

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. [326125]	
2. Name of Operator [373910]		9. API Well No. 30-025-49874	
3a. Address 		3b. Phone No. (include area code) 	
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At surface At proposed prod. zone		10. Field and Pool, or Exploratory [97088] 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)	
Title		Date	
Approved by (Signature)		Name (Printed/Typed)	
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 03/08/2022

SL

(Continued on page 2)



Approval Date: 03/07/2022

 KZ
 03/16/2022

*(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 N / 998 FSL / 1807 FWL / TWSP: 25S / RANGE: 35E / SECTION: 35 / LAT: 32.082309 / LONG: -103.341034 (TVD: 0 feet, MD: 0 feet)

PPP: NENW / 0 FNL / 2080 FWL / TWSP: 26S / RANGE: 35E / SECTION: 11 / LAT: 32.065054 / LONG: -103.340137 (TVD: 12017 feet, MD: 17100 feet)

PPP: NESW / 2648 FNL / 2079 FWL / TWSP: 26S / RANGE: 35E / SECTION: 2 / LAT: 32.072291 / LONG: -103.340142 (TVD: 12017 feet, MD: 14400 feet)

PPP: NENW / 704 FNL / 2082 FWL / TWSP: 26S / RANGE: 35E / SECTION: 2 / LAT: 32.077632 / LONG: -103.340146 (TVD: 12017 feet, MD: 12476 feet)

BHL: TR N / 150 FSL / 2080 FWL / TWSP: 26S / RANGE: 35E / SECTION: 11 / LAT: 32.05094 / LONG: -103.340127 (TVD: 12017 feet, MD: 22187 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.

CONFIDENTIAL

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 30-025-49874		² Pool Code 97088		³ Pool Name WC-025 G-08 S253534O; BONE SPRING	
⁴ Property Code 326125		⁵ Property Name TATANKA FED COM			⁶ Well Number 602H
⁷ OGRID No. 373910		⁸ Operator Name FRANKLIN MOUNTAIN ENERGY LLC			⁹ Elevation 3135.3'

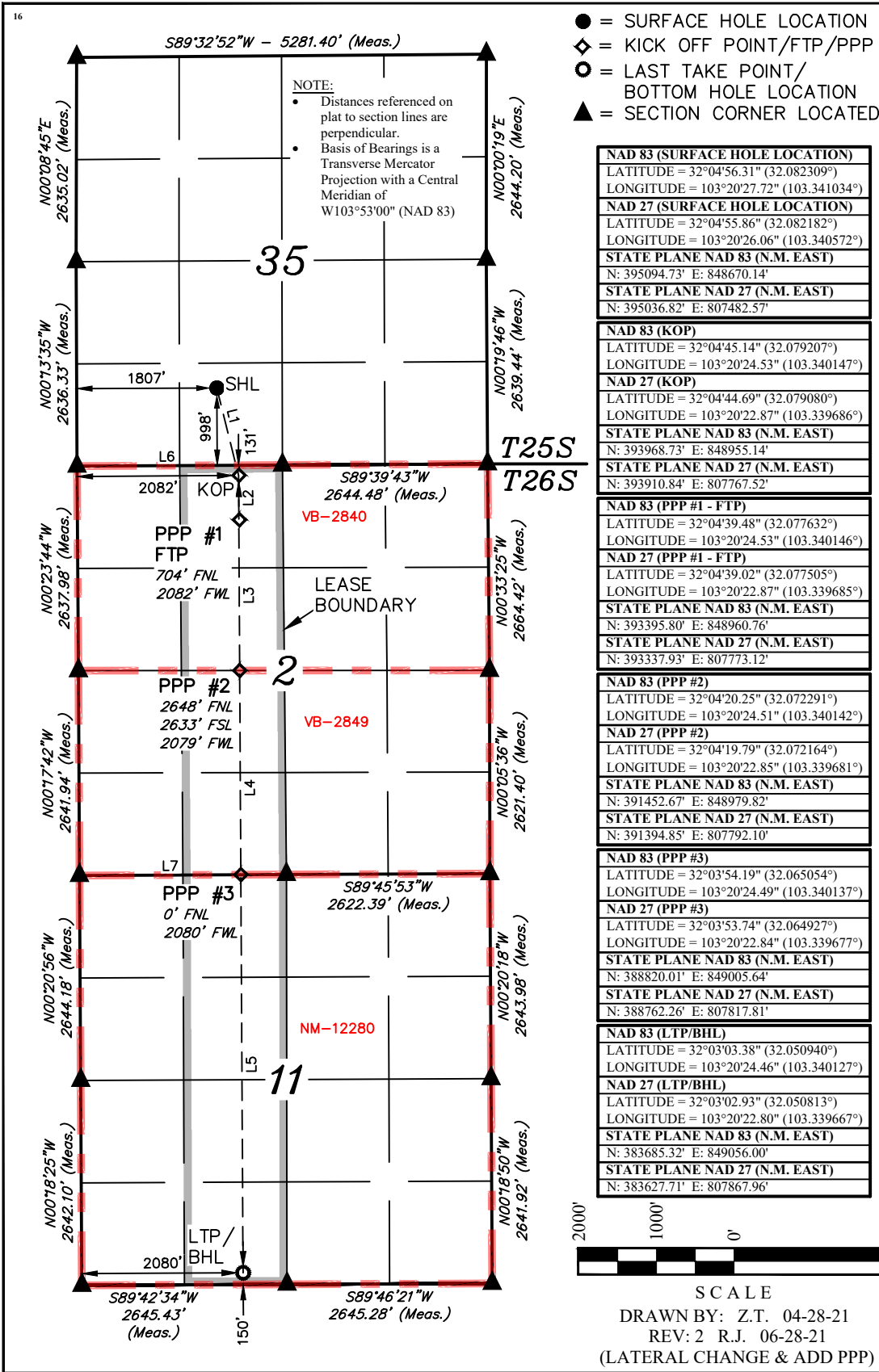
¹⁰ Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
N	35	25S	35E		998	SOUTH	1807	WEST	LEA

¹¹ Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
N	11	26S	35E		150	SOUTH	2080	WEST	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: 7/7/2021

Printed Name: Shelly Albrecht

E-mail Address: salbrecht@fmellc.com

LINE TABLE		
LINE	DIRECTION	LENGTH
L1	S13°57'53"E	1161.68'
L2	S00°19'23"E	573.04'
L3	S00°19'23"E	1943.51'
L4	S00°19'23"E	2633.18'
L5	S00°19'23"E	5135.69'
L6	S89°42'05"W	2648.06'
L7	S89°43'33"W	2668.48'

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.

JUNE 03, 2021

Date of Survey

Signature and Seal of Professional Surveyor:

Paul Buchele

PAUL BUCHELE
NEW MEXICO
23782
06-28-21
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:** 03/_08/_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: Tatanka North CTB: (f#) TBD [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

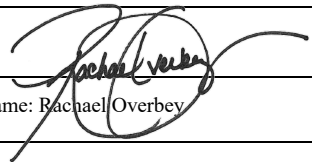
1. If, at any time after Operator submits this Natural Gas Management Plan and before the well is spud:

(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: 3/8/2022
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
Tatanka Fed Com 101H	TBD	C-2-26S-35E	20 FNL 1347 FWL	800 +/-	700 +/-	600 +/-
Tatanka Fed Com 102H	TBD	C-2-26S-35E	20 FNL 1372 FWL	800 +/-	700 +/-	600 +/-
Tatanka Fed Com 103H	TBD	B-2-26S-35E	20 FNL 1875 FEL	800 +/-	700 +/-	600 +/-
Tatanka Fed Com 104H	TBD	B-2-26S-35E	20 FNL 1850 FEL	800 +/-	700 +/-	600 +/-
Tatanka Fed Com 501H	TBD	C-2-26S-35E	20 FNL 1397 FWL	800 +/-	700 +/-	600 +/-
Tatanka Fed Com 502H	TBD	C-2-26S-35E	20 FNL 1422 FWL	800 +/-	700 +/-	600 +/-
Tatanka Fed Com 503H	TBD	B-2-26S-35E	20 FNL 1925 FEL	800 +/-	700 +/-	600 +/-
Tatanka Fed Com 504H	TBD	B-2-26S-35E	20 FNL 1900 FEL	800 +/-	700 +/-	600 +/-
Tatanka Fed Com 601H	TBD	D-2-26S-35E	10 FNL 545 FWL	800 +/-	700 +/-	600 +/-
Tatanka Fed Com 602H	TBD 30-025-49874	N-35-25S-35E	998 FSL 1807 FWL	800 +/-	700 +/-	600 +/-
Tatanka Fed Com 603H	TBD	N-35-25S-35E	998 FSL 1907 FWL	800 +/-	700 +/-	600 +/-
Tatanka Fed Com 604H	TBD	A-2-26S-35E	20 FNL 885 FEL	800 +/-	700 +/-	600 +/-
Tatanka Fed Com 701H	TBD	D-2-26S-35E	10 FNL 620 FWL	800 +/-	700 +/-	600 +/-
Tatanka Fed Com 702H	TBD	N-35-25S-35E	998 FSL 1782 FWL	800 +/-	700 +/-	600 +/-
Tatanka Fed Com 703H	TBD	N-35-25S-35E	998 FSL 1857 FWL	800 +/-	700 +/-	600 +/-
Tatanka Fed Com 704H	TBD	A-2-26S-35E	20 FNL 935 FEL	800 +/-	700 +/-	600 +/-
Tatanka Fed Com 705H	TBD	A-2-26S-35E	20 FNL 860 FEL	800 +/-	700 +/-	600 +/-
Tatanka Fed Com 801H	TBD	D-2-26S-35E	10 FNL 570 FWL	800 +/-	700 +/-	600 +/-
Tatanka Fed Com 802H	TBD	D-2-26S-35E	10 FNL 595 FWL	800 +/-	700 +/-	600 +/-
Tatanka Fed Com 803H	TBD	N-35-25S-35E	998 FSL 1832 FWL	800 +/-	700 +/-	600 +/-
Tatanka Fed Com 804H	TBD	N-35-25S-35E	998 FSL 1882 FWL	800 +/-	700 +/-	600 +/-
Tatanka Fed Com 805H	TBD	A-2-26S-35E	20 FNL 910 FEL	800 +/-	700 +/-	600 +/-
Tatanka Fed Com 806H	TBD	A-2-26S-35E	20 FNL 835 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
Tatanka Fed Com 101H	TBD	TBD	TBD	TBD	TBD	TBD
Tatanka Fed Com 102H	TBD	TBD	TBD	TBD	TBD	TBD
Tatanka Fed Com 103H	TBD	TBD	TBD	TBD	TBD	TBD
Tatanka Fed Com 104H	TBD	TBD	TBD	TBD	TBD	TBD
Tatanka Fed Com 501H	TBD	TBD	TBD	TBD	TBD	TBD
Tatanka Fed Com 502H	TBD	TBD	TBD	TBD	TBD	TBD
Tatanka Fed Com 503H	TBD	TBD	TBD	TBD	TBD	TBD
Tatanka Fed Com 504H	TBD	TBD	TBD	TBD	TBD	TBD
Tatanka Fed Com 601H	TBD	7/15/2022	12/15/2022	2/28/2023	3/28/2023	4/2/2023
Tatanka Fed Com 602H	TBD 30-025-49874	6/15/2022	12/15/2022	1/30/2023	3/10/2023	3/13/2023
Tatanka Fed Com 603H	TBD	6/15/2022	12/15/2022	1/30/2023	3/10/2023	3/13/2023
Tatanka Fed Com 604H	TBD	7/1/2022	12/15/2022	1/30/2023	3/1/2023	3/4/2023
Tatanka Fed Com 701H	TBD	7/15/2022	12/15/2022	2/28/2023	3/28/2023	4/2/2023
Tatanka Fed Com 702H	TBD	6/15/2022	12/15/2022	1/30/2023	3/10/2023	3/13/2023
Tatanka Fed Com 703H	TBD	6/15/2022	12/15/2022	1/30/2023	3/10/2023	3/13/2023
Tatanka Fed Com 704H	TBD	7/1/2022	12/15/2022	1/30/2023	3/1/2023	3/4/2023
Tatanka Fed Com 705H	TBD	7/1/2022	12/15/2022	1/30/2023	3/1/2023	3/4/2023
Tatanka Fed Com 801H	TBD	7/15/2022	12/15/2022	2/28/2023	3/28/2023	4/2/2023
Tatanka Fed Com 802H	TBD	7/15/2022	12/15/2022	2/28/2023	3/28/2023	4/2/2023
Tatanka Fed Com 803H	TBD	6/15/2022	12/15/2022	1/30/2023	3/10/2023	3/13/2023
Tatanka Fed Com 804H	TBD	6/15/2022	12/15/2022	1/30/2023	3/10/2023	3/13/2023
Tatanka Fed Com 805H	TBD	7/1/2022	12/15/2022	1/30/2023	3/1/2023	3/4/2023
Tatanka Fed Com 806H	TBD	7/1/2022	12/15/2022	1/30/2023	3/1/2023	3/4/2023



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.



