359.46	8,394.00	6,519.59	88.10	6,519.98	0.00	0.00	0.00
15,000.00	90.00	359.46	8,394.00	6,619.59	87.15	6,619.96	0.00	0.00	0.00
15,100.00	90.00	359.46	8,394.00	6,719.59	86.20	6,719.95	0.00	0.00	0.00
15,200.00	90.00	359.46	8,394.00	6,819.58	85.26	6,819.94	0.00	0.00	0.00
15,300.00	90.00	359.46	8,394.00	6,919.58	84.31	6,919.93	0.00	0.00	0.00
15,400.00	90.00	359.46	8,394.00	7,019.57	83.36	7,019.92	0.00	0.00	0.00
15,500.00	90.00	359.46	8,394.00	7,119.57	82.41	7,119.91	0.00	0.00	0.00
15,600.00	90.00	359.46	8,394.00	7,219.56	81.47	7,219.90	0.00	0.00	0.00
15,700.00	90.00	359.46	8,394.00	7,319.56	80.52	7,319.89	0.00	0.00	0.00
15,800.00	90.00	359.46	8,394.00	7,419.55	79.57	7,419.88	0.00	0.00	0.00
15,900.00	90.00	359.46	8,394.00	7,519.55	78.62	7,519.87	0.00	0.00	0.00
16,000.00	90.00	359.46	8,394.00	7,619.55	77.68	7,619.85	0.00	0.00	0.00
16,100.00	90.00	359.46	8,394.00	7,719.54	76.73	7,719.84	0.00	0.00	0.00
16,200.00	90.00	359.46	8,394.00	7,819.54	75.78	7,819.83	0.00	0.00	0.00
16,300.00	90.00	359.46	8,394.00	7,919.53	74.84	7,919.82	0.00	0.00	0.00
16,400.00	90.00	359.46	8,394.00	8,019.53	73.89	8,019.81	0.00	0.00	0.00
16,500.00	90.00	359.46	8,394.00	8,119.52	72.94	8,119.80	0.00	0.00	0.00
16,600.00	90.00	359.46	8,394.00	8,219.52	71.99	8,219.79	0.00	0.00	0.00
16,700.00	90.00	359.46	8,394.00	8,319.51	71.05	8,319.78	0.00	0.00	0.00
16,800.00	90.00	359.46	8,394.00	8,419.51	70.10	8,419.77	0.00	0.00	0.00
16,900.00	90.00	359.46	8,394.00	8,519.51	69.15	8,519.75	0.00	0.00	0.00
17,000.00	90.00	359.46	8,394.00	8,619.50	68.20	8,619.74	0.00	0.00	0.00
17,100.00	90.00	359.46	8,394.00	8,719.50	67.26	8,719.73	0.00	0.00	0.00
17,200.00	90.00	359.46	8,394.00	8,819.49	66.31	8,819.72	0.00	0.00	0.00
17,300.00	90.00	359.46	8,394.00	8,919.49	65.36	8,919.71	0.00	0.00	0.00
17,400.00	90.00	359.46	8,394.00	9,019.48	64.41	9,019.70	0.00	0.00	0.00
17,500.00	90.00	359.46	8,394.00	9,119.48	63.47	9,119.69	0.00	0.00	0.00
17,600.00	90.00	359.46	8,394.00	9,219.47	62.52	9,219.68	0.00	0.00	0.00
17,700.00	90.00	359.46	8,394.00	9,319.47	61.57	9,319.67	0.00	0.00	0.00
17,800.00	90.00	359.46	8,394.00	9,419.46	60.62	9,419.65	0.00	0.00	0.00
17,900.00	90.00	359.46	8,394.00	9,519.46	59.68	9,519.64	0.00	0.00	0.00
18,000.00	90.00	359.46	8,394.00	9,619.46	58.73	9,619.63	0.00	0.00	0.00
18,100.00	90.00	359.46	8,394.00	9,719.45	57.78	9,719.62	0.00	0.00	0.00
18,200.00	90.00	359.46	8,394.00	9,819.45	56.83	9,819.61	0.00	0.00	0.00
18,300.00	90.00	359.46	8,394.00	9,919.44	55.89	9,919.60	0.00	0.00	0.00
18,400.00	90.00	359.46	8,394.00	10,019.44	54.94	10,019.59	0.00	0.00	0.00
18,449.58	90.00	359.46	8,394.00	10,069.01	54.47	10,069.16	0.00	0.00	0.00
TD at 18449.57 - PBHL (FMM Fed Com 103H)									



Total Directional Services

Planning Report



Database:	EDM 5000.15 Single User Db	Local Co-ordinate Reference:	Well FMM Fed Com 103H
Company:	Franklin Mountain Energy	TVD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Project:	Lea County, NM (NAD83)	MD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Site:	FMM Fed Com	North Reference:	Grid
Well:	FMM Fed Com 103H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

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
SHL (FMM Fed Com 103H) - plan hits target center - Point	0.00	0.00	0.00	0.00	0.00	426,210.83	855,118.72	32.167667	-103.319271
LP (FMM Fed Com 103H) - plan hits target center - Point	0.00	0.00	8,394.00	347.93	146.57	426,558.76	855,265.29	32.168620	-103.318786
PBHL (FMM Fed Com 103H) - plan hits target center - Point	0.00	0.00	8,394.00	10,069.01	54.47	436,279.84	855,173.19	32.195341	-103.318788

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
1,920.00	1,920.00	0.00	0.00	Start Build 1.50
2,120.05	2,119.96	-4.34	2.93	Start 4986.93 hold at 2120.05 MD
7,106.97	7,100.04	-220.66	149.07	Start Drop -1.50
7,307.02	7,300.00	-225.00	152.00	Start 521.04 hold at 7307.02 MD
7,828.06	7,821.04	-225.00	152.00	Start DLS 10.00 TFO 359.46
8,728.06	8,394.00	347.93	146.57	Start 9721.51 hold at 8728.06 MD
18,449.58	8,394.00	10,069.01	54.47	TD at 18449.57



Franklin Mountain Energy

Lea County, NM (NAD83)

FMM Fed Com

FMM Fed Com 103H

OH

Plan #1

Anticollision Report

07 September, 2021





Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well FMM Fed Com 103H
Project:	Lea County, NM (NAD83)	TVD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Reference Site:	FMM Fed Com	MD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	FMM Fed Com 103H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.15 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Reference	Plan #1
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria
Interpolation Method:	Stations
Depth Range:	Unlimited
Results Limited by:	Maximum ellipse separation of 1,000.00 usft
Warning Levels Evaluated at:	2.00 Sigma
Error Model:	ISCWSA
Scan Method:	Closest Approach 3D
Error Surface:	Combined Separation
Casing Method:	Not applied

Survey Tool Program	Date	9/7/2021
From (usft)	To (usft)	Survey (Wellbore)
0.00	18,449.55	Plan #1 (OH)
		Tool Name
		OWSG (Rev2) MWD
		Description
		OWSG MWD - Standard

Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
FMM Fed Com						
Amoco State #001 (Offset) - OH - OH	1,159.53	1,287.69	4,124.16	4,090.04	120.881	CC
Amoco State #001 (Offset) - OH - OH	2,000.00	2,014.46	4,125.85	4,083.59	97.629	ES
Amoco State #001 (Offset) - OH - OH	3,800.00	3,775.00	4,198.26	4,117.65	52.079	SF
Blue Bay WCA State Com #001C (Offset Plan) - OH - PI	10,675.60	8,403.70	480.96	423.72	8.402	CC, ES
Blue Bay WCA State Com #001C (Offset Plan) - OH - PI	10,700.00	8,403.70	481.58	424.05	8.370	SF
FMM Fed Com 101H - OH - Plan #1	1,806.74	1,761.24	1,986.02	1,977.30	227.878	CC
FMM Fed Com 101H - OH - Plan #1	1,900.00	1,835.95	1,986.27	1,977.13	217.344	ES
FMM Fed Com 101H - OH - Plan #1	18,450.14	18,627.99	3,041.75	2,802.82	12.731	SF
FMM Fed Com 102H - OH - Plan #1	7,952.67	7,936.51	1,527.05	1,487.39	38.497	CC
FMM Fed Com 102H - OH - Plan #1	18,450.14	18,544.21	1,537.76	1,298.08	6.416	ES, SF
FMM Fed Com 104H - OH - Plan #1	1,600.00	1,599.70	50.00	42.22	6.426	CC, ES
FMM Fed Com 104H - OH - Plan #1	1,700.00	1,697.96	51.70	43.43	6.250	SF
FMM Fed Com 301H - OH - Plan #1	1,920.00	1,875.30	1,961.26	1,951.97	211.083	CC, ES
FMM Fed Com 301H - OH - Plan #1	18,450.14	20,176.56	3,485.80	3,271.04	16.232	SF
FMM Fed Com 302H - OH - Plan #1	7,828.06	7,814.84	1,529.29	1,490.04	38.962	CC
FMM Fed Com 302H - OH - Plan #1	7,900.00	7,886.59	1,529.50	1,489.91	38.633	ES
FMM Fed Com 302H - OH - Plan #1	18,450.14	20,114.45	2,222.95	2,038.53	12.053	SF
FMM Fed Com 303H - OH - Plan #1	1,716.60	1,716.80	25.00	16.63	2.986	CC
FMM Fed Com 303H - OH - Plan #1	1,800.00	1,800.20	25.00	16.20	2.842	ES
FMM Fed Com 303H - OH - Plan #1	7,828.06	7,832.23	68.81	30.16	1.780	SF
FMM Fed Com 304H - OH - Plan #1	1,316.60	1,316.80	74.99	68.65	11.818	CC
FMM Fed Com 304H - OH - Plan #1	1,400.00	1,400.00	74.99	68.22	11.081	ES
FMM Fed Com 304H - OH - Plan #1	1,500.00	1,497.63	76.69	69.43	10.565	SF
FMM Fed Com 801H - OH - Plan #1	1,920.00	1,875.60	1,975.06	1,965.77	212.551	CC, ES
FMM Fed Com 801H - OH - Plan #1	8,650.00	8,432.00	3,075.99	3,033.78	72.869	SF
FMM Fed Com 802H - OH - Plan #1	1,920.00	1,875.90	1,950.01	1,940.72	209.838	CC, ES
FMM Fed Com 802H - OH - Plan #1	18,450.14	22,404.38	4,454.27	4,301.01	29.064	SF
FMM Fed Com 803H - OH - Plan #1	7,828.06	7,865.40	1,175.37	1,135.86	29.752	CC
FMM Fed Com 803H - OH - Plan #1	7,850.00	7,887.33	1,175.39	1,135.78	29.675	ES
FMM Fed Com 803H - OH - Plan #1	8,250.00	8,250.22	1,193.16	1,151.68	28.766	SF
FMM Fed Com 804H - OH - Plan #1	2,577.37	2,573.33	54.32	41.74	4.317	CC
FMM Fed Com 804H - OH - Plan #1	2,600.00	2,595.63	54.39	41.71	4.288	ES
FMM Fed Com 804H - OH - Plan #1	2,700.00	2,694.95	56.08	42.93	4.264	SF
FMM Fed Com 805H - OH - Plan #1	2,269.38	2,264.83	77.67	66.62	7.026	CC
FMM Fed Com 805H - OH - Plan #1	2,300.00	2,294.96	77.77	66.58	6.948	ES
FMM Fed Com 805H - OH - Plan #1	2,400.00	2,393.20	79.63	67.98	6.835	SF
FMM Fed Com 806H - OH - Plan #1	1,600.00	1,599.50	97.62	89.84	12.546	CC, ES

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



Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well FMM Fed Com 103H
Project:	Lea County, NM (NAD83)	TVD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Reference Site:	FMM Fed Com	MD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	FMM Fed Com 103H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.15 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Summary

Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
FMM Fed Com						
FMM Fed Com 806H - OH - Plan #1	1,800.00	1,794.30	102.72	93.97	11.737	SF
Pre-Ongard Well #001 (Offset) - OH - OH	1,137.79	1,189.68	4,815.88	4,790.41	189.092	CC
Pre-Ongard Well #001 (Offset) - OH - OH	1,942.75	2,031.86	4,815.98	4,763.71	92.129	ES
Pre-Ongard Well #001 (Offset) - OH - OH	3,900.00	3,875.00	4,914.11	4,808.94	46.724	SF
Proxy WCA State Com #001H (Offset) - OH - OH	100.00	33.48	2,875.32	2,875.19	10,000.000	CC
Proxy WCA State Com #001H (Offset) - OH - OH	200.00	124.71	2,875.59	2,875.06	5,490.712	ES
Proxy WCA State Com #001H (Offset) - OH - OH	5,100.00	4,501.00	3,007.04	2,983.94	130.158	SF
Proxy WCA State Com #001H (Offset) - ST01 - ST01	100.00	33.48	2,875.32	2,875.19	10,000.000	CC
Proxy WCA State Com #001H (Offset) - ST01 - ST01	200.00	124.71	2,875.59	2,875.06	5,490.712	ES
Proxy WCA State Com #001H (Offset) - ST01 - ST01	9,500.00	8,335.49	3,342.74	3,302.12	82.278	SF
Proxy WCA State Com #001H (Offset) - ST02 - ST02	100.00	33.48	2,875.32	2,875.19	10,000.000	CC
Proxy WCA State Com #001H (Offset) - ST02 - ST02	200.00	124.71	2,875.59	2,875.06	5,490.712	ES
Proxy WCA State Com #001H (Offset) - ST02 - ST02	14,000.00	16,762.00	4,811.14	4,718.31	51.830	SF

Offset Design

Survey Program: 635-INC-ONLY													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
0.00	0.00	13.70	13.70	0.00	0.22	4.89	4,110.18	351.72	4,125.20					
100.00	100.00	113.70	113.70	0.13	1.82	4.89	4,110.18	351.72	4,125.20	4,123.38	1.82	2,263.831		
200.00	200.00	213.70	213.70	0.48	3.42	4.89	4,110.18	351.72	4,125.20	4,121.75	3.45	1,195.415		
300.00	300.00	313.70	313.70	0.84	5.02	4.89	4,110.18	351.72	4,125.20	4,120.11	5.09	811.112		
400.00	400.00	413.70	413.70	1.20	6.61	4.89	4,110.18	351.72	4,125.20	4,118.48	6.72	613.633		
500.00	500.00	513.70	513.70	1.56	8.21	4.89	4,110.18	351.72	4,125.20	4,116.84	8.36	493.443		
600.00	600.00	613.70	613.70	1.92	9.81	4.89	4,110.18	351.72	4,125.20	4,115.20	10.00	412.610		
700.00	700.00	713.86	713.70	2.28	13.02	4.89	4,110.18	351.72	4,125.20	4,111.98	13.22	312.044		
800.00	800.00	813.86	813.70	2.63	16.66	4.89	4,110.18	351.72	4,125.20	4,108.33	16.87	244.551		
900.00	900.00	917.34	917.12	2.99	20.43	4.89	4,112.83	351.72	4,127.84	4,107.20	20.64	199.946		
1,000.00	1,000.00	1,059.99	1,059.73	3.35	25.62	4.89	4,111.97	351.72	4,127.24	4,101.41	25.83	159.756		
1,100.00	1,100.00	1,202.70	1,202.39	3.71	30.81	4.89	4,109.64	351.72	4,125.62	4,094.59	31.03	132.968		
1,159.53	1,159.53	1,287.69	1,287.31	3.92	33.90	4.89	4,107.55	351.72	4,124.16	4,090.04	34.12	120.881	CC	
1,200.00	1,200.00	1,214.45	1,213.70	4.07	30.80	4.89	4,110.18	351.72	4,125.20	4,094.14	31.06	132.799		
1,300.00	1,300.00	1,314.46	1,313.70	4.43	32.11	4.89	4,110.18	351.72	4,125.20	4,092.78	32.42	127.249		
1,400.00	1,400.00	1,414.46	1,413.70	4.79	33.06	4.89	4,110.18	351.72	4,125.20	4,091.79	33.41	123.481		
1,500.00	1,500.00	1,514.46	1,513.70	5.14	34.50	4.89	4,110.18	351.72	4,125.20	4,090.32	34.88	118.268		
1,600.00	1,600.00	1,614.46	1,613.70	5.50	35.94	4.89	4,110.18	351.72	4,125.20	4,088.84	36.36	113.468		
1,700.00	1,700.00	1,714.46	1,713.70	5.86	37.38	4.89	4,110.18	351.72	4,125.20	4,087.37	37.83	109.040		
1,800.00	1,800.00	1,814.46	1,813.70	6.22	38.81	4.89	4,110.18	351.72	4,125.20	4,085.89	39.31	104.944		
1,900.00	1,900.00	1,914.46	1,913.70	6.58	40.25	4.89	4,110.18	351.72	4,125.20	4,084.41	40.79	101.144		
1,920.00	1,920.00	1,934.46	1,933.70	6.65	40.54	4.89	4,110.18	351.72	4,125.20	4,084.12	41.08	100.416		
2,000.00	1,999.99	2,014.46	2,013.69	6.92	41.69	-141.07	4,110.18	351.72	4,125.85	4,083.59	42.26	97.629	ES	
2,100.00	2,099.93	2,114.40	2,113.63	7.25	43.13	-141.07	4,110.18	351.72	4,128.50	4,084.77	43.73	94.404		
2,120.05	2,119.96	2,134.42	2,133.66	7.32	43.42	-141.07	4,110.18	351.72	4,129.27	4,085.25	44.03	93.789		
2,200.00	2,199.80	2,214.26	2,213.50	7.58	44.56	-141.11	4,110.18	351.72	4,132.53	4,087.33	45.20	91.420		
2,300.00	2,299.66	2,314.13	2,313.36	7.92	46.00	-141.16	4,110.18	351.72	4,136.61	4,089.94	46.68	88.624		
2,400.00	2,399.52	2,413.99	2,413.22	8.25	47.44	-141.20	4,110.18	351.72	4,140.69	4,092.54	48.15	85.999		
2,500.00	2,499.39	2,513.85	2,513.09	8.59	48.87	-141.25	4,110.18	351.72	4,144.77	4,095.15	49.62	83.528		
2,600.00	2,599.25	2,613.73	2,612.95	8.94	50.63	-141.29	4,110.18	351.72	4,148.86	4,097.45	51.41	80.699		

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



Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well FMM Fed Com 103H
Project:	Lea County, NM (NAD83)	TVD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Reference Site:	FMM Fed Com	MD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	FMM Fed Com 103H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.15 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 635-INC-ONLY													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
2,700.00	2,699.11	2,713.59	2,712.81	9.28	52.57	-141.34	4,110.18	351.72	4,152.95	4,099.57	53.38	77.797		
2,800.00	2,798.98	2,813.45	2,812.68	9.63	54.51	-141.38	4,110.18	351.72	4,157.04	4,101.69	55.35	75.101		
2,900.00	2,898.84	2,919.55	2,918.77	9.97	56.57	-141.43	4,110.71	351.72	4,161.67	4,104.22	57.44	72.449		
3,000.00	2,998.70	3,026.47	3,025.69	10.32	58.65	-141.48	4,110.46	351.72	4,165.53	4,105.98	59.55	69.952		
3,100.00	3,098.57	3,113.09	3,112.27	10.67	60.46	-141.52	4,110.18	351.72	4,169.33	4,107.94	61.39	67.918		
3,200.00	3,198.43	3,212.96	3,212.13	11.02	63.34	-141.56	4,110.18	351.72	4,173.43	4,109.15	64.28	64.922		
3,300.00	3,298.29	3,312.82	3,311.99	11.38	66.22	-141.61	4,110.18	351.72	4,177.53	4,110.35	67.18	62.183		
3,400.00	3,398.15	3,412.68	3,411.85	11.73	69.10	-141.65	4,110.18	351.72	4,181.64	4,111.56	70.08	59.670		
3,500.00	3,498.02	3,512.54	3,511.72	12.09	71.98	-141.70	4,110.18	351.72	4,185.75	4,112.77	72.98	57.357		
3,600.00	3,597.88	3,612.41	3,611.58	12.44	74.86	-141.74	4,110.18	351.72	4,189.86	4,113.98	75.88	55.220		
3,700.00	3,697.74	3,712.27	3,711.44	12.80	77.73	-141.78	4,110.18	351.72	4,193.97	4,115.20	78.77	53.240		
3,800.00	3,797.61	3,775.00	3,773.73	13.16	79.54	-141.81	4,110.18	351.72	4,198.26	4,117.65	80.61	52.079 SF		
3,900.00	3,897.47	3,775.00	3,773.73	13.51	79.54	-141.81	4,110.18	351.72	4,204.46	4,123.83	80.63	52.145		
4,000.00	3,997.33	3,775.00	3,773.73	13.87	79.54	-141.81	4,110.18	351.72	4,213.02	4,132.41	80.61	52.267		
4,100.00	4,097.19	3,775.00	3,773.73	14.23	79.54	-141.81	4,110.18	351.72	4,223.93	4,143.39	80.54	52.446		
4,200.00	4,197.06	3,775.00	3,773.73	14.59	79.54	-141.81	4,110.18	351.72	4,237.18	4,156.75	80.43	52.682		
4,300.00	4,296.92	3,775.00	3,773.73	14.95	79.54	-141.81	4,110.18	351.72	4,252.74	4,172.46	80.28	52.975		
4,400.00	4,396.78	3,775.00	3,773.73	15.31	79.54	-141.81	4,110.18	351.72	4,270.58	4,190.50	80.08	53.327		
4,500.00	4,496.65	3,775.00	3,773.73	15.67	79.54	-141.81	4,110.18	351.72	4,290.68	4,210.83	79.85	53.734		
4,600.00	4,596.51	3,775.00	3,773.73	16.03	79.54	-141.81	4,110.18	351.72	4,313.00	4,233.42	79.58	54.195		
4,700.00	4,696.37	3,775.00	3,773.73	16.39	79.54	-141.81	4,110.18	351.72	4,337.52	4,258.24	79.28	54.711		
4,800.00	4,796.23	3,775.00	3,773.73	16.75	79.54	-141.81	4,110.18	351.72	4,364.19	4,285.24	78.94	55.282		
4,900.00	4,896.10	3,775.00	3,773.73	17.12	79.54	-141.81	4,110.18	351.72	4,392.97	4,314.40	78.58	55.905		
5,000.00	4,995.96	3,775.00	3,773.73	17.48	79.54	-141.81	4,110.18	351.72	4,423.83	4,345.65	78.18	56.582		
5,100.00	5,095.82	3,775.00	3,773.73	17.84	79.54	-141.81	4,110.18	351.72	4,456.72	4,378.96	77.76	57.312		
5,200.00	5,195.69	3,775.00	3,773.73	18.21	79.54	-141.81	4,110.18	351.72	4,491.60	4,414.28	77.32	58.094		
5,300.00	5,295.55	3,775.00	3,773.73	18.57	79.54	-141.81	4,110.18	351.72	4,528.41	4,451.57	76.85	58.928		
5,400.00	5,395.41	3,775.00	3,773.73	18.93	79.54	-141.81	4,110.18	351.72	4,567.12	4,490.77	76.36	59.814		
5,500.00	5,495.27	3,775.00	3,773.73	19.30	79.54	-141.81	4,110.18	351.72	4,607.68	4,531.83	75.85	60.750		
5,600.00	5,595.14	3,775.00	3,773.73	19.66	79.54	-141.81	4,110.18	351.72	4,650.03	4,574.71	75.32	61.740		
5,700.00	5,695.00	3,775.00	3,773.73	20.02	79.54	-141.81	4,110.18	351.72	4,694.13	4,619.36	74.77	62.780		
5,800.00	5,794.86	3,775.00	3,773.73	20.39	79.54	-141.81	4,110.18	351.72	4,739.93	4,665.72	74.21	63.869		
5,900.00	5,894.73	3,775.00	3,773.73	20.75	79.54	-141.81	4,110.18	351.72	4,787.38	4,713.74	73.64	65.007		
6,000.00	5,994.59	3,775.00	3,773.73	21.12	79.54	-141.81	4,110.18	351.72	4,836.43	4,763.37	73.07	66.193		
6,100.00	6,094.45	3,775.00	3,773.73	21.48	79.54	-141.81	4,110.18	351.72	4,887.04	4,814.56	72.48	67.427		
6,200.00	6,194.31	3,775.00	3,773.73	21.85	79.54	-141.81	4,110.18	351.72	4,939.15	4,867.27	71.89	68.708		
6,300.00	6,294.18	3,775.00	3,773.73	22.21	79.54	-141.81	4,110.18	351.72	4,992.73	4,921.44	71.29	70.035		
10,700.00	8,394.00	3,775.00	3,773.73	49.16	79.54	2.97	4,110.18	351.72	4,972.86	4,934.03	38.83	128.069		
10,800.00	8,394.00	3,775.00	3,773.73	50.49	79.54	2.97	4,110.18	351.72	4,937.78	4,899.61	38.17	129.373		
10,900.00	8,394.00	3,775.00	3,773.73	51.84	79.54	2.97	4,110.18	351.72	4,904.49	4,866.94	37.55	130.597		
11,000.00	8,394.00	3,775.00	3,773.73	53.21	79.54	2.97	4,110.18	351.72	4,873.03	4,836.03	37.00	131.710		
11,100.00	8,394.00	3,775.00	3,773.73	54.60	79.54	2.97	4,110.18	351.72	4,843.42	4,806.92	36.51	132.670		
11,200.00	8,394.00	3,775.00	3,773.73	56.00	79.54	2.97	4,110.18	351.72	4,815.71	4,779.63	36.08	133.456		
11,300.00	8,394.00	3,775.00	3,773.73	57.41	79.54	2.97	4,110.18	351.72	4,789.93	4,754.20	35.73	134.042		
11,400.00	8,394.00	3,775.00	3,773.73	58.84	79.54	2.97	4,110.18	351.72	4,766.11	4,730.65	35.46	134.397		
11,500.00	8,394.00	3,775.00	3,773.73	60.28	79.54	2.97	4,110.18	351.72	4,744.28	4,709.01	35.27	134.496		
11,600.00	8,394.00	3,775.00	3,773.73	61.72	79.54	2.97	4,110.18	351.72	4,724.46	4,689.28	35.18	134.293		
11,700.00	8,394.00	3,775.00	3,773.73	63.18	79.54	2.97	4,110.18	351.72	4,706.69	4,671.51	35.18	133.794		
11,800.00	8,394.00	3,775.00	3,773.73	64.65	79.54	2.97	4,110.18	351.72	4,690.98	4,655.71	35.26	133.024		
11,900.00	8,394.00	3,775.00	3,773.73	66.13	79.54	2.97	4,110.18	351.72	4,677.35	4,641.90	35.45	131.942		
12,000.00	8,394.00	3,775.00	3,773.73	67.61	79.54	2.97	4,110.18	351.72	4,665.83	4,630.11	35.73	130.598		
12,100.00	8,394.00	3,775.00	3,773.73	69.10	79.54	2.97	4,110.18	351.72	4,656.43	4,620.33	36.10	128.992		

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



Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well FMM Fed Com 103H
Project:	Lea County, NM (NAD83)	TVD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Reference Site:	FMM Fed Com	MD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	FMM Fed Com 103H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.15 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 635-INC-ONLY													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
12,200.00	8,394.00	3,775.00	3,773.73	70.60	79.54	2.97	4,110.18	351.72	4,649.16	4,612.61	36.56	127.176		
12,300.00	8,394.00	3,775.00	3,773.73	72.11	79.54	2.97	4,110.18	351.72	4,644.04	4,606.94	37.10	125.168		
12,400.00	8,394.00	3,775.00	3,773.73	73.62	79.54	2.97	4,110.18	351.72	4,641.06	4,603.33	37.73	123.009		
12,488.19	8,394.00	3,775.00	3,773.73	74.96	79.54	2.97	4,110.18	351.72	4,640.22	4,601.87	38.35	120.996		
12,500.00	8,394.00	3,775.00	3,773.73	75.14	79.54	2.97	4,110.18	351.72	4,640.24	4,601.80	38.44	120.724		
12,600.00	8,394.00	3,775.00	3,773.73	76.66	79.54	2.97	4,110.18	351.72	4,641.57	4,602.35	39.22	118.361		
12,700.00	8,394.00	3,775.00	3,773.73	78.19	79.54	2.97	4,110.18	351.72	4,645.05	4,604.99	40.06	115.952		
12,800.00	8,394.00	3,775.00	3,773.73	79.72	79.54	2.97	4,110.18	351.72	4,650.69	4,609.72	40.96	113.536		
12,900.00	8,394.00	3,775.00	3,773.73	81.26	79.54	2.97	4,110.18	351.72	4,658.46	4,616.55	41.91	111.143		
13,000.00	8,394.00	3,775.00	3,773.73	82.80	79.54	2.97	4,110.18	351.72	4,668.36	4,625.45	42.91	108.786		
13,100.00	8,394.00	3,775.00	3,773.73	84.35	79.54	2.97	4,110.18	351.72	4,680.38	4,636.43	43.95	106.484		
13,200.00	8,394.00	3,775.00	3,773.73	85.90	79.54	2.97	4,110.18	351.72	4,694.50	4,649.47	45.03	104.257		
13,300.00	8,394.00	3,775.00	3,773.73	87.46	79.54	2.97	4,110.18	351.72	4,710.70	4,664.57	46.13	102.116		
13,400.00	8,394.00	3,775.00	3,773.73	89.02	79.54	2.97	4,110.18	351.72	4,728.96	4,681.70	47.26	100.071		
13,500.00	8,394.00	3,775.00	3,773.73	90.58	79.54	2.97	4,110.18	351.72	4,749.26	4,700.86	48.40	98.128		
13,600.00	8,394.00	3,775.00	3,773.73	92.14	79.54	2.97	4,110.18	351.72	4,771.56	4,722.01	49.55	96.293		
13,700.00	8,394.00	3,775.00	3,773.73	93.71	79.54	2.97	4,110.18	351.72	4,795.85	4,745.14	50.71	94.571		
13,800.00	8,394.00	3,775.00	3,773.73	95.28	79.54	2.97	4,110.18	351.72	4,822.09	4,770.21	51.88	92.955		
13,900.00	8,394.00	3,775.00	3,773.73	96.85	79.54	2.97	4,110.18	351.72	4,850.24	4,797.21	53.04	91.447		
14,000.00	8,394.00	3,775.00	3,773.73	98.43	79.54	2.97	4,110.18	351.72	4,880.29	4,826.09	54.20	90.046		
14,100.00	8,394.00	3,775.00	3,773.73	100.01	79.54	2.97	4,110.18	351.72	4,912.19	4,856.84	55.35	88.748		
14,200.00	8,394.00	3,775.00	3,773.73	101.59	79.54	2.97	4,110.18	351.72	4,945.90	4,889.41	56.49	87.551		
14,300.00	8,394.00	3,775.00	3,773.73	103.17	79.54	2.97	4,110.18	351.72	4,981.40	4,923.78	57.62	86.450		

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



Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well FMM Fed Com 103H
Project:	Lea County, NM (NAD83)	TVD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Reference Site:	FMM Fed Com	MD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	FMM Fed Com 103H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.15 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 0-OWSG (Rev2) MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
0.00	0.00	9.70	9.70	0.00	0.01	14.83	2,299.94	609.06	2,379.22					
100.00	100.00	109.70	109.70	0.13	0.17	14.83	2,299.94	609.06	2,379.22	2,379.01	0.21	N/A		
200.00	200.00	209.70	209.70	0.48	0.53	14.83	2,299.94	609.06	2,379.22	2,378.50	0.72	3,323.015		
300.00	300.00	309.70	309.70	0.84	0.89	14.83	2,299.94	609.06	2,379.22	2,378.00	1.22	1,945.936		
400.00	400.00	409.70	409.70	1.20	1.24	14.83	2,299.94	609.06	2,379.22	2,377.49	1.73	1,375.668		
500.00	500.00	509.70	509.70	1.56	1.60	14.83	2,299.94	609.06	2,379.22	2,376.98	2.24	1,063.864		
600.00	600.00	609.70	609.70	1.92	1.96	14.83	2,299.94	609.06	2,379.22	2,376.48	2.74	867.281		
700.00	700.00	709.70	709.70	2.28	2.32	14.83	2,299.94	609.06	2,379.22	2,375.97	3.25	732.014		
800.00	800.00	809.70	809.70	2.63	2.68	14.83	2,299.94	609.06	2,379.22	2,375.46	3.76	633.247		
900.00	900.00	909.70	909.70	2.99	3.04	14.83	2,299.94	609.06	2,379.22	2,374.96	4.26	557.964		
1,000.00	1,000.00	1,009.70	1,009.70	3.35	3.40	14.83	2,299.94	609.06	2,379.22	2,374.45	4.77	498.678		
1,100.00	1,100.00	1,109.70	1,109.70	3.71	3.75	14.83	2,299.94	609.06	2,379.22	2,373.94	5.28	450.780		
1,200.00	1,200.00	1,209.70	1,209.70	4.07	4.11	14.83	2,299.94	609.06	2,379.22	2,373.44	5.78	411.278		
1,300.00	1,300.00	1,309.70	1,309.70	4.43	4.47	14.83	2,299.94	609.06	2,379.22	2,372.93	6.29	378.140		
1,400.00	1,400.00	1,409.70	1,409.70	4.79	4.83	14.83	2,299.94	609.06	2,379.22	2,372.42	6.80	349.945		
1,500.00	1,500.00	1,509.70	1,509.70	5.14	5.19	14.83	2,299.94	609.06	2,379.22	2,371.91	7.31	325.662		
1,600.00	1,600.00	1,609.70	1,609.70	5.50	5.55	14.83	2,299.94	609.06	2,379.22	2,371.41	7.81	304.530		
1,700.00	1,700.00	1,709.70	1,709.70	5.86	5.90	14.83	2,299.94	609.06	2,379.22	2,370.90	8.32	285.974		
1,800.00	1,800.00	1,809.70	1,809.70	6.22	6.26	14.83	2,299.94	609.06	2,379.22	2,370.39	8.83	269.550		
1,900.00	1,900.00	1,909.70	1,909.70	6.58	6.62	14.83	2,299.94	609.06	2,379.22	2,369.89	9.33	254.909		
1,920.00	1,920.00	1,929.70	1,929.70	6.65	6.69	14.83	2,299.94	609.06	2,379.22	2,369.79	9.43	252.170		
2,000.00	1,999.99	2,009.69	2,009.69	6.92	6.98	-131.14	2,299.94	609.06	2,379.77	2,369.94	9.83	242.062		
2,100.00	2,099.93	2,109.63	2,109.63	7.25	7.34	-131.17	2,299.94	609.06	2,382.01	2,371.69	10.32	230.893		
2,120.05	2,119.96	2,129.66	2,129.66	7.32	7.41	-131.18	2,299.94	609.06	2,382.67	2,372.25	10.41	228.791		
2,200.00	2,199.80	2,209.50	2,209.50	7.58	7.70	-131.26	2,299.94	609.06	2,385.43	2,374.62	10.80	220.793		
2,300.00	2,299.66	2,309.36	2,309.36	7.92	8.05	-131.35	2,299.94	609.06	2,388.89	2,377.59	11.29	211.532		
2,400.00	2,399.52	2,409.22	2,409.22	8.25	8.41	-131.45	2,299.94	609.06	2,392.35	2,380.57	11.78	203.010		
2,500.00	2,499.39	2,509.09	2,509.09	8.59	8.77	-131.54	2,299.94	609.06	2,395.82	2,383.54	12.28	195.145		
2,600.00	2,599.25	2,608.95	2,608.95	8.94	9.13	-131.63	2,299.94	609.06	2,399.30	2,386.53	12.77	187.866		
2,700.00	2,699.11	2,708.81	2,708.81	9.28	9.49	-131.73	2,299.94	609.06	2,402.78	2,389.52	13.27	181.113		
2,800.00	2,798.98	2,808.68	2,808.68	9.63	9.84	-131.82	2,299.94	609.06	2,406.27	2,392.51	13.76	174.832		
2,900.00	2,898.84	2,908.54	2,908.54	9.97	10.20	-131.91	2,299.94	609.06	2,409.77	2,395.51	14.26	168.977		
3,000.00	2,998.70	3,008.40	3,008.40	10.32	10.56	-132.00	2,299.94	609.06	2,413.27	2,398.51	14.76	163.507		
3,100.00	3,098.57	3,108.27	3,108.27	10.67	10.92	-132.10	2,299.94	609.06	2,416.78	2,401.52	15.26	158.387		
3,200.00	3,198.43	3,208.13	3,208.13	11.02	11.28	-132.19	2,299.94	609.06	2,420.30	2,404.54	15.76	153.584		
3,300.00	3,298.29	3,307.99	3,307.99	11.38	11.63	-132.28	2,299.94	609.06	2,423.82	2,407.56	16.26	149.072		
3,400.00	3,398.15	3,407.85	3,407.85	11.73	11.99	-132.37	2,299.94	609.06	2,427.34	2,410.58	16.76	144.823		
3,500.00	3,498.02	3,507.72	3,507.72	12.09	12.35	-132.46	2,299.94	609.06	2,430.88	2,413.62	17.26	140.818		
3,600.00	3,597.88	3,607.58	3,607.58	12.44	12.71	-132.55	2,299.94	609.06	2,434.42	2,416.65	17.76	137.035		
3,700.00	3,697.74	3,707.44	3,707.44	12.80	13.07	-132.64	2,299.94	609.06	2,437.96	2,419.70	18.27	133.458		
3,800.00	3,797.61	3,807.31	3,807.31	13.16	13.42	-132.73	2,299.94	609.06	2,441.52	2,422.74	18.77	130.069		
3,900.00	3,897.47	3,907.17	3,907.17	13.51	13.78	-132.82	2,299.94	609.06	2,445.07	2,425.80	19.27	126.856		
4,000.00	3,997.33	4,007.03	4,007.03	13.87	14.14	-132.91	2,299.94	609.06	2,448.64	2,428.86	19.78	123.804		
4,100.00	4,097.19	4,106.89	4,106.89	14.23	14.50	-133.00	2,299.94	609.06	2,452.21	2,431.92	20.28	120.902		
4,200.00	4,197.06	4,206.76	4,206.76	14.59	14.86	-133.09	2,299.94	609.06	2,455.78	2,435.00	20.79	118.139		
4,300.00	4,296.92	4,306.62	4,306.62	14.95	15.21	-133.18	2,299.94	609.06	2,459.37	2,438.07	21.29	115.506		
4,400.00	4,396.78	4,406.48	4,406.48	15.31	15.57	-133.27	2,299.94	609.06	2,462.95	2,441.16	21.80	112.994		
4,500.00	4,496.65	4,506.35	4,506.35	15.67	15.93	-133.36	2,299.94	609.06	2,466.55	2,444.24	22.30	110.595		
4,600.00	4,596.51	4,606.21	4,606.21	16.03	16.29	-133.45	2,299.94	609.06	2,470.15	2,447.34	22.81	108.301		
4,700.00	4,696.37	4,706.07	4,706.07	16.39	16.65	-133.54	2,299.94	609.06	2,473.75	2,450.44	23.31	106.107		
4,800.00	4,796.23	4,805.93	4,805.93	16.75	17.00	-133.62	2,299.94	609.06	2,477.36	2,453.54	23.82	104.004		
4,900.00	4,896.10	4,905.80	4,905.80	17.12	17.36	-133.71	2,299.94	609.06	2,480.98	2,456.65	24.33	101.989		

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



Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well FMM Fed Com 103H
Project:	Lea County, NM (NAD83)	TVD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Reference Site:	FMM Fed Com	MD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	FMM Fed Com 103H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.15 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 0-OWSG (Rev2) MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
5,000.00	4,995.96	5,005.66	5,005.66	17.48	17.72	-133.80	2,299.94	609.06	2,484.60	2,459.77	24.83	100.056		
5,100.00	5,095.82	5,105.52	5,105.52	17.84	18.08	-133.88	2,299.94	609.06	2,488.23	2,462.89	25.34	98.199		
5,200.00	5,195.69	5,205.39	5,205.39	18.21	18.44	-133.97	2,299.94	609.06	2,491.87	2,466.02	25.85	96.415		
5,300.00	5,295.55	5,305.25	5,305.25	18.57	18.79	-134.06	2,299.94	609.06	2,495.51	2,469.15	26.35	94.699		
5,400.00	5,395.41	5,405.11	5,405.11	18.93	19.15	-134.14	2,299.94	609.06	2,499.15	2,472.29	26.86	93.047		
5,500.00	5,495.27	5,504.97	5,504.97	19.30	19.51	-134.23	2,299.94	609.06	2,502.80	2,475.44	27.37	91.457		
5,600.00	5,595.14	5,604.84	5,604.84	19.66	19.87	-134.32	2,299.94	609.06	2,506.46	2,478.59	27.87	89.924		
5,700.00	5,695.00	5,704.70	5,704.70	20.02	20.23	-134.40	2,299.94	609.06	2,510.12	2,481.74	28.38	88.446		
5,800.00	5,794.86	5,804.56	5,804.56	20.39	20.58	-134.49	2,299.94	609.06	2,513.79	2,484.90	28.89	87.020		
5,900.00	5,894.73	5,904.43	5,904.43	20.75	20.94	-134.57	2,299.94	609.06	2,517.46	2,488.07	29.39	85.643		
6,000.00	5,994.59	6,004.29	6,004.29	21.12	21.30	-134.66	2,299.94	609.06	2,521.14	2,491.24	29.90	84.313		
6,100.00	6,094.45	6,104.15	6,104.15	21.48	21.66	-134.74	2,299.94	609.06	2,524.83	2,494.42	30.41	83.026		
6,200.00	6,194.31	6,204.01	6,204.01	21.85	22.02	-134.82	2,299.94	609.06	2,528.52	2,497.60	30.92	81.783		
6,300.00	6,294.18	6,303.88	6,303.88	22.21	22.37	-134.91	2,299.94	609.06	2,532.21	2,500.79	31.43	80.579		
6,400.00	6,394.04	6,403.74	6,403.74	22.58	22.73	-134.99	2,299.94	609.06	2,535.91	2,503.98	31.93	79.413		
6,500.00	6,493.90	6,503.60	6,503.60	22.94	23.09	-135.08	2,299.94	609.06	2,539.62	2,507.18	32.44	78.285		
6,600.00	6,593.77	6,603.47	6,603.47	23.31	23.45	-135.16	2,299.94	609.06	2,543.33	2,510.38	32.95	77.190		
6,700.00	6,693.63	6,703.33	6,703.33	23.67	23.81	-135.24	2,299.94	609.06	2,547.05	2,513.59	33.46	76.130		
6,800.00	6,793.49	6,803.19	6,803.19	24.04	24.16	-135.32	2,299.94	609.06	2,550.77	2,516.81	33.96	75.100		
6,900.00	6,893.35	6,903.05	6,903.05	24.40	24.52	-135.41	2,299.94	609.06	2,554.50	2,520.03	34.47	74.102		
7,000.00	6,993.22	7,002.92	7,002.92	24.77	24.88	-135.49	2,299.94	609.06	2,558.23	2,523.25	34.98	73.132		
7,106.97	7,100.04	7,109.74	7,109.74	25.16	25.26	-135.58	2,299.94	609.06	2,562.23	2,526.71	35.52	72.126		
7,200.00	7,192.99	7,202.69	7,202.69	25.50	25.60	-135.66	2,299.94	609.06	2,564.90	2,528.91	36.00	71.255		
7,307.02	7,300.00	7,309.70	7,309.70	25.87	25.98	10.26	2,299.94	609.06	2,565.98	2,529.45	36.53	70.243		
7,400.00	7,392.98	7,402.68	7,402.68	26.18	26.31	10.26	2,299.94	609.06	2,565.98	2,528.99	36.99	69.374		
7,500.00	7,492.98	7,502.68	7,502.68	26.52	26.67	10.26	2,299.94	609.06	2,565.98	2,528.50	37.48	68.462		
7,600.00	7,592.98	7,602.68	7,602.68	26.85	27.03	10.26	2,299.94	609.06	2,565.98	2,528.00	37.97	67.573		
7,700.00	7,692.98	7,702.68	7,702.68	27.19	27.39	10.26	2,299.94	609.06	2,565.98	2,527.51	38.47	66.706		
7,800.00	7,792.98	7,802.68	7,802.68	27.53	27.75	10.26	2,299.94	609.06	2,565.98	2,527.02	38.96	65.861		
7,828.06	7,821.04	7,830.74	7,830.74	27.62	27.85	10.26	2,299.94	609.06	2,565.98	2,526.88	39.10	65.628		
7,850.00	7,842.97	7,852.67	7,852.67	27.69	27.93	10.81	2,299.94	609.06	2,565.56	2,526.36	39.21	65.436		
7,900.00	7,892.79	7,902.49	7,902.49	27.86	28.10	10.91	2,299.94	609.06	2,561.55	2,522.09	39.45	64.929		
7,950.00	7,942.06	7,951.76	7,951.76	28.01	28.28	11.10	2,299.94	609.06	2,553.28	2,513.59	39.69	64.329		
8,000.00	7,990.41	8,000.11	8,000.11	28.16	28.45	11.41	2,299.94	609.06	2,540.83	2,500.91	39.92	63.642		
8,050.00	8,037.47	8,047.17	8,047.17	28.29	28.62	11.84	2,299.94	609.06	2,524.29	2,484.14	40.15	62.876		
8,100.00	8,082.88	8,092.58	8,092.58	28.42	28.79	12.41	2,299.94	609.06	2,503.80	2,463.44	40.36	62.038		
8,150.00	8,126.30	8,136.00	8,136.00	28.54	28.94	13.15	2,299.94	609.06	2,479.50	2,438.94	40.56	61.134		
8,200.00	8,167.40	8,177.10	8,177.10	28.66	29.09	14.10	2,299.94	609.06	2,451.60	2,410.85	40.74	60.172		
8,250.00	8,205.86	8,215.56	8,215.56	28.77	29.23	15.31	2,299.94	609.06	2,420.30	2,379.39	40.91	59.159		
8,300.00	8,241.40	8,251.10	8,251.10	28.88	29.35	16.85	2,299.94	609.06	2,385.86	2,344.79	41.06	58.101		
8,350.00	8,273.73	8,283.43	8,283.43	28.99	29.47	18.85	2,299.94	609.06	2,348.53	2,307.34	41.20	57.004		
8,400.00	8,302.62	8,312.32	8,312.32	29.11	29.57	21.46	2,299.94	609.06	2,308.62	2,267.31	41.32	55.877		
8,450.00	8,327.84	8,337.54	8,337.54	29.24	29.66	24.96	2,299.94	609.06	2,266.43	2,225.02	41.42	54.724		
8,500.00	8,349.21	8,358.91	8,358.91	29.38	29.74	29.77	2,299.94	609.06	2,222.30	2,180.80	41.50	53.552		
8,550.00	8,366.55	8,376.25	8,376.25	29.52	29.80	36.54	2,299.94	609.06	2,176.55	2,134.99	41.56	52.369		
8,600.00	8,379.75	8,389.45	8,389.45	29.68	29.85	46.29	2,299.94	609.06	2,129.56	2,087.95	41.61	51.179		
8,650.00	8,388.69	8,398.39	8,398.39	29.85	29.88	60.23	2,299.94	609.06	2,081.68	2,040.04	41.64	49.990		
8,700.00	8,393.31	8,403.01	8,403.01	30.03	29.90	78.63	2,299.94	609.06	2,033.29	1,991.63	41.66	48.806		
8,728.06	8,394.00	8,403.70	8,403.70	30.14	29.90	90.00	2,299.94	609.06	2,006.05	1,964.39	41.67	48.147		
8,800.00	8,394.00	8,403.70	8,403.70	30.43	29.90	90.00	2,299.94	609.06	1,936.29	1,894.61	41.67	46.464		
8,900.00	8,394.00	8,403.70	8,403.70	30.91	29.90	90.00	2,299.94	609.06	1,839.59	1,797.90	41.69	44.124		
9,000.00	8,394.00	8,403.70	8,403.70	31.47	29.90	90.00	2,299.94	609.06	1,743.26	1,701.54	41.72	41.785		

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



Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well FMM Fed Com 103H
Project:	Lea County, NM (NAD83)	TVD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Reference Site:	FMM Fed Com	MD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	FMM Fed Com 103H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.15 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 0-OWSG (Rev2) MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance							Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
9,100.00	8,394.00	8,403.70	8,403.70	32.10	29.90	90.00	2,299.94	609.06	1,647.37	1,605.61	41.76	39.447		
9,200.00	8,394.00	8,403.70	8,403.70	32.81	29.90	90.00	2,299.94	609.06	1,552.01	1,510.18	41.82	37.110		
9,300.00	8,394.00	8,403.70	8,403.70	33.58	29.90	90.00	2,299.94	609.06	1,457.26	1,415.35	41.91	34.775		
9,400.00	8,394.00	8,403.70	8,403.70	34.41	29.90	90.00	2,299.94	609.06	1,363.26	1,321.24	42.02	32.443		
9,500.00	8,394.00	8,403.70	8,403.70	35.30	29.90	90.00	2,299.94	609.06	1,270.18	1,228.01	42.18	30.116		
9,600.00	8,394.00	8,403.70	8,403.70	36.24	29.90	90.00	2,299.94	609.06	1,178.24	1,135.85	42.39	27.794		
9,700.00	8,394.00	8,403.70	8,403.70	37.24	29.90	90.00	2,299.94	609.06	1,087.71	1,045.03	42.68	25.483		
9,800.00	8,394.00	8,403.70	8,403.70	38.28	29.90	90.00	2,299.94	609.06	999.00	955.92	43.08	23.187		
9,900.00	8,394.00	8,403.70	8,403.70	39.36	29.90	90.00	2,299.94	609.06	912.62	868.99	43.63	20.917		
10,000.00	8,394.00	8,403.70	8,403.70	40.48	29.90	90.00	2,299.94	609.06	829.31	784.93	44.39	18.684		
10,100.00	8,394.00	8,403.70	8,403.70	41.63	29.90	90.00	2,299.94	609.06	750.09	704.67	45.42	16.514		
10,200.00	8,394.00	8,403.70	8,403.70	42.82	29.90	90.00	2,299.94	609.06	676.40	629.58	46.82	14.446		
10,300.00	8,394.00	8,403.70	8,403.70	44.03	29.90	90.00	2,299.94	609.06	610.25	561.58	48.67	12.539		
10,400.00	8,394.00	8,403.70	8,403.70	45.28	29.90	90.00	2,299.94	609.06	554.33	503.37	50.96	10.877		
10,500.00	8,394.00	8,403.70	8,403.70	46.55	29.90	90.00	2,299.94	609.06	512.02	458.48	53.53	9.564		
10,600.00	8,394.00	8,403.70	8,403.70	47.84	29.90	90.00	2,299.94	609.06	486.87	430.94	55.93	8.705		
10,675.60	8,394.00	8,403.70	8,403.70	48.84	29.90	90.00	2,299.94	609.06	480.96	423.72	57.25	8.402 CC, ES		
10,700.00	8,394.00	8,403.70	8,403.70	49.16	29.90	90.00	2,299.94	609.06	481.58	424.05	57.53	8.370 SF		
10,800.00	8,394.00	8,403.70	8,403.70	50.49	29.90	90.00	2,299.94	609.06	496.79	438.84	57.95	8.573		
10,900.00	8,394.00	8,403.70	8,403.70	51.84	29.90	90.00	2,299.94	609.06	530.73	473.44	57.30	9.263		
11,000.00	8,394.00	8,403.70	8,403.70	53.21	29.90	90.00	2,299.94	609.06	580.14	524.10	56.03	10.354		
11,100.00	8,394.00	8,403.70	8,403.70	54.60	29.90	90.00	2,299.94	609.06	641.44	586.86	54.57	11.754		
11,200.00	8,394.00	8,403.70	8,403.70	56.00	29.90	90.00	2,299.94	609.06	711.56	658.39	53.17	13.383		
11,300.00	8,394.00	8,403.70	8,403.70	57.41	29.90	90.00	2,299.94	609.06	788.16	736.24	51.92	15.179		
11,400.00	8,394.00	8,403.70	8,403.70	58.84	29.90	90.00	2,299.94	609.06	869.53	818.66	50.86	17.095		
11,500.00	8,394.00	8,403.70	8,403.70	60.28	29.90	90.00	2,299.94	609.06	954.44	904.47	49.97	19.098		
11,600.00	8,394.00	8,403.70	8,403.70	61.72	29.90	90.00	2,299.94	609.06	1,042.04	992.80	49.23	21.165		
11,700.00	8,394.00	8,403.70	8,403.70	63.18	29.90	90.00	2,299.94	609.06	1,131.69	1,083.07	48.62	23.278		
11,800.00	8,394.00	8,403.70	8,403.70	64.65	29.90	90.00	2,299.94	609.06	1,222.95	1,174.85	48.10	25.426		
11,900.00	8,394.00	8,403.70	8,403.70	66.13	29.90	90.00	2,299.94	609.06	1,315.48	1,267.82	47.66	27.601		
12,000.00	8,394.00	8,403.70	8,403.70	67.61	29.90	90.00	2,299.94	609.06	1,409.03	1,361.74	47.29	29.795		
12,100.00	8,394.00	8,403.70	8,403.70	69.10	29.90	90.00	2,299.94	609.06	1,503.41	1,456.43	46.98	32.002		
12,200.00	8,394.00	8,403.70	8,403.70	70.60	29.90	90.00	2,299.94	609.06	1,598.47	1,551.77	46.71	34.223		
12,300.00	8,394.00	8,403.70	8,403.70	72.11	29.90	90.00	2,299.94	609.06	1,694.11	1,647.63	46.48	36.450		
12,400.00	8,394.00	8,403.70	8,403.70	73.62	29.90	90.00	2,299.94	609.06	1,790.22	1,743.94	46.28	38.685		
12,500.00	8,394.00	8,403.70	8,403.70	75.14	29.90	90.00	2,299.94	609.06	1,886.73	1,840.63	46.11	40.922		
12,600.00	8,394.00	8,403.70	8,403.70	76.66	29.90	90.00	2,299.94	609.06	1,983.59	1,937.63	45.96	43.162		
12,700.00	8,394.00	8,403.70	8,403.70	78.19	29.90	90.00	2,299.94	609.06	2,080.75	2,034.92	45.83	45.406		
12,800.00	8,394.00	8,403.70	8,403.70	79.72	29.90	90.00	2,299.94	609.06	2,178.16	2,132.45	45.71	47.651		
12,900.00	8,394.00	8,403.70	8,403.70	81.26	29.90	90.00	2,299.94	609.06	2,275.80	2,230.19	45.61	49.896		
13,000.00	8,394.00	8,403.70	8,403.70	82.80	29.90	90.00	2,299.94	609.06	2,373.64	2,328.11	45.52	52.139		
13,100.00	8,394.00	8,403.70	8,403.70	84.35	29.90	90.00	2,299.94	609.06	2,471.65	2,426.20	45.45	54.381		
13,200.00	8,394.00	8,403.70	8,403.70	85.90	29.90	90.00	2,299.94	609.06	2,569.81	2,524.42	45.39	56.622		
13,300.00	8,394.00	8,403.70	8,403.70	87.46	29.90	90.00	2,299.94	609.06	2,668.11	2,622.78	45.33	58.859		
13,400.00	8,394.00	8,403.70	8,403.70	89.02	29.90	90.00	2,299.94	609.06	2,766.53	2,721.24	45.28	61.094		
13,500.00	8,394.00	8,403.70	8,403.70	90.58	29.90	90.00	2,299.94	609.06	2,865.06	2,819.82	45.24	63.328		
13,600.00	8,394.00	8,403.70	8,403.70	92.14	29.90	90.00	2,299.94	609.06	2,963.69	2,918.48	45.21	65.557		
13,700.00	8,394.00	8,403.70	8,403.70	93.71	29.90	90.00	2,299.94	609.06	3,062.40	3,017.23	45.18	67.786		
13,800.00	8,394.00	8,403.70	8,403.70	95.28	29.90	90.00	2,299.94	609.06	3,161.20	3,116.05	45.15	70.012		
13,900.00	8,394.00	8,403.70	8,403.70	96.85	29.90	90.00	2,299.94	609.06	3,260.07	3,214.94	45.13	72.235		
14,000.00	8,394.00	8,403.70	8,403.70	98.43	29.90	90.00	2,299.94	609.06	3,359.01	3,313.90	45.12	74.453		
14,100.00	8,394.00	8,403.70	8,403.70	100.01	29.90	90.00	2,299.94	609.06	3,458.01	3,412.91	45.10	76.667		

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



Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well FMM Fed Com 103H
Project:	Lea County, NM (NAD83)	TVD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Reference Site:	FMM Fed Com	MD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	FMM Fed Com 103H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.15 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.00 usft
FMM Fed Com - Blue Bay WCA State Com #001C (Offset Plan) - OH - Plan #1												Offset Well Error:	0.00 usft
Survey Program: 0-OWSG (Rev2) MWD													
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
14,200.00	8,394.00	8,403.70	8,403.70	101.59	29.90	90.00	2,299.94	609.06	3,557.07	3,511.97	45.10	78.877	
14,300.00	8,394.00	8,403.70	8,403.70	103.17	29.90	90.00	2,299.94	609.06	3,656.17	3,611.08	45.09	81.082	
14,400.00	8,394.00	8,403.70	8,403.70	104.75	29.90	90.00	2,299.94	609.06	3,755.33	3,710.24	45.09	83.283	
14,500.00	8,394.00	8,403.70	8,403.70	106.34	29.90	90.00	2,299.94	609.06	3,854.52	3,809.43	45.09	85.479	
14,600.00	8,394.00	8,403.70	8,403.70	107.93	29.90	90.00	2,299.94	609.06	3,953.76	3,908.66	45.10	87.671	
14,700.00	8,394.00	8,403.70	8,403.70	109.52	29.90	90.00	2,299.94	609.06	4,053.04	4,007.93	45.11	89.857	
14,800.00	8,394.00	8,403.70	8,403.70	111.11	29.90	90.00	2,299.94	609.06	4,152.35	4,107.23	45.12	92.038	
14,900.00	8,394.00	8,403.70	8,403.70	112.71	29.90	90.00	2,299.94	609.06	4,251.69	4,206.56	45.13	94.214	
15,000.00	8,394.00	8,403.70	8,403.70	114.30	29.90	90.00	2,299.94	609.06	4,351.06	4,305.92	45.14	96.385	
15,100.00	8,394.00	8,403.70	8,403.70	115.90	29.90	90.00	2,299.94	609.06	4,450.46	4,405.31	45.16	98.551	
15,200.00	8,394.00	8,403.70	8,403.70	117.50	29.90	90.00	2,299.94	609.06	4,549.89	4,504.71	45.18	100.711	
15,300.00	8,394.00	8,403.70	8,403.70	119.10	29.90	90.00	2,299.94	609.06	4,649.34	4,604.14	45.20	102.865	
15,400.00	8,394.00	8,403.70	8,403.70	120.70	29.90	90.00	2,299.94	609.06	4,748.82	4,703.60	45.22	105.013	
15,500.00	8,394.00	8,403.70	8,403.70	122.31	29.90	90.00	2,299.94	609.06	4,848.31	4,803.07	45.25	107.156	
15,600.00	8,394.00	8,403.70	8,403.70	123.91	29.90	90.00	2,299.94	609.06	4,947.83	4,902.56	45.27	109.293	

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



Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well FMM Fed Com 103H
Project:	Lea County, NM (NAD83)	TVD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Reference Site:	FMM Fed Com	MD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	FMM Fed Com 103H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.15 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													FMM Fed Com - FMM Fed Com 101H - OH - Plan #1		Offset Site Error:	0.00 usft
Survey Program: 0-OWSG (Rev2) MWD													Offset Well Error:	0.00 usft		
Reference		Offset		Semi Major Axis			Distance									
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning			
0.00	0.00	0.00	0.00	0.00	0.00	-90.53	-18.44	-1,985.93	1,986.54							
100.00	100.00	54.50	54.50	0.13	0.07	-90.53	-18.44	-1,985.93	1,986.02	1,985.88	0.14	N/A				
200.00	200.00	154.50	154.50	0.48	0.32	-90.53	-18.44	-1,985.93	1,986.02	1,985.44	0.58	3,420.471				
300.00	300.00	254.50	254.50	0.84	0.68	-90.53	-18.44	-1,985.93	1,986.02	1,984.94	1.08	1,835.209				
400.00	400.00	354.50	354.50	1.20	1.04	-90.53	-18.44	-1,985.93	1,986.02	1,984.43	1.59	1,251.300				
500.00	500.00	454.50	454.50	1.56	1.40	-90.53	-18.44	-1,985.93	1,986.02	1,983.93	2.09	948.839				
600.00	600.00	554.50	554.50	1.92	1.75	-90.53	-18.44	-1,985.93	1,986.02	1,983.42	2.60	764.018				
700.00	700.00	654.50	654.50	2.28	2.11	-90.53	-18.44	-1,985.93	1,986.02	1,982.91	3.11	639.419				
800.00	800.00	754.50	754.50	2.63	2.47	-90.53	-18.44	-1,985.93	1,986.02	1,982.41	3.61	549.743				
900.00	900.00	854.50	854.50	2.99	2.83	-90.53	-18.44	-1,985.93	1,986.02	1,981.90	4.12	482.118				
1,000.00	1,000.00	954.50	954.50	3.35	3.19	-90.53	-18.44	-1,985.93	1,986.02	1,981.39	4.63	429.304				
1,100.00	1,100.00	1,054.50	1,054.50	3.71	3.55	-90.53	-18.44	-1,985.93	1,986.02	1,980.89	5.13	386.916				
1,200.00	1,200.00	1,154.50	1,154.50	4.07	3.91	-90.53	-18.44	-1,985.93	1,986.02	1,980.38	5.64	352.144				
1,300.00	1,300.00	1,254.50	1,254.50	4.43	4.26	-90.53	-18.44	-1,985.93	1,986.02	1,979.87	6.15	323.106				
1,400.00	1,400.00	1,354.50	1,354.50	4.79	4.62	-90.53	-18.44	-1,985.93	1,986.02	1,979.37	6.65	298.491				
1,500.00	1,500.00	1,454.50	1,454.50	5.14	4.98	-90.53	-18.44	-1,985.93	1,986.02	1,978.86	7.16	277.361				
1,600.00	1,600.00	1,554.50	1,554.50	5.50	5.34	-90.53	-18.44	-1,985.93	1,986.02	1,978.35	7.67	259.025				
1,700.00	1,700.00	1,654.50	1,654.50	5.86	5.70	-90.53	-18.44	-1,985.93	1,986.02	1,977.84	8.17	242.962				
1,800.00	1,800.00	1,754.50	1,754.50	6.22	6.06	-90.53	-18.44	-1,985.93	1,986.02	1,977.34	8.68	228.775				
1,806.74	1,806.74	1,761.24	1,761.24	6.24	6.08	-90.53	-18.44	-1,985.93	1,986.02	1,977.30	8.72	227.878	CC			
1,900.00	1,900.00	1,835.95	1,835.95	6.58	6.34	-90.53	-18.46	-1,986.10	1,986.27	1,977.13	9.14	217.344	ES			
1,920.00	1,920.00	1,849.14	1,849.14	6.65	6.39	-90.53	-18.48	-1,986.25	1,986.49	1,977.27	9.22	215.406				
2,000.00	1,999.99	1,900.00	1,899.99	6.92	6.57	123.49	-18.62	-1,987.23	1,988.53	1,978.99	9.54	208.445				
2,100.00	2,099.93	1,967.68	1,967.63	7.25	6.80	123.47	-18.93	-1,989.58	1,993.90	1,983.97	9.93	200.779				
2,120.05	2,119.96	1,980.85	1,980.78	7.32	6.84	123.47	-19.01	-1,990.18	1,995.36	1,985.35	10.01	199.368				
2,200.00	2,199.80	2,033.27	2,033.12	7.58	7.02	123.52	-19.39	-1,992.99	2,001.97	1,991.65	10.32	194.048				
2,300.00	2,299.66	2,100.00	2,099.69	7.92	7.25	123.59	-20.02	-1,997.60	2,011.76	2,001.06	10.71	187.919				
2,400.00	2,399.52	2,163.82	2,163.27	8.25	7.48	123.65	-20.76	-2,003.09	2,023.24	2,012.16	11.09	182.495				
2,500.00	2,499.39	2,228.72	2,227.82	8.59	7.70	123.70	-21.66	-2,009.75	2,036.40	2,024.94	11.47	177.561				
2,600.00	2,599.25	2,300.00	2,298.57	8.94	7.96	123.76	-22.82	-2,018.32	2,051.25	2,039.38	11.87	172.825				
2,700.00	2,699.11	2,357.59	2,355.61	9.28	8.17	123.80	-23.88	-2,026.19	2,067.71	2,055.49	12.23	169.096				
2,800.00	2,798.98	2,421.49	2,418.75	9.63	8.40	123.84	-25.20	-2,035.93	2,085.84	2,073.23	12.60	165.495				
2,900.00	2,898.84	2,491.33	2,487.56	9.97	8.66	123.88	-26.80	-2,047.76	2,105.60	2,092.60	13.00	162.016				
3,000.00	2,998.70	2,579.34	2,574.13	10.32	9.00	123.93	-28.92	-2,063.46	2,126.29	2,112.84	13.45	158.123				
3,100.00	3,098.57	2,677.15	2,670.35	10.67	9.38	123.98	-31.28	-2,080.91	2,147.00	2,133.07	13.93	154.108				
3,200.00	3,198.43	2,774.96	2,766.56	11.02	9.76	124.03	-33.63	-2,098.36	2,167.72	2,153.30	14.42	150.338				
3,300.00	3,298.29	2,872.78	2,862.78	11.38	10.16	124.07	-35.99	-2,115.81	2,188.44	2,173.53	14.91	146.792				
3,400.00	3,398.15	2,970.59	2,959.00	11.73	10.55	124.12	-38.35	-2,133.25	2,209.16	2,193.76	15.40	143.453				
3,500.00	3,498.02	3,068.41	3,055.21	12.09	10.95	124.17	-40.71	-2,150.70	2,229.88	2,213.98	15.89	140.304				
3,600.00	3,597.88	3,166.22	3,151.43	12.44	11.36	124.21	-43.06	-2,168.15	2,250.60	2,234.21	16.39	137.332				
3,700.00	3,697.74	3,264.03	3,247.64	12.80	11.77	124.26	-45.42	-2,185.60	2,271.32	2,254.44	16.88	134.521				
3,800.00	3,797.61	3,361.85	3,343.86	13.16	12.18	124.30	-47.78	-2,203.05	2,292.05	2,274.67	17.38	131.860				
3,900.00	3,897.47	3,459.66	3,440.07	13.51	12.60	124.35	-50.14	-2,220.49	2,312.78	2,294.89	17.88	129.338				
4,000.00	3,997.33	3,557.47	3,536.29	13.87	13.01	124.39	-52.50	-2,237.94	2,333.50	2,315.12	18.38	126.945				
4,100.00	4,097.19	3,655.29	3,632.51	14.23	13.43	124.43	-54.85	-2,255.39	2,354.23	2,335.35	18.88	124.671				
4,200.00	4,197.06	3,753.10	3,728.72	14.59	13.85	124.47	-57.21	-2,272.84	2,374.96	2,355.58	19.39	122.509				
4,300.00	4,296.92	3,850.91	3,824.94	14.95	14.28	124.51	-59.57	-2,290.29	2,395.70	2,375.81	19.89	120.450				
4,400.00	4,396.78	3,948.73	3,921.15	15.31	14.70	124.55	-61.93	-2,307.74	2,416.43	2,396.03	20.39	118.488				
4,500.00	4,496.65	4,046.54	4,017.37	15.67	15.13	124.59	-64.29	-2,325.18	2,437.16	2,416.26	20.90	116.616				
4,600.00	4,596.51	4,144.35	4,113.59	16.03	15.56	124.63	-66.64	-2,342.63	2,457.90	2,436.49	21.40	114.828				
4,700.00	4,696.37	4,242.17	4,209.80	16.39	15.99	124.67	-69.00	-2,360.08	2,478.63	2,456.72	21.91	113.120				
4,800.00	4,796.23	4,339.98	4,306.02	16.75	16.42	124.71	-71.36	-2,377.53	2,499.37	2,476.95	22.42	111.485				

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



Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well FMM Fed Com 103H
Project:	Lea County, NM (NAD83)	TVD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Reference Site:	FMM Fed Com	MD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	FMM Fed Com 103H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.15 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 0-OWSG (Rev2) MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
4,900.00	4,896.10	4,437.80	4,402.23	17.12	16.85	124.74	-73.72	-2,394.98	2,520.11	2,497.18	22.93	109.919		
5,000.00	4,995.96	4,535.61	4,498.45	17.48	17.28	124.78	-76.07	-2,412.42	2,540.85	2,517.41	23.44	108.419		
5,100.00	5,095.82	4,633.42	4,594.67	17.84	17.72	124.81	-78.43	-2,429.87	2,561.58	2,537.64	23.94	106.980		
5,200.00	5,195.69	4,731.24	4,690.88	18.21	18.15	124.85	-80.79	-2,447.32	2,582.33	2,557.87	24.45	105.598		
5,300.00	5,295.55	4,829.05	4,787.10	18.57	18.59	124.88	-83.15	-2,464.77	2,603.07	2,578.10	24.96	104.271		
5,400.00	5,395.41	4,926.86	4,883.31	18.93	19.03	124.92	-85.51	-2,482.22	2,623.81	2,598.33	25.47	102.996		
5,500.00	5,495.27	5,024.68	4,979.53	19.30	19.46	124.95	-87.86	-2,499.67	2,644.55	2,618.57	25.99	101.768		
5,600.00	5,595.14	5,122.49	5,075.74	19.66	19.90	124.98	-90.22	-2,517.11	2,665.30	2,638.80	26.50	100.587		
5,700.00	5,695.00	5,220.30	5,171.96	20.02	20.34	125.01	-92.58	-2,534.56	2,686.04	2,659.03	27.01	99.448		
5,800.00	5,794.86	5,318.12	5,268.18	20.39	20.78	125.05	-94.94	-2,552.01	2,706.79	2,679.27	27.52	98.351		
5,900.00	5,894.73	5,415.93	5,364.39	20.75	21.22	125.08	-97.30	-2,569.46	2,727.53	2,699.50	28.03	97.293		
6,000.00	5,994.59	5,513.74	5,460.61	21.12	21.66	125.11	-99.65	-2,586.91	2,748.28	2,719.73	28.55	96.271		
6,100.00	6,094.45	5,611.56	5,556.82	21.48	22.10	125.14	-102.01	-2,604.35	2,769.03	2,739.97	29.06	95.284		
6,200.00	6,194.31	5,709.37	5,653.04	21.85	22.54	125.17	-104.37	-2,621.80	2,789.78	2,760.20	29.57	94.331		
6,300.00	6,294.18	5,807.19	5,749.26	22.21	22.99	125.20	-106.73	-2,639.25	2,810.53	2,780.44	30.09	93.409		
6,400.00	6,394.04	5,905.00	5,845.47	22.58	23.43	125.23	-109.08	-2,656.70	2,831.28	2,800.67	30.60	92.518		
6,500.00	6,493.90	6,002.81	5,941.69	22.94	23.87	125.25	-111.44	-2,674.15	2,852.03	2,820.91	31.12	91.655		
6,600.00	6,593.77	6,100.63	6,037.90	23.31	24.32	125.28	-113.80	-2,691.59	2,872.78	2,841.15	31.63	90.819		
6,700.00	6,693.63	6,198.44	6,134.12	23.67	24.76	125.31	-116.16	-2,709.04	2,893.53	2,861.38	32.15	90.009		
6,800.00	6,793.49	6,296.25	6,230.34	24.04	25.20	125.34	-118.52	-2,726.49	2,914.28	2,881.62	32.66	89.225		
6,900.00	6,893.35	6,394.07	6,326.55	24.40	25.65	125.36	-120.87	-2,743.94	2,935.04	2,901.86	33.18	88.464		
7,000.00	6,993.22	6,491.88	6,422.77	24.77	26.09	125.39	-123.23	-2,761.39	2,955.79	2,922.10	33.69	87.725		
7,106.97	7,100.04	6,596.52	6,525.69	25.16	26.57	125.42	-125.75	-2,780.05	2,977.99	2,943.75	34.25	86.959		
7,200.00	7,192.99	6,687.65	6,615.34	25.50	26.98	125.66	-127.95	-2,796.31	2,996.66	2,961.93	34.72	86.298		
7,307.02	7,300.00	6,851.32	6,776.46	25.87	27.72	-88.21	-131.80	-2,824.78	3,016.36	2,980.88	35.48	85.005		
7,400.00	7,392.98	7,272.63	7,195.19	26.18	29.38	-88.35	-137.78	-2,869.01	3,026.10	2,989.15	36.96	81.886		
7,500.00	7,492.98	7,525.00	7,447.48	26.52	30.20	-88.36	-138.44	-2,873.93	3,027.17	2,989.40	37.77	80.152		
7,600.00	7,592.98	7,625.00	7,547.48	26.85	30.50	-88.36	-138.44	-2,873.93	3,027.17	2,988.93	38.24	79.160		
7,700.00	7,692.98	7,725.00	7,647.48	27.19	30.81	-88.36	-138.44	-2,873.93	3,027.17	2,988.46	38.72	78.191		
7,800.00	7,792.98	7,825.00	7,747.48	27.53	31.11	-88.36	-138.44	-2,873.93	3,027.17	2,987.98	39.19	77.243		
7,828.06	7,821.04	7,853.07	7,775.54	27.62	31.20	-88.36	-138.44	-2,873.93	3,027.17	2,987.85	39.32	76.981		
7,850.00	7,842.97	7,875.00	7,797.47	27.69	31.27	-87.83	-138.44	-2,873.93	3,027.16	2,987.73	39.43	76.778		
7,900.00	7,892.79	7,924.82	7,847.29	27.86	31.42	-87.92	-138.44	-2,873.93	3,027.00	2,987.34	39.66	76.325		
7,950.00	7,942.06	7,974.09	7,896.56	28.01	31.57	-88.11	-138.44	-2,873.93	3,026.71	2,986.82	39.88	75.888		
8,000.00	7,990.41	8,022.44	7,944.91	28.16	31.72	-88.38	-138.44	-2,873.93	3,026.30	2,986.20	40.10	75.469		
8,050.00	8,037.47	8,069.50	7,991.97	28.29	31.87	-88.72	-138.44	-2,873.93	3,025.85	2,985.54	40.31	75.068		
8,100.00	8,082.88	8,114.91	8,037.38	28.42	32.01	-89.13	-138.44	-2,873.93	3,025.42	2,984.92	40.51	74.690		
8,150.00	8,126.30	8,156.59	8,079.05	28.54	32.14	-89.53	-137.43	-2,873.94	3,025.11	2,984.42	40.69	74.341		
8,200.00	8,167.40	8,198.96	8,121.21	28.66	32.26	-89.94	-133.36	-2,873.98	3,024.98	2,984.11	40.87	74.007		
8,207.01	8,172.96	8,205.01	8,127.20	28.67	32.28	-89.99	-132.52	-2,873.99	3,024.98	2,984.08	40.90	73.962		
8,250.00	8,205.86	8,242.87	8,164.46	28.77	32.39	-90.34	-125.86	-2,874.06	3,025.06	2,984.00	41.05	73.685		
8,300.00	8,241.40	8,288.58	8,208.74	28.88	32.52	-90.75	-114.56	-2,874.17	3,025.34	2,984.11	41.23	73.372		
8,350.00	8,273.73	8,336.39	8,253.93	28.99	32.65	-91.16	-99.01	-2,874.33	3,025.85	2,984.44	41.41	73.065		
8,400.00	8,302.62	8,386.64	8,299.87	29.11	32.77	-91.58	-78.66	-2,874.53	3,026.57	2,984.98	41.60	72.761		
8,450.00	8,327.84	8,439.76	8,346.28	29.24	32.89	-92.00	-52.86	-2,874.78	3,027.51	2,985.73	41.78	72.457		
8,500.00	8,349.21	8,496.22	8,392.77	29.38	33.01	-92.42	-20.86	-2,875.10	3,028.65	2,986.67	41.98	72.149		
8,550.00	8,366.55	8,556.58	8,438.72	29.52	33.12	-92.85	18.22	-2,875.49	3,029.95	2,987.77	42.18	71.833		
8,600.00	8,379.75	8,621.43	8,483.22	29.68	33.23	-93.28	65.35	-2,875.96	3,031.40	2,989.00	42.40	71.503		
8,650.00	8,388.69	8,691.41	8,524.94	29.85	33.33	-93.71	121.48	-2,876.52	3,032.93	2,990.31	42.62	71.156		
8,700.00	8,393.31	8,767.12	8,561.99	30.03	33.44	-94.14	187.44	-2,877.18	3,034.48	2,991.61	42.87	70.776		
8,728.06	8,394.00	8,812.29	8,579.84	30.14	33.50	-94.37	228.91	-2,877.59	3,035.33	2,992.30	43.03	70.546		
8,800.00	8,394.00	8,938.74	8,611.88	30.43	33.73	-94.98	350.97	-2,878.80	3,036.92	2,993.43	43.48	69.838		