Tatanka Fed Com 602H

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)	3,130'	30'	30'	0	Sand/Gravels/unconsolidated
Rustler	2,354'	806'			Carbonates
Salado	1,887'	1,273'			Salt, Carbonate & Clastics
Base Salt	-369'	3,529'			Shaley Carbonate & Shale
Lamar	-1,959'	5,119'			Carbonate & Clastics
Bell Canyon	-2,038'	5,198'			Sandstone - oil/gas/water
Cherry Canyon	-2,909'	6,069'			Sandstone - oil/gas/water
Brushy Canyon	-4,346'	7,506'			Sand/carb/shales - oil/gas/water
Bone Spring Lime	-5,669'	8,829'			Shale/Carbonates - oil/gas
Avalon	-5,707'	8,867'			Shale/Carbonates - oil/gas
Chert Zone	-5,886'	9,046'			Chert/Carbonate
First Bone Spring Sand	-6,933'	10,093'			Sandstone - oil/gas/water
Second Bone Spring Carbonates	-7,102'	10,262'			Shale/Carbonates - oil/gas
Second Bone Spring Sand	-7,443'	10,603'			Sandstone - oil/gas/water
Third Bone Spring Carbonates	-8,039'	11,199'			Shale/Carbonates - oil/gas
Third Bone Spring Sand	-8,670'	11,830'			Sandstone - oil/gas/water
HZ Target at Landing	-8,857'	12,017'			Overpressure shale/sand- Oil/Gas
Wolfcamp	-8,956'	12,116'			Overpressure shale/sand- Oil/Gas
Wolfcamp A	-9,021'	12,181'			Overpressure Shale - Oil/Gas
Wolfcamp B	-9,284'	12,444'			Overpressure Shale - Oil/Gas

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

Upper Permian Sands	0- 400'	Fresh Water
Delaware Sands	5,198'	Oil
Bone Spring	10,093'	Oil
Wolfcamp	12,116'	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	5150	1.78	1.76	2.99	3.41
Intermediate 7 5/8"	29.7	HCP-110	8280	7150	827	Stinger 564	12476	1.06	1.22	1.76	1.20
Long string 5 1/2"	23	P-110	14520	14520	729	Eagle 606 TVD	22187 12017	1.32	1.40	1.19	0.99 1.61



7 5/8" casing will be set at 12,476' MD/12,017' TVD at 90° Inc. Stress calculations on 5 1/2" casing performed assuming 22,187' depth. Actual max vertical depth is 12,017'.

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	795	Extenda Cem, 12.8 ppg Class C, 3lb/sk Kol-Seal	1.747	9.06	0	334	Tail, 14.8 ppg, Class C,	1.349	6.51	1000	100%
Int1	12.25	9.625	5150	1506	0.125pps Poly-E-Flake					1% CaCl ₂ , 0.125pps Celo-Flake				
					Lead, 12.8 ppg, Class C 5% Salt,	1.79	9.74	0	154	Tail, 14.8 ppg, Class C,	1.33	6.37	4850	100%
					0.125 pps Poly-E-Flake, 3lb/sk Kol-Seal					0.1% HR 800 .125 pps Poly-E-Flake				
Int2	8.75	7.625	12476	394	Lite Fill, 9.5 ppg, Class C 3lb/sk	2.13	5.97	4150	94	NeoCem 14.8 ppg, Class C	1.33	6.29	11476	50%
					Bridgemaker Gel, 5% Salt, 5pps LCM, 0.25pps Cello-Flake					0.25 pps Cello-Flake, 2% CaCl ₂				
Prod	6.75	5.5	22187	799	Tail, 14.5 ppg, Gas Migration Control	1.34	6.22	11476						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 1/2" 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' – 12,476'	Brine	8.8-10.2	28-34	N/c
12,476' – 22,187' 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 12,017' TVD (deepest point of the well) is 195F with an estimated maximum bottom-hole pressure (BHP) at the same point of 7,811 psig (based on 12.5 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 to Imaging: 3/16/2022 11:37:16 AM

Franklin Mountain Energy

Project: Lea County, NM (NAD83)
Site: Tatanka Fed Com
Well: Tatanka Fed Com 602H
Wellbore: OH
Design: Plan #1

3135.3' GE + 30' KB @ 3165.30usft



Azimuths to Grid North
True North: -0.53°
Magnetic North: 5.90°

Magnetic Field
Strength: 47432.2nT
Dip Angle: 59.80°
Date: 6/25/2021
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



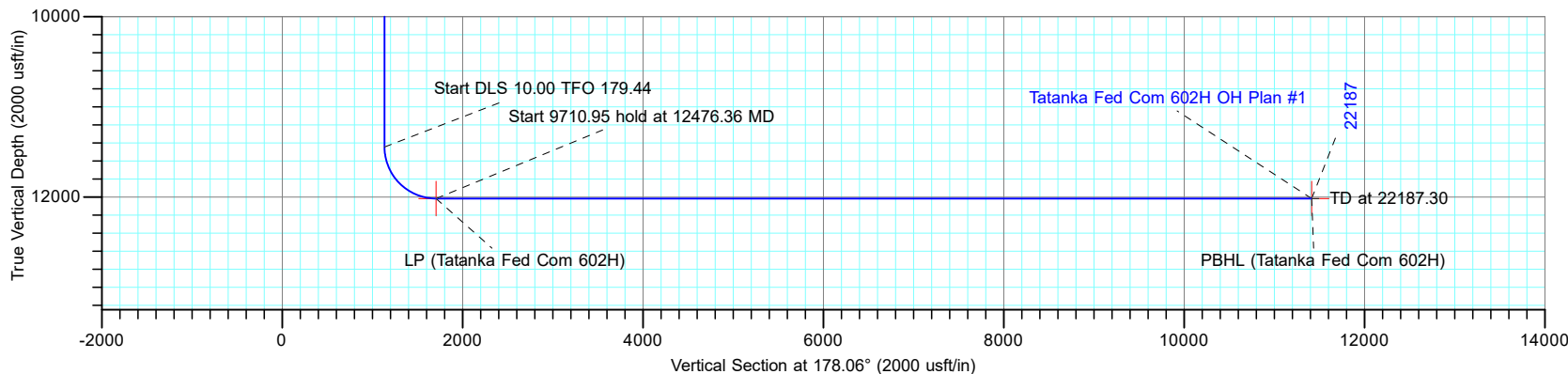
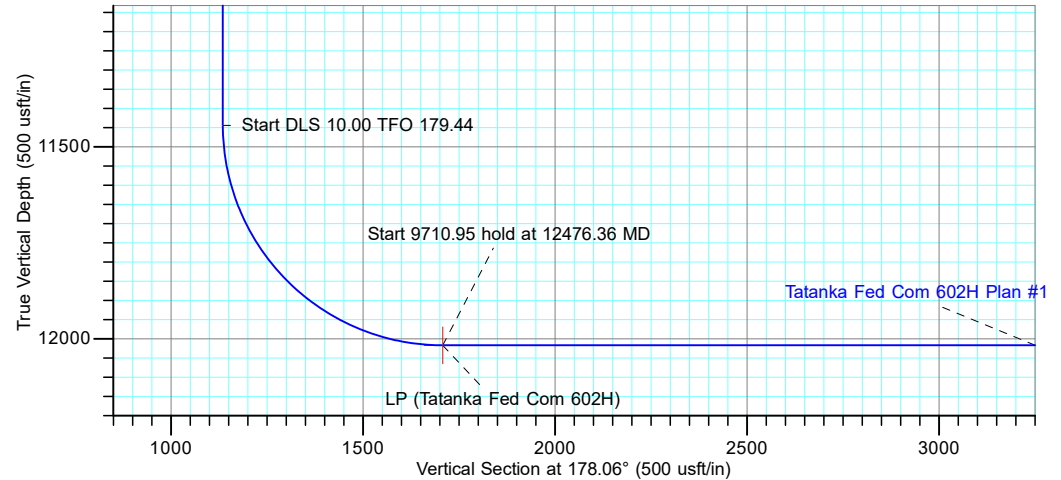
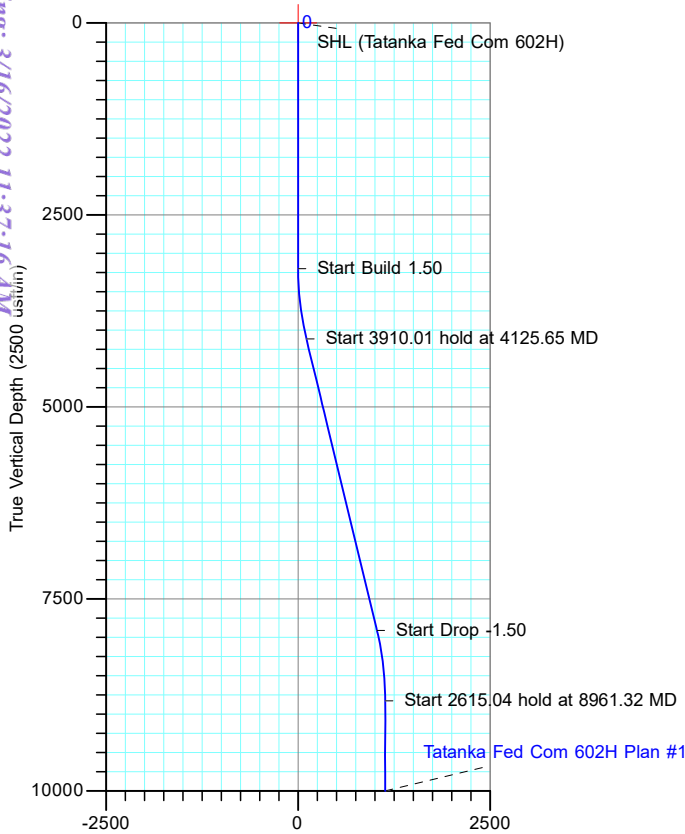
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SECTION DETAILS

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	
3200.00	0.00	0.00	3200.00	0.00	0.00	0.00	0.00	0.00	Start Build 1.50
4125.65	13.88	165.80	4116.62	-108.20	27.39	1.50	165.80	109.06	Start 3910.01 hold at 4125.65 MD
8035.66	13.88	165.80	7912.38	-1017.80	257.61	0.00	0.00	1025.93	Start Drop -1.50
8961.32	0.00	0.00	8829.00	-1126.00	285.00	1.50	180.00	1134.99	Start 2615.04 hold at 8961.32 MD
11576.36	0.00	0.00	11444.04	-1126.00	285.00	0.00	0.00	1134.99	Start DLS 10.00 TFO 179.44
12476.36	90.00	179.44	12017.00	-1698.93	290.62	10.00	179.44	1707.78	Start 9710.95 hold at 12476.36 MD
22187.30	90.00	179.44	12017.00-11409.41	385.86	0.00	0.00	0.00	11415.93	TD at 22187.30

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Latitude	Longitude
LP (Tatanka Fed Com 602H)	12017.00	-1698.93	290.62	32.077632	-103.340146
PBHL (Tatanka Fed Com 602H)	12017.00	-11409.41	385.86	32.050940	-103.340127
SHL (Tatanka Fed Com 602H)	0.00	0.00	0.00	32.082309	-103.341034



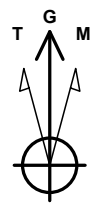
TOTAL DIRECTIONAL SERVICES LLC
671 Academy Ct, Windsor, CO 80550
Phone: (970) 460-9402

Plan: Plan #1 (Tatanka Fed Com 602H/OH)
Tatanka Fed Com
Created By: Dustin Ault Date: 11:51, June 25 2021
Date: _____
Approved: _____ Date: _____

Page 18 of 169

Franklin Mountain Energy

Project: Lea County, NM (NAD83)
Site: Tatanka Fed Com
Well: Tatanka Fed Com 602H
Wellbore: OH
Design: Plan #1



Azimuths to Grid North
True North: -0.53°
Magnetic North: 5.90°

Magnetic Field
Strength: 47432.2nT
Dip Angle: 59.80°
Date: 6/25/2021
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