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



Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well FMM Fed Com 103H
Project:	Lea County, NM (NAD83)	TVD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Reference Site:	FMM Fed Com	MD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	FMM Fed Com 103H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.15 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 0-OWSG (Rev2) MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
8,900.00	8,394.00	9,077.85	8,618.00	30.91	34.11	-95.09	489.77	-2,880.18	3,037.26	2,993.07	44.18	68.742		
9,000.00	8,394.00	9,177.85	8,618.00	31.47	34.50	-95.09	589.77	-2,881.18	3,037.30	2,992.39	44.91	67.630		
9,100.00	8,394.00	9,277.85	8,618.00	32.10	34.97	-95.09	689.76	-2,882.17	3,037.35	2,991.61	45.74	66.399		
9,200.00	8,394.00	9,377.85	8,618.00	32.81	35.54	-95.09	789.76	-2,883.17	3,037.40	2,990.72	46.68	65.071		
9,300.00	8,394.00	9,477.85	8,618.00	33.58	36.18	-95.09	889.75	-2,884.16	3,037.44	2,989.74	47.71	63.668		
9,400.00	8,394.00	9,577.85	8,618.00	34.41	36.89	-95.09	989.75	-2,885.16	3,037.49	2,988.66	48.83	62.210		
9,500.00	8,394.00	9,677.85	8,618.00	35.30	37.66	-95.09	1,089.74	-2,886.15	3,037.54	2,987.51	50.03	60.716		
9,600.00	8,394.00	9,777.85	8,618.00	36.24	38.50	-95.09	1,189.74	-2,887.15	3,037.58	2,986.28	51.31	59.202		
9,700.00	8,394.00	9,877.85	8,618.00	37.24	39.39	-95.09	1,289.73	-2,888.14	3,037.63	2,984.97	52.66	57.683		
9,800.00	8,394.00	9,977.85	8,618.00	38.28	40.32	-95.09	1,389.73	-2,889.13	3,037.68	2,983.60	54.08	56.171		
9,900.00	8,394.00	10,077.85	8,618.00	39.36	41.31	-95.09	1,489.72	-2,890.13	3,037.73	2,982.17	55.56	54.675		
10,000.00	8,394.00	10,177.85	8,618.00	40.48	42.34	-95.09	1,589.72	-2,891.12	3,037.77	2,980.68	57.10	53.204		
10,100.00	8,394.00	10,277.85	8,618.00	41.63	43.40	-95.09	1,689.71	-2,892.12	3,037.82	2,979.13	58.69	51.763		
10,200.00	8,394.00	10,377.85	8,618.00	42.82	44.51	-95.09	1,789.71	-2,893.11	3,037.87	2,977.54	60.32	50.359		
10,300.00	8,394.00	10,477.85	8,618.00	44.03	45.64	-95.09	1,889.70	-2,894.11	3,037.91	2,975.91	62.01	48.994		
10,400.00	8,394.00	10,577.85	8,618.00	45.28	46.81	-95.09	1,989.70	-2,895.10	3,037.96	2,974.23	63.73	47.670		
10,500.00	8,394.00	10,677.85	8,618.00	46.55	48.00	-95.09	2,089.69	-2,896.10	3,038.01	2,972.52	65.49	46.389		
10,600.00	8,394.00	10,777.85	8,618.00	47.84	49.23	-95.09	2,189.69	-2,897.09	3,038.06	2,970.77	67.28	45.153		
10,700.00	8,394.00	10,877.85	8,618.00	49.16	50.47	-95.09	2,289.68	-2,898.09	3,038.10	2,968.99	69.11	43.960		
10,800.00	8,394.00	10,977.85	8,618.00	50.49	51.74	-95.09	2,389.68	-2,899.08	3,038.15	2,967.18	70.97	42.811		
10,900.00	8,394.00	11,077.85	8,618.00	51.84	53.03	-95.09	2,489.67	-2,900.08	3,038.20	2,965.35	72.85	41.704		
11,000.00	8,394.00	11,177.85	8,618.00	53.21	54.34	-95.09	2,589.67	-2,901.07	3,038.24	2,963.48	74.76	40.640		
11,100.00	8,394.00	11,277.85	8,618.00	54.60	55.67	-95.09	2,689.66	-2,902.07	3,038.29	2,961.60	76.69	39.617		
11,200.00	8,394.00	11,377.85	8,618.00	56.00	57.01	-95.09	2,789.66	-2,903.06	3,038.34	2,959.69	78.64	38.634		
11,300.00	8,394.00	11,477.85	8,618.00	57.41	58.37	-95.09	2,889.65	-2,904.05	3,038.39	2,957.77	80.62	37.689		
11,400.00	8,394.00	11,577.85	8,618.00	58.84	59.75	-95.09	2,989.65	-2,905.05	3,038.43	2,955.82	82.61	36.781		
11,500.00	8,394.00	11,677.85	8,618.00	60.28	61.14	-95.09	3,089.64	-2,906.04	3,038.48	2,953.86	84.62	35.908		
11,600.00	8,394.00	11,777.85	8,618.00	61.72	62.54	-95.09	3,189.64	-2,907.04	3,038.53	2,951.88	86.64	35.069		
11,700.00	8,394.00	11,877.85	8,618.00	63.18	63.95	-95.09	3,289.63	-2,908.03	3,038.57	2,949.89	88.68	34.263		
11,800.00	8,394.00	11,977.85	8,618.00	64.65	65.38	-95.09	3,389.63	-2,909.03	3,038.62	2,947.88	90.74	33.488		
11,900.00	8,394.00	12,077.85	8,618.00	66.13	66.81	-95.09	3,489.62	-2,910.02	3,038.67	2,945.86	92.80	32.743		
12,000.00	8,394.00	12,177.85	8,618.00	67.61	68.26	-95.09	3,589.62	-2,911.02	3,038.71	2,943.83	94.88	32.026		
12,100.00	8,394.00	12,277.85	8,618.00	69.10	69.71	-95.09	3,689.61	-2,912.01	3,038.76	2,941.79	96.97	31.336		
12,200.00	8,394.00	12,377.85	8,618.00	70.60	71.17	-95.09	3,789.61	-2,913.01	3,038.81	2,939.73	99.08	30.672		
12,300.00	8,394.00	12,477.85	8,618.00	72.11	72.65	-95.09	3,889.60	-2,914.00	3,038.86	2,937.67	101.19	30.032		
12,400.00	8,394.00	12,577.85	8,618.00	73.62	74.12	-95.09	3,989.60	-2,915.00	3,038.90	2,935.60	103.31	29.416		
12,500.00	8,394.00	12,677.85	8,618.00	75.14	75.61	-95.09	4,089.59	-2,915.99	3,038.95	2,933.51	105.44	28.823		
12,600.00	8,394.00	12,777.85	8,618.00	76.66	77.10	-95.09	4,189.59	-2,916.99	3,039.00	2,931.42	107.57	28.250		
12,700.00	8,394.00	12,877.85	8,618.00	78.19	78.60	-95.09	4,289.58	-2,917.98	3,039.04	2,929.32	109.72	27.698		
12,800.00	8,394.00	12,977.85	8,618.00	79.72	80.11	-95.09	4,389.58	-2,918.97	3,039.09	2,927.22	111.87	27.166		
12,900.00	8,394.00	13,077.85	8,618.00	81.26	81.62	-95.09	4,489.57	-2,919.97	3,039.14	2,925.11	114.03	26.652		
13,000.00	8,394.00	13,177.85	8,618.00	82.80	83.13	-95.09	4,589.57	-2,920.96	3,039.19	2,922.99	116.20	26.155		
13,100.00	8,394.00	13,277.85	8,618.00	84.35	84.65	-95.09	4,689.56	-2,921.96	3,039.23	2,920.86	118.37	25.676		
13,200.00	8,394.00	13,377.85	8,618.00	85.90	86.18	-95.09	4,789.56	-2,922.95	3,039.28	2,918.73	120.55	25.212		
13,300.00	8,394.00	13,477.85	8,618.00	87.46	87.71	-95.09	4,889.55	-2,923.95	3,039.33	2,916.59	122.73	24.764		
13,400.00	8,394.00	13,577.85	8,618.00	89.02	89.24	-95.09	4,989.55	-2,924.94	3,039.37	2,914.45	124.92	24.330		
13,500.00	8,394.00	13,677.85	8,618.00	90.58	90.78	-95.09	5,089.54	-2,925.94	3,039.42	2,912.31	127.11	23.911		
13,600.00	8,394.00	13,777.85	8,618.00	92.14	92.33	-95.09	5,189.54	-2,926.93	3,039.47	2,910.15	129.31	23.505		
13,700.00	8,394.00	13,877.85	8,618.00	93.71	93.87	-95.09	5,289.53	-2,927.93	3,039.52	2,908.00	131.52	23.111		
13,800.00	8,394.00	13,977.85	8,618.00	95.28	95.42	-95.09	5,389.53	-2,928.92	3,039.56	2,905.84	133.72	22.730		
13,900.00	8,394.00	14,077.85	8,618.00	96.85	96.97	-95.09	5,489.52	-2,929.92	3,039.61	2,903.67	135.94	22.361		
14,000.00	8,394.00	14,177.85	8,618.00	98.43	98.53	-95.09	5,589.52	-2,930.91	3,039.66	2,901.51	138.15	22.003		

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



Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well FMM Fed Com 103H
Project:	Lea County, NM (NAD83)	TVD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Reference Site:	FMM Fed Com	MD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	FMM Fed Com 103H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.15 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 0-OWSG (Rev2) MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
14,100.00	8,394.00	14,277.85	8,618.00	100.01	100.09	-95.09	5,689.51	-2,931.91	3,039.70	2,899.33	140.37	21.655		
14,200.00	8,394.00	14,377.85	8,618.00	101.59	101.65	-95.09	5,789.51	-2,932.90	3,039.75	2,897.16	142.59	21.318		
14,300.00	8,394.00	14,477.85	8,618.00	103.17	103.22	-95.09	5,889.50	-2,933.89	3,039.80	2,894.98	144.82	20.991		
14,400.00	8,394.00	14,577.85	8,618.00	104.75	104.79	-95.09	5,989.50	-2,934.89	3,039.84	2,892.80	147.05	20.673		
14,500.00	8,394.00	14,677.85	8,618.00	106.34	106.36	-95.09	6,089.49	-2,935.88	3,039.89	2,890.61	149.28	20.364		
14,600.00	8,394.00	14,777.85	8,618.00	107.93	107.93	-95.09	6,189.49	-2,936.88	3,039.94	2,888.43	151.51	20.064		
14,700.00	8,394.00	14,877.85	8,618.00	109.52	109.51	-95.09	6,289.48	-2,937.87	3,039.99	2,886.23	153.75	19.772		
14,800.00	8,394.00	14,977.85	8,618.00	111.11	111.08	-95.09	6,389.48	-2,938.87	3,040.03	2,884.04	155.99	19.488		
14,900.00	8,394.00	15,077.85	8,618.00	112.71	112.66	-95.09	6,489.47	-2,939.86	3,040.08	2,881.84	158.24	19.212		
15,000.00	8,394.00	15,177.85	8,618.00	114.30	114.24	-95.09	6,589.47	-2,940.86	3,040.13	2,879.65	160.48	18.944		
15,100.00	8,394.00	15,277.85	8,618.00	115.90	115.83	-95.09	6,689.46	-2,941.85	3,040.17	2,877.45	162.73	18.682		
15,200.00	8,394.00	15,377.85	8,618.00	117.50	117.41	-95.09	6,789.46	-2,942.85	3,040.22	2,875.24	164.98	18.428		
15,300.00	8,394.00	15,477.85	8,618.00	119.10	119.00	-95.09	6,889.46	-2,943.84	3,040.27	2,873.04	167.23	18.180		
15,400.00	8,394.00	15,577.85	8,618.00	120.70	120.59	-95.09	6,989.45	-2,944.84	3,040.32	2,870.83	169.49	17.938		
15,500.00	8,394.00	15,677.85	8,618.00	122.31	122.18	-95.09	7,089.45	-2,945.83	3,040.36	2,868.62	171.74	17.703		
15,600.00	8,394.00	15,777.85	8,618.00	123.91	123.77	-95.09	7,189.44	-2,946.83	3,040.41	2,866.41	174.00	17.474		
15,700.00	8,394.00	15,877.85	8,618.00	125.52	125.37	-95.09	7,289.44	-2,947.82	3,040.46	2,864.20	176.26	17.250		
15,800.00	8,394.00	15,977.85	8,618.00	127.12	126.96	-95.09	7,389.43	-2,948.81	3,040.50	2,861.98	178.52	17.031		
15,900.00	8,394.00	16,077.85	8,618.00	128.73	128.56	-95.09	7,489.43	-2,949.81	3,040.55	2,859.76	180.79	16.818		
16,000.00	8,394.00	16,177.85	8,618.00	130.34	130.16	-95.09	7,589.42	-2,950.80	3,040.60	2,857.55	183.05	16.611		
16,100.00	8,394.00	16,277.85	8,618.00	131.95	131.76	-95.08	7,689.42	-2,951.80	3,040.65	2,855.33	185.32	16.408		
16,200.00	8,394.00	16,377.85	8,618.00	133.56	133.36	-95.08	7,789.41	-2,952.79	3,040.69	2,853.10	187.59	16.209		
16,300.00	8,394.00	16,477.85	8,618.00	135.18	134.96	-95.08	7,889.41	-2,953.79	3,040.74	2,850.88	189.86	16.016		
16,400.00	8,394.00	16,577.85	8,618.00	136.79	136.56	-95.08	7,989.40	-2,954.78	3,040.79	2,848.66	192.13	15.827		
16,500.00	8,394.00	16,677.85	8,618.00	138.40	138.17	-95.08	8,089.40	-2,955.78	3,040.83	2,846.43	194.40	15.642		
16,600.00	8,394.00	16,777.85	8,618.00	140.02	139.77	-95.08	8,189.39	-2,956.77	3,040.88	2,844.21	196.67	15.461		
16,700.00	8,394.00	16,877.85	8,618.00	141.64	141.38	-95.08	8,289.39	-2,957.77	3,040.93	2,841.98	198.95	15.285		
16,800.00	8,394.00	16,977.85	8,618.00	143.25	142.99	-95.08	8,389.38	-2,958.76	3,040.97	2,839.75	201.23	15.112		
16,900.00	8,394.00	17,077.85	8,618.00	144.87	144.60	-95.08	8,489.38	-2,959.76	3,041.02	2,837.52	203.50	14.943		
17,000.00	8,394.00	17,177.85	8,618.00	146.49	146.21	-95.08	8,589.37	-2,960.75	3,041.07	2,835.29	205.78	14.778		
17,100.00	8,394.00	17,277.85	8,618.00	148.11	147.82	-95.08	8,689.37	-2,961.75	3,041.12	2,833.05	208.06	14.616		
17,200.00	8,394.00	17,377.85	8,618.00	149.73	149.43	-95.08	8,789.36	-2,962.74	3,041.16	2,830.82	210.34	14.458		
17,300.00	8,394.00	17,477.85	8,618.00	151.35	151.04	-95.08	8,889.36	-2,963.73	3,041.21	2,828.59	212.62	14.303		
17,400.00	8,394.00	17,577.85	8,618.00	152.97	152.66	-95.08	8,989.35	-2,964.73	3,041.26	2,826.35	214.91	14.152		
17,500.00	8,394.00	17,677.85	8,618.00	154.59	154.27	-95.08	9,089.35	-2,965.72	3,041.30	2,824.11	217.19	14.003		
17,600.00	8,394.00	17,777.85	8,618.00	156.21	155.88	-95.08	9,189.34	-2,966.72	3,041.35	2,821.88	219.47	13.857		
17,700.00	8,394.00	17,877.85	8,618.00	157.84	157.50	-95.08	9,289.34	-2,967.71	3,041.40	2,819.64	221.76	13.715		
17,800.00	8,394.00	17,977.85	8,618.00	159.46	159.12	-95.08	9,389.33	-2,968.71	3,041.45	2,817.40	224.05	13.575		
17,900.00	8,394.00	18,077.85	8,618.00	161.08	160.73	-95.08	9,489.33	-2,969.70	3,041.49	2,815.16	226.33	13.438		
18,000.00	8,394.00	18,177.85	8,618.00	162.71	162.35	-95.08	9,589.32	-2,970.70	3,041.54	2,812.92	228.62	13.304		
18,100.00	8,394.00	18,277.85	8,618.00	164.33	163.97	-95.08	9,689.32	-2,971.69	3,041.59	2,810.68	230.91	13.172		
18,200.00	8,394.00	18,377.85	8,618.00	165.96	165.59	-95.08	9,789.31	-2,972.69	3,041.63	2,808.43	233.20	13.043		
18,300.00	8,394.00	18,477.85	8,618.00	167.59	167.21	-95.08	9,889.31	-2,973.68	3,041.68	2,806.19	235.49	12.916		
18,400.00	8,394.00	18,577.85	8,618.00	169.21	168.83	-95.08	9,989.30	-2,974.68	3,041.73	2,803.95	237.78	12.792		
18,449.58	8,394.00	18,627.43	8,618.00	170.02	169.63	-95.08	10,038.87	-2,975.17	3,041.75	2,802.83	238.92	12.731		
18,450.14	8,394.00	18,627.99	8,618.00	170.03	169.64	-95.08	10,039.44	-2,975.18	3,041.75	2,802.82	238.93	12.731 SF		

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



Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well FMM Fed Com 103H
Project:	Lea County, NM (NAD83)	TVD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Reference Site:	FMM Fed Com	MD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	FMM Fed Com 103H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.15 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													FMM Fed Com - FMM Fed Com 102H - OH - Plan #1		Offset Site Error:	0.00 usft
Survey Program: 0-OWSG (Rev2) MWD													Offset Well Error:	0.00 usft		
Reference		Offset		Semi Major Axis			Distance									
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning			
0.00	0.00	0.00	0.00	0.00	0.00	-90.53	-17.97	-1,936.11	1,936.69							
100.00	100.00	56.40	56.40	0.13	0.07	-90.53	-17.97	-1,936.11	1,936.20	1,936.05	0.14	N/A				
200.00	200.00	156.40	156.40	0.48	0.33	-90.53	-17.97	-1,936.11	1,936.20	1,935.61	0.58	3,313.031				
300.00	300.00	256.40	256.40	0.84	0.69	-90.53	-17.97	-1,936.11	1,936.20	1,935.11	1.09	1,782.107				
400.00	400.00	356.40	356.40	1.20	1.04	-90.53	-17.97	-1,936.11	1,936.20	1,934.60	1.59	1,216.490				
500.00	500.00	456.40	456.40	1.56	1.40	-90.53	-17.97	-1,936.11	1,936.20	1,934.10	2.10	923.030				
600.00	600.00	556.40	556.40	1.92	1.76	-90.53	-17.97	-1,936.11	1,936.20	1,933.59	2.60	743.535				
700.00	700.00	656.40	656.40	2.28	2.12	-90.53	-17.97	-1,936.11	1,936.20	1,933.09	3.11	622.448				
800.00	800.00	756.40	756.40	2.63	2.48	-90.53	-17.97	-1,936.11	1,936.20	1,932.58	3.62	535.261				
900.00	900.00	856.40	856.40	2.99	2.84	-90.53	-17.97	-1,936.11	1,936.20	1,932.07	4.12	469.490				
1,000.00	1,000.00	956.40	956.40	3.35	3.20	-90.53	-17.97	-1,936.11	1,936.20	1,931.57	4.63	418.110				
1,100.00	1,100.00	1,056.40	1,056.40	3.71	3.55	-90.53	-17.97	-1,936.11	1,936.20	1,931.06	5.14	376.863				
1,200.00	1,200.00	1,156.40	1,156.40	4.07	3.91	-90.53	-17.97	-1,936.11	1,936.20	1,930.55	5.64	343.023				
1,300.00	1,300.00	1,256.40	1,256.40	4.43	4.27	-90.53	-17.97	-1,936.11	1,936.20	1,930.05	6.15	314.758				
1,400.00	1,400.00	1,356.40	1,356.40	4.79	4.63	-90.53	-17.97	-1,936.11	1,936.20	1,929.54	6.66	290.796				
1,500.00	1,500.00	1,456.40	1,456.40	5.14	4.99	-90.53	-17.97	-1,936.11	1,936.20	1,929.03	7.17	270.224				
1,600.00	1,600.00	1,556.40	1,556.40	5.50	5.35	-90.53	-17.97	-1,936.11	1,936.20	1,928.52	7.67	252.370				
1,700.00	1,700.00	1,656.40	1,656.40	5.86	5.70	-90.53	-17.97	-1,936.11	1,936.20	1,928.02	8.18	236.729				
1,800.00	1,800.00	1,756.40	1,756.40	6.22	6.06	-90.53	-17.97	-1,936.11	1,936.20	1,927.51	8.69	222.914				
1,900.00	1,900.00	1,856.40	1,856.40	6.58	6.42	-90.53	-17.97	-1,936.11	1,936.20	1,927.00	9.19	210.621				
1,920.00	1,920.00	1,876.40	1,876.40	6.65	6.49	-90.53	-17.97	-1,936.11	1,936.20	1,926.90	9.29	208.324				
2,000.00	1,999.99	1,956.39	1,956.39	6.92	6.78	123.52	-17.97	-1,936.11	1,936.66	1,926.97	9.69	199.861				
2,100.00	2,099.93	2,107.18	2,107.16	7.25	7.31	123.63	-18.50	-1,934.70	1,937.80	1,927.51	10.29	188.315				
2,120.05	2,119.96	2,145.30	2,145.26	7.32	7.44	123.66	-18.93	-1,933.52	1,937.73	1,927.31	10.43	185.874				
2,200.00	2,199.80	2,297.28	2,296.98	7.58	7.95	123.77	-21.99	-1,925.27	1,935.72	1,924.77	10.96	176.640				
2,300.00	2,299.66	2,477.25	2,476.01	7.92	8.58	123.81	-28.32	-1,908.21	1,929.06	1,917.46	11.60	166.332				
2,400.00	2,399.52	2,576.88	2,574.90	8.25	8.93	123.81	-32.54	-1,896.82	1,920.55	1,908.47	12.08	159.031				
2,500.00	2,499.39	2,676.52	2,673.80	8.59	9.29	123.81	-36.76	-1,885.44	1,912.04	1,899.48	12.56	152.244				
2,600.00	2,599.25	2,776.16	2,772.69	8.94	9.65	123.81	-40.98	-1,874.05	1,903.53	1,890.48	13.04	145.924				
2,700.00	2,699.11	2,875.80	2,871.59	9.28	10.01	123.81	-45.21	-1,862.67	1,895.02	1,881.48	13.53	140.029				
2,800.00	2,798.98	2,975.43	2,970.48	9.63	10.38	123.81	-49.43	-1,851.28	1,886.50	1,872.48	14.02	134.521				
2,900.00	2,898.84	3,075.07	3,069.38	9.97	10.75	123.82	-53.65	-1,839.89	1,877.99	1,863.48	14.52	129.365				
3,000.00	2,998.70	3,174.71	3,168.27	10.32	11.13	123.82	-57.87	-1,828.51	1,869.48	1,854.47	15.01	124.531				
3,100.00	3,098.57	3,274.34	3,267.16	10.67	11.50	123.82	-62.09	-1,817.12	1,860.97	1,845.46	15.51	119.992				
3,200.00	3,198.43	3,373.98	3,366.06	11.02	11.88	123.82	-66.31	-1,805.74	1,852.46	1,836.45	16.01	115.722				
3,300.00	3,298.29	3,473.62	3,464.95	11.38	12.26	123.82	-70.53	-1,794.35	1,843.95	1,827.44	16.51	111.700				
3,400.00	3,398.15	3,573.26	3,563.85	11.73	12.64	123.82	-74.76	-1,782.96	1,835.44	1,818.43	17.01	107.906				
3,500.00	3,498.02	3,672.89	3,662.74	12.09	13.03	123.82	-78.98	-1,771.58	1,826.93	1,809.41	17.51	104.322				
3,600.00	3,597.88	3,772.53	3,761.64	12.44	13.41	123.83	-83.20	-1,760.19	1,818.41	1,800.40	18.02	100.931				
3,700.00	3,697.74	3,872.17	3,860.53	12.80	13.80	123.83	-87.42	-1,748.81	1,809.90	1,791.38	18.52	97.720				
3,800.00	3,797.61	3,971.80	3,959.42	13.16	14.19	123.83	-91.64	-1,737.42	1,801.39	1,782.36	19.03	94.674				
3,900.00	3,897.47	4,071.44	4,058.32	13.51	14.57	123.83	-95.86	-1,726.04	1,792.88	1,773.35	19.53	91.781				
4,000.00	3,997.33	4,171.08	4,157.21	13.87	14.96	123.83	-100.09	-1,714.65	1,784.37	1,764.33	20.04	89.031				
4,100.00	4,097.19	4,270.72	4,256.11	14.23	15.35	123.83	-104.31	-1,703.26	1,775.86	1,755.31	20.55	86.414				
4,200.00	4,197.06	4,370.35	4,355.00	14.59	15.75	123.84	-108.53	-1,691.88	1,767.35	1,746.29	21.06	83.920				
4,300.00	4,296.92	4,469.99	4,453.90	14.95	16.14	123.84	-112.75	-1,680.49	1,758.84	1,737.27	21.57	81.542				
4,400.00	4,396.78	4,569.63	4,552.79	15.31	16.53	123.84	-116.97	-1,669.11	1,750.32	1,728.24	22.08	79.271				
4,500.00	4,496.65	4,669.26	4,651.69	15.67	16.92	123.84	-121.19	-1,657.72	1,741.81	1,719.22	22.59	77.101				
4,600.00	4,596.51	4,768.90	4,750.58	16.03	17.32	123.84	-125.41	-1,646.34	1,733.30	1,710.20	23.10	75.025				
4,700.00	4,696.37	4,868.54	4,849.47	16.39	17.71	123.84	-129.64	-1,634.95	1,724.79	1,701.17	23.62	73.037				
4,800.00	4,796.23	4,968.18	4,948.37	16.75	18.11	123.85	-133.86	-1,623.56	1,716.28	1,692.15	24.13	71.132				
4,900.00	4,896.10	5,067.81	5,047.26	17.12	18.50	123.85	-138.08	-1,612.18	1,707.77	1,683.13	24.64	69.306				

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



Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well FMM Fed Com 103H
Project:	Lea County, NM (NAD83)	TVD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Reference Site:	FMM Fed Com	MD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	FMM Fed Com 103H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.15 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 0-OWSG (Rev2) MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
5,000.00	4,995.96	5,167.45	5,146.16	17.48	18.90	123.85	-142.30	-1,600.79	1,699.26	1,674.10	25.15	67.553		
5,100.00	5,095.82	5,267.09	5,245.05	17.84	19.30	123.85	-146.52	-1,589.41	1,690.74	1,665.08	25.67	65.869		
5,200.00	5,195.69	5,366.72	5,343.95	18.21	19.69	123.85	-150.74	-1,578.02	1,682.23	1,656.05	26.18	64.250		
5,300.00	5,295.55	5,466.36	5,442.84	18.57	20.09	123.85	-154.96	-1,566.64	1,673.72	1,647.02	26.70	62.693		
5,400.00	5,395.41	5,566.00	5,541.73	18.93	20.49	123.86	-159.19	-1,555.25	1,665.21	1,638.00	27.21	61.194		
5,500.00	5,495.27	5,665.64	5,640.63	19.30	20.89	123.86	-163.41	-1,543.86	1,656.70	1,628.97	27.73	59.749		
5,600.00	5,595.14	5,765.27	5,739.52	19.66	21.29	123.86	-167.63	-1,532.48	1,648.19	1,619.95	28.24	58.357		
5,700.00	5,695.00	5,864.91	5,838.42	20.02	21.69	123.86	-171.85	-1,521.09	1,639.68	1,610.92	28.76	57.015		
5,800.00	5,794.86	5,964.55	5,937.31	20.39	22.09	123.86	-176.07	-1,509.71	1,631.17	1,601.89	29.27	55.719		
5,900.00	5,894.73	6,064.18	6,036.21	20.75	22.48	123.86	-180.29	-1,498.32	1,622.65	1,592.86	29.79	54.467		
6,000.00	5,994.59	6,163.82	6,135.10	21.12	22.88	123.87	-184.51	-1,486.94	1,614.14	1,583.84	30.31	53.258		
6,100.00	6,094.45	6,263.46	6,234.00	21.48	23.29	123.87	-188.74	-1,475.55	1,605.63	1,574.81	30.82	52.089		
6,200.00	6,194.31	6,363.10	6,332.89	21.85	23.69	123.87	-192.96	-1,464.16	1,597.12	1,565.78	31.34	50.958		
6,300.00	6,294.18	6,462.73	6,431.78	22.21	24.09	123.87	-197.18	-1,452.78	1,588.61	1,556.75	31.86	49.864		
6,400.00	6,394.04	6,562.37	6,530.68	22.58	24.49	123.87	-201.40	-1,441.39	1,580.10	1,547.72	32.38	48.804		
6,500.00	6,493.90	6,662.01	6,629.57	22.94	24.89	123.88	-205.62	-1,430.01	1,571.59	1,538.69	32.89	47.777		
6,600.00	6,593.77	6,761.64	6,728.47	23.31	25.29	123.88	-209.84	-1,418.62	1,563.08	1,529.66	33.41	46.782		
6,700.00	6,693.63	6,861.28	6,827.36	23.67	25.69	123.88	-214.06	-1,407.24	1,554.56	1,520.63	33.93	45.817		
6,800.00	6,793.49	6,960.82	6,926.05	24.04	26.03	123.89	-217.61	-1,397.66	1,546.30	1,511.87	34.42	44.919		
6,900.00	6,893.35	7,060.36	7,025.08	24.40	26.32	123.90	-220.20	-1,390.70	1,539.59	1,504.70	34.89	44.127		
7,000.00	6,993.22	7,160.00	7,124.81	24.77	26.63	123.95	-222.52	-1,384.42	1,534.70	1,499.33	35.36	43.396		
7,106.97	7,100.04	7,169.21	7,133.88	25.16	26.88	124.00	-224.04	-1,380.33	1,531.36	1,495.54	35.82	42.749		
7,200.00	7,192.99	7,236.82	7,201.41	25.50	27.12	124.03	-225.10	-1,377.47	1,529.52	1,493.29	36.23	42.222		
7,307.02	7,300.00	7,314.63	7,279.20	25.87	27.39	-90.03	-225.81	-1,375.57	1,527.74	1,491.07	36.67	41.665		
7,400.00	7,392.98	7,384.81	7,349.38	26.18	27.63	-90.04	-225.97	-1,375.11	1,527.11	1,490.07	37.04	41.229		
7,500.00	7,492.98	7,484.81	7,449.38	26.52	27.95	-90.04	-225.97	-1,375.11	1,527.11	1,489.60	37.52	40.707		
7,600.00	7,592.98	7,584.81	7,549.38	26.85	28.28	-90.04	-225.97	-1,375.11	1,527.11	1,489.12	37.99	40.196		
7,700.00	7,692.98	7,684.81	7,649.38	27.19	28.60	-90.04	-225.97	-1,375.11	1,527.11	1,488.64	38.47	39.698		
7,800.00	7,792.98	7,784.81	7,749.38	27.53	28.93	-90.04	-225.97	-1,375.11	1,527.11	1,488.17	38.95	39.211		
7,828.06	7,821.04	7,812.87	7,777.44	27.62	29.02	-90.04	-225.97	-1,375.11	1,527.11	1,488.03	39.08	39.076		
7,850.00	7,842.97	7,834.81	7,799.37	27.69	29.09	-89.51	-225.97	-1,375.11	1,527.11	1,487.92	39.19	38.971		
7,900.00	7,892.79	7,884.62	7,849.19	27.86	29.25	-89.67	-225.97	-1,375.11	1,527.08	1,487.66	39.42	38.737		
7,950.00	7,942.06	7,933.89	7,898.46	28.01	29.42	-89.98	-225.97	-1,375.11	1,527.05	1,487.40	39.66	38.508		
7,952.67	7,944.67	7,936.51	7,901.07	28.02	29.42	-90.00	-225.97	-1,375.11	1,527.05	1,487.39	39.67	38.497 CC		
8,000.00	7,990.41	7,983.06	7,947.57	28.16	29.57	-90.37	-224.08	-1,375.13	1,527.09	1,487.21	39.88	38.290		
8,050.00	8,037.47	8,033.16	7,997.27	28.29	29.73	-90.77	-217.84	-1,375.19	1,527.20	1,487.10	40.10	38.083		
8,100.00	8,082.88	8,084.27	8,047.21	28.42	29.88	-91.17	-207.02	-1,375.30	1,527.40	1,487.08	40.32	37.887		
8,150.00	8,126.30	8,136.44	8,096.97	28.54	30.02	-91.56	-191.43	-1,375.46	1,527.66	1,487.14	40.52	37.701		
8,200.00	8,167.40	8,189.71	8,146.11	28.66	30.15	-91.94	-170.92	-1,375.67	1,528.00	1,487.28	40.72	37.525		
8,250.00	8,205.86	8,244.11	8,194.11	28.77	30.27	-92.31	-145.35	-1,375.92	1,528.40	1,487.48	40.91	37.357		
8,300.00	8,241.40	8,299.68	8,240.40	28.88	30.37	-92.67	-114.66	-1,376.23	1,528.84	1,487.74	41.10	37.196		
8,350.00	8,273.73	8,356.42	8,284.38	28.99	30.46	-93.01	-78.85	-1,376.59	1,529.32	1,488.03	41.29	37.038		
8,400.00	8,302.62	8,414.32	8,325.38	29.11	30.54	-93.33	-38.01	-1,377.00	1,529.82	1,488.34	41.48	36.881		
8,450.00	8,327.84	8,473.35	8,362.73	29.24	30.60	-93.62	7.67	-1,377.46	1,530.32	1,488.65	41.67	36.721		
8,500.00	8,349.21	8,533.45	8,395.72	29.38	30.65	-93.89	57.88	-1,377.96	1,530.80	1,488.93	41.88	36.555		
8,550.00	8,366.55	8,594.54	8,423.68	29.52	30.69	-94.12	112.16	-1,378.51	1,531.25	1,489.16	42.09	36.378		
8,600.00	8,379.75	8,656.51	8,445.97	29.68	30.73	-94.31	169.95	-1,379.08	1,531.65	1,489.33	42.33	36.186		
8,650.00	8,388.69	8,719.22	8,462.04	29.85	30.81	-94.47	230.52	-1,379.69	1,531.99	1,489.41	42.58	35.979		
8,700.00	8,393.31	8,782.50	8,471.46	30.03	30.94	-94.57	293.06	-1,380.32	1,532.24	1,489.38	42.85	35.756		
8,728.06	8,394.00	8,818.19	8,473.71	30.14	31.05	-94.62	328.67	-1,380.68	1,532.34	1,489.33	43.01	35.624		
8,800.00	8,394.00	8,894.07	8,474.00	30.43	31.32	-94.63	404.55	-1,381.44	1,532.40	1,488.98	43.42	35.291		
8,900.00	8,394.00	8,994.07	8,474.00	30.91	31.78	-94.63	504.54	-1,382.44	1,532.45	1,488.38	44.08	34.769		

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



Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well FMM Fed Com 103H
Project:	Lea County, NM (NAD83)	TVD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Reference Site:	FMM Fed Com	MD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	FMM Fed Com 103H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.15 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 0-OWSG (Rev2) MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
9,000.00	8,394.00	9,094.07	8,474.00	31.47	32.31	-94.63	604.54	-1,383.44	1,532.51	1,487.67	44.84	34.177		
9,100.00	8,394.00	9,194.07	8,474.00	32.10	32.92	-94.63	704.53	-1,384.45	1,532.56	1,486.85	45.71	33.526		
9,200.00	8,394.00	9,294.07	8,474.00	32.81	33.60	-94.63	804.53	-1,385.45	1,532.62	1,485.94	46.68	32.830		
9,300.00	8,394.00	9,394.07	8,474.00	33.58	34.34	-94.63	904.52	-1,386.45	1,532.68	1,484.93	47.75	32.098		
9,400.00	8,394.00	9,494.07	8,474.00	34.41	35.15	-94.63	1,004.52	-1,387.46	1,532.73	1,483.83	48.90	31.342		
9,500.00	8,394.00	9,594.07	8,474.00	35.30	36.01	-94.63	1,104.51	-1,388.46	1,532.79	1,482.65	50.14	30.571		
9,600.00	8,394.00	9,694.07	8,474.00	36.24	36.92	-94.63	1,204.51	-1,389.46	1,532.84	1,481.39	51.45	29.793		
9,700.00	8,394.00	9,794.07	8,474.00	37.24	37.88	-94.62	1,304.50	-1,390.47	1,532.90	1,480.07	52.83	29.015		
9,800.00	8,394.00	9,894.07	8,474.00	38.28	38.89	-94.62	1,404.50	-1,391.47	1,532.95	1,478.68	54.28	28.243		
9,900.00	8,394.00	9,994.07	8,474.00	39.36	39.94	-94.62	1,504.49	-1,392.47	1,533.01	1,477.23	55.78	27.481		
10,000.00	8,394.00	10,094.07	8,474.00	40.48	41.02	-94.62	1,604.49	-1,393.48	1,533.06	1,475.72	57.35	26.734		
10,100.00	8,394.00	10,194.07	8,474.00	41.63	42.15	-94.62	1,704.48	-1,394.48	1,533.12	1,474.16	58.96	26.004		
10,200.00	8,394.00	10,294.07	8,474.00	42.82	43.31	-94.62	1,804.48	-1,395.48	1,533.18	1,472.56	60.62	25.293		
10,300.00	8,394.00	10,394.07	8,474.00	44.03	44.49	-94.62	1,904.47	-1,396.48	1,533.23	1,470.91	62.32	24.603		
10,400.00	8,394.00	10,494.07	8,474.00	45.28	45.71	-94.62	2,004.47	-1,397.49	1,533.29	1,469.23	64.06	23.935		
10,500.00	8,394.00	10,594.07	8,474.00	46.55	46.96	-94.62	2,104.46	-1,398.49	1,533.34	1,467.50	65.84	23.290		
10,600.00	8,394.00	10,694.07	8,474.00	47.84	48.22	-94.62	2,204.46	-1,399.49	1,533.40	1,465.75	67.65	22.667		
10,700.00	8,394.00	10,794.07	8,474.00	49.16	49.51	-94.62	2,304.45	-1,400.50	1,533.45	1,463.96	69.49	22.067		
10,800.00	8,394.00	10,894.07	8,474.00	50.49	50.82	-94.62	2,404.45	-1,401.50	1,533.51	1,462.15	71.36	21.489		
10,900.00	8,394.00	10,994.07	8,474.00	51.84	52.15	-94.62	2,504.44	-1,402.50	1,533.56	1,460.30	73.26	20.933		
11,000.00	8,394.00	11,094.07	8,474.00	53.21	53.50	-94.62	2,604.44	-1,403.51	1,533.62	1,458.44	75.18	20.399		
11,100.00	8,394.00	11,194.07	8,474.00	54.60	54.87	-94.62	2,704.43	-1,404.51	1,533.68	1,456.55	77.13	19.885		
11,200.00	8,394.00	11,294.07	8,474.00	56.00	56.25	-94.62	2,804.43	-1,405.51	1,533.73	1,454.64	79.09	19.392		
11,300.00	8,394.00	11,394.07	8,474.00	57.41	57.64	-94.62	2,904.42	-1,406.52	1,533.79	1,452.71	81.08	18.918		
11,400.00	8,394.00	11,494.07	8,474.00	58.84	59.05	-94.62	3,004.42	-1,407.52	1,533.84	1,450.76	83.08	18.463		
11,500.00	8,394.00	11,594.07	8,474.00	60.28	60.47	-94.62	3,104.41	-1,408.52	1,533.90	1,448.80	85.10	18.025		
11,600.00	8,394.00	11,694.07	8,474.00	61.72	61.90	-94.62	3,204.41	-1,409.53	1,533.95	1,446.82	87.13	17.605		
11,700.00	8,394.00	11,794.07	8,474.00	63.18	63.34	-94.62	3,304.40	-1,410.53	1,534.01	1,444.83	89.18	17.201		
11,800.00	8,394.00	11,894.07	8,474.00	64.65	64.79	-94.62	3,404.40	-1,411.53	1,534.06	1,442.82	91.24	16.813		
11,900.00	8,394.00	11,994.07	8,474.00	66.13	66.25	-94.62	3,504.39	-1,412.53	1,534.12	1,440.80	93.32	16.439		
12,000.00	8,394.00	12,094.07	8,474.00	67.61	67.72	-94.62	3,604.39	-1,413.54	1,534.18	1,438.77	95.41	16.080		
12,100.00	8,394.00	12,194.07	8,474.00	69.10	69.20	-94.62	3,704.38	-1,414.54	1,534.23	1,436.73	97.51	15.735		
12,200.00	8,394.00	12,294.07	8,474.00	70.60	70.69	-94.62	3,804.38	-1,415.54	1,534.29	1,434.67	99.61	15.402		
12,300.00	8,394.00	12,394.07	8,474.00	72.11	72.18	-94.62	3,904.37	-1,416.55	1,534.34	1,432.61	101.73	15.082		
12,400.00	8,394.00	12,494.07	8,474.00	73.62	73.68	-94.62	4,004.37	-1,417.55	1,534.40	1,430.54	103.86	14.774		
12,500.00	8,394.00	12,594.07	8,474.00	75.14	75.19	-94.62	4,104.36	-1,418.55	1,534.45	1,428.46	106.00	14.477		
12,600.00	8,394.00	12,694.07	8,474.00	76.66	76.70	-94.62	4,204.35	-1,419.56	1,534.51	1,426.37	108.14	14.190		
12,700.00	8,394.00	12,794.07	8,474.00	78.19	78.22	-94.62	4,304.35	-1,420.56	1,534.56	1,424.27	110.29	13.914		
12,800.00	8,394.00	12,894.07	8,474.00	79.72	79.74	-94.62	4,404.34	-1,421.56	1,534.62	1,422.17	112.45	13.647		
12,900.00	8,394.00	12,994.07	8,474.00	81.26	81.27	-94.62	4,504.34	-1,422.57	1,534.68	1,420.06	114.62	13.390		
13,000.00	8,394.00	13,094.07	8,474.00	82.80	82.80	-94.62	4,604.33	-1,423.57	1,534.73	1,417.94	116.79	13.141		
13,100.00	8,394.00	13,194.07	8,474.00	84.35	84.34	-94.62	4,704.33	-1,424.57	1,534.79	1,415.82	118.97	12.901		
13,200.00	8,394.00	13,294.07	8,474.00	85.90	85.88	-94.62	4,804.32	-1,425.58	1,534.84	1,413.69	121.15	12.669		
13,300.00	8,394.00	13,394.07	8,474.00	87.46	87.42	-94.62	4,904.32	-1,426.58	1,534.90	1,411.56	123.34	12.445		
13,400.00	8,394.00	13,494.07	8,474.00	89.02	88.97	-94.62	5,004.31	-1,427.58	1,534.95	1,409.42	125.53	12.228		
13,500.00	8,394.00	13,594.07	8,474.00	90.58	90.53	-94.62	5,104.31	-1,428.58	1,535.01	1,407.28	127.73	12.017		
13,600.00	8,394.00	13,694.07	8,474.00	92.14	92.08	-94.62	5,204.30	-1,429.59	1,535.06	1,405.13	129.93	11.814		
13,700.00	8,394.00	13,794.07	8,474.00	93.71	93.64	-94.62	5,304.30	-1,430.59	1,535.12	1,402.98	132.14	11.617		
13,800.00	8,394.00	13,894.07	8,474.00	95.28	95.21	-94.62	5,404.29	-1,431.59	1,535.17	1,400.82	134.35	11.426		
13,900.00	8,394.00	13,994.07	8,474.00	96.85	96.77	-94.62	5,504.29	-1,432.60	1,535.23	1,398.66	136.57	11.241		
14,000.00	8,394.00	14,094.07	8,474.00	98.43	98.34	-94.62	5,604.28	-1,433.60	1,535.29	1,396.50	138.79	11.062		
14,100.00	8,394.00	14,194.07	8,474.00	100.01	99.91	-94.62	5,704.28	-1,434.60	1,535.34	1,394.33	141.01	10.888		

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



Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well FMM Fed Com 103H
Project:	Lea County, NM (NAD83)	TVD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Reference Site:	FMM Fed Com	MD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	FMM Fed Com 103H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.15 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 0-OWSG (Rev2) MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
14,200.00	8,394.00	14,294.07	8,474.00	101.59	101.49	-94.62	5,804.27	-1,435.61	1,535.40	1,392.16	143.24	10.719		
14,300.00	8,394.00	14,394.07	8,474.00	103.17	103.06	-94.62	5,904.27	-1,436.61	1,535.45	1,389.98	145.47	10.555		
14,400.00	8,394.00	14,494.07	8,474.00	104.75	104.64	-94.62	6,004.26	-1,437.61	1,535.51	1,387.81	147.70	10.396		
14,500.00	8,394.00	14,594.07	8,474.00	106.34	106.22	-94.62	6,104.26	-1,438.62	1,535.56	1,385.63	149.94	10.241		
14,600.00	8,394.00	14,694.07	8,474.00	107.93	107.81	-94.62	6,204.25	-1,439.62	1,535.62	1,383.44	152.17	10.091		
14,700.00	8,394.00	14,794.07	8,474.00	109.52	109.39	-94.62	6,304.25	-1,440.62	1,535.67	1,381.26	154.42	9.945		
14,800.00	8,394.00	14,894.07	8,474.00	111.11	110.98	-94.62	6,404.24	-1,441.63	1,535.73	1,379.07	156.66	9.803		
14,900.00	8,394.00	14,994.07	8,474.00	112.71	112.57	-94.62	6,504.24	-1,442.63	1,535.79	1,376.88	158.91	9.665		
15,000.00	8,394.00	15,094.07	8,474.00	114.30	114.16	-94.62	6,604.23	-1,443.63	1,535.84	1,374.69	161.15	9.530		
15,100.00	8,394.00	15,194.07	8,474.00	115.90	115.75	-94.62	6,704.23	-1,444.63	1,535.90	1,372.49	163.40	9.399		
15,200.00	8,394.00	15,294.07	8,474.00	117.50	117.35	-94.62	6,804.22	-1,445.64	1,535.95	1,370.30	165.66	9.272		
15,300.00	8,394.00	15,394.07	8,474.00	119.10	118.94	-94.62	6,904.22	-1,446.64	1,536.01	1,368.10	167.91	9.148		
15,400.00	8,394.00	15,494.07	8,474.00	120.70	120.54	-94.62	7,004.21	-1,447.64	1,536.06	1,365.89	170.17	9.027		
15,500.00	8,394.00	15,594.07	8,474.00	122.31	122.14	-94.62	7,104.21	-1,448.65	1,536.12	1,363.69	172.43	8.909		
15,600.00	8,394.00	15,694.07	8,474.00	123.91	123.74	-94.61	7,204.20	-1,449.65	1,536.17	1,361.49	174.69	8.794		
15,700.00	8,394.00	15,794.07	8,474.00	125.52	125.34	-94.61	7,304.20	-1,450.65	1,536.23	1,359.28	176.95	8.682		
15,800.00	8,394.00	15,894.07	8,474.00	127.12	126.94	-94.61	7,404.19	-1,451.66	1,536.29	1,357.07	179.22	8.572		
15,900.00	8,394.00	15,994.07	8,474.00	128.73	128.55	-94.61	7,504.19	-1,452.66	1,536.34	1,354.86	181.48	8.466		
16,000.00	8,394.00	16,094.07	8,474.00	130.34	130.15	-94.61	7,604.18	-1,453.66	1,536.40	1,352.65	183.75	8.361		
16,100.00	8,394.00	16,194.07	8,474.00	131.95	131.76	-94.61	7,704.18	-1,454.67	1,536.45	1,350.43	186.02	8.260		
16,200.00	8,394.00	16,294.07	8,474.00	133.56	133.37	-94.61	7,804.17	-1,455.67	1,536.51	1,348.22	188.29	8.160		
16,300.00	8,394.00	16,394.07	8,474.00	135.18	134.97	-94.61	7,904.17	-1,456.67	1,536.56	1,346.00	190.56	8.063		
16,400.00	8,394.00	16,494.07	8,474.00	136.79	136.58	-94.61	8,004.16	-1,457.68	1,536.62	1,343.78	192.84	7.969		
16,500.00	8,394.00	16,594.07	8,474.00	138.40	138.20	-94.61	8,104.16	-1,458.68	1,536.67	1,341.56	195.11	7.876		
16,600.00	8,394.00	16,694.07	8,474.00	140.02	139.81	-94.61	8,204.15	-1,459.68	1,536.73	1,339.34	197.39	7.785		
16,700.00	8,394.00	16,794.07	8,474.00	141.64	141.42	-94.61	8,304.15	-1,460.68	1,536.79	1,337.12	199.66	7.697		
16,800.00	8,394.00	16,894.07	8,474.00	143.25	143.03	-94.61	8,404.14	-1,461.69	1,536.84	1,334.90	201.94	7.610		
16,900.00	8,394.00	16,994.07	8,474.00	144.87	144.65	-94.61	8,504.14	-1,462.69	1,536.90	1,332.67	204.22	7.526		
17,000.00	8,394.00	17,094.07	8,474.00	146.49	146.26	-94.61	8,604.13	-1,463.69	1,536.95	1,330.45	206.50	7.443		
17,100.00	8,394.00	17,194.07	8,474.00	148.11	147.88	-94.61	8,704.13	-1,464.70	1,537.01	1,328.22	208.79	7.362		
17,200.00	8,394.00	17,294.07	8,474.00	149.73	149.50	-94.61	8,804.12	-1,465.70	1,537.06	1,325.99	211.07	7.282		
17,300.00	8,394.00	17,394.07	8,474.00	151.35	151.11	-94.61	8,904.12	-1,466.70	1,537.12	1,323.77	213.35	7.205		
17,400.00	8,394.00	17,494.07	8,474.00	152.97	152.73	-94.61	9,004.11	-1,467.71	1,537.17	1,321.54	215.64	7.128		
17,500.00	8,394.00	17,594.07	8,474.00	154.59	154.35	-94.61	9,104.11	-1,468.71	1,537.23	1,319.31	217.92	7.054		
17,600.00	8,394.00	17,694.07	8,474.00	156.21	155.97	-94.61	9,204.10	-1,469.71	1,537.29	1,317.07	220.21	6.981		
17,700.00	8,394.00	17,794.07	8,474.00	157.84	157.59	-94.61	9,304.10	-1,470.72	1,537.34	1,314.84	222.50	6.909		
17,800.00	8,394.00	17,894.07	8,474.00	159.46	159.21	-94.61	9,404.09	-1,471.72	1,537.40	1,312.61	224.79	6.839		
17,900.00	8,394.00	17,994.07	8,474.00	161.08	160.83	-94.61	9,504.09	-1,472.72	1,537.45	1,310.38	227.08	6.771		
18,000.00	8,394.00	18,094.07	8,474.00	162.71	162.46	-94.61	9,604.08	-1,473.73	1,537.51	1,308.14	229.37	6.703		
18,100.00	8,394.00	18,194.07	8,474.00	164.33	164.08	-94.61	9,704.08	-1,474.73	1,537.56	1,305.91	231.66	6.637		
18,200.00	8,394.00	18,294.07	8,474.00	165.96	165.70	-94.61	9,804.07	-1,475.73	1,537.62	1,303.67	233.95	6.572		
18,300.00	8,394.00	18,394.07	8,474.00	167.59	167.33	-94.61	9,904.07	-1,476.73	1,537.67	1,301.43	236.24	6.509		
18,400.00	8,394.00	18,494.07	8,474.00	169.21	168.95	-94.61	10,004.06	-1,477.73	1,537.73	1,299.20	238.53	6.447		
18,449.58	8,394.00	18,543.64	8,474.00	170.02	169.76	-94.61	10,053.63	-1,478.23	1,537.76	1,298.09	239.67	6.416		
18,450.14	8,394.00	18,544.21	8,474.00	170.03	169.77	-94.61	10,054.20	-1,478.24	1,537.76	1,298.08	239.68	6.416 ES, SF		

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



Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well FMM Fed Com 103H
Project:	Lea County, NM (NAD83)	TVD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Reference Site:	FMM Fed Com	MD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	FMM Fed Com 103H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.15 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design FMM Fed Com - FMM Fed Com 104H - OH - Plan #1													Offset Site Error:	0.00 usft
Survey Program: 0-OWSG (Rev2) MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance								Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
0.00	0.00	0.00	0.00	0.00	0.00	89.54	0.40	50.00	50.00					
100.00	100.00	99.70	99.70	0.13	0.13	89.54	0.40	50.00	50.00	49.82	0.18	282.226		
200.00	200.00	199.70	199.70	0.48	0.48	89.54	0.40	50.00	50.00	49.32	0.68	73.141		
300.00	300.00	299.70	299.70	0.84	0.84	89.54	0.40	50.00	50.00	48.81	1.19	41.998		
400.00	400.00	399.70	399.70	1.20	1.20	89.54	0.40	50.00	50.00	48.30	1.70	29.455		
500.00	500.00	499.70	499.70	1.56	1.56	89.54	0.40	50.00	50.00	47.80	2.20	22.682		
600.00	600.00	599.70	599.70	1.92	1.92	89.54	0.40	50.00	50.00	47.29	2.71	18.441		
700.00	700.00	699.70	699.70	2.28	2.28	89.54	0.40	50.00	50.00	46.78	3.22	15.536		
800.00	800.00	799.70	799.70	2.63	2.63	89.54	0.40	50.00	50.00	46.28	3.73	13.422		
900.00	900.00	899.70	899.70	2.99	2.99	89.54	0.40	50.00	50.00	45.77	4.23	11.814		
1,000.00	1,000.00	999.70	999.70	3.35	3.35	89.54	0.40	50.00	50.00	45.26	4.74	10.550		
1,100.00	1,100.00	1,099.70	1,099.70	3.71	3.71	89.54	0.40	50.00	50.00	44.76	5.25	9.531		
1,200.00	1,200.00	1,199.70	1,199.70	4.07	4.07	89.54	0.40	50.00	50.00	44.25	5.75	8.691		
1,300.00	1,300.00	1,299.70	1,299.70	4.43	4.43	89.54	0.40	50.00	50.00	43.74	6.26	7.987		
1,400.00	1,400.00	1,399.70	1,399.70	4.79	4.78	89.54	0.40	50.00	50.00	43.23	6.77	7.389		
1,500.00	1,500.00	1,499.70	1,499.70	5.14	5.14	89.54	0.40	50.00	50.00	42.73	7.27	6.874		
1,600.00	1,600.00	1,599.70	1,599.70	5.50	5.50	89.54	0.40	50.00	50.00	42.22	7.78	6.426 CC, ES		
1,700.00	1,700.00	1,697.96	1,697.94	5.86	5.84	89.66	0.31	51.67	51.70	43.43	8.27	6.250 SF		
1,800.00	1,800.00	1,795.97	1,795.82	6.22	6.18	89.98	0.02	56.69	56.82	48.07	8.75	6.495		
1,900.00	1,900.00	1,893.54	1,893.02	6.58	6.52	90.39	-0.44	65.00	65.35	56.13	9.21	7.091		
1,920.00	1,920.00	1,912.98	1,912.35	6.65	6.59	90.48	-0.56	67.05	67.46	58.15	9.31	7.248		
2,000.00	1,999.99	1,990.48	1,989.28	6.92	6.86	-55.53	-1.09	76.53	76.77	67.11	9.66	7.948		
2,100.00	2,099.93	2,086.77	2,084.43	7.25	7.22	-56.63	-1.92	91.19	90.12	80.04	10.08	8.940		
2,120.05	2,119.96	2,105.99	2,103.36	7.32	7.29	-56.94	-2.11	94.50	93.03	82.87	10.16	9.153		
2,200.00	2,199.80	2,182.24	2,178.24	7.58	7.58	-58.17	-2.92	108.87	105.87	95.37	10.49	10.089		
2,300.00	2,299.66	2,276.62	2,270.35	7.92	7.95	-59.19	-4.07	129.41	124.89	113.99	10.90	11.459		
2,400.00	2,399.52	2,369.73	2,360.50	8.25	8.34	-59.77	-5.38	152.62	147.11	135.82	11.29	13.026		
2,500.00	2,499.39	2,461.40	2,448.48	8.59	8.74	-60.06	-6.83	178.33	172.45	160.77	11.68	14.767		
2,600.00	2,599.25	2,553.15	2,535.70	8.94	9.17	-60.17	-8.43	206.75	200.71	188.63	12.08	16.613		
2,700.00	2,699.11	2,648.84	2,626.42	9.28	9.64	-60.22	-10.14	237.14	229.77	217.21	12.57	18.283		
2,800.00	2,798.98	2,744.52	2,717.13	9.63	10.13	-60.26	-11.85	267.52	258.83	245.77	13.06	19.823		
2,900.00	2,898.84	2,840.21	2,807.85	9.97	10.63	-60.29	-13.56	297.91	287.89	274.34	13.55	21.244		
3,000.00	2,998.70	2,935.89	2,898.56	10.32	11.14	-60.32	-15.27	328.30	316.95	302.90	14.05	22.561		
3,100.00	3,098.57	3,031.58	2,989.28	10.67	11.66	-60.34	-16.99	358.69	346.01	331.46	14.55	23.782		
3,200.00	3,198.43	3,127.26	3,079.99	11.02	12.20	-60.36	-18.70	389.07	375.07	360.02	15.05	24.916		
3,300.00	3,298.29	3,222.95	3,170.71	11.38	12.74	-60.38	-20.41	419.46	404.13	388.57	15.56	25.974		
3,400.00	3,398.15	3,318.63	3,261.42	11.73	13.28	-60.39	-22.12	449.85	433.19	417.12	16.07	26.960		
3,500.00	3,498.02	3,414.32	3,352.14	12.09	13.84	-60.41	-23.83	480.24	462.25	445.67	16.58	27.882		
3,600.00	3,597.88	3,510.00	3,442.85	12.44	14.40	-60.42	-25.54	510.62	491.31	474.22	17.09	28.746		
3,700.00	3,697.74	3,605.68	3,533.57	12.80	14.96	-60.43	-27.25	541.01	520.37	502.76	17.61	29.557		
3,800.00	3,797.61	3,701.37	3,624.28	13.16	15.53	-60.43	-28.97	571.40	549.43	531.31	18.12	30.318		
3,900.00	3,897.47	3,797.05	3,715.00	13.51	16.10	-60.44	-30.68	601.79	578.49	559.85	18.64	31.035		
4,000.00	3,997.33	3,892.74	3,805.71	13.87	16.68	-60.45	-32.39	632.17	607.55	588.39	19.16	31.710		
4,100.00	4,097.19	3,988.42	3,896.43	14.23	17.26	-60.46	-34.10	662.56	636.61	616.93	19.68	32.347		
4,200.00	4,197.06	4,084.11	3,987.14	14.59	17.84	-60.46	-35.81	692.95	665.67	645.46	20.20	32.949		
4,300.00	4,296.92	4,179.79	4,077.86	14.95	18.42	-60.47	-37.52	723.34	694.73	674.00	20.73	33.519		
4,400.00	4,396.78	4,275.48	4,168.57	15.31	19.01	-60.47	-39.23	753.72	723.79	702.54	21.25	34.060		
4,500.00	4,496.65	4,371.16	4,259.29	15.67	19.60	-60.48	-40.95	784.11	752.85	731.07	21.78	34.573		
4,600.00	4,596.51	4,466.84	4,350.00	16.03	20.19	-60.48	-42.66	814.50	781.91	759.61	22.30	35.061		
4,700.00	4,696.37	4,562.53	4,440.72	16.39	20.78	-60.48	-44.37	844.89	810.97	788.14	22.83	35.524		
4,800.00	4,796.23	4,658.21	4,531.43	16.75	21.38	-60.49	-46.08	875.27	840.03	816.67	23.36	35.965		
4,900.00	4,896.10	4,753.90	4,622.15	17.12	21.97	-60.49	-47.79	905.66	869.09	845.20	23.89	36.386		

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



Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well FMM Fed Com 103H
Project:	Lea County, NM (NAD83)	TVD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Reference Site:	FMM Fed Com	MD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	FMM Fed Com 103H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.15 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													FMM Fed Com - FMM Fed Com 104H - OH - Plan #1		Offset Site Error:	0.00 usft
Survey Program: 0-OWSG (Rev2) MWD													Offset Well Error:	0.00 usft		
Reference		Offset		Semi Major Axis			Distance							Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor				
				(usft)	(usft)	(°)										
5,000.00	4,995.96	4,849.58	4,712.86	17.48	22.57	-60.49	-49.50	936.05	898.15	873.73	24.41	36.787				
5,100.00	5,095.82	4,945.27	4,803.58	17.84	23.17	-60.50	-51.21	966.44	927.21	902.26	24.94	37.170				
5,200.00	5,195.69	5,040.95	4,894.29	18.21	23.77	-60.50	-52.93	996.82	956.27	930.79	25.48	37.537				
5,300.00	5,295.55	5,136.64	4,985.01	18.57	24.37	-60.50	-54.64	1,027.21	985.33	959.32	26.01	37.887				
5,400.00	5,395.41	5,232.32	5,075.72	18.93	24.97	-60.51	-56.35	1,057.60	1,014.39	987.85	26.54	38.223				
5,500.00	5,495.27	5,328.01	5,166.44	19.30	25.57	-60.51	-58.06	1,087.99	1,043.45	1,016.37	27.07	38.544				
5,600.00	5,595.14	5,423.69	5,257.15	19.66	26.17	-60.51	-59.77	1,118.37	1,072.51	1,044.90	27.60	38.853				
5,700.00	5,695.00	5,519.37	5,347.87	20.02	26.78	-60.51	-61.48	1,148.76	1,101.56	1,073.43	28.14	39.149				
5,800.00	5,794.86	5,615.06	5,438.58	20.39	27.38	-60.51	-63.19	1,179.15	1,130.62	1,101.95	28.67	39.433				
5,900.00	5,894.73	5,710.74	5,529.30	20.75	27.99	-60.52	-64.91	1,209.54	1,159.68	1,130.48	29.21	39.706				
6,000.00	5,994.59	5,806.43	5,620.01	21.12	28.60	-60.52	-66.62	1,239.92	1,188.74	1,159.00	29.74	39.969				
6,100.00	6,094.45	5,902.11	5,710.73	21.48	29.20	-60.52	-68.33	1,270.31	1,217.80	1,187.53	30.28	40.222				
6,200.00	6,194.31	5,997.80	5,801.44	21.85	29.81	-60.52	-70.04	1,300.70	1,246.86	1,216.05	30.81	40.466				
6,300.00	6,294.18	6,093.48	5,892.16	22.21	30.42	-60.52	-71.75	1,331.09	1,275.92	1,244.57	31.35	40.701				
6,400.00	6,394.04	6,189.17	5,982.87	22.58	31.03	-60.52	-73.46	1,361.47	1,304.98	1,273.10	31.89	40.927				
6,500.00	6,493.90	6,284.85	6,073.59	22.94	31.64	-60.53	-75.17	1,391.86	1,334.04	1,301.62	32.42	41.146				
6,600.00	6,593.77	6,380.53	6,164.30	23.31	32.25	-60.53	-76.89	1,422.25	1,363.10	1,330.14	32.96	41.357				
6,700.00	6,693.63	6,476.22	6,255.02	23.67	32.86	-60.53	-78.60	1,452.64	1,392.16	1,358.67	33.50	41.560				
6,800.00	6,793.49	6,571.90	6,345.73	24.04	33.47	-60.53	-80.31	1,483.02	1,421.22	1,387.19	34.04	41.757				
6,900.00	6,893.35	6,711.72	6,478.70	24.40	34.34	-60.54	-82.74	1,526.14	1,449.61	1,414.76	34.86	41.588				
7,000.00	6,993.22	6,908.34	6,668.75	24.77	35.43	-60.61	-85.56	1,576.34	1,472.47	1,436.55	35.92	40.994				
7,106.97	7,100.04	7,124.61	6,881.21	25.16	36.42	-60.78	-87.82	1,616.38	1,489.43	1,452.54	36.89	40.372				
7,200.00	7,192.99	7,315.92	7,071.21	25.50	37.15	-61.03	-89.06	1,638.38	1,498.24	1,460.66	37.58	39.869				
7,307.02	7,300.00	7,537.88	7,292.91	25.87	37.79	84.83	-89.60	1,647.97	1,502.10	1,463.95	38.15	39.376				
7,400.00	7,392.98	7,637.65	7,392.68	26.18	38.03	84.83	-89.60	1,648.00	1,502.11	1,463.55	38.57	38.948				
7,500.00	7,492.98	7,737.65	7,492.68	26.52	38.27	84.83	-89.60	1,648.00	1,502.11	1,463.09	39.02	38.495				
7,600.00	7,592.98	7,837.65	7,592.68	26.85	38.52	84.83	-89.60	1,648.00	1,502.11	1,462.64	39.48	38.050				
7,700.00	7,692.98	7,937.65	7,692.68	27.19	38.76	84.83	-89.60	1,648.00	1,502.11	1,462.18	39.93	37.615				
7,800.00	7,792.98	8,022.35	7,777.20	27.53	38.97	84.66	-85.29	1,647.96	1,502.55	1,462.15	40.40	37.192				
7,828.06	7,821.04	8,045.04	7,799.66	27.62	39.02	84.54	-82.06	1,647.93	1,502.89	1,462.36	40.53	37.078				
7,850.00	7,842.97	8,062.64	7,816.99	27.69	39.06	84.95	-78.95	1,647.90	1,503.19	1,462.56	40.64	36.992				
7,900.00	7,892.79	8,100.00	7,853.39	27.86	39.15	84.68	-70.59	1,647.82	1,503.86	1,463.00	40.86	36.806				
7,950.00	7,942.06	8,142.14	7,893.70	28.01	39.24	84.41	-58.34	1,647.70	1,504.47	1,463.40	41.07	36.631				
8,000.00	7,990.41	8,181.51	7,930.45	28.16	39.32	84.19	-44.25	1,647.57	1,505.02	1,463.75	41.27	36.469				
8,050.00	8,037.47	8,220.68	7,965.97	28.29	39.40	84.01	-27.76	1,647.41	1,505.49	1,464.03	41.45	36.318				
8,100.00	8,082.88	8,259.69	8,000.14	28.42	39.47	83.87	-8.96	1,647.23	1,505.87	1,464.24	41.63	36.175				
8,150.00	8,126.30	8,300.00	8,034.03	28.54	39.54	83.76	12.86	1,647.02	1,506.15	1,464.36	41.79	36.038				
8,200.00	8,167.40	8,337.40	8,064.02	28.66	39.60	83.69	35.19	1,646.81	1,506.33	1,464.38	41.95	35.910				
8,250.00	8,205.86	8,376.17	8,093.50	28.77	39.66	83.67	60.35	1,646.57	1,506.40	1,464.30	42.10	35.783				
8,300.00	8,241.40	8,414.93	8,121.22	28.88	39.71	83.68	87.45	1,646.32	1,506.37	1,464.12	42.25	35.658				
8,350.00	8,273.73	8,450.00	8,144.66	28.99	39.76	83.72	113.52	1,646.07	1,506.23	1,463.84	42.40	35.527				
8,400.00	8,302.62	8,492.58	8,170.91	29.11	39.81	83.82	147.03	1,645.75	1,505.98	1,463.42	42.56	35.383				
8,450.00	8,327.84	8,531.55	8,192.69	29.24	39.85	83.95	179.33	1,645.44	1,505.64	1,462.91	42.73	35.238				
8,500.00	8,349.21	8,570.65	8,212.29	29.38	39.89	84.12	213.16	1,645.12	1,505.20	1,462.30	42.90	35.083				
8,550.00	8,366.55	8,609.94	8,229.62	29.52	39.93	84.32	248.40	1,644.78	1,504.68	1,461.59	43.09	34.918				
8,600.00	8,379.75	8,650.00	8,244.75	29.68	39.97	84.56	285.49	1,644.43	1,504.09	1,460.80	43.29	34.742				
8,650.00	8,388.69	8,689.21	8,257.03	29.85	40.01	84.83	322.72	1,644.08	1,503.44	1,459.93	43.51	34.556				
8,700.00	8,393.31	8,729.30	8,266.91	30.03	40.06	85.14	361.56	1,643.71	1,502.75	1,459.02	43.73	34.361				
8,728.06	8,394.00	8,750.00	8,270.94	30.14	40.08	85.31	381.86	1,643.51	1,502.35	1,458.49	43.86	34.251				
8,800.00	8,394.00	8,811.01	8,278.53	30.43	40.16	85.60	442.37	1,642.94	1,501.64	1,457.40	44.24	33.945				
8,900.00	8,394.00	8,902.79	8,280.00	30.91	40.31	85.66	534.11	1,642.06	1,501.50	1,456.64	44.86	33.470				
8,917.23	8,394.00	8,920.02	8,280.00	31.01	40.34	85.66	551.34	1,641.90	1,501.50	1,456.51	44.99	33.375				