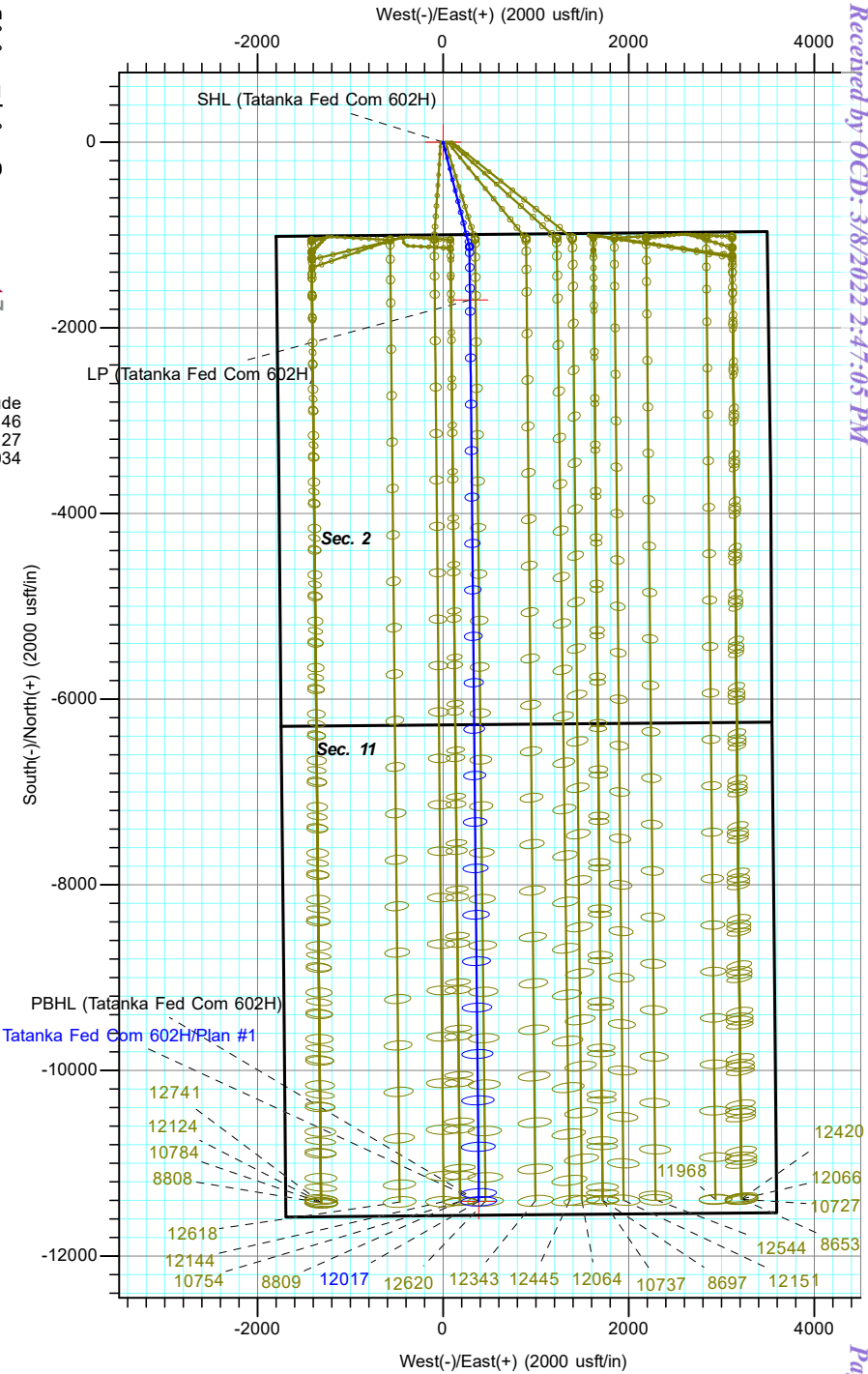
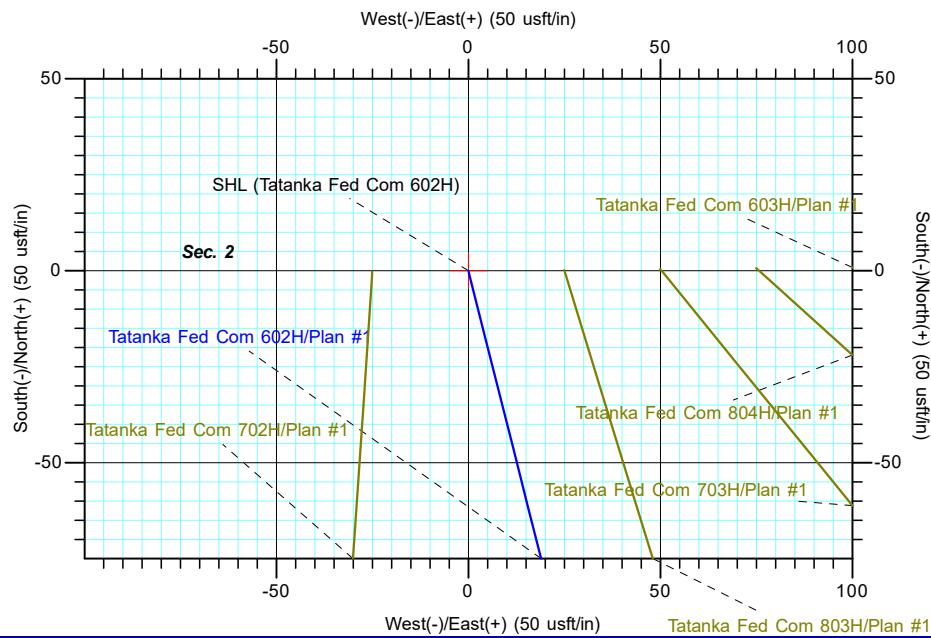


DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
LP (Tatanka Fed Com 602H)	12017.00	-1698.93	290.62	393395.80	848960.76	32.077632	-103.340146
PBHL (Tatanka Fed Com 602H)	12017.00	-11409.41	385.86	383685.32	849056.00	32.050940	-103.340127
SHL (Tatanka Fed Com 602H)	0.00	0.00	0.00	395094.73	848670.14	32.082309	-103.341034

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VFace	Annotation
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
3200.00	0.00	0.00	3200.00	0.00	0.00	0.00	0.00	0.00	Start Build 1.50
4125.65	13.88	165.80	4116.62	-108.20	27.39	1.50	165.80	109.06	Start 3910.01 hold at 4125.65 MD
8035.66	13.88	165.80	7912.38	-1017.80	257.61	0.00	0.00	1025.93	Start Drop -1.50
8961.32	0.00	0.00	8829.00	-1126.00	285.00	1.50	180.00	1134.99	Start 2615.04 hold at 8961.32 MD
11576.36	0.00	0.00	11444.04	-1126.00	285.00	0.00	0.00	1134.99	Start DLS 10.00 TFO 179.44
12476.36	90.00	179.44	12017.00	-1698.93	290.62	10.00	179.44	1707.78	Start 9710.95 hold at 12476.36 MD
22187.30	90.00	179.44	12017.00	-11409.41	385.86	0.00	0.00	11415.93	TD at 22187.30



TOTAL DIRECTIONAL SERVICES LLC
671 Academy Ct, Windsor, CO 80550
Phone: (970) 460-9402

Plan: Plan #1 (Tatanka Fed Com 602H/OH)
Tatanka Fed Com
Created By: Dustin Ault
Date: 11:53, June 25 2021
Approved: _____
Date: _____



Franklin Mountain Energy

Lea County, NM (NAD83)

Tatanka Fed Com

Tatanka Fed Com 602H

OH

Plan: Plan #1

Standard Planning Report

25 June, 2021





Total Directional Services

Planning Report



Database:	EDM 5000.15 Single User Db	Local Co-ordinate Reference:	Well Tatanka Fed Com 602H
Company:	Franklin Mountain Energy	TVD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Project:	Lea County, NM (NAD83)	MD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Site:	Tatanka Fed Com	North Reference:	Grid
Well:	Tatanka Fed Com 602H	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	Tatanka Fed Com				
Site Position:		Northing:	394,075.36 usft	Latitude:	32.079539
From:	Map	Easting:	847,416.74 usft	Longitude:	-103.345111
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.52

Well	Tatanka Fed Com 602H					
Well Position	+N/-S	1,019.37 usft	Northing:	395,094.73 usft	Latitude:	32.082309
	+E/-W	1,253.40 usft	Easting:	848,670.14 usft	Longitude:	-103.341034
Position Uncertainty		0.00 usft	Wellhead Elevation:		Ground Level:	3,135.30 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2020	6/25/2021	6.42	59.80	47,432.16414491

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	178.06

Plan Survey Tool Program	Date	6/25/2021			
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks	
1	0.00	22,187.30 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	
3,200.00	0.00	0.00	3,200.00	0.00	0.00	0.00	0.00	0.00	0.00	
4,125.65	13.88	165.80	4,116.62	-108.20	27.39	1.50	1.50	0.00	165.80	
8,035.67	13.88	165.80	7,912.38	-1,017.80	257.61	0.00	0.00	0.00	0.00	
8,961.32	0.00	0.00	8,829.00	-1,126.00	285.00	1.50	-1.50	0.00	180.00	
11,576.36	0.00	0.00	11,444.04	-1,126.00	285.00	0.00	0.00	0.00	0.00	
12,476.36	90.00	179.44	12,017.00	-1,698.93	290.62	10.00	10.00	19.94	179.44	
22,187.30	90.00	179.44	12,017.00	-11,409.41	385.86	0.00	0.00	0.00	0.00	PBHL (Tatanka Fed C



Total Directional Services

Planning Report



Database:	EDM 5000.15 Single User Db	Local Co-ordinate Reference:	Well Tatanka Fed Com 602H
Company:	Franklin Mountain Energy	TVD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Project:	Lea County, NM (NAD83)	MD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Site:	Tatanka Fed Com	North Reference:	Grid
Well:	Tatanka Fed Com 602H	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 (Tatanka Fed Com 602H)									
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
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	0.00	0.00
2,700.00	0.00	0.00	2,700.00	0.00	0.00	0.00	0.00	0.00	0.00
2,800.00	0.00	0.00	2,800.00	0.00	0.00	0.00	0.00	0.00	0.00
2,900.00	0.00	0.00	2,900.00	0.00	0.00	0.00	0.00	0.00	0.00
3,000.00	0.00	0.00	3,000.00	0.00	0.00	0.00	0.00	0.00	0.00
3,100.00	0.00	0.00	3,100.00	0.00	0.00	0.00	0.00	0.00	0.00
3,200.00	0.00	0.00	3,200.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 1.50									
3,300.00	1.50	165.80	3,299.99	-1.27	0.32	1.28	1.50	1.50	0.00
3,400.00	3.00	165.80	3,399.91	-5.07	1.28	5.12	1.50	1.50	0.00
3,500.00	4.50	165.80	3,499.69	-11.41	2.89	11.51	1.50	1.50	0.00
3,600.00	6.00	165.80	3,599.27	-20.29	5.13	20.45	1.50	1.50	0.00
3,700.00	7.50	165.80	3,698.57	-31.68	8.02	31.93	1.50	1.50	0.00
3,800.00	9.00	165.80	3,797.54	-45.59	11.54	45.95	1.50	1.50	0.00
3,900.00	10.50	165.80	3,896.09	-62.01	15.69	62.50	1.50	1.50	0.00
4,000.00	12.00	165.80	3,994.16	-80.92	20.48	81.56	1.50	1.50	0.00
4,100.00	13.50	165.80	4,091.70	-102.31	25.90	103.13	1.50	1.50	0.00
4,125.65	13.88	165.80	4,116.62	-108.20	27.39	109.06	1.50	1.50	0.00
Start 3910.01 hold at 4125.65 MD									
4,200.00	13.88	165.80	4,188.79	-125.50	31.76	126.50	0.00	0.00	0.00
4,300.00	13.88	165.80	4,285.87	-148.76	37.65	149.95	0.00	0.00	0.00
4,400.00	13.88	165.80	4,382.95	-172.02	43.54	173.40	0.00	0.00	0.00
4,500.00	13.88	165.80	4,480.03	-195.29	49.43	196.84	0.00	0.00	0.00
4,600.00	13.88	165.80	4,577.11	-218.55	55.32	220.29	0.00	0.00	0.00
4,700.00	13.88	165.80	4,674.18	-241.81	61.20	243.74	0.00	0.00	0.00
4,800.00	13.88	165.80	4,771.26	-265.08	67.09	267.19	0.00	0.00	0.00



Total Directional Services

Planning Report



Database:	EDM 5000.15 Single User Db	Local Co-ordinate Reference:	Well Tatanka Fed Com 602H
Company:	Franklin Mountain Energy	TVD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Project:	Lea County, NM (NAD83)	MD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Site:	Tatanka Fed Com	North Reference:	Grid
Well:	Tatanka Fed Com 602H	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)
4,900.00	13.88	165.80	4,868.34	-288.34	72.98	290.64	0.00	0.00	0.00
5,000.00	13.88	165.80	4,965.42	-311.60	78.87	314.09	0.00	0.00	0.00
5,100.00	13.88	165.80	5,062.50	-334.87	84.76	337.54	0.00	0.00	0.00
5,200.00	13.88	165.80	5,159.57	-358.13	90.65	360.99	0.00	0.00	0.00
5,300.00	13.88	165.80	5,256.65	-381.39	96.53	384.44	0.00	0.00	0.00
5,400.00	13.88	165.80	5,353.73	-404.66	102.42	407.89	0.00	0.00	0.00
5,500.00	13.88	165.80	5,450.81	-427.92	108.31	431.34	0.00	0.00	0.00
5,600.00	13.88	165.80	5,547.89	-451.18	114.20	454.78	0.00	0.00	0.00
5,700.00	13.88	165.80	5,644.96	-474.45	120.09	478.23	0.00	0.00	0.00
5,800.00	13.88	165.80	5,742.04	-497.71	125.97	501.68	0.00	0.00	0.00
5,900.00	13.88	165.80	5,839.12	-520.97	131.86	525.13	0.00	0.00	0.00
6,000.00	13.88	165.80	5,936.20	-544.24	137.75	548.58	0.00	0.00	0.00
6,100.00	13.88	165.80	6,033.28	-567.50	143.64	572.03	0.00	0.00	0.00
6,200.00	13.88	165.80	6,130.35	-590.76	149.53	595.48	0.00	0.00	0.00
6,300.00	13.88	165.80	6,227.43	-614.03	155.42	618.93	0.00	0.00	0.00
6,400.00	13.88	165.80	6,324.51	-637.29	161.30	642.38	0.00	0.00	0.00
6,500.00	13.88	165.80	6,421.59	-660.55	167.19	665.83	0.00	0.00	0.00
6,600.00	13.88	165.80	6,518.67	-683.82	173.08	689.28	0.00	0.00	0.00
6,700.00	13.88	165.80	6,615.75	-707.08	178.97	712.73	0.00	0.00	0.00
6,800.00	13.88	165.80	6,712.82	-730.34	184.86	736.17	0.00	0.00	0.00
6,900.00	13.88	165.80	6,809.90	-753.61	190.74	759.62	0.00	0.00	0.00
7,000.00	13.88	165.80	6,906.98	-776.87	196.63	783.07	0.00	0.00	0.00
7,100.00	13.88	165.80	7,004.06	-800.13	202.52	806.52	0.00	0.00	0.00
7,200.00	13.88	165.80	7,101.14	-823.40	208.41	829.97	0.00	0.00	0.00
7,300.00	13.88	165.80	7,198.21	-846.66	214.30	853.42	0.00	0.00	0.00
7,400.00	13.88	165.80	7,295.29	-869.92	220.18	876.87	0.00	0.00	0.00
7,500.00	13.88	165.80	7,392.37	-893.19	226.07	900.32	0.00	0.00	0.00
7,600.00	13.88	165.80	7,489.45	-916.45	231.96	923.77	0.00	0.00	0.00
7,700.00	13.88	165.80	7,586.53	-939.71	237.85	947.22	0.00	0.00	0.00
7,800.00	13.88	165.80	7,683.60	-962.98	243.74	970.67	0.00	0.00	0.00
7,900.00	13.88	165.80	7,780.68	-986.24	249.63	994.11	0.00	0.00	0.00
8,000.00	13.88	165.80	7,877.76	-1,009.50	255.51	1,017.56	0.00	0.00	0.00
8,035.67	13.88	165.80	7,912.38	-1,017.80	257.61	1,025.93	0.00	0.00	0.00
Start Drop -1.50									
8,100.00	12.92	165.80	7,974.96	-1,032.26	261.27	1,040.50	1.50	-1.50	0.00
8,200.00	11.42	165.80	8,072.71	-1,052.69	266.45	1,061.10	1.50	-1.50	0.00
8,300.00	9.92	165.80	8,170.98	-1,070.64	270.99	1,079.19	1.50	-1.50	0.00
8,400.00	8.42	165.80	8,269.70	-1,086.09	274.90	1,094.76	1.50	-1.50	0.00
8,500.00	6.92	165.80	8,368.80	-1,099.03	278.17	1,107.80	1.50	-1.50	0.00
8,600.00	5.42	165.80	8,468.22	-1,109.45	280.81	1,118.30	1.50	-1.50	0.00
8,700.00	3.92	165.80	8,567.89	-1,117.34	282.81	1,126.26	1.50	-1.50	0.00
8,800.00	2.42	165.80	8,667.73	-1,122.70	284.16	1,131.66	1.50	-1.50	0.00
8,900.00	0.92	165.80	8,767.69	-1,125.52	284.88	1,134.51	1.50	-1.50	0.00
8,961.32	0.00	0.00	8,829.00	-1,126.00	285.00	1,134.99	1.50	-1.50	0.00
Start 2615.04 hold at 8961.32 MD									
9,000.00	0.00	0.00	8,867.68	-1,126.00	285.00	1,134.99	0.00	0.00	0.00
9,100.00	0.00	0.00	8,967.68	-1,126.00	285.00	1,134.99	0.00	0.00	0.00
9,200.00	0.00	0.00	9,067.68	-1,126.00	285.00	1,134.99	0.00	0.00	0.00
9,300.00	0.00	0.00	9,167.68	-1,126.00	285.00	1,134.99	0.00	0.00	0.00
9,400.00	0.00	0.00	9,267.68	-1,126.00	285.00	1,134.99	0.00	0.00	0.00
9,500.00	0.00	0.00	9,367.68	-1,126.00	285.00	1,134.99	0.00	0.00	0.00
9,600.00	0.00	0.00	9,467.68	-1,126.00	285.00	1,134.99	0.00	0.00	0.00
9,700.00	0.00	0.00	9,567.68	-1,126.00	285.00	1,134.99	0.00	0.00	0.00
9,800.00	0.00	0.00	9,667.68	-1,126.00	285.00	1,134.99	0.00	0.00	0.00



Total Directional Services

Planning Report



Database:	EDM 5000.15 Single User Db	Local Co-ordinate Reference:	Well Tatanka Fed Com 602H
Company:	Franklin Mountain Energy	TVD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Project:	Lea County, NM (NAD83)	MD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Site:	Tatanka Fed Com	North Reference:	Grid
Well:	Tatanka Fed Com 602H	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)
9,900.00	0.00	0.00	9,767.68	-1,126.00	285.00	1,134.99	0.00	0.00	0.00
10,000.00	0.00	0.00	9,867.68	-1,126.00	285.00	1,134.99	0.00	0.00	0.00
10,100.00	0.00	0.00	9,967.68	-1,126.00	285.00	1,134.99	0.00	0.00	0.00
10,200.00	0.00	0.00	10,067.68	-1,126.00	285.00	1,134.99	0.00	0.00	0.00
10,300.00	0.00	0.00	10,167.68	-1,126.00	285.00	1,134.99	0.00	0.00	0.00
10,400.00	0.00	0.00	10,267.68	-1,126.00	285.00	1,134.99	0.00	0.00	0.00
10,500.00	0.00	0.00	10,367.68	-1,126.00	285.00	1,134.99	0.00	0.00	0.00
10,600.00	0.00	0.00	10,467.68	-1,126.00	285.00	1,134.99	0.00	0.00	0.00
10,700.00	0.00	0.00	10,567.68	-1,126.00	285.00	1,134.99	0.00	0.00	0.00
10,800.00	0.00	0.00	10,667.68	-1,126.00	285.00	1,134.99	0.00	0.00	0.00
10,900.00	0.00	0.00	10,767.68	-1,126.00	285.00	1,134.99	0.00	0.00	0.00
11,000.00	0.00	0.00	10,867.68	-1,126.00	285.00	1,134.99	0.00	0.00	0.00
11,100.00	0.00	0.00	10,967.68	-1,126.00	285.00	1,134.99	0.00	0.00	0.00
11,200.00	0.00	0.00	11,067.68	-1,126.00	285.00	1,134.99	0.00	0.00	0.00
11,300.00	0.00	0.00	11,167.68	-1,126.00	285.00	1,134.99	0.00	0.00	0.00
11,400.00	0.00	0.00	11,267.68	-1,126.00	285.00	1,134.99	0.00	0.00	0.00
11,500.00	0.00	0.00	11,367.68	-1,126.00	285.00	1,134.99	0.00	0.00	0.00
11,576.36	0.00	0.00	11,444.04	-1,126.00	285.00	1,134.99	0.00	0.00	0.00
Start DLS 10.00 TFO 179.44									
11,600.00	2.36	179.44	11,467.68	-1,126.49	285.00	1,135.48	10.00	10.00	0.00
11,650.00	7.36	179.44	11,517.48	-1,130.73	285.05	1,139.71	10.00	10.00	0.00
11,700.00	12.36	179.44	11,566.73	-1,139.29	285.13	1,148.28	10.00	10.00	0.00
11,750.00	17.36	179.44	11,615.04	-1,152.11	285.26	1,161.09	10.00	10.00	0.00
11,800.00	22.36	179.44	11,662.05	-1,169.09	285.42	1,178.07	10.00	10.00	0.00
11,850.00	27.36	179.44	11,707.40	-1,190.11	285.63	1,199.08	10.00	10.00	0.00
11,900.00	32.36	179.44	11,750.75	-1,215.00	285.87	1,223.97	10.00	10.00	0.00
11,950.00	37.36	179.44	11,791.76	-1,243.57	286.15	1,252.53	10.00	10.00	0.00
12,000.00	42.36	179.44	11,830.12	-1,275.61	286.47	1,284.56	10.00	10.00	0.00
12,050.00	47.36	179.44	11,865.55	-1,310.87	286.81	1,319.81	10.00	10.00	0.00
12,100.00	52.36	179.44	11,897.77	-1,349.08	287.19	1,358.01	10.00	10.00	0.00
12,150.00	57.36	179.44	11,926.54	-1,389.95	287.59	1,398.88	10.00	10.00	0.00
12,200.00	62.36	179.44	11,951.63	-1,433.18	288.01	1,442.09	10.00	10.00	0.00
12,250.00	67.36	179.44	11,972.86	-1,478.43	288.46	1,487.33	10.00	10.00	0.00
12,300.00	72.36	179.44	11,990.07	-1,525.35	288.92	1,534.25	10.00	10.00	0.00
12,350.00	77.36	179.44	12,003.12	-1,573.60	289.39	1,582.48	10.00	10.00	0.00
12,400.00	82.36	179.44	12,011.92	-1,622.80	289.87	1,631.67	10.00	10.00	0.00
12,450.00	87.36	179.44	12,016.39	-1,672.58	290.36	1,681.44	10.00	10.00	0.00
12,476.36	90.00	179.44	12,017.00	-1,698.93	290.62	1,707.78	10.00	10.00	0.00
Start 9710.95 hold at 12476.36 MD - LP (Tatanka Fed Com 602H)									
12,500.00	90.00	179.44	12,017.00	-1,722.57	290.85	1,731.42	0.00	0.00	0.00
12,600.00	90.00	179.44	12,017.00	-1,822.57	291.83	1,831.39	0.00	0.00	0.00
12,700.00	90.00	179.44	12,017.00	-1,922.56	292.81	1,931.36	0.00	0.00	0.00
12,800.00	90.00	179.44	12,017.00	-2,022.56	293.79	2,031.33	0.00	0.00	0.00
12,900.00	90.00	179.44	12,017.00	-2,122.55	294.77	2,131.30	0.00	0.00	0.00
13,000.00	90.00	179.44	12,017.00	-2,222.55	295.75	2,231.28	0.00	0.00	0.00
13,100.00	90.00	179.44	12,017.00	-2,322.54	296.74	2,331.25	0.00	0.00	0.00
13,200.00	90.00	179.44	12,017.00	-2,422.54	297.72	2,431.22	0.00	0.00	0.00
13,300.00	90.00	179.44	12,017.00	-2,522.53	298.70	2,531.19	0.00	0.00	0.00
13,400.00	90.00	179.44	12,017.00	-2,622.53	299.68	2,631.16	0.00	0.00	0.00
13,500.00	90.00	179.44	12,017.00	-2,722.52	300.66	2,731.13	0.00	0.00	0.00
13,600.00	90.00	179.44	12,017.00	-2,822.52	301.64	2,831.10	0.00	0.00	0.00
13,700.00	90.00	179.44	12,017.00	-2,922.52	302.62	2,931.07	0.00	0.00	0.00
13,800.00	90.00	179.44	12,017.00	-3,022.51	303.60	3,031.05	0.00	0.00	0.00
13,900.00	90.00	179.44	12,017.00	-3,122.51	304.58	3,131.02	0.00	0.00	0.00



Total Directional Services

Planning Report



Database:	EDM 5000.15 Single User Db	Local Co-ordinate Reference:	Well Tatanka Fed Com 602H
Company:	Franklin Mountain Energy	TVD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Project:	Lea County, NM (NAD83)	MD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Site:	Tatanka Fed Com	North Reference:	Grid
Well:	Tatanka Fed Com 602H	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	179.44	12,017.00	-3,222.50	305.56	3,230.99	0.00	0.00	0.00
14,100.00	90.00	179.44	12,017.00	-3,322.50	306.54	3,330.96	0.00	0.00	0.00
14,200.00	90.00	179.44	12,017.00	-3,422.49	307.52	3,430.93	0.00	0.00	0.00
14,300.00	90.00	179.44	12,017.00	-3,522.49	308.50	3,530.90	0.00	0.00	0.00
14,400.00	90.00	179.44	12,017.00	-3,622.48	309.49	3,630.87	0.00	0.00	0.00
14,500.00	90.00	179.44	12,017.00	-3,722.48	310.47	3,730.84	0.00	0.00	0.00
14,600.00	90.00	179.44	12,017.00	-3,822.47	311.45	3,830.81	0.00	0.00	0.00
14,700.00	90.00	179.44	12,017.00	-3,922.47	312.43	3,930.79	0.00	0.00	0.00
14,800.00	90.00	179.44	12,017.00	-4,022.46	313.41	4,030.76	0.00	0.00	0.00
14,900.00	90.00	179.44	12,017.00	-4,122.46	314.39	4,130.73	0.00	0.00	0.00
15,000.00	90.00	179.44	12,017.00	-4,222.45	315.37	4,230.70	0.00	0.00	0.00
15,100.00	90.00	179.44	12,017.00	-4,322.45	316.35	4,330.67	0.00	0.00	0.00
15,200.00	90.00	179.44	12,017.00	-4,422.44	317.33	4,430.64	0.00	0.00	0.00
15,300.00	90.00	179.44	12,017.00	-4,522.44	318.31	4,530.61	0.00	0.00	0.00
15,400.00	90.00	179.44	12,017.00	-4,622.43	319.29	4,630.58	0.00	0.00	0.00
15,500.00	90.00	179.44	12,017.00	-4,722.43	320.27	4,730.56	0.00	0.00	0.00
15,600.00	90.00	179.44	12,017.00	-4,822.42	321.25	4,830.53	0.00	0.00	0.00
15,700.00	90.00	179.44	12,017.00	-4,922.42	322.24	4,930.50	0.00	0.00	0.00
15,800.00	90.00	179.44	12,017.00	-5,022.41	323.22	5,030.47	0.00	0.00	0.00
15,900.00	90.00	179.44	12,017.00	-5,122.41	324.20	5,130.44	0.00	0.00	0.00
16,000.00	90.00	179.44	12,017.00	-5,222.40	325.18	5,230.41	0.00	0.00	0.00
16,100.00	90.00	179.44	12,017.00	-5,322.40	326.16	5,330.38	0.00	0.00	0.00
16,200.00	90.00	179.44	12,017.00	-5,422.39	327.14	5,430.35	0.00	0.00	0.00
16,300.00	90.00	179.44	12,017.00	-5,522.39	328.12	5,530.33	0.00	0.00	0.00
16,400.00	90.00	179.44	12,017.00	-5,622.39	329.10	5,630.30	0.00	0.00	0.00
16,500.00	90.00	179.44	12,017.00	-5,722.38	330.08	5,730.27	0.00	0.00	0.00
16,600.00	90.00	179.44	12,017.00	-5,822.38	331.06	5,830.24	0.00	0.00	0.00
16,700.00	90.00	179.44	12,017.00	-5,922.37	332.04	5,930.21	0.00	0.00	0.00
16,800.00	90.00	179.44	12,017.00	-6,022.37	333.02	6,030.18	0.00	0.00	0.00
16,900.00	90.00	179.44	12,017.00	-6,122.36	334.00	6,130.15	0.00	0.00	0.00
17,000.00	90.00	179.44	12,017.00	-6,222.36	334.99	6,230.12	0.00	0.00	0.00
17,100.00	90.00	179.44	12,017.00	-6,322.35	335.97	6,330.09	0.00	0.00	0.00
17,200.00	90.00	179.44	12,017.00	-6,422.35	336.95	6,430.07	0.00	0.00	0.00
17,300.00	90.00	179.44	12,017.00	-6,522.34	337.93	6,530.04	0.00	0.00	0.00
17,400.00	90.00	179.44	12,017.00	-6,622.34	338.91	6,630.01	0.00	0.00	0.00
17,500.00	90.00	179.44	12,017.00	-6,722.33	339.89	6,729.98	0.00	0.00	0.00
17,600.00	90.00	179.44	12,017.00	-6,822.33	340.87	6,829.95	0.00	0.00	0.00
17,700.00	90.00	179.44	12,017.00	-6,922.32	341.85	6,929.92	0.00	0.00	0.00
17,800.00	90.00	179.44	12,017.00	-7,022.32	342.83	7,029.89	0.00	0.00	0.00
17,900.00	90.00	179.44	12,017.00	-7,122.31	343.81	7,129.86	0.00	0.00	0.00
18,000.00	90.00	179.44	12,017.00	-7,222.31	344.79	7,229.84	0.00	0.00	0.00
18,100.00	90.00	179.44	12,017.00	-7,322.30	345.77	7,329.81	0.00	0.00	0.00
18,200.00	90.00	179.44	12,017.00	-7,422.30	346.75	7,429.78	0.00	0.00	0.00
18,300.00	90.00	179.44	12,017.00	-7,522.29	347.74	7,529.75	0.00	0.00	0.00
18,400.00	90.00	179.44	12,017.00	-7,622.29	348.72	7,629.72	0.00	0.00	0.00
18,500.00	90.00	179.44	12,017.00	-7,722.28	349.70	7,729.69	0.00	0.00	0.00
18,600.00	90.00	179.44	12,017.00	-7,822.28	350.68	7,829.66	0.00	0.00	0.00
18,700.00	90.00	179.44	12,017.00	-7,922.27	351.66	7,929.63	0.00	0.00	0.00
18,800.00	90.00	179.44	12,017.00	-8,022.27	352.64	8,029.61	0.00	0.00	0.00
18,900.00	90.00	179.44	12,017.00	-8,122.27	353.62	8,129.58	0.00	0.00	0.00
19,000.00	90.00	179.44	12,017.00	-8,222.26	354.60	8,229.55	0.00	0.00	0.00
19,100.00	90.00	179.44	12,017.00	-8,322.26	355.58	8,329.52	0.00	0.00	0.00
19,200.00	90.00	179.44	12,017.00	-8,422.25	356.56	8,429.49	0.00	0.00	0.00
19,300.00	90.00	179.44	12,017.00	-8,522.25	357.54	8,529.46	0.00	0.00	0.00