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



Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well FMM Fed Com 103H
Project:	Lea County, NM (NAD83)	TVD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Reference Site:	FMM Fed Com	MD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	FMM Fed Com 103H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.15 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design FMM Fed Com - FMM Fed Com 104H - OH - Plan #1													Offset Site Error:	0.00 usft
Survey Program: 0-OWSG (Rev2) MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance							Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
9,000.00	8,394.00	9,002.79	8,280.00	31.47	40.52	85.66	634.11	1,641.11	1,501.50	1,455.89	45.60	32.925		
9,100.00	8,394.00	9,102.79	8,280.00	32.10	40.79	85.66	734.10	1,640.16	1,501.49	1,455.04	46.45	32.324		
9,200.00	8,394.00	9,202.79	8,280.00	32.81	41.13	85.66	834.10	1,639.21	1,501.49	1,454.09	47.40	31.677		
9,300.00	8,394.00	9,302.79	8,280.00	33.58	41.53	85.66	934.09	1,638.26	1,501.48	1,453.04	48.44	30.996		
9,400.00	8,394.00	9,402.79	8,280.00	34.41	42.00	85.66	1,034.09	1,637.31	1,501.48	1,451.91	49.57	30.290		
9,500.00	8,394.00	9,502.79	8,280.00	35.30	42.54	85.66	1,134.08	1,636.36	1,501.48	1,450.69	50.78	29.567		
9,600.00	8,394.00	9,602.79	8,280.00	36.24	43.14	85.66	1,234.08	1,635.40	1,501.47	1,449.40	52.07	28.836		
9,700.00	8,394.00	9,702.79	8,280.00	37.24	43.82	85.66	1,334.07	1,634.45	1,501.47	1,448.04	53.43	28.102		
9,800.00	8,394.00	9,802.79	8,280.00	38.28	44.55	85.66	1,434.07	1,633.50	1,501.46	1,446.61	54.85	27.372		
9,900.00	8,394.00	9,902.79	8,280.00	39.36	45.35	85.66	1,534.07	1,632.55	1,501.46	1,445.12	56.34	26.651		
10,000.00	8,394.00	10,002.79	8,280.00	40.48	46.20	85.66	1,634.06	1,631.60	1,501.45	1,443.58	57.88	25.943		
10,100.00	8,394.00	10,102.79	8,280.00	41.63	47.11	85.66	1,734.06	1,630.65	1,501.45	1,441.98	59.47	25.248		
10,200.00	8,394.00	10,202.79	8,280.00	42.82	48.07	85.66	1,834.05	1,629.69	1,501.45	1,440.34	61.11	24.571		
10,300.00	8,394.00	10,302.79	8,280.00	44.03	49.07	85.66	1,934.05	1,628.74	1,501.44	1,438.65	62.79	23.912		
10,400.00	8,394.00	10,402.79	8,280.00	45.28	50.11	85.66	2,034.04	1,627.79	1,501.44	1,436.93	64.51	23.274		
10,500.00	8,394.00	10,502.79	8,280.00	46.55	51.19	85.66	2,134.04	1,626.84	1,501.43	1,435.16	66.27	22.656		
10,600.00	8,394.00	10,602.79	8,280.00	47.84	52.30	85.66	2,234.03	1,625.89	1,501.43	1,433.36	68.07	22.058		
10,700.00	8,394.00	10,702.79	8,280.00	49.16	53.45	85.66	2,334.03	1,624.94	1,501.43	1,431.53	69.89	21.482		
10,800.00	8,394.00	10,802.79	8,280.00	50.49	54.63	85.66	2,434.02	1,623.98	1,501.42	1,429.67	71.75	20.926		
10,900.00	8,394.00	10,902.79	8,280.00	51.84	55.83	85.66	2,534.02	1,623.03	1,501.42	1,427.79	73.63	20.391		
11,000.00	8,394.00	11,002.79	8,280.00	53.21	57.06	85.66	2,634.02	1,622.08	1,501.41	1,425.87	75.54	19.876		
11,100.00	8,394.00	11,102.79	8,280.00	54.60	58.31	85.66	2,734.01	1,621.13	1,501.41	1,423.94	77.47	19.381		
11,200.00	8,394.00	11,202.79	8,280.00	56.00	59.58	85.66	2,834.01	1,620.18	1,501.40	1,421.98	79.42	18.904		
11,300.00	8,394.00	11,302.79	8,280.00	57.41	60.88	85.66	2,934.00	1,619.23	1,501.40	1,420.01	81.39	18.446		
11,400.00	8,394.00	11,402.79	8,280.00	58.84	62.19	85.66	3,034.00	1,618.28	1,501.40	1,418.01	83.38	18.006		
11,500.00	8,394.00	11,502.79	8,280.00	60.28	63.51	85.66	3,133.99	1,617.32	1,501.39	1,416.00	85.39	17.582		
11,600.00	8,394.00	11,602.79	8,280.00	61.72	64.86	85.66	3,233.99	1,616.37	1,501.39	1,413.97	87.42	17.175		
11,700.00	8,394.00	11,702.79	8,280.00	63.18	66.22	85.66	3,333.98	1,615.42	1,501.38	1,411.93	89.46	16.784		
11,800.00	8,394.00	11,802.79	8,280.00	64.65	67.59	85.66	3,433.98	1,614.47	1,501.38	1,409.87	91.51	16.407		
11,900.00	8,394.00	11,902.79	8,280.00	66.13	68.98	85.66	3,533.98	1,613.52	1,501.38	1,407.80	93.58	16.045		
12,000.00	8,394.00	12,002.79	8,280.00	67.61	70.37	85.66	3,633.97	1,612.57	1,501.37	1,405.72	95.65	15.696		
12,100.00	8,394.00	12,102.79	8,280.00	69.10	71.78	85.66	3,733.97	1,611.61	1,501.37	1,403.62	97.74	15.360		
12,200.00	8,394.00	12,202.79	8,280.00	70.60	73.20	85.66	3,833.96	1,610.66	1,501.36	1,401.52	99.84	15.037		
12,300.00	8,394.00	12,302.79	8,280.00	72.11	74.63	85.66	3,933.96	1,609.71	1,501.36	1,399.40	101.95	14.726		
12,400.00	8,394.00	12,402.79	8,280.00	73.62	76.07	85.66	4,033.95	1,608.76	1,501.35	1,397.28	104.07	14.426		
12,500.00	8,394.00	12,502.79	8,280.00	75.14	77.52	85.66	4,133.95	1,607.81	1,501.35	1,395.15	106.20	14.137		
12,600.00	8,394.00	12,602.79	8,280.00	76.66	78.97	85.66	4,233.94	1,606.86	1,501.35	1,393.01	108.34	13.858		
12,700.00	8,394.00	12,702.79	8,280.00	78.19	80.44	85.66	4,333.94	1,605.90	1,501.34	1,390.86	110.49	13.589		
12,800.00	8,394.00	12,802.79	8,280.00	79.72	81.91	85.66	4,433.93	1,604.95	1,501.34	1,388.70	112.64	13.329		
12,900.00	8,394.00	12,902.79	8,280.00	81.26	83.38	85.66	4,533.93	1,604.00	1,501.33	1,386.54	114.80	13.078		
13,000.00	8,394.00	13,002.79	8,280.00	82.80	84.87	85.66	4,633.93	1,603.05	1,501.33	1,384.37	116.96	12.836		
13,100.00	8,394.00	13,102.79	8,280.00	84.35	86.36	85.66	4,733.92	1,602.10	1,501.33	1,382.19	119.14	12.602		
13,200.00	8,394.00	13,202.79	8,280.00	85.90	87.86	85.66	4,833.92	1,601.15	1,501.32	1,380.01	121.31	12.376		
13,300.00	8,394.00	13,302.79	8,280.00	87.46	89.36	85.66	4,933.91	1,600.19	1,501.32	1,377.82	123.50	12.157		
13,400.00	8,394.00	13,402.79	8,280.00	89.02	90.87	85.66	5,033.91	1,599.24	1,501.31	1,375.63	125.68	11.945		
13,500.00	8,394.00	13,502.79	8,280.00	90.58	92.38	85.66	5,133.90	1,598.29	1,501.31	1,373.43	127.88	11.740		
13,600.00	8,394.00	13,602.79	8,280.00	92.14	93.90	85.66	5,233.90	1,597.34	1,501.30	1,371.23	130.08	11.542		
13,700.00	8,394.00	13,702.79	8,280.00	93.71	95.42	85.66	5,333.89	1,596.39	1,501.30	1,369.02	132.28	11.349		
13,800.00	8,394.00	13,802.79	8,280.00	95.28	96.94	85.66	5,433.89	1,595.44	1,501.30	1,366.81	134.49	11.163		
13,900.00	8,394.00	13,902.79	8,280.00	96.85	98.47	85.66	5,533.88	1,594.49	1,501.29	1,364.59	136.70	10.982		
14,000.00	8,394.00	14,002.79	8,280.00	98.43	100.01	85.66	5,633.88	1,593.53	1,501.29	1,362.37	138.91	10.807		
14,100.00	8,394.00	14,102.79	8,280.00	100.01	101.55	85.66	5,733.88	1,592.58	1,501.28	1,360.15	141.13	10.637		

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



Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well FMM Fed Com 103H
Project:	Lea County, NM (NAD83)	TVD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Reference Site:	FMM Fed Com	MD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	FMM Fed Com 103H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.15 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design FMM Fed Com - FMM Fed Com 104H - OH - Plan #1													Offset Site Error:	0.00 usft
Survey Program: 0-OWSG (Rev2) MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
14,200.00	8,394.00	14,202.79	8,280.00	101.59	103.09	85.66	5,833.87	1,591.63	1,501.28	1,357.92	143.36	10.472		
14,300.00	8,394.00	14,302.79	8,280.00	103.17	104.63	85.66	5,933.87	1,590.68	1,501.28	1,355.69	145.58	10.312		
14,400.00	8,394.00	14,402.79	8,280.00	104.75	106.18	85.66	6,033.86	1,589.73	1,501.27	1,353.46	147.81	10.157		
14,500.00	8,394.00	14,502.79	8,280.00	106.34	107.73	85.66	6,133.86	1,588.78	1,501.27	1,351.22	150.04	10.006		
14,600.00	8,394.00	14,602.79	8,280.00	107.93	109.29	85.66	6,233.85	1,587.82	1,501.26	1,348.98	152.28	9.859		
14,700.00	8,394.00	14,702.79	8,280.00	109.52	110.84	85.66	6,333.85	1,586.87	1,501.26	1,346.74	154.52	9.716		
14,800.00	8,394.00	14,802.79	8,280.00	111.11	112.40	85.66	6,433.84	1,585.92	1,501.25	1,344.50	156.76	9.577		
14,900.00	8,394.00	14,902.79	8,280.00	112.71	113.97	85.66	6,533.84	1,584.97	1,501.25	1,342.25	159.00	9.442		
15,000.00	8,394.00	15,002.79	8,280.00	114.30	115.53	85.66	6,633.83	1,584.02	1,501.25	1,340.00	161.25	9.310		
15,100.00	8,394.00	15,102.79	8,280.00	115.90	117.10	85.66	6,733.83	1,583.07	1,501.24	1,337.75	163.50	9.182		
15,200.00	8,394.00	15,202.79	8,280.00	117.50	118.67	85.66	6,833.83	1,582.11	1,501.24	1,335.49	165.75	9.057		
15,300.00	8,394.00	15,302.79	8,280.00	119.10	120.24	85.66	6,933.82	1,581.16	1,501.23	1,333.23	168.00	8.936		
15,400.00	8,394.00	15,402.79	8,280.00	120.70	121.81	85.66	7,033.82	1,580.21	1,501.23	1,330.97	170.25	8.818		
15,500.00	8,394.00	15,502.79	8,280.00	122.31	123.39	85.66	7,133.81	1,579.26	1,501.23	1,328.71	172.51	8.702		
15,600.00	8,394.00	15,602.79	8,280.00	123.91	124.97	85.66	7,233.81	1,578.31	1,501.22	1,326.45	174.77	8.590		
15,700.00	8,394.00	15,702.79	8,280.00	125.52	126.55	85.66	7,333.80	1,577.36	1,501.22	1,324.19	177.03	8.480		
15,800.00	8,394.00	15,802.79	8,280.00	127.12	128.13	85.66	7,433.80	1,576.41	1,501.21	1,321.92	179.29	8.373		
15,900.00	8,394.00	15,902.79	8,280.00	128.73	129.71	85.66	7,533.79	1,575.45	1,501.21	1,319.65	181.56	8.268		
16,000.00	8,394.00	16,002.79	8,280.00	130.34	131.30	85.66	7,633.79	1,574.50	1,501.20	1,317.38	183.82	8.166		
16,100.00	8,394.00	16,102.79	8,280.00	131.95	132.89	85.66	7,733.79	1,573.55	1,501.20	1,315.11	186.09	8.067		
16,200.00	8,394.00	16,202.79	8,280.00	133.56	134.47	85.66	7,833.78	1,572.60	1,501.20	1,312.83	188.36	7.970		
16,300.00	8,394.00	16,302.79	8,280.00	135.18	136.06	85.66	7,933.78	1,571.65	1,501.19	1,310.56	190.63	7.875		
16,400.00	8,394.00	16,402.79	8,280.00	136.79	137.66	85.66	8,033.77	1,570.70	1,501.19	1,308.28	192.90	7.782		
16,500.00	8,394.00	16,502.79	8,280.00	138.40	139.25	85.66	8,133.77	1,569.74	1,501.18	1,306.01	195.18	7.691		
16,600.00	8,394.00	16,602.79	8,280.00	140.02	140.84	85.66	8,233.76	1,568.79	1,501.18	1,303.73	197.45	7.603		
16,700.00	8,394.00	16,702.79	8,280.00	141.64	142.44	85.66	8,333.76	1,567.84	1,501.18	1,301.45	199.73	7.516		
16,800.00	8,394.00	16,802.79	8,280.00	143.25	144.04	85.66	8,433.75	1,566.89	1,501.17	1,299.17	202.00	7.431		
16,900.00	8,394.00	16,902.79	8,280.00	144.87	145.63	85.66	8,533.75	1,565.94	1,501.17	1,296.88	204.28	7.348		
17,000.00	8,394.00	17,002.79	8,280.00	146.49	147.23	85.66	8,633.74	1,564.99	1,501.16	1,294.60	206.56	7.267		
17,100.00	8,394.00	17,102.79	8,280.00	148.11	148.83	85.66	8,733.74	1,564.03	1,501.16	1,292.32	208.84	7.188		
17,200.00	8,394.00	17,202.79	8,280.00	149.73	150.44	85.66	8,833.73	1,563.08	1,501.15	1,290.03	211.12	7.110		
17,300.00	8,394.00	17,302.79	8,280.00	151.35	152.04	85.66	8,933.73	1,562.13	1,501.15	1,287.74	213.41	7.034		
17,400.00	8,394.00	17,402.79	8,280.00	152.97	153.64	85.66	9,033.73	1,561.18	1,501.15	1,285.46	215.69	6.960		
17,500.00	8,394.00	17,502.79	8,280.00	154.59	155.25	85.66	9,133.72	1,560.23	1,501.14	1,283.17	217.97	6.887		
17,600.00	8,394.00	17,602.79	8,280.00	156.21	156.85	85.66	9,233.72	1,559.28	1,501.14	1,280.88	220.26	6.815		
17,700.00	8,394.00	17,702.79	8,280.00	157.84	158.46	85.66	9,333.71	1,558.33	1,501.13	1,278.59	222.55	6.745		
17,800.00	8,394.00	17,802.79	8,280.00	159.46	160.07	85.66	9,433.71	1,557.37	1,501.13	1,276.30	224.83	6.677		
17,900.00	8,394.00	17,902.79	8,280.00	161.08	161.68	85.66	9,533.70	1,556.42	1,501.13	1,274.00	227.12	6.609		
18,000.00	8,394.00	18,002.79	8,280.00	162.71	163.28	85.66	9,633.70	1,555.47	1,501.12	1,271.71	229.41	6.543		
18,100.00	8,394.00	18,102.79	8,280.00	164.33	164.90	85.66	9,733.69	1,554.52	1,501.12	1,269.42	231.70	6.479		
18,200.00	8,394.00	18,202.79	8,280.00	165.96	166.51	85.66	9,833.69	1,553.57	1,501.11	1,267.12	233.99	6.415		
18,300.00	8,394.00	18,302.79	8,280.00	167.59	168.12	85.66	9,933.69	1,552.62	1,501.11	1,264.83	236.28	6.353		
18,400.00	8,394.00	18,402.79	8,280.00	169.21	169.73	85.66	10,033.68	1,551.66	1,501.10	1,262.53	238.57	6.292		
18,443.95	8,394.00	18,446.74	8,280.00	169.93	170.44	85.66	10,077.63	1,551.25	1,501.10	1,261.52	239.58	6.266		
18,449.58	8,394.00	18,448.40	8,280.00	170.02	170.47	85.66	10,079.29	1,551.23	1,501.11	1,261.40	239.71	6.262		
18,450.14	8,394.00	18,448.40	8,280.00	170.03	170.47	85.66	10,079.29	1,551.23	1,501.11	1,261.39	239.72	6.262		

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



Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well FMM Fed Com 103H
Project:	Lea County, NM (NAD83)	TVD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Reference Site:	FMM Fed Com	MD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	FMM Fed Com 103H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.15 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 0-OWSG (Rev2) MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
0.00	0.00	0.00	0.00	0.00	0.00	-90.53	-18.21	-1,961.18	1,961.77					
100.00	100.00	55.30	55.30	0.13	0.07	-90.53	-18.21	-1,961.18	1,961.26	1,961.12	0.14	N/A		
200.00	200.00	155.30	155.30	0.48	0.32	-90.53	-18.21	-1,961.18	1,961.26	1,960.68	0.58	3,368.612		
300.00	300.00	255.30	255.30	0.84	0.68	-90.53	-18.21	-1,961.18	1,961.26	1,960.18	1.08	1,809.318		
400.00	400.00	355.30	355.30	1.20	1.04	-90.53	-18.21	-1,961.18	1,961.26	1,959.67	1.59	1,234.243		
500.00	500.00	455.30	455.30	1.56	1.40	-90.53	-18.21	-1,961.18	1,961.26	1,959.17	2.10	936.156		
600.00	600.00	555.30	555.30	1.92	1.76	-90.53	-18.21	-1,961.18	1,961.26	1,958.66	2.60	753.933		
700.00	700.00	655.30	655.30	2.28	2.12	-90.53	-18.21	-1,961.18	1,961.26	1,958.15	3.11	631.051		
800.00	800.00	755.30	755.30	2.63	2.47	-90.53	-18.21	-1,961.18	1,961.26	1,957.65	3.61	542.596		
900.00	900.00	855.30	855.30	2.99	2.83	-90.53	-18.21	-1,961.18	1,961.26	1,957.14	4.12	475.881		
1,000.00	1,000.00	955.30	955.30	3.35	3.19	-90.53	-18.21	-1,961.18	1,961.26	1,956.63	4.63	423.771		
1,100.00	1,100.00	1,055.30	1,055.30	3.71	3.55	-90.53	-18.21	-1,961.18	1,961.26	1,956.13	5.13	381.945		
1,200.00	1,200.00	1,155.30	1,155.30	4.07	3.91	-90.53	-18.21	-1,961.18	1,961.26	1,955.62	5.64	347.632		
1,300.00	1,300.00	1,255.30	1,255.30	4.43	4.27	-90.53	-18.21	-1,961.18	1,961.26	1,955.11	6.15	318.975		
1,400.00	1,400.00	1,355.30	1,355.30	4.79	4.63	-90.53	-18.21	-1,961.18	1,961.26	1,954.61	6.66	294.682		
1,500.00	1,500.00	1,455.30	1,455.30	5.14	4.98	-90.53	-18.21	-1,961.18	1,961.26	1,954.10	7.16	273.828		
1,600.00	1,600.00	1,555.30	1,555.30	5.50	5.34	-90.53	-18.21	-1,961.18	1,961.26	1,953.59	7.67	255.729		
1,700.00	1,700.00	1,655.30	1,655.30	5.86	5.70	-90.53	-18.21	-1,961.18	1,961.26	1,953.09	8.18	239.875		
1,800.00	1,800.00	1,755.30	1,755.30	6.22	6.06	-90.53	-18.21	-1,961.18	1,961.26	1,952.58	8.68	225.871		
1,900.00	1,900.00	1,855.30	1,855.30	6.58	6.42	-90.53	-18.21	-1,961.18	1,961.26	1,952.07	9.19	213.412		
1,920.00	1,920.00	1,875.30	1,875.30	6.65	6.49	-90.53	-18.21	-1,961.18	1,961.26	1,951.97	9.29	211.083 CC, ES		
2,000.00	1,999.99	1,955.29	1,955.29	6.92	6.78	123.52	-18.21	-1,961.18	1,961.73	1,952.04	9.69	202.505		
2,100.00	2,099.93	2,036.76	2,036.76	7.25	7.06	123.56	-18.25	-1,961.35	1,963.87	1,953.74	10.12	194.018		
2,120.05	2,119.96	2,050.08	2,050.08	7.32	7.11	123.57	-18.28	-1,961.50	1,964.64	1,954.44	10.20	192.585		
2,200.00	2,199.80	2,100.00	2,099.99	7.58	7.28	123.62	-18.49	-1,962.46	1,968.53	1,958.02	10.51	187.316		
2,300.00	2,299.66	2,169.46	2,169.40	7.92	7.52	123.70	-19.03	-1,964.85	1,974.92	1,964.01	10.91	181.071		
2,400.00	2,399.52	2,235.60	2,235.45	8.25	7.75	123.76	-19.79	-1,968.27	1,983.00	1,971.71	11.30	175.547		
2,500.00	2,499.39	2,300.00	2,299.69	8.59	7.97	123.81	-20.77	-1,972.67	1,992.77	1,981.09	11.68	170.615		
2,600.00	2,599.25	2,367.31	2,366.74	8.94	8.20	123.86	-22.04	-1,978.40	2,004.22	1,992.15	12.07	166.037		
2,700.00	2,699.11	2,432.79	2,431.86	9.28	8.43	123.90	-23.53	-1,985.08	2,017.33	2,004.88	12.46	161.965		
2,800.00	2,798.98	2,500.00	2,498.57	9.63	8.67	123.93	-25.31	-1,993.08	2,032.10	2,019.26	12.84	158.221		
2,900.00	2,898.84	2,562.81	2,560.78	9.97	8.89	123.95	-27.20	-2,001.58	2,048.51	2,035.29	13.22	154.993		
3,000.00	2,998.70	2,627.29	2,624.48	10.32	9.13	123.97	-29.38	-2,011.34	2,066.54	2,052.95	13.59	152.031		
3,100.00	3,098.57	2,700.00	2,696.09	10.67	9.40	123.98	-32.11	-2,023.61	2,086.22	2,072.23	13.99	149.082		
3,200.00	3,198.43	2,760.81	2,755.79	11.02	9.63	123.98	-34.62	-2,034.89	2,107.45	2,093.09	14.35	146.817		
3,300.00	3,298.29	2,849.41	2,842.64	11.38	9.97	123.98	-38.43	-2,052.00	2,129.61	2,114.80	14.81	143.814		
3,400.00	3,398.15	2,946.92	2,938.22	11.73	10.36	123.98	-42.62	-2,070.84	2,151.79	2,136.50	15.29	140.690		
3,500.00	3,498.02	3,044.43	3,033.80	12.09	10.75	123.98	-46.81	-2,089.67	2,173.97	2,158.19	15.78	137.737		
3,600.00	3,597.88	3,141.94	3,129.38	12.44	11.14	123.98	-51.00	-2,108.50	2,196.15	2,179.88	16.27	134.943		
3,700.00	3,697.74	3,239.45	3,224.96	12.80	11.55	123.98	-55.19	-2,127.34	2,218.33	2,201.57	16.77	132.297		
3,800.00	3,797.61	3,336.96	3,320.54	13.16	11.96	123.98	-59.39	-2,146.17	2,240.51	2,223.25	17.26	129.788		
3,900.00	3,897.47	3,434.46	3,416.13	13.51	12.37	123.98	-63.58	-2,165.00	2,262.69	2,244.94	17.76	127.406		
4,000.00	3,997.33	3,531.97	3,511.71	13.87	12.79	123.98	-67.77	-2,183.83	2,284.88	2,266.62	18.26	125.144		
4,100.00	4,097.19	3,629.48	3,607.29	14.23	13.21	123.98	-71.96	-2,202.67	2,307.06	2,288.30	18.76	122.992		
4,200.00	4,197.06	3,726.99	3,702.87	14.59	13.63	123.98	-76.15	-2,221.50	2,329.24	2,309.98	19.26	120.943		
4,300.00	4,296.92	3,824.50	3,798.45	14.95	14.06	123.98	-80.35	-2,240.33	2,351.42	2,331.66	19.76	118.991		
4,400.00	4,396.78	3,922.01	3,894.03	15.31	14.49	123.98	-84.54	-2,259.16	2,373.60	2,353.33	20.26	117.129		
4,500.00	4,496.65	4,019.52	3,989.61	15.67	14.92	123.97	-88.73	-2,278.00	2,395.78	2,375.01	20.77	115.351		
4,600.00	4,596.51	4,117.03	4,085.19	16.03	15.35	123.97	-92.92	-2,296.83	2,417.96	2,396.68	21.28	113.652		
4,700.00	4,696.37	4,214.54	4,180.78	16.39	15.79	123.97	-97.11	-2,315.66	2,440.14	2,418.36	21.78	112.027		
4,800.00	4,796.23	4,312.05	4,276.36	16.75	16.23	123.97	-101.30	-2,334.49	2,462.32	2,440.03	22.29	110.472		
4,900.00	4,896.10	4,409.55	4,371.94	17.12	16.67	123.97	-105.50	-2,353.33	2,484.50	2,461.70	22.80	108.982		

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



Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well FMM Fed Com 103H
Project:	Lea County, NM (NAD83)	TVD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Reference Site:	FMM Fed Com	MD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	FMM Fed Com 103H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.15 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design FMM Fed Com - FMM Fed Com 301H - OH - Plan #1													Offset Site Error:	0.00 usft
Survey Program: 0-OWSG (Rev2) MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
5,000.00	4,995.96	4,507.06	4,467.52	17.48	17.11	123.97	-109.69	-2,372.16	2,506.68	2,483.38	23.31	107.554		
5,100.00	5,095.82	4,604.57	4,563.10	17.84	17.55	123.97	-113.88	-2,390.99	2,528.86	2,505.05	23.82	106.184		
5,200.00	5,195.69	4,702.08	4,658.68	18.21	18.00	123.97	-118.07	-2,409.82	2,551.04	2,526.72	24.33	104.867		
5,300.00	5,295.55	4,799.59	4,754.26	18.57	18.45	123.97	-122.26	-2,428.66	2,573.22	2,548.39	24.84	103.603		
5,400.00	5,395.41	4,897.10	4,849.84	18.93	18.89	123.97	-126.46	-2,447.49	2,595.41	2,570.06	25.35	102.387		
5,500.00	5,495.27	4,994.61	4,945.43	19.30	19.34	123.97	-130.65	-2,466.32	2,617.59	2,591.72	25.86	101.217		
5,600.00	5,595.14	5,092.12	5,041.01	19.66	19.79	123.97	-134.84	-2,485.16	2,639.77	2,613.39	26.37	100.090		
5,700.00	5,695.00	5,189.63	5,136.59	20.02	20.24	123.97	-139.03	-2,503.99	2,661.95	2,635.06	26.89	99.004		
5,800.00	5,794.86	5,287.14	5,232.17	20.39	20.69	123.97	-143.22	-2,522.82	2,684.13	2,656.73	27.40	97.957		
5,900.00	5,894.73	5,384.65	5,327.75	20.75	21.15	123.97	-147.42	-2,541.65	2,706.31	2,678.39	27.92	96.948		
6,000.00	5,994.59	5,482.15	5,423.33	21.12	21.60	123.97	-151.61	-2,560.49	2,728.49	2,700.06	28.43	95.973		
6,100.00	6,094.45	5,579.66	5,518.91	21.48	22.05	123.96	-155.80	-2,579.32	2,750.67	2,721.73	28.94	95.031		
6,200.00	6,194.31	5,677.17	5,614.49	21.85	22.51	123.96	-159.99	-2,598.15	2,772.85	2,743.39	29.46	94.122		
6,300.00	6,294.18	5,774.68	5,710.08	22.21	22.96	123.96	-164.18	-2,616.98	2,795.03	2,765.06	29.98	93.242		
6,400.00	6,394.04	5,872.19	5,805.66	22.58	23.42	123.96	-168.38	-2,635.82	2,817.21	2,786.72	30.49	92.391		
6,500.00	6,493.90	5,969.70	5,901.24	22.94	23.88	123.96	-172.57	-2,654.65	2,839.39	2,808.38	31.01	91.567		
6,600.00	6,593.77	6,067.21	5,996.82	23.31	24.33	123.96	-176.76	-2,673.48	2,861.57	2,830.05	31.53	90.769		
6,700.00	6,693.63	6,164.72	6,092.40	23.67	24.79	123.96	-180.95	-2,692.31	2,883.75	2,851.71	32.04	89.996		
6,800.00	6,793.49	6,262.23	6,187.98	24.04	25.25	123.96	-185.14	-2,711.15	2,905.93	2,873.37	32.56	89.247		
6,900.00	6,893.35	6,359.74	6,283.56	24.40	25.71	123.96	-189.33	-2,729.98	2,928.12	2,895.04	33.08	88.521		
7,000.00	6,993.22	6,457.25	6,379.14	24.77	26.17	123.96	-193.53	-2,748.81	2,950.30	2,916.70	33.60	87.816		
7,106.97	7,100.04	6,561.55	6,481.39	25.16	26.66	123.96	-198.01	-2,768.96	2,974.02	2,939.87	34.15	87.085		
7,200.00	7,192.99	6,652.39	6,570.44	25.50	27.09	124.20	-201.92	-2,786.50	2,994.04	2,959.41	34.63	86.453		
7,307.02	7,300.00	6,883.40	6,797.52	25.87	28.15	-89.73	-211.10	-2,827.74	3,014.74	2,979.08	35.65	84.560		
7,400.00	7,392.98	7,287.99	7,199.77	26.18	29.73	-89.91	-220.16	-2,868.45	3,024.11	2,987.05	37.05	81.619		
7,500.00	7,492.98	7,536.59	7,448.28	26.52	30.52	-89.93	-221.21	-2,873.18	3,025.18	2,987.33	37.85	79.931		
7,600.00	7,592.98	7,636.59	7,548.28	26.85	30.82	-89.93	-221.21	-2,873.18	3,025.18	2,986.86	38.32	78.947		
7,700.00	7,692.98	7,736.59	7,648.28	27.19	31.12	-89.93	-221.21	-2,873.18	3,025.18	2,986.39	38.79	77.986		
7,800.00	7,792.98	7,836.59	7,748.28	27.53	31.43	-89.93	-221.21	-2,873.18	3,025.18	2,985.92	39.26	77.046		
7,828.06	7,821.04	7,864.65	7,776.34	27.62	31.51	-89.93	-221.21	-2,873.18	3,025.18	2,985.78	39.40	76.786		
7,850.00	7,842.97	7,886.58	7,798.27	27.69	31.58	-89.39	-221.21	-2,873.18	3,025.18	2,985.67	39.50	76.585		
7,900.00	7,892.79	7,936.40	7,848.09	27.86	31.73	-89.47	-221.21	-2,873.18	3,025.14	2,985.40	39.73	76.139		
7,950.00	7,942.06	7,985.67	7,897.36	28.01	31.88	-89.64	-221.21	-2,873.18	3,025.07	2,985.11	39.95	75.713		
8,000.00	7,990.41	8,034.02	7,945.71	28.16	32.03	-89.88	-221.21	-2,873.18	3,025.01	2,984.85	40.17	75.308		
8,021.84	8,011.15	8,054.75	7,966.45	28.22	32.09	-90.00	-221.21	-2,873.18	3,025.01	2,984.75	40.26	75.139		
8,050.00	8,037.47	8,081.08	7,992.77	28.29	32.17	-90.18	-221.21	-2,873.18	3,025.02	2,984.65	40.37	74.926		
8,100.00	8,082.88	8,126.49	8,038.18	28.42	32.31	-90.52	-221.21	-2,873.18	3,025.16	2,984.59	40.57	74.568		
8,150.00	8,126.30	8,169.91	8,081.60	28.54	32.44	-90.89	-221.21	-2,873.18	3,025.52	2,984.76	40.76	74.236		
8,200.00	8,167.40	8,211.01	8,122.70	28.66	32.57	-91.27	-221.21	-2,873.18	3,026.17	2,985.24	40.93	73.930		
8,250.00	8,205.86	8,249.47	8,161.16	28.77	32.69	-91.63	-221.21	-2,873.18	3,027.23	2,986.13	41.10	73.651		
8,300.00	8,241.40	8,285.00	8,196.70	28.88	32.80	-91.94	-221.21	-2,873.18	3,028.78	2,987.52	41.26	73.400		
8,350.00	8,273.73	8,317.34	8,229.03	28.99	32.90	-92.20	-221.21	-2,873.18	3,030.92	2,989.50	41.42	73.177		
8,400.00	8,302.62	8,346.22	8,257.92	29.11	32.99	-92.36	-221.21	-2,873.18	3,033.74	2,992.18	41.57	72.983		
8,450.00	8,327.84	8,371.45	8,283.14	29.24	33.06	-92.41	-221.21	-2,873.18	3,037.32	2,995.61	41.71	72.817		
8,500.00	8,349.21	8,392.81	8,304.51	29.38	33.13	-92.34	-221.21	-2,873.18	3,041.72	2,999.87	41.85	72.681		
8,550.00	8,366.55	8,410.16	8,321.85	29.52	33.18	-92.11	-221.21	-2,873.18	3,046.98	3,005.00	41.98	72.575		
8,600.00	8,379.75	8,423.35	8,335.05	29.68	33.22	-91.74	-221.21	-2,873.18	3,053.14	3,011.02	42.11	72.498		
8,650.00	8,388.69	8,432.30	8,343.99	29.85	33.25	-91.19	-221.21	-2,873.18	3,060.19	3,017.95	42.24	72.450		
8,700.00	8,393.31	8,436.92	8,348.61	30.03	33.27	-90.48	-221.21	-2,873.18	3,068.11	3,025.75	42.36	72.433		
8,728.06	8,394.00	8,437.60	8,349.30	30.14	33.27	-90.00	-221.21	-2,873.18	3,072.92	3,030.49	42.42	72.437		
8,800.00	8,394.00	8,437.60	8,349.30	30.43	33.27	-90.00	-221.21	-2,873.18	3,086.38	3,043.78	42.60	72.452		
8,900.00	8,394.00	8,437.60	8,349.30	30.91	33.27	-90.00	-221.21	-2,873.18	3,107.77	3,064.88	42.89	72.457		

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



Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well FMM Fed Com 103H
Project:	Lea County, NM (NAD83)	TVD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Reference Site:	FMM Fed Com	MD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	FMM Fed Com 103H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.15 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 0-OWSG (Rev2) MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
9,000.00	8,394.00	8,437.60	8,349.30	31.47	33.27	-90.00	-221.21	-2,873.18	3,132.21	3,088.98	43.23	72.453		
9,100.00	8,394.00	8,437.60	8,349.30	32.10	33.27	-90.00	-221.21	-2,873.18	3,159.62	3,116.01	43.61	72.448		
9,200.00	8,394.00	8,437.60	8,349.30	32.81	33.27	-90.00	-221.21	-2,873.18	3,189.94	3,145.91	44.03	72.448		
9,300.00	8,394.00	8,437.60	8,349.30	33.58	33.27	-90.00	-221.21	-2,873.18	3,223.07	3,178.59	44.48	72.461		
9,400.00	8,394.00	8,437.60	8,349.30	34.41	33.27	-90.00	-221.21	-2,873.18	3,258.94	3,213.98	44.95	72.494		
9,500.00	8,394.00	8,437.60	8,349.30	35.30	33.27	-90.00	-221.21	-2,873.18	3,297.45	3,252.00	45.45	72.551		
9,600.00	8,394.00	8,437.60	8,349.30	36.24	33.27	-90.00	-221.21	-2,873.18	3,338.51	3,292.55	45.96	72.638		
9,700.00	8,394.00	8,437.60	8,349.30	37.24	33.27	-90.00	-221.21	-2,873.18	3,382.03	3,335.55	46.48	72.759		
9,800.00	8,394.00	8,437.60	8,349.30	38.28	33.27	-90.00	-221.21	-2,873.18	3,427.92	3,380.91	47.01	72.916		
9,900.00	8,394.00	8,437.60	8,349.30	39.36	33.27	-90.00	-221.21	-2,873.18	3,476.08	3,428.54	47.54	73.113		
10,000.00	8,394.00	11,726.42	10,073.00	40.48	46.22	-119.67	1,589.74	-2,891.18	3,482.37	3,428.99	53.39	65.230		
10,100.00	8,394.00	11,826.42	10,073.00	41.63	47.20	-119.67	1,689.73	-2,892.17	3,482.41	3,427.66	54.75	63.606		
10,200.00	8,394.00	11,926.42	10,073.00	42.82	48.23	-119.67	1,789.73	-2,893.17	3,482.45	3,426.29	56.16	62.010		
10,300.00	8,394.00	12,026.42	10,073.00	44.03	49.28	-119.67	1,889.72	-2,894.16	3,482.49	3,424.88	57.61	60.448		
10,400.00	8,394.00	12,126.42	10,073.00	45.28	50.37	-119.67	1,989.72	-2,895.16	3,482.53	3,423.43	59.10	58.924		
10,500.00	8,394.00	12,226.42	10,073.00	46.55	51.49	-119.67	2,089.71	-2,896.15	3,482.57	3,421.95	60.63	57.441		
10,600.00	8,394.00	12,326.42	10,073.00	47.84	52.64	-119.67	2,189.71	-2,897.14	3,482.62	3,420.43	62.19	56.001		
10,700.00	8,394.00	12,426.42	10,073.00	49.16	53.81	-119.67	2,289.70	-2,898.14	3,482.66	3,418.88	63.78	54.604		
10,800.00	8,394.00	12,526.42	10,073.00	50.49	55.01	-119.67	2,389.70	-2,899.13	3,482.70	3,417.30	65.40	53.253		
10,900.00	8,394.00	12,626.42	10,073.00	51.84	56.23	-119.66	2,489.69	-2,900.13	3,482.74	3,415.69	67.04	51.948		
11,000.00	8,394.00	12,726.42	10,073.00	53.21	57.47	-119.66	2,589.69	-2,901.12	3,482.78	3,414.07	68.71	50.687		
11,100.00	8,394.00	12,826.42	10,073.00	54.60	58.74	-119.66	2,689.68	-2,902.11	3,482.82	3,412.41	70.40	49.469		
11,200.00	8,394.00	12,926.42	10,073.00	56.00	60.02	-119.66	2,789.68	-2,903.11	3,482.86	3,410.74	72.12	48.294		
11,300.00	8,394.00	13,026.42	10,073.00	57.41	61.32	-119.66	2,889.67	-2,904.10	3,482.90	3,409.05	73.85	47.161		
11,400.00	8,394.00	13,126.42	10,073.00	58.84	62.63	-119.66	2,989.67	-2,905.10	3,482.94	3,407.33	75.60	46.068		
11,500.00	8,394.00	13,226.42	10,073.00	60.28	63.97	-119.66	3,089.66	-2,906.09	3,482.98	3,405.61	77.37	45.015		
11,600.00	8,394.00	13,326.42	10,073.00	61.72	65.31	-119.66	3,189.66	-2,907.08	3,483.02	3,403.86	79.16	44.001		
11,700.00	8,394.00	13,426.42	10,073.00	63.18	66.67	-119.66	3,289.65	-2,908.08	3,483.06	3,402.10	80.96	43.024		
11,800.00	8,394.00	13,526.42	10,073.00	64.65	68.04	-119.66	3,389.65	-2,909.07	3,483.10	3,400.33	82.77	42.082		
11,900.00	8,394.00	13,626.42	10,073.00	66.13	69.43	-119.66	3,489.64	-2,910.07	3,483.14	3,398.55	84.59	41.174		
12,000.00	8,394.00	13,726.42	10,073.00	67.61	70.83	-119.66	3,589.64	-2,911.06	3,483.18	3,396.75	86.43	40.299		
12,100.00	8,394.00	13,826.42	10,073.00	69.10	72.23	-119.66	3,689.63	-2,912.05	3,483.22	3,394.94	88.28	39.456		
12,200.00	8,394.00	13,926.42	10,073.00	70.60	73.65	-119.66	3,789.63	-2,913.05	3,483.26	3,393.12	90.14	38.642		
12,300.00	8,394.00	14,026.42	10,073.00	72.11	75.08	-119.66	3,889.62	-2,914.04	3,483.30	3,391.29	92.01	37.857		
12,400.00	8,394.00	14,126.42	10,073.00	73.62	76.51	-119.66	3,989.62	-2,915.04	3,483.34	3,389.45	93.89	37.099		
12,500.00	8,394.00	14,226.42	10,073.00	75.14	77.96	-119.66	4,089.61	-2,916.03	3,483.38	3,387.60	95.78	36.368		
12,600.00	8,394.00	14,326.42	10,073.00	76.66	79.41	-119.66	4,189.61	-2,917.02	3,483.43	3,385.75	97.68	35.662		
12,700.00	8,394.00	14,426.42	10,073.00	78.19	80.87	-119.66	4,289.60	-2,918.02	3,483.47	3,383.88	99.58	34.981		
12,800.00	8,394.00	14,526.42	10,073.00	79.72	82.34	-119.66	4,389.60	-2,919.01	3,483.51	3,382.01	101.49	34.323		
12,900.00	8,394.00	14,626.42	10,073.00	81.26	83.81	-119.66	4,489.59	-2,920.01	3,483.55	3,380.14	103.41	33.687		
13,000.00	8,394.00	14,726.42	10,073.00	82.80	85.29	-119.66	4,589.59	-2,921.00	3,483.59	3,378.25	105.33	33.072		
13,100.00	8,394.00	14,826.42	10,073.00	84.35	86.78	-119.66	4,689.58	-2,921.99	3,483.63	3,376.36	107.27	32.477		
13,200.00	8,394.00	14,926.42	10,073.00	85.90	88.27	-119.66	4,789.58	-2,922.99	3,483.67	3,374.47	109.20	31.901		
13,300.00	8,394.00	15,026.42	10,073.00	87.46	89.77	-119.66	4,889.57	-2,923.98	3,483.71	3,372.56	111.15	31.344		
13,400.00	8,394.00	15,126.42	10,073.00	89.02	91.27	-119.66	4,989.57	-2,924.98	3,483.75	3,370.66	113.09	30.804		
13,500.00	8,394.00	15,226.42	10,073.00	90.58	92.78	-119.66	5,089.56	-2,925.97	3,483.79	3,368.74	115.05	30.282		
13,600.00	8,394.00	15,326.42	10,073.00	92.14	94.29	-119.65	5,189.56	-2,926.96	3,483.83	3,366.83	117.00	29.775		
13,700.00	8,394.00	15,426.42	10,073.00	93.71	95.81	-119.65	5,289.55	-2,927.96	3,483.87	3,364.91	118.96	29.285		
13,800.00	8,394.00	15,526.42	10,073.00	95.28	97.33	-119.65	5,389.55	-2,928.95	3,483.91	3,362.98	120.93	28.809		
13,900.00	8,394.00	15,626.42	10,073.00	96.85	98.86	-119.65	5,489.54	-2,929.95	3,483.95	3,361.05	122.90	28.348		
14,000.00	8,394.00	15,726.42	10,073.00	98.43	100.39	-119.65	5,589.54	-2,930.94	3,483.99	3,359.12	124.87	27.900		
14,100.00	8,394.00	15,826.42	10,073.00	100.01	101.93	-119.65	5,689.53	-2,931.93	3,484.03	3,357.18	126.85	27.466		

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



Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well FMM Fed Com 103H
Project:	Lea County, NM (NAD83)	TVD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Reference Site:	FMM Fed Com	MD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	FMM Fed Com 103H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.15 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 0-OWSG (Rev2) MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
14,200.00	8,394.00	15,926.42	10,073.00	101.59	103.46	-119.65	5,789.53	-2,932.93	3,484.07	3,355.24	128.83	27.044		
14,300.00	8,394.00	16,026.42	10,073.00	103.17	105.01	-119.65	5,889.52	-2,933.92	3,484.11	3,353.30	130.82	26.634		
14,400.00	8,394.00	16,126.42	10,073.00	104.75	106.55	-119.65	5,989.52	-2,934.92	3,484.15	3,351.35	132.80	26.236		
14,500.00	8,394.00	16,226.42	10,073.00	106.34	108.10	-119.65	6,089.51	-2,935.91	3,484.19	3,349.40	134.79	25.849		
14,600.00	8,394.00	16,326.42	10,073.00	107.93	109.65	-119.65	6,189.51	-2,936.90	3,484.24	3,347.45	136.78	25.473		
14,700.00	8,394.00	16,426.42	10,073.00	109.52	111.20	-119.65	6,289.50	-2,937.90	3,484.28	3,345.50	138.78	25.107		
14,800.00	8,394.00	16,526.42	10,073.00	111.11	112.76	-119.65	6,389.50	-2,938.89	3,484.32	3,343.54	140.78	24.751		
14,900.00	8,394.00	16,626.42	10,073.00	112.71	114.32	-119.65	6,489.49	-2,939.89	3,484.36	3,341.58	142.78	24.404		
15,000.00	8,394.00	16,726.42	10,073.00	114.30	115.88	-119.65	6,589.49	-2,940.88	3,484.40	3,339.62	144.78	24.067		
15,100.00	8,394.00	16,826.42	10,073.00	115.90	117.44	-119.65	6,689.48	-2,941.87	3,484.44	3,337.65	146.78	23.739		
15,200.00	8,394.00	16,926.42	10,073.00	117.50	119.01	-119.65	6,789.48	-2,942.87	3,484.48	3,335.69	148.79	23.419		
15,300.00	8,394.00	17,026.42	10,073.00	119.10	120.58	-119.65	6,889.47	-2,943.86	3,484.52	3,333.72	150.80	23.107		
15,400.00	8,394.00	17,126.42	10,073.00	120.70	122.15	-119.65	6,989.47	-2,944.86	3,484.56	3,331.75	152.81	22.803		
15,500.00	8,394.00	17,226.42	10,073.00	122.31	123.72	-119.65	7,089.46	-2,945.85	3,484.60	3,329.78	154.82	22.507		
15,600.00	8,394.00	17,326.42	10,073.00	123.91	125.30	-119.65	7,189.46	-2,946.84	3,484.64	3,327.80	156.84	22.218		
15,700.00	8,394.00	17,426.42	10,073.00	125.52	126.88	-119.65	7,289.45	-2,947.84	3,484.68	3,325.83	158.85	21.936		
15,800.00	8,394.00	17,526.42	10,073.00	127.12	128.46	-119.65	7,389.45	-2,948.83	3,484.72	3,323.85	160.87	21.662		
15,900.00	8,394.00	17,626.42	10,073.00	128.73	130.04	-119.65	7,489.44	-2,949.83	3,484.76	3,321.87	162.89	21.393		
16,000.00	8,394.00	17,726.42	10,073.00	130.34	131.62	-119.65	7,589.44	-2,950.82	3,484.80	3,319.89	164.91	21.131		
16,100.00	8,394.00	17,826.42	10,073.00	131.95	133.20	-119.65	7,689.43	-2,951.81	3,484.84	3,317.91	166.94	20.875		
16,200.00	8,394.00	17,926.42	10,073.00	133.56	134.79	-119.64	7,789.43	-2,952.81	3,484.88	3,315.92	168.96	20.626		
16,300.00	8,394.00	18,026.42	10,073.00	135.18	136.38	-119.64	7,889.43	-2,953.80	3,484.92	3,313.94	170.98	20.382		
16,400.00	8,394.00	18,126.42	10,073.00	136.79	137.97	-119.64	7,989.42	-2,954.80	3,484.96	3,311.96	173.01	20.143		
16,500.00	8,394.00	18,226.42	10,073.00	138.40	139.56	-119.64	8,089.42	-2,955.79	3,485.00	3,309.97	175.04	19.910		
16,600.00	8,394.00	18,326.42	10,073.00	140.02	141.15	-119.64	8,189.41	-2,956.78	3,485.05	3,307.98	177.06	19.682		
16,700.00	8,394.00	18,426.42	10,073.00	141.64	142.74	-119.64	8,289.41	-2,957.78	3,485.09	3,305.99	179.09	19.460		
16,800.00	8,394.00	18,526.42	10,073.00	143.25	144.34	-119.64	8,389.40	-2,958.77	3,485.13	3,304.00	181.13	19.242		
16,900.00	8,394.00	18,626.42	10,073.00	144.87	145.93	-119.64	8,489.40	-2,959.77	3,485.17	3,302.01	183.16	19.028		
17,000.00	8,394.00	18,726.42	10,073.00	146.49	147.53	-119.64	8,589.39	-2,960.76	3,485.21	3,300.02	185.19	18.819		
17,100.00	8,394.00	18,826.42	10,073.00	148.11	149.13	-119.64	8,689.39	-2,961.75	3,485.25	3,298.02	187.23	18.615		
17,200.00	8,394.00	18,926.42	10,073.00	149.73	150.73	-119.64	8,789.38	-2,962.75	3,485.29	3,296.03	189.26	18.416		
17,300.00	8,394.00	19,026.42	10,073.00	151.35	152.33	-119.64	8,889.38	-2,963.74	3,485.33	3,294.04	191.29	18.220		
17,400.00	8,394.00	19,126.42	10,073.00	152.97	153.93	-119.64	8,989.37	-2,964.74	3,485.37	3,292.04	193.33	18.028		
17,500.00	8,394.00	19,226.42	10,073.00	154.59	155.54	-119.64	9,089.37	-2,965.73	3,485.41	3,290.04	195.37	17.840		
17,600.00	8,394.00	19,326.42	10,073.00	156.21	157.14	-119.64	9,189.36	-2,966.72	3,485.45	3,288.05	197.40	17.656		
17,700.00	8,394.00	19,426.42	10,073.00	157.84	158.74	-119.64	9,289.36	-2,967.72	3,485.49	3,286.05	199.44	17.476		
17,800.00	8,394.00	19,526.42	10,073.00	159.46	160.35	-119.64	9,389.35	-2,968.71	3,485.53	3,284.05	201.48	17.299		
17,900.00	8,394.00	19,626.42	10,073.00	161.08	161.96	-119.64	9,489.35	-2,969.71	3,485.57	3,282.05	203.52	17.126		
18,000.00	8,394.00	19,726.42	10,073.00	162.71	163.56	-119.64	9,589.34	-2,970.70	3,485.61	3,280.05	205.56	16.956		
18,100.00	8,394.00	19,826.42	10,073.00	164.33	165.17	-119.64	9,689.34	-2,971.69	3,485.65	3,278.05	207.60	16.790		
18,200.00	8,394.00	19,926.42	10,073.00	165.96	166.78	-119.64	9,789.33	-2,972.69	3,485.69	3,276.05	209.64	16.627		
18,300.00	8,394.00	20,026.42	10,073.00	167.59	168.39	-119.64	9,889.33	-2,973.68	3,485.73	3,274.05	211.69	16.467		
18,400.00	8,394.00	20,126.42	10,073.00	169.21	170.00	-119.64	9,989.32	-2,974.68	3,485.77	3,272.04	213.73	16.309		
18,449.58	8,394.00	20,176.00	10,073.00	170.02	170.80	-119.64	10,038.89	-2,975.17	3,485.79	3,271.05	214.74	16.232		
18,450.14	8,394.00	20,176.56	10,073.00	170.03	170.81	-119.64	10,039.46	-2,975.18	3,485.80	3,271.04	214.75	16.232 SF		

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



Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well FMM Fed Com 103H
Project:	Lea County, NM (NAD83)	TVD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Reference Site:	FMM Fed Com	MD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	FMM Fed Com 103H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.15 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design FMM Fed Com - FMM Fed Com 302H - OH - Plan #1													Offset Site Error:	0.00 usft
Survey Program: 0-OWSG (Rev2) MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
0.00	0.00	0.00	0.00	0.00	0.00	-90.53	-17.74	-1,911.05	1,911.61					
100.00	100.00	57.00	57.00	0.13	0.07	-90.53	-17.74	-1,911.05	1,911.13	1,910.99	0.14	N/A		
200.00	200.00	157.00	157.00	0.48	0.33	-90.53	-17.74	-1,911.05	1,911.13	1,910.54	0.59	3,263.392		
300.00	300.00	257.00	257.00	0.84	0.69	-90.53	-17.74	-1,911.05	1,911.13	1,910.04	1.09	1,756.838		
400.00	400.00	357.00	357.00	1.20	1.05	-90.53	-17.74	-1,911.05	1,911.13	1,909.54	1.59	1,199.676		
500.00	500.00	457.00	457.00	1.56	1.41	-90.53	-17.74	-1,911.05	1,911.13	1,909.03	2.10	910.456		
600.00	600.00	557.00	557.00	1.92	1.76	-90.53	-17.74	-1,911.05	1,911.13	1,908.52	2.61	733.499		
700.00	700.00	657.00	657.00	2.28	2.12	-90.53	-17.74	-1,911.05	1,911.13	1,908.02	3.11	614.101		
800.00	800.00	757.00	757.00	2.63	2.48	-90.53	-17.74	-1,911.05	1,911.13	1,907.51	3.62	528.116		
900.00	900.00	857.00	857.00	2.99	2.84	-90.53	-17.74	-1,911.05	1,911.13	1,907.00	4.13	463.246		
1,000.00	1,000.00	957.00	957.00	3.35	3.20	-90.53	-17.74	-1,911.05	1,911.13	1,906.50	4.63	412.564		
1,100.00	1,100.00	1,057.00	1,057.00	3.71	3.56	-90.53	-17.74	-1,911.05	1,911.13	1,905.99	5.14	371.877		
1,200.00	1,200.00	1,157.00	1,157.00	4.07	3.91	-90.53	-17.74	-1,911.05	1,911.13	1,905.48	5.65	338.493		
1,300.00	1,300.00	1,257.00	1,257.00	4.43	4.27	-90.53	-17.74	-1,911.05	1,911.13	1,904.98	6.15	310.608		
1,400.00	1,400.00	1,357.00	1,357.00	4.79	4.63	-90.53	-17.74	-1,911.05	1,911.13	1,904.47	6.66	286.967		
1,500.00	1,500.00	1,457.00	1,457.00	5.14	4.99	-90.53	-17.74	-1,911.05	1,911.13	1,903.96	7.17	266.670		
1,600.00	1,600.00	1,557.00	1,557.00	5.50	5.35	-90.53	-17.74	-1,911.05	1,911.13	1,903.46	7.67	249.055		
1,700.00	1,700.00	1,657.00	1,657.00	5.86	5.71	-90.53	-17.74	-1,911.05	1,911.13	1,902.95	8.18	233.622		
1,800.00	1,800.00	1,757.00	1,757.00	6.22	6.07	-90.53	-17.74	-1,911.05	1,911.13	1,902.44	8.69	219.990		
1,900.00	1,900.00	1,857.00	1,857.00	6.58	6.42	-90.53	-17.74	-1,911.05	1,911.13	1,901.94	9.19	207.861		
1,920.00	1,920.00	1,877.00	1,877.00	6.65	6.50	-90.53	-17.74	-1,911.05	1,911.13	1,901.83	9.30	205.594		
2,000.00	1,999.99	1,956.99	1,956.99	6.92	6.78	123.52	-17.74	-1,911.05	1,911.59	1,901.90	9.69	197.243		
2,100.00	2,099.93	2,101.43	2,101.42	7.25	7.29	123.62	-18.38	-1,909.86	1,912.81	1,902.54	10.28	186.139		
2,120.05	2,119.96	2,137.13	2,137.10	7.32	7.41	123.65	-18.91	-1,908.88	1,912.82	1,902.41	10.41	183.832		
2,200.00	2,199.80	2,279.50	2,279.25	7.58	7.89	123.72	-22.60	-1,902.06	1,911.32	1,900.40	10.92	175.078		
2,300.00	2,299.66	2,457.14	2,456.05	7.92	8.50	123.71	-30.74	-1,887.02	1,905.77	1,894.22	11.55	164.985		
2,400.00	2,399.52	2,565.13	2,563.20	8.25	8.88	123.65	-37.11	-1,875.25	1,897.79	1,885.74	12.05	157.543		
2,500.00	2,499.39	2,664.79	2,662.10	8.59	9.23	123.60	-43.01	-1,864.35	1,889.78	1,877.25	12.53	150.836		
2,600.00	2,599.25	2,764.46	2,760.99	8.94	9.59	123.55	-48.90	-1,853.45	1,881.77	1,868.75	13.01	144.589		
2,700.00	2,699.11	2,864.12	2,859.88	9.28	9.96	123.50	-54.80	-1,842.55	1,873.76	1,860.26	13.50	138.759		
2,800.00	2,798.98	2,963.79	2,958.77	9.63	10.33	123.45	-60.70	-1,831.65	1,865.76	1,851.76	14.00	133.310		
2,900.00	2,898.84	3,063.45	3,057.66	9.97	10.70	123.40	-66.59	-1,820.75	1,857.75	1,843.26	14.49	128.209		
3,000.00	2,998.70	3,163.12	3,156.55	10.32	11.07	123.34	-72.49	-1,809.85	1,849.75	1,834.77	14.99	123.426		
3,100.00	3,098.57	3,262.78	3,255.44	10.67	11.45	123.29	-78.39	-1,798.95	1,841.75	1,826.27	15.49	118.933		
3,200.00	3,198.43	3,362.45	3,354.34	11.02	11.82	123.24	-84.28	-1,788.05	1,833.75	1,817.77	15.99	114.708		
3,300.00	3,298.29	3,462.11	3,453.23	11.38	12.20	123.19	-90.18	-1,777.16	1,825.76	1,809.27	16.49	110.727		
3,400.00	3,398.15	3,561.78	3,552.12	11.73	12.59	123.13	-96.08	-1,766.26	1,817.76	1,800.77	16.99	106.972		
3,500.00	3,498.02	3,661.44	3,651.01	12.09	12.97	123.08	-101.98	-1,755.36	1,809.77	1,792.27	17.50	103.425		
3,600.00	3,497.88	3,761.11	3,749.90	12.44	13.36	123.02	-107.87	-1,744.46	1,801.77	1,783.77	18.01	100.070		
3,700.00	3,497.74	3,860.77	3,848.79	12.80	13.74	122.97	-113.77	-1,733.56	1,793.78	1,775.27	18.51	96.892		
3,800.00	3,497.61	3,960.44	3,947.69	13.16	14.13	122.91	-119.67	-1,722.66	1,785.80	1,766.77	19.02	93.879		
3,900.00	3,497.47	4,060.10	4,046.58	13.51	14.52	122.85	-125.56	-1,711.76	1,777.81	1,758.28	19.53	91.017		
4,000.00	3,497.33	4,159.77	4,145.47	13.87	14.91	122.80	-131.46	-1,700.86	1,769.82	1,749.78	20.04	88.297		
4,100.00	4,097.19	4,259.43	4,244.36	14.23	15.30	122.74	-137.36	-1,689.96	1,761.84	1,741.28	20.56	85.709		
4,200.00	4,197.06	4,359.10	4,343.25	14.59	15.69	122.68	-143.26	-1,679.06	1,753.86	1,732.79	21.07	83.243		
4,300.00	4,296.92	4,458.76	4,442.14	14.95	16.09	122.62	-149.15	-1,668.16	1,745.88	1,724.29	21.58	80.892		
4,400.00	4,396.78	4,558.43	4,541.04	15.31	16.48	122.56	-155.05	-1,657.26	1,737.90	1,715.80	22.10	78.647		
4,500.00	4,496.65	4,658.09	4,639.93	15.67	16.88	122.50	-160.95	-1,646.36	1,729.92	1,707.31	22.61	76.502		
4,600.00	4,496.51	4,757.76	4,738.82	16.03	17.27	122.44	-166.84	-1,635.46	1,721.95	1,698.82	23.13	74.451		
4,700.00	4,496.37	4,857.42	4,837.71	16.39	17.67	122.38	-172.74	-1,624.56	1,713.98	1,690.33	23.65	72.487		
4,800.00	4,496.23	4,957.09	4,936.60	16.75	18.07	122.32	-178.64	-1,613.66	1,706.01	1,681.84	24.16	70.605		
4,900.00	4,496.10	5,056.75	5,035.49	17.12	18.46	122.26	-184.53	-1,602.77	1,698.04	1,673.36	24.68	68.801		

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



Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well FMM Fed Com 103H
Project:	Lea County, NM (NAD83)	TVD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Reference Site:	FMM Fed Com	MD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	FMM Fed Com 103H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.15 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 0-OWSG (Rev2) MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
5,000.00	4,995.96	5,156.42	5,134.39	17.48	18.86	122.19	-190.43	-1,591.87	1,690.07	1,664.87	25.20	67.070		
5,100.00	5,095.82	5,256.08	5,233.28	17.84	19.26	122.13	-196.33	-1,580.97	1,682.11	1,656.39	25.72	65.407		
5,200.00	5,195.69	5,355.75	5,332.17	18.21	19.66	122.07	-202.23	-1,570.07	1,674.14	1,647.91	26.24	63.809		
5,300.00	5,295.55	5,455.41	5,431.06	18.57	20.06	122.00	-208.12	-1,559.17	1,666.18	1,639.43	26.76	62.272		
5,400.00	5,395.41	5,555.08	5,529.95	18.93	20.46	121.94	-214.02	-1,548.27	1,658.23	1,630.95	27.28	60.793		
5,500.00	5,495.27	5,654.74	5,628.84	19.30	20.86	121.87	-219.92	-1,537.37	1,650.27	1,622.47	27.80	59.368		
5,600.00	5,595.14	5,754.41	5,727.73	19.66	21.26	121.81	-225.81	-1,526.47	1,642.32	1,614.00	28.32	57.995		
5,700.00	5,695.00	5,854.07	5,826.63	20.02	21.66	121.74	-231.71	-1,515.57	1,634.36	1,605.52	28.84	56.671		
5,800.00	5,794.86	5,953.74	5,925.52	20.39	22.06	121.67	-237.61	-1,504.67	1,626.41	1,597.05	29.36	55.393		
5,900.00	5,894.73	6,053.40	6,024.41	20.75	22.46	121.60	-243.50	-1,493.77	1,618.47	1,588.58	29.88	54.159		
6,000.00	5,994.59	6,153.07	6,123.30	21.12	22.86	121.53	-249.40	-1,482.87	1,610.52	1,580.12	30.41	52.967		
6,100.00	6,094.45	6,252.73	6,222.19	21.48	23.27	121.46	-255.30	-1,471.97	1,602.58	1,571.65	30.93	51.815		
6,200.00	6,194.31	6,352.40	6,321.08	21.85	23.67	121.39	-261.20	-1,461.07	1,594.64	1,563.19	31.45	50.700		
6,300.00	6,294.18	6,452.06	6,419.98	22.21	24.07	121.32	-267.09	-1,450.17	1,586.70	1,554.73	31.98	49.622		
6,400.00	6,394.04	6,551.73	6,518.87	22.58	24.47	121.25	-272.99	-1,439.27	1,578.77	1,546.27	32.50	48.578		
6,500.00	6,493.90	6,651.39	6,617.76	22.94	24.88	121.18	-278.89	-1,428.38	1,570.83	1,537.81	33.02	47.567		
6,600.00	6,593.77	6,751.06	6,716.65	23.31	25.28	121.10	-284.78	-1,417.48	1,562.90	1,529.36	33.55	46.587		
6,700.00	6,693.63	6,850.72	6,815.54	23.67	25.68	121.03	-290.68	-1,406.58	1,554.98	1,520.90	34.07	45.637		
6,800.00	6,793.49	6,937.62	6,901.78	24.04	26.03	120.97	-296.54	-1,397.23	1,547.26	1,512.68	34.57	44.752		
6,900.00	6,893.35	7,000.00	6,963.81	24.40	26.28	120.94	-298.90	-1,391.38	1,541.04	1,506.02	35.02	44.003		
7,000.00	6,993.22	7,086.22	7,049.70	24.77	26.61	120.94	-302.48	-1,384.76	1,536.36	1,500.85	35.51	43.268		
7,106.97	7,100.04	7,165.87	7,129.18	25.16	26.90	120.97	-304.97	-1,380.17	1,533.26	1,497.27	35.99	42.602		
7,200.00	7,192.99	7,235.17	7,198.40	25.50	27.15	120.98	-306.49	-1,377.36	1,531.52	1,495.12	36.40	42.076		
7,307.02	7,300.00	7,314.93	7,278.13	25.87	27.43	-93.09	-307.50	-1,375.49	1,529.86	1,493.01	36.85	41.520		
7,400.00	7,392.98	7,386.78	7,349.98	26.18	27.67	-93.10	-307.74	-1,375.05	1,529.29	1,492.06	37.22	41.084		
7,500.00	7,492.98	7,486.78	7,449.98	26.52	27.99	-93.10	-307.74	-1,375.05	1,529.29	1,491.59	37.70	40.569		
7,600.00	7,592.98	7,586.78	7,549.98	26.85	28.31	-93.10	-307.74	-1,375.05	1,529.29	1,491.12	38.17	40.067		
7,700.00	7,692.98	7,686.78	7,649.98	27.19	28.64	-93.10	-307.74	-1,375.05	1,529.29	1,490.65	38.64	39.575		
7,800.00	7,792.98	7,786.78	7,749.98	27.53	28.96	-93.10	-307.74	-1,375.05	1,529.29	1,490.17	39.12	39.095		
7,828.06	7,821.04	7,814.84	7,778.04	27.62	29.05	-93.10	-307.74	-1,375.05	1,529.29	1,490.04	39.25	38.962 CC		
7,850.00	7,842.97	7,836.77	7,799.97	27.69	29.12	-92.57	-307.74	-1,375.05	1,529.31	1,489.95	39.35	38.860		
7,900.00	7,892.79	7,886.59	7,849.79	27.86	29.29	-92.71	-307.74	-1,375.05	1,529.50	1,489.91	39.59	38.633 ES		
7,950.00	7,942.06	7,935.86	7,899.06	28.01	29.45	-92.97	-307.74	-1,375.05	1,529.92	1,490.10	39.82	38.418		
8,000.00	7,990.41	7,984.21	7,947.41	28.16	29.60	-93.36	-307.74	-1,375.05	1,530.64	1,490.59	40.05	38.217		
8,050.00	8,037.47	8,031.27	7,994.47	28.29	29.76	-93.84	-307.74	-1,375.05	1,531.77	1,491.50	40.27	38.033		
8,100.00	8,082.88	8,076.68	8,039.88	28.42	29.91	-94.38	-307.74	-1,375.05	1,533.42	1,492.93	40.49	37.869		
8,150.00	8,126.30	8,120.10	8,083.30	28.54	30.05	-94.95	-307.74	-1,375.05	1,535.74	1,495.04	40.70	37.729		
8,200.00	8,167.40	8,161.20	8,124.40	28.66	30.18	-95.50	-307.74	-1,375.05	1,538.90	1,497.99	40.91	37.616		
8,250.00	8,205.86	8,199.66	8,162.86	28.77	30.31	-96.00	-307.74	-1,375.05	1,543.06	1,501.95	41.11	37.534		
8,300.00	8,241.40	8,235.20	8,198.40	28.88	30.42	-96.39	-307.74	-1,375.05	1,548.39	1,507.08	41.31	37.486		
8,350.00	8,273.73	8,267.53	8,230.73	28.99	30.53	-96.64	-307.74	-1,375.05	1,555.05	1,513.55	41.49	37.477		
8,400.00	8,302.62	8,296.42	8,259.62	29.11	30.62	-96.69	-307.74	-1,375.05	1,563.17	1,521.49	41.68	37.508		
8,450.00	8,327.84	8,321.64	8,284.84	29.24	30.71	-96.51	-307.74	-1,375.05	1,572.86	1,531.01	41.85	37.583		
8,500.00	8,349.21	8,343.01	8,306.21	29.38	30.78	-96.07	-307.74	-1,375.05	1,584.22	1,542.20	42.02	37.704		
8,550.00	8,366.55	8,360.35	8,323.55	29.52	30.84	-95.33	-307.74	-1,375.05	1,597.26	1,555.08	42.18	37.871		
8,600.00	8,379.75	8,373.55	8,336.75	29.68	30.88	-94.27	-307.74	-1,375.05	1,611.98	1,569.66	42.32	38.086		
8,650.00	8,388.69	8,382.49	8,345.69	29.85	30.91	-92.87	-307.74	-1,375.05	1,628.34	1,585.88	42.46	38.347		
8,700.00	8,393.31	8,387.11	8,350.31	30.03	30.92	-91.13	-307.74	-1,375.05	1,646.22	1,603.63	42.59	38.654		
8,728.06	8,394.00	8,387.80	8,351.00	30.14	30.93	-90.00	-307.74	-1,375.05	1,656.87	1,614.22	42.65	38.845		
8,800.00	8,394.00	8,387.80	8,351.00	30.43	30.93	-90.00	-307.74	-1,375.05	1,686.02	1,643.20	42.82	39.375		
8,900.00	8,394.00	8,387.80	8,351.00	30.91	30.93	-90.00	-307.74	-1,375.05	1,730.69	1,687.63	43.07	40.188		
9,000.00	8,394.00	8,387.80	8,351.00	31.47	30.93	-90.00	-307.74	-1,375.05	1,779.87	1,736.55	43.32	41.086		

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



Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well FMM Fed Com 103H
Project:	Lea County, NM (NAD83)	TVD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Reference Site:	FMM Fed Com	MD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	FMM Fed Com 103H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.15 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 0-OWSG (Rev2) MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
9,100.00	8,394.00	8,387.80	8,351.00	32.10	30.93	-90.00	-307.74	-1,375.05	1,833.18	1,789.61	43.58	42.067		
9,200.00	8,394.00	8,387.80	8,351.00	32.81	30.93	-90.00	-307.74	-1,375.05	1,890.29	1,846.46	43.83	43.124		
9,300.00	8,394.00	8,387.80	8,351.00	33.58	30.93	-90.00	-307.74	-1,375.05	1,950.85	1,906.77	44.08	44.252		
9,400.00	8,394.00	8,387.80	8,351.00	34.41	30.93	-90.00	-307.74	-1,375.05	2,014.56	1,970.24	44.33	45.448		
9,500.00	8,394.00	8,387.80	8,351.00	35.30	30.93	-90.00	-307.74	-1,375.05	2,081.13	2,036.57	44.56	46.705		
9,600.00	8,394.00	8,387.80	8,351.00	36.24	30.93	-90.00	-307.74	-1,375.05	2,150.29	2,105.51	44.78	48.021		
9,700.00	8,394.00	11,364.31	9,961.00	37.24	42.15	-136.49	1,304.61	-1,391.11	2,220.03	2,174.91	45.12	49.201		
9,800.00	8,394.00	11,464.31	9,961.00	38.28	43.08	-136.49	1,404.60	-1,392.10	2,220.07	2,173.88	46.19	48.065		
9,900.00	8,394.00	11,564.31	9,961.00	39.36	44.04	-136.48	1,504.60	-1,393.10	2,220.10	2,172.80	47.30	46.939		
10,000.00	8,394.00	11,664.31	9,961.00	40.48	45.04	-136.48	1,604.59	-1,394.09	2,220.13	2,171.69	48.45	45.826		
10,100.00	8,394.00	11,764.31	9,961.00	41.63	46.08	-136.48	1,704.59	-1,395.09	2,220.17	2,170.53	49.63	44.731		
10,200.00	8,394.00	11,864.31	9,961.00	42.82	47.15	-136.48	1,804.58	-1,396.08	2,220.20	2,169.35	50.85	43.658		
10,300.00	8,394.00	11,964.31	9,961.00	44.03	48.26	-136.48	1,904.58	-1,397.08	2,220.23	2,168.12	52.11	42.608		
10,400.00	8,394.00	12,064.31	9,961.00	45.28	49.39	-136.48	2,004.57	-1,398.08	2,220.27	2,166.87	53.39	41.583		
10,500.00	8,394.00	12,164.31	9,961.00	46.55	50.56	-136.48	2,104.57	-1,399.07	2,220.30	2,165.60	54.70	40.587		
10,600.00	8,394.00	12,264.31	9,961.00	47.84	51.75	-136.48	2,204.56	-1,400.07	2,220.33	2,164.29	56.04	39.619		
10,700.00	8,394.00	12,364.31	9,961.00	49.16	52.96	-136.48	2,304.56	-1,401.06	2,220.37	2,162.96	57.40	38.680		
10,800.00	8,394.00	12,464.31	9,961.00	50.49	54.20	-136.48	2,404.55	-1,402.06	2,220.40	2,161.61	58.79	37.771		
10,900.00	8,394.00	12,564.31	9,961.00	51.84	55.46	-136.48	2,504.55	-1,403.06	2,220.43	2,160.24	60.19	36.889		
11,000.00	8,394.00	12,664.31	9,961.00	53.21	56.74	-136.47	2,604.54	-1,404.05	2,220.47	2,158.85	61.62	36.037		
11,100.00	8,394.00	12,764.31	9,961.00	54.60	58.04	-136.47	2,704.54	-1,405.05	2,220.50	2,157.44	63.06	35.214		
11,200.00	8,394.00	12,864.31	9,961.00	56.00	59.36	-136.47	2,804.53	-1,406.04	2,220.53	2,156.02	64.51	34.419		
11,300.00	8,394.00	12,964.31	9,961.00	57.41	60.69	-136.47	2,904.53	-1,407.04	2,220.57	2,154.58	65.99	33.651		
11,400.00	8,394.00	13,064.31	9,961.00	58.84	62.03	-136.47	3,004.52	-1,408.03	2,220.60	2,153.12	67.48	32.908		
11,500.00	8,394.00	13,164.31	9,961.00	60.28	63.40	-136.47	3,104.52	-1,409.03	2,220.63	2,151.66	68.98	32.193		
11,600.00	8,394.00	13,264.31	9,961.00	61.72	64.77	-136.47	3,204.51	-1,410.03	2,220.67	2,150.18	70.49	31.502		
11,700.00	8,394.00	13,364.31	9,961.00	63.18	66.16	-136.47	3,304.51	-1,411.02	2,220.70	2,148.68	72.02	30.836		
11,800.00	8,394.00	13,464.31	9,961.00	64.65	67.56	-136.47	3,404.50	-1,412.02	2,220.73	2,147.18	73.55	30.192		
11,900.00	8,394.00	13,564.31	9,961.00	66.13	68.97	-136.47	3,504.50	-1,413.01	2,220.77	2,145.67	75.10	29.570		
12,000.00	8,394.00	13,664.31	9,961.00	67.61	70.39	-136.47	3,604.49	-1,414.01	2,220.80	2,144.14	76.66	28.970		
12,100.00	8,394.00	13,764.31	9,961.00	69.10	71.82	-136.46	3,704.48	-1,415.01	2,220.83	2,142.61	78.22	28.390		
12,200.00	8,394.00	13,864.31	9,961.00	70.60	73.26	-136.46	3,804.48	-1,416.00	2,220.87	2,141.07	79.80	27.831		
12,300.00	8,394.00	13,964.31	9,961.00	72.11	74.71	-136.46	3,904.48	-1,417.00	2,220.90	2,139.52	81.38	27.290		
12,400.00	8,394.00	14,064.31	9,961.00	73.62	76.17	-136.46	4,004.47	-1,417.99	2,220.93	2,137.97	82.97	26.769		
12,500.00	8,394.00	14,164.31	9,961.00	75.14	77.63	-136.46	4,104.47	-1,418.99	2,220.97	2,136.40	84.56	26.264		
12,600.00	8,394.00	14,264.31	9,961.00	76.66	79.11	-136.46	4,204.46	-1,419.98	2,221.00	2,134.84	86.17	25.776		
12,700.00	8,394.00	14,364.31	9,961.00	78.19	80.59	-136.46	4,304.46	-1,420.98	2,221.03	2,133.26	87.77	25.304		
12,800.00	8,394.00	14,464.31	9,961.00	79.72	82.07	-136.46	4,404.45	-1,421.98	2,221.07	2,131.68	89.39	24.847		
12,900.00	8,394.00	14,564.31	9,961.00	81.26	83.56	-136.46	4,504.45	-1,422.97	2,221.10	2,130.09	91.01	24.405		
13,000.00	8,394.00	14,664.31	9,961.00	82.80	85.06	-136.46	4,604.44	-1,423.97	2,221.13	2,128.50	92.63	23.977		
13,100.00	8,394.00	14,764.31	9,961.00	84.35	86.57	-136.46	4,704.44	-1,424.96	2,221.17	2,126.90	94.26	23.563		
13,200.00	8,394.00	14,864.31	9,961.00	85.90	88.08	-136.45	4,804.43	-1,425.96	2,221.20	2,125.30	95.90	23.162		
13,300.00	8,394.00	14,964.31	9,961.00	87.46	89.59	-136.45	4,904.43	-1,426.96	2,221.23	2,123.70	97.53	22.774		
13,400.00	8,394.00	15,064.31	9,961.00	89.02	91.11	-136.45	5,004.42	-1,427.95	2,221.27	2,122.09	99.18	22.397		
13,500.00	8,394.00	15,164.31	9,961.00	90.58	92.63	-136.45	5,104.42	-1,428.95	2,221.30	2,120.48	100.82	22.032		
13,600.00	8,394.00	15,264.31	9,961.00	92.14	94.16	-136.45	5,204.41	-1,429.94	2,221.33	2,118.86	102.47	21.677		
13,700.00	8,394.00	15,364.31	9,961.00	93.71	95.69	-136.45	5,304.41	-1,430.94	2,221.37	2,117.24	104.13	21.333		
13,800.00	8,394.00	15,464.31	9,961.00	95.28	97.23	-136.45	5,404.40	-1,431.93	2,221.40	2,115.62	105.78	20.999		
13,900.00	8,394.00	15,564.31	9,961.00	96.85	98.77	-136.45	5,504.40	-1,432.93	2,221.43	2,113.99	107.44	20.676		
14,000.00	8,394.00	15,664.31	9,961.00	98.43	100.31	-136.45	5,604.39	-1,433.93	2,221.47	2,112.36	109.10	20.361		
14,100.00	8,394.00	15,764.31	9,961.00	100.01	101.86	-136.45	5,704.39	-1,434.92	2,221.50	2,110.73	110.77	20.055		
14,200.00	8,394.00	15,864.31	9,961.00	101.59	103.41	-136.45	5,804.38	-1,435.92	2,221.53	2,109.10	112.43	19.759		

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



Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well FMM Fed Com 103H
Project:	Lea County, NM (NAD83)	TVD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Reference Site:	FMM Fed Com	MD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	FMM Fed Com 103H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.15 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 0-OWSG (Rev2) MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
14,300.00	8,394.00	15,964.31	9,961.00	103.17	104.96	-136.45	5,904.38	-1,436.91	2,221.57	2,107.47	114.10	19.470		
14,400.00	8,394.00	16,064.31	9,961.00	104.75	106.52	-136.44	6,004.37	-1,437.91	2,221.60	2,105.83	115.77	19.189		
14,500.00	8,394.00	16,164.31	9,961.00	106.34	108.07	-136.44	6,104.37	-1,438.91	2,221.63	2,104.19	117.45	18.916		
14,600.00	8,394.00	16,264.31	9,961.00	107.93	109.64	-136.44	6,204.36	-1,439.90	2,221.67	2,102.54	119.13	18.650		
14,700.00	8,394.00	16,364.31	9,961.00	109.52	111.20	-136.44	6,304.36	-1,440.90	2,221.70	2,100.90	120.81	18.391		
14,800.00	8,394.00	16,464.31	9,961.00	111.11	112.77	-136.44	6,404.35	-1,441.89	2,221.73	2,099.25	122.48	18.139		
14,900.00	8,394.00	16,564.31	9,961.00	112.71	114.34	-136.44	6,504.35	-1,442.89	2,221.77	2,097.60	124.16	17.894		
15,000.00	8,394.00	16,664.31	9,961.00	114.30	115.91	-136.44	6,604.34	-1,443.88	2,221.80	2,095.96	125.85	17.655		
15,100.00	8,394.00	16,764.31	9,961.00	115.90	117.48	-136.44	6,704.34	-1,444.88	2,221.84	2,094.30	127.53	17.422		
15,200.00	8,394.00	16,864.31	9,961.00	117.50	119.06	-136.44	6,804.33	-1,445.88	2,221.87	2,092.65	129.22	17.195		
15,300.00	8,394.00	16,964.31	9,961.00	119.10	120.64	-136.44	6,904.33	-1,446.87	2,221.90	2,091.00	130.90	16.974		
15,400.00	8,394.00	17,064.31	9,961.00	120.70	122.21	-136.44	7,004.32	-1,447.87	2,221.94	2,089.34	132.59	16.758		
15,500.00	8,394.00	17,164.31	9,961.00	122.31	123.80	-136.43	7,104.32	-1,448.86	2,221.97	2,087.68	134.28	16.547		
15,600.00	8,394.00	17,264.31	9,961.00	123.91	125.38	-136.43	7,204.31	-1,449.86	2,222.00	2,086.03	135.98	16.341		
15,700.00	8,394.00	17,364.31	9,961.00	125.52	126.97	-136.43	7,304.31	-1,450.86	2,222.04	2,084.37	137.67	16.141		
15,800.00	8,394.00	17,464.31	9,961.00	127.12	128.55	-136.43	7,404.30	-1,451.85	2,222.07	2,082.71	139.36	15.945		
15,900.00	8,394.00	17,564.31	9,961.00	128.73	130.14	-136.43	7,504.30	-1,452.85	2,222.10	2,081.05	141.05	15.754		
16,000.00	8,394.00	17,664.31	9,961.00	130.34	131.73	-136.43	7,604.29	-1,453.84	2,222.14	2,079.39	142.74	15.567		
16,100.00	8,394.00	17,764.31	9,961.00	131.95	133.32	-136.43	7,704.29	-1,454.84	2,222.17	2,077.73	144.44	15.385		
16,200.00	8,394.00	17,864.31	9,961.00	133.56	134.92	-136.43	7,804.28	-1,455.83	2,222.20	2,076.06	146.14	15.206		
16,300.00	8,394.00	17,964.31	9,961.00	135.18	136.51	-136.43	7,904.28	-1,456.83	2,222.24	2,074.40	147.84	15.032		
16,400.00	8,394.00	18,064.31	9,961.00	136.79	138.11	-136.43	8,004.27	-1,457.83	2,222.27	2,072.73	149.53	14.861		
16,500.00	8,394.00	18,164.31	9,961.00	138.40	139.70	-136.43	8,104.27	-1,458.82	2,222.30	2,071.07	151.23	14.695		
16,600.00	8,394.00	18,264.31	9,961.00	140.02	141.30	-136.42	8,204.26	-1,459.82	2,222.34	2,069.41	152.93	14.532		
16,700.00	8,394.00	18,364.31	9,961.00	141.64	142.90	-136.42	8,304.26	-1,460.81	2,222.37	2,067.74	154.63	14.372		
16,800.00	8,394.00	18,464.31	9,961.00	143.25	144.50	-136.42	8,404.25	-1,461.81	2,222.40	2,066.07	156.33	14.216		
16,900.00	8,394.00	18,564.31	9,961.00	144.87	146.10	-136.42	8,504.25	-1,462.81	2,222.44	2,064.41	158.03	14.063		
17,000.00	8,394.00	18,664.31	9,961.00	146.49	147.71	-136.42	8,604.24	-1,463.80	2,222.47	2,062.74	159.73	13.914		
17,100.00	8,394.00	18,764.31	9,961.00	148.11	149.31	-136.42	8,704.24	-1,464.80	2,222.50	2,061.07	161.43	13.767		
17,200.00	8,394.00	18,864.31	9,961.00	149.73	150.92	-136.42	8,804.23	-1,465.79	2,222.54	2,059.40	163.14	13.624		
17,300.00	8,394.00	18,964.31	9,961.00	151.35	152.52	-136.42	8,904.23	-1,466.79	2,222.57	2,057.73	164.84	13.483		
17,400.00	8,394.00	19,064.31	9,961.00	152.97	154.13	-136.42	9,004.22	-1,467.78	2,222.60	2,056.06	166.54	13.346		
17,500.00	8,394.00	19,164.31	9,961.00	154.59	155.74	-136.42	9,104.22	-1,468.78	2,222.64	2,054.40	168.24	13.211		
17,600.00	8,394.00	19,264.31	9,961.00	156.21	157.35	-136.42	9,204.21	-1,469.78	2,222.67	2,052.73	169.94	13.079		
17,700.00	8,394.00	19,364.31	9,961.00	157.84	158.96	-136.41	9,304.21	-1,470.77	2,222.70	2,051.06	171.65	12.949		
17,800.00	8,394.00	19,464.31	9,961.00	159.46	160.57	-136.41	9,404.20	-1,471.77	2,222.74	2,049.39	173.35	12.822		
17,900.00	8,394.00	19,564.31	9,961.00	161.08	162.18	-136.41	9,504.20	-1,472.76	2,222.77	2,047.72	175.05	12.698		
18,000.00	8,394.00	19,664.31	9,961.00	162.71	163.79	-136.41	9,604.19	-1,473.76	2,222.80	2,046.04	176.76	12.575		
18,100.00	8,394.00	19,764.31	9,961.00	164.33	165.41	-136.41	9,704.19	-1,474.76	2,222.84	2,044.37	178.46	12.455		
18,200.00	8,394.00	19,864.31	9,961.00	165.96	167.02	-136.41	9,804.18	-1,475.75	2,222.87	2,042.70	180.17	12.338		
18,300.00	8,394.00	19,964.31	9,961.00	167.59	168.64	-136.41	9,904.18	-1,476.75	2,222.90	2,041.04	181.87	12.223		
18,400.00	8,394.00	20,064.31	9,961.00	169.21	170.25	-136.41	10,004.17	-1,477.74	2,222.94	2,039.37	183.57	12.109		
18,449.58	8,394.00	20,113.88	9,961.00	170.02	171.05	-136.41	10,053.75	-1,478.24	2,222.95	2,038.54	184.42	12.054		
18,450.14	8,394.00	20,114.45	9,961.00	170.03	171.06	-136.41	10,054.31	-1,478.24	2,222.95	2,038.53	184.43	12.053 SF		

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



Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well FMM Fed Com 103H
Project:	Lea County, NM (NAD83)	TVD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Reference Site:	FMM Fed Com	MD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	FMM Fed Com 103H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.15 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													FMM Fed Com - FMM Fed Com 303H - OH - Plan #1		Offset Site Error:	0.00 usft
Survey Program: 0-OWSG (Rev2) MWD													Offset Well Error:	0.00 usft		
Reference		Offset		Semi Major Axis			Distance							Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor				
0.00	0.00	0.20	0.20	0.00	0.00	89.54	0.20	25.00	25.00							
100.00	100.00	100.20	100.20	0.13	0.13	89.54	0.20	25.00	25.00	24.82	0.18	140.499				
200.00	200.00	200.20	200.20	0.48	0.48	89.54	0.20	25.00	25.00	24.32	0.68	36.503				
300.00	300.00	300.20	300.20	0.84	0.84	89.54	0.20	25.00	25.00	23.81	1.19	20.976				
400.00	400.00	400.20	400.20	1.20	1.20	89.54	0.20	25.00	25.00	23.30	1.70	14.717				
500.00	500.00	500.20	500.20	1.56	1.56	89.54	0.20	25.00	25.00	22.80	2.21	11.334				
600.00	600.00	600.20	600.20	1.92	1.92	89.54	0.20	25.00	25.00	22.29	2.71	9.216				
700.00	700.00	700.20	700.20	2.28	2.28	89.54	0.20	25.00	25.00	21.78	3.22	7.765				
800.00	800.00	800.20	800.20	2.63	2.64	89.54	0.20	25.00	25.00	21.27	3.73	6.709				
900.00	900.00	900.20	900.20	2.99	2.99	89.54	0.20	25.00	25.00	20.77	4.23	5.905				
1,000.00	1,000.00	1,000.20	1,000.20	3.35	3.35	89.54	0.20	25.00	25.00	20.26	4.74	5.274				
1,100.00	1,100.00	1,100.20	1,100.20	3.71	3.71	89.54	0.20	25.00	25.00	19.75	5.25	4.764				
1,200.00	1,200.00	1,200.20	1,200.20	4.07	4.07	89.54	0.20	25.00	25.00	19.25	5.75	4.345				
1,300.00	1,300.00	1,300.20	1,300.20	4.43	4.43	89.54	0.20	25.00	25.00	18.74	6.26	3.993				
1,400.00	1,400.00	1,400.20	1,400.20	4.79	4.79	89.54	0.20	25.00	25.00	18.23	6.77	3.694				
1,500.00	1,500.00	1,500.20	1,500.20	5.14	5.14	89.54	0.20	25.00	25.00	17.73	7.28	3.436				
1,600.00	1,600.00	1,600.20	1,600.20	5.50	5.50	89.54	0.20	25.00	25.00	17.22	7.78	3.213				
1,700.00	1,700.00	1,700.20	1,700.20	5.86	5.86	89.54	0.20	25.00	25.00	16.71	8.29	3.016				
1,716.60	1,716.60	1,716.80	1,716.80	5.92	5.92	89.54	0.20	25.00	25.00	16.63	8.37	2.986 CC				
1,800.00	1,800.00	1,800.20	1,800.20	6.22	6.22	89.54	0.20	25.00	25.00	16.20	8.80	2.842 ES				
1,900.00	1,900.00	1,900.00	1,899.99	6.58	6.56	92.24	-1.00	25.52	25.54	16.25	9.29	2.750				
1,920.00	1,920.00	1,919.85	1,919.83	6.65	6.63	93.39	-1.52	25.75	25.80	16.41	9.39	2.749				
2,000.00	1,999.99	1,999.54	1,999.45	6.92	6.89	-47.64	-4.58	27.08	26.90	17.14	9.76	2.757				
2,100.00	2,099.93	2,099.23	2,098.93	7.25	7.22	-41.70	-10.41	29.62	28.13	17.92	10.22	2.754				
2,120.05	2,119.96	2,119.27	2,118.92	7.32	7.28	-40.80	-11.70	30.18	28.25	17.94	10.31	2.740				
2,200.00	2,199.80	2,199.20	2,198.66	7.58	7.55	-37.55	-16.81	32.41	28.62	17.94	10.68	2.679				
2,300.00	2,299.66	2,299.18	2,298.40	7.92	7.89	-33.62	-23.21	35.19	29.20	18.05	11.15	2.619				
2,400.00	2,399.52	2,399.16	2,398.13	8.25	8.23	-29.86	-29.61	37.98	29.92	18.29	11.63	2.574				
2,500.00	2,499.39	2,499.14	2,497.87	8.59	8.57	-26.29	-36.01	40.76	30.76	18.66	12.10	2.541				
2,600.00	2,599.25	2,599.12	2,597.60	8.94	8.92	-22.92	-42.40	43.55	31.72	19.13	12.58	2.520				
2,700.00	2,699.11	2,699.10	2,697.34	9.28	9.27	-19.75	-48.80	46.33	32.77	19.71	13.07	2.508				
2,800.00	2,798.98	2,799.07	2,797.07	9.63	9.62	-16.80	-55.20	49.12	33.92	20.37	13.55	2.503				
2,900.00	2,898.84	2,899.05	2,896.81	9.97	9.97	-14.04	-61.60	51.91	35.15	21.12	14.04	2.505				
3,000.00	2,998.70	2,999.03	2,996.54	10.32	10.33	-11.48	-68.00	54.69	36.46	21.94	14.52	2.511				
3,100.00	3,098.57	3,099.01	3,096.28	10.67	10.69	-9.10	-74.39	57.48	37.84	22.83	15.01	2.521				
3,200.00	3,198.43	3,198.99	3,196.01	11.02	11.04	-6.89	-80.79	60.26	39.28	23.78	15.50	2.534				
3,300.00	3,298.29	3,298.97	3,295.75	11.38	11.40	-4.83	-87.19	63.05	40.77	24.78	15.99	2.549				
3,400.00	3,398.15	3,398.95	3,395.48	11.73	11.76	-2.93	-93.59	65.83	42.31	25.83	16.49	2.566				
3,500.00	3,498.02	3,498.93	3,495.22	12.09	12.12	-1.16	-99.99	68.62	43.90	26.92	16.98	2.585				
3,600.00	3,597.88	3,598.90	3,594.95	12.44	12.49	0.48	-106.38	71.40	45.52	28.05	17.48	2.605				
3,700.00	3,697.74	3,698.88	3,694.69	12.80	12.85	2.01	-112.78	74.19	47.18	29.21	17.97	2.625				
3,800.00	3,797.61	3,798.86	3,794.42	13.16	13.21	3.44	-119.18	76.97	48.87	30.40	18.47	2.646				
3,900.00	3,897.47	3,898.84	3,894.15	13.51	13.58	4.77	-125.58	79.76	50.59	31.62	18.97	2.667				
4,000.00	3,997.33	3,998.82	3,993.89	13.87	13.94	6.01	-131.97	82.55	52.33	32.87	19.47	2.688				
4,100.00	4,097.19	4,098.80	4,093.62	14.23	14.31	7.17	-138.37	85.33	54.10	34.13	19.96	2.710				
4,200.00	4,197.06	4,198.78	4,193.36	14.59	14.67	8.26	-144.77	88.12	55.89	35.42	20.46	2.731				
4,300.00	4,296.92	4,298.75	4,293.09	14.95	15.04	9.28	-151.17	90.90	57.69	36.73	20.97	2.752				
4,400.00	4,396.78	4,398.73	4,392.83	15.31	15.41	10.23	-157.57	93.69	59.52	38.05	21.47	2.772				
4,500.00	4,496.65	4,498.71	4,492.56	15.67	15.78	11.13	-163.96	96.47	61.35	39.39	21.97	2.793				
4,600.00	4,596.51	4,598.69	4,592.30	16.03	16.14	11.98	-170.36	99.26	63.21	40.74	22.47	2.813				
4,700.00	4,696.37	4,698.67	4,692.03	16.39	16.51	12.78	-176.76	102.04	65.07	42.10	22.97	2.832				
4,800.00	4,796.23	4,798.65	4,791.77	16.75	16.88	13.53	-183.16	104.83	66.95	43.47	23.48	2.852				

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



Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well FMM Fed Com 103H
Project:	Lea County, NM (NAD83)	TVD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Reference Site:	FMM Fed Com	MD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	FMM Fed Com 103H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.15 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													FMM Fed Com - FMM Fed Com 303H - OH - Plan #1		Offset Site Error:	0.00 usft
Survey Program: 0-OWSG (Rev2) MWD													Offset Well Error:	0.00 usft		
Reference		Offset		Semi Major Axis			Distance							Warning		
Measured Depth	Vertical	Measured	Vertical	Reference	Offset	Highside	Offset Wellbore Centre		Between	Between	Minimum	Separation				
Depth (usft)	Depth (usft)	Depth (usft)	Depth (usft)	(usft)	(usft)	Toolface (°)	+N/-S (usft)	+E/-W (usft)	Centres (usft)	Ellipses (usft)	Separation (usft)	Factor				
4,900.00	4,896.10	4,898.63	4,891.50	17.12	17.25	14.25	-189.56	107.61	68.84	44.86	23.98	2.871				
5,000.00	4,995.96	4,998.60	4,991.24	17.48	17.62	14.92	-195.95	110.40	70.74	46.25	24.49	2.889				
5,100.00	5,095.82	5,098.58	5,090.97	17.84	17.99	15.56	-202.35	113.19	72.65	47.66	24.99	2.907				
5,200.00	5,195.69	5,198.56	5,190.71	18.21	18.36	16.17	-208.75	115.97	74.56	49.07	25.50	2.925				
5,300.00	5,295.55	5,298.54	5,290.44	18.57	18.73	16.74	-215.15	118.76	76.49	50.49	26.00	2.942				
5,400.00	5,395.41	5,398.52	5,390.18	18.93	19.10	17.29	-221.54	121.54	78.42	51.91	26.51	2.959				
5,500.00	5,495.27	5,498.50	5,489.91	19.30	19.47	17.81	-227.94	124.33	80.36	53.35	27.01	2.975				
5,600.00	5,595.14	5,598.48	5,589.65	19.66	19.84	18.31	-234.34	127.11	82.31	54.79	27.52	2.991				
5,700.00	5,695.00	5,698.45	5,689.38	20.02	20.22	18.78	-240.74	129.90	84.26	56.23	28.03	3.006				
5,800.00	5,794.86	5,798.43	5,789.12	20.39	20.59	19.24	-247.14	132.68	86.21	57.68	28.53	3.022				
5,900.00	5,894.73	5,898.41	5,888.85	20.75	20.96	19.67	-253.53	135.47	88.18	59.14	29.04	3.036				
6,000.00	5,994.59	5,998.39	5,988.59	21.12	21.33	20.08	-259.93	138.25	90.14	60.59	29.55	3.051				
6,100.00	6,094.45	6,098.37	6,088.32	21.48	21.70	20.48	-266.33	141.04	92.11	62.06	30.06	3.065				
6,200.00	6,194.31	6,198.35	6,188.05	21.85	22.08	20.86	-272.73	143.83	94.09	63.53	30.56	3.078				
6,300.00	6,294.18	6,298.33	6,287.79	22.21	22.45	21.22	-279.13	146.61	96.07	65.00	31.07	3.092				
6,400.00	6,394.04	6,398.41	6,387.63	22.58	22.82	21.57	-285.53	149.40	98.05	66.47	31.58	3.105				
6,500.00	6,493.90	6,501.00	6,490.06	22.94	23.20	22.08	-290.73	151.66	98.61	66.50	32.11	3.071				
6,600.00	6,593.77	6,603.53	6,592.55	23.31	23.57	22.94	-293.40	152.83	96.56	63.94	32.61	2.961				
6,700.00	6,693.63	6,704.82	6,693.83	23.67	23.91	24.16	-293.80	153.00	92.17	59.07	33.10	2.785				
6,800.00	6,793.49	6,804.68	6,793.69	24.04	24.24	25.57	-293.80	153.00	87.42	53.82	33.60	2.602				
6,900.00	6,893.35	6,904.54	6,893.55	24.40	24.57	27.13	-293.80	153.00	82.72	48.62	34.10	2.426				
7,000.00	6,993.22	7,004.40	6,993.42	24.77	24.90	28.88	-293.80	153.00	78.10	43.50	34.60	2.257				
7,106.97	7,100.04	7,111.23	7,100.24	25.16	25.25	31.00	-293.80	153.00	73.25	38.10	35.15	2.084				
7,200.00	7,192.99	7,204.18	7,193.19	25.50	25.56	32.55	-293.80	153.00	70.07	34.45	35.62	1.967				
7,307.02	7,300.00	7,311.19	7,300.20	25.87	25.92	179.17	-293.80	153.00	68.81	32.67	36.14	1.904				
7,400.00	7,392.98	7,404.17	7,393.18	26.18	26.23	179.17	-293.80	153.00	68.81	32.22	36.59	1.881				
7,500.00	7,492.98	7,504.17	7,493.18	26.52	26.57	179.17	-293.80	153.00	68.81	31.74	37.07	1.856				
7,600.00	7,592.98	7,604.17	7,593.18	26.85	26.90	179.17	-293.80	153.00	68.81	31.26	37.55	1.832				
7,700.00	7,692.98	7,704.17	7,693.18	27.19	27.24	179.17	-293.80	153.00	68.81	30.78	38.03	1.809				
7,800.00	7,792.98	7,804.17	7,793.18	27.53	27.58	179.17	-293.80	153.00	68.81	30.29	38.51	1.787				
7,828.06	7,821.04	7,832.23	7,821.24	27.62	27.67	179.17	-293.80	153.00	68.81	30.16	38.65	1.780 SF				
7,850.00	7,842.97	7,854.16	7,843.17	27.69	27.74	179.71	-293.80	153.00	69.23	30.47	38.76	1.786				
7,900.00	7,892.79	7,903.98	7,892.99	27.86	27.91	179.73	-293.80	153.00	73.32	34.32	39.00	1.880				
7,950.00	7,942.06	7,953.25	7,942.26	28.01	28.08	179.75	-293.80	153.00	81.73	42.50	39.23	2.083				
8,000.00	7,990.41	8,001.60	7,990.61	28.16	28.24	179.78	-293.80	153.00	94.41	54.95	39.47	2.392				
8,050.00	8,037.47	8,048.66	8,037.67	28.29	28.40	179.81	-293.80	153.00	111.26	71.57	39.69	2.803				
8,100.00	8,082.88	8,094.07	8,083.08	28.42	28.56	179.83	-293.80	153.00	132.14	92.24	39.90	3.312				
8,150.00	8,126.30	8,137.49	8,126.50	28.54	28.70	179.85	-293.80	153.00	156.90	116.80	40.10	3.913				
8,200.00	8,167.40	8,178.59	8,167.60	28.66	28.84	179.86	-293.80	153.00	185.35	145.07	40.28	4.602				
8,250.00	8,205.86	8,217.05	8,206.06	28.77	28.97	179.88	-293.80	153.00	217.27	176.83	40.45	5.372				
8,300.00	8,241.40	8,252.58	8,241.60	28.88	29.09	179.88	-293.80	153.00	252.43	211.83	40.60	6.218				
8,350.00	8,273.73	8,284.92	8,273.93	28.99	29.20	179.89	-293.80	153.00	290.55	249.82	40.73	7.133				
8,400.00	8,302.62	8,313.80	8,302.82	29.11	29.30	179.89	-293.80	153.00	331.34	290.49	40.85	8.112				
8,450.00	8,327.84	8,339.03	8,328.04	29.24	29.39	179.89	-293.80	153.00	374.49	333.55	40.95	9.146				
8,500.00	8,349.21	8,360.39	8,349.41	29.38	29.46	179.88	-293.80	153.00	419.68	378.65	41.03	10.230				
8,550.00	8,366.55	8,377.74	8,366.75	29.52	29.52	179.86	-293.80	153.00	466.56	425.47	41.09	11.355				
8,600.00	8,379.75	8,390.93	8,379.95	29.68	29.56	179.83	-293.80	153.00	514.77	473.63	41.14	12.514				
8,650.00	8,388.69	8,399.88	8,388.89	29.85	29.59	179.74	-293.80	153.00	563.95	522.78	41.17	13.699				
8,700.00	8,393.31	8,404.50	8,393.51	30.03	29.61	179.34	-293.80	153.00	613.72	572.53	41.18	14.903				
8,728.06	8,394.00	8,405.18	8,394.20	30.14	29.61	90.02	-293.80	153.00	641.76	600.58	41.19	15.582				
8,800.00	8,394.00	8,405.18	8,394.20	30.43	29.61	90.03	-293.80	153.00	713.70	672.52	41.19	17.328				
8,900.00	8,394.00	8,405.18	8,394.20	30.91	29.61	90.03	-293.80	153.00	813.70	772.51	41.19	19.754				

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



Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well FMM Fed Com 103H
Project:	Lea County, NM (NAD83)	TVD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Reference Site:	FMM Fed Com	MD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	FMM Fed Com 103H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.15 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													FMM Fed Com - FMM Fed Com 303H - OH - Plan #1		Offset Site Error: 0.00 usft	
Survey Program: 0-OWSG (Rev2) MWD													Offset Well Error: 0.00 usft			
Reference		Offset		Semi Major Axis			Distance						Warning			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre		Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor				
							+N/-S (usft)	+E/-W (usft)								
9,000.00	8,394.00	8,405.18	8,394.20	31.47	29.61	90.03	-293.80	153.00	913.70	872.51	41.20	22.179				
9,100.00	8,394.00	8,405.18	8,394.20	32.10	29.61	90.04	-293.80	153.00	1,013.70	972.50	41.20	24.603				
9,200.00	8,394.00	8,405.18	8,394.20	32.81	29.61	90.04	-293.80	153.00	1,113.70	1,072.49	41.21	27.025				
9,300.00	8,394.00	8,405.18	8,394.20	33.58	29.61	90.05	-293.80	153.00	1,213.70	1,172.49	41.22	29.447				
9,400.00	8,394.00	8,405.18	8,394.20	34.41	29.61	90.05	-293.80	153.00	1,313.70	1,272.48	41.22	31.867				
9,500.00	8,394.00	8,405.18	8,394.20	35.30	29.61	90.05	-293.80	153.00	1,413.70	1,372.47	41.23	34.286				
9,600.00	8,394.00	11,184.77	9,906.00	36.24	40.72	179.99	1,219.83	138.61	1,511.80	1,483.94	27.86	54.257				
9,700.00	8,394.00	11,284.77	9,906.00	37.24	41.62	179.99	1,319.83	137.66	1,511.80	1,483.31	28.49	53.073				
9,800.00	8,394.00	11,384.77	9,906.00	38.28	42.56	179.99	1,419.83	136.71	1,511.80	1,482.66	29.14	51.886				
9,900.00	8,394.00	11,484.77	9,906.00	39.36	43.55	179.99	1,519.82	135.76	1,511.80	1,481.98	29.82	50.706				
10,000.00	8,394.00	11,584.77	9,906.00	40.48	44.57	179.99	1,619.82	134.81	1,511.80	1,481.28	30.52	49.537				
10,100.00	8,394.00	11,684.77	9,906.00	41.63	45.63	179.99	1,719.81	133.85	1,511.80	1,480.55	31.25	48.384				
10,200.00	8,394.00	11,784.77	9,906.00	42.82	46.73	179.99	1,819.81	132.90	1,511.80	1,479.80	32.00	47.250				
10,300.00	8,394.00	11,884.77	9,906.00	44.03	47.86	179.99	1,919.80	131.95	1,511.80	1,479.03	32.77	46.140				
10,400.00	8,394.00	11,984.77	9,906.00	45.28	49.01	179.99	2,019.80	131.00	1,511.80	1,478.25	33.55	45.056				
10,500.00	8,394.00	12,084.77	9,906.00	46.55	50.20	179.99	2,119.79	130.05	1,511.80	1,477.44	34.36	43.998				
10,600.00	8,394.00	12,184.77	9,906.00	47.84	51.41	179.99	2,219.79	129.10	1,511.80	1,476.62	35.18	42.969				
10,700.00	8,394.00	12,284.77	9,906.00	49.16	52.65	179.99	2,319.79	128.15	1,511.80	1,475.78	36.02	41.969				
10,800.00	8,394.00	12,384.77	9,906.00	50.49	53.90	179.99	2,419.78	127.20	1,511.80	1,474.93	36.88	40.998				
10,900.00	8,394.00	12,484.77	9,906.00	51.84	55.18	179.99	2,519.78	126.25	1,511.80	1,474.06	37.74	40.057				
11,000.00	8,394.00	12,584.77	9,906.00	53.21	56.48	179.99	2,619.77	125.30	1,511.80	1,473.18	38.62	39.146				
11,100.00	8,394.00	12,684.77	9,906.00	54.60	57.79	179.99	2,719.77	124.35	1,511.80	1,472.29	39.51	38.264				
11,200.00	8,394.00	12,784.77	9,906.00	56.00	59.13	179.99	2,819.76	123.40	1,511.80	1,471.39	40.41	37.410				
11,300.00	8,394.00	12,884.77	9,906.00	57.41	60.47	179.99	2,919.76	122.45	1,511.80	1,470.48	41.32	36.585				
11,400.00	8,394.00	12,984.77	9,906.00	58.84	61.84	179.99	3,019.75	121.49	1,511.80	1,469.56	42.24	35.788				
11,500.00	8,394.00	13,084.77	9,906.00	60.28	63.21	179.99	3,119.75	120.54	1,511.80	1,468.63	43.17	35.017				
11,600.00	8,394.00	13,184.77	9,906.00	61.72	64.60	179.99	3,219.74	119.59	1,511.80	1,467.69	44.11	34.272				
11,700.00	8,394.00	13,284.77	9,906.00	63.18	66.00	179.99	3,319.74	118.64	1,511.80	1,466.74	45.06	33.553				
11,800.00	8,394.00	13,384.77	9,906.00	64.65	67.42	179.99	3,419.74	117.69	1,511.80	1,465.79	46.01	32.858				
11,900.00	8,394.00	13,484.77	9,906.00	66.13	68.84	179.99	3,519.73	116.74	1,511.80	1,464.83	46.97	32.186				
12,000.00	8,394.00	13,584.77	9,906.00	67.61	70.28	179.99	3,619.73	115.79	1,511.80	1,463.86	47.94	31.537				
12,100.00	8,394.00	13,684.77	9,906.00	69.10	71.72	179.99	3,719.72	114.84	1,511.80	1,462.89	48.91	30.910				
12,200.00	8,394.00	13,784.77	9,906.00	70.60	73.17	179.99	3,819.72	113.89	1,511.80	1,461.91	49.89	30.304				
12,300.00	8,394.00	13,884.77	9,906.00	72.11	74.63	179.99	3,919.71	112.94	1,511.80	1,460.93	50.87	29.718				
12,400.00	8,394.00	13,984.77	9,906.00	73.62	76.10	179.99	4,019.71	111.99	1,511.80	1,459.94	51.86	29.151				
12,500.00	8,394.00	14,084.77	9,906.00	75.14	77.58	179.99	4,119.70	111.04	1,511.80	1,458.95	52.85	28.603				
12,600.00	8,394.00	14,184.77	9,906.00	76.66	79.06	179.99	4,219.70	110.09	1,511.80	1,457.95	53.85	28.073				
12,700.00	8,394.00	14,284.77	9,906.00	78.19	80.55	179.99	4,319.69	109.13	1,511.80	1,456.94	54.86	27.560				
12,800.00	8,394.00	14,384.77	9,906.00	79.72	82.04	179.99	4,419.69	108.18	1,511.80	1,455.94	55.86	27.063				
12,900.00	8,394.00	14,484.77	9,906.00	81.26	83.54	179.99	4,519.69	107.23	1,511.80	1,454.93	56.87	26.582				
13,000.00	8,394.00	14,584.77	9,906.00	82.80	85.05	179.99	4,619.68	106.28	1,511.80	1,453.91	57.89	26.117				
13,100.00	8,394.00	14,684.77	9,906.00	84.35	86.56	179.99	4,719.68	105.33	1,511.80	1,452.90	58.90	25.666				
13,200.00	8,394.00	14,784.77	9,906.00	85.90	88.08	179.99	4,819.67	104.38	1,511.80	1,451.88	59.92	25.228				
13,300.00	8,394.00	14,884.77	9,906.00	87.46	89.60	179.99	4,919.67	103.43	1,511.80	1,450.85	60.95	24.805				
13,400.00	8,394.00	14,984.77	9,906.00	89.02	91.13	179.99	5,019.66	102.48	1,511.80	1,449.82	61.98	24.394				
13,500.00	8,394.00	15,084.77	9,906.00	90.58	92.66	179.99	5,119.66	101.53	1,511.80	1,448.80	63.00	23.995				
13,600.00	8,394.00	15,184.77	9,906.00	92.14	94.20	179.99	5,219.65	100.58	1,511.80	1,447.76	64.04	23.608				
13,700.00	8,394.00	15,284.77	9,906.00	93.71	95.73	179.99	5,319.65	99.63	1,511.80	1,446.73	65.07	23.233				
13,800.00	8,394.00	15,384.77	9,906.00	95.28	97.28	179.99	5,419.65	98.68	1,511.80	1,445.69	66.11	22.868				
13,900.00	8,394.00	15,484.77	9,906.00	96.85	98.82	179.99	5,519.64	97.73	1,511.80	1,444.65	67.15	22.514				
14,000.00	8,394.00	15,584.77	9,906.00	98.43	100.37	179.99	5,619.64	96.77	1,511.80	1,443.61	68.19	22.170				
14,100.00	8,394.00	15,684.77	9,906.00	100.01	101.93	179.99	5,719.63	95.82	1,511.80	1,442.57	69.23	21.836				

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



Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well FMM Fed Com 103H
Project:	Lea County, NM (NAD83)	TVD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Reference Site:	FMM Fed Com	MD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	FMM Fed Com 103H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.15 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													FMM Fed Com - FMM Fed Com 303H - OH - Plan #1		Offset Site Error:	0.00 usft
Survey Program: 0-OWSG (Rev2) MWD													Offset Well Error:	0.00 usft		
Reference		Offset		Semi Major Axis			Distance							Warning		
Measured Depth	Vertical	Measured	Vertical	Reference	Offset	Highside	Offset Wellbore Centre		Between	Between	Minimum	Separation				
Depth (usft)	Depth (usft)	Depth (usft)	Depth (usft)	(usft)	(usft)	Toolface (°)	+N/-S (usft)	+E/-W (usft)	Centres (usft)	Ellipses (usft)	Separation (usft)	Factor				
14,200.00	8,394.00	15,784.77	9,906.00	101.59	103.48	179.99	5,819.63	94.87	1,511.80	1,441.52	70.28	21.511				
14,300.00	8,394.00	15,884.77	9,906.00	103.17	105.04	179.99	5,919.62	93.92	1,511.80	1,440.47	71.33	21.195				
14,400.00	8,394.00	15,984.77	9,906.00	104.75	106.60	179.99	6,019.62	92.97	1,511.80	1,439.42	72.38	20.887				
14,500.00	8,394.00	16,084.77	9,906.00	106.34	108.17	179.99	6,119.61	92.02	1,511.80	1,438.37	73.43	20.588				
14,600.00	8,394.00	16,184.77	9,906.00	107.93	109.73	180.00	6,219.61	91.07	1,511.80	1,437.32	74.48	20.297				
14,700.00	8,394.00	16,284.77	9,906.00	109.52	111.30	180.00	6,319.60	90.12	1,511.80	1,436.26	75.54	20.014				
14,800.00	8,394.00	16,384.77	9,906.00	111.11	112.87	180.00	6,419.60	89.17	1,511.80	1,435.21	76.59	19.738				
14,900.00	8,394.00	16,484.77	9,906.00	112.71	114.45	180.00	6,519.60	88.22	1,511.80	1,434.15	77.65	19.469				
15,000.00	8,394.00	16,584.77	9,906.00	114.30	116.02	180.00	6,619.59	87.27	1,511.80	1,433.09	78.71	19.207				
15,100.00	8,394.00	16,684.77	9,906.00	115.90	117.60	180.00	6,719.59	86.32	1,511.80	1,432.03	79.77	18.951				
15,200.00	8,394.00	16,784.77	9,906.00	117.50	119.18	180.00	6,819.58	85.37	1,511.80	1,430.97	80.83	18.702				
15,300.00	8,394.00	16,884.77	9,906.00	119.10	120.77	180.00	6,919.58	84.41	1,511.80	1,429.90	81.90	18.460				
15,400.00	8,394.00	16,984.77	9,906.00	120.70	122.35	180.00	7,019.57	83.46	1,511.80	1,428.84	82.96	18.223				
15,500.00	8,394.00	17,084.77	9,906.00	122.31	123.94	180.00	7,119.57	82.51	1,511.80	1,427.77	84.03	17.992				
15,600.00	8,394.00	17,184.77	9,906.00	123.91	125.52	180.00	7,219.56	81.56	1,511.80	1,426.71	85.09	17.766				
15,700.00	8,394.00	17,284.77	9,906.00	125.52	127.11	180.00	7,319.56	80.61	1,511.80	1,425.64	86.16	17.546				
15,800.00	8,394.00	17,384.77	9,906.00	127.12	128.70	180.00	7,419.55	79.66	1,511.80	1,424.57	87.23	17.331				
15,900.00	8,394.00	17,484.77	9,906.00	128.73	130.30	180.00	7,519.55	78.71	1,511.80	1,423.50	88.30	17.121				
16,000.00	8,394.00	17,584.77	9,906.00	130.34	131.89	180.00	7,619.55	77.76	1,511.80	1,422.43	89.37	16.916				
16,100.00	8,394.00	17,684.77	9,906.00	131.95	133.48	180.00	7,719.54	76.81	1,511.80	1,421.36	90.44	16.715				
16,200.00	8,394.00	17,784.77	9,906.00	133.56	135.08	180.00	7,819.54	75.86	1,511.80	1,420.28	91.52	16.519				
16,300.00	8,394.00	17,884.77	9,906.00	135.18	136.68	180.00	7,919.53	74.91	1,511.80	1,419.21	92.59	16.328				
16,400.00	8,394.00	17,984.77	9,906.00	136.79	138.28	180.00	8,019.53	73.96	1,511.80	1,418.13	93.67	16.140				
16,500.00	8,394.00	18,084.77	9,906.00	138.40	139.88	180.00	8,119.52	73.01	1,511.80	1,417.06	94.74	15.957				
16,600.00	8,394.00	18,184.77	9,906.00	140.02	141.48	180.00	8,219.52	72.06	1,511.80	1,415.98	95.82	15.778				
16,700.00	8,394.00	18,284.77	9,906.00	141.64	143.08	180.00	8,319.51	71.10	1,511.80	1,414.91	96.89	15.603				
16,800.00	8,394.00	18,384.77	9,906.00	143.25	144.69	180.00	8,419.51	70.15	1,511.80	1,413.83	97.97	15.431				
16,900.00	8,394.00	18,484.77	9,906.00	144.87	146.29	180.00	8,519.51	69.20	1,511.80	1,412.75	99.05	15.263				
17,000.00	8,394.00	18,584.77	9,906.00	146.49	147.90	180.00	8,619.50	68.25	1,511.80	1,411.67	100.13	15.099				
17,100.00	8,394.00	18,684.77	9,906.00	148.11	149.51	180.00	8,719.50	67.30	1,511.80	1,410.59	101.21	14.938				
17,200.00	8,394.00	18,784.77	9,906.00	149.73	151.11	180.00	8,819.49	66.35	1,511.80	1,409.51	102.29	14.780				
17,300.00	8,394.00	18,884.77	9,906.00	151.35	152.72	180.00	8,919.49	65.40	1,511.80	1,408.43	103.37	14.625				
17,400.00	8,394.00	18,984.77	9,906.00	152.97	154.33	180.00	9,019.48	64.45	1,511.80	1,407.35	104.45	14.474				
17,500.00	8,394.00	19,084.77	9,906.00	154.59	155.94	180.00	9,119.48	63.50	1,511.80	1,406.27	105.53	14.325				
17,600.00	8,394.00	19,184.77	9,906.00	156.21	157.56	180.00	9,219.47	62.55	1,511.80	1,405.18	106.62	14.180				
17,700.00	8,394.00	19,284.77	9,906.00	157.84	159.17	180.00	9,319.47	61.60	1,511.80	1,404.10	107.70	14.037				
17,800.00	8,394.00	19,384.77	9,906.00	159.46	160.78	180.00	9,419.46	60.65	1,511.80	1,403.02	108.78	13.897				
17,900.00	8,394.00	19,484.77	9,906.00	161.08	162.40	180.00	9,519.46	59.70	1,511.80	1,401.93	109.87	13.760				
18,000.00	8,394.00	19,584.77	9,906.00	162.71	164.01	180.00	9,619.46	58.74	1,511.80	1,400.85	110.95	13.626				
18,100.00	8,394.00	19,684.77	9,906.00	164.33	165.63	180.00	9,719.45	57.79	1,511.80	1,399.76	112.04	13.494				
18,200.00	8,394.00	19,784.77	9,906.00	165.96	167.24	180.00	9,819.45	56.84	1,511.80	1,398.68	113.12	13.364				
18,300.00	8,394.00	19,884.77	9,906.00	167.59	168.86	180.00	9,919.44	55.89	1,511.80	1,397.59	114.21	13.237				
18,400.00	8,394.00	19,984.77	9,906.00	169.21	170.48	180.00	10,019.44	54.94	1,511.80	1,396.50	115.30	13.112				
18,449.58	8,394.00	20,034.35	9,906.00	170.02	171.28	180.00	10,069.01	54.47	1,511.80	1,395.97	115.83	13.051				
18,450.14	8,394.00	20,034.35	9,906.00	170.03	171.28	180.00	10,069.01	54.47	1,511.80	1,395.96	115.84	13.051				

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



Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well FMM Fed Com 103H
Project:	Lea County, NM (NAD83)	TVD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Reference Site:	FMM Fed Com	MD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	FMM Fed Com 103H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.15 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design FMM Fed Com - FMM Fed Com 304H - OH - Plan #1													Offset Site Error:	0.00 usft
Survey Program: 0-OWSG (Rev2) MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance								Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
0.00	0.00	0.20	0.20	0.00	0.00	89.54	0.60	74.99	74.99					
100.00	100.00	100.20	100.20	0.13	0.13	89.54	0.60	74.99	74.99	74.81	0.18	421.442		
200.00	200.00	200.20	200.20	0.48	0.48	89.54	0.60	74.99	74.99	74.31	0.68	109.494		
300.00	300.00	300.20	300.20	0.84	0.84	89.54	0.60	74.99	74.99	73.80	1.19	62.921		
400.00	400.00	400.20	400.20	1.20	1.20	89.54	0.60	74.99	74.99	73.29	1.70	44.144		
500.00	500.00	500.20	500.20	1.56	1.56	89.54	0.60	74.99	74.99	72.79	2.21	33.998		
600.00	600.00	600.20	600.20	1.92	1.92	89.54	0.60	74.99	74.99	72.28	2.71	27.645		
700.00	700.00	700.20	700.20	2.28	2.28	89.54	0.60	74.99	74.99	71.77	3.22	23.292		
800.00	800.00	800.20	800.20	2.63	2.64	89.54	0.60	74.99	74.99	71.27	3.73	20.123		
900.00	900.00	900.20	900.20	2.99	2.99	89.54	0.60	74.99	74.99	70.76	4.23	17.714		
1,000.00	1,000.00	1,000.20	1,000.20	3.35	3.35	89.54	0.60	74.99	74.99	70.25	4.74	15.819		
1,100.00	1,100.00	1,100.20	1,100.20	3.71	3.71	89.54	0.60	74.99	74.99	69.74	5.25	14.291		
1,200.00	1,200.00	1,200.20	1,200.20	4.07	4.07	89.54	0.60	74.99	74.99	69.24	5.75	13.032		
1,300.00	1,300.00	1,300.20	1,300.20	4.43	4.43	89.54	0.60	74.99	74.99	68.73	6.26	11.977		
1,316.60	1,316.60	1,316.80	1,316.80	4.49	4.49	89.54	0.60	74.99	74.99	68.65	6.35	11.818 CC		
1,400.00	1,400.00	1,400.00	1,400.00	4.79	4.79	89.54	0.60	74.99	74.99	68.22	6.77	11.081 ES		
1,500.00	1,500.00	1,497.63	1,497.61	5.14	5.13	89.69	0.41	76.64	76.69	69.43	7.26	10.565 SF		
1,600.00	1,600.00	1,594.83	1,594.68	5.50	5.46	90.11	-0.16	81.57	81.76	74.02	7.74	10.569		
1,700.00	1,700.00	1,691.59	1,691.08	5.86	5.80	90.71	-1.10	89.72	90.19	81.98	8.20	10.994		
1,800.00	1,800.00	1,787.68	1,786.50	6.22	6.14	91.37	-2.41	101.01	101.96	93.30	8.66	11.771		
1,900.00	1,900.00	1,882.91	1,880.62	6.58	6.49	92.02	-4.07	115.33	117.05	107.94	9.11	12.849		
1,920.00	1,920.00	1,900.00	1,897.47	6.65	6.55	92.13	-4.40	118.22	120.47	111.30	9.17	13.134		
2,000.00	1,999.99	1,977.17	1,973.27	6.92	6.84	-53.44	-6.06	132.55	134.90	125.37	9.54	14.148		
2,100.00	2,099.93	2,070.53	2,064.42	7.25	7.22	-53.62	-8.38	152.59	154.48	144.54	9.94	15.543		
2,120.05	2,119.96	2,089.13	2,082.50	7.32	7.29	-53.72	-8.88	156.93	158.60	148.58	10.02	15.832		
2,200.00	2,199.80	2,162.82	2,153.84	7.58	7.61	-54.26	-11.00	175.28	176.19	165.86	10.33	17.050		
2,300.00	2,299.66	2,253.73	2,241.15	7.92	8.01	-54.72	-13.91	200.42	200.99	190.27	10.72	18.746		
2,400.00	2,399.52	2,348.51	2,331.57	8.25	8.46	-55.04	-17.18	228.66	227.96	216.78	11.18	20.390		
2,500.00	2,499.39	2,444.78	2,423.38	8.59	8.93	-55.30	-20.51	257.42	255.01	243.34	11.67	21.860		
2,600.00	2,599.25	2,541.04	2,515.19	8.94	9.42	-55.50	-23.83	286.17	282.06	269.91	12.16	23.205		
2,700.00	2,699.11	2,637.31	2,607.00	9.28	9.92	-55.67	-27.16	314.93	309.12	296.47	12.65	24.438		
2,800.00	2,798.98	2,733.58	2,698.81	9.63	10.43	-55.82	-30.49	343.69	336.18	323.03	13.15	25.571		
2,900.00	2,898.84	2,829.84	2,790.62	9.97	10.94	-55.94	-33.82	372.44	363.24	349.59	13.65	26.615		
3,000.00	2,998.70	2,926.11	2,882.43	10.32	11.47	-56.04	-37.14	401.20	390.30	376.15	14.15	27.580		
3,100.00	3,098.57	3,022.37	2,974.24	10.67	12.00	-56.13	-40.47	429.96	417.37	402.71	14.66	28.474		
3,200.00	3,198.43	3,118.64	3,066.05	11.02	12.54	-56.21	-43.80	458.71	444.43	429.27	15.17	29.303		
3,300.00	3,298.29	3,214.91	3,157.86	11.38	13.09	-56.28	-47.12	487.47	471.50	455.82	15.68	30.074		
3,400.00	3,398.15	3,311.17	3,249.67	11.73	13.64	-56.35	-50.45	516.22	498.56	482.37	16.19	30.792		
3,500.00	3,498.02	3,407.44	3,341.48	12.09	14.19	-56.40	-53.78	544.98	525.63	508.93	16.71	31.463		
3,600.00	3,597.88	3,503.70	3,433.29	12.44	14.75	-56.45	-57.11	573.74	552.70	535.48	17.22	32.091		
3,700.00	3,697.74	3,599.97	3,525.10	12.80	15.31	-56.50	-60.43	602.49	579.77	562.03	17.74	32.680		
3,800.00	3,797.61	3,696.24	3,616.91	13.16	15.87	-56.54	-63.76	631.25	606.83	588.57	18.26	33.233		
3,900.00	3,897.47	3,792.50	3,708.72	13.51	16.43	-56.58	-67.09	660.01	633.90	615.12	18.78	33.753		
4,000.00	3,997.33	3,888.77	3,800.53	13.87	17.00	-56.62	-70.42	688.76	660.97	641.67	19.30	34.243		
4,100.00	4,097.19	3,985.03	3,892.34	14.23	17.57	-56.65	-73.74	717.52	688.04	668.21	19.83	34.705		
4,200.00	4,197.06	4,081.30	3,984.16	14.59	18.14	-56.68	-77.07	746.28	715.11	694.76	20.35	35.142		
4,300.00	4,296.92	4,177.57	4,075.97	14.95	18.72	-56.71	-80.40	775.03	742.18	721.30	20.87	35.555		
4,400.00	4,396.78	4,273.83	4,167.78	15.31	19.29	-56.73	-83.72	803.79	769.25	747.85	21.40	35.946		
4,500.00	4,496.65	4,370.10	4,259.59	15.67	19.87	-56.76	-87.05	832.54	796.31	774.39	21.93	36.318		
4,600.00	4,596.51	4,466.36	4,351.40	16.03	20.44	-56.78	-90.38	861.30	823.38	800.93	22.45	36.670		
4,700.00	4,696.37	4,562.63	4,443.21	16.39	21.02	-56.80	-93.71	890.06	850.45	827.47	22.98	37.006		
4,800.00	4,796.23	4,658.90	4,535.02	16.75	21.60	-56.82	-97.03	918.81	877.52	854.01	23.51	37.325		

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Total Directional Services

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Reference Site:	FMM Fed Com	MD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	FMM Fed Com 103H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.15 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 0-OWSG (Rev2) MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
4,900.00	4,896.10	4,755.16	4,626.83	17.12	22.18	-56.84	-100.36	947.57	904.59	880.55	24.04	37.629		
5,000.00	4,995.96	4,851.43	4,718.64	17.48	22.77	-56.86	-103.69	976.33	931.66	907.09	24.57	37.919		
5,100.00	5,095.82	4,947.70	4,810.45	17.84	23.35	-56.88	-107.01	1,005.08	958.73	933.63	25.10	38.196		
5,200.00	5,195.69	5,043.96	4,902.26	18.21	23.93	-56.89	-110.34	1,033.84	985.80	960.17	25.63	38.461		
5,300.00	5,295.55	5,140.23	4,994.07	18.57	24.52	-56.91	-113.67	1,062.60	1,012.87	986.71	26.16	38.714		
5,400.00	5,395.41	5,236.49	5,085.88	18.93	25.10	-56.92	-117.00	1,091.35	1,039.94	1,013.25	26.70	38.956		
5,500.00	5,495.27	5,332.76	5,177.69	19.30	25.69	-56.93	-120.32	1,120.11	1,067.01	1,039.78	27.23	39.189		
5,600.00	5,595.14	5,429.03	5,269.50	19.66	26.27	-56.95	-123.65	1,148.86	1,094.08	1,066.32	27.76	39.411		
5,700.00	5,695.00	5,525.29	5,361.31	20.02	26.86	-56.96	-126.98	1,177.62	1,121.15	1,092.86	28.29	39.625		
5,800.00	5,794.86	5,621.56	5,453.12	20.39	27.45	-56.97	-130.30	1,206.38	1,148.22	1,119.39	28.83	39.831		
5,900.00	5,894.73	5,717.82	5,544.93	20.75	28.03	-56.98	-133.63	1,235.13	1,175.29	1,145.93	29.36	40.028		
6,000.00	5,994.59	5,814.09	5,636.74	21.12	28.62	-56.99	-136.96	1,263.89	1,202.36	1,172.47	29.90	40.218		
6,100.00	6,094.45	5,910.36	5,728.55	21.48	29.21	-57.00	-140.29	1,292.65	1,229.43	1,199.00	30.43	40.401		
6,200.00	6,194.31	6,006.62	5,820.36	21.85	29.80	-57.01	-143.61	1,321.40	1,256.50	1,225.54	30.97	40.577		
6,300.00	6,294.18	6,102.89	5,912.17	22.21	30.39	-57.02	-146.94	1,350.16	1,283.57	1,252.07	31.50	40.746		
6,400.00	6,394.04	6,199.15	6,003.99	22.58	30.98	-57.03	-150.27	1,378.92	1,310.64	1,278.61	32.04	40.910		
6,500.00	6,493.90	6,295.42	6,095.80	22.94	31.57	-57.04	-153.59	1,407.67	1,337.71	1,305.14	32.57	41.067		
6,600.00	6,593.77	6,391.69	6,187.61	23.31	32.16	-57.05	-156.92	1,436.43	1,364.79	1,331.68	33.11	41.220		
6,700.00	6,693.63	6,487.95	6,279.42	23.67	32.75	-57.05	-160.25	1,465.18	1,391.86	1,358.21	33.65	41.367		
6,800.00	6,793.49	6,584.22	6,371.23	24.04	33.34	-57.06	-163.58	1,493.94	1,418.93	1,384.74	34.18	41.509		
6,900.00	6,893.35	6,701.96	6,483.62	24.40	34.06	-57.07	-167.61	1,528.81	1,445.84	1,410.98	34.85	41.482		
7,000.00	6,993.22	6,898.33	6,673.54	24.77	35.14	-57.14	-173.33	1,578.22	1,468.19	1,432.28	35.91	40.881		
7,106.97	7,100.04	7,114.14	6,885.65	25.16	36.13	-57.29	-177.87	1,617.48	1,484.63	1,447.75	36.88	40.252		
7,200.00	7,192.99	7,304.91	7,075.16	25.50	36.85	-57.53	-180.35	1,638.90	1,493.04	1,455.47	37.57	39.744		
7,307.02	7,300.00	7,526.13	7,296.13	25.87	37.49	88.33	-181.40	1,647.98	1,496.62	1,458.49	38.13	39.245		
7,400.00	7,392.98	7,623.17	7,393.18	26.18	37.72	88.33	-181.40	1,647.99	1,496.63	1,458.07	38.55	38.819		
7,500.00	7,492.98	7,723.17	7,493.18	26.52	37.97	88.33	-181.40	1,647.99	1,496.63	1,457.62	39.01	38.367		
7,600.00	7,592.98	7,823.17	7,593.18	26.85	38.21	88.33	-181.40	1,647.99	1,496.63	1,457.16	39.46	37.925		
7,700.00	7,692.98	7,923.17	7,693.18	27.19	38.46	88.33	-181.40	1,647.99	1,496.63	1,456.71	39.92	37.491		
7,800.00	7,792.98	8,023.17	7,793.18	27.53	38.71	88.33	-181.40	1,647.99	1,496.63	1,456.25	40.38	37.066		
7,828.06	7,821.04	8,051.23	7,821.24	27.62	38.78	88.33	-181.40	1,647.99	1,496.63	1,456.12	40.51	36.949		
7,850.00	7,842.97	8,073.17	7,843.17	27.69	38.83	88.89	-181.40	1,647.99	1,496.62	1,456.01	40.61	36.858		
7,900.00	7,892.79	8,122.98	7,892.99	27.86	38.96	89.05	-181.40	1,647.99	1,496.54	1,455.72	40.82	36.660		
7,950.00	7,942.06	8,172.25	7,942.26	28.01	39.08	89.38	-181.40	1,647.99	1,496.43	1,455.40	41.03	36.475		
8,000.00	7,990.41	8,220.60	7,990.61	28.16	39.21	89.86	-181.40	1,647.99	1,496.34	1,455.12	41.22	36.305		
8,012.50	8,002.31	8,232.50	8,002.51	28.19	39.24	90.00	-181.40	1,647.99	1,496.34	1,455.07	41.26	36.265		
8,050.00	8,037.47	8,267.66	8,037.67	28.29	39.33	90.46	-181.40	1,647.99	1,496.39	1,455.00	41.39	36.150		
8,100.00	8,082.88	8,313.08	8,083.08	28.42	39.44	91.15	-181.40	1,647.99	1,496.72	1,455.16	41.56	36.012		
8,150.00	8,126.30	8,356.50	8,126.50	28.54	39.55	91.90	-181.40	1,647.99	1,497.49	1,455.77	41.72	35.894		
8,200.00	8,167.40	8,397.60	8,167.60	28.66	39.66	92.66	-181.40	1,647.99	1,498.87	1,457.00	41.87	35.797		
8,250.00	8,205.86	8,436.06	8,206.06	28.77	39.76	93.37	-181.40	1,647.99	1,501.06	1,459.05	42.02	35.724		
8,300.00	8,241.40	8,471.59	8,241.60	28.88	39.85	94.01	-181.40	1,647.99	1,504.26	1,462.09	42.17	35.675		
8,350.00	8,273.73	8,503.92	8,273.93	28.99	39.93	94.50	-181.40	1,647.99	1,508.64	1,466.33	42.31	35.653		
8,400.00	8,302.62	8,532.81	8,302.82	29.11	40.00	94.82	-181.40	1,647.99	1,514.38	1,471.92	42.47	35.659		
8,450.00	8,327.84	8,558.03	8,328.04	29.24	40.07	94.92	-181.40	1,647.99	1,521.62	1,479.00	42.63	35.694		
8,500.00	8,349.21	8,579.40	8,349.41	29.38	40.12	94.76	-181.40	1,647.99	1,530.47	1,487.68	42.80	35.760		
8,550.00	8,366.55	8,596.75	8,366.75	29.52	40.17	94.30	-181.40	1,647.99	1,541.00	1,498.03	42.97	35.858		
8,600.00	8,379.75	8,609.94	8,379.95	29.68	40.20	93.53	-181.40	1,647.99	1,553.23	1,510.07	43.16	35.989		
8,650.00	8,388.69	8,618.88	8,388.89	29.85	40.23	92.42	-181.40	1,647.99	1,567.13	1,523.79	43.35	36.151		
8,700.00	8,393.31	8,623.50	8,393.51	30.03	40.24	90.97	-181.40	1,647.99	1,582.64	1,539.09	43.54	36.346		
8,728.06	8,394.00	8,624.19	8,394.20	30.14	40.24	90.00	-181.40	1,647.99	1,592.00	1,548.34	43.65	36.468		
8,800.00	8,394.00	8,624.19	8,394.20	30.43	40.24	90.00	-181.40	1,647.99	1,617.97	1,574.01	43.96	36.809		

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Total Directional Services

Anticollision Report



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Project:	Lea County, NM (NAD83)	TVD Reference:	3333.3' GE + 30' KB @ 3363.30usft
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Reference Well:	FMM Fed Com 103H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.15 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 0-OWSG (Rev2) MWD													Offset Well Error:	0.00 usft
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Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
8,900.00	8,394.00	8,624.19	8,394.20	30.91	40.24	90.00	-181.40	1,647.99	1,658.59	1,614.17	44.42	37.335		
9,000.00	8,394.00	8,624.19	8,394.20	31.47	40.24	90.00	-181.40	1,647.99	1,704.12	1,659.19	44.93	37.926		
9,100.00	8,394.00	8,624.19	8,394.20	32.10	40.24	90.00	-181.40	1,647.99	1,754.17	1,708.71	45.46	38.585		
9,200.00	8,394.00	8,624.19	8,394.20	32.81	40.24	90.00	-181.40	1,647.99	1,808.37	1,762.37	46.00	39.313		
9,300.00	8,394.00	8,624.19	8,394.20	33.58	40.24	90.00	-181.40	1,647.99	1,866.36	1,819.83	46.53	40.108		
9,400.00	8,394.00	8,624.19	8,394.20	34.41	40.24	90.00	-181.40	1,647.99	1,927.80	1,880.74	47.05	40.970		
9,500.00	8,394.00	8,624.19	8,394.20	35.30	40.24	90.00	-181.40	1,647.99	1,992.36	1,944.80	47.56	41.894		
9,600.00	8,394.00	8,624.19	8,394.20	36.24	40.24	90.00	-181.40	1,647.99	2,059.75	2,011.72	48.04	42.878		
9,700.00	8,394.00	11,316.48	9,817.00	37.24	47.19	133.56	1,333.94	1,633.70	2,064.84	2,023.06	41.78	49.417		
9,800.00	8,394.00	11,416.48	9,817.00	38.28	47.89	133.56	1,433.93	1,632.76	2,064.85	2,022.01	42.84	48.198		
9,900.00	8,394.00	11,516.48	9,817.00	39.36	48.65	133.56	1,533.93	1,631.81	2,064.85	2,020.90	43.95	46.984		
10,000.00	8,394.00	11,616.48	9,817.00	40.48	49.46	133.56	1,633.93	1,630.87	2,064.85	2,019.75	45.10	45.781		
10,100.00	8,394.00	11,716.48	9,817.00	41.63	50.33	133.56	1,733.92	1,629.93	2,064.86	2,018.56	46.30	44.596		
10,200.00	8,394.00	11,816.48	9,817.00	42.82	51.24	133.56	1,833.92	1,628.99	2,064.86	2,017.32	47.54	43.432		
10,300.00	8,394.00	11,916.48	9,817.00	44.03	52.19	133.56	1,933.91	1,628.04	2,064.86	2,016.04	48.82	42.295		
10,400.00	8,394.00	12,016.48	9,817.00	45.28	53.19	133.56	2,033.91	1,627.10	2,064.87	2,014.73	50.13	41.186		
10,500.00	8,394.00	12,116.48	9,817.00	46.55	54.22	133.56	2,133.90	1,626.16	2,064.87	2,013.39	51.48	40.110		
10,600.00	8,394.00	12,216.48	9,817.00	47.84	55.29	133.55	2,233.90	1,625.21	2,064.87	2,012.02	52.86	39.065		
10,700.00	8,394.00	12,316.48	9,817.00	49.16	56.39	133.55	2,333.89	1,624.27	2,064.88	2,010.62	54.26	38.055		
10,800.00	8,394.00	12,416.48	9,817.00	50.49	57.52	133.55	2,433.89	1,623.33	2,064.88	2,009.19	55.69	37.079		
10,900.00	8,394.00	12,516.48	9,817.00	51.84	58.68	133.55	2,533.89	1,622.38	2,064.88	2,007.74	57.14	36.138		
11,000.00	8,394.00	12,616.48	9,817.00	53.21	59.86	133.55	2,633.88	1,621.44	2,064.89	2,006.28	58.61	35.231		
11,100.00	8,394.00	12,716.48	9,817.00	54.60	61.07	133.55	2,733.88	1,620.50	2,064.89	2,004.79	60.10	34.357		
11,200.00	8,394.00	12,816.48	9,817.00	56.00	62.29	133.55	2,833.87	1,619.56	2,064.89	2,003.28	61.61	33.515		
11,300.00	8,394.00	12,916.48	9,817.00	57.41	63.54	133.55	2,933.87	1,618.61	2,064.90	2,001.76	63.14	32.705		
11,400.00	8,394.00	13,016.48	9,817.00	58.84	64.81	133.55	3,033.86	1,617.67	2,064.90	2,000.22	64.68	31.924		
11,500.00	8,394.00	13,116.48	9,817.00	60.28	66.09	133.55	3,133.86	1,616.73	2,064.90	1,998.66	66.24	31.174		
11,600.00	8,394.00	13,216.48	9,817.00	61.72	67.39	133.55	3,233.85	1,615.78	2,064.91	1,997.09	67.81	30.451		
11,700.00	8,394.00	13,316.48	9,817.00	63.18	68.71	133.55	3,333.85	1,614.84	2,064.91	1,995.51	69.39	29.756		
11,800.00	8,394.00	13,416.48	9,817.00	64.65	70.04	133.55	3,433.85	1,613.90	2,064.91	1,993.92	70.99	29.088		
11,900.00	8,394.00	13,516.48	9,817.00	66.13	71.39	133.55	3,533.84	1,612.95	2,064.91	1,992.32	72.60	28.444		
12,000.00	8,394.00	13,616.48	9,817.00	67.61	72.75	133.55	3,633.84	1,612.01	2,064.92	1,990.71	74.21	27.825		
12,100.00	8,394.00	13,716.48	9,817.00	69.10	74.12	133.55	3,733.83	1,611.07	2,064.92	1,989.09	75.84	27.229		
12,200.00	8,394.00	13,816.48	9,817.00	70.60	75.50	133.55	3,833.83	1,610.13	2,064.92	1,987.46	77.47	26.655		
12,300.00	8,394.00	13,916.48	9,817.00	72.11	76.90	133.55	3,933.82	1,609.18	2,064.93	1,985.82	79.11	26.102		
12,400.00	8,394.00	14,016.48	9,817.00	73.62	78.30	133.55	4,033.82	1,608.24	2,064.93	1,984.17	80.76	25.568		
12,500.00	8,394.00	14,116.48	9,817.00	75.14	79.72	133.55	4,133.81	1,607.30	2,064.93	1,982.51	82.42	25.054		
12,600.00	8,394.00	14,216.48	9,817.00	76.66	81.14	133.55	4,233.81	1,606.35	2,064.94	1,980.86	84.08	24.559		
12,700.00	8,394.00	14,316.48	9,817.00	78.19	82.57	133.55	4,333.81	1,605.41	2,064.94	1,979.19	85.75	24.081		
12,800.00	8,394.00	14,416.48	9,817.00	79.72	84.01	133.55	4,433.80	1,604.47	2,064.94	1,977.52	87.43	23.619		
12,900.00	8,394.00	14,516.48	9,817.00	81.26	85.46	133.55	4,533.80	1,603.52	2,064.95	1,975.84	89.11	23.173		
13,000.00	8,394.00	14,616.48	9,817.00	82.80	86.91	133.55	4,633.79	1,602.58	2,064.95	1,974.16	90.79	22.743		
13,100.00	8,394.00	14,716.48	9,817.00	84.35	88.38	133.55	4,733.79	1,601.64	2,064.95	1,972.47	92.48	22.327		
13,200.00	8,394.00	14,816.48	9,817.00	85.90	89.84	133.55	4,833.78	1,600.70	2,064.96	1,970.78	94.18	21.925		
13,300.00	8,394.00	14,916.48	9,817.00	87.46	91.32	133.55	4,933.78	1,599.75	2,064.96	1,969.08	95.88	21.537		
13,400.00	8,394.00	15,016.48	9,817.00	89.02	92.80	133.55	5,033.77	1,598.81	2,064.96	1,967.38	97.58	21.161		
13,500.00	8,394.00	15,116.48	9,817.00	90.58	94.29	133.55	5,133.77	1,597.87	2,064.97	1,965.68	99.29	20.797		
13,600.00	8,394.00	15,216.48	9,817.00	92.14	95.78	133.55	5,233.77	1,596.92	2,064.97	1,963.97	101.00	20.445		
13,700.00	8,394.00	15,316.48	9,817.00	93.71	97.28	133.55	5,333.76	1,595.98	2,064.97	1,962.26	102.72	20.103		
13,800.00	8,394.00	15,416.48	9,817.00	95.28	98.78	133.55	5,433.76	1,595.04	2,064.98	1,960.54	104.43	19.773		
13,900.00	8,394.00	15,516.48	9,817.00	96.85	100.29	133.55	5,533.75	1,594.10	2,064.98	1,958.83	106.15	19.453		
14,000.00	8,394.00	15,616.48	9,817.00	98.43	101.80	133.55	5,633.75	1,593.15	2,064.98	1,957.11	107.88	19.142		

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



Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well FMM Fed Com 103H
Project:	Lea County, NM (NAD83)	TVD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Reference Site:	FMM Fed Com	MD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	FMM Fed Com 103H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.15 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 0-OWSG (Rev2) MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
14,100.00	8,394.00	15,716.48	9,817.00	100.01	103.31	133.55	5,733.74	1,592.21	2,064.99	1,955.38	109.60	18.841		
14,200.00	8,394.00	15,816.48	9,817.00	101.59	104.83	133.55	5,833.74	1,591.27	2,064.99	1,953.66	111.33	18.548		
14,300.00	8,394.00	15,916.48	9,817.00	103.17	106.36	133.55	5,933.73	1,590.32	2,064.99	1,951.93	113.06	18.265		
14,400.00	8,394.00	16,016.48	9,817.00	104.75	107.89	133.55	6,033.73	1,589.38	2,065.00	1,950.20	114.79	17.989		
14,500.00	8,394.00	16,116.48	9,817.00	106.34	109.42	133.55	6,133.73	1,588.44	2,065.00	1,948.47	116.53	17.721		
14,600.00	8,394.00	16,216.48	9,817.00	107.93	110.95	133.55	6,233.72	1,587.49	2,065.00	1,946.74	118.26	17.461		
14,700.00	8,394.00	16,316.48	9,817.00	109.52	112.49	133.55	6,333.72	1,586.55	2,065.00	1,945.00	120.00	17.208		
14,800.00	8,394.00	16,416.48	9,817.00	111.11	114.03	133.55	6,433.71	1,585.61	2,065.01	1,943.27	121.74	16.962		
14,900.00	8,394.00	16,516.48	9,817.00	112.71	115.58	133.55	6,533.71	1,584.67	2,065.01	1,941.53	123.48	16.723		
15,000.00	8,394.00	16,616.48	9,817.00	114.30	117.13	133.55	6,633.70	1,583.72	2,065.01	1,939.79	125.22	16.491		
15,100.00	8,394.00	16,716.48	9,817.00	115.90	118.68	133.55	6,733.70	1,582.78	2,065.02	1,938.05	126.97	16.264		
15,200.00	8,394.00	16,816.48	9,817.00	117.50	120.23	133.55	6,833.69	1,581.84	2,065.02	1,936.31	128.71	16.044		
15,300.00	8,394.00	16,916.48	9,817.00	119.10	121.78	133.55	6,933.69	1,580.89	2,065.02	1,934.56	130.46	15.829		
15,400.00	8,394.00	17,016.48	9,817.00	120.70	123.34	133.55	7,033.69	1,579.95	2,065.03	1,932.82	132.21	15.620		
15,500.00	8,394.00	17,116.48	9,817.00	122.31	124.90	133.55	7,133.68	1,579.01	2,065.03	1,931.07	133.96	15.416		
15,600.00	8,394.00	17,216.48	9,817.00	123.91	126.47	133.55	7,233.68	1,578.06	2,065.03	1,929.33	135.71	15.217		
15,700.00	8,394.00	17,316.48	9,817.00	125.52	128.03	133.55	7,333.67	1,577.12	2,065.04	1,927.58	137.46	15.023		
15,800.00	8,394.00	17,416.48	9,817.00	127.12	129.60	133.55	7,433.67	1,576.18	2,065.04	1,925.83	139.21	14.834		
15,900.00	8,394.00	17,516.48	9,817.00	128.73	131.17	133.55	7,533.66	1,575.24	2,065.04	1,924.08	140.96	14.650		
16,000.00	8,394.00	17,616.48	9,817.00	130.34	132.74	133.55	7,633.66	1,574.29	2,065.05	1,922.33	142.71	14.470		
16,100.00	8,394.00	17,716.48	9,817.00	131.95	134.31	133.55	7,733.65	1,573.35	2,065.05	1,920.58	144.47	14.294		
16,200.00	8,394.00	17,816.48	9,817.00	133.56	135.89	133.55	7,833.65	1,572.41	2,065.05	1,918.83	146.22	14.123		
16,300.00	8,394.00	17,916.48	9,817.00	135.18	137.47	133.55	7,933.65	1,571.46	2,065.06	1,917.08	147.98	13.955		
16,400.00	8,394.00	18,016.48	9,817.00	136.79	139.04	133.55	8,033.64	1,570.52	2,065.06	1,915.33	149.73	13.792		
16,500.00	8,394.00	18,116.48	9,817.00	138.40	140.62	133.55	8,133.64	1,569.58	2,065.06	1,913.57	151.49	13.632		
16,600.00	8,394.00	18,216.48	9,817.00	140.02	142.21	133.55	8,233.63	1,568.63	2,065.07	1,911.82	153.25	13.476		
16,700.00	8,394.00	18,316.48	9,817.00	141.64	143.79	133.55	8,333.63	1,567.69	2,065.07	1,910.07	155.00	13.323		
16,800.00	8,394.00	18,416.48	9,817.00	143.25	145.38	133.55	8,433.62	1,566.75	2,065.07	1,908.31	156.76	13.173		
16,900.00	8,394.00	18,516.48	9,817.00	144.87	146.96	133.55	8,533.62	1,565.81	2,065.08	1,906.56	158.52	13.027		
17,000.00	8,394.00	18,616.48	9,817.00	146.49	148.55	133.55	8,633.61	1,564.86	2,065.08	1,904.80	160.28	12.884		
17,100.00	8,394.00	18,716.48	9,817.00	148.11	150.14	133.55	8,733.61	1,563.92	2,065.08	1,903.05	162.04	12.745		
17,200.00	8,394.00	18,816.48	9,817.00	149.73	151.73	133.55	8,833.61	1,562.98	2,065.08	1,901.29	163.79	12.608		
17,300.00	8,394.00	18,916.48	9,817.00	151.35	153.32	133.55	8,933.60	1,562.03	2,065.09	1,899.53	165.55	12.474		
17,400.00	8,394.00	19,016.48	9,817.00	152.97	154.92	133.55	9,033.60	1,561.09	2,065.09	1,897.78	167.31	12.343		
17,500.00	8,394.00	19,116.48	9,817.00	154.59	156.51	133.55	9,133.59	1,560.15	2,065.09	1,896.02	169.07	12.214		
17,600.00	8,394.00	19,216.48	9,817.00	156.21	158.11	133.55	9,233.59	1,559.21	2,065.10	1,894.27	170.83	12.088		
17,700.00	8,394.00	19,316.48	9,817.00	157.84	159.70	133.55	9,333.58	1,558.26	2,065.10	1,892.51	172.59	11.965		
17,800.00	8,394.00	19,416.48	9,817.00	159.46	161.30	133.55	9,433.58	1,557.32	2,065.10	1,890.75	174.35	11.845		
17,900.00	8,394.00	19,516.48	9,817.00	161.08	162.90	133.55	9,533.57	1,556.38	2,065.11	1,889.00	176.11	11.726		
18,000.00	8,394.00	19,616.48	9,817.00	162.71	164.50	133.55	9,633.57	1,555.43	2,065.11	1,887.24	177.87	11.610		
18,100.00	8,394.00	19,716.48	9,817.00	164.33	166.10	133.55	9,733.57	1,554.49	2,065.11	1,885.48	179.63	11.496		
18,200.00	8,394.00	19,816.48	9,817.00	165.96	167.70	133.55	9,833.56	1,553.55	2,065.12	1,883.73	181.39	11.385		
18,300.00	8,394.00	19,916.48	9,817.00	167.59	169.31	133.55	9,933.56	1,552.60	2,065.12	1,881.97	183.15	11.276		
18,400.00	8,394.00	20,016.48	9,817.00	169.21	170.91	133.55	10,033.55	1,551.66	2,065.12	1,880.21	184.91	11.168		
18,403.66	8,394.00	20,020.14	9,817.00	169.27	170.97	133.55	10,037.21	1,551.63	2,065.12	1,880.15	184.98	11.164		
18,449.58	8,394.00	20,062.22	9,817.00	170.02	171.65	133.55	10,079.29	1,551.23	2,065.13	1,879.36	185.77	11.116		
18,450.14	8,394.00	20,062.22	9,817.00	170.03	171.65	133.55	10,079.29	1,551.23	2,065.13	1,879.35	185.78	11.116		