Total Directional Services

Planning Report



Database:	EDM 5000.15 Single User Db	Local Co-ordinate Reference:	Well Tatanka Fed Com 602H
Company:	Franklin Mountain Energy	TVD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Project:	Lea County, NM (NAD83)	MD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Site:	Tatanka Fed Com	North Reference:	Grid
Well:	Tatanka Fed Com 602H	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)	
19,400.00	90.00	179.44	12,017.00	-8,622.24	358.52	8,629.43	0.00	0.00	0.00	
19,500.00	90.00	179.44	12,017.00	-8,722.24	359.50	8,729.40	0.00	0.00	0.00	
19,600.00	90.00	179.44	12,017.00	-8,822.23	360.48	8,829.38	0.00	0.00	0.00	
19,700.00	90.00	179.44	12,017.00	-8,922.23	361.47	8,929.35	0.00	0.00	0.00	
19,800.00	90.00	179.44	12,017.00	-9,022.22	362.45	9,029.32	0.00	0.00	0.00	
19,900.00	90.00	179.44	12,017.00	-9,122.22	363.43	9,129.29	0.00	0.00	0.00	
20,000.00	90.00	179.44	12,017.00	-9,222.21	364.41	9,229.26	0.00	0.00	0.00	
20,100.00	90.00	179.44	12,017.00	-9,322.21	365.39	9,329.23	0.00	0.00	0.00	
20,200.00	90.00	179.44	12,017.00	-9,422.20	366.37	9,429.20	0.00	0.00	0.00	
20,300.00	90.00	179.44	12,017.00	-9,522.20	367.35	9,529.17	0.00	0.00	0.00	
20,400.00	90.00	179.44	12,017.00	-9,622.19	368.33	9,629.14	0.00	0.00	0.00	
20,500.00	90.00	179.44	12,017.00	-9,722.19	369.31	9,729.12	0.00	0.00	0.00	
20,600.00	90.00	179.44	12,017.00	-9,822.18	370.29	9,829.09	0.00	0.00	0.00	
20,700.00	90.00	179.44	12,017.00	-9,922.18	371.27	9,929.06	0.00	0.00	0.00	
20,800.00	90.00	179.44	12,017.00	-10,022.17	372.25	10,029.03	0.00	0.00	0.00	
20,900.00	90.00	179.44	12,017.00	-10,122.17	373.23	10,129.00	0.00	0.00	0.00	
21,000.00	90.00	179.44	12,017.00	-10,222.16	374.22	10,228.97	0.00	0.00	0.00	
21,100.00	90.00	179.44	12,017.00	-10,322.16	375.20	10,328.94	0.00	0.00	0.00	
21,200.00	90.00	179.44	12,017.00	-10,422.15	376.18	10,428.91	0.00	0.00	0.00	
21,300.00	90.00	179.44	12,017.00	-10,522.15	377.16	10,528.89	0.00	0.00	0.00	
21,400.00	90.00	179.44	12,017.00	-10,622.14	378.14	10,628.86	0.00	0.00	0.00	
21,500.00	90.00	179.44	12,017.00	-10,722.14	379.12	10,728.83	0.00	0.00	0.00	
21,600.00	90.00	179.44	12,017.00	-10,822.14	380.10	10,828.80	0.00	0.00	0.00	
21,700.00	90.00	179.44	12,017.00	-10,922.13	381.08	10,928.77	0.00	0.00	0.00	
21,800.00	90.00	179.44	12,017.00	-11,022.13	382.06	11,028.74	0.00	0.00	0.00	
21,900.00	90.00	179.44	12,017.00	-11,122.12	383.04	11,128.71	0.00	0.00	0.00	
22,000.00	90.00	179.44	12,017.00	-11,222.12	384.02	11,228.68	0.00	0.00	0.00	
22,100.00	90.00	179.44	12,017.00	-11,322.11	385.00	11,328.66	0.00	0.00	0.00	
22,187.30	90.00	179.44	12,017.00	-11,409.41	385.86	11,415.93	0.00	0.00	0.00	
TD at 22187.30 - PBHL (Tatanka Fed Com 602H)										

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
SHL (Tatanka Fed Com 602H) - hit/miss target - Shape - Point	0.00	0.00	0.00	0.00	0.00	395,094.73	848,670.14	32.082309	-103.341034
PBHL (Tatanka Fed Com 602H) - plan hits target center - Point	0.00	0.00	12,017.00	-11,409.41	385.86	383,685.32	849,056.00	32.050940	-103.340127
LP (Tatanka Fed Com 602H) - plan hits target center - Point	0.00	0.01	12,017.00	-1,698.93	290.62	393,395.80	848,960.76	32.077632	-103.340146



Total Directional Services

Planning Report



Database:	EDM 5000.15 Single User Db	Local Co-ordinate Reference:	Well Tatanka Fed Com 602H
Company:	Franklin Mountain Energy	TVD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Project:	Lea County, NM (NAD83)	MD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Site:	Tatanka Fed Com	North Reference:	Grid
Well:	Tatanka Fed Com 602H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
3,200.00	3,200.00	0.00	0.00	Start Build 1.50
4,125.65	4,116.62	-108.20	27.39	Start 3910.01 hold at 4125.65 MD
8,035.67	7,912.38	-1,017.80	257.61	Start Drop -1.50
8,961.32	8,829.00	-1,126.00	285.00	Start 2615.04 hold at 8961.32 MD
11,576.36	11,444.04	-1,126.00	285.00	Start DLS 10.00 TFO 179.44
12,476.36	12,017.00	-1,698.93	290.62	Start 9710.95 hold at 12476.36 MD
22,187.30	12,017.00	-11,409.41	385.86	TD at 22187.30



Franklin Mountain Energy

Lea County, NM (NAD83)

Tatanka Fed Com

Tatanka Fed Com 602H

OH

Plan #1

Anticollision Report

25 June, 2021





Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well Tatanka Fed Com 602H
Project:	Lea County, NM (NAD83)	TVD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 602H	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	6/25/2021
From (usft)	To (usft)	Survey (Wellbore)
0.00	22,187.30	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						
Tatanka Fed Com						
Tatanka Fed Com 101H - OH - Plan #1	4,235.44	4,031.64	1,096.10	1,075.93	54.330	CC, ES
Tatanka Fed Com 101H - OH - Plan #1	22,187.30	18,762.37	3,631.46	3,472.54	22.851	SF
Tatanka Fed Com 102H - OH - Plan #1	8,380.40	8,278.15	201.08	156.25	4.485	CC, ES
Tatanka Fed Com 102H - OH - Plan #1	8,400.00	8,295.93	201.18	156.26	4.478	SF
Tatanka Fed Com 103H - OH - Plan #1	8,526.38	8,344.85	1,346.24	1,301.22	29.905	CC, ES
Tatanka Fed Com 103H - OH - Plan #1	22,187.30	18,679.53	3,577.51	3,433.02	24.760	SF
Tatanka Fed Com 104H - OH - Plan #1	2,000.00	1,983.10	1,924.94	1,915.17	197.089	CC, ES
Tatanka Fed Com 104H - OH - Plan #1	22,187.30	18,771.31	4,396.32	4,204.59	22.929	SF
Tatanka Fed Com 501H - OH - Plan #1	4,476.67	4,279.43	1,029.81	1,008.37	48.030	CC
Tatanka Fed Com 501H - OH - Plan #1	4,500.00	4,300.00	1,029.88	1,008.33	47.793	ES
Tatanka Fed Com 501H - OH - Plan #1	22,187.30	20,841.66	2,099.87	1,879.99	9.550	SF
Tatanka Fed Com 502H - OH - Plan #1	7,988.18	7,877.46	180.86	138.32	4.252	CC
Tatanka Fed Com 502H - OH - Plan #1	8,000.00	7,888.94	180.88	138.28	4.246	ES
Tatanka Fed Com 502H - OH - Plan #1	10,600.00	10,492.37	204.75	149.79	3.725	SF
Tatanka Fed Com 503H - OH - Plan #1	10,589.47	10,455.95	1,334.63	1,279.70	24.296	CC
Tatanka Fed Com 503H - OH - Plan #1	10,600.00	10,464.92	1,334.65	1,279.67	24.279	ES
Tatanka Fed Com 503H - OH - Plan #1	22,187.30	20,839.86	1,848.40	1,647.28	9.190	SF
Tatanka Fed Com 504H - OH - Plan #1	4,160.11	3,819.05	1,868.76	1,849.29	95.979	CC, ES
Tatanka Fed Com 504H - OH - Plan #1	22,187.30	20,814.97	3,110.27	2,867.05	12.788	SF
Tatanka Fed Com 601H - OH - Plan #2	4,865.48	4,728.28	1,614.30	1,590.49	67.785	CC
Tatanka Fed Com 601H - OH - Plan #2	22,187.30	22,129.15	1,703.10	1,442.24	6.529	ES, SF
Tatanka Fed Com 603H - OH - Plan #1	3,116.40	3,117.20	99.98	84.51	6.463	CC
Tatanka Fed Com 603H - OH - Plan #1	3,200.00	3,200.00	99.99	84.09	6.291	ES
Tatanka Fed Com 603H - OH - Plan #1	22,187.30	22,444.37	1,111.52	839.96	4.093	SF
Tatanka Fed Com 604H - OH - Plan #2	12,116.68	11,995.19	2,550.48	2,487.41	40.436	CC
Tatanka Fed Com 604H - OH - Plan #2	22,187.30	22,051.86	2,550.80	2,289.66	9.768	ES, SF
Tatanka Fed Com 702H - OH - Plan #1	3,200.00	3,200.00	25.00	9.11	1.573	CC
Tatanka Fed Com 702H - OH - Plan #1	3,300.00	3,299.99	25.34	8.96	1.547	ES, SF
Tatanka Fed Com 703H - OH - Plan #1	3,116.43	3,117.13	49.99	34.52	3.231	CC
Tatanka Fed Com 703H - OH - Plan #1	3,200.00	3,200.69	49.99	34.10	3.145	ES
Tatanka Fed Com 703H - OH - Plan #1	22,187.30	22,642.12	692.31	456.58	2.937	SF
Tatanka Fed Com 704H - OH - Plan #2	11,576.36	11,469.04	1,562.54	1,502.92	26.207	CC
Tatanka Fed Com 704H - OH - Plan #2	22,187.30	22,294.27	1,566.16	1,305.63	6.011	ES, SF
Tatanka Fed Com 705H - OH - Plan #2	4,226.23	3,804.37	2,796.36	2,776.66	141.902	CC
Tatanka Fed Com 705H - OH - Plan #2	22,187.30	22,054.29	2,830.71	2,569.77	10.848	ES, SF
Tatanka Fed Com 801H - OH - Plan #2	4,731.22	4,600.59	1,584.73	1,561.55	68.378	CC
Tatanka Fed Com 801H - OH - Plan #2	4,900.00	4,763.96	1,585.29	1,561.21	65.826	ES

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 Tatanka Fed Com 602H
Project:	Lea County, NM (NAD83)	TVD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 602H	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						
Tatanka Fed Com						
Tatanka Fed Com 801H - OH - Plan #2	22,187.30	22,865.07	1,847.52	1,603.96	7.586	SF
Tatanka Fed Com 802H - OH - Plan #2	7,532.87	7,487.93	813.39	773.40	20.338	CC, ES
Tatanka Fed Com 802H - OH - Plan #2	22,187.30	22,787.51	1,044.18	824.51	4.753	SF
Tatanka Fed Com 803H - OH - Plan #1	3,420.57	3,420.89	24.42	7.47	1.441	Level 3, CC
Tatanka Fed Com 803H - OH - Plan #1	3,500.00	3,500.25	24.55	7.23	1.418	Level 3, ES
Tatanka Fed Com 803H - OH - Plan #1	3,600.00	3,600.24	25.07	7.30	1.411	Level 3, SF
Tatanka Fed Com 804H - OH - Plan #1	3,340.21	3,340.31	74.57	58.00	4.499	CC
Tatanka Fed Com 804H - OH - Plan #1	3,400.00	3,399.26	74.83	57.97	4.440	ES
Tatanka Fed Com 804H - OH - Plan #1	22,187.30	22,812.55	1,068.16	819.69	4.299	SF
Tatanka Fed Com 805H - OH - Plan #2	11,576.36	11,421.64	1,906.16	1,846.64	32.026	CC
Tatanka Fed Com 805H - OH - Plan #2	22,187.30	22,640.57	1,976.06	1,722.80	7.803	ES, SF
Tatanka Fed Com 806H - OH - Plan #2	5,052.44	4,652.26	2,822.65	2,798.49	116.819	CC
Tatanka Fed Com 806H - OH - Plan #2	22,187.30	22,519.85	2,858.84	2,599.97	11.044	ES, SF