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



Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well FMM Fed Com 103H
Project:	Lea County, NM (NAD83)	TVD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Reference Site:	FMM Fed Com	MD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	FMM Fed Com 103H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.15 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													FMM Fed Com - FMM Fed Com 801H - OH - Plan #1		Offset Site Error:	0.00 usft
Survey Program: 0-OWSG (Rev2) MWD													Offset Well Error:	0.00 usft		
Reference		Offset		Semi Major Axis			Distance									
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning			
0.00	0.00	0.00	0.00	0.00	0.00	-92.71	-93.27	-1,972.85	1,975.56							
100.00	100.00	55.60	55.60	0.13	0.07	-92.71	-93.27	-1,972.85	1,975.06	1,974.91	0.14	N/A				
200.00	200.00	155.60	155.60	0.48	0.32	-92.71	-93.27	-1,972.85	1,975.06	1,974.47	0.58	3,388.821				
300.00	300.00	255.60	255.60	0.84	0.68	-92.71	-93.27	-1,972.85	1,975.06	1,973.97	1.08	1,820.907				
400.00	400.00	355.60	355.60	1.20	1.04	-92.71	-93.27	-1,972.85	1,975.06	1,973.47	1.59	1,242.373				
500.00	500.00	455.60	455.60	1.56	1.40	-92.71	-93.27	-1,972.85	1,975.06	1,972.96	2.10	942.417				
600.00	600.00	555.60	555.60	1.92	1.76	-92.71	-93.27	-1,972.85	1,975.06	1,972.46	2.60	759.024				
700.00	700.00	655.60	655.60	2.28	2.12	-92.71	-93.27	-1,972.85	1,975.06	1,971.95	3.11	635.340				
800.00	800.00	755.60	755.60	2.63	2.48	-92.71	-93.27	-1,972.85	1,975.06	1,971.44	3.62	546.301				
900.00	900.00	855.60	855.60	2.99	2.83	-92.71	-93.27	-1,972.85	1,975.06	1,970.94	4.12	479.142				
1,000.00	1,000.00	955.60	955.60	3.35	3.19	-92.71	-93.27	-1,972.85	1,975.06	1,970.43	4.63	426.684				
1,100.00	1,100.00	1,055.60	1,055.60	3.71	3.55	-92.71	-93.27	-1,972.85	1,975.06	1,969.92	5.14	384.576				
1,200.00	1,200.00	1,155.60	1,155.60	4.07	3.91	-92.71	-93.27	-1,972.85	1,975.06	1,969.41	5.64	350.031				
1,300.00	1,300.00	1,255.60	1,255.60	4.43	4.27	-92.71	-93.27	-1,972.85	1,975.06	1,968.91	6.15	321.180				
1,400.00	1,400.00	1,355.60	1,355.60	4.79	4.63	-92.71	-93.27	-1,972.85	1,975.06	1,968.40	6.66	296.722				
1,500.00	1,500.00	1,455.60	1,455.60	5.14	4.98	-92.71	-93.27	-1,972.85	1,975.06	1,967.89	7.16	275.725				
1,600.00	1,600.00	1,555.60	1,555.60	5.50	5.34	-92.71	-93.27	-1,972.85	1,975.06	1,967.39	7.67	257.503				
1,700.00	1,700.00	1,655.60	1,655.60	5.86	5.70	-92.71	-93.27	-1,972.85	1,975.06	1,966.88	8.18	241.540				
1,800.00	1,800.00	1,755.60	1,755.60	6.22	6.06	-92.71	-93.27	-1,972.85	1,975.06	1,966.37	8.68	227.440				
1,900.00	1,900.00	1,855.60	1,855.60	6.58	6.42	-92.71	-93.27	-1,972.85	1,975.06	1,965.87	9.19	214.896				
1,920.00	1,920.00	1,875.60	1,875.60	6.65	6.49	-92.71	-93.27	-1,972.85	1,975.06	1,965.77	9.29	212.551	CC, ES			
2,000.00	1,999.99	1,955.59	1,955.59	6.92	6.78	121.35	-93.27	-1,972.85	1,975.49	1,965.81	9.69	203.910				
2,100.00	2,099.93	2,036.83	2,036.83	7.25	7.06	121.39	-93.31	-1,973.03	1,977.53	1,967.41	10.12	195.365				
2,120.05	2,119.96	2,050.10	2,050.10	7.32	7.11	121.39	-93.35	-1,973.17	1,978.27	1,968.07	10.20	193.921				
2,200.00	2,199.80	2,100.00	2,099.99	7.58	7.28	121.45	-93.58	-1,974.13	1,982.03	1,971.52	10.51	188.603				
2,300.00	2,299.66	2,169.07	2,169.01	7.92	7.52	121.53	-94.16	-1,976.49	1,988.26	1,977.35	10.91	182.313				
2,400.00	2,399.52	2,234.99	2,234.84	8.25	7.74	121.59	-94.98	-1,979.87	1,996.18	1,984.89	11.29	176.740				
2,500.00	2,499.39	2,300.00	2,299.69	8.59	7.97	121.65	-96.06	-1,984.29	2,005.79	1,994.11	11.68	171.729				
2,600.00	2,599.25	2,366.26	2,365.70	8.94	8.19	121.70	-97.43	-1,989.90	2,017.08	2,005.02	12.07	167.141				
2,700.00	2,699.11	2,431.52	2,430.61	9.28	8.42	121.75	-99.05	-1,996.51	2,030.04	2,017.59	12.45	163.027				
2,800.00	2,798.98	2,500.00	2,498.57	9.63	8.66	121.79	-101.03	-2,004.60	2,044.66	2,031.81	12.84	159.190				
2,900.00	2,898.84	2,561.14	2,559.13	9.97	8.88	121.81	-103.04	-2,012.82	2,060.91	2,047.70	13.21	155.979				
3,000.00	2,998.70	2,625.43	2,622.64	10.32	9.12	121.84	-105.40	-2,022.48	2,078.79	2,065.20	13.59	152.982				
3,100.00	3,098.57	2,700.00	2,696.09	10.67	9.39	121.86	-108.46	-2,034.99	2,098.33	2,084.34	14.00	149.929				
3,200.00	3,198.43	2,762.60	2,757.54	11.02	9.63	121.87	-111.28	-2,046.56	2,119.42	2,105.06	14.36	147.566				
3,300.00	3,298.29	2,844.96	2,838.27	11.38	9.95	121.87	-115.16	-2,062.42	2,141.50	2,126.70	14.80	144.743				
3,400.00	3,398.15	2,942.48	2,933.85	11.73	10.33	121.88	-119.76	-2,081.21	2,163.63	2,148.35	15.28	141.585				
3,500.00	3,498.02	3,040.00	3,029.44	12.09	10.73	121.89	-124.35	-2,100.00	2,185.77	2,170.00	15.77	138.601				
3,600.00	3,597.88	3,137.52	3,125.02	12.44	11.12	121.90	-128.94	-2,118.79	2,207.90	2,191.64	16.26	135.778				
3,700.00	3,697.74	3,235.04	3,220.60	12.80	11.53	121.91	-133.53	-2,137.57	2,230.04	2,213.28	16.75	133.104				
3,800.00	3,797.61	3,332.56	3,316.18	13.16	11.94	121.92	-138.13	-2,156.36	2,252.17	2,234.92	17.25	130.569				
3,900.00	3,897.47	3,430.08	3,411.76	13.51	12.35	121.93	-142.72	-2,175.15	2,274.30	2,256.56	17.75	128.162				
4,000.00	3,997.33	3,527.60	3,507.35	13.87	12.77	121.94	-147.31	-2,193.93	2,296.44	2,278.19	18.24	125.876				
4,100.00	4,097.19	3,625.12	3,602.93	14.23	13.19	121.95	-151.90	-2,212.72	2,318.57	2,299.83	18.74	123.702				
4,200.00	4,197.06	3,722.64	3,698.51	14.59	13.61	121.96	-156.49	-2,231.51	2,340.71	2,321.46	19.24	121.632				
4,300.00	4,296.92	3,820.15	3,794.09	14.95	14.04	121.96	-161.09	-2,250.30	2,362.84	2,343.09	19.75	119.660				
4,400.00	4,396.78	3,917.67	3,889.67	15.31	14.47	121.97	-165.68	-2,269.08	2,384.98	2,364.73	20.25	117.778				
4,500.00	4,496.65	4,015.19	3,985.26	15.67	14.90	121.98	-170.27	-2,287.87	2,407.11	2,386.36	20.75	115.982				
4,600.00	4,596.51	4,112.71	4,080.84	16.03	15.33	121.99	-174.86	-2,306.66	2,429.24	2,407.99	21.26	114.266				
4,700.00	4,696.37	4,210.23	4,176.42	16.39	15.77	122.00	-179.46	-2,325.44	2,451.38	2,429.61	21.77	112.624				
4,800.00	4,796.23	4,307.75	4,272.00	16.75	16.21	122.00	-184.05	-2,344.23	2,473.51	2,451.24	22.27	111.053				
4,900.00	4,896.10	4,405.27	4,367.58	17.12	16.65	122.01	-188.64	-2,363.02	2,495.65	2,472.87	22.78	109.548				

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



Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well FMM Fed Com 103H
Project:	Lea County, NM (NAD83)	TVD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Reference Site:	FMM Fed Com	MD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	FMM Fed Com 103H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.15 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 0-OWSG (Rev2) MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
5,000.00	4,995.96	4,502.79	4,463.17	17.48	17.09	122.02	-193.23	-2,381.81	2,517.78	2,494.49	23.29	108.105		
5,100.00	5,095.82	4,600.31	4,558.75	17.84	17.54	122.03	-197.83	-2,400.59	2,539.92	2,516.12	23.80	106.720		
5,200.00	5,195.69	4,697.83	4,654.33	18.21	17.98	122.03	-202.42	-2,419.38	2,562.05	2,537.74	24.31	105.391		
5,300.00	5,295.55	4,795.34	4,749.91	18.57	18.43	122.04	-207.01	-2,438.17	2,584.19	2,559.37	24.82	104.113		
5,400.00	5,395.41	4,892.86	4,845.49	18.93	18.88	122.05	-211.60	-2,456.95	2,606.32	2,580.99	25.33	102.885		
5,500.00	5,495.27	4,990.38	4,941.07	19.30	19.33	122.05	-216.20	-2,475.74	2,628.46	2,602.61	25.84	101.702		
5,600.00	5,595.14	5,087.90	5,036.66	19.66	19.78	122.06	-220.79	-2,494.53	2,650.59	2,624.24	26.36	100.564		
5,700.00	5,695.00	5,185.42	5,132.24	20.02	20.23	122.07	-225.38	-2,513.32	2,672.73	2,645.86	26.87	99.467		
5,800.00	5,794.86	5,282.94	5,227.82	20.39	20.68	122.07	-229.97	-2,532.10	2,694.86	2,667.48	27.38	98.410		
5,900.00	5,894.73	5,380.46	5,323.40	20.75	21.13	122.08	-234.57	-2,550.89	2,717.00	2,689.10	27.90	97.390		
6,000.00	5,994.59	5,477.98	5,418.98	21.12	21.58	122.08	-239.16	-2,569.68	2,739.13	2,710.72	28.41	96.405		
6,100.00	6,094.45	5,575.50	5,514.57	21.48	22.04	122.09	-243.75	-2,588.46	2,761.27	2,732.34	28.93	95.454		
6,200.00	6,194.31	5,673.02	5,610.15	21.85	22.49	122.10	-248.34	-2,607.25	2,783.40	2,753.96	29.44	94.535		
6,300.00	6,294.18	5,770.53	5,705.73	22.21	22.95	122.10	-252.94	-2,626.04	2,805.54	2,775.58	29.96	93.646		
6,400.00	6,394.04	5,868.05	5,801.31	22.58	23.41	122.11	-257.53	-2,644.83	2,827.67	2,797.20	30.48	92.787		
6,500.00	6,493.90	5,965.57	5,896.89	22.94	23.86	122.11	-262.12	-2,663.61	2,849.81	2,818.82	30.99	91.954		
6,600.00	6,593.77	6,063.09	5,992.48	23.31	24.32	122.12	-266.71	-2,682.40	2,871.94	2,840.44	31.51	91.149		
6,700.00	6,693.63	6,160.61	6,088.06	23.67	24.78	122.12	-271.31	-2,701.19	2,894.08	2,862.05	32.03	90.368		
6,800.00	6,793.49	6,258.13	6,183.64	24.04	25.24	122.13	-275.90	-2,719.97	2,916.21	2,883.67	32.54	89.611		
6,900.00	6,893.35	6,355.65	6,279.22	24.40	25.70	122.14	-280.49	-2,738.76	2,938.35	2,905.29	33.06	88.877		
7,000.00	6,993.22	6,453.17	6,374.80	24.77	26.16	122.14	-285.08	-2,757.55	2,960.49	2,926.91	33.58	88.165		
7,106.97	7,100.04	6,557.49	6,477.05	25.16	26.65	122.15	-290.00	-2,777.65	2,984.16	2,950.03	34.13	87.427		
7,200.00	7,192.99	6,648.33	6,566.09	25.50	27.08	122.39	-294.27	-2,795.15	3,004.17	2,969.55	34.61	86.790		
7,307.02	7,300.00	6,970.52	6,883.97	25.87	28.50	-91.56	-306.60	-2,845.58	3,021.63	2,985.69	35.94	84.073		
7,400.00	7,392.98	7,424.01	7,336.30	26.18	30.11	-91.67	-313.26	-2,872.82	3,026.14	2,988.81	37.33	81.066		
7,500.00	7,492.98	7,536.29	7,448.58	26.52	30.45	-91.67	-313.27	-2,872.85	3,026.14	2,988.32	37.82	80.008		
7,600.00	7,592.98	7,636.29	7,548.58	26.85	30.75	-91.67	-313.27	-2,872.85	3,026.14	2,987.85	38.29	79.023		
7,700.00	7,692.98	7,736.29	7,648.58	27.19	31.05	-91.67	-313.27	-2,872.85	3,026.14	2,987.37	38.77	78.059		
7,800.00	7,792.98	7,836.29	7,748.58	27.53	31.36	-91.67	-313.27	-2,872.85	3,026.14	2,986.90	39.24	77.117		
7,828.06	7,821.04	7,864.35	7,776.64	27.62	31.44	-91.67	-313.27	-2,872.85	3,026.14	2,986.77	39.37	76.857		
7,850.00	7,842.97	7,886.28	7,798.57	27.69	31.51	-91.14	-313.27	-2,872.85	3,026.15	2,986.67	39.48	76.656		
7,900.00	7,892.79	7,936.10	7,848.39	27.86	31.66	-91.20	-313.27	-2,872.85	3,026.23	2,986.53	39.71	76.212		
7,950.00	7,942.06	7,985.37	7,897.66	28.01	31.81	-91.34	-313.27	-2,872.85	3,026.42	2,986.49	39.93	75.792		
8,000.00	7,990.41	8,033.72	7,946.01	28.16	31.96	-91.54	-313.27	-2,872.85	3,026.75	2,986.61	40.15	75.395		
8,050.00	8,037.47	8,080.78	7,993.07	28.29	32.10	-91.79	-313.27	-2,872.85	3,027.28	2,986.92	40.35	75.025		
8,100.00	8,082.88	8,126.19	8,038.48	28.42	32.24	-92.07	-313.27	-2,872.85	3,028.05	2,987.50	40.55	74.682		
8,150.00	8,126.30	8,169.61	8,081.90	28.54	32.37	-92.37	-313.27	-2,872.85	3,029.16	2,988.42	40.73	74.367		
8,200.00	8,167.40	8,210.71	8,123.00	28.66	32.50	-92.66	-313.27	-2,872.85	3,030.68	2,989.77	40.91	74.081		
8,250.00	8,205.86	8,249.17	8,161.46	28.77	32.62	-92.92	-313.27	-2,872.85	3,032.70	2,991.62	41.08	73.824		
8,300.00	8,241.40	8,284.70	8,197.00	28.88	32.73	-93.13	-313.27	-2,872.85	3,035.32	2,994.07	41.24	73.598		
8,350.00	8,273.73	8,317.04	8,229.33	28.99	32.83	-93.26	-313.27	-2,872.85	3,038.61	2,997.21	41.40	73.402		
8,400.00	8,302.62	8,345.93	8,258.22	29.11	32.92	-93.30	-313.27	-2,872.85	3,042.66	3,001.11	41.55	73.236		
8,450.00	8,327.84	8,371.15	8,283.44	29.24	33.00	-93.22	-313.27	-2,872.85	3,047.53	3,005.84	41.69	73.101		
8,500.00	8,349.21	8,392.51	8,304.81	29.38	33.06	-93.01	-313.27	-2,872.85	3,053.27	3,011.45	41.83	72.997		
8,550.00	8,366.55	8,409.86	8,322.15	29.52	33.12	-92.65	-313.27	-2,872.85	3,059.93	3,017.97	41.96	72.924		
8,600.00	8,379.75	8,423.05	8,335.35	29.68	33.16	-92.12	-313.27	-2,872.85	3,067.50	3,025.41	42.09	72.881		
8,650.00	8,388.69	8,432.00	8,344.29	29.85	33.18	-91.43	-313.27	-2,872.85	3,075.99	3,033.78	42.21	72.869 SF		
8,700.00	8,393.31	8,436.62	8,348.91	30.03	33.20	-90.56	-313.27	-2,872.85	3,085.36	3,043.03	42.33	72.888		
8,728.06	8,394.00	8,437.31	8,349.60	30.14	33.20	-90.00	-313.27	-2,872.85	3,090.97	3,048.58	42.39	72.912		
8,800.00	8,394.00	8,437.31	8,349.60	30.43	33.20	-90.00	-313.27	-2,872.85	3,106.49	3,063.93	42.57	72.978		
8,900.00	8,394.00	8,437.31	8,349.60	30.91	33.20	-90.00	-313.27	-2,872.85	3,130.69	3,087.83	42.85	73.055		
9,000.00	8,394.00	8,437.31	8,349.60	31.47	33.20	-90.00	-313.27	-2,872.85	3,157.86	3,114.68	43.19	73.122		

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



Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well FMM Fed Com 103H
Project:	Lea County, NM (NAD83)	TVD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Reference Site:	FMM Fed Com	MD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	FMM Fed Com 103H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.15 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 0-OWSG (Rev2) MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
9,100.00	8,394.00	8,437.31	8,349.60	32.10	33.20	-90.00	-313.27	-2,872.85	3,187.95	3,144.39	43.56	73.187		
9,200.00	8,394.00	8,437.31	8,349.60	32.81	33.20	-90.00	-313.27	-2,872.85	3,220.86	3,176.89	43.97	73.257		
9,300.00	8,394.00	8,437.31	8,349.60	33.58	33.20	-90.00	-313.27	-2,872.85	3,256.50	3,212.10	44.40	73.338		
9,400.00	8,394.00	8,437.31	8,349.60	34.41	33.20	-90.00	-313.27	-2,872.85	3,294.80	3,249.93	44.87	73.436		
9,500.00	8,394.00	8,437.31	8,349.60	35.30	33.20	-90.00	-313.27	-2,872.85	3,335.66	3,290.31	45.35	73.558		
9,600.00	8,394.00	8,437.31	8,349.60	36.24	33.20	-90.00	-313.27	-2,872.85	3,378.98	3,333.14	45.84	73.707		
9,700.00	8,394.00	8,437.31	8,349.60	37.24	33.20	-90.00	-313.27	-2,872.85	3,424.68	3,378.33	46.35	73.888		
9,800.00	8,394.00	8,437.31	8,349.60	38.28	33.20	-90.00	-313.27	-2,872.85	3,472.65	3,425.79	46.86	74.104		
9,900.00	8,394.00	8,437.31	8,349.60	39.36	33.20	-90.00	-313.27	-2,872.85	3,522.81	3,475.44	47.38	74.356		
10,000.00	8,394.00	8,437.31	8,349.60	40.48	33.20	-90.00	-313.27	-2,872.85	3,575.07	3,527.18	47.89	74.647		
10,100.00	8,394.00	8,437.31	8,349.60	41.63	33.20	-90.00	-313.27	-2,872.85	3,629.33	3,580.92	48.40	74.980		
10,200.00	8,394.00	8,437.31	8,349.60	42.82	33.20	-90.00	-313.27	-2,872.85	3,685.50	3,636.59	48.91	75.356		
10,300.00	8,394.00	8,437.31	8,349.60	44.03	33.20	-90.00	-313.27	-2,872.85	3,743.50	3,694.10	49.41	75.770		
10,400.00	8,394.00	8,437.31	8,349.60	45.28	33.20	-90.00	-313.27	-2,872.85	3,803.25	3,753.35	49.90	76.223		
10,500.00	8,394.00	8,437.31	8,349.60	46.55	33.20	-90.00	-313.27	-2,872.85	3,864.66	3,814.29	50.38	76.715		
10,600.00	8,394.00	8,437.31	8,349.60	47.84	33.20	-90.00	-313.27	-2,872.85	3,927.66	3,876.81	50.85	77.246		
10,700.00	8,394.00	8,437.31	8,349.60	49.16	33.20	-90.00	-313.27	-2,872.85	3,992.17	3,940.87	51.30	77.817		
10,800.00	8,394.00	8,437.31	8,349.60	50.49	33.20	-90.00	-313.27	-2,872.85	4,058.12	4,006.37	51.75	78.425		
10,900.00	8,394.00	8,437.31	8,349.60	51.84	33.20	-90.00	-313.27	-2,872.85	4,125.44	4,073.26	52.18	79.067		
11,000.00	8,394.00	8,437.31	8,349.60	53.21	33.20	-90.00	-313.27	-2,872.85	4,194.06	4,141.46	52.59	79.743		
11,100.00	8,394.00	8,437.31	8,349.60	54.60	33.20	-90.00	-313.27	-2,872.85	4,263.92	4,210.92	53.00	80.452		
11,200.00	8,394.00	8,437.31	8,349.60	56.00	33.20	-90.00	-313.27	-2,872.85	4,334.97	4,281.57	53.39	81.193		
11,300.00	8,394.00	8,437.31	8,349.60	57.41	33.20	-90.00	-313.27	-2,872.85	4,407.13	4,353.37	53.77	81.966		
11,400.00	8,394.00	8,437.31	8,349.60	58.84	33.20	-90.00	-313.27	-2,872.85	4,480.37	4,426.24	54.13	82.766		
11,500.00	8,394.00	8,437.31	8,349.60	60.28	33.20	-90.00	-313.27	-2,872.85	4,554.63	4,500.14	54.49	83.594		
11,600.00	8,394.00	8,437.31	8,349.60	61.72	33.20	-90.00	-313.27	-2,872.85	4,629.85	4,575.03	54.83	84.447		
11,700.00	8,394.00	8,437.31	8,349.60	63.18	33.20	-90.00	-313.27	-2,872.85	4,706.00	4,650.84	55.16	85.322		
11,800.00	8,394.00	8,437.31	8,349.60	64.65	33.20	-90.00	-313.27	-2,872.85	4,783.03	4,727.55	55.47	86.221		
11,900.00	8,394.00	8,437.31	8,349.60	66.13	33.20	-90.00	-313.27	-2,872.85	4,860.89	4,805.11	55.78	87.147		
12,000.00	8,394.00	8,437.31	8,349.60	67.61	33.20	-90.00	-313.27	-2,872.85	4,939.55	4,883.48	56.07	88.094		

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



Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well FMM Fed Com 103H
Project:	Lea County, NM (NAD83)	TVD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Reference Site:	FMM Fed Com	MD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	FMM Fed Com 103H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.15 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 0-OWSG (Rev2) MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
0.00	0.00	0.00	0.00	0.00	0.00	-92.73	-93.03	-1,947.79	1,950.51					
100.00	100.00	55.90	55.90	0.13	0.07	-92.73	-93.03	-1,947.79	1,950.01	1,949.87	0.14	N/A		
200.00	200.00	155.90	155.90	0.48	0.33	-92.73	-93.03	-1,947.79	1,950.01	1,949.43	0.58	3,342.403		
300.00	300.00	255.90	255.90	0.84	0.68	-92.73	-93.03	-1,947.79	1,950.01	1,948.92	1.09	1,796.691		
400.00	400.00	355.90	355.90	1.20	1.04	-92.73	-93.03	-1,947.79	1,950.01	1,948.42	1.59	1,226.074		
500.00	500.00	455.90	455.90	1.56	1.40	-92.73	-93.03	-1,947.79	1,950.01	1,947.91	2.10	930.146		
600.00	600.00	555.90	555.90	1.92	1.76	-92.73	-93.03	-1,947.79	1,950.01	1,947.41	2.60	749.188		
700.00	700.00	655.90	655.90	2.28	2.12	-92.73	-93.03	-1,947.79	1,950.01	1,946.90	3.11	627.135		
800.00	800.00	755.90	755.90	2.63	2.48	-92.73	-93.03	-1,947.79	1,950.01	1,946.39	3.62	539.263		
900.00	900.00	855.90	855.90	2.99	2.84	-92.73	-93.03	-1,947.79	1,950.01	1,945.89	4.12	472.981		
1,000.00	1,000.00	955.90	955.90	3.35	3.19	-92.73	-93.03	-1,947.79	1,950.01	1,945.38	4.63	421.205		
1,100.00	1,100.00	1,055.90	1,055.90	3.71	3.55	-92.73	-93.03	-1,947.79	1,950.01	1,944.87	5.14	379.644		
1,200.00	1,200.00	1,155.90	1,155.90	4.07	3.91	-92.73	-93.03	-1,947.79	1,950.01	1,944.37	5.64	345.546		
1,300.00	1,300.00	1,255.90	1,255.90	4.43	4.27	-92.73	-93.03	-1,947.79	1,950.01	1,943.86	6.15	317.068		
1,400.00	1,400.00	1,355.90	1,355.90	4.79	4.63	-92.73	-93.03	-1,947.79	1,950.01	1,943.35	6.66	292.926		
1,500.00	1,500.00	1,455.90	1,455.90	5.14	4.99	-92.73	-93.03	-1,947.79	1,950.01	1,942.85	7.16	272.200		
1,600.00	1,600.00	1,555.90	1,555.90	5.50	5.34	-92.73	-93.03	-1,947.79	1,950.01	1,942.34	7.67	254.212		
1,700.00	1,700.00	1,655.90	1,655.90	5.86	5.70	-92.73	-93.03	-1,947.79	1,950.01	1,941.83	8.18	238.455		
1,800.00	1,800.00	1,755.90	1,755.90	6.22	6.06	-92.73	-93.03	-1,947.79	1,950.01	1,941.32	8.68	224.536		
1,900.00	1,900.00	1,855.90	1,855.90	6.58	6.42	-92.73	-93.03	-1,947.79	1,950.01	1,940.82	9.19	212.153		
1,920.00	1,920.00	1,875.90	1,875.90	6.65	6.49	-92.73	-93.03	-1,947.79	1,950.01	1,940.72	9.29	209.838 CC, ES		
2,000.00	1,999.99	1,955.89	1,955.89	6.92	6.78	121.32	-93.03	-1,947.79	1,950.44	1,940.76	9.69	201.309		
2,100.00	2,099.93	2,055.83	2,055.83	7.25	7.14	121.38	-93.03	-1,947.79	1,952.22	1,942.04	10.17	191.900		
2,120.05	2,119.96	2,075.86	2,075.86	7.32	7.21	121.40	-93.03	-1,947.79	1,952.74	1,942.47	10.27	190.131		
2,200.00	2,199.80	2,155.70	2,155.70	7.58	7.49	121.51	-93.03	-1,947.79	1,954.92	1,944.26	10.66	183.397		
2,300.00	2,299.66	2,254.53	2,254.53	7.92	7.84	121.63	-93.42	-1,947.79	1,957.68	1,946.54	11.14	175.759		
2,400.00	2,399.52	2,352.64	2,352.60	8.25	8.16	121.68	-96.08	-1,947.78	1,960.53	1,948.92	11.61	168.928		
2,500.00	2,499.39	2,450.77	2,450.59	8.59	8.48	121.65	-101.26	-1,947.75	1,963.47	1,951.40	12.07	162.664		
2,600.00	2,599.25	2,548.78	2,548.30	8.94	8.81	121.56	-108.95	-1,947.72	1,966.51	1,953.97	12.54	156.825		
2,700.00	2,699.11	2,646.56	2,645.54	9.28	9.13	121.39	-119.11	-1,947.67	1,969.66	1,956.65	13.01	151.374		
2,800.00	2,798.98	2,746.10	2,744.38	9.63	9.47	121.17	-130.88	-1,947.62	1,972.89	1,959.40	13.49	146.201		
2,900.00	2,898.84	2,845.77	2,843.36	9.97	9.81	120.96	-142.67	-1,947.56	1,976.15	1,962.17	13.98	141.339		
3,000.00	2,998.70	2,945.45	2,942.33	10.32	10.16	120.75	-154.46	-1,947.51	1,979.43	1,964.96	14.47	136.766		
3,100.00	3,098.57	3,045.13	3,041.31	10.67	10.51	120.54	-166.25	-1,947.46	1,982.75	1,967.78	14.97	132.460		
3,200.00	3,198.43	3,144.80	3,140.29	11.02	10.86	120.33	-178.05	-1,947.40	1,986.09	1,970.62	15.47	128.402		
3,300.00	3,298.29	3,244.48	3,239.26	11.38	11.22	120.12	-189.84	-1,947.35	1,989.45	1,973.48	15.97	124.575		
3,400.00	3,398.15	3,344.15	3,338.24	11.73	11.59	119.91	-201.63	-1,947.30	1,992.85	1,976.37	16.48	120.961		
3,500.00	3,498.02	3,443.83	3,437.22	12.09	11.95	119.70	-213.42	-1,947.24	1,996.27	1,979.28	16.98	117.546		
3,600.00	3,597.88	3,543.51	3,536.19	12.44	12.32	119.49	-225.22	-1,947.19	1,999.71	1,982.22	17.49	114.314		
3,700.00	3,697.74	3,643.18	3,635.17	12.80	12.69	119.28	-237.01	-1,947.13	2,003.19	1,985.18	18.01	111.254		
3,800.00	3,797.61	3,742.86	3,734.14	13.16	13.06	119.08	-248.80	-1,947.08	2,006.69	1,988.17	18.52	108.352		
3,900.00	3,897.47	3,842.54	3,833.12	13.51	13.44	118.87	-260.59	-1,947.03	2,010.21	1,991.17	19.04	105.599		
4,000.00	3,997.33	3,942.21	3,932.10	13.87	13.81	118.67	-272.39	-1,946.97	2,013.76	1,994.21	19.55	102.983		
4,100.00	4,097.19	4,041.89	4,031.07	14.23	14.19	118.46	-284.18	-1,946.92	2,017.34	1,997.26	20.07	100.496		
4,200.00	4,197.06	4,141.96	4,134.52	14.59	14.58	118.28	-295.51	-1,946.87	2,020.85	2,000.25	20.60	98.079		
4,300.00	4,296.92	4,251.21	4,239.41	14.95	14.97	118.17	-304.13	-1,946.83	2,024.12	2,002.99	21.13	95.780		
4,400.00	4,396.78	4,356.60	4,344.64	15.31	15.35	118.15	-309.87	-1,946.80	2,027.12	2,005.47	21.66	93.606		
4,500.00	4,496.65	4,461.97	4,449.98	15.67	15.72	118.21	-312.71	-1,946.79	2,029.86	2,007.69	22.17	91.551		
4,600.00	4,596.51	4,564.41	4,552.41	16.03	16.07	118.33	-313.03	-1,946.79	2,032.37	2,009.69	22.67	89.634		
4,700.00	4,696.37	4,664.27	4,652.27	16.39	16.41	118.46	-313.03	-1,946.79	2,034.86	2,011.69	23.17	87.831		
4,800.00	4,796.23	4,764.13	4,752.13	16.75	16.75	118.59	-313.03	-1,946.79	2,037.36	2,013.70	23.66	86.100		
4,900.00	4,896.10	4,863.99	4,852.00	17.12	17.09	118.72	-313.03	-1,946.79	2,039.88	2,015.72	24.16	84.438		

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



Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well FMM Fed Com 103H
Project:	Lea County, NM (NAD83)	TVD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Reference Site:	FMM Fed Com	MD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	FMM Fed Com 103H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.15 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 0-OWSG (Rev2) MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
5,000.00	4,995.96	4,963.86	4,951.86	17.48	17.43	118.85	-313.03	-1,946.79	2,042.40	2,017.74	24.65	82.841		
5,100.00	5,095.82	5,063.72	5,051.72	17.84	17.77	118.97	-313.03	-1,946.79	2,044.93	2,019.78	25.15	81.306		
5,200.00	5,195.69	5,163.58	5,151.59	18.21	18.11	119.10	-313.03	-1,946.79	2,047.48	2,021.83	25.65	79.828		
5,300.00	5,295.55	5,263.45	5,251.45	18.57	18.46	119.23	-313.03	-1,946.79	2,050.03	2,023.88	26.15	78.405		
5,400.00	5,395.41	5,363.31	5,351.31	18.93	18.80	119.36	-313.03	-1,946.79	2,052.59	2,025.95	26.65	77.035		
5,500.00	5,495.27	5,463.17	5,451.17	19.30	19.14	119.48	-313.03	-1,946.79	2,055.17	2,028.02	27.14	75.713		
5,600.00	5,595.14	5,563.03	5,551.04	19.66	19.49	119.61	-313.03	-1,946.79	2,057.75	2,030.11	27.64	74.439		
5,700.00	5,695.00	5,662.90	5,650.90	20.02	19.83	119.74	-313.03	-1,946.79	2,060.35	2,032.20	28.14	73.208		
5,800.00	5,794.86	5,762.76	5,750.76	20.39	20.18	119.86	-313.03	-1,946.79	2,062.95	2,034.31	28.64	72.020		
5,900.00	5,894.73	5,862.62	5,850.63	20.75	20.52	119.99	-313.03	-1,946.79	2,065.56	2,036.42	29.14	70.872		
6,000.00	5,994.59	5,962.49	5,950.49	21.12	20.87	120.11	-313.03	-1,946.79	2,068.19	2,038.54	29.65	69.763		
6,100.00	6,094.45	6,062.35	6,050.35	21.48	21.22	120.24	-313.03	-1,946.79	2,070.82	2,040.68	30.15	68.690		
6,200.00	6,194.31	6,162.21	6,150.21	21.85	21.56	120.36	-313.03	-1,946.79	2,073.47	2,042.82	30.65	67.651		
6,300.00	6,294.18	6,262.07	6,250.08	22.21	21.91	120.49	-313.03	-1,946.79	2,076.12	2,044.97	31.15	66.646		
6,400.00	6,394.04	6,361.94	6,349.94	22.58	22.26	120.61	-313.03	-1,946.79	2,078.78	2,047.13	31.65	65.672		
6,500.00	6,493.90	6,461.80	6,449.80	22.94	22.61	120.74	-313.03	-1,946.79	2,081.46	2,049.30	32.16	64.728		
6,600.00	6,593.77	6,561.66	6,549.67	23.31	22.95	120.86	-313.03	-1,946.79	2,084.14	2,051.48	32.66	63.813		
6,700.00	6,693.63	6,661.53	6,649.53	23.67	23.30	120.98	-313.03	-1,946.79	2,086.83	2,053.67	33.16	62.926		
6,800.00	6,793.49	6,761.39	6,749.39	24.04	23.65	121.11	-313.03	-1,946.79	2,089.54	2,055.87	33.67	62.065		
6,900.00	6,893.35	6,861.25	6,849.25	24.40	24.00	121.23	-313.03	-1,946.79	2,092.25	2,058.08	34.17	61.229		
7,000.00	6,993.22	6,961.11	6,949.12	24.77	24.35	121.35	-313.03	-1,946.79	2,094.97	2,060.29	34.67	60.417		
7,106.97	7,100.04	7,067.94	7,055.94	25.16	24.72	121.48	-313.03	-1,946.79	2,097.89	2,062.68	35.21	59.575		
7,200.00	7,192.99	7,160.89	7,148.89	25.50	25.05	121.59	-313.03	-1,946.79	2,099.85	2,064.17	35.68	58.849		
7,307.02	7,300.00	7,267.90	7,255.90	25.87	25.42	-92.40	-313.03	-1,946.79	2,100.63	2,064.42	36.21	58.013		
7,400.00	7,392.98	7,360.88	7,348.88	26.18	25.75	-92.40	-313.03	-1,946.79	2,100.63	2,063.97	36.66	57.300		
7,500.00	7,492.98	7,460.88	7,448.88	26.52	26.10	-92.40	-313.03	-1,946.79	2,100.63	2,063.49	37.15	56.551		
7,600.00	7,592.98	7,560.88	7,548.88	26.85	26.45	-92.40	-313.03	-1,946.79	2,100.63	2,063.00	37.63	55.820		
7,700.00	7,692.98	7,660.88	7,648.88	27.19	26.80	-92.40	-313.03	-1,946.79	2,100.63	2,062.52	38.12	55.108		
7,800.00	7,792.98	7,760.88	7,748.88	27.53	27.16	-92.40	-313.03	-1,946.79	2,100.63	2,062.03	38.61	54.413		
7,828.06	7,821.04	7,788.94	7,776.94	27.62	27.25	-92.40	-313.03	-1,946.79	2,100.63	2,061.89	38.74	54.220		
7,850.00	7,842.97	7,810.87	7,798.87	27.69	27.33	-91.87	-313.03	-1,946.79	2,100.65	2,061.80	38.85	54.072		
7,900.00	7,892.79	7,860.69	7,848.69	27.86	27.51	-91.97	-313.03	-1,946.79	2,100.79	2,061.70	39.09	53.745		
7,950.00	7,942.06	7,909.96	7,897.96	28.01	27.68	-92.16	-313.03	-1,946.79	2,101.09	2,061.77	39.32	53.435		
8,000.00	7,990.41	7,958.31	7,946.31	28.16	27.85	-92.44	-313.03	-1,946.79	2,101.62	2,062.08	39.55	53.144		
8,050.00	8,037.47	8,005.37	7,993.37	28.29	28.02	-92.79	-313.03	-1,946.79	2,102.44	2,062.68	39.76	52.874		
8,100.00	8,082.88	8,050.78	8,038.78	28.42	28.18	-93.19	-313.03	-1,946.79	2,103.64	2,063.67	39.97	52.628		
8,150.00	8,126.30	8,094.20	8,082.20	28.54	28.33	-93.60	-313.03	-1,946.79	2,105.33	2,065.16	40.17	52.408		
8,200.00	8,167.40	8,135.30	8,123.30	28.66	28.47	-94.01	-313.03	-1,946.79	2,107.64	2,067.27	40.36	52.216		
8,250.00	8,205.86	8,173.76	8,161.76	28.77	28.61	-94.37	-313.03	-1,946.79	2,110.67	2,070.13	40.55	52.055		
8,300.00	8,241.40	8,209.29	8,197.30	28.88	28.73	-94.66	-313.03	-1,946.79	2,114.57	2,073.85	40.72	51.927		
8,350.00	8,273.73	8,241.63	8,229.63	28.99	28.85	-94.84	-313.03	-1,946.79	2,119.45	2,078.56	40.89	51.833		
8,400.00	8,302.62	8,270.51	8,258.52	29.11	28.95	-94.88	-313.03	-1,946.79	2,125.41	2,084.36	41.05	51.776		
8,450.00	8,327.84	8,295.74	8,283.74	29.24	29.04	-94.75	-313.03	-1,946.79	2,132.55	2,091.35	41.20	51.758		
8,500.00	8,349.21	8,317.10	8,305.11	29.38	29.11	-94.42	-313.03	-1,946.79	2,140.93	2,099.59	41.35	51.778		
8,550.00	8,366.55	8,334.45	8,322.45	29.52	29.18	-93.88	-313.03	-1,946.79	2,150.60	2,109.11	41.49	51.839		
8,600.00	8,379.75	8,347.64	8,335.65	29.68	29.22	-93.11	-313.03	-1,946.79	2,161.56	2,119.94	41.62	51.941		
8,650.00	8,388.69	8,356.59	8,344.59	29.85	29.25	-92.09	-313.03	-1,946.79	2,173.78	2,132.04	41.74	52.083		
8,700.00	8,393.31	8,361.21	8,349.21	30.03	29.27	-90.82	-313.03	-1,946.79	2,187.20	2,145.35	41.85	52.264		
8,728.06	8,394.00	8,361.89	8,349.90	30.14	29.27	-90.00	-313.03	-1,946.79	2,195.23	2,153.32	41.91	52.383		
8,800.00	8,394.00	8,361.89	8,349.90	30.43	29.27	-90.00	-313.03	-1,946.79	2,217.31	2,175.24	42.06	52.714		
8,900.00	8,394.00	8,361.89	8,349.90	30.91	29.27	-90.00	-313.03	-1,946.79	2,251.46	2,209.15	42.31	53.214		
9,000.00	8,394.00	8,361.89	8,349.90	31.47	29.27	-90.00	-313.03	-1,946.79	2,289.47	2,246.88	42.59	53.762		

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



Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well FMM Fed Com 103H
Project:	Lea County, NM (NAD83)	TVD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Reference Site:	FMM Fed Com	MD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	FMM Fed Com 103H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.15 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 0-OWSG (Rev2) MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
9,100.00	8,394.00	8,361.89	8,349.90	32.10	29.27	-90.00	-313.03	-1,946.79	2,331.15	2,288.27	42.88	54.362		
9,200.00	8,394.00	8,361.89	8,349.90	32.81	29.27	-90.00	-313.03	-1,946.79	2,376.32	2,333.12	43.20	55.013		
9,300.00	8,394.00	8,361.89	8,349.90	33.58	29.27	-90.00	-313.03	-1,946.79	2,424.77	2,381.25	43.52	55.716		
9,400.00	8,394.00	8,361.89	8,349.90	34.41	29.27	-90.00	-313.03	-1,946.79	2,476.31	2,432.46	43.85	56.471		
9,500.00	8,394.00	8,361.89	8,349.90	35.30	29.27	-90.00	-313.03	-1,946.79	2,530.75	2,486.57	44.18	57.278		
9,600.00	8,394.00	8,361.90	8,349.90	36.24	29.27	-90.00	-313.03	-1,946.79	2,587.92	2,543.40	44.51	58.138		
9,700.00	8,394.00	8,361.90	8,349.90	37.24	29.27	-90.00	-313.03	-1,946.79	2,647.63	2,602.79	44.84	59.049		
9,800.00	8,394.00	8,361.90	8,349.90	38.28	29.27	-90.00	-313.03	-1,946.79	2,709.71	2,664.56	45.16	60.007		
9,900.00	8,394.00	8,361.90	8,349.90	39.36	29.27	-90.00	-313.03	-1,946.79	2,774.01	2,728.54	45.47	61.010		
10,000.00	8,394.00	8,361.90	8,349.90	40.48	29.27	-90.00	-313.03	-1,946.79	2,840.38	2,794.61	45.77	62.058		
10,100.00	8,394.00	8,361.90	8,349.90	41.63	29.27	-90.00	-313.03	-1,946.79	2,908.67	2,862.61	46.06	63.147		
10,200.00	8,394.00	8,361.90	8,349.90	42.82	29.27	-90.00	-313.03	-1,946.79	2,978.75	2,932.41	46.34	64.275		
10,300.00	8,394.00	8,361.90	8,349.90	44.03	29.27	-90.00	-313.03	-1,946.79	3,050.50	3,003.89	46.61	65.444		
10,400.00	8,394.00	8,361.90	8,349.90	45.28	29.27	-90.00	-313.03	-1,946.79	3,123.81	3,076.94	46.87	66.648		
10,500.00	8,394.00	8,361.90	8,349.90	46.55	29.27	-90.00	-313.03	-1,946.79	3,198.56	3,151.45	47.12	67.887		
10,600.00	8,394.00	8,361.90	8,349.90	47.84	29.27	-90.00	-313.03	-1,946.79	3,274.66	3,227.31	47.35	69.157		
10,700.00	8,394.00	8,361.90	8,349.90	49.16	29.27	-90.00	-313.03	-1,946.79	3,352.02	3,304.44	47.58	70.457		
10,800.00	8,394.00	8,361.90	8,349.90	50.49	29.27	-90.00	-313.03	-1,946.79	3,430.54	3,382.75	47.79	71.784		
10,900.00	8,394.00	8,361.90	8,349.90	51.84	29.27	-90.00	-313.03	-1,946.79	3,510.16	3,462.17	47.99	73.137		
11,000.00	8,394.00	8,361.90	8,349.90	53.21	29.27	-90.00	-313.03	-1,946.79	3,590.80	3,542.61	48.19	74.513		
11,100.00	8,394.00	8,361.90	8,349.90	54.60	29.27	-90.00	-313.03	-1,946.79	3,672.39	3,624.01	48.38	75.911		
11,200.00	8,394.00	8,361.90	8,349.90	56.00	29.27	-90.00	-313.03	-1,946.79	3,754.87	3,706.31	48.56	77.329		
11,300.00	8,394.00	8,361.90	8,349.90	57.41	29.27	-90.00	-313.03	-1,946.79	3,838.19	3,789.46	48.73	78.771		
11,400.00	8,394.00	8,361.90	8,349.90	58.84	29.27	-90.00	-313.03	-1,946.79	3,922.28	3,873.39	48.89	80.231		
11,500.00	8,394.00	8,361.90	8,349.90	60.28	29.27	-90.00	-313.03	-1,946.79	4,007.10	3,958.06	49.04	81.708		
11,600.00	8,394.00	8,361.90	8,349.90	61.72	29.27	-90.00	-313.03	-1,946.79	4,092.61	4,043.42	49.19	83.201		
11,700.00	8,394.00	8,361.90	8,349.90	63.18	29.27	-90.00	-313.03	-1,946.79	4,178.77	4,129.44	49.33	84.709		
11,800.00	8,394.00	8,361.90	8,349.90	64.65	29.27	-90.00	-313.03	-1,946.79	4,265.53	4,216.06	49.47	86.231		
11,900.00	8,394.00	8,361.90	8,349.90	66.13	29.27	-90.00	-313.03	-1,946.79	4,352.85	4,303.26	49.60	87.766		
12,000.00	8,394.00	8,361.90	8,349.90	67.61	29.27	-90.00	-313.03	-1,946.79	4,440.71	4,390.99	49.72	89.312		
12,100.00	8,394.00	16,054.24	12,276.00	69.10	76.53	-151.84	3,698.93	-1,986.48	4,453.01	4,385.80	67.21	66.250		
12,200.00	8,394.00	16,154.24	12,276.00	70.60	77.90	-151.84	3,798.93	-1,987.47	4,453.03	4,384.58	68.45	65.054		
12,300.00	8,394.00	16,254.24	12,276.00	72.11	79.29	-151.84	3,898.92	-1,988.46	4,453.05	4,383.36	69.70	63.892		
12,400.00	8,394.00	16,354.24	12,276.00	73.62	80.68	-151.84	3,998.92	-1,989.45	4,453.07	4,382.12	70.95	62.763		
12,500.00	8,394.00	16,454.24	12,276.00	75.14	82.08	-151.84	4,098.91	-1,990.44	4,453.09	4,380.88	72.21	61.669		
12,600.00	8,394.00	16,554.24	12,276.00	76.66	83.49	-151.84	4,198.91	-1,991.43	4,453.11	4,379.64	73.48	60.607		
12,700.00	8,394.00	16,654.24	12,276.00	78.19	84.91	-151.84	4,298.90	-1,992.42	4,453.13	4,378.38	74.75	59.575		
12,800.00	8,394.00	16,754.24	12,276.00	79.72	86.34	-151.84	4,398.90	-1,993.40	4,453.15	4,377.12	76.03	58.572		
12,900.00	8,394.00	16,854.24	12,276.00	81.26	87.78	-151.84	4,498.89	-1,994.39	4,453.17	4,375.86	77.31	57.598		
13,000.00	8,394.00	16,954.24	12,276.00	82.80	89.22	-151.84	4,598.89	-1,995.38	4,453.19	4,374.59	78.61	56.652		
13,100.00	8,394.00	17,054.24	12,276.00	84.35	90.67	-151.84	4,698.88	-1,996.37	4,453.21	4,373.31	79.90	55.732		
13,200.00	8,394.00	17,154.24	12,276.00	85.90	92.13	-151.84	4,798.88	-1,997.36	4,453.23	4,372.02	81.21	54.838		
13,300.00	8,394.00	17,254.24	12,276.00	87.46	93.59	-151.84	4,898.87	-1,998.35	4,453.25	4,370.74	82.52	53.968		
13,400.00	8,394.00	17,354.24	12,276.00	89.02	95.06	-151.84	4,998.87	-1,999.34	4,453.27	4,369.44	83.83	53.122		
13,500.00	8,394.00	17,454.24	12,276.00	90.58	96.54	-151.84	5,098.86	-2,000.33	4,453.29	4,368.14	85.15	52.300		
13,600.00	8,394.00	17,554.24	12,276.00	92.14	98.02	-151.84	5,198.86	-2,001.32	4,453.31	4,366.84	86.47	51.500		
13,700.00	8,394.00	17,654.24	12,276.00	93.71	99.51	-151.84	5,298.85	-2,002.31	4,453.33	4,365.53	87.80	50.722		
13,800.00	8,394.00	17,754.24	12,276.00	95.28	101.00	-151.84	5,398.85	-2,003.30	4,453.35	4,364.22	89.13	49.966		
13,900.00	8,394.00	17,854.24	12,276.00	96.85	102.49	-151.84	5,498.84	-2,004.29	4,453.37	4,362.91	90.46	49.230		
14,000.00	8,394.00	17,954.24	12,276.00	98.43	104.00	-151.84	5,598.84	-2,005.28	4,453.39	4,361.59	91.80	48.514		
14,100.00	8,394.00	18,054.24	12,276.00	100.01	105.50	-151.84	5,698.83	-2,006.27	4,453.41	4,360.27	93.14	47.815		
14,200.00	8,394.00	18,154.24	12,276.00	101.59	107.01	-151.83	5,798.83	-2,007.25	4,453.43	4,358.95	94.48	47.134		

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



Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well FMM Fed Com 103H
Project:	Lea County, NM (NAD83)	TVD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Reference Site:	FMM Fed Com	MD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	FMM Fed Com 103H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.15 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design FMM Fed Com - FMM Fed Com 802H - OH - Plan #1													Offset Site Error:	0.00 usft
Survey Program: 0-OWSG (Rev2) MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
14,300.00	8,394.00	18,254.24	12,276.00	103.17	108.53	-151.83	5,898.83	-2,008.24	4,453.45	4,357.62	95.83	46.473		
14,400.00	8,394.00	18,354.24	12,276.00	104.75	110.05	-151.83	5,998.82	-2,009.23	4,453.47	4,356.29	97.18	45.828		
14,500.00	8,394.00	18,454.24	12,276.00	106.34	111.57	-151.83	6,098.82	-2,010.22	4,453.49	4,354.96	98.53	45.200		
14,600.00	8,394.00	18,554.24	12,276.00	107.93	113.10	-151.83	6,198.81	-2,011.21	4,453.51	4,353.63	99.88	44.587		
14,700.00	8,394.00	18,654.24	12,276.00	109.52	114.62	-151.83	6,298.81	-2,012.20	4,453.53	4,352.29	101.24	43.990		
14,800.00	8,394.00	18,754.24	12,276.00	111.11	116.16	-151.83	6,398.80	-2,013.19	4,453.55	4,350.95	102.60	43.407		
14,900.00	8,394.00	18,854.24	12,276.00	112.71	117.69	-151.83	6,498.80	-2,014.18	4,453.57	4,349.61	103.96	42.838		
15,000.00	8,394.00	18,954.24	12,276.00	114.30	119.23	-151.83	6,598.79	-2,015.17	4,453.59	4,348.26	105.33	42.283		
15,100.00	8,394.00	19,054.24	12,276.00	115.90	120.78	-151.83	6,698.79	-2,016.16	4,453.61	4,346.91	106.69	41.742		
15,200.00	8,394.00	19,154.24	12,276.00	117.50	122.32	-151.83	6,798.78	-2,017.15	4,453.63	4,345.56	108.06	41.213		
15,300.00	8,394.00	19,254.24	12,276.00	119.10	123.87	-151.83	6,898.78	-2,018.14	4,453.65	4,344.21	109.44	40.696		
15,400.00	8,394.00	19,354.24	12,276.00	120.70	125.42	-151.83	6,998.77	-2,019.13	4,453.67	4,342.86	110.81	40.192		
15,500.00	8,394.00	19,454.24	12,276.00	122.31	126.97	-151.83	7,098.77	-2,020.11	4,453.69	4,341.50	112.18	39.700		
15,600.00	8,394.00	19,554.24	12,276.00	123.91	128.53	-151.83	7,198.76	-2,021.10	4,453.71	4,340.15	113.56	39.220		
15,700.00	8,394.00	19,654.24	12,276.00	125.52	130.09	-151.83	7,298.76	-2,022.09	4,453.73	4,338.79	114.93	38.750		
15,800.00	8,394.00	19,754.24	12,276.00	127.12	131.65	-151.83	7,398.75	-2,023.08	4,453.75	4,337.43	116.31	38.291		
15,900.00	8,394.00	19,854.24	12,276.00	128.73	133.21	-151.83	7,498.75	-2,024.07	4,453.77	4,336.07	117.70	37.841		
16,000.00	8,394.00	19,954.24	12,276.00	130.34	134.77	-151.83	7,598.74	-2,025.06	4,453.79	4,334.71	119.08	37.402		
16,100.00	8,394.00	20,054.24	12,276.00	131.95	136.34	-151.83	7,698.74	-2,026.05	4,453.81	4,333.34	120.46	36.973		
16,200.00	8,394.00	20,154.24	12,276.00	133.56	137.91	-151.83	7,798.73	-2,027.04	4,453.82	4,331.98	121.84	36.553		
16,300.00	8,394.00	20,254.24	12,276.00	135.18	139.48	-151.82	7,898.73	-2,028.03	4,453.84	4,330.61	123.23	36.143		
16,400.00	8,394.00	20,354.24	12,276.00	136.79	141.05	-151.82	7,998.72	-2,029.02	4,453.86	4,329.25	124.62	35.741		
16,500.00	8,394.00	20,454.24	12,276.00	138.40	142.63	-151.82	8,098.72	-2,030.01	4,453.88	4,327.88	126.00	35.347		
16,600.00	8,394.00	20,554.24	12,276.00	140.02	144.20	-151.82	8,198.71	-2,031.00	4,453.90	4,326.51	127.39	34.962		
16,700.00	8,394.00	20,654.24	12,276.00	141.64	145.78	-151.82	8,298.71	-2,031.99	4,453.92	4,325.14	128.78	34.584		
16,800.00	8,394.00	20,754.24	12,276.00	143.25	147.36	-151.82	8,398.70	-2,032.98	4,453.94	4,323.77	130.18	34.215		
16,900.00	8,394.00	20,854.24	12,276.00	144.87	148.94	-151.82	8,498.70	-2,033.96	4,453.96	4,322.39	131.57	33.852		
17,000.00	8,394.00	20,954.24	12,276.00	146.49	150.52	-151.82	8,598.69	-2,034.95	4,453.98	4,321.02	132.97	33.497		
17,100.00	8,394.00	21,054.24	12,276.00	148.11	152.11	-151.82	8,698.69	-2,035.94	4,454.00	4,319.64	134.36	33.150		
17,200.00	8,394.00	21,154.24	12,276.00	149.73	153.69	-151.82	8,798.68	-2,036.93	4,454.02	4,318.27	135.76	32.809		
17,300.00	8,394.00	21,254.24	12,276.00	151.35	155.28	-151.82	8,898.68	-2,037.92	4,454.04	4,316.89	137.15	32.476		
17,400.00	8,394.00	21,354.24	12,276.00	152.97	156.87	-151.82	8,998.67	-2,038.91	4,454.06	4,315.52	138.55	32.149		
17,500.00	8,394.00	21,454.24	12,276.00	154.59	158.46	-151.82	9,098.67	-2,039.90	4,454.08	4,314.14	139.94	31.828		
17,600.00	8,394.00	21,554.24	12,276.00	156.21	160.05	-151.82	9,198.66	-2,040.89	4,454.10	4,312.76	141.34	31.513		
17,700.00	8,394.00	21,654.24	12,276.00	157.84	161.64	-151.82	9,298.66	-2,041.88	4,454.12	4,311.38	142.74	31.204		
17,800.00	8,394.00	21,754.24	12,276.00	159.46	163.24	-151.82	9,398.65	-2,042.87	4,454.14	4,310.00	144.14	30.901		
17,900.00	8,394.00	21,854.24	12,276.00	161.08	164.83	-151.82	9,498.65	-2,043.86	4,454.16	4,308.62	145.54	30.604		
18,000.00	8,394.00	21,954.24	12,276.00	162.71	166.43	-151.82	9,598.64	-2,044.85	4,454.18	4,307.23	146.95	30.312		
18,100.00	8,394.00	22,054.24	12,276.00	164.33	168.02	-151.82	9,698.64	-2,045.84	4,454.20	4,305.85	148.35	30.026		
18,200.00	8,394.00	22,154.24	12,276.00	165.96	169.62	-151.82	9,798.63	-2,046.82	4,454.22	4,304.47	149.75	29.745		
18,300.00	8,394.00	22,254.24	12,276.00	167.59	171.22	-151.82	9,898.63	-2,047.81	4,454.24	4,303.09	151.15	29.469		
18,400.00	8,394.00	22,354.24	12,276.00	169.21	172.82	-151.81	9,998.62	-2,048.80	4,454.26	4,301.71	152.55	29.198		
18,449.58	8,394.00	22,403.82	12,276.00	170.02	173.61	-151.81	10,048.20	-2,049.29	4,454.27	4,301.02	153.25	29.065		
18,450.14	8,394.00	22,404.38	12,276.00	170.03	173.62	-151.81	10,048.76	-2,049.30	4,454.27	4,301.01	153.26	29.064 SF		

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



Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well FMM Fed Com 103H
Project:	Lea County, NM (NAD83)	TVD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Reference Site:	FMM Fed Com	MD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	FMM Fed Com 103H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.15 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 0-OWSG (Rev2) MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
0.00	0.00	0.00	0.00	0.00	0.00	-92.76	-92.80	-1,922.72	1,925.45					
100.00	100.00	56.50	56.50	0.13	0.07	-92.76	-92.80	-1,922.72	1,924.96	1,924.82	0.14	N/A		
200.00	200.00	156.50	156.50	0.48	0.33	-92.76	-92.80	-1,922.72	1,924.96	1,924.38	0.58	3,292.675		
300.00	300.00	256.50	256.50	0.84	0.69	-92.76	-92.80	-1,922.72	1,924.96	1,923.88	1.09	1,771.398		
400.00	400.00	356.50	356.50	1.20	1.04	-92.76	-92.80	-1,922.72	1,924.96	1,923.37	1.59	1,209.252		
500.00	500.00	456.50	456.50	1.56	1.40	-92.76	-92.80	-1,922.72	1,924.96	1,922.86	2.10	917.569		
600.00	600.00	556.50	556.50	1.92	1.76	-92.76	-92.80	-1,922.72	1,924.96	1,922.36	2.60	739.152		
700.00	700.00	656.50	656.50	2.28	2.12	-92.76	-92.80	-1,922.72	1,924.96	1,921.85	3.11	618.788		
800.00	800.00	756.50	756.50	2.63	2.48	-92.76	-92.80	-1,922.72	1,924.96	1,921.34	3.62	532.119		
900.00	900.00	856.50	856.50	2.99	2.84	-92.76	-92.80	-1,922.72	1,924.96	1,920.84	4.12	466.738		
1,000.00	1,000.00	956.50	956.50	3.35	3.20	-92.76	-92.80	-1,922.72	1,924.96	1,920.33	4.63	415.661		
1,100.00	1,100.00	1,056.50	1,056.50	3.71	3.55	-92.76	-92.80	-1,922.72	1,924.96	1,919.82	5.14	374.659		
1,200.00	1,200.00	1,156.50	1,156.50	4.07	3.91	-92.76	-92.80	-1,922.72	1,924.96	1,919.32	5.64	341.018		
1,300.00	1,300.00	1,256.50	1,256.50	4.43	4.27	-92.76	-92.80	-1,922.72	1,924.96	1,918.81	6.15	312.919		
1,400.00	1,400.00	1,356.50	1,356.50	4.79	4.63	-92.76	-92.80	-1,922.72	1,924.96	1,918.30	6.66	289.098		
1,500.00	1,500.00	1,456.50	1,456.50	5.14	4.99	-92.76	-92.80	-1,922.72	1,924.96	1,917.80	7.17	268.647		
1,600.00	1,600.00	1,556.50	1,556.50	5.50	5.35	-92.76	-92.80	-1,922.72	1,924.96	1,917.29	7.67	250.898		
1,700.00	1,700.00	1,656.50	1,656.50	5.86	5.71	-92.76	-92.80	-1,922.72	1,924.96	1,916.78	8.18	235.348		
1,800.00	1,800.00	1,756.50	1,756.50	6.22	6.06	-92.76	-92.80	-1,922.72	1,924.96	1,916.28	8.69	221.614		
1,900.00	1,900.00	1,856.50	1,856.50	6.58	6.42	-92.76	-92.80	-1,922.72	1,924.96	1,915.77	9.19	209.394		
1,920.00	1,920.00	1,876.50	1,876.50	6.65	6.49	-92.76	-92.80	-1,922.72	1,924.96	1,915.67	9.29	207.110		
2,000.00	1,999.99	1,956.49	1,956.49	6.92	6.78	121.29	-92.80	-1,922.72	1,925.40	1,915.71	9.69	198.693		
2,100.00	2,099.93	2,109.64	2,109.62	7.25	7.32	121.41	-93.16	-1,921.19	1,926.39	1,916.09	10.30	187.077		
2,120.05	2,119.96	2,148.56	2,148.52	7.32	7.45	121.45	-93.46	-1,919.91	1,926.26	1,915.82	10.43	184.618		
2,200.00	2,199.80	2,303.69	2,303.37	7.58	7.98	121.58	-95.55	-1,910.98	1,923.89	1,912.91	10.98	175.287		
2,300.00	2,299.66	2,496.93	2,495.53	7.92	8.65	121.68	-100.15	-1,891.29	1,916.54	1,904.90	11.64	164.636		
2,400.00	2,399.52	2,688.39	2,684.67	8.25	9.35	121.69	-106.89	-1,862.49	1,904.37	1,892.09	12.29	154.965		
2,500.00	2,499.39	2,823.42	2,817.15	8.59	9.87	121.66	-112.83	-1,837.08	1,888.31	1,875.48	12.83	147.156		
2,600.00	2,599.25	2,922.05	2,913.81	8.94	10.26	121.63	-117.30	-1,817.99	1,871.86	1,858.55	13.32	140.560		
2,700.00	2,699.11	3,020.68	3,010.48	9.28	10.65	121.60	-121.76	-1,798.90	1,855.42	1,841.61	13.81	134.395		
2,800.00	2,798.98	3,119.32	3,107.15	9.63	11.05	121.57	-126.23	-1,779.82	1,838.98	1,824.68	14.30	128.622		
2,900.00	2,898.84	3,217.95	3,203.81	9.97	11.46	121.54	-130.69	-1,760.73	1,822.54	1,807.74	14.79	123.209		
3,000.00	2,998.70	3,316.59	3,300.48	10.32	11.87	121.51	-135.16	-1,741.64	1,806.09	1,790.80	15.29	118.127		
3,100.00	3,098.57	3,415.22	3,397.15	10.67	12.29	121.48	-139.62	-1,722.56	1,789.65	1,773.86	15.79	113.347		
3,200.00	3,198.43	3,513.86	3,493.81	11.02	12.71	121.45	-144.09	-1,703.47	1,773.21	1,756.92	16.29	108.847		
3,300.00	3,298.29	3,612.49	3,590.48	11.38	13.13	121.41	-148.55	-1,684.38	1,756.77	1,739.98	16.79	104.604		
3,400.00	3,398.15	3,711.12	3,687.15	11.73	13.56	121.38	-153.02	-1,665.29	1,740.33	1,723.03	17.30	100.597		
3,500.00	3,498.02	3,809.76	3,783.82	12.09	13.99	121.35	-157.48	-1,646.21	1,723.89	1,706.09	17.81	96.808		
3,600.00	3,597.88	3,908.39	3,880.48	12.44	14.43	121.31	-161.95	-1,627.12	1,707.46	1,689.14	18.32	93.222		
3,700.00	3,697.74	4,007.03	3,977.15	12.80	14.87	121.28	-166.41	-1,608.03	1,691.02	1,672.19	18.83	89.823		
3,800.00	3,797.61	4,105.66	4,073.82	13.16	15.31	121.24	-170.88	-1,588.95	1,674.58	1,655.24	19.34	86.597		
3,900.00	3,897.47	4,204.30	4,170.48	13.51	15.75	121.20	-175.34	-1,569.86	1,658.15	1,638.30	19.85	83.533		
4,000.00	3,997.33	4,302.93	4,267.15	13.87	16.19	121.16	-179.81	-1,550.77	1,641.71	1,621.35	20.36	80.618		
4,100.00	4,097.19	4,401.57	4,363.82	14.23	16.64	121.13	-184.27	-1,531.69	1,625.27	1,604.40	20.88	77.843		
4,200.00	4,197.06	4,500.20	4,460.48	14.59	17.08	121.09	-188.74	-1,512.60	1,608.84	1,587.45	21.39	75.198		
4,300.00	4,296.92	4,598.83	4,557.15	14.95	17.53	121.05	-193.20	-1,493.51	1,592.41	1,570.50	21.91	72.675		
4,400.00	4,396.78	4,697.47	4,653.82	15.31	17.98	121.01	-197.67	-1,474.43	1,575.97	1,553.55	22.43	70.265		
4,500.00	4,496.65	4,796.10	4,750.48	15.67	18.44	120.97	-202.13	-1,455.34	1,559.54	1,536.60	22.95	67.961		
4,600.00	4,596.51	4,894.74	4,847.15	16.03	18.89	120.92	-206.60	-1,436.25	1,543.11	1,519.64	23.47	65.757		
4,700.00	4,696.37	4,993.37	4,943.82	16.39	19.34	120.88	-211.06	-1,417.16	1,526.68	1,502.69	23.99	63.647		
4,800.00	4,796.23	5,092.01	5,040.49	16.75	19.80	120.84	-215.53	-1,398.08	1,510.25	1,485.74	24.51	61.624		
4,900.00	4,896.10	5,190.64	5,137.15	17.12	20.25	120.79	-219.99	-1,378.99	1,493.82	1,468.79	25.03	59.684		

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



Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well FMM Fed Com 103H
Project:	Lea County, NM (NAD83)	TVD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Reference Site:	FMM Fed Com	MD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	FMM Fed Com 103H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.15 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design FMM Fed Com - FMM Fed Com 803H - OH - Plan #1													Offset Site Error:	0.00 usft
Survey Program: 0-OWSG (Rev2) MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
5,000.00	4,995.96	5,289.27	5,233.82	17.48	20.71	120.74	-224.46	-1,359.90	1,477.40	1,451.85	25.55	57.822		
5,100.00	5,095.82	5,387.91	5,330.49	17.84	21.17	120.70	-228.92	-1,340.82	1,460.97	1,434.90	26.07	56.034		
5,200.00	5,195.69	5,486.54	5,427.15	18.21	21.63	120.65	-233.39	-1,321.73	1,444.54	1,417.95	26.60	54.315		
5,300.00	5,295.55	5,585.18	5,523.82	18.57	22.09	120.60	-237.85	-1,302.64	1,428.12	1,401.00	27.12	52.661		
5,400.00	5,395.41	5,683.81	5,620.49	18.93	22.55	120.55	-242.32	-1,283.56	1,411.70	1,384.05	27.64	51.068		
5,500.00	5,495.27	5,782.45	5,717.15	19.30	23.01	120.50	-246.78	-1,264.47	1,395.27	1,367.11	28.17	49.534		
5,600.00	5,595.14	5,881.08	5,813.82	19.66	23.47	120.44	-251.25	-1,245.38	1,378.85	1,350.16	28.69	48.056		
5,700.00	5,695.00	5,979.72	5,910.49	20.02	23.93	120.39	-255.71	-1,226.30	1,362.43	1,333.21	29.22	46.629		
5,800.00	5,794.86	6,078.35	6,007.15	20.39	24.40	120.33	-260.18	-1,207.21	1,346.01	1,316.27	29.74	45.253		
5,900.00	5,894.73	6,176.98	6,103.82	20.75	24.86	120.28	-264.64	-1,188.12	1,329.60	1,299.32	30.27	43.923		
6,000.00	5,994.59	6,275.62	6,200.49	21.12	25.32	120.22	-269.11	-1,169.03	1,313.18	1,282.38	30.80	42.638		
6,100.00	6,094.45	6,374.25	6,297.16	21.48	25.79	120.16	-273.57	-1,149.95	1,296.76	1,265.44	31.33	41.396		
6,200.00	6,194.31	6,472.89	6,393.82	21.85	26.25	120.10	-278.03	-1,130.86	1,280.35	1,248.50	31.85	40.195		
6,300.00	6,294.18	6,571.52	6,490.49	22.21	26.72	120.03	-282.50	-1,111.77	1,263.94	1,231.56	32.38	39.032		
6,400.00	6,394.04	6,667.42	6,584.48	22.58	27.17	119.97	-286.84	-1,093.23	1,247.54	1,214.63	32.91	37.908		
6,500.00	6,493.90	6,742.88	6,658.60	22.94	27.52	119.93	-290.05	-1,079.50	1,232.28	1,198.85	33.42	36.870		
6,600.00	6,593.77	6,818.75	6,733.41	23.31	27.86	119.92	-292.94	-1,067.14	1,218.88	1,184.96	33.93	35.928		
6,700.00	6,693.63	6,900.00	6,813.77	23.67	28.21	119.92	-295.66	-1,055.51	1,207.39	1,172.97	34.43	35.072		
6,800.00	6,793.49	6,971.53	6,884.72	24.04	28.50	119.95	-297.73	-1,046.66	1,197.77	1,162.87	34.90	34.322		
6,900.00	6,893.35	7,048.32	6,961.06	24.40	28.80	119.99	-299.62	-1,038.59	1,190.07	1,154.70	35.37	33.650		
7,000.00	6,993.22	7,125.29	7,037.74	24.77	29.09	120.07	-301.16	-1,032.00	1,184.29	1,148.47	35.82	33.062		
7,106.97	7,100.04	7,200.00	7,112.27	25.16	29.36	120.16	-302.32	-1,027.05	1,180.27	1,144.00	36.27	32.544		
7,200.00	7,192.99	7,279.56	7,191.74	25.50	29.63	120.21	-303.19	-1,023.34	1,177.94	1,141.25	36.69	32.107		
7,307.02	7,300.00	7,362.21	7,274.35	25.87	29.90	-93.84	-303.69	-1,021.19	1,175.96	1,138.84	37.12	31.680		
7,400.00	7,392.98	7,437.34	7,349.48	26.18	30.14	-93.84	-303.80	-1,020.72	1,175.37	1,137.88	37.49	31.352		
7,500.00	7,492.98	7,537.34	7,449.48	26.52	30.44	-93.84	-303.80	-1,020.72	1,175.37	1,137.41	37.96	30.965		
7,600.00	7,592.98	7,637.34	7,549.48	26.85	30.74	-93.84	-303.80	-1,020.72	1,175.37	1,136.94	38.43	30.586		
7,700.00	7,692.98	7,737.34	7,649.48	27.19	31.04	-93.84	-303.80	-1,020.72	1,175.37	1,136.47	38.90	30.215		
7,800.00	7,792.98	7,837.34	7,749.48	27.53	31.35	-93.84	-303.80	-1,020.72	1,175.37	1,136.00	39.37	29.853		
7,828.06	7,821.04	7,865.40	7,777.54	27.62	31.43	-93.84	-303.80	-1,020.72	1,175.37	1,135.86	39.51	29.752 CC		
7,850.00	7,842.97	7,887.33	7,799.47	27.69	31.50	-93.32	-303.80	-1,020.72	1,175.39	1,135.78	39.61	29.675 ES		
7,900.00	7,892.79	7,937.15	7,849.29	27.86	31.65	-93.49	-303.80	-1,020.72	1,175.64	1,135.79	39.85	29.504		
7,950.00	7,942.06	7,986.42	7,898.56	28.01	31.80	-93.84	-303.80	-1,020.72	1,176.18	1,136.10	40.08	29.343		
8,000.00	7,990.41	8,034.77	7,946.91	28.16	31.95	-94.34	-303.80	-1,020.72	1,177.12	1,136.80	40.32	29.194		
8,050.00	8,037.47	8,081.83	7,993.97	28.29	32.09	-94.97	-303.80	-1,020.72	1,178.58	1,138.02	40.56	29.061		
8,100.00	8,082.88	8,127.24	8,039.38	28.42	32.23	-95.67	-303.80	-1,020.72	1,180.71	1,139.92	40.79	28.947		
8,150.00	8,126.30	8,170.66	8,082.80	28.54	32.37	-96.41	-303.80	-1,020.72	1,183.71	1,142.69	41.02	28.857		
8,200.00	8,167.40	8,211.76	8,123.90	28.66	32.49	-97.13	-303.80	-1,020.72	1,187.79	1,146.54	41.25	28.795		
8,250.00	8,205.86	8,250.22	8,162.36	28.77	32.61	-97.77	-303.80	-1,020.72	1,193.16	1,151.68	41.48	28.766 SF		
8,300.00	8,241.40	8,285.75	8,197.90	28.88	32.72	-98.28	-303.80	-1,020.72	1,200.03	1,158.32	41.70	28.775		
8,350.00	8,273.73	8,318.09	8,230.23	28.99	32.82	-98.60	-303.80	-1,020.72	1,208.58	1,166.66	41.93	28.826		
8,400.00	8,302.62	8,346.97	8,259.12	29.11	32.91	-98.67	-303.80	-1,020.72	1,219.00	1,176.85	42.15	28.922		
8,450.00	8,327.84	8,372.20	8,284.34	29.24	32.99	-98.44	-303.80	-1,020.72	1,231.39	1,189.02	42.36	29.068		
8,500.00	8,349.21	8,393.56	8,305.71	29.38	33.05	-97.87	-303.80	-1,020.72	1,245.83	1,203.26	42.57	29.265		
8,550.00	8,366.55	8,410.91	8,323.05	29.52	33.11	-96.92	-303.80	-1,020.72	1,262.35	1,219.58	42.77	29.514		
8,600.00	8,379.75	8,424.10	8,336.25	29.68	33.15	-95.54	-303.80	-1,020.72	1,280.91	1,237.95	42.96	29.816		
8,650.00	8,388.69	8,433.05	8,345.19	29.85	33.18	-93.73	-303.80	-1,020.72	1,301.41	1,258.28	43.14	30.169		
8,700.00	8,393.31	8,437.67	8,349.81	30.03	33.19	-91.46	-303.80	-1,020.72	1,323.70	1,280.40	43.30	30.572		
8,728.06	8,394.00	8,438.36	8,350.50	30.14	33.19	-90.00	-303.80	-1,020.72	1,336.91	1,293.53	43.38	30.818		
8,800.00	8,394.00	8,438.36	8,350.50	30.43	33.19	-90.00	-303.80	-1,020.72	1,372.84	1,329.25	43.59	31.496		
8,900.00	8,394.00	8,438.36	8,350.50	30.91	33.19	-90.00	-303.80	-1,020.72	1,427.30	1,383.43	43.87	32.532		
9,000.00	8,394.00	8,438.36	8,350.50	31.47	33.19	-90.00	-303.80	-1,020.72	1,486.51	1,442.36	44.15	33.670		

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



Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well FMM Fed Com 103H
Project:	Lea County, NM (NAD83)	TVD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Reference Site:	FMM Fed Com	MD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	FMM Fed Com 103H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.15 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 0-OWSG (Rev2) MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
9,100.00	8,394.00	8,438.36	8,350.50	32.10	33.19	-90.00	-303.80	-1,020.72	1,549.91	1,505.50	44.41	34.899		
9,200.00	8,394.00	8,438.36	8,350.50	32.81	33.19	-90.00	-303.80	-1,020.72	1,617.02	1,572.36	44.65	36.211		
9,300.00	8,394.00	8,438.36	8,350.50	33.58	33.19	-90.00	-303.80	-1,020.72	1,687.38	1,642.50	44.88	37.597		
9,400.00	8,394.00	8,438.36	8,350.50	34.41	33.19	-90.00	-303.80	-1,020.72	1,760.62	1,715.53	45.09	39.048		
9,500.00	8,394.00	8,438.36	8,350.50	35.30	33.19	-90.00	-303.80	-1,020.72	1,836.38	1,791.10	45.28	40.557		
9,600.00	8,394.00	8,438.36	8,350.50	36.24	33.19	-90.00	-303.80	-1,020.72	1,914.37	1,868.92	45.45	42.118		
9,700.00	8,394.00	8,438.36	8,350.50	37.24	33.19	-90.00	-303.80	-1,020.72	1,994.32	1,948.71	45.61	43.725		
9,800.00	8,394.00	8,438.36	8,350.50	38.28	33.19	-90.00	-303.80	-1,020.72	2,076.02	2,030.26	45.75	45.374		
9,900.00	8,394.00	8,438.36	8,350.50	39.36	33.19	-90.00	-303.80	-1,020.72	2,159.25	2,113.37	45.88	47.059		
10,000.00	8,394.00	8,438.36	8,350.50	40.48	33.19	-90.00	-303.80	-1,020.72	2,243.85	2,197.85	46.00	48.775		
10,100.00	8,394.00	8,438.36	8,350.50	41.63	33.19	-90.00	-303.80	-1,020.72	2,329.68	2,283.56	46.11	50.520		
10,200.00	8,394.00	8,438.36	8,350.50	42.82	33.19	-90.00	-303.80	-1,020.72	2,416.59	2,370.38	46.22	52.290		
10,300.00	8,394.00	8,438.36	8,350.50	44.03	33.19	-90.00	-303.80	-1,020.72	2,504.48	2,458.17	46.31	54.082		
10,400.00	8,394.00	8,438.36	8,350.50	45.28	33.19	-90.00	-303.80	-1,020.72	2,593.25	2,546.85	46.40	55.895		
10,500.00	8,394.00	8,438.36	8,350.50	46.55	33.19	-90.00	-303.80	-1,020.72	2,682.81	2,636.33	46.48	57.725		
10,600.00	8,394.00	8,438.36	8,350.50	47.84	33.19	-90.00	-303.80	-1,020.72	2,773.08	2,726.53	46.55	59.571		
10,700.00	8,394.00	8,438.36	8,350.50	49.16	33.19	-90.00	-303.80	-1,020.72	2,864.00	2,817.38	46.62	61.433		
10,800.00	8,394.00	8,438.36	8,350.50	50.49	33.19	-90.00	-303.80	-1,020.72	2,955.51	2,908.82	46.69	63.307		
10,900.00	8,394.00	8,438.36	8,350.50	51.84	33.19	-90.00	-303.80	-1,020.72	3,047.54	3,000.80	46.75	65.193		
11,000.00	8,394.00	8,438.36	8,350.50	53.21	33.19	-90.00	-303.80	-1,020.72	3,140.07	3,093.27	46.80	67.089		
11,100.00	8,394.00	8,438.36	8,350.50	54.60	33.19	-90.00	-303.80	-1,020.72	3,233.04	3,186.18	46.86	68.994		
11,200.00	8,394.00	8,438.36	8,350.50	56.00	33.19	-90.00	-303.80	-1,020.72	3,326.42	3,279.51	46.91	70.907		
11,300.00	8,394.00	8,438.36	8,350.50	57.41	33.19	-90.00	-303.80	-1,020.72	3,420.17	3,373.21	46.96	72.827		
11,400.00	8,394.00	8,438.36	8,350.50	58.84	33.19	-90.00	-303.80	-1,020.72	3,514.27	3,467.26	47.01	74.754		
11,500.00	8,394.00	8,438.36	8,350.50	60.28	33.19	-90.00	-303.80	-1,020.72	3,608.69	3,561.63	47.06	76.686		
11,600.00	8,394.00	8,438.36	8,350.50	61.72	33.19	-90.00	-303.80	-1,020.72	3,703.40	3,656.29	47.10	78.623		
11,700.00	8,394.00	8,438.36	8,350.50	63.18	33.19	-90.00	-303.80	-1,020.72	3,798.38	3,751.23	47.15	80.564		
11,800.00	8,394.00	8,438.36	8,350.50	64.65	33.19	-90.00	-303.80	-1,020.72	3,893.61	3,846.42	47.19	82.509		
11,900.00	8,394.00	15,790.01	12,136.00	66.13	74.32	-162.75	3,508.08	-1,058.50	3,963.69	3,905.11	58.58	67.666		
12,000.00	8,394.00	15,890.01	12,136.00	67.61	75.65	-162.75	3,608.08	-1,059.50	3,963.70	3,904.08	59.62	66.485		
12,100.00	8,394.00	15,990.01	12,136.00	69.10	77.00	-162.75	3,708.07	-1,060.49	3,963.71	3,903.05	60.66	65.338		
12,200.00	8,394.00	16,090.01	12,136.00	70.60	78.36	-162.75	3,808.07	-1,061.48	3,963.73	3,902.01	61.72	64.223		
12,300.00	8,394.00	16,190.01	12,136.00	72.11	79.73	-162.75	3,908.06	-1,062.47	3,963.74	3,900.96	62.78	63.138		
12,400.00	8,394.00	16,290.01	12,136.00	73.62	81.11	-162.75	4,008.06	-1,063.46	3,963.75	3,899.91	63.85	62.081		
12,500.00	8,394.00	16,390.01	12,136.00	75.14	82.50	-162.75	4,108.05	-1,064.45	3,963.77	3,898.84	64.92	61.054		
12,600.00	8,394.00	16,490.01	12,136.00	76.66	83.90	-162.75	4,208.05	-1,065.44	3,963.78	3,897.78	66.00	60.054		
12,700.00	8,394.00	16,590.01	12,136.00	78.19	85.31	-162.75	4,308.04	-1,066.43	3,963.79	3,896.70	67.09	59.080		
12,800.00	8,394.00	16,690.01	12,136.00	79.72	86.72	-162.75	4,408.04	-1,067.42	3,963.81	3,895.62	68.19	58.133		
12,900.00	8,394.00	16,790.01	12,136.00	81.26	88.15	-162.75	4,508.03	-1,068.41	3,963.82	3,894.53	69.28	57.211		
13,000.00	8,394.00	16,890.01	12,136.00	82.80	89.58	-162.75	4,608.03	-1,069.41	3,963.83	3,893.44	70.39	56.313		
13,100.00	8,394.00	16,990.01	12,136.00	84.35	91.02	-162.75	4,708.02	-1,070.40	3,963.84	3,892.35	71.50	55.440		
13,200.00	8,394.00	17,090.01	12,136.00	85.90	92.47	-162.75	4,808.02	-1,071.39	3,963.86	3,891.24	72.61	54.589		
13,300.00	8,394.00	17,190.01	12,136.00	87.46	93.92	-162.75	4,908.01	-1,072.38	3,963.87	3,890.14	73.73	53.762		
13,400.00	8,394.00	17,290.01	12,136.00	89.02	95.38	-162.75	5,008.01	-1,073.37	3,963.88	3,889.03	74.85	52.957		
13,500.00	8,394.00	17,390.01	12,136.00	90.58	96.85	-162.75	5,108.00	-1,074.36	3,963.90	3,887.92	75.98	52.173		
13,600.00	8,394.00	17,490.01	12,136.00	92.14	98.32	-162.74	5,208.00	-1,075.35	3,963.91	3,886.80	77.11	51.409		
13,700.00	8,394.00	17,590.01	12,136.00	93.71	99.80	-162.74	5,307.99	-1,076.34	3,963.92	3,885.68	78.24	50.664		
13,800.00	8,394.00	17,690.01	12,136.00	95.28	101.29	-162.74	5,407.99	-1,077.33	3,963.94	3,884.56	79.38	49.939		
13,900.00	8,394.00	17,790.01	12,136.00	96.85	102.78	-162.74	5,507.98	-1,078.33	3,963.95	3,883.43	80.52	49.231		
14,000.00	8,394.00	17,890.01	12,136.00	98.43	104.27	-162.74	5,607.98	-1,079.32	3,963.96	3,882.30	81.66	48.541		
14,100.00	8,394.00	17,990.01	12,136.00	100.01	105.77	-162.74	5,707.97	-1,080.31	3,963.97	3,881.16	82.81	47.868		
14,200.00	8,394.00	18,090.01	12,136.00	101.59	107.27	-162.74	5,807.97	-1,081.30	3,963.99	3,880.03	83.96	47.214		

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



Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well FMM Fed Com 103H
Project:	Lea County, NM (NAD83)	TVD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Reference Site:	FMM Fed Com	MD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	FMM Fed Com 103H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.15 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 0-OWSG (Rev2) MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
14,300.00	8,394.00	18,190.01	12,136.00	103.17	108.78	-162.74	5,907.96	-1,082.29	3,964.00	3,878.89	85.11	46.575		
14,400.00	8,394.00	18,290.01	12,136.00	104.75	110.29	-162.74	6,007.96	-1,083.28	3,964.01	3,877.75	86.26	45.952		
14,500.00	8,394.00	18,390.01	12,136.00	106.34	111.81	-162.74	6,107.95	-1,084.27	3,964.03	3,876.60	87.42	45.344		
14,600.00	8,394.00	18,490.01	12,136.00	107.93	113.32	-162.74	6,207.95	-1,085.26	3,964.04	3,875.46	88.58	44.750		
14,700.00	8,394.00	18,590.01	12,136.00	109.52	114.85	-162.74	6,307.94	-1,086.25	3,964.05	3,874.31	89.74	44.171		
14,800.00	8,394.00	18,690.01	12,136.00	111.11	116.37	-162.74	6,407.94	-1,087.25	3,964.06	3,873.16	90.91	43.605		
14,900.00	8,394.00	18,790.01	12,136.00	112.71	117.90	-162.74	6,507.94	-1,088.24	3,964.08	3,872.00	92.08	43.052		
15,000.00	8,394.00	18,890.01	12,136.00	114.30	119.44	-162.74	6,607.93	-1,089.23	3,964.09	3,870.85	93.25	42.513		
15,100.00	8,394.00	18,990.01	12,136.00	115.90	120.97	-162.74	6,707.93	-1,090.22	3,964.10	3,869.69	94.42	41.985		
15,200.00	8,394.00	19,090.01	12,136.00	117.50	122.51	-162.73	6,807.92	-1,091.21	3,964.12	3,868.53	95.59	41.470		
15,300.00	8,394.00	19,190.01	12,136.00	119.10	124.05	-162.73	6,907.92	-1,092.20	3,964.13	3,867.36	96.77	40.966		
15,400.00	8,394.00	19,290.01	12,136.00	120.70	125.60	-162.73	7,007.91	-1,093.19	3,964.14	3,866.20	97.94	40.474		
15,500.00	8,394.00	19,390.01	12,136.00	122.31	127.15	-162.73	7,107.91	-1,094.18	3,964.16	3,865.04	99.12	39.994		
15,600.00	8,394.00	19,490.01	12,136.00	123.91	128.70	-162.73	7,207.90	-1,095.17	3,964.17	3,863.87	100.30	39.524		
15,700.00	8,394.00	19,590.01	12,136.00	125.52	130.25	-162.73	7,307.90	-1,096.16	3,964.18	3,862.70	101.48	39.064		
15,800.00	8,394.00	19,690.01	12,136.00	127.12	131.81	-162.73	7,407.89	-1,097.16	3,964.19	3,861.53	102.66	38.614		
15,900.00	8,394.00	19,790.01	12,136.00	128.73	133.36	-162.73	7,507.89	-1,098.15	3,964.21	3,860.36	103.85	38.173		
16,000.00	8,394.00	19,890.01	12,136.00	130.34	134.92	-162.73	7,607.88	-1,099.14	3,964.22	3,859.19	105.03	37.742		
16,100.00	8,394.00	19,990.01	12,136.00	131.95	136.48	-162.73	7,707.88	-1,100.13	3,964.23	3,858.01	106.22	37.320		
16,200.00	8,394.00	20,090.01	12,136.00	133.56	138.05	-162.73	7,807.87	-1,101.12	3,964.25	3,856.84	107.41	36.908		
16,300.00	8,394.00	20,190.01	12,136.00	135.18	139.62	-162.73	7,907.87	-1,102.11	3,964.26	3,855.66	108.60	36.504		
16,400.00	8,394.00	20,290.01	12,136.00	136.79	141.18	-162.73	8,007.86	-1,103.10	3,964.27	3,854.48	109.79	36.109		
16,500.00	8,394.00	20,390.01	12,136.00	138.40	142.75	-162.73	8,107.86	-1,104.09	3,964.28	3,853.31	110.98	35.721		
16,600.00	8,394.00	20,490.01	12,136.00	140.02	144.32	-162.73	8,207.85	-1,105.08	3,964.30	3,852.13	112.17	35.341		
16,700.00	8,394.00	20,590.01	12,136.00	141.64	145.90	-162.73	8,307.85	-1,106.08	3,964.31	3,850.95	113.37	34.969		
16,800.00	8,394.00	20,690.01	12,136.00	143.25	147.47	-162.73	8,407.84	-1,107.07	3,964.32	3,849.76	114.56	34.605		
16,900.00	8,394.00	20,790.01	12,136.00	144.87	149.05	-162.72	8,507.84	-1,108.06	3,964.34	3,848.58	115.76	34.247		
17,000.00	8,394.00	20,890.01	12,136.00	146.49	150.63	-162.72	8,607.83	-1,109.05	3,964.35	3,847.40	116.95	33.897		
17,100.00	8,394.00	20,990.01	12,136.00	148.11	152.21	-162.72	8,707.83	-1,110.04	3,964.36	3,846.21	118.15	33.553		
17,200.00	8,394.00	21,090.01	12,136.00	149.73	153.79	-162.72	8,807.82	-1,111.03	3,964.38	3,845.02	119.35	33.216		
17,300.00	8,394.00	21,190.01	12,136.00	151.35	155.37	-162.72	8,907.82	-1,112.02	3,964.39	3,843.84	120.55	32.885		
17,400.00	8,394.00	21,290.01	12,136.00	152.97	156.96	-162.72	9,007.81	-1,113.01	3,964.40	3,842.65	121.75	32.561		
17,500.00	8,394.00	21,390.01	12,136.00	154.59	158.54	-162.72	9,107.81	-1,114.00	3,964.41	3,841.46	122.96	32.243		
17,600.00	8,394.00	21,490.01	12,136.00	156.21	160.13	-162.72	9,207.80	-1,115.00	3,964.43	3,840.27	124.16	31.931		
17,700.00	8,394.00	21,590.01	12,136.00	157.84	161.72	-162.72	9,307.80	-1,115.99	3,964.44	3,839.08	125.36	31.625		
17,800.00	8,394.00	21,690.01	12,136.00	159.46	163.31	-162.72	9,407.79	-1,116.98	3,964.45	3,837.89	126.56	31.325		
17,900.00	8,394.00	21,790.01	12,136.00	161.08	164.90	-162.72	9,507.79	-1,117.97	3,964.47	3,836.70	127.76	31.029		
18,000.00	8,394.00	21,890.01	12,136.00	162.71	166.49	-162.72	9,607.78	-1,118.96	3,964.48	3,835.51	128.97	30.739		
18,100.00	8,394.00	21,990.01	12,136.00	164.33	168.09	-162.72	9,707.78	-1,119.95	3,964.49	3,834.31	130.18	30.454		
18,200.00	8,394.00	22,090.01	12,136.00	165.96	169.68	-162.72	9,807.77	-1,120.94	3,964.51	3,833.12	131.38	30.175		
18,300.00	8,394.00	22,190.01	12,136.00	167.59	171.28	-162.72	9,907.77	-1,121.93	3,964.52	3,831.93	132.59	29.901		
18,400.00	8,394.00	22,290.01	12,136.00	169.21	172.87	-162.72	10,007.76	-1,122.92	3,964.53	3,830.74	133.80	29.631		
18,449.58	8,394.00	22,339.58	12,136.00	170.02	173.67	-162.72	10,057.34	-1,123.42	3,964.54	3,830.14	134.39	29.499		
18,450.14	8,394.00	22,340.15	12,136.00	170.03	173.67	-162.72	10,057.90	-1,123.42	3,964.54	3,830.13	134.40	29.497		

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



Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well FMM Fed Com 103H
Project:	Lea County, NM (NAD83)	TVD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Reference Site:	FMM Fed Com	MD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	FMM Fed Com 103H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.15 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design FMM Fed Com - FMM Fed Com 804H - OH - Plan #1													Offset Site Error:	0.00 usft
Survey Program: 0-OWSG (Rev2) MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance								Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
0.00	0.00	0.00	0.00	0.00	0.00	170.08	-74.89	13.10	76.04					
100.00	100.00	98.80	98.80	0.13	0.12	170.08	-74.89	13.10	76.03	75.85	0.18	431.058		
200.00	200.00	198.80	198.80	0.48	0.48	170.08	-74.89	13.10	76.03	75.35	0.68	111.582		
300.00	300.00	298.80	298.80	0.84	0.84	170.08	-74.89	13.10	76.03	74.84	1.19	63.979		
400.00	400.00	398.80	398.80	1.20	1.20	170.08	-74.89	13.10	76.03	74.33	1.70	44.847		
500.00	500.00	498.80	498.80	1.56	1.56	170.08	-74.89	13.10	76.03	73.82	2.20	34.523		
600.00	600.00	598.80	598.80	1.92	1.91	170.08	-74.89	13.10	76.03	73.32	2.71	28.063		
700.00	700.00	698.80	698.80	2.28	2.27	170.08	-74.89	13.10	76.03	72.81	3.22	23.639		
800.00	800.00	798.80	798.80	2.63	2.63	170.08	-74.89	13.10	76.03	72.30	3.72	20.420		
900.00	900.00	898.80	898.80	2.99	2.99	170.08	-74.89	13.10	76.03	71.80	4.23	17.973		
1,000.00	1,000.00	998.80	998.80	3.35	3.35	170.08	-74.89	13.10	76.03	71.29	4.74	16.050		
1,100.00	1,100.00	1,098.80	1,098.80	3.71	3.71	170.08	-74.89	13.10	76.03	70.78	5.24	14.498		
1,200.00	1,200.00	1,198.80	1,198.80	4.07	4.06	170.08	-74.89	13.10	76.03	70.28	5.75	13.220		
1,300.00	1,300.00	1,298.80	1,298.80	4.43	4.42	170.08	-74.89	13.10	76.03	69.77	6.26	12.149		
1,400.00	1,400.00	1,398.80	1,398.80	4.79	4.78	170.08	-74.89	13.10	76.03	69.26	6.76	11.239		
1,500.00	1,500.00	1,498.80	1,498.80	5.14	5.14	170.08	-74.89	13.10	76.03	68.76	7.27	10.455		
1,600.00	1,600.00	1,598.80	1,598.80	5.50	5.50	170.08	-74.89	13.10	76.03	68.25	7.78	9.774		
1,700.00	1,700.00	1,698.80	1,698.80	5.86	5.86	170.08	-74.89	13.10	76.03	67.74	8.29	9.176		
1,800.00	1,800.00	1,798.80	1,798.80	6.22	6.22	170.08	-74.89	13.10	76.03	67.23	8.79	8.647		
1,900.00	1,900.00	1,898.80	1,898.80	6.58	6.57	170.08	-74.89	13.10	76.03	66.73	9.30	8.175		
1,920.00	1,920.00	1,918.80	1,918.80	6.65	6.65	170.08	-74.89	13.10	76.03	66.63	9.40	8.087		
2,000.00	1,999.99	1,998.79	1,998.79	6.92	6.93	24.38	-74.89	13.10	75.26	65.47	9.80	7.682		
2,100.00	2,099.93	2,098.73	2,098.73	7.25	7.29	25.52	-74.89	13.10	72.18	61.90	10.28	7.020		
2,120.05	2,119.96	2,118.76	2,118.76	7.32	7.36	25.87	-74.89	13.10	71.28	60.90	10.38	6.867		
2,200.00	2,199.80	2,198.60	2,198.60	7.58	7.65	27.42	-74.89	13.10	67.54	56.77	10.77	6.271		
2,300.00	2,299.66	2,298.46	2,298.46	7.92	8.01	29.61	-74.89	13.10	62.93	51.68	11.26	5.590		
2,400.00	2,399.52	2,398.32	2,398.32	8.25	8.36	32.15	-74.89	13.10	58.44	46.69	11.75	4.974		
2,500.00	2,499.39	2,497.00	2,496.99	8.59	8.70	35.74	-75.92	12.43	55.14	42.91	12.22	4.510		
2,577.37	2,576.65	2,573.33	2,573.27	8.86	8.95	39.69	-78.18	10.95	54.32	41.74	12.58	4.317 CC		
2,600.00	2,599.25	2,595.63	2,595.55	8.94	9.03	41.00	-79.09	10.37	54.39	41.71	12.68	4.288 ES		
2,700.00	2,699.11	2,694.95	2,694.69	9.28	9.35	47.14	-84.01	7.16	56.08	42.93	13.15	4.264 SF		
2,800.00	2,798.98	2,794.75	2,794.31	9.63	9.68	52.93	-89.12	3.83	58.57	44.94	13.63	4.298		
2,900.00	2,898.84	2,894.55	2,893.92	9.97	10.02	58.20	-94.22	0.50	61.60	47.49	14.11	4.366		
3,000.00	2,998.70	2,994.35	2,993.54	10.32	10.36	62.95	-99.33	-2.82	65.11	50.52	14.59	4.462		
3,100.00	3,098.57	3,094.16	3,093.15	10.67	10.70	67.18	-104.44	-6.15	69.01	53.94	15.08	4.578		
3,200.00	3,198.43	3,193.96	3,192.77	11.02	11.04	70.94	-109.54	-9.48	73.26	57.69	15.56	4.707		
3,300.00	3,298.29	3,293.76	3,292.38	11.38	11.38	74.28	-114.65	-12.81	77.78	61.73	16.05	4.845		
3,400.00	3,398.15	3,393.56	3,391.99	11.73	11.73	77.25	-119.75	-16.13	82.54	65.99	16.54	4.989		
3,500.00	3,498.02	3,493.36	3,491.61	12.09	12.07	79.88	-124.86	-19.46	87.49	70.45	17.04	5.136		
3,600.00	3,597.88	3,593.16	3,591.22	12.44	12.42	82.23	-129.97	-22.79	92.61	75.08	17.53	5.283		
3,700.00	3,697.74	3,692.96	3,690.84	12.80	12.77	84.33	-135.07	-26.11	97.87	79.84	18.03	5.429		
3,800.00	3,797.61	3,792.76	3,790.45	13.16	13.12	86.22	-140.18	-29.44	103.24	84.72	18.52	5.574		
3,900.00	3,897.47	3,892.56	3,890.07	13.51	13.47	87.91	-145.28	-32.77	108.72	89.70	19.02	5.716		
4,000.00	3,997.33	3,992.36	3,989.68	13.87	13.83	89.45	-150.39	-36.09	114.28	94.76	19.52	5.854		
4,100.00	4,097.19	4,092.16	4,089.30	14.23	14.18	90.84	-155.50	-39.42	119.92	99.90	20.02	5.990		
4,200.00	4,197.06	4,191.96	4,188.91	14.59	14.54	92.10	-160.60	-42.75	125.62	105.09	20.52	6.121		
4,300.00	4,296.92	4,291.76	4,288.52	14.95	14.89	93.26	-165.71	-46.08	131.37	110.35	21.02	6.249		
4,400.00	4,396.78	4,391.57	4,388.14	15.31	15.25	94.31	-170.81	-49.40	137.18	115.65	21.53	6.372		
4,500.00	4,496.65	4,491.37	4,487.75	15.67	15.60	95.28	-175.92	-52.73	143.02	120.99	22.03	6.492		
4,600.00	4,596.51	4,591.17	4,587.37	16.03	15.96	96.18	-181.03	-56.06	148.91	126.37	22.54	6.608		
4,700.00	4,696.37	4,690.97	4,686.98	16.39	16.32	97.00	-186.13	-59.38	154.83	131.79	23.04	6.720		
4,800.00	4,796.23	4,790.77	4,786.60	16.75	16.68	97.77	-191.24	-62.71	160.78	137.23	23.55	6.828		

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



Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well FMM Fed Com 103H
Project:	Lea County, NM (NAD83)	TVD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Reference Site:	FMM Fed Com	MD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	FMM Fed Com 103H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.15 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 0-OWSG (Rev2) MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
4,900.00	4,896.10	4,890.57	4,886.21	17.12	17.04	98.48	-196.34	-66.04	166.75	142.70	24.05	6.933		
5,000.00	4,995.96	4,990.37	4,985.83	17.48	17.40	99.14	-201.45	-69.36	172.75	148.19	24.56	7.034		
5,100.00	5,095.82	5,090.17	5,085.44	17.84	17.76	99.76	-206.56	-72.69	178.77	153.70	25.07	7.132		
5,200.00	5,195.69	5,189.97	5,185.06	18.21	18.12	100.33	-211.66	-76.02	184.81	159.23	25.58	7.226		
5,300.00	5,295.55	5,289.77	5,284.67	18.57	18.48	100.87	-216.77	-79.35	190.87	164.78	26.08	7.318		
5,400.00	5,395.41	5,389.57	5,384.28	18.93	18.85	101.38	-221.87	-82.67	196.94	170.35	26.59	7.406		
5,500.00	5,495.27	5,489.37	5,483.90	19.30	19.21	101.86	-226.98	-86.00	203.02	175.92	27.10	7.491		
5,600.00	5,595.14	5,589.17	5,583.51	19.66	19.57	102.31	-232.09	-89.33	209.13	181.51	27.61	7.574		
5,700.00	5,695.00	5,688.98	5,683.13	20.02	19.94	102.73	-237.19	-92.65	215.24	187.12	28.12	7.654		
5,800.00	5,794.86	5,788.78	5,782.74	20.39	20.30	103.13	-242.30	-95.98	221.36	192.73	28.63	7.731		
5,900.00	5,894.73	5,888.58	5,882.36	20.75	20.66	103.51	-247.40	-99.31	227.49	198.35	29.14	7.806		
6,000.00	5,994.59	5,988.38	5,981.97	21.12	21.03	103.87	-252.51	-102.63	233.64	203.98	29.65	7.879		
6,100.00	6,094.45	6,088.18	6,081.59	21.48	21.39	104.21	-257.62	-105.96	239.79	209.62	30.16	7.949		
6,200.00	6,194.31	6,187.98	6,181.20	21.85	21.76	104.53	-262.72	-109.29	245.95	215.27	30.68	8.017		
6,300.00	6,294.18	6,287.78	6,280.82	22.21	22.12	104.84	-267.83	-112.62	252.11	220.93	31.19	8.084		
6,400.00	6,394.04	6,387.58	6,380.43	22.58	22.49	105.13	-272.93	-115.94	258.29	226.59	31.70	8.148		
6,500.00	6,493.90	6,487.38	6,480.04	22.94	22.85	105.41	-278.04	-119.27	264.47	232.26	32.21	8.210		
6,600.00	6,593.77	6,587.18	6,579.66	23.31	23.22	105.67	-283.15	-122.60	270.65	237.93	32.73	8.270		
6,700.00	6,693.63	6,686.98	6,679.27	23.67	23.58	105.93	-288.25	-125.92	276.85	243.61	33.24	8.329		
6,800.00	6,793.49	6,790.88	6,783.01	24.04	23.96	106.27	-293.01	-129.02	282.56	248.78	33.78	8.366		
6,900.00	6,893.35	6,896.84	6,888.93	24.40	24.34	106.95	-295.55	-130.68	286.26	251.95	34.31	8.343		
7,000.00	6,993.22	6,999.93	6,992.02	24.77	24.69	107.92	-295.89	-130.90	288.12	253.31	34.82	8.275		
7,106.97	7,100.04	7,106.76	7,098.84	25.16	25.06	108.98	-295.89	-130.90	289.90	254.54	35.35	8.200		
7,200.00	7,192.99	7,199.71	7,191.79	25.50	25.37	109.69	-295.89	-130.90	291.14	255.32	35.82	8.128		
7,307.02	7,300.00	7,306.72	7,298.80	25.87	25.73	-104.07	-295.89	-130.90	291.65	255.31	36.34	8.026		
7,400.00	7,392.98	7,399.70	7,391.78	26.18	26.05	-104.07	-295.89	-130.90	291.65	254.86	36.78	7.929		
7,500.00	7,492.98	7,499.70	7,491.78	26.52	26.39	-104.07	-295.89	-130.90	291.65	254.38	37.26	7.827		
7,600.00	7,592.98	7,599.70	7,591.78	26.85	26.73	-104.07	-295.89	-130.90	291.65	253.90	37.74	7.727		
7,700.00	7,692.98	7,699.70	7,691.78	27.19	27.07	-104.07	-295.89	-130.90	291.65	253.42	38.22	7.630		
7,800.00	7,792.98	7,799.70	7,791.78	27.53	27.41	-104.07	-295.89	-130.90	291.65	252.94	38.70	7.536		
7,828.06	7,821.04	7,827.76	7,819.84	27.62	27.51	-104.07	-295.89	-130.90	291.65	252.81	38.84	7.509		
7,850.00	7,842.97	7,849.69	7,841.77	27.69	27.58	-103.60	-295.89	-130.90	291.75	252.80	38.94	7.492		
7,900.00	7,892.79	7,899.51	7,891.59	27.86	27.75	-104.27	-295.89	-130.90	292.73	253.56	39.18	7.472		
7,950.00	7,942.06	7,948.78	7,940.86	28.01	27.92	-105.62	-295.89	-130.90	294.94	255.53	39.40	7.485		
8,000.00	7,990.41	7,997.13	7,989.21	28.16	28.09	-107.54	-295.89	-130.90	298.67	259.05	39.62	7.538		
8,050.00	8,037.47	8,044.19	8,036.27	28.29	28.25	-109.87	-295.89	-130.90	304.39	264.56	39.83	7.643		
8,100.00	8,082.88	8,089.60	8,081.68	28.42	28.40	-112.42	-295.89	-130.90	312.58	272.56	40.02	7.810		
8,150.00	8,126.30	8,133.02	8,125.10	28.54	28.55	-115.01	-295.89	-130.90	323.78	283.58	40.21	8.053		
8,200.00	8,167.40	8,174.12	8,166.20	28.66	28.69	-117.43	-295.89	-130.90	338.43	298.06	40.38	8.382		
8,250.00	8,205.86	8,212.58	8,204.66	28.77	28.83	-119.52	-295.89	-130.90	356.87	316.33	40.54	8.804		
8,300.00	8,241.40	8,248.11	8,240.20	28.88	28.95	-121.11	-295.89	-130.90	379.24	338.56	40.68	9.323		
8,350.00	8,273.73	8,280.44	8,272.53	28.99	29.06	-122.08	-295.89	-130.90	405.55	364.75	40.81	9.938		
8,400.00	8,302.62	8,309.33	8,301.42	29.11	29.16	-122.29	-295.89	-130.90	435.65	394.73	40.92	10.647		
8,450.00	8,327.84	8,334.56	8,326.64	29.24	29.25	-121.60	-295.89	-130.90	469.25	428.24	41.01	11.441		
8,500.00	8,349.21	8,355.92	8,348.01	29.38	29.32	-119.81	-295.89	-130.90	506.00	464.90	41.09	12.314		
8,550.00	8,366.55	8,373.27	8,365.35	29.52	29.38	-116.68	-295.89	-130.90	545.45	504.30	41.15	13.254		
8,600.00	8,379.75	8,386.46	8,378.55	29.68	29.42	-111.90	-295.89	-130.90	587.17	545.98	41.20	14.253		
8,650.00	8,388.69	8,395.40	8,387.49	29.85	29.45	-105.10	-295.89	-130.90	630.68	589.46	41.23	15.298		
8,700.00	8,393.31	8,400.03	8,392.11	30.03	29.47	-96.04	-295.89	-130.90	675.51	634.27	41.24	16.380		
8,728.06	8,394.00	8,400.71	8,392.80	30.14	29.47	-90.00	-295.89	-130.90	701.07	659.83	41.24	16.999		
8,800.00	8,394.00	8,400.71	8,392.80	30.43	29.47	-90.00	-295.89	-130.90	767.41	726.17	41.24	18.608		
8,900.00	8,394.00	8,400.71	8,392.80	30.91	29.47	-90.00	-295.89	-130.90	861.13	819.89	41.24	20.879		

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



Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well FMM Fed Com 103H
Project:	Lea County, NM (NAD83)	TVD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Reference Site:	FMM Fed Com	MD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	FMM Fed Com 103H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.15 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design FMM Fed Com - FMM Fed Com 804H - OH - Plan #1													Offset Site Error:	0.00 usft
Survey Program: 0-OWSG (Rev2) MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
9,000.00	8,394.00	8,400.71	8,392.80	31.47	29.47	-90.00	-295.89	-130.90	956.12	914.87	41.25	23.180		
9,100.00	8,394.00	8,400.71	8,392.80	32.10	29.47	-90.00	-295.89	-130.90	1,052.04	1,010.78	41.25	25.501		
9,200.00	8,394.00	8,400.71	8,392.80	32.81	29.47	-90.00	-295.89	-130.90	1,148.65	1,107.39	41.26	27.838		
9,300.00	8,394.00	8,400.71	8,392.80	33.58	29.47	-90.00	-295.89	-130.90	1,245.80	1,204.53	41.27	30.186		
9,400.00	8,394.00	8,400.71	8,392.80	34.41	29.47	-90.00	-295.89	-130.90	1,343.37	1,302.09	41.28	32.542		
9,500.00	8,394.00	8,400.71	8,392.80	35.30	29.47	-90.00	-295.89	-130.90	1,441.27	1,399.98	41.29	34.905		
9,600.00	8,394.00	8,400.71	8,392.80	36.24	29.47	-90.00	-295.89	-130.90	1,539.44	1,498.14	41.30	37.273		
9,700.00	8,394.00	8,400.71	8,392.80	37.24	29.47	-90.00	-295.89	-130.90	1,637.84	1,596.52	41.31	39.644		
9,800.00	8,394.00	8,400.71	8,392.80	38.28	29.47	-90.00	-295.89	-130.90	1,736.41	1,695.09	41.33	42.018		
9,900.00	8,394.00	8,400.71	8,392.80	39.36	29.47	-90.00	-295.89	-130.90	1,835.14	1,793.81	41.34	44.393		
10,000.00	8,394.00	8,400.71	8,392.80	40.48	29.47	-90.00	-295.89	-130.90	1,934.00	1,892.65	41.35	46.770		
10,100.00	8,394.00	8,400.71	8,392.80	41.63	29.47	-90.00	-295.89	-130.90	2,032.98	1,991.61	41.37	49.147		
10,200.00	8,394.00	8,400.71	8,392.80	42.82	29.47	-90.00	-295.89	-130.90	2,132.04	2,090.66	41.38	51.524		
10,300.00	8,394.00	8,400.71	8,392.80	44.03	29.47	-90.00	-295.89	-130.90	2,231.20	2,189.80	41.40	53.900		
10,400.00	8,394.00	8,400.71	8,392.80	45.28	29.47	-90.00	-295.89	-130.90	2,330.42	2,289.01	41.41	56.275		
10,500.00	8,394.00	8,400.71	8,392.80	46.55	29.47	-90.00	-295.89	-130.90	2,429.71	2,388.28	41.43	58.650		
10,600.00	8,394.00	8,400.71	8,392.80	47.84	29.47	-90.00	-295.89	-130.90	2,529.05	2,487.61	41.44	61.023		
10,700.00	8,394.00	8,400.71	8,392.80	49.16	29.47	-90.00	-295.89	-130.90	2,628.44	2,586.98	41.46	63.394		
10,800.00	8,394.00	8,400.71	8,392.80	50.49	29.47	-90.00	-295.89	-130.90	2,727.88	2,686.40	41.48	65.763		
10,900.00	8,394.00	8,400.71	8,392.80	51.84	29.47	-90.00	-295.89	-130.90	2,827.36	2,785.86	41.50	68.130		
11,000.00	8,394.00	8,400.71	8,392.80	53.21	29.47	-90.00	-295.89	-130.90	2,926.87	2,885.35	41.52	70.494		
11,100.00	8,394.00	8,400.71	8,392.80	54.60	29.47	-90.00	-295.89	-130.90	3,026.42	2,984.88	41.54	72.856		
11,200.00	8,394.00	8,400.71	8,392.80	56.00	29.47	-90.00	-295.89	-130.90	3,125.99	3,084.43	41.56	75.215		
11,300.00	8,394.00	8,400.71	8,392.80	57.41	29.47	-90.00	-295.89	-130.90	3,225.59	3,184.01	41.58	77.572		
11,400.00	8,394.00	8,400.71	8,392.80	58.84	29.47	-90.00	-295.89	-130.90	3,325.22	3,283.61	41.60	79.925		
11,500.00	8,394.00	8,400.71	8,392.80	60.28	29.47	-90.00	-295.89	-130.90	3,424.86	3,383.24	41.63	82.275		
11,600.00	8,394.00	8,400.71	8,392.80	61.72	29.47	-90.00	-295.89	-130.90	3,524.53	3,482.88	41.65	84.621		
11,700.00	8,394.00	8,400.71	8,392.80	63.18	29.47	-90.00	-295.89	-130.90	3,624.21	3,582.54	41.67	86.964		
11,800.00	8,394.00	8,400.71	8,392.80	64.65	29.47	-90.00	-295.89	-130.90	3,723.92	3,682.22	41.70	89.303		
11,900.00	8,394.00	15,756.12	12,181.00	66.13	73.65	-175.72	3,517.06	-166.80	3,798.78	3,747.90	50.88	74.663		
12,000.00	8,394.00	15,856.12	12,181.00	67.61	75.00	-175.72	3,617.06	-167.75	3,798.78	3,746.99	51.79	73.353		
12,100.00	8,394.00	15,956.12	12,181.00	69.10	76.37	-175.72	3,717.05	-168.69	3,798.78	3,746.08	52.70	72.077		
12,200.00	8,394.00	16,056.12	12,181.00	70.60	77.75	-175.72	3,817.05	-169.63	3,798.78	3,745.15	53.63	70.835		
12,300.00	8,394.00	16,156.12	12,181.00	72.11	79.13	-175.72	3,917.04	-170.57	3,798.78	3,744.22	54.56	69.625		
12,400.00	8,394.00	16,256.12	12,181.00	73.62	80.53	-175.72	4,017.04	-171.51	3,798.78	3,743.28	55.50	68.448		
12,500.00	8,394.00	16,356.12	12,181.00	75.14	81.94	-175.72	4,117.03	-172.45	3,798.78	3,742.33	56.44	67.301		
12,600.00	8,394.00	16,456.12	12,181.00	76.66	83.36	-175.72	4,217.03	-173.39	3,798.78	3,741.38	57.40	66.185		
12,700.00	8,394.00	16,556.12	12,181.00	78.19	84.78	-175.72	4,317.03	-174.34	3,798.78	3,740.42	58.35	65.099		
12,800.00	8,394.00	16,656.12	12,181.00	79.72	86.22	-175.72	4,417.02	-175.28	3,798.78	3,739.46	59.32	64.042		
12,900.00	8,394.00	16,756.12	12,181.00	81.26	87.66	-175.72	4,517.02	-176.22	3,798.78	3,738.49	60.29	63.013		
13,000.00	8,394.00	16,856.12	12,181.00	82.80	89.11	-175.72	4,617.01	-177.16	3,798.78	3,737.52	61.26	62.012		
13,100.00	8,394.00	16,956.12	12,181.00	84.35	90.56	-175.72	4,717.01	-178.10	3,798.78	3,736.54	62.24	61.037		
13,200.00	8,394.00	17,056.12	12,181.00	85.90	92.02	-175.72	4,817.00	-179.04	3,798.78	3,735.55	63.22	60.087		
13,300.00	8,394.00	17,156.12	12,181.00	87.46	93.49	-175.72	4,917.00	-179.99	3,798.78	3,734.57	64.21	59.163		
13,400.00	8,394.00	17,256.12	12,181.00	89.02	94.97	-175.72	5,016.99	-180.93	3,798.77	3,733.57	65.20	58.263		
13,500.00	8,394.00	17,356.12	12,181.00	90.58	96.45	-175.72	5,116.99	-181.87	3,798.77	3,732.58	66.20	57.386		
13,600.00	8,394.00	17,456.12	12,181.00	92.14	97.93	-175.72	5,216.99	-182.81	3,798.77	3,731.58	67.20	56.532		
13,700.00	8,394.00	17,556.12	12,181.00	93.71	99.42	-175.72	5,316.98	-183.75	3,798.77	3,730.57	68.20	55.700		
13,800.00	8,394.00	17,656.12	12,181.00	95.28	100.92	-175.72	5,416.98	-184.69	3,798.77	3,729.57	69.21	54.889		
13,900.00	8,394.00	17,756.12	12,181.00	96.85	102.42	-175.72	5,516.97	-185.64	3,798.77	3,728.55	70.22	54.099		
14,000.00	8,394.00	17,856.12	12,181.00	98.43	103.93	-175.72	5,616.97	-186.58	3,798.77	3,727.54	71.23	53.329		
14,100.00	8,394.00	17,956.12	12,181.00	100.01	105.44	-175.72	5,716.96	-187.52	3,798.77	3,726.52	72.25	52.579		

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



Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well FMM Fed Com 103H
Project:	Lea County, NM (NAD83)	TVD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Reference Site:	FMM Fed Com	MD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	FMM Fed Com 103H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.15 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 0-OWSG (Rev2) MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
14,200.00	8,394.00	18,056.12	12,181.00	101.59	106.95	-175.72	5,816.96	-188.46	3,798.77	3,725.50	73.27	51.847		
14,300.00	8,394.00	18,156.12	12,181.00	103.17	108.47	-175.72	5,916.95	-189.40	3,798.77	3,724.48	74.29	51.133		
14,400.00	8,394.00	18,256.12	12,181.00	104.75	109.99	-175.72	6,016.95	-190.34	3,798.77	3,723.45	75.32	50.436		
14,500.00	8,394.00	18,356.12	12,181.00	106.34	111.52	-175.72	6,116.95	-191.28	3,798.77	3,722.42	76.35	49.757		
14,600.00	8,394.00	18,456.12	12,181.00	107.93	113.05	-175.72	6,216.94	-192.23	3,798.77	3,721.39	77.38	49.094		
14,700.00	8,394.00	18,556.12	12,181.00	109.52	114.58	-175.73	6,316.94	-193.17	3,798.77	3,720.36	78.41	48.447		
14,800.00	8,394.00	18,656.12	12,181.00	111.11	116.12	-175.73	6,416.93	-194.11	3,798.77	3,719.32	79.45	47.816		
14,900.00	8,394.00	18,756.12	12,181.00	112.71	117.65	-175.73	6,516.93	-195.05	3,798.77	3,718.28	80.48	47.199		
15,000.00	8,394.00	18,856.12	12,181.00	114.30	119.20	-175.73	6,616.92	-195.99	3,798.77	3,717.24	81.52	46.597		
15,100.00	8,394.00	18,956.12	12,181.00	115.90	120.74	-175.73	6,716.92	-196.93	3,798.77	3,716.20	82.57	46.009		
15,200.00	8,394.00	19,056.12	12,181.00	117.50	122.29	-175.73	6,816.91	-197.88	3,798.77	3,715.16	83.61	45.434		
15,300.00	8,394.00	19,156.12	12,181.00	119.10	123.84	-175.73	6,916.91	-198.82	3,798.77	3,714.11	84.66	44.873		
15,400.00	8,394.00	19,256.12	12,181.00	120.70	125.39	-175.73	7,016.91	-199.76	3,798.77	3,713.06	85.70	44.324		
15,500.00	8,394.00	19,356.12	12,181.00	122.31	126.95	-175.73	7,116.90	-200.70	3,798.77	3,712.01	86.75	43.788		
15,600.00	8,394.00	19,456.12	12,181.00	123.91	128.51	-175.73	7,216.90	-201.64	3,798.77	3,710.96	87.80	43.264		
15,700.00	8,394.00	19,556.12	12,181.00	125.52	130.07	-175.73	7,316.89	-202.58	3,798.76	3,709.91	88.86	42.751		
15,800.00	8,394.00	19,656.12	12,181.00	127.12	131.63	-175.73	7,416.89	-203.53	3,798.76	3,708.85	89.91	42.249		
15,900.00	8,394.00	19,756.12	12,181.00	128.73	133.20	-175.73	7,516.88	-204.47	3,798.76	3,707.80	90.97	41.759		
16,000.00	8,394.00	19,856.12	12,181.00	130.34	134.76	-175.73	7,616.88	-205.41	3,798.76	3,706.74	92.03	41.279		
16,100.00	8,394.00	19,956.12	12,181.00	131.95	136.33	-175.73	7,716.87	-206.35	3,798.76	3,705.68	93.08	40.810		
16,200.00	8,394.00	20,056.12	12,181.00	133.56	137.90	-175.73	7,816.87	-207.29	3,798.76	3,704.62	94.14	40.351		
16,300.00	8,394.00	20,156.12	12,181.00	135.18	139.47	-175.73	7,916.87	-208.23	3,798.76	3,703.56	95.20	39.901		
16,400.00	8,394.00	20,256.12	12,181.00	136.79	141.05	-175.73	8,016.86	-209.17	3,798.76	3,702.49	96.27	39.461		
16,500.00	8,394.00	20,356.12	12,181.00	138.40	142.63	-175.73	8,116.86	-210.12	3,798.76	3,701.43	97.33	39.029		
16,600.00	8,394.00	20,456.12	12,181.00	140.02	144.20	-175.73	8,216.85	-211.06	3,798.76	3,700.37	98.40	38.607		
16,700.00	8,394.00	20,556.12	12,181.00	141.64	145.78	-175.73	8,316.85	-212.00	3,798.76	3,699.30	99.46	38.193		
16,800.00	8,394.00	20,656.12	12,181.00	143.25	147.36	-175.73	8,416.84	-212.94	3,798.76	3,698.23	100.53	37.788		
16,900.00	8,394.00	20,756.12	12,181.00	144.87	148.95	-175.73	8,516.84	-213.88	3,798.76	3,697.16	101.60	37.390		
17,000.00	8,394.00	20,856.12	12,181.00	146.49	150.53	-175.73	8,616.83	-214.82	3,798.76	3,696.09	102.67	37.000		
17,100.00	8,394.00	20,956.12	12,181.00	148.11	152.12	-175.73	8,716.83	-215.77	3,798.76	3,695.02	103.74	36.618		
17,200.00	8,394.00	21,056.12	12,181.00	149.73	153.70	-175.73	8,816.83	-216.71	3,798.76	3,693.95	104.81	36.244		
17,300.00	8,394.00	21,156.12	12,181.00	151.35	155.29	-175.73	8,916.82	-217.65	3,798.76	3,692.87	105.88	35.877		
17,400.00	8,394.00	21,256.12	12,181.00	152.97	156.88	-175.73	9,016.82	-218.59	3,798.76	3,691.80	106.96	35.517		
17,500.00	8,394.00	21,356.12	12,181.00	154.59	158.47	-175.73	9,116.81	-219.53	3,798.76	3,690.73	108.03	35.163		
17,600.00	8,394.00	21,456.12	12,181.00	156.21	160.07	-175.73	9,216.81	-220.47	3,798.76	3,689.65	109.11	34.817		
17,700.00	8,394.00	21,556.12	12,181.00	157.84	161.66	-175.73	9,316.80	-221.42	3,798.76	3,688.57	110.18	34.477		
17,800.00	8,394.00	21,656.12	12,181.00	159.46	163.26	-175.73	9,416.80	-222.36	3,798.76	3,687.49	111.26	34.143		
17,900.00	8,394.00	21,756.12	12,181.00	161.08	164.85	-175.73	9,516.79	-223.30	3,798.76	3,686.42	112.34	33.815		
18,000.00	8,394.00	21,856.12	12,181.00	162.71	166.45	-175.73	9,616.79	-224.24	3,798.75	3,685.34	113.42	33.493		
18,100.00	8,394.00	21,956.12	12,181.00	164.33	168.05	-175.73	9,716.79	-225.18	3,798.75	3,684.26	114.50	33.178		
18,200.00	8,394.00	22,056.12	12,181.00	165.96	169.65	-175.73	9,816.78	-226.12	3,798.75	3,683.18	115.58	32.867		
18,300.00	8,394.00	22,156.12	12,181.00	167.59	171.25	-175.73	9,916.78	-227.06	3,798.75	3,682.09	116.66	32.563		
18,400.00	8,394.00	22,256.12	12,181.00	169.21	172.85	-175.73	10,016.77	-228.01	3,798.75	3,681.01	117.74	32.264		
18,449.58	8,394.00	22,305.69	12,181.00	170.02	173.64	-175.73	10,066.35	-228.47	3,798.75	3,680.48	118.28	32.117		
18,450.14	8,394.00	22,306.26	12,181.00	170.03	173.65	-175.73	10,066.91	-228.48	3,798.75	3,680.47	118.28	32.116		

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



Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well FMM Fed Com 103H
Project:	Lea County, NM (NAD83)	TVD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Reference Site:	FMM Fed Com	MD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	FMM Fed Com 103H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.15 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													FMM Fed Com - FMM Fed Com 805H - OH - Plan #1		Offset Site Error:	0.00 usft
Survey Program: 0-OWSG (Rev2) MWD													Offset Well Error:	0.00 usft		
Reference		Offset		Semi Major Axis			Distance							Warning		
Measured Depth	Vertical	Measured	Vertical	Reference	Offset	Highside	Offset Wellbore Centre		Between	Between	Minimum	Separation				
Depth	Depth	Depth	Depth			Toolface	+N/-S	+E/-W	Centres	Ellipses	Separation	Factor				
(usft)	(usft)	(usft)	(usft)	(usft)	(usft)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)					
0.00	0.00	0.00	0.00	0.00	0.00	152.97	-74.69	38.10	83.85							
100.00	100.00	99.60	99.60	0.13	0.12	152.97	-74.69	38.10	83.85	83.67	0.18	473.494				
200.00	200.00	199.60	199.60	0.48	0.48	152.97	-74.69	38.10	83.85	83.16	0.68	122.694				
300.00	300.00	299.60	299.60	0.84	0.84	152.97	-74.69	38.10	83.85	82.66	1.19	70.439				
400.00	400.00	399.60	399.60	1.20	1.20	152.97	-74.69	38.10	83.85	82.15	1.70	49.400				
500.00	500.00	499.60	499.60	1.56	1.56	152.97	-74.69	38.10	83.85	81.64	2.20	38.039				
600.00	600.00	599.60	599.60	1.92	1.92	152.97	-74.69	38.10	83.85	81.14	2.71	30.926				
700.00	700.00	699.60	699.60	2.28	2.27	152.97	-74.69	38.10	83.85	80.63	3.22	26.054				
800.00	800.00	799.60	799.60	2.63	2.63	152.97	-74.69	38.10	83.85	80.12	3.73	22.508				
900.00	900.00	899.60	899.60	2.99	2.99	152.97	-74.69	38.10	83.85	79.61	4.23	19.812				
1,000.00	1,000.00	999.60	999.60	3.35	3.35	152.97	-74.69	38.10	83.85	79.11	4.74	17.693				
1,100.00	1,100.00	1,099.60	1,099.60	3.71	3.71	152.97	-74.69	38.10	83.85	78.60	5.25	15.983				
1,200.00	1,200.00	1,199.60	1,199.60	4.07	4.07	152.97	-74.69	38.10	83.85	78.09	5.75	14.575				
1,300.00	1,300.00	1,299.60	1,299.60	4.43	4.43	152.97	-74.69	38.10	83.85	77.59	6.26	13.394				
1,400.00	1,400.00	1,399.60	1,399.60	4.79	4.78	152.97	-74.69	38.10	83.85	77.08	6.77	12.391				
1,500.00	1,500.00	1,499.60	1,499.60	5.14	5.14	152.97	-74.69	38.10	83.85	76.57	7.27	11.527				
1,600.00	1,600.00	1,599.60	1,599.60	5.50	5.50	152.97	-74.69	38.10	83.85	76.07	7.78	10.776				
1,700.00	1,700.00	1,699.60	1,699.60	5.86	5.86	152.97	-74.69	38.10	83.85	75.56	8.29	10.117				
1,800.00	1,800.00	1,799.60	1,799.60	6.22	6.22	152.97	-74.69	38.10	83.85	75.05	8.79	9.534				
1,900.00	1,900.00	1,899.60	1,899.60	6.58	6.58	152.97	-74.69	38.10	83.85	74.54	9.30	9.014				
1,920.00	1,920.00	1,919.60	1,919.60	6.65	6.65	152.97	-74.69	38.10	83.85	74.44	9.40	8.917				
2,000.00	1,999.99	1,999.59	1,999.59	6.92	6.93	7.09	-74.69	38.10	83.01	73.22	9.80	8.472				
2,100.00	2,099.93	2,098.07	2,098.06	7.25	7.28	6.75	-75.08	39.30	80.55	70.28	10.27	7.842				
2,120.05	2,119.96	2,117.81	2,117.79	7.32	7.34	6.56	-75.26	39.82	79.96	69.60	10.36	7.715				
2,200.00	2,199.80	2,196.54	2,196.45	7.58	7.61	5.25	-76.28	42.90	78.18	67.45	10.73	7.284				
2,269.38	2,269.08	2,264.83	2,264.62	7.81	7.84	3.42	-77.57	46.81	77.67	66.62	11.05	7.026 CC				
2,300.00	2,299.66	2,294.96	2,294.67	7.92	7.94	2.42	-78.26	48.91	77.77	66.58	11.19	6.948 ES				
2,400.00	2,399.52	2,393.20	2,392.51	8.25	8.28	-1.53	-81.03	57.30	79.63	67.98	11.65	6.835 SF				
2,500.00	2,499.39	2,491.13	2,489.78	8.59	8.63	-6.18	-84.58	68.04	84.04	71.94	12.10	6.946				
2,600.00	2,599.25	2,589.60	2,587.30	8.94	8.98	-11.02	-88.84	80.96	90.99	78.44	12.56	7.247				
2,700.00	2,699.11	2,689.04	2,685.74	9.28	9.34	-15.28	-93.26	94.33	98.85	85.81	13.03	7.584				
2,800.00	2,798.98	2,788.48	2,784.18	9.63	9.71	-18.89	-97.68	107.71	107.16	93.65	13.51	7.930				
2,900.00	2,898.84	2,887.92	2,882.62	9.97	10.08	-21.98	-102.10	121.09	115.84	101.84	14.00	8.275				
3,000.00	2,998.70	2,987.37	2,981.06	10.32	10.45	-24.63	-106.52	134.47	124.81	110.33	14.49	8.616				
3,100.00	3,098.57	3,086.81	3,079.50	10.67	10.83	-26.92	-110.94	147.85	134.01	119.03	14.98	8.948				
3,200.00	3,198.43	3,186.25	3,177.94	11.02	11.21	-28.92	-115.35	161.23	143.39	127.92	15.47	9.270				
3,300.00	3,298.29	3,285.69	3,276.37	11.38	11.60	-30.67	-119.77	174.61	152.93	136.96	15.96	9.581				
3,400.00	3,398.15	3,385.14	3,374.81	11.73	11.99	-32.21	-124.19	187.98	162.59	146.13	16.46	9.879				
3,500.00	3,498.02	3,484.58	3,473.25	12.09	12.38	-33.58	-128.61	201.36	172.35	155.39	16.96	10.165				
3,600.00	3,597.88	3,584.02	3,571.69	12.44	12.77	-34.80	-133.03	214.74	182.20	164.74	17.45	10.439				
3,700.00	3,697.74	3,683.46	3,670.13	12.80	13.16	-35.90	-137.45	228.12	192.12	174.17	17.96	10.700				
3,800.00	3,797.61	3,782.91	3,768.57	13.16	13.56	-36.89	-141.86	241.50	202.11	183.65	18.46	10.950				
3,900.00	3,897.47	3,882.35	3,867.01	13.51	13.95	-37.78	-146.28	254.88	212.15	193.19	18.96	11.189				
4,000.00	3,997.33	3,981.79	3,965.45	13.87	14.35	-38.59	-150.70	268.26	222.24	202.77	19.46	11.418				
4,100.00	4,097.19	4,081.23	4,063.89	14.23	14.75	-39.34	-155.12	281.63	232.37	212.40	19.97	11.636				
4,200.00	4,197.06	4,180.68	4,162.33	14.59	15.15	-40.02	-159.54	295.01	242.53	222.05	20.48	11.845				
4,300.00	4,296.92	4,280.12	4,260.77	14.95	15.56	-40.65	-163.96	308.39	252.73	231.74	20.98	12.044				
4,400.00	4,396.78	4,379.56	4,359.21	15.31	15.96	-41.22	-168.37	321.77	262.95	241.46	21.49	12.235				
4,500.00	4,496.65	4,479.00	4,457.65	15.67	16.36	-41.76	-172.79	335.15	273.20	251.20	22.00	12.418				
4,600.00	4,596.51	4,578.45	4,556.09	16.03	16.77	-42.25	-177.21	348.53	283.46	260.95	22.51	12.593				
4,700.00	4,696.37	4,677.89	4,654.53	16.39	17.18	-42.72	-181.63	361.90	293.75	270.73	23.02	12.761				
4,800.00	4,796.23	4,777.33	4,752.96	16.75	17.58	-43.15	-186.05	375.28	304.06	280.53	23.53	12.922				

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



Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well FMM Fed Com 103H
Project:	Lea County, NM (NAD83)	TVD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Reference Site:	FMM Fed Com	MD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	FMM Fed Com 103H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.15 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 0-OWSG (Rev2) MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
4,900.00	4,896.10	4,876.77	4,851.40	17.12	17.99	-43.55	-190.47	388.66	314.38	290.34	24.04	13.076		
5,000.00	4,995.96	4,976.22	4,949.84	17.48	18.40	-43.92	-194.89	402.04	324.72	300.16	24.55	13.225		
5,100.00	5,095.82	5,075.66	5,048.28	17.84	18.81	-44.28	-199.30	415.42	335.07	310.00	25.07	13.367		
5,200.00	5,195.69	5,175.10	5,146.72	18.21	19.22	-44.61	-203.72	428.80	345.43	319.85	25.58	13.504		
5,300.00	5,295.55	5,274.54	5,245.16	18.57	19.63	-44.92	-208.14	442.18	355.80	329.71	26.09	13.636		
5,400.00	5,395.41	5,373.99	5,343.60	18.93	20.04	-45.22	-212.56	455.55	366.18	339.57	26.61	13.763		
5,500.00	5,495.27	5,473.43	5,442.04	19.30	20.45	-45.50	-216.98	468.93	376.57	349.45	27.12	13.885		
5,600.00	5,595.14	5,572.87	5,540.48	19.66	20.86	-45.76	-221.40	482.31	386.97	359.34	27.64	14.002		
5,700.00	5,695.00	5,672.31	5,638.92	20.02	21.27	-46.01	-225.81	495.69	397.38	369.23	28.15	14.116		
5,800.00	5,794.86	5,771.76	5,737.36	20.39	21.69	-46.25	-230.23	509.07	407.79	379.13	28.67	14.225		
5,900.00	5,894.73	5,871.20	5,835.80	20.75	22.10	-46.47	-234.65	522.45	418.21	389.03	29.18	14.331		
6,000.00	5,994.59	5,970.64	5,934.24	21.12	22.51	-46.69	-239.07	535.83	428.64	398.94	29.70	14.433		
6,100.00	6,094.45	6,070.08	6,032.68	21.48	22.93	-46.89	-243.49	549.20	439.07	408.86	30.21	14.532		
6,200.00	6,194.31	6,169.53	6,131.11	21.85	23.34	-47.08	-247.91	562.58	449.51	418.78	30.73	14.627		
6,300.00	6,294.18	6,268.97	6,229.55	22.21	23.76	-47.27	-252.32	575.96	459.95	428.70	31.25	14.719		
6,400.00	6,394.04	6,368.41	6,327.99	22.58	24.17	-47.45	-256.74	589.34	470.40	438.63	31.77	14.808		
6,500.00	6,493.90	6,467.85	6,426.43	22.94	24.59	-47.62	-261.16	602.72	480.85	448.57	32.28	14.895		
6,600.00	6,593.77	6,567.30	6,524.87	23.31	25.00	-47.78	-265.58	616.10	491.31	458.50	32.80	14.978		
6,700.00	6,693.63	6,666.74	6,623.31	23.67	25.42	-47.94	-270.00	629.47	501.76	468.45	33.32	15.059		
6,800.00	6,793.49	6,766.18	6,721.75	24.04	25.83	-48.09	-274.42	642.85	512.23	478.39	33.84	15.138		
6,900.00	6,893.35	6,869.92	6,824.46	24.40	26.26	-48.24	-278.98	656.68	522.58	488.19	34.39	15.198		
7,000.00	6,993.22	6,965.18	6,938.91	24.77	26.73	-48.45	-283.26	669.65	530.76	495.76	34.99	15.168		
7,106.97	7,100.04	7,108.96	7,062.21	25.16	27.20	-48.75	-286.65	679.91	536.23	500.62	35.61	15.057		
7,200.00	7,192.99	7,216.82	7,169.89	25.50	27.59	-49.00	-288.58	685.75	538.98	502.86	36.12	14.921		
7,307.02	7,300.00	7,341.04	7,294.06	25.87	28.02	96.86	-289.62	688.90	540.81	504.14	36.66	14.751		
7,400.00	7,392.98	7,439.56	7,392.58	26.18	28.34	96.87	-289.69	689.10	540.98	503.88	37.10	14.581		
7,500.00	7,492.98	7,539.56	7,492.58	26.52	28.65	96.87	-289.69	689.10	540.98	503.40	37.58	14.396		
7,600.00	7,592.98	7,639.56	7,592.58	26.85	28.97	96.87	-289.69	689.10	540.98	502.93	38.06	14.216		
7,700.00	7,692.98	7,739.56	7,692.58	27.19	29.30	96.87	-289.69	689.10	540.98	502.45	38.53	14.040		
7,800.00	7,792.98	7,839.56	7,792.58	27.53	29.62	96.87	-289.69	689.10	540.98	501.97	39.01	13.867		
7,828.06	7,821.04	7,867.62	7,820.64	27.62	29.71	96.87	-289.69	689.10	540.98	501.84	39.15	13.820		
7,850.00	7,842.97	7,889.56	7,842.57	27.69	29.78	97.45	-289.69	689.10	541.04	501.79	39.25	13.785		
7,900.00	7,892.79	7,939.37	7,892.39	27.86	29.94	97.82	-289.69	689.10	541.58	502.10	39.48	13.719		
7,950.00	7,942.06	7,988.64	7,941.66	28.01	30.10	98.57	-289.69	689.10	542.80	503.11	39.69	13.675		
8,000.00	7,990.41	8,036.99	7,990.01	28.16	30.25	99.64	-289.69	689.10	544.88	504.98	39.90	13.656		
8,050.00	8,037.47	8,084.05	8,037.07	28.29	30.41	100.96	-289.69	689.10	548.08	507.98	40.09	13.670		
8,100.00	8,082.88	8,129.47	8,082.48	28.42	30.55	102.45	-289.69	689.10	552.73	512.45	40.28	13.722		
8,150.00	8,126.30	8,172.89	8,125.90	28.54	30.69	103.98	-289.69	689.10	559.21	518.75	40.46	13.821		
8,200.00	8,167.40	8,213.98	8,167.00	28.66	30.83	105.46	-289.69	689.10	567.90	527.26	40.64	13.975		
8,250.00	8,205.86	8,252.44	8,205.46	28.77	30.95	106.77	-289.69	689.10	579.16	538.34	40.81	14.191		
8,300.00	8,241.40	8,287.98	8,241.00	28.88	31.07	107.80	-289.69	689.10	593.30	552.31	40.99	14.475		
8,350.00	8,273.73	8,320.31	8,273.33	28.99	31.17	108.42	-289.69	689.10	610.55	569.39	41.16	14.832		
8,400.00	8,302.62	8,349.20	8,302.22	29.11	31.27	108.55	-289.69	689.10	631.05	589.71	41.34	15.266		
8,450.00	8,327.84	8,374.42	8,327.44	29.24	31.35	108.08	-289.69	689.10	654.80	613.29	41.51	15.776		
8,500.00	8,349.21	8,395.79	8,348.81	29.38	31.42	106.91	-289.69	689.10	681.72	640.05	41.67	16.360		
8,550.00	8,366.55	8,413.13	8,366.15	29.52	31.48	104.92	-289.69	689.10	711.60	669.78	41.82	17.016		
8,600.00	8,379.75	8,426.33	8,379.35	29.68	31.52	102.03	-289.69	689.10	744.16	702.21	41.96	17.737		
8,650.00	8,388.69	8,435.27	8,388.29	29.85	31.55	98.14	-289.69	689.10	779.05	736.97	42.08	18.515		
8,700.00	8,393.31	8,439.89	8,392.91	30.03	31.56	93.21	-289.69	689.10	815.86	773.68	42.18	19.343		
8,728.06	8,394.00	8,440.58	8,393.60	30.14	31.57	90.00	-289.69	689.10	837.20	794.97	42.23	19.825		
8,800.00	8,394.00	8,440.58	8,393.60	30.43	31.57	90.00	-289.69	689.10	893.62	851.27	42.35	21.103		
8,900.00	8,394.00	8,440.58	8,393.60	30.91	31.57	90.00	-289.69	689.10	975.44	932.95	42.49	22.954		