Offset Design

Tatanka Fed Com - Tatanka 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						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	-156.16	-1,021.84	-451.49	1,117.21				
100.00	100.00	87.10	87.10	0.13	0.11	-156.16	-1,021.84	-451.49	1,117.14	1,116.97	0.17	6,714.217	
200.00	200.00	187.10	187.10	0.48	0.44	-156.16	-1,021.84	-451.49	1,117.14	1,116.49	0.65	1,712.062	
300.00	300.00	287.10	287.10	0.84	0.80	-156.16	-1,021.84	-451.49	1,117.14	1,115.98	1.16	963.792	
400.00	400.00	387.10	387.10	1.20	1.15	-156.16	-1,021.84	-451.49	1,117.14	1,115.47	1.67	670.583	
500.00	500.00	487.10	487.10	1.56	1.51	-156.16	-1,021.84	-451.49	1,117.14	1,114.97	2.17	514.147	
600.00	600.00	587.10	587.10	1.92	1.87	-156.16	-1,021.84	-451.49	1,117.14	1,114.46	2.68	416.888	
700.00	700.00	687.10	687.10	2.28	2.23	-156.16	-1,021.84	-451.49	1,117.14	1,113.95	3.19	350.570	
800.00	800.00	787.10	787.10	2.63	2.59	-156.16	-1,021.84	-451.49	1,117.14	1,113.45	3.69	302.455	
900.00	900.00	887.10	887.10	2.99	2.95	-156.16	-1,021.84	-451.49	1,117.14	1,112.94	4.20	265.954	
1,000.00	1,000.00	987.10	987.10	3.35	3.31	-156.16	-1,021.84	-451.49	1,117.14	1,112.43	4.71	237.313	
1,100.00	1,100.00	1,087.10	1,087.10	3.71	3.66	-156.16	-1,021.84	-451.49	1,117.14	1,111.92	5.21	214.242	
1,200.00	1,200.00	1,187.10	1,187.10	4.07	4.02	-156.16	-1,021.84	-451.49	1,117.14	1,111.42	5.72	195.258	
1,300.00	1,300.00	1,287.10	1,287.10	4.43	4.38	-156.16	-1,021.84	-451.49	1,117.14	1,110.91	6.23	179.365	
1,400.00	1,400.00	1,387.10	1,387.10	4.79	4.74	-156.16	-1,021.84	-451.49	1,117.14	1,110.40	6.74	165.865	
1,500.00	1,500.00	1,487.10	1,487.10	5.14	5.10	-156.16	-1,021.84	-451.49	1,117.14	1,109.90	7.24	154.254	
1,600.00	1,600.00	1,587.10	1,587.10	5.50	5.46	-156.16	-1,021.84	-451.49	1,117.14	1,109.39	7.75	144.163	
1,700.00	1,700.00	1,687.10	1,687.10	5.86	5.81	-156.16	-1,021.84	-451.49	1,117.14	1,108.88	8.26	135.311	
1,800.00	1,800.00	1,787.10	1,787.10	6.22	6.17	-156.16	-1,021.84	-451.49	1,117.14	1,108.38	8.76	127.483	
1,900.00	1,900.00	1,887.10	1,887.10	6.58	6.53	-156.16	-1,021.84	-451.49	1,117.14	1,107.87	9.27	120.511	
2,000.00	2,000.00	1,987.10	1,987.10	6.94	6.89	-156.16	-1,021.84	-451.49	1,117.14	1,107.36	9.78	114.263	
2,100.00	2,100.00	2,087.10	2,087.10	7.29	7.25	-156.16	-1,021.84	-451.49	1,117.14	1,106.86	10.28	108.630	
2,200.00	2,200.00	2,187.10	2,187.10	7.65	7.61	-156.16	-1,021.84	-451.49	1,117.14	1,106.35	10.79	103.527	
2,300.00	2,300.00	2,287.10	2,287.10	8.01	7.97	-156.16	-1,021.84	-451.49	1,117.14	1,105.84	11.30	98.881	
2,400.00	2,400.00	2,387.10	2,387.10	8.37	8.32	-156.16	-1,021.84	-451.49	1,117.14	1,105.33	11.80	94.635	
2,500.00	2,500.00	2,487.10	2,487.10	8.73	8.68	-156.16	-1,021.84	-451.49	1,117.14	1,104.83	12.31	90.738	
2,600.00	2,600.00	2,587.10	2,587.10	9.09	9.04	-156.16	-1,021.84	-451.49	1,117.14	1,104.32	12.82	87.149	
2,700.00	2,700.00	2,687.10	2,687.10	9.45	9.40	-156.16	-1,021.84	-451.49	1,117.14	1,103.81	13.33	83.834	
2,800.00	2,800.00	2,787.10	2,787.10	9.80	9.76	-156.16	-1,021.84	-451.49	1,117.14	1,103.31	13.83	80.762	
2,900.00	2,900.00	2,887.10	2,887.10	10.16	10.12	-156.16	-1,021.84	-451.49	1,117.14	1,102.80	14.34	77.906	

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 Tatanka Fed Com 602H
Project:	Lea County, NM (NAD83)	TVD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 602H	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		
3,000.00	3,000.00	2,987.10	2,987.10	10.52	10.47	-156.16	-1,021.84	-451.49	1,117.14	1,102.29	14.85	75.246		
3,100.00	3,100.00	3,087.10	3,087.10	10.88	10.83	-156.16	-1,021.84	-451.49	1,117.14	1,101.79	15.35	72.762		
3,200.00	3,200.00	3,187.10	3,187.10	11.24	11.19	-156.16	-1,021.84	-451.49	1,117.14	1,101.28	15.86	70.436		
3,300.00	3,299.99	3,272.66	3,272.65	11.58	11.49		-1,022.06	-452.14	1,116.67	1,100.36	16.31	68.462		
3,400.00	3,399.91	3,355.96	3,355.92	11.90	11.77	38.31	-1,022.87	-454.50	1,115.62	1,098.89	16.74	66.662		
3,500.00	3,499.69	3,439.02	3,438.87	12.23	12.05	38.66	-1,024.26	-458.56	1,114.05	1,096.89	17.16	64.934		
3,600.00	3,599.27	3,521.73	3,521.34	12.56	12.33	39.15	-1,026.23	-464.30	1,111.99	1,094.41	17.58	63.271		
3,700.00	3,698.57	3,600.00	3,599.27	12.89	12.60	39.75	-1,028.62	-471.28	1,109.55	1,091.57	17.98	61.717		
3,800.00	3,797.54	3,685.57	3,684.26	13.22	12.90	40.54	-1,031.83	-480.65	1,106.80	1,088.39	18.41	60.135		
3,900.00	3,896.09	3,766.48	3,764.41	13.57	13.18	41.44	-1,035.43	-491.15	1,103.89	1,085.07	18.82	58.666		
4,000.00	3,994.16	3,846.58	3,843.49	13.92	13.46	42.45	-1,039.54	-503.14	1,100.96	1,081.73	19.22	57.268		
4,100.00	4,091.70	3,925.75	3,921.39	14.28	13.75	43.59	-1,044.12	-516.52	1,098.18	1,078.55	19.63	55.943		
4,125.65	4,116.62	3,945.90	3,941.17	14.37	13.82	43.90	-1,045.37	-520.17	1,097.51	1,077.78	19.73	55.616		
4,200.00	4,188.79	4,000.00	3,994.16	14.65	14.02	44.74	-1,048.90	-530.45	1,096.26	1,076.25	20.01	54.778		
4,235.44	4,223.19	4,031.64	4,025.08	14.79	14.14	45.24	-1,051.07	-536.80	1,096.10	1,075.93	20.17	54.330 CC, ES		
4,300.00	4,285.87	4,081.70	4,073.90	15.04	14.33	46.05	-1,054.68	-547.33	1,096.60	1,076.17	20.43	53.671		
4,400.00	4,382.95	4,158.70	4,148.66	15.43	14.63	47.33	-1,060.64	-564.71	1,099.37	1,078.54	20.83	52.782		
4,500.00	4,480.03	4,234.97	4,222.35	15.83	14.93	48.64	-1,067.02	-583.32	1,104.63	1,083.41	21.22	52.055		
4,600.00	4,577.11	4,310.47	4,294.89	16.23	15.24	49.96	-1,073.80	-603.12	1,112.44	1,090.83	21.61	51.485		
4,700.00	4,674.18	4,386.56	4,367.57	16.65	15.56	51.32	-1,081.10	-624.43	1,122.84	1,100.85	22.00	51.046		
4,800.00	4,771.26	4,479.64	4,456.25	17.07	15.97	52.97	-1,090.27	-651.19	1,134.97	1,112.47	22.50	50.442		
4,900.00	4,868.34	4,572.73	4,544.93	17.49	16.38	54.59	-1,099.45	-677.96	1,148.14	1,125.13	23.01	49.895		
5,000.00	4,965.42	4,665.81	4,633.61	17.92	16.81	56.18	-1,108.62	-704.72	1,162.30	1,138.77	23.53	49.402		
5,100.00	5,062.50	4,758.90	4,722.30	18.36	17.24	57.73	-1,117.79	-731.48	1,177.43	1,153.38	24.05	48.958		
5,200.00	5,159.57	4,851.98	4,810.98	18.80	17.69	59.25	-1,126.96	-758.25	1,193.49	1,168.91	24.58	48.561		
5,300.00	5,256.65	4,945.07	4,899.66	19.25	18.14	60.73	-1,136.13	-785.01	1,210.43	1,185.32	25.11	48.206		
5,400.00	5,353.73	5,038.15	4,988.34	19.70	18.60	62.17	-1,145.30	-811.77	1,228.23	1,202.59	25.65	47.890		
5,500.00	5,450.81	5,131.24	5,077.02	20.15	19.06	63.57	-1,154.47	-838.54	1,246.85	1,220.66	26.19	47.611		
5,600.00	5,547.89	5,224.32	5,165.70	20.61	19.53	64.94	-1,163.64	-865.30	1,266.25	1,239.51	26.73	47.364		
5,700.00	5,644.96	5,317.41	5,254.39	21.07	20.01	66.27	-1,172.82	-892.06	1,286.39	1,259.11	27.28	47.147		
5,800.00	5,742.04	5,410.49	5,343.07	21.54	20.49	67.56	-1,181.99	-918.83	1,307.25	1,279.41	27.84	46.958		
5,900.00	5,839.12	5,503.58	5,431.75	22.00	20.98	68.81	-1,191.16	-945.59	1,328.78	1,300.38	28.40	46.795		
6,000.00	5,936.20	5,596.66	5,520.43	22.47	21.47	70.02	-1,200.33	-972.35	1,350.96	1,322.00	28.96	46.653		
6,100.00	6,033.28	5,689.75	5,609.11	22.94	21.97	71.20	-1,209.50	-999.12	1,373.75	1,344.23	29.52	46.533		
6,200.00	6,130.35	5,782.83	5,697.79	23.42	22.47	72.35	-1,218.67	-1,025.88	1,397.13	1,367.04	30.09	46.431		
6,300.00	6,227.43	5,875.92	5,786.47	23.90	22.98	73.46	-1,227.84	-1,052.64	1,421.06	1,390.40	30.66	46.346		
6,400.00	6,324.51	5,969.00	5,875.16	24.38	23.49	74.53	-1,237.01	-1,079.41	1,445.52	1,414.28	31.24	46.276		
6,500.00	6,421.59	6,062.09	5,963.84	24.86	24.00	75.57	-1,246.18	-1,106.17	1,470.48	1,438.66	31.81	46.220		
6,600.00	6,518.67	6,155.17	6,052.52	25.34	24.51	76.58	-1,255.36	-1,132.93	1,495.91	1,463.52	32.40	46.177		
6,700.00	6,615.75	6,248.26	6,141.20	25.83	25.03	77.56	-1,264.53	-1,159.69	1,521.80	1,488.82	32.98	46.145		
6,800.00	6,712.82	6,341.34	6,229.88	26.31	25.55	78.50	-1,273.70	-1,186.46	1,548.12	1,514.55	33.57	46.123		
6,900.00	6,809.90	6,434.43	6,318.56	26.80	26.07	79.42	-1,282.87	-1,213.22	1,574.85	1,540.69	34.15	46.110		
7,000.00	6,906.98	6,527.51	6,407.25	27.29	26.60	80.31	-1,292.04	-1,239.98	1,601.96	1,567.21	34.75	46.105		
7,100.00	7,004.06	6,680.54	6,553.79	27.78	27.44	81.71	-1,306.32	-1,281.64	1,627.96	1,592.21	35.74	45.544		
7,200.00	7,101.14	6,846.15	6,714.22	28.28	28.30	83.15	-1,319.61	-1,320.45	1,650.31	1,613.53	36.77	44.876		
7,300.00	7,198.21	7,014.85	6,879.33	28.77	29.11	84.57	-1,330.83	-1,353.18	1,668.84	1,631.08	37.76	44.194		
7,400.00	7,295.29	7,186.06	7,048.27	29.26	29.86	85.97	-1,339.78	-1,379.31	1,683.44	1,644.74	38.69	43.510		
7,500.00	7,392.37	7,359.12	7,220.14	29.76	30.54	87.36	-1,346.33	-1,398.42	1,694.02	1,654.46	39.56	42.824		
7,600.00	7,489.45	7,533.36	7,393.92	30.26	31.17	88.75	-1,350.37	-1,410.20	1,700.53	1,660.17	40.36	42.137		
7,700.00	7,586.53	7,708.04	7,568.53	30.76	31.72	90.15	-1,351.83	-1,414.47	1,702.95	1,661.87	41.08	41.451		
7,800.00	7,683.60	7,810.22	7,670.70	31.26	32.03	90.98	-1,351.84	-1,414.49	1,703.21	1,661.53	41.69	40.857		
7,900.00	7,780.68	7,907.29	7,767.78	31.76	32.31	91.76	-1,351.84	-1,414.49	1,703.80	1,661.52	42.29	40.293		