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



Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well FMM Fed Com 103H
Project:	Lea County, NM (NAD83)	TVD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Reference Site:	FMM Fed Com	MD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	FMM Fed Com 103H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.15 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design FMM Fed Com - FMM Fed Com 805H - OH - Plan #1													Offset Site Error:	0.00 usft
Survey Program: 0-OWSG (Rev2) MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance								Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
9,000.00	8,394.00	8,440.58	8,393.60	31.47	31.57	90.00	-289.69	689.10	1,060.39	1,017.76	42.63	24.875		
9,100.00	8,394.00	8,440.58	8,393.60	32.10	31.57	90.00	-289.69	689.10	1,147.76	1,105.01	42.75	26.851		
9,200.00	8,394.00	8,440.58	8,393.60	32.81	31.57	90.00	-289.69	689.10	1,237.05	1,194.20	42.85	28.870		
9,300.00	8,394.00	8,440.58	8,393.60	33.58	31.57	90.00	-289.69	689.10	1,327.86	1,284.92	42.94	30.923		
9,400.00	8,394.00	8,440.58	8,393.60	34.41	31.57	90.00	-289.69	689.10	1,419.91	1,376.89	43.02	33.003		
9,500.00	8,394.00	8,440.58	8,393.60	35.30	31.57	90.00	-289.69	689.10	1,512.97	1,469.88	43.10	35.107		
9,600.00	8,394.00	8,440.58	8,393.60	36.24	31.57	90.00	-289.69	689.10	1,606.87	1,563.71	43.16	37.228		
9,700.00	8,394.00	8,440.58	8,393.60	37.24	31.57	90.00	-289.69	689.10	1,701.46	1,658.24	43.22	39.364		
9,800.00	8,394.00	8,440.58	8,393.60	38.28	31.57	90.00	-289.69	689.10	1,796.63	1,753.36	43.28	41.513		
9,900.00	8,394.00	8,440.58	8,393.60	39.36	31.57	90.00	-289.69	689.10	1,892.31	1,848.98	43.33	43.673		
10,000.00	8,394.00	8,440.58	8,393.60	40.48	31.57	90.00	-289.69	689.10	1,988.41	1,945.03	43.38	45.841		
10,100.00	8,394.00	8,440.58	8,393.60	41.63	31.57	90.00	-289.69	689.10	2,084.87	2,041.45	43.42	48.016		
10,200.00	8,394.00	8,440.58	8,393.60	42.82	31.57	90.00	-289.69	689.10	2,181.66	2,138.20	43.46	50.196		
10,300.00	8,394.00	8,440.58	8,393.60	44.03	31.57	90.00	-289.69	689.10	2,278.72	2,235.22	43.50	52.381		
10,400.00	8,394.00	8,440.58	8,393.60	45.28	31.57	90.00	-289.69	689.10	2,376.03	2,332.49	43.54	54.570		
10,500.00	8,394.00	8,440.58	8,393.60	46.55	31.57	90.00	-289.69	689.10	2,473.55	2,429.97	43.58	56.762		
10,600.00	8,394.00	8,440.58	8,393.60	47.84	31.57	90.00	-289.69	689.10	2,571.26	2,527.65	43.61	58.956		
10,700.00	8,394.00	8,440.58	8,393.60	49.16	31.57	90.00	-289.69	689.10	2,669.14	2,625.49	43.65	61.152		
10,800.00	8,394.00	8,440.58	8,393.60	50.49	31.57	90.00	-289.69	689.10	2,767.17	2,723.49	43.68	63.349		
10,900.00	8,394.00	8,440.58	8,393.60	51.84	31.57	90.00	-289.69	689.10	2,865.34	2,821.63	43.71	65.547		
11,000.00	8,394.00	8,440.58	8,393.60	53.21	31.57	90.00	-289.69	689.10	2,963.63	2,919.88	43.75	67.746		
11,100.00	8,394.00	8,440.58	8,393.60	54.60	31.57	90.00	-289.69	689.10	3,062.03	3,018.25	43.78	69.944		
11,200.00	8,394.00	8,440.58	8,393.60	56.00	31.57	90.00	-289.69	689.10	3,160.53	3,116.72	43.81	72.142		
11,300.00	8,394.00	8,440.58	8,393.60	57.41	31.57	90.00	-289.69	689.10	3,259.13	3,215.29	43.84	74.339		
11,400.00	8,394.00	8,440.58	8,393.60	58.84	31.57	90.00	-289.69	689.10	3,357.80	3,313.93	43.87	76.535		
11,500.00	8,394.00	8,440.58	8,393.60	60.28	31.57	90.00	-289.69	689.10	3,456.56	3,412.65	43.90	78.729		
11,600.00	8,394.00	8,440.58	8,393.60	61.72	31.57	90.00	-289.69	689.10	3,555.38	3,511.44	43.94	80.922		
11,700.00	8,394.00	8,440.58	8,393.60	63.18	31.57	90.00	-289.69	689.10	3,654.27	3,610.30	43.97	83.114		
11,800.00	8,394.00	15,607.71	12,092.00	64.65	72.44	171.74	3,424.79	654.08	3,737.13	3,686.63	50.50	74.007		
11,900.00	8,394.00	15,707.71	12,092.00	66.13	73.78	171.74	3,524.79	653.13	3,737.13	3,685.70	51.43	72.671		
12,000.00	8,394.00	15,807.71	12,092.00	67.61	75.12	171.74	3,624.78	652.19	3,737.13	3,684.77	52.36	71.371		
12,100.00	8,394.00	15,907.71	12,092.00	69.10	76.48	171.74	3,724.78	651.25	3,737.13	3,683.82	53.31	70.106		
12,200.00	8,394.00	16,007.71	12,092.00	70.60	77.85	171.74	3,824.78	650.30	3,737.13	3,682.87	54.26	68.875		
12,300.00	8,394.00	16,107.71	12,092.00	72.11	79.23	171.74	3,924.77	649.36	3,737.13	3,681.91	55.22	67.678		
12,400.00	8,394.00	16,207.71	12,092.00	73.62	80.62	171.74	4,024.77	648.42	3,737.13	3,680.95	56.19	66.513		
12,500.00	8,394.00	16,307.71	12,092.00	75.14	82.02	171.74	4,124.76	647.47	3,737.13	3,679.97	57.16	65.380		
12,600.00	8,394.00	16,407.71	12,092.00	76.66	83.42	171.74	4,224.76	646.53	3,737.13	3,678.99	58.14	64.278		
12,700.00	8,394.00	16,507.71	12,092.00	78.19	84.84	171.74	4,324.75	645.59	3,737.14	3,678.01	59.13	63.206		
12,800.00	8,394.00	16,607.71	12,092.00	79.72	86.27	171.74	4,424.75	644.65	3,737.14	3,677.02	60.12	62.164		
12,900.00	8,394.00	16,707.71	12,092.00	81.26	87.70	171.74	4,524.74	643.70	3,737.14	3,676.02	61.11	61.150		
13,000.00	8,394.00	16,807.71	12,092.00	82.80	89.14	171.74	4,624.74	642.76	3,737.14	3,675.02	62.12	60.164		
13,100.00	8,394.00	16,907.71	12,092.00	84.35	90.59	171.74	4,724.74	641.82	3,737.14	3,674.01	63.12	59.204		
13,200.00	8,394.00	17,007.71	12,092.00	85.90	92.05	171.74	4,824.73	640.87	3,737.14	3,673.00	64.13	58.270		
13,300.00	8,394.00	17,107.71	12,092.00	87.46	93.51	171.74	4,924.73	639.93	3,737.14	3,671.99	65.15	57.361		
13,400.00	8,394.00	17,207.71	12,092.00	89.02	94.98	171.74	5,024.72	638.99	3,737.14	3,670.97	66.17	56.477		
13,500.00	8,394.00	17,307.71	12,092.00	90.58	96.45	171.74	5,124.72	638.05	3,737.14	3,669.94	67.20	55.616		
13,600.00	8,394.00	17,407.71	12,092.00	92.14	97.93	171.74	5,224.71	637.10	3,737.14	3,668.92	68.22	54.778		
13,700.00	8,394.00	17,507.71	12,092.00	93.71	99.41	171.74	5,324.71	636.16	3,737.14	3,667.89	69.26	53.962		
13,800.00	8,394.00	17,607.71	12,092.00	95.28	100.90	171.74	5,424.70	635.22	3,737.14	3,666.85	70.29	53.167		
13,900.00	8,394.00	17,707.71	12,092.00	96.85	102.40	171.74	5,524.70	634.27	3,737.14	3,665.81	71.33	52.393		
14,000.00	8,394.00	17,807.71	12,092.00	98.43	103.90	171.74	5,624.70	633.33	3,737.14	3,664.77	72.37	51.638		
14,100.00	8,394.00	17,907.71	12,092.00	100.01	105.40	171.74	5,724.69	632.39	3,737.14	3,663.73	73.42	50.903		

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



Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well FMM Fed Com 103H
Project:	Lea County, NM (NAD83)	TVD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Reference Site:	FMM Fed Com	MD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	FMM Fed Com 103H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.15 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													FMM Fed Com - FMM Fed Com 805H - OH - Plan #1		Offset Site Error:	0.00 usft
Survey Program: 0-OWSG (Rev2) MWD													Offset Well Error:	0.00 usft		
Reference		Offset		Semi Major Axis			Distance									
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning			
14,200.00	8,394.00	18,007.71	12,092.00	101.59	106.91	171.74	5,824.69	631.45	3,737.14	3,662.68	74.46	50.188				
14,300.00	8,394.00	18,107.71	12,092.00	103.17	108.43	171.74	5,924.68	630.50	3,737.15	3,661.63	75.51	49.490				
14,400.00	8,394.00	18,207.71	12,092.00	104.75	109.94	171.74	6,024.68	629.56	3,737.15	3,660.58	76.56	48.810				
14,500.00	8,394.00	18,307.71	12,092.00	106.34	111.46	171.74	6,124.67	628.62	3,737.15	3,659.53	77.62	48.147				
14,600.00	8,394.00	18,407.71	12,092.00	107.93	112.99	171.74	6,224.67	627.67	3,737.15	3,658.47	78.67	47.501				
14,700.00	8,394.00	18,507.71	12,092.00	109.52	114.52	171.74	6,324.66	626.73	3,737.15	3,657.41	79.73	46.870				
14,800.00	8,394.00	18,607.71	12,092.00	111.11	116.05	171.74	6,424.66	625.79	3,737.15	3,656.35	80.80	46.253				
14,900.00	8,394.00	18,707.71	12,092.00	112.71	117.58	171.74	6,524.66	624.85	3,737.15	3,655.29	81.86	45.652				
15,000.00	8,394.00	18,807.71	12,092.00	114.30	119.12	171.74	6,624.65	623.90	3,737.15	3,654.22	82.93	45.065				
15,100.00	8,394.00	18,907.71	12,092.00	115.90	120.66	171.74	6,724.65	622.96	3,737.15	3,653.15	84.00	44.491				
15,200.00	8,394.00	19,007.71	12,092.00	117.50	122.20	171.74	6,824.64	622.02	3,737.15	3,652.08	85.07	43.931				
15,300.00	8,394.00	19,107.71	12,092.00	119.10	123.75	171.74	6,924.64	621.07	3,737.15	3,651.01	86.14	43.384				
15,400.00	8,394.00	19,207.71	12,092.00	120.70	125.30	171.74	7,024.63	620.13	3,737.15	3,649.94	87.21	42.850				
15,500.00	8,394.00	19,307.71	12,092.00	122.31	126.85	171.74	7,124.63	619.19	3,737.15	3,648.86	88.29	42.328				
15,600.00	8,394.00	19,407.71	12,092.00	123.91	128.41	171.74	7,224.62	618.25	3,737.15	3,647.79	89.37	41.817				
15,700.00	8,394.00	19,507.71	12,092.00	125.52	129.96	171.74	7,324.62	617.30	3,737.15	3,646.71	90.45	41.318				
15,800.00	8,394.00	19,607.71	12,092.00	127.12	131.52	171.74	7,424.62	616.36	3,737.16	3,645.63	91.53	40.830				
15,900.00	8,394.00	19,707.71	12,092.00	128.73	133.08	171.74	7,524.61	615.42	3,737.16	3,644.54	92.61	40.353				
16,000.00	8,394.00	19,807.71	12,092.00	130.34	134.65	171.74	7,624.61	614.47	3,737.16	3,643.46	93.70	39.886				
16,100.00	8,394.00	19,907.71	12,092.00	131.95	136.21	171.74	7,724.60	613.53	3,737.16	3,642.38	94.78	39.430				
16,200.00	8,394.00	20,007.71	12,092.00	133.56	137.78	171.74	7,824.60	612.59	3,737.16	3,641.29	95.86	38.984				
16,300.00	8,394.00	20,107.71	12,092.00	135.18	139.35	171.74	7,924.59	611.65	3,737.16	3,640.21	96.95	38.547				
16,400.00	8,394.00	20,207.71	12,092.00	136.79	140.92	171.74	8,024.59	610.70	3,737.16	3,639.12	98.04	38.119				
16,500.00	8,394.00	20,307.71	12,092.00	138.40	142.50	171.74	8,124.58	609.76	3,737.16	3,638.03	99.13	37.701				
16,600.00	8,394.00	20,407.71	12,092.00	140.02	144.07	171.74	8,224.58	608.82	3,737.16	3,636.94	100.22	37.290				
16,700.00	8,394.00	20,507.71	12,092.00	141.64	145.65	171.74	8,324.58	607.87	3,737.16	3,635.85	101.31	36.888				
16,800.00	8,394.00	20,607.71	12,092.00	143.25	147.23	171.74	8,424.57	606.93	3,737.16	3,634.76	102.41	36.494				
16,900.00	8,394.00	20,707.71	12,092.00	144.87	148.81	171.74	8,524.57	605.99	3,737.16	3,633.66	103.50	36.108				
17,000.00	8,394.00	20,807.71	12,092.00	146.49	150.39	171.74	8,624.56	605.04	3,737.16	3,632.57	104.60	35.729				
17,100.00	8,394.00	20,907.71	12,092.00	148.11	151.97	171.74	8,724.56	604.10	3,737.16	3,631.47	105.69	35.359				
17,200.00	8,394.00	21,007.71	12,092.00	149.73	153.56	171.74	8,824.55	603.16	3,737.16	3,630.38	106.79	34.996				
17,300.00	8,394.00	21,107.71	12,092.00	151.35	155.14	171.74	8,924.55	602.22	3,737.17	3,629.28	107.89	34.640				
17,400.00	8,394.00	21,207.71	12,092.00	152.97	156.73	171.74	9,024.54	601.27	3,737.17	3,628.18	108.98	34.291				
17,500.00	8,394.00	21,307.71	12,092.00	154.59	158.32	171.74	9,124.54	600.33	3,737.17	3,627.08	110.08	33.949				
17,600.00	8,394.00	21,407.71	12,092.00	156.21	159.91	171.74	9,224.54	599.39	3,737.17	3,625.98	111.18	33.613				
17,700.00	8,394.00	21,507.71	12,092.00	157.84	161.50	171.74	9,324.53	598.44	3,737.17	3,624.88	112.28	33.283				
17,800.00	8,394.00	21,607.71	12,092.00	159.46	163.09	171.74	9,424.53	597.50	3,737.17	3,623.78	113.39	32.960				
17,900.00	8,394.00	21,707.71	12,092.00	161.08	164.68	171.74	9,524.52	596.56	3,737.17	3,622.68	114.49	32.642				
18,000.00	8,394.00	21,807.71	12,092.00	162.71	166.28	171.74	9,624.52	595.62	3,737.17	3,621.58	115.59	32.331				
18,100.00	8,394.00	21,907.71	12,092.00	164.33	167.88	171.74	9,724.51	594.67	3,737.17	3,620.48	116.70	32.025				
18,200.00	8,394.00	22,007.71	12,092.00	165.96	169.47	171.74	9,824.51	593.73	3,737.17	3,619.37	117.80	31.725				
18,300.00	8,394.00	22,107.71	12,092.00	167.59	171.07	171.74	9,924.50	592.79	3,737.17	3,618.27	118.91	31.430				
18,400.00	8,394.00	22,207.71	12,092.00	169.21	172.67	171.74	10,024.50	591.84	3,737.17	3,617.16	120.01	31.140				
18,404.60	8,394.00	22,212.31	12,092.00	169.29	172.74	171.74	10,029.10	591.80	3,737.17	3,617.11	120.06	31.127				
18,449.58	8,394.00	22,255.91	12,092.00	170.02	173.44	171.74	10,072.70	591.39	3,737.17	3,616.62	120.55	31.001				
18,450.14	8,394.00	22,255.91	12,092.00	170.03	173.44	171.74	10,072.70	591.39	3,737.17	3,616.62	120.56	30.999				

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



Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well FMM Fed Com 103H
Project:	Lea County, NM (NAD83)	TVD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Reference Site:	FMM Fed Com	MD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	FMM Fed Com 103H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.15 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design FMM Fed Com - FMM Fed Com 806H - OH - Plan #1													Offset Site Error:	0.00 usft
Survey Program: 0-OWSG (Rev2) MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance								Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
0.00	0.00	0.00	0.00	0.00	0.00	139.74	-74.49	63.09	97.62					
100.00	100.00	99.50	99.50	0.13	0.12	139.74	-74.49	63.09	97.62	97.44	0.18	551.536		
200.00	200.00	199.50	199.50	0.48	0.48	139.74	-74.49	63.09	97.62	96.93	0.68	142.898		
300.00	300.00	299.50	299.50	0.84	0.84	139.74	-74.49	63.09	97.62	96.43	1.19	82.026		
400.00	400.00	399.50	399.50	1.20	1.20	139.74	-74.49	63.09	97.62	95.92	1.70	57.522		
500.00	500.00	499.50	499.50	1.56	1.56	139.74	-74.49	63.09	97.62	95.41	2.20	44.291		
600.00	600.00	599.50	599.50	1.92	1.92	139.74	-74.49	63.09	97.62	94.91	2.71	36.009		
700.00	700.00	699.50	699.50	2.28	2.27	139.74	-74.49	63.09	97.62	94.40	3.22	30.336		
800.00	800.00	799.50	799.50	2.63	2.63	139.74	-74.49	63.09	97.62	93.89	3.72	26.207		
900.00	900.00	899.50	899.50	2.99	2.99	139.74	-74.49	63.09	97.62	93.39	4.23	23.067		
1,000.00	1,000.00	999.50	999.50	3.35	3.35	139.74	-74.49	63.09	97.62	92.88	4.74	20.600		
1,100.00	1,100.00	1,099.50	1,099.50	3.71	3.71	139.74	-74.49	63.09	97.62	92.37	5.25	18.609		
1,200.00	1,200.00	1,199.50	1,199.50	4.07	4.07	139.74	-74.49	63.09	97.62	91.86	5.75	16.969		
1,300.00	1,300.00	1,299.50	1,299.50	4.43	4.43	139.74	-74.49	63.09	97.62	91.36	6.26	15.595		
1,400.00	1,400.00	1,399.50	1,399.50	4.79	4.78	139.74	-74.49	63.09	97.62	90.85	6.77	14.426		
1,500.00	1,500.00	1,499.50	1,499.50	5.14	5.14	139.74	-74.49	63.09	97.62	90.34	7.27	13.421		
1,600.00	1,600.00	1,599.50	1,599.50	5.50	5.50	139.74	-74.49	63.09	97.62	89.84	7.78	12.546 CC, ES		
1,700.00	1,700.00	1,697.02	1,697.00	5.86	5.84	139.10	-74.70	64.72	98.87	90.60	8.27	11.952		
1,800.00	1,800.00	1,794.30	1,794.15	6.22	6.17	137.26	-75.34	69.62	102.72	93.97	8.75	11.737 SF		
1,900.00	1,900.00	1,891.13	1,890.63	6.58	6.51	134.50	-76.40	77.75	109.36	100.14	9.23	11.854		
1,920.00	1,920.00	1,910.43	1,909.82	6.65	6.58	133.87	-76.66	79.75	111.05	101.73	9.32	11.916		
2,000.00	1,999.99	1,987.37	1,986.19	6.92	6.85	-14.85	-77.87	89.02	118.22	108.54	9.68	12.214		
2,100.00	2,099.93	2,082.99	2,080.71	7.25	7.20	-18.80	-79.75	103.37	127.91	117.81	10.11	12.658		
2,120.05	2,119.96	2,102.08	2,099.51	7.32	7.27	-19.64	-80.17	106.61	129.98	119.80	10.19	12.757		
2,200.00	2,199.80	2,177.84	2,173.93	7.58	7.55	-23.03	-82.01	120.68	139.53	129.01	10.52	13.263		
2,300.00	2,299.66	2,271.65	2,265.52	7.92	7.92	-27.02	-84.63	140.81	154.82	143.90	10.92	14.176		
2,400.00	2,399.52	2,364.23	2,355.20	8.25	8.31	-30.58	-87.60	163.57	173.83	162.52	11.31	15.370		
2,500.00	2,499.39	2,455.42	2,442.77	8.59	8.71	-33.65	-90.90	188.79	196.44	184.76	11.69	16.811		
2,600.00	2,599.25	2,546.47	2,529.37	8.94	9.13	-36.25	-94.53	216.65	222.46	210.39	12.07	18.428		
2,700.00	2,699.11	2,642.26	2,620.19	9.28	9.60	-38.47	-98.47	246.84	249.80	237.25	12.55	19.909		
2,800.00	2,798.98	2,738.05	2,711.01	9.63	10.09	-40.25	-102.41	277.03	277.41	264.39	13.03	21.293		
2,900.00	2,898.84	2,833.83	2,801.83	9.97	10.59	-41.71	-106.35	307.22	305.24	291.72	13.51	22.586		
3,000.00	2,998.70	2,929.62	2,892.65	10.32	11.10	-42.93	-110.29	337.41	333.21	319.20	14.01	23.792		
3,100.00	3,098.57	3,025.41	2,983.47	10.67	11.62	-43.96	-114.23	367.60	361.30	346.80	14.50	24.918		
3,200.00	3,198.43	3,121.19	3,074.29	11.02	12.15	-44.84	-118.17	397.79	389.48	374.49	15.00	25.970		
3,300.00	3,298.29	3,216.98	3,165.11	11.38	12.69	-45.60	-122.11	427.98	417.74	402.24	15.50	26.953		
3,400.00	3,398.15	3,312.76	3,255.92	11.73	13.24	-46.27	-126.05	458.17	446.06	430.05	16.00	27.874		
3,500.00	3,498.02	3,408.55	3,346.74	12.09	13.80	-46.85	-129.99	488.36	474.42	457.91	16.51	28.738		
3,600.00	3,597.88	3,504.34	3,437.56	12.44	14.36	-47.37	-133.93	518.55	502.83	485.81	17.02	29.548		
3,700.00	3,697.74	3,600.12	3,528.38	12.80	14.92	-47.84	-137.88	548.74	531.27	513.74	17.53	30.310		
3,800.00	3,797.61	3,695.91	3,619.20	13.16	15.49	-48.26	-141.82	578.93	559.74	541.70	18.04	31.027		
3,900.00	3,897.47	3,791.70	3,710.02	13.51	16.06	-48.63	-145.76	609.11	588.23	569.67	18.56	31.702		
4,000.00	3,997.33	3,887.48	3,800.84	13.87	16.64	-48.97	-149.70	639.30	616.74	597.67	19.07	32.339		
4,100.00	4,097.19	3,983.27	3,891.66	14.23	17.22	-49.29	-153.64	669.49	645.28	625.69	19.59	32.942		
4,200.00	4,197.06	4,079.05	3,982.48	14.59	17.80	-49.57	-157.58	699.68	673.83	653.72	20.11	33.512		
4,300.00	4,296.92	4,174.84	4,073.29	14.95	18.39	-49.83	-161.52	729.87	702.39	681.76	20.63	34.052		
4,400.00	4,396.78	4,270.63	4,164.11	15.31	18.97	-50.08	-165.46	760.06	730.97	709.82	21.15	34.564		
4,500.00	4,496.65	4,366.41	4,254.93	15.67	19.56	-50.30	-169.40	790.25	759.55	737.88	21.67	35.049		
4,600.00	4,596.51	4,462.20	4,345.75	16.03	20.15	-50.51	-173.34	820.44	788.15	765.96	22.19	35.511		
4,700.00	4,696.37	4,557.99	4,436.57	16.39	20.75	-50.70	-177.28	850.63	816.76	794.04	22.72	35.950		
4,800.00	4,796.23	4,653.77	4,527.39	16.75	21.34	-50.88	-181.22	880.82	845.37	822.13	23.24	36.369		
4,900.00	4,896.10	4,749.56	4,618.21	17.12	21.94	-51.05	-185.16	911.01	873.99	850.22	23.77	36.768		

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



Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well FMM Fed Com 103H
Project:	Lea County, NM (NAD83)	TVD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Reference Site:	FMM Fed Com	MD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	FMM Fed Com 103H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.15 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 0-OWSG (Rev2) MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
5,000.00	4,995.96	4,845.34	4,709.03	17.48	22.54	-51.21	-189.10	941.20	902.62	878.32	24.30	37.148		
5,100.00	5,095.82	4,941.13	4,799.85	17.84	23.14	-51.35	-193.04	971.39	931.25	906.43	24.83	37.511		
5,200.00	5,195.69	5,036.92	4,890.67	18.21	23.74	-51.49	-196.98	1,001.58	959.89	934.53	25.35	37.859		
5,300.00	5,295.55	5,132.70	4,981.48	18.57	24.34	-51.62	-200.92	1,031.76	988.53	962.65	25.88	38.191		
5,400.00	5,395.41	5,228.49	5,072.30	18.93	24.94	-51.75	-204.86	1,061.95	1,017.18	990.77	26.41	38.509		
5,500.00	5,495.27	5,324.28	5,163.12	19.30	25.54	-51.86	-208.80	1,092.14	1,045.83	1,018.89	26.94	38.814		
5,600.00	5,595.14	5,420.06	5,253.94	19.66	26.15	-51.97	-212.74	1,122.33	1,074.49	1,047.01	27.48	39.107		
5,700.00	5,695.00	5,515.85	5,344.76	20.02	26.75	-52.08	-216.68	1,152.52	1,103.15	1,075.14	28.01	39.388		
5,800.00	5,794.86	5,611.63	5,435.58	20.39	27.36	-52.18	-220.62	1,182.71	1,131.81	1,103.27	28.54	39.657		
5,900.00	5,894.73	5,707.42	5,526.40	20.75	27.96	-52.27	-224.56	1,212.90	1,160.48	1,131.40	29.07	39.916		
6,000.00	5,994.59	5,803.21	5,617.22	21.12	28.57	-52.36	-228.50	1,243.09	1,189.14	1,159.54	29.61	40.166		
6,100.00	6,094.45	5,898.99	5,708.04	21.48	29.18	-52.45	-232.44	1,273.28	1,217.81	1,187.67	30.14	40.406		
6,200.00	6,194.31	5,994.78	5,798.86	21.85	29.79	-52.53	-236.38	1,303.47	1,246.49	1,215.81	30.67	40.637		
6,300.00	6,294.18	6,090.57	5,889.67	22.21	30.40	-52.61	-240.32	1,333.66	1,275.16	1,243.95	31.21	40.859		
6,400.00	6,394.04	6,186.35	5,980.49	22.58	31.00	-52.68	-244.26	1,363.85	1,303.84	1,272.10	31.74	41.074		
6,500.00	6,493.90	6,282.14	6,071.31	22.94	31.61	-52.76	-248.20	1,394.04	1,332.52	1,300.24	32.28	41.281		
6,600.00	6,593.77	6,377.92	6,162.13	23.31	32.22	-52.82	-252.14	1,424.22	1,361.20	1,328.39	32.82	41.481		
6,700.00	6,693.63	6,473.71	6,252.95	23.67	32.84	-52.89	-256.08	1,454.41	1,389.88	1,356.53	33.35	41.674		
6,800.00	6,793.49	6,569.50	6,343.77	24.04	33.45	-52.95	-260.02	1,484.60	1,418.57	1,384.68	33.89	41.860		
6,900.00	6,893.35	6,707.10	6,474.61	24.40	34.31	-53.04	-265.53	1,526.83	1,446.66	1,411.97	34.69	41.700		
7,000.00	6,993.22	6,904.69	6,665.52	24.77	35.41	-53.20	-272.11	1,577.19	1,469.25	1,433.49	35.76	41.089		
7,106.97	7,100.04	7,121.98	6,878.96	25.16	36.41	-53.42	-277.35	1,617.35	1,485.84	1,449.11	36.73	40.452		
7,200.00	7,192.99	7,314.16	7,069.80	25.50	37.14	-53.69	-280.23	1,639.42	1,494.37	1,456.96	37.42	39.940		
7,307.02	7,300.00	7,537.06	7,292.44	25.87	37.78	92.16	-281.49	1,649.06	1,498.14	1,460.16	37.98	39.445		
7,400.00	7,392.98	7,637.11	7,392.48	26.18	38.02	92.16	-281.49	1,649.09	1,498.16	1,459.76	38.40	39.014		
7,500.00	7,492.98	7,737.11	7,492.48	26.52	38.27	92.16	-281.49	1,649.09	1,498.16	1,459.30	38.86	38.557		
7,600.00	7,592.98	7,837.11	7,592.48	26.85	38.51	92.16	-281.49	1,649.09	1,498.16	1,458.84	39.31	38.109		
7,700.00	7,692.98	7,937.11	7,692.48	27.19	38.75	92.16	-281.49	1,649.09	1,498.16	1,458.39	39.77	37.670		
7,800.00	7,792.98	8,037.11	7,792.48	27.53	39.00	92.16	-281.49	1,649.09	1,498.16	1,457.93	40.23	37.241		
7,828.06	7,821.04	8,065.17	7,820.54	27.62	39.07	92.16	-281.49	1,649.09	1,498.16	1,457.80	40.36	37.122		
7,850.00	7,842.97	8,087.10	7,842.47	27.69	39.13	92.72	-281.49	1,649.09	1,498.16	1,457.72	40.46	37.030		
7,900.00	7,892.79	8,136.92	7,892.29	27.86	39.25	92.85	-281.49	1,649.09	1,498.37	1,457.70	40.68	36.835		
7,950.00	7,942.06	8,186.19	7,941.56	28.01	39.37	93.13	-281.49	1,649.09	1,498.82	1,457.93	40.89	36.658		
8,000.00	7,990.41	8,234.54	7,989.91	28.16	39.50	93.52	-281.49	1,649.09	1,499.58	1,458.50	41.08	36.500		
8,050.00	8,037.47	8,281.60	8,036.97	28.29	39.61	94.00	-281.49	1,649.09	1,500.76	1,459.48	41.27	36.363		
8,100.00	8,082.88	8,327.01	8,082.38	28.42	39.73	94.55	-281.49	1,649.09	1,502.48	1,461.02	41.45	36.248		
8,150.00	8,126.30	8,370.43	8,125.80	28.54	39.84	95.13	-281.49	1,649.09	1,504.89	1,463.26	41.62	36.156		
8,200.00	8,167.40	8,411.53	8,166.90	28.66	39.94	95.69	-281.49	1,649.09	1,508.15	1,466.36	41.79	36.090		
8,250.00	8,205.86	8,449.99	8,205.36	28.77	40.04	96.19	-281.49	1,649.09	1,512.45	1,470.49	41.95	36.050		
8,300.00	8,241.40	8,485.52	8,240.90	28.88	40.13	96.59	-281.49	1,649.09	1,517.94	1,475.82	42.12	36.038		
8,350.00	8,273.73	8,517.86	8,273.23	28.99	40.21	96.83	-281.49	1,649.09	1,524.79	1,482.50	42.29	36.056		
8,400.00	8,302.62	8,546.74	8,302.12	29.11	40.29	96.88	-281.49	1,649.09	1,533.13	1,490.67	42.47	36.103		
8,450.00	8,327.84	8,571.97	8,327.34	29.24	40.35	96.69	-281.49	1,649.09	1,543.09	1,500.44	42.65	36.183		
8,500.00	8,349.21	8,593.33	8,348.71	29.38	40.41	96.23	-281.49	1,649.09	1,554.73	1,511.89	42.84	36.295		
8,550.00	8,366.55	8,610.68	8,366.05	29.52	40.45	95.47	-281.49	1,649.09	1,568.09	1,525.05	43.03	36.441		
8,600.00	8,379.75	8,623.87	8,379.25	29.68	40.49	94.38	-281.49	1,649.09	1,583.16	1,539.92	43.23	36.620		
8,650.00	8,388.69	8,632.82	8,388.19	29.85	40.51	92.94	-281.49	1,649.09	1,599.88	1,556.44	43.44	36.830		
8,700.00	8,393.31	8,637.44	8,392.81	30.03	40.52	91.15	-281.49	1,649.09	1,618.15	1,574.50	43.65	37.073		
8,728.06	8,394.00	8,638.13	8,393.50	30.14	40.52	90.00	-281.49	1,649.09	1,629.03	1,585.26	43.76	37.223		
8,800.00	8,394.00	8,638.13	8,393.50	30.43	40.52	90.00	-281.49	1,649.09	1,658.77	1,614.69	44.08	37.633		
8,900.00	8,394.00	8,638.13	8,393.50	30.91	40.52	90.00	-281.49	1,649.09	1,704.30	1,659.74	44.55	38.252		
9,000.00	8,394.00	8,638.13	8,393.50	31.47	40.52	90.00	-281.49	1,649.09	1,754.35	1,709.29	45.06	38.932		

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



Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well FMM Fed Com 103H
Project:	Lea County, NM (NAD83)	TVD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Reference Site:	FMM Fed Com	MD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	FMM Fed Com 103H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.15 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 0-OWSG (Rev2) MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
9,100.00	8,394.00	8,638.13	8,393.50	32.10	40.52	90.00	-281.49	1,649.09	1,808.55	1,762.97	45.58	39.675		
9,200.00	8,394.00	8,638.13	8,393.50	32.81	40.52	90.00	-281.49	1,649.09	1,866.54	1,820.43	46.11	40.481		
9,300.00	8,394.00	8,638.13	8,393.50	33.58	40.52	90.00	-281.49	1,649.09	1,927.97	1,881.35	46.63	41.350		
9,400.00	8,394.00	8,638.13	8,393.50	34.41	40.52	90.00	-281.49	1,649.09	1,992.53	1,945.41	47.13	42.279		
9,500.00	8,394.00	8,638.13	8,393.50	35.30	40.52	90.00	-281.49	1,649.09	2,059.93	2,012.32	47.61	43.264		
9,600.00	8,394.00	8,638.13	8,393.50	36.24	40.52	90.00	-281.49	1,649.09	2,129.89	2,081.81	48.07	44.304		
9,700.00	8,394.00	8,638.13	8,393.50	37.24	40.52	90.00	-281.49	1,649.09	2,202.17	2,153.66	48.51	45.396		
9,800.00	8,394.00	8,638.13	8,393.50	38.28	40.52	90.00	-281.49	1,649.09	2,276.54	2,227.62	48.92	46.534		
9,900.00	8,394.00	8,638.13	8,393.50	39.36	40.52	90.00	-281.49	1,649.09	2,352.82	2,303.51	49.31	47.715		
10,000.00	8,394.00	8,638.13	8,393.50	40.48	40.52	90.00	-281.49	1,649.09	2,430.82	2,381.14	49.67	48.935		
10,100.00	8,394.00	8,638.13	8,393.50	41.63	40.52	90.00	-281.49	1,649.09	2,510.38	2,460.36	50.01	50.193		
10,200.00	8,394.00	8,638.13	8,393.50	42.82	40.52	90.00	-281.49	1,649.09	2,591.35	2,541.02	50.33	51.483		
10,300.00	8,394.00	8,638.13	8,393.50	44.03	40.52	90.00	-281.49	1,649.09	2,673.62	2,622.98	50.63	52.804		
10,400.00	8,394.00	8,638.13	8,393.50	45.28	40.52	90.00	-281.49	1,649.09	2,757.05	2,706.14	50.91	54.152		
10,500.00	8,394.00	8,638.13	8,393.50	46.55	40.52	90.00	-281.49	1,649.09	2,841.56	2,790.38	51.17	55.526		
10,600.00	8,394.00	8,638.13	8,393.50	47.84	40.52	90.00	-281.49	1,649.09	2,927.04	2,875.62	51.42	56.926		
10,700.00	8,394.00	8,638.13	8,393.50	49.16	40.52	90.00	-281.49	1,649.09	3,013.42	2,961.77	51.65	58.347		
10,800.00	8,394.00	8,638.13	8,393.50	50.49	40.52	90.00	-281.49	1,649.09	3,100.61	3,048.75	51.86	59.788		
10,900.00	8,394.00	8,638.13	8,393.50	51.84	40.52	90.00	-281.49	1,649.09	3,188.56	3,136.50	52.06	61.246		
11,000.00	8,394.00	8,638.13	8,393.50	53.21	40.52	90.00	-281.49	1,649.09	3,277.20	3,224.95	52.25	62.721		
11,100.00	8,394.00	8,638.13	8,393.50	54.60	40.52	90.00	-281.49	1,649.09	3,366.47	3,314.04	52.43	64.210		
11,200.00	8,394.00	8,638.13	8,393.50	56.00	40.52	90.00	-281.49	1,649.09	3,456.33	3,403.74	52.60	65.713		
11,300.00	8,394.00	8,638.13	8,393.50	57.41	40.52	90.00	-281.49	1,649.09	3,546.74	3,493.98	52.76	67.229		
11,400.00	8,394.00	8,638.13	8,393.50	58.84	40.52	90.00	-281.49	1,649.09	3,637.65	3,584.74	52.91	68.755		
11,500.00	8,394.00	8,638.13	8,393.50	60.28	40.52	90.00	-281.49	1,649.09	3,729.02	3,675.97	53.05	70.293		
11,600.00	8,394.00	8,638.13	8,393.50	61.72	40.52	90.00	-281.49	1,649.09	3,820.82	3,767.64	53.19	71.839		
11,700.00	8,394.00	8,638.13	8,393.50	63.18	40.52	90.00	-281.49	1,649.09	3,913.03	3,859.72	53.31	73.395		
11,800.00	8,394.00	8,638.13	8,393.50	64.65	40.52	90.00	-281.49	1,649.09	4,005.61	3,952.17	53.44	74.958		
11,900.00	8,394.00	15,937.23	12,123.00	66.13	76.49	158.14	3,533.86	1,613.05	4,018.58	3,960.70	57.88	69.432		
12,000.00	8,394.00	16,037.23	12,123.00	67.61	77.78	158.14	3,633.86	1,612.11	4,018.58	3,959.59	58.99	68.117		
12,100.00	8,394.00	16,137.23	12,123.00	69.10	79.09	158.13	3,733.85	1,611.16	4,018.58	3,958.46	60.12	66.842		
12,200.00	8,394.00	16,237.23	12,123.00	70.60	80.41	158.13	3,833.85	1,610.22	4,018.58	3,957.33	61.26	65.604		
12,300.00	8,394.00	16,337.23	12,123.00	72.11	81.75	158.13	3,933.85	1,609.28	4,018.58	3,956.18	62.40	64.401		
12,400.00	8,394.00	16,437.23	12,123.00	73.62	83.09	158.13	4,033.84	1,608.33	4,018.58	3,955.03	63.55	63.234		
12,500.00	8,394.00	16,537.23	12,123.00	75.14	84.45	158.13	4,133.84	1,607.39	4,018.59	3,953.88	64.71	62.105		
12,600.00	8,394.00	16,637.23	12,123.00	76.66	85.81	158.13	4,233.83	1,606.44	4,018.59	3,952.72	65.87	61.008		
12,700.00	8,394.00	16,737.23	12,123.00	78.19	87.19	158.13	4,333.83	1,605.50	4,018.59	3,951.55	67.04	59.944		
12,800.00	8,394.00	16,837.23	12,123.00	79.72	88.58	158.13	4,433.82	1,604.55	4,018.59	3,950.38	68.21	58.912		
12,900.00	8,394.00	16,937.23	12,123.00	81.26	89.97	158.13	4,533.82	1,603.61	4,018.59	3,949.20	69.40	57.909		
13,000.00	8,394.00	17,037.23	12,123.00	82.80	91.38	158.13	4,633.81	1,602.66	4,018.59	3,948.01	70.58	56.934		
13,100.00	8,394.00	17,137.23	12,123.00	84.35	92.79	158.13	4,733.81	1,601.72	4,018.59	3,946.82	71.78	55.988		
13,200.00	8,394.00	17,237.23	12,123.00	85.90	94.21	158.13	4,833.81	1,600.77	4,018.59	3,945.62	72.97	55.069		
13,300.00	8,394.00	17,337.23	12,123.00	87.46	95.64	158.13	4,933.80	1,599.83	4,018.59	3,944.42	74.18	54.176		
13,400.00	8,394.00	17,437.23	12,123.00	89.02	97.07	158.13	5,033.80	1,598.89	4,018.60	3,943.21	75.38	53.311		
13,500.00	8,394.00	17,537.23	12,123.00	90.58	98.51	158.13	5,133.79	1,597.94	4,018.60	3,942.01	76.59	52.470		
13,600.00	8,394.00	17,637.23	12,123.00	92.14	99.96	158.13	5,233.79	1,597.00	4,018.60	3,940.80	77.80	51.652		
13,700.00	8,394.00	17,737.23	12,123.00	93.71	101.42	158.13	5,333.78	1,596.05	4,018.60	3,939.58	79.02	50.857		
13,800.00	8,394.00	17,837.23	12,123.00	95.28	102.88	158.13	5,433.78	1,595.11	4,018.60	3,938.36	80.24	50.084		
13,900.00	8,394.00	17,937.23	12,123.00	96.85	104.34	158.13	5,533.77	1,594.16	4,018.60	3,937.14	81.46	49.331		
14,000.00	8,394.00	18,037.23	12,123.00	98.43	105.82	158.13	5,633.77	1,593.22	4,018.60	3,935.91	82.69	48.599		
14,100.00	8,394.00	18,137.23	12,123.00	100.01	107.29	158.13	5,733.77	1,592.27	4,018.60	3,934.68	83.92	47.887		
14,200.00	8,394.00	18,237.23	12,123.00	101.59	108.78	158.13	5,833.76	1,591.33	4,018.60	3,933.45	85.15	47.193		

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



Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well FMM Fed Com 103H
Project:	Lea County, NM (NAD83)	TVD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Reference Site:	FMM Fed Com	MD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	FMM Fed Com 103H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.15 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													FMM Fed Com - FMM Fed Com 806H - OH - Plan #1		Offset Site Error:	0.00 usft
Survey Program: 0-OWSG (Rev2) MWD													Offset Well Error:	0.00 usft		
Reference		Offset		Semi Major Axis			Distance									
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning			
14,300.00	8,394.00	18,337.23	12,123.00	103.17	110.26	158.13	5,933.76	1,590.39	4,018.61	3,932.22	86.39	46.518				
14,400.00	8,394.00	18,437.23	12,123.00	104.75	111.76	158.13	6,033.75	1,589.44	4,018.61	3,930.98	87.63	45.860				
14,500.00	8,394.00	18,537.23	12,123.00	106.34	113.25	158.13	6,133.75	1,588.50	4,018.61	3,929.74	88.87	45.219				
14,600.00	8,394.00	18,637.23	12,123.00	107.93	114.75	158.13	6,233.74	1,587.55	4,018.61	3,928.49	90.11	44.595				
14,700.00	8,394.00	18,737.23	12,123.00	109.52	116.26	158.13	6,333.74	1,586.61	4,018.61	3,927.25	91.36	43.987				
14,800.00	8,394.00	18,837.23	12,123.00	111.11	117.77	158.13	6,433.73	1,585.66	4,018.61	3,926.01	92.60	43.396				
14,900.00	8,394.00	18,937.23	12,123.00	112.71	119.28	158.13	6,533.73	1,584.72	4,018.61	3,924.76	93.85	42.818				
15,000.00	8,394.00	19,037.23	12,123.00	114.30	120.79	158.13	6,633.73	1,583.77	4,018.61	3,923.51	95.11	42.254				
15,100.00	8,394.00	19,137.23	12,123.00	115.90	122.31	158.13	6,733.72	1,582.83	4,018.61	3,922.25	96.36	41.704				
15,200.00	8,394.00	19,237.23	12,123.00	117.50	123.84	158.13	6,833.72	1,581.89	4,018.62	3,921.00	97.61	41.168				
15,300.00	8,394.00	19,337.23	12,123.00	119.10	125.36	158.13	6,933.71	1,580.94	4,018.62	3,919.75	98.87	40.645				
15,400.00	8,394.00	19,437.23	12,123.00	120.70	126.89	158.13	7,033.71	1,580.00	4,018.62	3,918.49	100.13	40.135				
15,500.00	8,394.00	19,537.23	12,123.00	122.31	128.43	158.13	7,133.70	1,579.05	4,018.62	3,917.23	101.39	39.636				
15,600.00	8,394.00	19,637.23	12,123.00	123.91	129.96	158.13	7,233.70	1,578.11	4,018.62	3,915.97	102.65	39.149				
15,700.00	8,394.00	19,737.23	12,123.00	125.52	131.50	158.13	7,333.69	1,577.16	4,018.62	3,914.71	103.91	38.673				
15,800.00	8,394.00	19,837.23	12,123.00	127.12	133.04	158.13	7,433.69	1,576.22	4,018.62	3,913.45	105.18	38.208				
15,900.00	8,394.00	19,937.23	12,123.00	128.73	134.58	158.13	7,533.69	1,575.27	4,018.62	3,912.18	106.44	37.754				
16,000.00	8,394.00	20,037.23	12,123.00	130.34	136.13	158.13	7,633.68	1,574.33	4,018.62	3,910.91	107.71	37.310				
16,100.00	8,394.00	20,137.23	12,123.00	131.95	137.68	158.13	7,733.68	1,573.38	4,018.63	3,909.65	108.98	36.875				
16,200.00	8,394.00	20,237.23	12,123.00	133.56	139.23	158.13	7,833.67	1,572.44	4,018.63	3,908.38	110.25	36.450				
16,300.00	8,394.00	20,337.23	12,123.00	135.18	140.78	158.13	7,933.67	1,571.50	4,018.63	3,907.11	111.52	36.035				
16,400.00	8,394.00	20,437.23	12,123.00	136.79	142.34	158.13	8,033.66	1,570.55	4,018.63	3,905.84	112.79	35.628				
16,500.00	8,394.00	20,537.23	12,123.00	138.40	143.90	158.13	8,133.66	1,569.61	4,018.63	3,904.57	114.06	35.231				
16,600.00	8,394.00	20,637.23	12,123.00	140.02	145.46	158.13	8,233.65	1,568.66	4,018.63	3,903.29	115.34	34.843				
16,700.00	8,394.00	20,737.23	12,123.00	141.64	147.02	158.13	8,333.65	1,567.72	4,018.63	3,902.02	116.61	34.461				
16,800.00	8,394.00	20,837.23	12,123.00	143.25	148.58	158.13	8,433.65	1,566.77	4,018.63	3,900.74	117.89	34.088				
16,900.00	8,394.00	20,937.23	12,123.00	144.87	150.15	158.13	8,533.64	1,565.83	4,018.63	3,899.47	119.17	33.723				
17,000.00	8,394.00	21,037.23	12,123.00	146.49	151.72	158.13	8,633.64	1,564.88	4,018.63	3,898.19	120.44	33.366				
17,100.00	8,394.00	21,137.23	12,123.00	148.11	153.29	158.13	8,733.63	1,563.94	4,018.64	3,896.92	121.72	33.016				
17,200.00	8,394.00	21,237.23	12,123.00	149.73	154.86	158.13	8,833.63	1,563.00	4,018.64	3,895.64	123.00	32.673				
17,300.00	8,394.00	21,337.23	12,123.00	151.35	156.43	158.13	8,933.62	1,562.05	4,018.64	3,894.36	124.27	32.337				
17,400.00	8,394.00	21,437.23	12,123.00	152.97	158.00	158.13	9,033.62	1,561.11	4,018.64	3,893.09	125.55	32.007				
17,500.00	8,394.00	21,537.23	12,123.00	154.59	159.58	158.13	9,133.61	1,560.16	4,018.64	3,891.81	126.83	31.684				
17,600.00	8,394.00	21,637.23	12,123.00	156.21	161.16	158.13	9,233.61	1,559.22	4,018.64	3,890.53	128.12	31.367				
17,700.00	8,394.00	21,737.23	12,123.00	157.84	162.74	158.13	9,333.61	1,558.27	4,018.64	3,889.24	129.40	31.056				
17,800.00	8,394.00	21,837.23	12,123.00	159.46	164.32	158.13	9,433.60	1,557.33	4,018.64	3,887.96	130.68	30.752				
17,900.00	8,394.00	21,937.23	12,123.00	161.08	165.90	158.13	9,533.60	1,556.38	4,018.64	3,886.68	131.97	30.452				
18,000.00	8,394.00	22,037.23	12,123.00	162.71	167.48	158.13	9,633.59	1,555.44	4,018.65	3,885.40	133.25	30.159				
18,100.00	8,394.00	22,137.23	12,123.00	164.33	169.07	158.13	9,733.59	1,554.50	4,018.65	3,884.11	134.54	29.871				
18,200.00	8,394.00	22,237.23	12,123.00	165.96	170.65	158.13	9,833.58	1,553.55	4,018.65	3,882.83	135.82	29.588				
18,300.00	8,394.00	22,337.23	12,123.00	167.59	172.24	158.13	9,933.58	1,552.61	4,018.65	3,881.55	137.10	29.311				
18,400.00	8,394.00	22,437.23	12,123.00	169.21	173.83	158.13	10,033.57	1,551.66	4,018.65	3,880.26	138.39	29.039				
18,403.82	8,394.00	22,441.05	12,123.00	169.28	173.89	158.13	10,037.39	1,551.63	4,018.65	3,880.21	138.44	29.029				
18,449.58	8,394.00	22,482.95	12,123.00	170.02	174.55	158.13	10,079.29	1,551.23	4,018.65	3,879.65	139.00	28.910				
18,450.14	8,394.00	22,482.95	12,123.00	170.03	174.55	158.13	10,079.29	1,551.23	4,018.65	3,879.65	139.01	28.910				

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



Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well FMM Fed Com 103H
Project:	Lea County, NM (NAD83)	TVD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Reference Site:	FMM Fed Com	MD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	FMM Fed Com 103H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.15 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 220-INC-ONLY													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
0.00	0.00	0.00	0.00	0.00	0.00	-28.50	4,232.37	-2,298.23	4,816.10					
100.00	100.00	96.70	96.70	0.13	0.82	-28.50	4,232.37	-2,298.23	4,816.10	4,815.27	0.83	5,821.762		
200.00	200.00	196.70	196.70	0.48	1.66	-28.50	4,232.37	-2,298.23	4,816.10	4,814.37	1.73	2,780.252		
300.00	300.00	296.70	296.70	0.84	3.22	-28.50	4,232.37	-2,298.23	4,816.10	4,812.77	3.33	1,447.320		
400.00	400.00	406.15	406.15	1.20	5.16	-28.50	4,232.37	-2,298.23	4,816.10	4,810.81	5.30	909.337		
407.29	407.29	414.25	414.25	1.23	5.30	-28.50	4,232.35	-2,298.23	4,816.09	4,810.65	5.44	884.980		
500.00	500.00	496.70	496.70	1.56	6.90	-28.50	4,232.37	-2,298.23	4,816.10	4,809.03	7.07	681.057		
600.00	600.00	605.73	605.73	1.92	8.99	-28.50	4,232.37	-2,298.23	4,816.11	4,806.92	9.19	524.056		
611.07	611.07	617.90	617.90	1.96	9.22	-28.50	4,232.35	-2,298.23	4,816.09	4,806.66	9.43	510.908		
700.00	700.00	696.72	696.70	2.28	11.49	-28.50	4,232.37	-2,298.23	4,816.10	4,804.38	11.72	411.027		
800.00	800.00	796.72	796.70	2.63	14.27	-28.50	4,232.37	-2,298.23	4,816.10	4,801.59	14.51	331.891		
900.00	900.00	901.66	901.62	2.99	17.18	-28.49	4,233.80	-2,298.23	4,817.36	4,799.92	17.44	276.200		
1,000.00	1,000.00	1,022.77	1,022.72	3.35	20.54	-28.50	4,233.36	-2,298.23	4,817.04	4,796.22	20.82	231.409		
1,100.00	1,100.00	1,143.89	1,143.83	3.71	23.91	-28.50	4,232.31	-2,298.23	4,816.28	4,792.09	24.19	199.083		
1,137.79	1,137.79	1,189.68	1,189.60	3.85	25.18	-28.51	4,231.76	-2,298.23	4,815.88	4,790.41	25.47	189.092 CC		
1,200.00	1,200.00	1,197.06	1,196.70	4.07	25.79	-28.50	4,232.37	-2,298.23	4,816.10	4,789.99	26.11	184.428		
1,300.00	1,300.00	1,343.62	1,343.20	4.43	30.90	-28.49	4,233.70	-2,298.23	4,817.49	4,786.28	31.22	154.321		
1,400.00	1,400.00	1,397.16	1,396.70	4.79	32.77	-28.50	4,232.37	-2,298.23	4,816.10	4,782.98	33.12	145.428		
1,500.00	1,500.00	1,497.38	1,496.70	5.14	36.31	-28.50	4,232.37	-2,298.23	4,816.10	4,779.43	36.67	131.337		
1,600.00	1,600.00	1,597.50	1,596.70	5.50	39.63	-28.50	4,232.37	-2,298.23	4,816.10	4,776.09	40.01	120.374		
1,700.00	1,700.00	1,697.57	1,696.70	5.86	42.64	-28.50	4,232.37	-2,298.23	4,816.10	4,773.06	43.04	111.893		
1,800.00	1,800.00	1,797.57	1,796.70	6.22	45.40	-28.50	4,232.37	-2,298.23	4,816.10	4,770.28	45.82	105.110		
1,900.00	1,900.00	1,959.08	1,958.17	6.58	49.84	-28.50	4,232.49	-2,298.23	4,816.59	4,766.32	50.27	95.810		
1,920.00	1,920.00	1,993.13	1,992.20	6.65	50.78	-28.50	4,231.94	-2,298.23	4,816.31	4,765.10	51.21	94.051		
1,942.75	1,942.75	2,031.86	2,030.92	6.73	51.85	-174.47	4,231.17	-2,298.23	4,815.98	4,763.71	52.27	92.129 ES		
2,000.00	1,999.99	1,997.71	1,996.69	6.92	50.84	-174.46	4,232.37	-2,298.23	4,816.93	4,765.63	51.31	93.886		
2,100.00	2,099.93	2,097.65	2,096.63	7.25	53.36	-174.46	4,232.37	-2,298.23	4,820.32	4,766.47	53.85	89.516		
2,120.05	2,119.96	2,117.67	2,116.66	7.32	53.86	-174.46	4,232.37	-2,298.23	4,821.31	4,766.95	54.36	88.696		
2,200.00	2,199.80	2,202.39	2,201.35	7.58	56.00	-174.46	4,234.03	-2,298.23	4,826.94	4,770.43	56.51	85.415		
2,300.00	2,299.66	2,344.38	2,343.32	7.92	59.58	-174.47	4,233.17	-2,298.23	4,831.62	4,771.51	60.10	80.389		
2,400.00	2,399.52	2,486.53	2,485.42	8.25	63.17	-174.49	4,230.89	-2,298.23	4,835.42	4,771.73	63.69	75.915		
2,500.00	2,499.39	2,497.25	2,496.09	8.59	63.55	-174.48	4,232.37	-2,298.23	4,841.11	4,776.99	64.12	75.497		
2,600.00	2,599.25	2,597.12	2,595.95	8.94	66.18	-174.49	4,232.37	-2,298.23	4,846.32	4,779.54	66.78	72.571		
2,700.00	2,699.11	2,715.39	2,714.21	9.28	69.30	-174.49	4,233.39	-2,298.23	4,852.47	4,782.55	69.92	69.402		
2,800.00	2,798.98	2,841.77	2,840.57	9.63	72.64	-174.50	4,232.46	-2,298.23	4,857.03	4,783.76	73.27	66.293		
2,900.00	2,898.84	2,896.89	2,895.54	9.97	74.25	-174.51	4,232.37	-2,298.23	4,861.95	4,787.04	74.92	64.898		
3,000.00	2,998.70	3,000.00	2,998.56	10.32	77.33	-174.51	4,232.37	-2,298.23	4,867.16	4,789.15	78.01	62.390		
3,100.00	3,098.57	3,096.70	3,095.27	10.67	80.22	-174.52	4,232.37	-2,298.23	4,872.37	4,791.45	80.92	60.212		
3,200.00	3,198.43	3,196.57	3,195.13	11.02	83.20	-174.52	4,232.37	-2,298.23	4,877.59	4,793.66	83.92	58.119		
3,300.00	3,298.29	3,311.52	3,310.03	11.38	86.64	-174.52	4,234.54	-2,298.23	4,884.73	4,797.35	87.37	55.907		
3,400.00	3,398.15	3,452.12	3,450.60	11.73	90.84	-174.53	4,233.38	-2,298.23	4,889.22	4,797.64	91.58	53.389		
3,500.00	3,498.02	3,592.88	3,591.30	12.09	95.04	-174.56	4,230.89	-2,298.23	4,892.88	4,797.10	95.78	51.084		
3,600.00	3,597.88	3,596.33	3,594.58	12.44	95.33	-174.55	4,232.37	-2,298.23	4,898.43	4,802.30	96.13	50.958		
3,700.00	3,697.74	3,696.20	3,694.44	12.80	98.55	-174.55	4,232.37	-2,298.23	4,903.64	4,804.28	99.37	49.349		
3,800.00	3,797.61	3,796.06	3,794.31	13.16	101.77	-174.56	4,232.37	-2,298.23	4,908.85	4,806.25	102.60	47.842		
3,900.00	3,897.47	3,875.00	3,872.97	13.51	104.31	-174.56	4,232.37	-2,298.23	4,914.11	4,808.94	105.17	46.724 SF		
4,000.00	3,997.33	3,875.00	3,872.97	13.87	104.31	-174.56	4,232.37	-2,298.23	4,920.76	4,815.58	105.19	46.781		
4,100.00	4,097.19	3,875.00	3,872.97	14.23	104.31	-174.56	4,232.37	-2,298.23	4,929.44	4,824.28	105.16	46.876		
4,200.00	4,197.06	3,875.00	3,872.97	14.59	104.31	-174.56	4,232.37	-2,298.23	4,940.12	4,835.03	105.09	47.008		
4,300.00	4,296.92	3,875.00	3,872.97	14.95	104.31	-174.56	4,232.37	-2,298.23	4,952.81	4,847.82	104.98	47.178		
4,400.00	4,396.78	3,875.00	3,872.97	15.31	104.31	-174.56	4,232.37	-2,298.23	4,967.47	4,862.63	104.83	47.385		
4,500.00	4,496.65	3,875.00	3,872.97	15.67	104.31	-174.56	4,232.37	-2,298.23	4,984.09	4,879.46	104.64	47.632		

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



Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well FMM Fed Com 103H
Project:	Lea County, NM (NAD83)	TVD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Reference Site:	FMM Fed Com	MD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	FMM Fed Com 103H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.15 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum



Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well FMM Fed Com 103H
Project:	Lea County, NM (NAD83)	TVD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Reference Site:	FMM Fed Com	MD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	FMM Fed Com 103H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.15 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 236-OWSG (Rev2) MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
0.00	0.00	0.00	0.00	0.00	0.00	-89.84	8.17	-2,875.29	2,876.00					
100.00	100.00	33.48	33.48	0.13	0.05	-89.84	8.16	-2,875.31	2,875.32	2,875.19	0.14	N/A CC		
200.00	200.00	124.71	124.71	0.48	0.20	-89.84	8.08	-2,875.55	2,875.59	2,875.06	0.52	5,490.712 ES		
300.00	300.00	215.94	215.94	0.84	0.35	-89.84	7.89	-2,876.07	2,876.16	2,875.25	0.91	3,157.458		
400.00	400.00	311.64	311.64	1.20	0.65	-89.85	7.64	-2,876.85	2,876.97	2,875.60	1.37	2,106.980		
500.00	500.00	412.60	412.59	1.56	1.01	-89.85	7.52	-2,877.73	2,877.84	2,875.98	1.86	1,548.496		
600.00	600.00	509.59	509.58	1.92	1.36	-89.85	7.64	-2,878.58	2,878.72	2,876.37	2.35	1,225.081		
700.00	700.00	600.35	600.33	2.28	1.68	-89.85	7.77	-2,879.55	2,879.79	2,876.96	2.83	1,017.354		
800.00	800.00	692.00	691.97	2.63	2.01	-89.85	7.79	-2,880.90	2,881.26	2,877.95	3.31	869.316		
900.00	900.00	784.00	783.96	2.99	2.34	-89.85	7.77	-2,882.57	2,883.06	2,879.26	3.80	758.760		
1,000.00	1,000.00	862.43	862.36	3.35	2.63	-89.85	7.60	-2,884.34	2,885.31	2,881.05	4.26	678.088		
1,100.00	1,100.00	946.77	946.67	3.71	2.93	-89.85	7.42	-2,886.74	2,888.15	2,883.43	4.72	611.447		
1,200.00	1,200.00	1,041.80	1,041.66	4.07	3.27	-89.85	7.38	-2,889.82	2,891.39	2,886.18	5.22	554.327		
1,300.00	1,300.00	1,141.72	1,141.51	4.43	3.63	-89.85	7.48	-2,893.11	2,894.69	2,888.97	5.72	506.056		
1,400.00	1,400.00	1,231.60	1,231.34	4.79	3.96	-89.85	7.68	-2,896.21	2,898.14	2,891.93	6.20	467.345		
1,500.00	1,500.00	1,340.53	1,340.21	5.14	4.35	-89.84	7.98	-2,900.04	2,901.65	2,894.93	6.73	431.333		
1,600.00	1,600.00	1,456.81	1,456.42	5.50	4.77	-89.84	7.88	-2,903.67	2,904.79	2,897.52	7.27	399.492		
1,700.00	1,700.00	1,596.10	1,595.68	5.86	5.27	-89.87	6.74	-2,906.53	2,906.83	2,898.96	7.87	369.349		
1,800.00	1,800.00	1,700.45	1,700.02	6.22	5.64	-89.89	5.56	-2,907.85	2,908.08	2,899.70	8.38	346.833		
1,900.00	1,900.00	1,807.87	1,807.42	6.58	6.03	-89.92	4.04	-2,909.08	2,909.23	2,900.33	8.91	326.668		
1,920.00	1,920.00	1,828.84	1,828.38	6.65	6.10	-89.93	3.72	-2,909.29	2,909.43	2,900.42	9.01	322.961		
2,000.00	1,999.99	1,936.60	1,936.13	6.92	6.47	124.09	2.02	-2,910.11	2,910.58	2,901.11	9.46	307.526		
2,100.00	2,099.93	2,132.31	2,131.78	7.25	7.12	124.16	0.13	-2,906.24	2,910.17	2,900.03	10.14	286.867		
2,120.05	2,119.96	2,154.68	2,154.13	7.32	7.20	124.17	0.03	-2,905.50	2,910.07	2,899.82	10.24	284.106		
2,200.00	2,199.80	2,243.49	2,242.89	7.58	7.49	124.25	-0.20	-2,902.39	2,909.62	2,898.98	10.64	273.572		
2,300.00	2,299.66	2,360.50	2,359.81	7.92	7.87	124.35	0.16	-2,897.79	2,908.64	2,897.50	11.14	261.022		
2,400.00	2,399.52	2,432.08	2,431.34	8.25	8.11	124.42	0.53	-2,895.09	2,907.83	2,896.27	11.55	251.661		
2,431.98	2,431.46	2,455.00	2,454.25	8.36	8.19	124.44	0.63	-2,894.37	2,907.78	2,896.09	11.69	248.814		
2,500.00	2,499.39	2,514.64	2,513.86	8.59	8.39	124.50	0.84	-2,892.69	2,907.88	2,895.89	11.99	242.475		
2,600.00	2,599.25	2,603.58	2,602.78	8.94	8.69	124.58	0.98	-2,890.49	2,908.37	2,895.92	12.45	233.653		
2,700.00	2,699.11	2,697.58	2,696.76	9.28	9.01	124.66	0.94	-2,888.46	2,909.18	2,896.26	12.92	225.236		
2,800.00	2,798.98	2,793.94	2,793.10	9.63	9.33	124.74	1.10	-2,886.49	2,910.12	2,896.73	13.39	217.297		
2,900.00	2,898.84	2,893.25	2,892.38	9.97	9.67	124.82	1.07	-2,884.56	2,911.17	2,897.29	13.88	209.776		
3,000.00	2,998.70	2,982.77	2,981.89	10.32	9.98	124.90	0.84	-2,882.92	2,912.33	2,897.99	14.34	203.065		
3,100.00	3,098.57	3,068.94	3,068.05	10.67	10.28	124.97	0.63	-2,881.76	2,913.98	2,899.18	14.80	196.888		
3,200.00	3,198.43	3,153.64	3,152.74	11.02	10.57	125.02	-0.13	-2,881.02	2,916.10	2,900.84	15.26	191.129		
3,300.00	3,298.29	3,243.65	3,242.74	11.38	10.89	125.08	-1.19	-2,880.72	2,918.75	2,903.02	15.73	185.565		
3,400.00	3,398.15	3,357.67	3,356.76	11.73	11.29	125.16	-2.06	-2,880.27	2,921.37	2,905.11	16.26	179.668		
3,500.00	3,498.02	3,459.96	3,459.05	12.09	11.64	125.22	-3.02	-2,879.37	2,923.48	2,906.72	16.76	174.406		
3,600.00	3,597.88	3,559.71	3,558.78	12.44	11.99	125.29	-4.05	-2,878.59	2,925.70	2,908.44	17.26	169.507		
3,700.00	3,697.74	3,661.06	3,660.13	12.80	12.35	125.35	-4.98	-2,877.75	2,927.88	2,910.12	17.76	164.838		
3,800.00	3,797.61	3,766.87	3,765.92	13.16	12.72	125.42	-6.15	-2,876.74	2,929.94	2,911.66	18.28	160.316		
3,900.00	3,897.47	3,869.18	3,868.23	13.51	13.08	125.49	-7.15	-2,875.60	2,931.83	2,913.05	18.78	156.101		
4,000.00	3,997.33	3,968.31	3,967.35	13.87	13.43	125.55	-8.07	-2,874.55	2,933.79	2,914.51	19.28	152.168		
4,100.00	4,097.19	4,082.79	4,081.81	14.23	13.83	125.64	-8.52	-2,872.90	2,935.38	2,915.56	19.81	148.141		
4,200.00	4,197.06	4,179.90	4,178.92	14.59	14.17	125.72	-8.76	-2,871.32	2,936.80	2,916.49	20.31	144.616		
4,300.00	4,296.92	4,274.02	4,273.02	14.95	14.50	125.79	-8.87	-2,869.99	2,938.45	2,917.65	20.79	141.315		
4,400.00	4,396.78	4,378.03	4,377.02	15.31	14.86	125.88	-8.81	-2,868.58	2,940.16	2,918.85	21.30	138.013		
4,500.00	4,496.65	4,481.60	4,480.58	15.67	15.22	125.97	-8.85	-2,866.94	2,941.65	2,919.83	21.81	134.857		
4,600.00	4,596.51	4,501.00	4,499.98	16.03	15.29	125.98	-8.85	-2,866.62	2,944.22	2,922.11	22.11	133.134		
4,700.00	4,696.37	4,501.00	4,499.98	16.39	15.29	125.98	-8.85	-2,866.62	2,950.12	2,927.77	22.35	131.990		
4,800.00	4,796.23	4,501.00	4,499.98	16.75	15.29	125.98	-8.85	-2,866.62	2,959.39	2,936.82	22.57	131.130		

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



Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well FMM Fed Com 103H
Project:	Lea County, NM (NAD83)	TVD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Reference Site:	FMM Fed Com	MD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	FMM Fed Com 103H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.15 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													FMM Fed Com - Proxy WCA State Com #001H (Offset) - OH - OH		Offset Site Error:	0.00 usft
Survey Program: 236-OWSG (Rev2) MWD															Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor				
4,900.00	4,896.10	4,501.00	4,499.98	17.12	15.29	125.98	-8.85	-2,866.62	2,972.00	2,949.23	22.77	130.545	SF			
5,000.00	4,995.96	4,501.00	4,499.98	17.48	15.29	125.98	-8.85	-2,866.62	2,987.90	2,964.95	22.94	130.225				
5,100.00	5,095.82	4,501.00	4,499.98	17.84	15.29	125.98	-8.85	-2,866.62	3,007.04	2,983.94	23.10	130.158				
5,200.00	5,195.69	4,501.00	4,499.98	18.21	15.29	125.98	-8.85	-2,866.62	3,029.37	3,006.13	23.24	130.333				
5,300.00	5,295.55	4,501.00	4,499.98	18.57	15.29	125.98	-8.85	-2,866.62	3,054.81	3,031.44	23.37	130.742				
5,400.00	5,395.41	4,501.00	4,499.98	18.93	15.29	125.98	-8.85	-2,866.62	3,083.28	3,059.81	23.47	131.372				
5,500.00	5,495.27	4,501.00	4,499.98	19.30	15.29	125.98	-8.85	-2,866.62	3,114.71	3,091.15	23.56	132.213				
5,600.00	5,595.14	4,501.00	4,499.98	19.66	15.29	125.98	-8.85	-2,866.62	3,149.00	3,125.37	23.63	133.257				
5,700.00	5,695.00	4,501.00	4,499.98	20.02	15.29	125.98	-8.85	-2,866.62	3,186.06	3,162.37	23.69	134.500				
5,800.00	5,794.86	4,501.00	4,499.98	20.39	15.29	125.98	-8.85	-2,866.62	3,225.79	3,202.06	23.73	135.925				
5,900.00	5,894.73	4,501.00	4,499.98	20.75	15.29	125.98	-8.85	-2,866.62	3,268.11	3,244.34	23.76	137.520				
6,000.00	5,994.59	4,501.00	4,499.98	21.12	15.29	125.98	-8.85	-2,866.62	3,312.90	3,289.11	23.79	139.274				
6,100.00	6,094.45	4,501.00	4,499.98	21.48	15.29	125.98	-8.85	-2,866.62	3,360.07	3,336.27	23.80	141.176				
6,200.00	6,194.31	4,501.00	4,499.98	21.85	15.29	125.98	-8.85	-2,866.62	3,409.52	3,385.72	23.81	143.218				
6,300.00	6,294.18	4,501.00	4,499.98	22.21	15.29	125.98	-8.85	-2,866.62	3,461.16	3,437.35	23.81	145.389				
6,400.00	6,394.04	4,501.00	4,499.98	22.58	15.29	125.98	-8.85	-2,866.62	3,514.88	3,491.08	23.80	147.679				
6,500.00	6,493.90	4,501.00	4,499.98	22.94	15.29	125.98	-8.85	-2,866.62	3,570.60	3,546.81	23.79	150.080				
6,600.00	6,593.77	4,501.00	4,499.98	23.31	15.29	125.98	-8.85	-2,866.62	3,628.21	3,604.44	23.78	152.580				
6,700.00	6,693.63	4,501.00	4,499.98	23.67	15.29	125.98	-8.85	-2,866.62	3,687.64	3,663.88	23.76	155.172				
6,800.00	6,793.49	4,501.00	4,499.98	24.04	15.29	125.98	-8.85	-2,866.62	3,748.80	3,725.05	23.75	157.845				
6,900.00	6,893.35	4,501.00	4,499.98	24.40	15.29	125.98	-8.85	-2,866.62	3,811.60	3,787.86	23.73	160.592				
7,000.00	6,993.22	4,501.00	4,499.98	24.77	15.29	125.98	-8.85	-2,866.62	3,875.96	3,852.24	23.72	163.402				
7,106.97	7,100.04	4,501.00	4,499.98	25.16	15.29	125.98	-8.85	-2,866.62	3,946.45	3,922.74	23.71	166.470				
7,200.00	7,192.99	4,501.00	4,499.98	25.50	15.29	126.99	-8.85	-2,866.62	4,008.57	3,984.88	23.69	169.182				
7,307.02	7,300.00	4,501.00	4,499.98	25.87	15.29	-85.90	-8.85	-2,866.62	4,080.25	4,056.58	23.67	172.377				
7,400.00	7,392.98	4,501.00	4,499.98	26.18	15.29	-85.90	-8.85	-2,866.62	4,143.19	4,119.54	23.65	175.209				
7,500.00	7,492.98	4,501.00	4,499.98	26.52	15.29	-85.90	-8.85	-2,866.62	4,212.12	4,188.50	23.63	178.273				
7,600.00	7,592.98	4,501.00	4,499.98	26.85	15.29	-85.90	-8.85	-2,866.62	4,282.28	4,258.67	23.61	181.355				
7,700.00	7,692.98	4,501.00	4,499.98	27.19	15.29	-85.90	-8.85	-2,866.62	4,353.60	4,330.00	23.60	184.449				
7,800.00	7,792.98	4,501.00	4,499.98	27.53	15.29	-85.90	-8.85	-2,866.62	4,426.04	4,402.44	23.60	187.547				
7,828.06	7,821.04	4,501.00	4,499.98	27.62	15.29	-85.90	-8.85	-2,866.62	4,446.55	4,422.95	23.60	188.416				
7,850.00	7,842.97	4,501.00	4,499.98	27.69	15.29	-83.01	-8.85	-2,866.62	4,462.63	4,439.03	23.60	189.099				
7,900.00	7,892.79	4,501.00	4,499.98	27.86	15.29	-77.74	-8.85	-2,866.62	4,499.14	4,475.55	23.60	190.667				
7,950.00	7,942.06	4,501.00	4,499.98	28.01	15.29	-72.69	-8.85	-2,866.62	4,535.29	4,511.70	23.59	192.244				
8,000.00	7,990.41	4,501.00	4,499.98	28.16	15.29	-67.94	-8.85	-2,866.62	4,570.80	4,547.21	23.58	193.813				
8,050.00	8,037.47	4,501.00	4,499.98	28.29	15.29	-63.57	-8.85	-2,866.62	4,605.42	4,581.84	23.57	195.359				
8,100.00	8,082.88	4,501.00	4,499.98	28.42	15.29	-59.60	-8.85	-2,866.62	4,638.91	4,615.34	23.56	196.863				
8,150.00	8,126.30	4,501.00	4,499.98	28.54	15.29	-56.05	-8.85	-2,866.62	4,671.04	4,647.49	23.55	198.305				
8,200.00	8,167.40	4,501.00	4,499.98	28.66	15.29	-52.91	-8.85	-2,866.62	4,701.60	4,678.06	23.55	199.665				
8,250.00	8,205.86	4,501.00	4,499.98	28.77	15.29	-50.15	-8.85	-2,866.62	4,730.39	4,706.85	23.54	200.918				
8,300.00	8,241.40	4,501.00	4,499.98	28.88	15.29	-47.75	-8.85	-2,866.62	4,757.23	4,733.68	23.55	202.040				
8,350.00	8,273.73	4,501.00	4,499.98	28.99	15.29	-45.68	-8.85	-2,866.62	4,781.94	4,758.38	23.56	203.009				
8,400.00	8,302.62	4,501.00	4,499.98	29.11	15.29	-43.91	-8.85	-2,866.62	4,804.36	4,780.79	23.57	203.798				
8,450.00	8,327.84	4,501.00	4,499.98	29.24	15.29	-42.42	-8.85	-2,866.62	4,824.37	4,800.77	23.60	204.384				
8,500.00	8,349.21	4,501.00	4,499.98	29.38	15.29	-41.17	-8.85	-2,866.62	4,841.84	4,818.20	23.65	204.747				
8,550.00	8,366.55	4,501.00	4,499.98	29.52	15.29	-40.16	-8.85	-2,866.62	4,856.67	4,832.96	23.71	204.868				
8,600.00	8,379.75	4,501.00	4,499.98	29.68	15.29	-39.36	-8.85	-2,866.62	4,868.76	4,844.98	23.78	204.732				
8,650.00	8,388.69	4,501.00	4,499.98	29.85	15.29	-38.77	-8.85	-2,866.62	4,878.05	4,854.18	23.87	204.331				
8,700.00	8,393.31	4,501.00	4,499.98	30.03	15.29	-38.36	-8.85	-2,866.62	4,884.49	4,860.50	23.98	203.661				
8,728.06	8,394.00	4,501.00	4,499.98	30.14	15.29	-38.22	-8.85	-2,866.62	4,886.83	4,862.77	24.05	203.171				
8,800.00	8,394.00	4,501.00	4,499.98	30.43	15.29	-38.22	-8.85	-2,866.62	4,892.19	4,867.93	24.26	201.684				
8,900.00	8,394.00	4,501.00	4,499.98	30.91	15.29	-38.22	-8.85	-2,866.62	4,901.38	4,876.79	24.59	199.300				