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 Tatanka Fed Com 602H
Project:	Lea County, NM (NAD83)	TVD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 602H	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
Tatanka Fed Com - Tatanka Fed Com 101H - OH - Plan #1													Offset Well Error:	0.00 usft
Survey Program: 0-OWSG (Rev2) MWD														
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		
8,000.00	7,877.76	8,004.37	7,864.86	32.26	32.60	92.54	-1,351.84	-1,414.49	1,704.73	1,661.85	42.89	39.751		
8,035.67	7,912.38	8,039.00	7,899.48	32.44	32.71	92.82	-1,351.84	-1,414.49	1,705.14	1,662.04	43.10	39.563		
8,100.00	7,974.96	8,101.58	7,962.06	32.76	32.89	93.32	-1,351.84	-1,414.49	1,705.96	1,662.48	43.48	39.234		
8,200.00	8,072.71	8,199.33	8,059.81	33.24	33.19	94.03	-1,351.84	-1,414.49	1,707.35	1,663.28	44.07	38.746		
8,300.00	8,170.98	8,297.60	8,158.08	33.69	33.48	94.66	-1,351.84	-1,414.49	1,708.77	1,664.14	44.63	38.285		
8,400.00	8,269.70	8,385.77	8,246.25	34.13	33.75	95.14	-1,352.35	-1,414.48	1,710.27	1,665.10	45.17	37.862		
8,500.00	8,368.80	8,450.00	8,310.14	34.55	33.95	95.26	-1,358.65	-1,414.42	1,713.00	1,667.35	45.65	37.523		
8,600.00	8,468.22	8,524.43	8,382.73	34.94	34.19	95.05	-1,374.83	-1,414.26	1,717.25	1,671.13	46.13	37.228		
8,700.00	8,567.89	8,589.96	8,444.44	35.31	34.42	94.59	-1,396.76	-1,414.04	1,723.25	1,676.69	46.56	37.014		
8,800.00	8,667.73	8,650.00	8,498.46	35.66	34.63	93.95	-1,422.92	-1,413.78	1,731.36	1,684.42	46.93	36.889		
8,900.00	8,767.69	8,700.00	8,541.15	35.99	34.81	93.31	-1,448.92	-1,413.52	1,742.06	1,694.83	47.23	36.884		
8,961.32	8,829.00	8,733.85	8,568.69	36.17	34.94	-101.40	-1,468.59	-1,413.32	1,750.11	1,702.72	47.39	36.927		
9,000.00	8,867.68	8,750.00	8,581.41	36.28	35.00	-101.73	-1,478.54	-1,413.22	1,755.84	1,708.38	47.46	36.994		
9,100.00	8,967.68	8,800.00	8,618.93	36.57	35.19	-102.79	-1,511.56	-1,412.89	1,773.22	1,725.58	47.64	37.220		
9,200.00	9,067.68	8,829.62	8,639.76	36.86	35.30	-103.47	-1,532.62	-1,412.68	1,794.36	1,746.69	47.67	37.640		
9,300.00	9,167.68	8,850.00	8,653.44	37.16	35.38	-103.95	-1,547.72	-1,412.53	1,819.56	1,771.98	47.59	38.235		
9,400.00	9,267.68	8,900.00	8,684.66	37.45	35.58	-105.19	-1,586.75	-1,412.14	1,848.68	1,801.06	47.62	38.821		
9,500.00	9,367.68	8,915.42	8,693.59	37.74	35.64	-105.58	-1,599.33	-1,412.02	1,881.78	1,834.37	47.40	39.698		
9,600.00	9,467.68	8,950.00	8,712.36	38.04	35.78	-106.49	-1,628.36	-1,411.73	1,918.97	1,871.72	47.25	40.612		
9,700.00	9,567.68	8,950.00	8,712.36	38.33	35.78	-106.49	-1,628.36	-1,411.73	1,959.83	1,912.99	46.84	41.844		
9,800.00	9,667.68	8,975.35	8,724.99	38.63	35.89	-107.17	-1,650.34	-1,411.51	2,004.39	1,957.83	46.56	43.053		
9,900.00	9,767.68	9,000.00	8,736.33	38.93	35.99	-107.85	-1,672.22	-1,411.29	2,052.56	2,006.31	46.25	44.381		
10,000.00	9,867.68	9,000.00	8,736.33	39.23	35.99	-107.85	-1,672.22	-1,411.29	2,103.97	2,058.21	45.76	45.983		
10,100.00	9,967.68	9,018.71	8,744.30	39.53	36.08	-108.37	-1,689.14	-1,411.12	2,158.52	2,113.14	45.38	47.561		
10,200.00	10,067.68	9,030.53	8,749.05	39.83	36.13	-108.70	-1,699.97	-1,411.01	2,216.04	2,171.08	44.96	49.286		
10,300.00	10,167.68	9,050.00	8,756.38	40.13	36.22	-109.24	-1,718.00	-1,410.83	2,276.36	2,231.76	44.60	51.040		
10,400.00	10,267.68	9,050.00	8,756.38	40.43	36.22	-109.24	-1,718.00	-1,410.83	2,339.13	2,295.02	44.11	53.029		
10,500.00	10,367.68	9,050.00	8,756.38	40.74	36.22	-109.24	-1,718.00	-1,410.83	2,404.41	2,360.78	43.64	55.102		
10,600.00	10,467.68	9,050.00	8,756.38	41.04	36.22	-109.24	-1,718.00	-1,410.83	2,472.02	2,428.84	43.18	57.251		
10,700.00	10,567.68	9,076.27	8,765.30	41.35	36.34	-109.99	-1,742.71	-1,410.58	2,541.18	2,498.25	42.93	59.196		
10,800.00	10,667.68	9,100.00	8,772.37	41.66	36.45	-110.66	-1,765.36	-1,410.36	2,612.75	2,570.08	42.68	61.222		
10,900.00	10,767.68	9,100.00	8,772.37	41.96	36.45	-110.66	-1,765.36	-1,410.36	2,685.70	2,643.41	42.29	63.506		
11,000.00	10,867.68	9,100.00	8,772.37	42.27	36.45	-110.66	-1,765.36	-1,410.36	2,760.34	2,718.40	41.93	65.831		
11,100.00	10,967.68	9,100.00	8,772.37	42.58	36.45	-110.66	-1,765.36	-1,410.36	2,836.54	2,794.94	41.60	68.189		
11,200.00	11,067.68	9,100.00	8,772.37	42.89	36.45	-110.66	-1,765.36	-1,410.36	2,914.17	2,872.88	41.29	70.574		
11,300.00	11,167.68	9,100.00	8,772.37	43.20	36.45	-110.66	-1,765.36	-1,410.36	2,993.14	2,952.13	41.01	72.978		
11,400.00	11,267.68	9,100.00	8,772.37	43.51	36.45	-110.66	-1,765.36	-1,410.36	3,073.33	3,032.57	40.76	75.393		
11,500.00	11,367.68	9,121.43	8,777.95	43.82	36.56	-111.27	-1,786.04	-1,410.15	3,154.25	3,113.58	40.67	77.555		
11,576.36	11,444.04	9,124.64	8,778.72	44.06	36.57	-111.37	-1,789.16	-1,410.12	3,216.92	3,176.38	40.54	79.360		
11,600.00	11,467.68	9,125.68	8,778.96	44.14	36.58	66.02	-1,790.17	-1,410.11	3,236.34	3,195.84	40.50	79.915		
11,650.00	11,517.48	9,128.37	8,779.59	44.33	36.59	59.82	-1,792.79	-1,410.08	3,276.79	3,236.37	40.42	81.062		
11,700.00	11,566.73	9,150.00	8,784.17	44.54	36.70	54.01	-1,813.92	-1,409.87	3,316.50	3,276.03	40.46	81.964		
11,750.00	11,615.04	9,150.00	8,784.17	44.78	36.70	49.43	-1,813.92	-1,409.87	3,354.46	3,314.07	40.39	83.062		
11,800.00	11,662.05	9,150.00	8,784.17	45.04	36.70	45.52	-1,813.92	-1,409.87	3,390.86	3,350.54	40.31	84.111		
11,850.00	11,707.40	9,150.00	8,784.17	45.33	36.70	42.19	-1,813.92	-1,409.87	3,425.47	3,385.22	40.25	85.104		
11,900.00	11,750.75	9,150.00	8,784.17	45.65	36.70	39.38	-1,813.92	-1,409.87	3,458.10	3,417.90	40.19	86.035		
11,950.00	11,791.76	9,150.00	8,784.17	45.98	36.70	37.01	-1,813.92	-1,409.87	3,488.54	3,448.40	40.15	86.896		
12,000.00	11,830.12	9,150.00	8,784.17	46.33	36.70	35.01	-1,813.92	-1,409.87	3,516.64	3,476.53	40.11	87.683		
12,050.00	11,865.55	9,150.00	8,784.17	46.70	36.70	33.34	-1,813.92	-1,409.87	3,542.23	3,502.15	40.08	88.389		
12,100.00	11,897.77	9,174.83	8,788.45	47.09	36.83	31.83	-1,838.38	-1,409.63	3,564.61	3,524.43	40.18	88.715		
12,150.00	11,926.54	9,200.00	8,791.69	47.50	36.97	30.62	-1,863.34	-1,409.38	3,584.73	3,544.44	40.29	88.971		
12,200.00	11,951.63	9,200.00	8,791.69	47.92	36.97	29.73	-1,863.34	-1,409.38	3,601.39	3,561.10	40.29	89.391		