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



Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well FMM Fed Com 103H
Project:	Lea County, NM (NAD83)	TVD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Reference Site:	FMM Fed Com	MD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	FMM Fed Com 103H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.15 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.00 usft
FMM Fed Com - Proxy WCA State Com #001H (Offset) - OH - OH												Offset Well Error:	0.00 usft
Survey Program: 236-OWSG (Rev2) MWD													
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
9,000.00	8,394.00	4,501.00	4,499.98	31.47	15.29	-38.22	-8.85	-2,866.62	4,912.59	4,887.61	24.99	196.614	
9,100.00	8,394.00	4,501.00	4,499.98	32.10	15.29	-38.22	-8.85	-2,866.62	4,925.81	4,900.38	25.43	193.691	
9,200.00	8,394.00	4,501.00	4,499.98	32.81	15.29	-38.22	-8.85	-2,866.62	4,941.01	4,915.09	25.92	190.593	
9,300.00	8,394.00	4,501.00	4,499.98	33.58	15.29	-38.22	-8.85	-2,866.62	4,958.19	4,931.73	26.46	187.381	
9,400.00	8,394.00	4,501.00	4,499.98	34.41	15.29	-38.22	-8.85	-2,866.62	4,977.32	4,950.28	27.03	184.109	
9,500.00	8,394.00	4,501.00	4,499.98	35.30	15.29	-38.22	-8.85	-2,866.62	4,998.37	4,970.73	27.64	180.823	

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



Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well FMM Fed Com 103H
Project:	Lea County, NM (NAD83)	TVD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Reference Site:	FMM Fed Com	MD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	FMM Fed Com 103H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.15 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 236-OWSG (Rev2) MWD, 2833-OWSG (Rev2) MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
0.00	0.00	0.00	0.00	0.00	0.00	-89.84	8.17	-2,875.29	2,876.00					
100.00	100.00	33.48	33.48	0.13	0.05	-89.84	8.16	-2,875.31	2,875.32	2,875.19	0.14	N/A CC		
200.00	200.00	124.71	124.71	0.48	0.20	-89.84	8.08	-2,875.55	2,875.59	2,875.06	0.52	5,490.712 ES		
300.00	300.00	215.94	215.94	0.84	0.35	-89.84	7.89	-2,876.07	2,876.16	2,875.25	0.91	3,157.458		
400.00	400.00	311.64	311.64	1.20	0.65	-89.85	7.64	-2,876.85	2,876.97	2,875.60	1.37	2,106.980		
500.00	500.00	412.60	412.59	1.56	1.01	-89.85	7.52	-2,877.73	2,877.84	2,875.98	1.86	1,548.496		
600.00	600.00	509.59	509.58	1.92	1.36	-89.85	7.64	-2,878.58	2,878.72	2,876.37	2.35	1,225.081		
700.00	700.00	600.35	600.33	2.28	1.68	-89.85	7.77	-2,879.55	2,879.79	2,876.96	2.83	1,017.354		
800.00	800.00	692.00	691.97	2.63	2.01	-89.85	7.79	-2,880.90	2,881.26	2,877.95	3.31	869.316		
900.00	900.00	784.00	783.96	2.99	2.34	-89.85	7.77	-2,882.57	2,883.06	2,879.26	3.80	758.760		
1,000.00	1,000.00	862.43	862.36	3.35	2.63	-89.85	7.60	-2,884.34	2,885.31	2,881.05	4.26	678.088		
1,100.00	1,100.00	946.77	946.67	3.71	2.93	-89.85	7.42	-2,886.74	2,888.15	2,883.43	4.72	611.447		
1,200.00	1,200.00	1,041.80	1,041.66	4.07	3.27	-89.85	7.38	-2,889.82	2,891.39	2,886.18	5.22	554.327		
1,300.00	1,300.00	1,141.72	1,141.51	4.43	3.63	-89.85	7.48	-2,893.11	2,894.69	2,888.97	5.72	506.056		
1,400.00	1,400.00	1,231.60	1,231.34	4.79	3.96	-89.85	7.68	-2,896.21	2,898.14	2,891.93	6.20	467.345		
1,500.00	1,500.00	1,340.53	1,340.21	5.14	4.35	-89.84	7.98	-2,900.04	2,901.65	2,894.93	6.73	431.333		
1,600.00	1,600.00	1,456.81	1,456.42	5.50	4.77	-89.84	7.88	-2,903.67	2,904.79	2,897.52	7.27	399.492		
1,700.00	1,700.00	1,596.10	1,595.68	5.86	5.27	-89.87	6.74	-2,906.53	2,906.83	2,898.96	7.87	369.349		
1,800.00	1,800.00	1,700.45	1,700.02	6.22	5.64	-89.89	5.56	-2,907.85	2,908.08	2,899.70	8.38	346.833		
1,900.00	1,900.00	1,807.87	1,807.42	6.58	6.03	-89.92	4.04	-2,909.08	2,909.23	2,900.33	8.91	326.668		
1,920.00	1,920.00	1,828.84	1,828.38	6.65	6.10	-89.93	3.72	-2,909.29	2,909.43	2,900.42	9.01	322.961		
2,000.00	1,999.99	1,936.60	1,936.13	6.92	6.47	124.09	2.02	-2,910.11	2,910.58	2,901.11	9.46	307.526		
2,100.00	2,099.93	2,132.31	2,131.78	7.25	7.12	124.16	0.13	-2,906.24	2,910.17	2,900.03	10.14	286.867		
2,120.05	2,119.96	2,154.68	2,154.13	7.32	7.20	124.17	0.03	-2,905.50	2,910.07	2,899.82	10.24	284.106		
2,200.00	2,199.80	2,243.49	2,242.89	7.58	7.49	124.25	-0.20	-2,902.39	2,909.62	2,898.98	10.64	273.572		
2,300.00	2,299.66	2,360.50	2,359.81	7.92	7.87	124.35	0.16	-2,897.79	2,908.64	2,897.50	11.14	261.022		
2,400.00	2,399.52	2,432.08	2,431.34	8.25	8.11	124.42	0.53	-2,895.09	2,907.83	2,896.27	11.55	251.661		
2,431.98	2,431.46	2,455.00	2,454.25	8.36	8.19	124.44	0.63	-2,894.37	2,907.78	2,896.09	11.69	248.814		
2,500.00	2,499.39	2,514.64	2,513.86	8.59	8.39	124.50	0.84	-2,892.69	2,907.88	2,895.89	11.99	242.475		
2,600.00	2,599.25	2,603.58	2,602.78	8.94	8.69	124.58	0.98	-2,890.49	2,908.37	2,895.92	12.45	233.653		
2,700.00	2,699.11	2,697.58	2,696.76	9.28	9.01	124.66	0.94	-2,888.46	2,909.18	2,896.26	12.92	225.236		
2,800.00	2,798.98	2,769.34	2,768.50	9.63	9.19	124.71	0.76	-2,887.13	2,910.38	2,897.09	13.30	218.901		
2,900.00	2,898.84	2,833.00	2,832.12	9.97	9.30	124.73	-1.35	-2,886.99	2,913.01	2,899.39	13.62	213.829		
3,000.00	2,998.70	2,833.00	2,832.12	10.32	9.30	124.73	-1.35	-2,886.99	2,917.83	2,903.96	13.87	210.348		
3,100.00	3,098.57	2,893.80	2,892.74	10.67	9.31	124.69	-5.60	-2,888.71	2,924.12	2,909.99	14.13	206.925		
3,200.00	3,198.43	2,926.00	2,924.72	11.02	9.32	124.66	-8.83	-2,890.68	2,933.12	2,918.74	14.38	203.946		
3,300.00	3,298.29	2,969.28	2,967.57	11.38	9.33	124.60	-13.70	-2,894.24	2,944.22	2,929.58	14.64	201.119		
3,400.00	3,398.15	3,021.00	3,018.66	11.73	9.35	124.52	-19.76	-2,899.58	2,957.25	2,942.35	14.90	198.452		
3,500.00	3,498.02	3,219.93	3,215.46	12.09	9.49	124.25	-41.80	-2,918.30	2,969.86	2,954.57	15.29	194.230		
3,600.00	3,597.88	3,380.00	3,374.67	12.44	9.63	124.13	-55.09	-2,928.07	2,978.70	2,963.03	15.67	190.099		
3,700.00	3,697.74	3,478.00	3,472.23	12.80	9.73	124.07	-62.63	-2,933.34	2,987.00	2,970.99	16.01	186.574		
3,800.00	3,797.61	3,784.97	3,778.40	13.16	10.12	123.93	-83.05	-2,938.14	2,990.63	2,974.08	16.55	180.745		
3,900.00	3,897.47	3,884.34	3,877.52	13.51	10.26	123.88	-89.94	-2,936.68	2,992.09	2,975.17	16.92	176.862		
4,000.00	3,997.33	3,985.42	3,978.35	13.87	10.42	123.83	-96.87	-2,935.18	2,993.55	2,976.25	17.30	173.050		
4,100.00	4,097.19	4,083.79	4,076.45	14.23	10.59	123.78	-103.92	-2,933.69	2,994.98	2,977.29	17.69	169.349		
4,200.00	4,197.06	4,192.50	4,184.84	14.59	10.78	123.71	-112.21	-2,932.11	2,996.48	2,978.39	18.09	165.641		
4,300.00	4,296.92	4,291.63	4,283.65	14.95	10.97	123.64	-119.91	-2,930.22	2,997.53	2,979.03	18.49	162.097		
4,400.00	4,396.78	4,396.46	4,388.10	15.31	11.18	123.57	-128.60	-2,928.47	2,998.82	2,979.91	18.91	158.600		
4,500.00	4,496.65	4,495.05	4,486.28	15.67	11.39	123.48	-137.48	-2,926.57	2,999.86	2,980.53	19.32	155.240		
4,600.00	4,596.51	4,585.27	4,576.07	16.03	11.60	123.39	-146.11	-2,925.03	3,001.13	2,981.40	19.74	152.067		
4,700.00	4,696.37	4,685.76	4,676.07	16.39	11.83	123.28	-155.91	-2,923.52	3,002.63	2,982.46	20.17	148.894		
4,800.00	4,796.23	4,778.34	4,768.16	16.75	12.06	123.18	-165.24	-2,922.17	3,004.17	2,983.58	20.59	145.894		

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



Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well FMM Fed Com 103H
Project:	Lea County, NM (NAD83)	TVD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Reference Site:	FMM Fed Com	MD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	FMM Fed Com 103H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.15 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													FMM Fed Com - Proxy WCA State Com #001H (Offset) - ST01 - ST01		Offset Site Error:	0.00 usft
Survey Program: 236-OWSG (Rev2) MWD, 2833-OWSG (Rev2) MWD													Offset Well Error:	0.00 usft		
Reference		Offset		Semi Major Axis			Distance							Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor				
4,900.00	4,896.10	4,880.12	4,869.34	17.12	12.32	123.06	-176.25	-2,920.81	3,005.86	2,984.83	21.04	142.892				
5,000.00	4,995.96	5,029.21	5,017.31	17.48	12.72	122.84	-194.19	-2,917.75	3,006.97	2,985.41	21.56	139.462				
5,100.00	5,095.82	5,145.05	5,132.16	17.84	13.04	122.66	-208.74	-2,913.55	3,006.40	2,984.36	22.04	136.388				
5,200.00	5,195.69	5,254.03	5,240.03	18.21	13.36	122.46	-223.68	-2,909.50	3,005.84	2,983.32	22.52	133.462				
5,300.00	5,295.55	5,355.00	5,339.85	18.57	13.66	122.26	-238.35	-2,905.47	3,005.05	2,982.05	23.00	130.680				
5,400.00	5,395.41	5,452.69	5,436.47	18.93	13.96	122.08	-252.19	-2,901.58	3,004.29	2,980.83	23.47	128.024				
5,500.00	5,495.27	5,584.62	5,567.53	19.30	14.35	121.92	-266.02	-2,895.73	3,002.97	2,978.99	23.99	125.200				
5,600.00	5,595.14	5,669.21	5,651.74	19.66	14.59	121.86	-272.89	-2,891.65	3,001.26	2,976.84	24.43	122.873				
5,694.90	5,689.90	5,727.00	5,709.35	20.01	14.76	121.83	-276.98	-2,889.53	3,000.67	2,975.86	24.81	120.960				
5,700.00	5,695.00	5,727.00	5,709.35	20.02	14.76	121.83	-276.98	-2,889.53	3,000.67	2,975.85	24.82	120.885				
5,800.00	5,794.86	5,802.25	5,784.42	20.39	14.98	121.80	-281.78	-2,887.64	3,001.18	2,975.94	25.25	118.882				
5,900.00	5,894.73	5,887.50	5,869.50	20.75	15.22	121.78	-286.83	-2,886.21	3,002.49	2,976.81	25.68	116.900				
6,000.00	5,994.59	5,984.30	5,966.16	21.12	15.50	121.76	-292.03	-2,884.86	3,004.07	2,977.92	26.14	114.909				
6,100.00	6,094.45	6,080.08	6,061.82	21.48	15.78	121.75	-296.55	-2,883.62	3,005.72	2,979.12	26.60	112.996				
6,200.00	6,194.31	6,179.55	6,161.18	21.85	16.07	121.75	-301.19	-2,882.45	3,007.48	2,980.42	27.07	111.118				
6,300.00	6,294.18	6,283.83	6,265.34	22.21	16.38	121.74	-305.98	-2,881.15	3,009.17	2,981.63	27.54	109.262				
6,400.00	6,394.04	6,374.73	6,356.16	22.58	16.65	121.75	-309.86	-2,880.07	3,010.92	2,982.92	27.99	107.558				
6,500.00	6,493.90	6,475.22	6,456.55	22.94	16.95	121.75	-314.02	-2,879.07	3,012.84	2,984.38	28.46	105.846				
6,600.00	6,593.77	6,592.85	6,574.06	23.31	17.30	121.75	-319.05	-2,877.51	3,014.44	2,985.47	28.97	104.063				
6,700.00	6,693.63	6,705.33	6,686.50	23.67	17.63	121.80	-321.50	-2,875.54	3,015.53	2,986.08	29.45	102.381				
6,800.00	6,793.49	6,809.16	6,790.30	24.04	17.92	121.88	-322.08	-2,873.46	3,016.32	2,986.40	29.92	100.813				
6,900.00	6,893.35	6,903.61	6,884.73	24.40	18.19	121.94	-322.64	-2,871.62	3,017.16	2,986.79	30.37	99.343				
7,000.00	6,993.22	7,000.71	6,981.81	24.77	18.47	122.01	-323.30	-2,869.92	3,018.20	2,987.37	30.83	97.900				
7,106.97	7,100.04	7,112.54	7,093.63	25.16	18.79	122.09	-324.24	-2,867.89	3,019.27	2,987.93	31.34	96.354				
7,200.00	7,192.99	7,208.96	7,190.02	25.50	19.07	122.14	-324.94	-2,865.99	3,019.45	2,987.67	31.77	95.033				
7,307.02	7,300.00	7,315.00	7,296.04	25.87	19.39	-91.91	-325.78	-2,863.84	3,018.11	2,985.85	32.26	93.564				
7,400.00	7,392.98	7,401.33	7,382.35	26.18	19.64	-91.93	-326.64	-2,862.20	3,016.37	2,983.71	32.66	92.352				
7,500.00	7,492.98	7,462.02	7,443.03	26.52	19.82	-91.94	-327.07	-2,861.48	3,015.23	2,982.20	33.03	91.275				
7,531.67	7,524.65	7,480.34	7,461.35	26.62	19.87	-91.94	-327.07	-2,861.44	3,015.16	2,982.01	33.15	90.955				
7,600.00	7,592.98	7,522.65	7,503.66	26.85	19.99	-91.94	-326.91	-2,861.64	3,015.48	2,982.08	33.40	90.278				
7,700.00	7,692.98	7,598.00	7,579.00	27.19	20.20	-91.93	-326.71	-2,862.76	3,016.90	2,983.10	33.79	89.277				
7,800.00	7,792.98	7,678.62	7,659.60	27.53	20.43	-91.93	-326.78	-2,864.52	3,019.05	2,984.86	34.20	88.286				
7,828.06	7,821.04	7,706.83	7,687.80	27.62	20.51	-91.93	-326.85	-2,865.18	3,019.71	2,985.39	34.32	87.984				
7,850.00	7,842.97	7,731.07	7,712.03	27.69	20.58	-91.35	-326.90	-2,865.73	3,020.22	2,985.80	34.42	87.740				
7,900.00	7,892.79	7,786.12	7,767.07	27.86	20.74	-91.32	-326.88	-2,866.92	3,021.40	2,986.75	34.65	87.199				
7,950.00	7,942.06	7,837.79	7,818.73	28.01	20.89	-91.36	-326.83	-2,867.97	3,022.62	2,987.76	34.86	86.697				
8,000.00	7,990.41	7,888.85	7,869.78	28.16	21.04	-91.47	-326.85	-2,868.96	3,023.95	2,988.88	35.07	86.220				
8,050.00	8,037.47	7,941.47	7,922.39	28.29	21.20	-91.66	-326.86	-2,869.91	3,025.40	2,990.12	35.28	85.756				
8,100.00	8,082.88	7,992.63	7,973.54	28.42	21.35	-91.90	-326.82	-2,870.74	3,027.00	2,991.53	35.48	85.319				
8,150.00	8,126.30	8,042.12	8,023.03	28.54	21.49	-92.18	-326.83	-2,871.45	3,028.84	2,993.17	35.67	84.910				
8,200.00	8,167.40	8,088.92	8,069.83	28.66	21.63	-92.47	-326.91	-2,872.02	3,030.99	2,995.13	35.86	84.531				
8,250.00	8,205.86	8,132.79	8,113.69	28.77	21.76	-92.74	-326.99	-2,872.47	3,033.56	2,997.52	36.04	84.183				
8,300.00	8,241.40	8,171.79	8,152.69	28.88	21.88	-92.95	-327.04	-2,872.81	3,036.64	3,000.44	36.20	83.875				
8,350.00	8,273.73	8,204.07	8,184.98	28.99	21.98	-93.04	-327.08	-2,873.08	3,040.37	3,004.01	36.36	83.616				
8,400.00	8,302.62	8,232.91	8,213.82	29.11	22.06	-93.04	-327.11	-2,873.32	3,044.85	3,008.33	36.51	83.389				
8,450.00	8,327.84	8,258.90	8,239.80	29.24	22.14	-92.93	-327.14	-2,873.53	3,050.12	3,013.46	36.66	83.190				
8,500.00	8,349.21	8,284.43	8,265.33	29.38	22.22	-92.75	-327.18	-2,873.72	3,056.23	3,019.41	36.82	83.006				
8,550.00	8,366.55	8,305.10	8,286.00	29.52	22.28	-92.42	-327.21	-2,873.84	3,063.19	3,026.23	36.97	82.858				
8,600.00	8,379.75	8,320.78	8,301.68	29.68	22.33	-91.91	-327.24	-2,873.92	3,071.05	3,033.94	37.11	82.747				
8,650.00	8,388.69	8,331.35	8,312.25	29.85	22.36	-91.22	-327.27	-2,873.96	3,079.79	3,042.54	37.25	82.672				
8,700.00	8,393.31	8,336.75	8,317.65	30.03	22.38	-90.34	-327.28	-2,873.98	3,089.39	3,052.00	37.39	82.633				
8,728.06	8,394.00	8,337.49	8,318.39	30.14	22.38	-89.77	-327.28	-2,873.99	3,095.13	3,057.67	37.46	82.628				

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



Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well FMM Fed Com 103H
Project:	Lea County, NM (NAD83)	TVD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Reference Site:	FMM Fed Com	MD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	FMM Fed Com 103H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.15 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 236-OWSG (Rev2) MWD, 2833-OWSG (Rev2) MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
8,800.00	8,394.00	8,337.31	8,318.21	30.43	22.38	-89.76	-327.28	-2,873.98	3,110.95	3,073.30	37.65	82.617		
8,900.00	8,394.00	8,337.04	8,317.94	30.91	22.38	-89.76	-327.28	-2,873.98	3,135.56	3,097.59	37.97	82.575		
9,000.00	8,394.00	8,336.78	8,317.68	31.47	22.38	-89.75	-327.28	-2,873.98	3,163.14	3,124.80	38.33	82.514		
9,100.00	8,394.00	8,336.52	8,317.42	32.10	22.38	-89.75	-327.28	-2,873.98	3,193.61	3,154.87	38.74	82.444		
9,200.00	8,394.00	8,336.27	8,317.17	32.81	22.38	-89.74	-327.28	-2,873.98	3,226.89	3,187.72	39.17	82.376		
9,300.00	8,394.00	8,336.01	8,316.91	33.58	22.38	-89.74	-327.28	-2,873.98	3,262.90	3,223.27	39.64	82.320		
9,400.00	8,394.00	8,335.75	8,316.65	34.41	22.38	-89.73	-327.28	-2,873.98	3,301.55	3,261.43	40.12	82.285		
9,500.00	8,394.00	8,335.49	8,316.39	35.30	22.37	-89.73	-327.28	-2,873.98	3,342.74	3,302.12	40.63	82.278 SF		
9,600.00	8,394.00	8,335.24	8,316.14	36.24	22.37	-89.72	-327.27	-2,873.98	3,386.39	3,345.25	41.14	82.305		
9,700.00	8,394.00	8,334.98	8,315.88	37.24	22.37	-89.72	-327.27	-2,873.98	3,432.39	3,390.73	41.67	82.373		
9,800.00	8,394.00	8,334.73	8,315.63	38.28	22.37	-89.71	-327.27	-2,873.98	3,480.67	3,438.47	42.20	82.486		
9,900.00	8,394.00	8,334.48	8,315.38	39.36	22.37	-89.71	-327.27	-2,873.97	3,531.11	3,488.38	42.72	82.648		
10,000.00	8,394.00	8,334.22	8,315.12	40.48	22.37	-89.71	-327.27	-2,873.97	3,583.63	3,540.38	43.25	82.860		
10,100.00	8,394.00	8,333.97	8,314.87	41.63	22.37	-89.70	-327.27	-2,873.97	3,638.15	3,594.38	43.77	83.117		
10,200.00	8,394.00	8,333.72	8,314.62	42.82	22.37	-89.70	-327.27	-2,873.97	3,694.57	3,650.28	44.29	83.424		
10,300.00	8,394.00	8,333.47	8,314.37	44.03	22.37	-89.69	-327.27	-2,873.97	3,752.80	3,708.01	44.79	83.781		
10,400.00	8,394.00	8,333.22	8,314.12	45.28	22.37	-89.69	-327.27	-2,873.97	3,812.77	3,767.48	45.29	84.186		
10,500.00	8,394.00	8,332.97	8,313.87	46.55	22.37	-89.68	-327.27	-2,873.97	3,874.39	3,828.62	45.78	84.639		
10,600.00	8,394.00	8,332.72	8,313.62	47.84	22.37	-89.68	-327.27	-2,873.97	3,937.59	3,891.35	46.25	85.145		
10,700.00	8,394.00	8,332.48	8,313.38	49.16	22.37	-89.67	-327.27	-2,873.97	4,002.29	3,955.59	46.70	85.697		
10,800.00	8,394.00	8,332.23	8,313.13	50.49	22.36	-89.67	-327.27	-2,873.97	4,068.42	4,021.27	47.15	86.292		
10,900.00	8,394.00	8,331.99	8,312.89	51.84	22.36	-89.66	-327.27	-2,873.97	4,135.91	4,088.33	47.58	86.930		
11,000.00	8,394.00	8,331.74	8,312.64	53.21	22.36	-89.66	-327.27	-2,873.96	4,204.69	4,156.70	47.99	87.608		
11,100.00	8,394.00	8,331.50	8,312.40	54.60	22.36	-89.65	-327.27	-2,873.96	4,274.71	4,226.31	48.40	88.323		
11,200.00	8,394.00	8,331.25	8,312.15	56.00	22.36	-89.65	-327.27	-2,873.96	4,345.90	4,297.11	48.79	89.073		
11,300.00	8,394.00	8,331.01	8,311.91	57.41	22.36	-89.64	-327.27	-2,873.96	4,418.20	4,369.03	49.17	89.858		
11,400.00	8,394.00	8,330.77	8,311.67	58.84	22.36	-89.64	-327.27	-2,873.96	4,491.57	4,442.04	49.53	90.681		
11,500.00	8,394.00	8,330.53	8,311.43	60.28	22.36	-89.64	-327.26	-2,873.96	4,565.95	4,516.07	49.88	91.538		
11,600.00	8,394.00	8,330.29	8,311.19	61.72	22.36	-89.63	-327.26	-2,873.96	4,641.29	4,591.08	50.22	92.425		
11,700.00	8,394.00	8,330.05	8,310.95	63.18	22.36	-89.63	-327.26	-2,873.96	4,717.55	4,667.01	50.54	93.340		
11,800.00	8,394.00	8,329.81	8,310.71	64.65	22.36	-89.62	-327.26	-2,873.96	4,794.69	4,743.83	50.85	94.283		
11,900.00	8,394.00	8,329.57	8,310.47	66.13	22.36	-89.62	-327.26	-2,873.96	4,872.65	4,821.49	51.16	95.252		
12,000.00	8,394.00	8,329.33	8,310.23	67.61	22.36	-89.61	-327.26	-2,873.95	4,951.40	4,899.96	51.45	96.245		

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



Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well FMM Fed Com 103H
Project:	Lea County, NM (NAD83)	TVD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Reference Site:	FMM Fed Com	MD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	FMM Fed Com 103H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.15 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													FMM Fed Com - Proxy WCA State Com #001H (Offset) - ST02 - ST02		Offset Site Error:	0.00 usft
Survey Program:													236-OWSG (Rev2) MWD, 2833-OWSG (Rev2) MWD, 10215-OWSG (Rev2) MWD		Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance									
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning			
0.00	0.00	0.00	0.00	0.00	0.00	-89.84	8.17	-2,875.29	2,876.00							
100.00	100.00	33.48	33.48	0.13	0.05	-89.84	8.16	-2,875.31	2,875.32	2,875.19	0.14	N/A CC				
200.00	200.00	124.71	124.71	0.48	0.20	-89.84	8.08	-2,875.55	2,875.59	2,875.06	0.52	5,490.712 ES				
300.00	300.00	215.94	215.94	0.84	0.35	-89.84	7.89	-2,876.07	2,876.16	2,875.25	0.91	3,157.458				
400.00	400.00	311.64	311.64	1.20	0.65	-89.85	7.64	-2,876.85	2,876.97	2,875.60	1.37	2,106.980				
500.00	500.00	412.60	412.59	1.56	1.01	-89.85	7.52	-2,877.73	2,877.84	2,875.98	1.86	1,548.496				
600.00	600.00	509.59	509.58	1.92	1.36	-89.85	7.64	-2,878.58	2,878.72	2,876.37	2.35	1,225.081				
700.00	700.00	600.35	600.33	2.28	1.68	-89.85	7.77	-2,879.55	2,879.79	2,876.96	2.83	1,017.354				
800.00	800.00	692.00	691.97	2.63	2.01	-89.85	7.79	-2,880.90	2,881.26	2,877.95	3.31	869.316				
900.00	900.00	784.00	783.96	2.99	2.34	-89.85	7.77	-2,882.57	2,883.06	2,879.26	3.80	758.760				
1,000.00	1,000.00	862.43	862.36	3.35	2.63	-89.85	7.60	-2,884.34	2,885.31	2,881.05	4.26	678.088				
1,100.00	1,100.00	946.77	946.67	3.71	2.93	-89.85	7.42	-2,886.74	2,888.15	2,883.43	4.72	611.447				
1,200.00	1,200.00	1,041.80	1,041.66	4.07	3.27	-89.85	7.38	-2,889.82	2,891.39	2,886.18	5.22	554.327				
1,300.00	1,300.00	1,141.72	1,141.51	4.43	3.63	-89.85	7.48	-2,893.11	2,894.69	2,888.97	5.72	506.056				
1,400.00	1,400.00	1,231.60	1,231.34	4.79	3.96	-89.85	7.68	-2,896.21	2,898.14	2,891.93	6.20	467.345				
1,500.00	1,500.00	1,340.53	1,340.21	5.14	4.35	-89.84	7.98	-2,900.04	2,901.65	2,894.93	6.73	431.333				
1,600.00	1,600.00	1,456.81	1,456.42	5.50	4.77	-89.84	7.88	-2,903.67	2,904.79	2,897.52	7.27	399.492				
1,700.00	1,700.00	1,596.10	1,595.68	5.86	5.27	-89.87	6.74	-2,906.53	2,906.83	2,898.96	7.87	369.349				
1,800.00	1,800.00	1,700.45	1,700.02	6.22	5.64	-89.89	5.56	-2,907.85	2,908.08	2,899.70	8.38	346.833				
1,900.00	1,900.00	1,807.87	1,807.42	6.58	6.03	-89.92	4.04	-2,909.08	2,909.23	2,900.33	8.91	326.668				
1,920.00	1,920.00	1,828.84	1,828.38	6.65	6.10	-89.93	3.72	-2,909.29	2,909.43	2,900.42	9.01	322.961				
2,000.00	1,999.99	1,936.60	1,936.13	6.92	6.47	124.09	2.02	-2,910.11	2,910.58	2,901.11	9.46	307.526				
2,100.00	2,099.93	2,132.31	2,131.78	7.25	7.12	124.16	0.13	-2,906.24	2,910.17	2,900.03	10.14	286.867				
2,120.05	2,119.96	2,154.68	2,154.13	7.32	7.20	124.17	0.03	-2,905.50	2,910.07	2,899.82	10.24	284.106				
2,200.00	2,199.80	2,243.49	2,242.89	7.58	7.49	124.25	-0.20	-2,902.39	2,909.62	2,898.98	10.64	273.572				
2,300.00	2,299.66	2,360.50	2,359.81	7.92	7.87	124.35	0.16	-2,897.79	2,908.64	2,897.50	11.14	261.022				
2,400.00	2,399.52	2,432.08	2,431.34	8.25	8.11	124.42	0.53	-2,895.09	2,907.83	2,896.27	11.55	251.661				
2,431.98	2,431.46	2,455.00	2,454.25	8.36	8.19	124.44	0.63	-2,894.37	2,907.78	2,896.09	11.69	248.814				
2,500.00	2,499.39	2,514.64	2,513.86	8.59	8.39	124.50	0.84	-2,892.69	2,907.88	2,895.89	11.99	242.475				
2,600.00	2,599.25	2,603.58	2,602.78	8.94	8.69	124.58	0.98	-2,890.49	2,908.37	2,895.92	12.45	233.653				
2,700.00	2,699.11	2,697.58	2,696.76	9.28	9.01	124.66	0.94	-2,888.46	2,909.18	2,896.26	12.92	225.236				
2,800.00	2,798.98	2,769.34	2,768.50	9.63	9.19	124.71	0.76	-2,887.13	2,910.38	2,897.09	13.30	218.901				
2,900.00	2,898.84	2,833.00	2,832.12	9.97	9.30	124.73	-1.35	-2,886.99	2,913.01	2,899.39	13.62	213.829				
3,000.00	2,998.70	2,833.00	2,832.12	10.32	9.30	124.73	-1.35	-2,886.99	2,917.83	2,903.96	13.87	210.348				
3,100.00	3,098.57	2,893.80	2,892.74	10.67	9.31	124.69	-5.60	-2,888.71	2,924.12	2,909.99	14.13	206.925				
3,200.00	3,198.43	2,926.00	2,924.72	11.02	9.32	124.66	-8.83	-2,890.68	2,933.12	2,918.74	14.38	203.946				
3,300.00	3,298.29	2,969.28	2,967.57	11.38	9.33	124.60	-13.70	-2,894.24	2,944.22	2,929.58	14.64	201.119				
3,400.00	3,398.15	3,021.00	3,018.66	11.73	9.35	124.52	-19.76	-2,899.58	2,957.25	2,942.35	14.90	198.452				
3,500.00	3,498.02	3,219.93	3,215.46	12.09	9.49	124.25	-41.80	-2,918.30	2,969.86	2,954.57	15.29	194.230				
3,600.00	3,597.88	3,380.00	3,374.67	12.44	9.63	124.13	-55.09	-2,928.07	2,978.70	2,963.03	15.67	190.099				
3,700.00	3,697.74	3,478.00	3,472.23	12.80	9.73	124.07	-62.63	-2,933.34	2,987.00	2,970.99	16.01	186.574				
3,800.00	3,797.61	3,784.97	3,778.40	13.16	10.12	123.93	-83.05	-2,938.14	2,990.63	2,974.08	16.55	180.745				
3,900.00	3,897.47	3,884.34	3,877.52	13.51	10.26	123.88	-89.94	-2,936.68	2,992.09	2,975.17	16.92	176.862				
4,000.00	3,997.33	3,985.42	3,978.35	13.87	10.42	123.83	-96.87	-2,935.18	2,993.55	2,976.25	17.30	173.050				
4,100.00	4,097.19	4,083.79	4,076.45	14.23	10.59	123.78	-103.92	-2,933.69	2,994.98	2,977.29	17.69	169.349				
4,200.00	4,197.06	4,192.50	4,184.84	14.59	10.78	123.71	-112.21	-2,932.11	2,996.48	2,978.39	18.09	165.641				
4,300.00	4,296.92	4,291.63	4,283.65	14.95	10.97	123.64	-119.91	-2,930.22	2,997.53	2,979.03	18.49	162.097				
4,400.00	4,396.78	4,396.46	4,388.10	15.31	11.18	123.57	-128.60	-2,928.47	2,998.82	2,979.91	18.91	158.600				
4,500.00	4,496.65	4,495.05	4,486.28	15.67	11.39	123.48	-137.48	-2,926.57	2,999.86	2,980.53	19.32	155.240				
4,600.00	4,596.51	4,585.27	4,576.07	16.03	11.60	123.39	-146.11	-2,925.03	3,001.13	2,981.40	19.74	152.067				
4,700.00	4,696.37	4,685.76	4,676.07	16.39	11.83	123.28	-155.91	-2,923.52	3,002.63	2,982.46	20.17	148.894				
4,800.00	4,796.23	4,778.34	4,768.16	16.75	12.06	123.18	-165.24	-2,922.17	3,004.17	2,983.58	20.59	145.894				

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



Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well FMM Fed Com 103H
Project:	Lea County, NM (NAD83)	TVD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Reference Site:	FMM Fed Com	MD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	FMM Fed Com 103H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.15 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													FMM Fed Com - Proxy WCA State Com #001H (Offset) - ST02 - ST02		Offset Site Error:	0.00 usft
Survey Program:													236-OWSG (Rev2) MWD, 2833-OWSG (Rev2) MWD, 10215-OWSG (Rev2) MWD		Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor				
4,900.00	4,896.10	4,880.12	4,869.34	17.12	12.32	123.06	-176.25	-2,920.81	3,005.86	2,984.83	21.04	142.892				
5,000.00	4,995.96	5,029.21	5,017.31	17.48	12.72	122.84	-194.19	-2,917.75	3,006.97	2,985.41	21.56	139.462				
5,100.00	5,095.82	5,145.05	5,132.16	17.84	13.04	122.66	-208.74	-2,913.55	3,006.40	2,984.36	22.04	136.388				
5,200.00	5,195.69	5,254.03	5,240.03	18.21	13.36	122.46	-223.68	-2,909.50	3,005.84	2,983.32	22.52	133.462				
5,300.00	5,295.55	5,355.00	5,339.85	18.57	13.66	122.26	-238.35	-2,905.47	3,005.05	2,982.05	23.00	130.680				
5,400.00	5,395.41	5,452.69	5,436.47	18.93	13.96	122.08	-252.19	-2,901.58	3,004.29	2,980.83	23.47	128.024				
5,500.00	5,495.27	5,584.62	5,567.53	19.30	14.35	121.92	-266.02	-2,895.73	3,002.97	2,978.99	23.99	125.200				
5,600.00	5,595.14	5,669.21	5,651.74	19.66	14.59	121.86	-272.89	-2,891.65	3,001.26	2,976.84	24.43	122.873				
5,694.90	5,689.90	5,727.00	5,709.35	20.01	14.76	121.83	-276.98	-2,889.53	3,000.67	2,975.86	24.81	120.960				
5,700.00	5,695.00	5,727.00	5,709.35	20.02	14.76	121.83	-276.98	-2,889.53	3,000.67	2,975.85	24.82	120.885				
5,800.00	5,794.86	5,802.25	5,784.42	20.39	14.98	121.80	-281.78	-2,887.64	3,001.18	2,975.94	25.25	118.882				
5,900.00	5,894.73	5,887.50	5,869.50	20.75	15.22	121.78	-286.83	-2,886.21	3,002.49	2,976.81	25.68	116.900				
6,000.00	5,994.59	5,984.30	5,966.16	21.12	15.50	121.76	-292.03	-2,884.86	3,004.07	2,977.92	26.14	114.909				
6,100.00	6,094.45	6,080.08	6,061.82	21.48	15.78	121.75	-296.55	-2,883.62	3,005.72	2,979.12	26.60	112.996				
6,200.00	6,194.31	6,179.55	6,161.18	21.85	16.07	121.75	-301.19	-2,882.45	3,007.48	2,980.42	27.07	111.118				
6,300.00	6,294.18	6,283.83	6,265.34	22.21	16.38	121.74	-305.98	-2,881.15	3,009.17	2,981.63	27.54	109.262				
6,400.00	6,394.04	6,374.73	6,356.16	22.58	16.65	121.75	-309.86	-2,880.07	3,010.92	2,982.92	27.99	107.558				
6,500.00	6,493.90	6,475.22	6,456.55	22.94	16.95	121.75	-314.02	-2,879.07	3,012.84	2,984.38	28.46	105.846				
6,600.00	6,593.77	6,592.85	6,574.06	23.31	17.30	121.75	-319.05	-2,877.51	3,014.44	2,985.47	28.97	104.063				
6,700.00	6,693.63	6,705.33	6,686.50	23.67	17.63	121.80	-321.50	-2,875.54	3,015.53	2,986.08	29.45	102.381				
6,800.00	6,793.49	6,809.16	6,790.30	24.04	17.92	121.88	-322.08	-2,873.46	3,016.32	2,986.40	29.92	100.813				
6,900.00	6,893.35	6,903.61	6,884.73	24.40	18.19	121.94	-322.64	-2,871.62	3,017.16	2,986.79	30.37	99.343				
7,000.00	6,993.22	7,000.71	6,981.81	24.77	18.47	122.01	-323.30	-2,869.92	3,018.20	2,987.37	30.83	97.900				
7,106.97	7,100.04	7,112.54	7,093.63	25.16	18.79	122.09	-324.24	-2,867.89	3,019.27	2,987.93	31.34	96.354				
7,200.00	7,192.99	7,208.96	7,190.02	25.50	19.07	122.14	-324.94	-2,865.99	3,019.45	2,987.67	31.77	95.033				
7,307.02	7,300.00	7,315.00	7,296.04	25.87	19.39	-91.91	-325.78	-2,863.84	3,018.11	2,985.85	32.26	93.564				
7,400.00	7,392.98	7,401.33	7,382.35	26.18	19.64	-91.93	-326.64	-2,862.20	3,016.37	2,983.71	32.66	92.352				
7,500.00	7,492.98	7,462.02	7,443.03	26.52	19.82	-91.94	-327.07	-2,861.48	3,015.23	2,982.20	33.03	91.275				
7,531.67	7,524.65	7,480.34	7,461.35	26.62	19.87	-91.94	-327.07	-2,861.44	3,015.16	2,982.01	33.15	90.955				
7,600.00	7,592.98	7,522.65	7,503.66	26.85	19.99	-91.94	-326.91	-2,861.64	3,015.48	2,982.08	33.40	90.278				
7,700.00	7,692.98	7,598.00	7,579.00	27.19	20.20	-91.93	-326.71	-2,862.76	3,016.90	2,983.10	33.79	89.277				
7,800.00	7,792.98	7,678.62	7,659.60	27.53	20.43	-91.93	-326.78	-2,864.52	3,019.05	2,984.86	34.20	88.286				
7,828.06	7,821.04	7,706.83	7,687.80	27.62	20.51	-91.93	-326.85	-2,865.18	3,019.71	2,985.39	34.32	87.984				
7,850.00	7,842.97	7,731.07	7,712.03	27.69	20.58	-91.35	-326.90	-2,865.73	3,020.22	2,985.80	34.42	87.740				
7,900.00	7,892.79	7,786.12	7,767.07	27.86	20.74	-91.32	-326.88	-2,866.92	3,021.40	2,986.75	34.65	87.199				
7,950.00	7,942.06	7,837.79	7,818.73	28.01	20.89	-91.36	-326.83	-2,867.97	3,022.62	2,987.76	34.86	86.697				
8,000.00	7,990.41	7,888.85	7,869.78	28.16	21.04	-91.47	-326.85	-2,868.96	3,023.95	2,988.88	35.07	86.220				
8,050.00	8,037.47	7,941.47	7,922.39	28.29	21.20	-91.66	-326.86	-2,869.91	3,025.40	2,990.12	35.28	85.756				
8,100.00	8,082.88	7,992.63	7,973.54	28.42	21.35	-91.90	-326.82	-2,870.74	3,027.00	2,991.53	35.48	85.319				
8,150.00	8,126.30	8,042.12	8,023.03	28.54	21.49	-92.18	-326.83	-2,871.45	3,028.84	2,993.17	35.67	84.910				
8,200.00	8,167.40	8,088.92	8,069.83	28.66	21.63	-92.47	-326.91	-2,872.02	3,030.99	2,995.13	35.86	84.531				
8,250.00	8,205.86	8,132.79	8,113.69	28.77	21.76	-92.74	-326.99	-2,872.47	3,033.56	2,997.52	36.04	84.183				
8,300.00	8,241.40	8,171.79	8,152.69	28.88	21.88	-92.95	-327.04	-2,872.81	3,036.64	3,000.44	36.20	83.875				
8,350.00	8,273.73	8,204.07	8,184.98	28.99	21.98	-93.04	-327.08	-2,873.08	3,040.37	3,004.01	36.36	83.616				
8,400.00	8,302.62	8,232.91	8,213.82	29.11	22.06	-93.04	-327.11	-2,873.32	3,044.85	3,008.33	36.51	83.389				
8,450.00	8,327.84	8,258.90	8,239.80	29.24	22.14	-92.93	-327.14	-2,873.53	3,050.12	3,013.46	36.66	83.190				
8,500.00	8,349.21	8,284.43	8,265.33	29.38	22.22	-92.75	-327.18	-2,873.72	3,056.23	3,019.41	36.82	83.006				
8,550.00	8,366.55	8,305.10	8,286.00	29.52	22.28	-92.42	-327.21	-2,873.84	3,063.19	3,026.23	36.97	82.858				
8,600.00	8,379.75	8,320.78	8,301.68	29.68	22.33	-91.91	-327.24	-2,873.92	3,071.05	3,033.94	37.11	82.747				
8,650.00	8,388.69	8,331.35	8,312.25	29.85	22.36	-91.22	-327.27	-2,873.96	3,079.79	3,042.54	37.25	82.672				
8,700.00	8,393.31	8,336.75	8,317.65	30.03	22.38	-90.34	-327.28	-2,873.98	3,089.39	3,052.00	37.39	82.633				
8,728.06	8,394.00	8,337.49	8,318.39	30.14	22.38	-89.77	-327.28	-2,873.99	3,095.13	3,057.67	37.46	82.628				

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



Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well FMM Fed Com 103H
Project:	Lea County, NM (NAD83)	TVD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Reference Site:	FMM Fed Com	MD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	FMM Fed Com 103H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.15 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 236-OWSG (Rev2) MWD, 2833-OWSG (Rev2) MWD, 10215-OWSG (Rev2) MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
8,800.00	8,394.00	8,337.31	8,318.21	30.43	22.38	-89.76	-327.28	-2,873.98	3,110.95	3,073.30	37.65	82.617		
8,900.00	8,394.00	8,337.04	8,317.94	30.91	22.38	-89.76	-327.28	-2,873.98	3,135.56	3,097.59	37.97	82.575		
9,000.00	8,394.00	8,336.78	8,317.68	31.47	22.38	-89.75	-327.28	-2,873.98	3,163.14	3,124.80	38.33	82.514		
9,100.00	8,394.00	8,336.52	8,317.42	32.10	22.38	-89.75	-327.28	-2,873.98	3,193.61	3,154.87	38.74	82.444		
9,200.00	8,394.00	8,336.27	8,317.17	32.81	22.38	-89.74	-327.28	-2,873.98	3,226.89	3,187.72	39.17	82.376		
9,300.00	8,394.00	8,336.01	8,316.91	33.58	22.38	-89.74	-327.28	-2,873.98	3,262.90	3,223.27	39.64	82.320		
9,400.00	8,394.00	8,335.75	8,316.65	34.41	22.38	-89.73	-327.28	-2,873.98	3,301.55	3,261.43	40.12	82.285		
9,500.00	8,394.00	8,335.49	8,316.39	35.30	22.37	-89.73	-327.28	-2,873.98	3,342.74	3,302.12	40.63	82.278		
9,600.00	8,394.00	8,335.24	8,316.14	36.24	22.37	-89.72	-327.27	-2,873.98	3,386.39	3,345.25	41.14	82.305		
9,700.00	8,394.00	8,334.98	8,315.88	37.24	22.37	-89.72	-327.27	-2,873.98	3,432.39	3,390.73	41.67	82.373		
9,800.00	8,394.00	8,334.73	8,315.63	38.28	22.37	-89.71	-327.27	-2,873.98	3,480.67	3,438.47	42.20	82.486		
9,900.00	8,394.00	8,334.48	8,315.38	39.36	22.37	-89.71	-327.27	-2,873.97	3,531.11	3,488.38	42.72	82.648		
10,000.00	8,394.00	8,334.22	8,315.12	40.48	22.37	-89.71	-327.27	-2,873.97	3,583.63	3,540.38	43.25	82.860		
10,100.00	8,394.00	8,333.97	8,314.87	41.63	22.37	-89.70	-327.27	-2,873.97	3,638.15	3,594.38	43.77	83.117		
10,200.00	8,394.00	8,333.72	8,314.62	42.82	22.37	-89.70	-327.27	-2,873.97	3,694.57	3,650.28	44.29	83.424		
10,300.00	8,394.00	8,333.47	8,314.37	44.03	22.37	-89.69	-327.27	-2,873.97	3,752.80	3,708.01	44.79	83.781		
10,400.00	8,394.00	8,333.22	8,314.12	45.28	22.37	-89.69	-327.27	-2,873.97	3,812.77	3,767.48	45.29	84.186		
10,500.00	8,394.00	8,332.97	8,313.87	46.55	22.37	-89.68	-327.27	-2,873.97	3,874.39	3,828.62	45.78	84.639		
10,600.00	8,394.00	8,332.72	8,313.62	47.84	22.37	-89.68	-327.27	-2,873.97	3,937.59	3,891.35	46.25	85.145		
10,700.00	8,394.00	8,332.48	8,313.38	49.16	22.37	-89.67	-327.27	-2,873.97	4,002.29	3,955.59	46.70	85.697		
10,800.00	8,394.00	8,332.23	8,313.13	50.49	22.36	-89.67	-327.27	-2,873.97	4,068.42	4,021.27	47.15	86.292		
10,900.00	8,394.00	8,331.99	8,312.89	51.84	22.36	-89.66	-327.27	-2,873.97	4,135.91	4,088.33	47.58	86.930		
11,000.00	8,394.00	8,331.74	8,312.64	53.21	22.36	-89.66	-327.27	-2,873.96	4,204.69	4,156.70	47.99	87.608		
11,100.00	8,394.00	8,331.50	8,312.40	54.60	22.36	-89.65	-327.27	-2,873.96	4,274.71	4,226.31	48.40	88.323		
11,200.00	8,394.00	8,331.25	8,312.15	56.00	22.36	-89.65	-327.27	-2,873.96	4,345.90	4,297.11	48.79	89.073		
11,300.00	8,394.00	8,331.01	8,311.91	57.41	22.36	-89.64	-327.27	-2,873.96	4,418.20	4,369.03	49.17	89.858		
11,400.00	8,394.00	8,330.77	8,311.67	58.84	22.36	-89.64	-327.27	-2,873.96	4,491.57	4,442.04	49.53	90.681		
11,500.00	8,394.00	8,330.53	8,311.43	60.28	22.36	-89.64	-327.26	-2,873.96	4,565.95	4,516.07	49.88	91.538		
11,600.00	8,394.00	8,330.29	8,311.19	61.72	22.36	-89.63	-327.26	-2,873.96	4,641.29	4,591.08	50.22	92.425		
11,700.00	8,394.00	15,766.00	11,948.86	63.18	66.23	-140.24	3,545.87	-2,894.57	4,713.84	4,643.70	70.14	67.202		
11,800.00	8,394.00	15,822.64	11,948.08	64.65	67.07	-140.27	3,602.40	-2,891.09	4,708.52	4,637.26	71.26	66.074		
11,900.00	8,394.00	15,860.00	11,947.77	66.13	67.62	-140.28	3,639.72	-2,889.61	4,704.73	4,632.49	72.24	65.130		
12,000.00	8,394.00	15,991.62	11,948.06	67.61	69.57	-140.36	3,771.14	-2,882.46	4,700.68	4,626.76	73.92	63.587		
12,100.00	8,394.00	16,049.00	11,948.49	69.10	70.43	-140.40	3,828.44	-2,879.59	4,697.40	4,622.34	75.05	62.588		
12,200.00	8,394.00	16,089.96	11,948.93	70.60	71.04	-140.42	3,869.37	-2,878.06	4,695.17	4,619.11	76.06	61.729		
12,300.00	8,394.00	16,143.00	11,949.86	72.11	71.84	-140.45	3,922.38	-2,876.58	4,694.07	4,616.91	77.16	60.832		
12,400.00	8,394.00	16,231.41	11,951.48	73.62	73.17	-140.48	4,010.77	-2,874.87	4,693.63	4,615.07	78.56	59.746		
12,500.00	8,394.00	16,322.51	11,952.76	75.14	74.56	-140.51	4,101.85	-2,873.71	4,693.31	4,613.32	79.99	58.674		
12,600.00	8,394.00	16,446.23	11,953.39	76.66	76.44	-140.53	4,225.56	-2,872.99	4,692.71	4,611.00	81.71	57.431		
12,700.00	8,394.00	16,521.00	11,953.63	78.19	77.59	-140.54	4,300.33	-2,873.05	4,692.36	4,609.33	83.03	56.513		
12,708.89	8,394.00	16,521.00	11,953.63	78.33	77.59	-140.54	4,300.33	-2,873.05	4,692.35	4,609.26	83.09	56.472		
12,800.00	8,394.00	16,566.79	11,953.79	79.72	78.29	-140.54	4,346.11	-2,873.67	4,692.81	4,608.70	84.11	55.792		
12,900.00	8,394.00	16,631.42	11,953.58	81.26	79.29	-140.52	4,410.70	-2,876.08	4,694.27	4,608.90	85.37	54.984		
13,000.00	8,394.00	16,762.00	11,953.52	82.80	81.31	-140.50	4,541.22	-2,879.82	4,695.39	4,608.16	87.23	53.828		
13,100.00	8,394.00	16,762.00	11,953.52	84.35	81.31	-140.50	4,541.22	-2,879.82	4,697.53	4,609.62	87.90	53.439		
13,200.00	8,394.00	16,762.00	11,953.52	85.90	81.31	-140.50	4,541.22	-2,879.82	4,701.78	4,613.23	88.55	53.097		
13,300.00	8,394.00	16,762.00	11,953.52	87.46	81.31	-140.50	4,541.22	-2,879.82	4,708.16	4,618.99	89.17	52.797		
13,400.00	8,394.00	16,762.00	11,953.52	89.02	81.31	-140.50	4,541.22	-2,879.82	4,716.66	4,626.88	89.77	52.539		
13,500.00	8,394.00	16,762.00	11,953.52	90.58	81.31	-140.50	4,541.22	-2,879.82	4,727.25	4,636.90	90.35	52.321		
13,600.00	8,394.00	16,762.00	11,953.52	92.14	81.31	-140.50	4,541.22	-2,879.82	4,739.93	4,649.03	90.90	52.143		
13,700.00	8,394.00	16,762.00	11,953.52	93.71	81.31	-140.50	4,541.22	-2,879.82	4,754.68	4,663.25	91.43	52.005		
13,800.00	8,394.00	16,762.00	11,953.52	95.28	81.31	-140.50	4,541.22	-2,879.82	4,771.48	4,679.56	91.92	51.911		

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



Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well FMM Fed Com 103H
Project:	Lea County, NM (NAD83)	TVD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Reference Site:	FMM Fed Com	MD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	FMM Fed Com 103H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.15 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.00 usft
FMM Fed Com - Proxy WCA State Com #001H (Offset) - ST02 - ST02												Offset Well Error:	0.00 usft
Survey Program: 236-OWSG (Rev2) MWD, 2833-OWSG (Rev2) MWD, 10215-OWSG (Rev2) MWD													
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
13,900.00	8,394.00	16,762.00	11,953.52	96.85	81.31	-140.50	4,541.22	-2,879.82	4,790.30	4,697.92	92.38	51.853	
14,000.00	8,394.00	16,762.00	11,953.52	98.43	81.31	-140.50	4,541.22	-2,879.82	4,811.14	4,718.31	92.83	51.830 SF	
14,100.00	8,394.00	16,762.00	11,953.52	100.01	81.31	-140.50	4,541.22	-2,879.82	4,833.95	4,740.72	93.23	51.849	
14,200.00	8,394.00	16,762.00	11,953.52	101.59	81.31	-140.50	4,541.22	-2,879.82	4,858.71	4,765.10	93.61	51.903	
14,300.00	8,394.00	16,762.00	11,953.52	103.17	81.31	-140.50	4,541.22	-2,879.82	4,885.40	4,791.43	93.97	51.990	
14,400.00	8,394.00	16,762.00	11,953.52	104.75	81.31	-140.50	4,541.22	-2,879.82	4,913.98	4,819.68	94.29	52.114	
14,500.00	8,394.00	16,762.00	11,953.52	106.34	81.31	-140.50	4,541.22	-2,879.82	4,944.41	4,849.82	94.59	52.272	
14,600.00	8,394.00	16,762.00	11,953.52	107.93	81.31	-140.50	4,541.22	-2,879.82	4,976.67	4,881.81	94.86	52.462	

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



Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well FMM Fed Com 103H
Project:	Lea County, NM (NAD83)	TVD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Reference Site:	FMM Fed Com	MD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	FMM Fed Com 103H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.15 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Reference Depths are relative to 3333.3' GE + 30' KB @ 3363.30usft

Coordinates are relative to: FMM Fed Com 103H

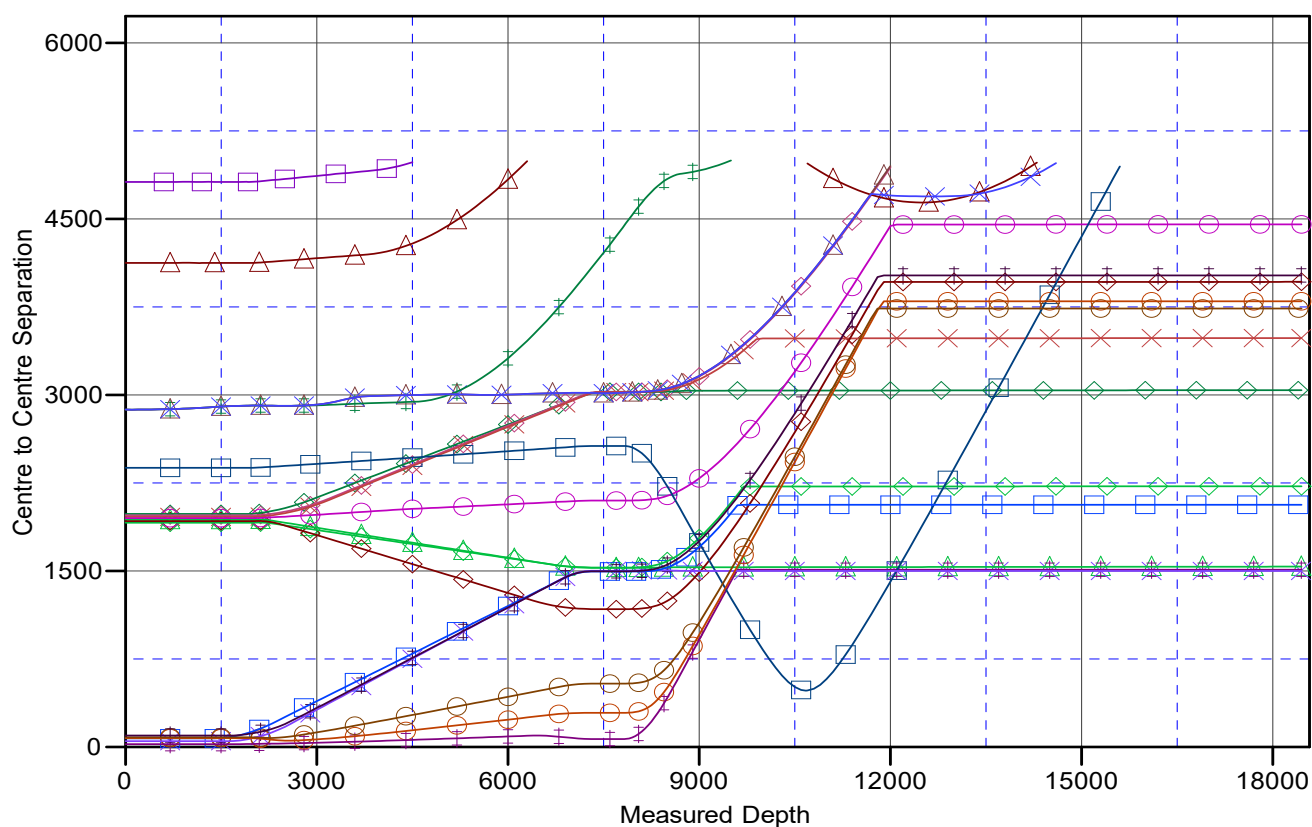
Offset Depths are relative to Offset Datum

Coordinate System is US State Plane 1983, New Mexico Eastern Zone

Central Meridian is -104.333334

Grid Convergence at Surface is: 0.54°

Ladder Plot



LEGEND

FMM Fed Com 101H, OH, Plan #1 V0	FMM Fed Com 802H, OH, Plan #1 V0	FMM Fed Com 806H, OH, Plan #1 V0
FMM Fed Com 801H, OH, Plan #1 V0	Amoco State #001 (Offset), OH, OH V0	Pre-Ongard Well #001 (Offset), OH, OH V0
FMM Fed Com 302H, OH, Plan #1 V0	Blue Bay WCA State Com #001C (Offset Plan), OH, Plan #1 V0	Proxy WCA State Com #001H (Offset), OH, OH V0
FMM Fed Com 301H, OH, Plan #1 V0	FMM Fed Com 104H, OH, Plan #1 V0	Proxy WCA State Com #001H (Offset), ST01, ST01 V0
FMM Fed Com 102H, OH, Plan #1 V0	FMM Fed Com 304H, OH, Plan #1 V0	Proxy WCA State Com #001H (Offset), ST02, ST02 V0
FMM Fed Com 303H, OH, Plan #1 V0	FMM Fed Com 804H, OH, Plan #1 V0	
FMM Fed Com 803H, OH, Plan #1 V0	FMM Fed Com 805H, OH, Plan #1 V0	

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



Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well FMM Fed Com 103H
Project:	Lea County, NM (NAD83)	TVD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Reference Site:	FMM Fed Com	MD Reference:	3333.3' GE + 30' KB @ 3363.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	FMM Fed Com 103H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.15 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Reference Depths are relative to 3333.3' GE + 30' KB @ 3363.30usft

Coordinates are relative to: FMM Fed Com 103H

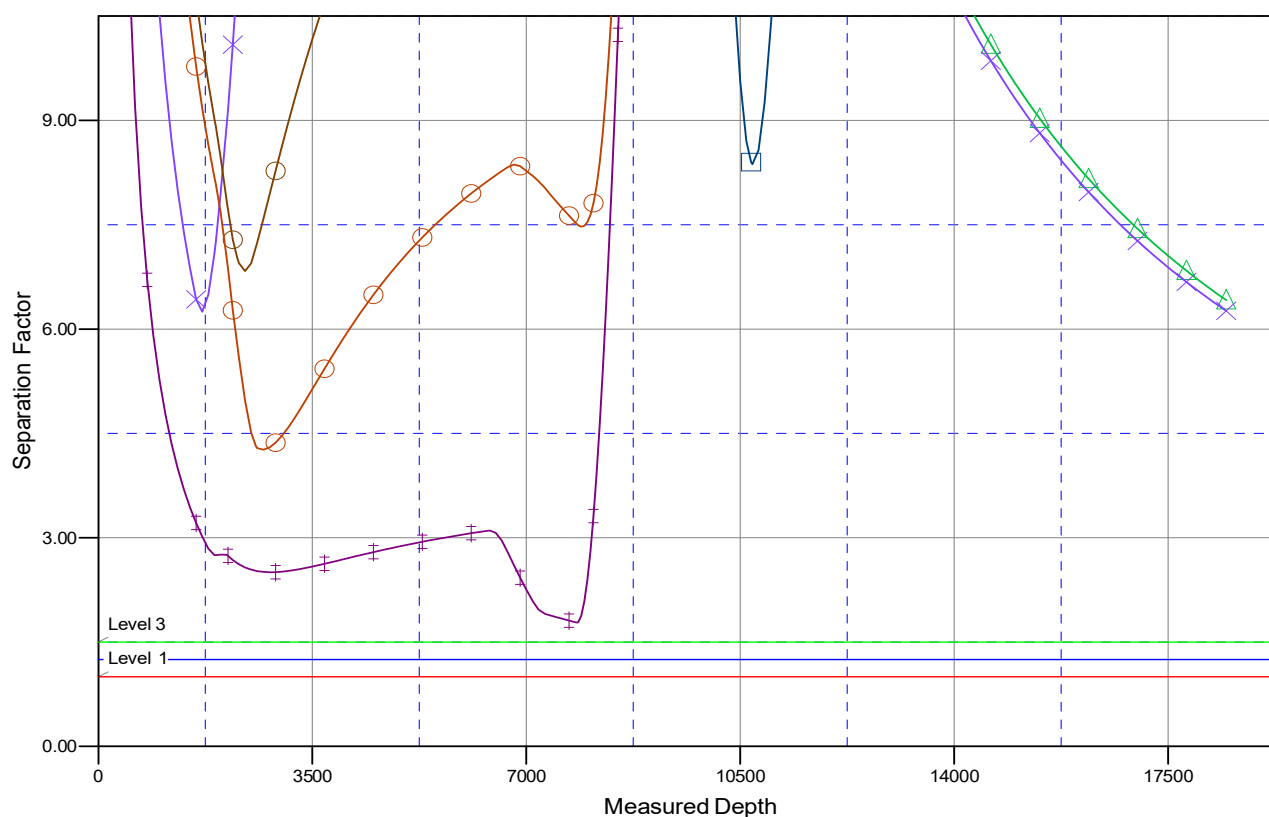
Offset Depths are relative to Offset Datum

Coordinate System is US State Plane 1983, New Mexico Eastern Zone

Central Meridian is -104.333334

Grid Convergence at Surface is: 0.54°

Separation Factor Plot



LEGEND

FMM Fed Com 101H, OH, Plan #1 V0	FMM Fed Com 802H, OH, Plan #1 V0	FMM Fed Com 806H, OH, Plan #1 V0
FMM Fed Com 801H, OH, Plan #1 V0	Amoco State #001 (Offset), OH, OH V0	Pre-Ongard Well #001 (Offset), OH, OH V0
FMM Fed Com 302H, OH, Plan #1 V0	Blue Bay WCA State Com #001C (Offset Plan), OH, Plan #1 V0	Proxy WCA State Com #001H (Offset), OH, OH V0
FMM Fed Com 301H, OH, Plan #1 V0	FMM Fed Com 104H, OH, Plan #1 V0	Proxy WCA State Com #001H (Offset), ST01, ST01 V0
FMM Fed Com 102H, OH, Plan #1 V0	FMM Fed Com 304H, OH, Plan #1 V0	Proxy WCA State Com #001H (Offset), ST02, ST02 V0
FMM Fed Com 303H, OH, Plan #1 V0	FMM Fed Com 804H, OH, Plan #1 V0	
FMM Fed Com 803H, OH, Plan #1 V0	FMM Fed Com 805H, OH, Plan #1 V0	

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

PECOS DISTRICT DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Franklin Mountain Energy LLC
LEASE NO.:	NMNM132081
LOCATION:	Section 36, T.24 S., R.35 E., NMPM
COUNTY:	Lea County, New Mexico
Sundry ID:	N/A

WELL NAME & NO.:	FMM Fed Com 103H
SURFACE HOLE FOOTAGE:	345'S & 2027'E
BOTTOM HOLE FOOTAGE:	150'N & 1877'E

WELL NAME & NO.:	FMM Fed Com 104H
SURFACE HOLE FOOTAGE:	345'S & 1977'E
BOTTOM HOLE FOOTAGE:	150'N & 380'E

WELL NAME & NO.:	FMM Fed Com 303H
SURFACE HOLE FOOTAGE:	345'S & 2002'E
BOTTOM HOLE FOOTAGE:	150'N & 1877'E

WELL NAME & NO.:	FMM Fed Com 304H
SURFACE HOLE FOOTAGE:	345'S & 1952'E
BOTTOM HOLE FOOTAGE:	150'N & 380'E

WELL NAME & NO.:	FMM Fed Com 804H
SURFACE HOLE FOOTAGE:	270'S & 2015'E
BOTTOM HOLE FOOTAGE:	150'N & 2160'E

WELL NAME & NO.:	FMM Fed Com 805H
SURFACE HOLE FOOTAGE:	270'S & 1990'E
BOTTOM HOLE FOOTAGE:	150'N & 1340'E

WELL NAME & NO.:	FMM Fed Com 806H
SURFACE HOLE FOOTAGE:	270'S & 1965'E
BOTTOM HOLE FOOTAGE:	150'N & 380'E

COA

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

A. HYDROGEN SULFIDE

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

B. CASING

1. The **13-3/8** inch surface casing shall be set at approximately **1500 feet** (a minimum of **25 feet (Lea County)** into the Rustler Anhydrite and above the salt) and cemented to the surface.
 - a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.
 - b. Wait on cement (WOC) time for a primary cement job will be a minimum of **8 hours** or 500 pounds compressive strength, whichever is greater. (This is to include the lead cement)
 - c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
 - d. If cement falls back, remedial cementing will be done prior to drilling out that string.

2. The minimum required fill of cement behind the 9-5/8 inch intermediate casing is:

Option 1 (Single Stage):

- Cement to surface. If cement does not circulate see B.1.a, c-d above.
Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst, potash or capitan reef.

Option 2:

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

- a. First stage to DV tool: Cement to circulate. If cement does not circulate off the DV tool, contact the appropriate BLM office before proceeding with second stage cement job.
 - b. Second stage above DV tool:
 - Cement to surface. If cement does not circulate, contact the appropriate BLM office.
Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst, potash or capitan reef.
- ❖ In Capitan Reef Areas if cement does not circulate to surface on the first two casing strings, the cement on the 3rd casing string must come to surface.
- ❖ **Special Capitan Reef requirements.** If lost circulation (50% or greater) occurs below the Base of the Salt, the operator shall do the following:
- Switch to fresh water mud to protect the Capitan Reef and use fresh water mud until setting the intermediate casing. The appropriate BLM office is to be notified for a PET to witness the switch to fresh water.
 - Daily drilling reports from the Base of the Salt to the setting of the intermediate casing are to be submitted to the BLM CFO engineering staff via e-mail by 0800 hours each morning. Any lost circulation encountered is to be recorded on these drilling reports. The daily drilling report should show mud volume per shift/tour. Failure to submit these reports will result in an Incidence of Non-Compliance being issued for failure to comply with the Conditions of Approval. If not already planned, the operator shall run a caliper survey for the intermediate well bore and submit to the appropriate BLM office.

Intermediate casing must be kept fluid filled to meet BLM minimum collapse requirement.

3. The minimum required fill of cement behind the **7-5/8** inch intermediate casing is:
 - Cement should tie-back at least **50 feet** on top of Capitan Reef top **or 200 feet** into the previous casing, whichever is greater. If cement does not circulate see B.1.a, c-d above.
Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst, potash or capitan reef. Cement excess is less than 25%, more cement might be required.
4. The minimum required fill of cement behind the **5-1/2** inch production casing is:
 - Cement should tie-back at least **200 feet** into previous casing string. Operator shall provide method of verification.
Cement excess is less than 25%, more cement might be required.

C. PRESSURE CONTROL

1.

Option 1:

- a. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **5000 (5M) psi**.
- b. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the **9-5/8** intermediate casing shoe shall be **5000 (5M) psi**.
- a. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the **7-5/8** inch intermediate casing shoe shall be **10,000 (10M) psi. Variance is approved to use a 5000 (5M) Annular which shall be tested to 5000 (5M) psi.**

Option 2:

- a. Operator has proposed a multi-bowl wellhead assembly. This assembly will only be tested when installed on the **13-3/8** inch surface casing. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **10,000 (10M) psi. Variance is approved to use a 5000 (5M) Annular which shall be tested to 5000 (5M) psi.**

- i. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
- ii. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
- iii. Manufacturer representative shall install the test plug for the initial BOP test.
- iv. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
- v. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.

D. SPECIAL REQUIREMENT (S)

Communitization Agreement

- The operator will submit a Communitization Agreement to the Santa Fe Office, 301 Dinosaur Trail Santa Fe, New Mexico 87508, at least 90 days before the anticipated date of first production from a well subject to a spacing order issued by the New Mexico Oil Conservation Division. The Communitization Agreement will include the signatures of all working interest owners in all Federal and Indian leases subject to the Communitization Agreement (i.e., operating rights owners and lessees of record), or certification that the operator has obtained the written signatures of all such owners and will make those signatures available to the BLM immediately upon request.
- If the operator does not comply with this condition of approval, the BLM may take enforcement actions that include, but are not limited to, those specified in 43 CFR 3163.1.
- In addition, the well sign shall include the surface and bottom hole lease numbers. When the Communitization Agreement number is known, it shall also be on the sign.

GENERAL REQUIREMENTS

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

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

☒ Eddy County

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

☒ Lea County

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

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

A. CASING

1. Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size or are Non-API. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.). The initial wellhead installed on the well will remain on the well with spools used as needed.
2. Wait on cement (WOC) for Potash Areas: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi for all cement blends, 2) until cement has been in place at least 24 hours. WOC time will be recorded in the driller's log. The casing integrity test can be done (prior to the cement setting up) immediately after bumping the plug.
3. Wait on cement (WOC) for Water Basin: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi at the shoe, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. See individual casing strings for details regarding lead cement slurry requirements. The casing integrity test can be done (prior to the cement setting up) immediately after bumping the plug.
4. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. Have well specific cement details onsite prior to pumping the cement for each casing string.
5. No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.
6. On that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Formation at the shoe shall be tested to a minimum of the mud weight equivalent anticipated to control the formation pressure to the next casing depth or at total depth of the well. This test shall be performed before drilling more than 20 feet of new hole.
7. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.
8. Whenever a casing string is cemented in the R-111-P potash area, the NMOCD requirements shall be followed.

B. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.
2. If a variance is approved for a flexible hose to be installed from the BOP to the choke manifold, the following requirements apply: The flex line must meet the requirements of API 16C. Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.
3. 5M or higher system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.
4. If the operator has proposed a multi-bowl wellhead assembly in the APD. The following requirements must be met:
 - a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
 - b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
 - c. Manufacturer representative shall install the test plug for the initial BOP test.
 - d. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.
 - e. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
5. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.
 - a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead when specified), whichever is greater. However, if the float does not

hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).

- b. In potash areas, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. For all casing strings, casing cut-off and BOP installation can be initiated at twelve hours after bumping the plug. However, **no tests** shall commence until the cement has had a minimum of 24 hours setup time, except the casing pressure test can be initiated immediately after bumping the plug (only applies to single stage cement jobs).
- c. The tests shall be done by an independent service company utilizing a test plug not a cup or J-packer. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to Onshore Order 2 with the pressure not to exceed 70% of the burst rating for the casing. Any test against the casing must meet the WOC time for water basin (8 hours) or potash (24 hours) or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).
- d. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two hour clock.
- e. The results of the test shall be reported to the appropriate BLM office.
- f. All tests are required to be recorded on a calibrated test chart. A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.
- g. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug. This test shall be performed prior to the test at full stack pressure.
- h. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the Wolfcamp formation if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per Onshore Order No. 2.

C. DRILLING MUD

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

D. WASTE MATERIAL AND FLUIDS

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

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

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 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 85984

CONDITIONS

Operator: Franklin Mountain Energy LLC 44 Cook Street Denver, CO 80206	OGRID: 373910
	Action Number: 85984
	Action Type: [C-101] BLM - Federal/Indian Land Lease (Form 3160-3)

CONDITIONS

Created By	Condition	Condition Date
pkautz	Will require a File As Drilled C-102 and a Directional Survey with the C-104	3/7/2022
pkautz	Once the well is spud, to prevent ground water contamination through whole or partial conduits from the surface, the operator shall drill without interruption through the fresh water zone or zones and shall immediately set in cement the water protection string	3/7/2022
pkautz	Oil base muds are not to be used until fresh water zones are cased and cemented providing isolation from the oil or diesel. This includes synthetic oils. Oil based mud, drilling fluids and solids must be contained in a steel closed loop system	3/7/2022
pkautz	Cement is required to circulate on both surface and intermediate1 strings of casing	3/7/2022