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 Tatanka Fed Com 602H
Project:	Lea County, NM (NAD83)	TVD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 602H	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													Tatanka Fed Com - Tatanka 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							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				
12,250.00	11,972.86	9,200.00	8,791.69	48.35	36.97	29.03	-1,863.34	-1,409.38	3,615.07	3,574.77	40.30	89.709				
12,300.00	11,990.07	9,200.00	8,791.69	48.80	36.97	28.51	-1,863.34	-1,409.38	3,625.70	3,585.38	40.32	89.922				
12,350.00	12,003.12	9,200.00	8,791.69	49.25	36.97	28.14	-1,863.34	-1,409.38	3,633.23	3,592.87	40.36	90.026				
12,400.00	12,011.92	9,200.00	8,791.69	49.70	36.97	27.94	-1,863.34	-1,409.38	3,637.61	3,597.20	40.41	90.017				
12,450.00	12,016.39	9,225.96	8,793.89	50.16	37.11	27.89	-1,889.20	-1,409.12	3,638.23	3,597.63	40.59	89.629				
12,476.36	12,017.00	9,250.00	8,794.88	50.40	37.24	27.93	-1,913.22	-1,408.88	3,637.76	3,597.02	40.73	89.305				
12,500.00	12,017.00	9,250.00	8,794.88	50.61	37.24	27.93	-1,913.22	-1,408.88	3,636.55	3,595.78	40.77	89.187				
12,600.00	12,017.00	9,250.00	8,794.88	51.55	37.24	27.93	-1,913.22	-1,408.88	3,633.14	3,592.17	40.97	88.674				
12,700.00	12,017.00	9,276.35	8,795.00	52.52	37.39	27.93	-1,939.57	-1,408.62	3,632.28	3,590.97	41.31	87.931				
12,800.00	12,017.00	9,376.35	8,795.00	53.53	38.01	27.93	-2,039.56	-1,407.62	3,632.27	3,590.32	41.95	86.577				
12,900.00	12,017.00	9,476.35	8,795.00	54.57	38.68	27.93	-2,139.56	-1,406.62	3,632.26	3,589.63	42.64	85.187				
13,000.00	12,017.00	9,576.35	8,795.00	55.63	39.42	27.93	-2,239.55	-1,405.62	3,632.26	3,588.89	43.36	83.764				
13,100.00	12,017.00	9,676.35	8,795.00	56.73	40.21	27.93	-2,339.55	-1,404.62	3,632.25	3,588.12	44.12	82.318				
13,200.00	12,017.00	9,776.35	8,795.00	57.85	41.06	27.93	-2,439.54	-1,403.62	3,632.24	3,587.32	44.92	80.864				
13,300.00	12,017.00	9,876.35	8,795.00	58.99	41.96	27.93	-2,539.54	-1,402.62	3,632.23	3,586.49	45.74	79.405				
13,400.00	12,017.00	9,976.35	8,795.00	60.16	42.91	27.93	-2,639.53	-1,401.62	3,632.22	3,585.62	46.60	77.946				
13,500.00	12,017.00	10,076.35	8,795.00	61.35	43.90	27.93	-2,739.53	-1,400.62	3,632.21	3,584.73	47.49	76.491				
13,600.00	12,017.00	10,176.35	8,795.00	62.57	44.93	27.93	-2,839.52	-1,399.62	3,632.20	3,583.80	48.40	75.045				
13,700.00	12,017.00	10,276.35	8,795.00	63.80	46.00	27.93	-2,939.52	-1,398.62	3,632.20	3,582.85	49.34	73.614				
13,800.00	12,017.00	10,376.35	8,795.00	65.05	47.10	27.93	-3,039.51	-1,397.62	3,632.19	3,581.88	50.31	72.202				
13,900.00	12,017.00	10,476.35	8,795.00	66.32	48.24	27.93	-3,139.51	-1,396.62	3,632.18	3,580.89	51.29	70.813				
14,000.00	12,017.00	10,576.35	8,795.00	67.60	49.40	27.93	-3,239.50	-1,395.63	3,632.17	3,579.87	52.30	69.449				
14,100.00	12,017.00	10,676.35	8,795.00	68.90	50.59	27.93	-3,339.50	-1,394.63	3,632.16	3,578.83	53.33	68.111				
14,200.00	12,017.00	10,776.35	8,795.00	70.22	51.81	27.93	-3,439.49	-1,393.63	3,632.15	3,577.78	54.37	66.799				
14,300.00	12,017.00	10,876.35	8,795.00	71.55	53.06	27.93	-3,539.49	-1,392.63	3,632.14	3,576.70	55.44	65.515				
14,400.00	12,017.00	10,976.35	8,795.00	72.89	54.32	27.93	-3,639.48	-1,391.63	3,632.13	3,575.61	56.52	64.260				
14,500.00	12,017.00	11,076.35	8,795.00	74.25	55.61	27.93	-3,739.48	-1,390.63	3,632.13	3,574.50	57.62	63.034				
14,600.00	12,017.00	11,176.35	8,795.00	75.61	56.91	27.93	-3,839.47	-1,389.63	3,632.12	3,573.38	58.74	61.838				
14,700.00	12,017.00	11,276.35	8,795.00	76.99	58.24	27.93	-3,939.47	-1,388.63	3,632.11	3,572.24	59.87	60.671				
14,800.00	12,017.00	11,376.35	8,795.00	78.38	59.58	27.93	-4,039.46	-1,387.63	3,632.10	3,571.09	61.01	59.535				
14,900.00	12,017.00	11,476.35	8,795.00	79.78	60.93	27.93	-4,139.46	-1,386.63	3,632.09	3,569.93	62.16	58.427				
15,000.00	12,017.00	11,576.35	8,795.00	81.18	62.30	27.93	-4,239.45	-1,385.63	3,632.08	3,568.75	63.33	57.350				
15,100.00	12,017.00	11,676.35	8,795.00	82.60	63.68	27.93	-4,339.45	-1,384.63	3,632.07	3,567.56	64.51	56.301				
15,200.00	12,017.00	11,776.35	8,795.00	84.03	65.08	27.93	-4,439.44	-1,383.63	3,632.06	3,566.37	65.70	55.283				
15,300.00	12,017.00	11,876.35	8,795.00	85.46	66.49	27.93	-4,539.44	-1,382.63	3,632.06	3,565.16	66.90	54.294				
15,400.00	12,017.00	11,976.35	8,795.00	86.90	67.91	27.93	-4,639.43	-1,381.63	3,632.05	3,563.94	68.10	53.331				
15,500.00	12,017.00	12,076.35	8,795.00	88.35	69.34	27.93	-4,739.43	-1,380.64	3,632.04	3,562.72	69.32	52.395				
15,600.00	12,017.00	12,176.35	8,795.00	89.80	70.78	27.93	-4,839.42	-1,379.64	3,632.03	3,561.48	70.55	51.484				
15,700.00	12,017.00	12,276.35	8,795.00	91.27	72.22	27.93	-4,939.42	-1,378.64	3,632.02	3,560.24	71.78	50.599				
15,800.00	12,017.00	12,376.35	8,795.00	92.74	73.68	27.93	-5,039.41	-1,377.64	3,632.01	3,558.99	73.02	49.738				
15,900.00	12,017.00	12,476.35	8,795.00	94.21	75.15	27.92	-5,139.41	-1,376.64	3,632.00	3,557.73	74.27	48.902				
16,000.00	12,017.00	12,576.35	8,795.00	95.69	76.62	27.92	-5,239.40	-1,375.64	3,632.00	3,556.47	75.52	48.090				
16,100.00	12,017.00	12,676.35	8,795.00	97.18	78.10	27.92	-5,339.40	-1,374.64	3,631.99	3,555.20	76.79	47.301				
16,200.00	12,017.00	12,776.35	8,795.00	98.67	79.59	27.92	-5,439.39	-1,373.64	3,631.98	3,553.93	78.05	46.532				
16,300.00	12,017.00	12,876.35	8,795.00	100.16	81.08	27.92	-5,539.39	-1,372.64	3,631.97	3,552.64	79.33	45.785				
16,400.00	12,017.00	12,976.35	8,795.00	101.67	82.58	27.92	-5,639.38	-1,371.64	3,631.96	3,551.35	80.61	45.058				
16,500.00	12,017.00	13,076.35	8,795.00	103.17	84.08	27.92	-5,739.38	-1,370.64	3,631.95	3,550.06	81.89	44.351				
16,600.00	12,017.00	13,176.35	8,795.00	104.68	85.59	27.92	-5,839.37	-1,369.64	3,631.94	3,548.76	83.18	43.664				
16,700.00	12,017.00	13,276.35	8,795.00	106.20	87.11	27.92	-5,939.37	-1,368.64	3,631.93	3,547.46	84.47	42.996				
16,800.00	12,017.00	13,376.35	8,795.00	107.71	88.63	27.92	-6,039.36	-1,367.64	3,631.93	3,546.16	85.77	42.346				
16,900.00	12,017.00	13,476.35	8,795.00	109.24	90.16	27.92	-6,139.36	-1,366.64	3,631.92	3,544.85	87.07	41.713				
17,000.00	12,017.00	13,576.35	8,795.00	110.76	91.69	27.92	-6,239.35	-1,365.65	3,631.91	3,543.53	88.37	41.097				

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 Tatanka Fed Com 602H
Project:	Lea County, NM (NAD83)	TVD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 602H	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													Tatanka Fed Com - Tatanka 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							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)								
17,100.00	12,017.00	13,676.35	8,795.00	112.29	93.22	27.92	-6,339.35	-1,364.65	3,631.90	3,542.22	89.68	40.497				
17,200.00	12,017.00	13,776.35	8,795.00	113.82	94.76	27.92	-6,439.34	-1,363.65	3,631.89	3,540.89	91.00	39.912				
17,300.00	12,017.00	13,876.35	8,795.00	115.36	96.30	27.92	-6,539.34	-1,362.65	3,631.88	3,539.57	92.31	39.342				
17,400.00	12,017.00	13,976.35	8,795.00	116.90	97.84	27.92	-6,639.33	-1,361.65	3,631.87	3,538.24	93.64	38.787				
17,500.00	12,017.00	14,076.35	8,795.00	118.44	99.39	27.92	-6,739.33	-1,360.65	3,631.86	3,536.90	94.96	38.246				
17,600.00	12,017.00	14,176.35	8,795.00	119.99	100.94	27.92	-6,839.32	-1,359.65	3,631.86	3,535.57	96.29	37.718				
17,700.00	12,017.00	14,276.35	8,795.00	121.53	102.50	27.92	-6,939.32	-1,358.65	3,631.85	3,534.23	97.62	37.204				
17,800.00	12,017.00	14,376.35	8,795.00	123.09	104.06	27.92	-7,039.31	-1,357.65	3,631.84	3,532.88	98.96	36.702				
17,900.00	12,017.00	14,476.35	8,795.00	124.64	105.62	27.92	-7,139.31	-1,356.65	3,631.83	3,531.54	100.29	36.212				
18,000.00	12,017.00	14,576.35	8,795.00	126.19	107.18	27.92	-7,239.30	-1,355.65	3,631.82	3,530.19	101.63	35.735				
18,100.00	12,017.00	14,676.35	8,795.00	127.75	108.75	27.92	-7,339.30	-1,354.65	3,631.81	3,528.84	102.97	35.271				
18,200.00	12,017.00	14,776.35	8,795.00	129.31	110.32	27.92	-7,439.29	-1,353.65	3,631.80	3,527.49	104.31	34.817				
18,300.00	12,017.00	14,876.35	8,795.00	130.88	111.89	27.92	-7,539.29	-1,352.65	3,631.80	3,526.14	105.66	34.374				
18,400.00	12,017.00	14,976.35	8,795.00	132.44	113.46	27.92	-7,639.28	-1,351.65	3,631.79	3,524.78	107.00	33.941				
18,500.00	12,017.00	15,076.35	8,795.00	134.01	115.04	27.92	-7,739.28	-1,350.66	3,631.78	3,523.42	108.35	33.518				
18,600.00	12,017.00	15,176.35	8,795.00	135.58	116.61	27.92	-7,839.27	-1,349.66	3,631.77	3,522.06	109.70	33.105				
18,700.00	12,017.00	15,276.35	8,795.00	137.15	118.19	27.92	-7,939.27	-1,348.66	3,631.76	3,520.70	111.06	32.702				
18,800.00	12,017.00	15,376.35	8,795.00	138.72	119.77	27.92	-8,039.26	-1,347.66	3,631.75	3,519.34	112.41	32.308				
18,900.00	12,017.00	15,476.35	8,795.00	140.29	121.36	27.92	-8,139.26	-1,346.66	3,631.74	3,517.98	113.77	31.923				
19,000.00	12,017.00	15,576.35	8,795.00	141.87	122.94	27.92	-8,239.25	-1,345.66	3,631.73	3,516.61	115.12	31.546				
19,100.00	12,017.00	15,676.35	8,795.00	143.45	124.53	27.92	-8,339.25	-1,344.66	3,631.73	3,515.24	116.48	31.178				
19,200.00	12,017.00	15,776.35	8,795.00	145.03	126.12	27.92	-8,439.24	-1,343.66	3,631.72	3,513.87	117.84	30.818				
19,300.00	12,017.00	15,876.35	8,795.00	146.61	127.71	27.92	-8,539.24	-1,342.66	3,631.71	3,512.50	119.21	30.466				
19,400.00	12,017.00	15,976.35	8,795.00	148.19	129.30	27.92	-8,639.23	-1,341.66	3,631.70	3,511.13	120.57	30.121				
19,500.00	12,017.00	16,076.35	8,795.00	149.78	130.89	27.92	-8,739.23	-1,340.66	3,631.69	3,509.76	121.93	29.785				
19,600.00	12,017.00	16,176.35	8,795.00	151.36	132.49	27.92	-8,839.22	-1,339.66	3,631.68	3,508.39	123.30	29.455				
19,700.00	12,017.00	16,276.35	8,795.00	152.95	134.09	27.92	-8,939.22	-1,338.66	3,631.67	3,507.01	124.66	29.132				
19,800.00	12,017.00	16,376.35	8,795.00	154.54	135.68	27.91	-9,039.21	-1,337.66	3,631.66	3,505.64	126.03	28.816				
19,900.00	12,017.00	16,476.35	8,795.00	156.13	137.28	27.91	-9,139.21	-1,336.66	3,631.66	3,504.26	127.40	28.507				
20,000.00	12,017.00	16,576.35	8,795.00	157.72	138.88	27.91	-9,239.20	-1,335.67	3,631.65	3,502.88	128.77	28.203				
20,100.00	12,017.00	16,676.35	8,795.00	159.31	140.48	27.91	-9,339.20	-1,334.67	3,631.64	3,501.50	130.14	27.906				
20,200.00	12,017.00	16,776.35	8,795.00	160.90	142.09	27.91	-9,439.19	-1,333.67	3,631.63	3,500.12	131.51	27.615				
20,300.00	12,017.00	16,876.35	8,795.00	162.50	143.69	27.91	-9,539.19	-1,332.67	3,631.62	3,498.74	132.88	27.329				
20,400.00	12,017.00	16,976.35	8,795.00	164.09	145.29	27.91	-9,639.18	-1,331.67	3,631.61	3,497.35	134.26	27.049				
20,500.00	12,017.00	17,076.35	8,795.00	165.69	146.90	27.91	-9,739.18	-1,330.67	3,631.60	3,495.97	135.64	26.775				
20,600.00	12,017.00	17,176.35	8,795.00	167.29	148.51	27.91	-9,839.17	-1,329.67	3,631.60	3,494.58	137.01	26.505				
20,700.00	12,017.00	17,276.35	8,795.00	168.89	150.11	27.91	-9,939.17	-1,328.67	3,631.59	3,493.19	138.39	26.241				
20,800.00	12,017.00	17,376.35	8,795.00	170.49	151.72	27.91	-10,039.16	-1,327.67	3,631.58	3,491.81	139.77	25.983				
20,900.00	12,017.00	17,476.35	8,795.00	172.09	153.33	27.91	-10,139.16	-1,326.67	3,631.57	3,490.43	141.14	25.730				
21,000.00	12,017.00	17,576.35	8,795.00	173.69	154.94	27.91	-10,239.15	-1,325.67	3,631.56	3,489.04	142.52	25.481				
21,100.00	12,017.00	17,676.35	8,795.00	175.29	156.55	27.91	-10,339.15	-1,324.67	3,631.55	3,487.65	143.90	25.237				
21,200.00	12,017.00	17,776.35	8,795.00	176.90	158.16	27.91	-10,439.14	-1,323.67	3,631.54	3,486.27	145.28	24.998				
21,300.00	12,017.00	17,876.35	8,795.00	178.50	159.78	27.91	-10,539.14	-1,322.67	3,631.53	3,484.88	146.65	24.762				
21,400.00	12,017.00	17,976.35	8,795.00	180.11	161.39	27.91	-10,639.13	-1,321.67	3,631.53	3,483.49	148.04	24.531				
21,500.00	12,017.00	18,076.35	8,795.00	181.71	163.01	27.91	-10,739.13	-1,320.68	3,631.52	3,482.10	149.42	24.305				
21,600.00	12,017.00	18,176.35	8,795.00	183.32	164.62	27.91	-10,839.12	-1,319.68	3,631.51	3,480.71	150.80	24.082				
21,700.00	12,017.00	18,276.35	8,795.00	184.93	166.24	27.91	-10,939.12	-1,318.68	3,631.50	3,479.32	152.18	23.863				
21,800.00	12,017.00	18,376.35	8,795.00	186.54	167.85	27.91	-11,039.11	-1,317.68	3,631.49	3,477.93	153.57	23.648				
21,900.00	12,017.00	18,476.35	8,795.00	188.15	169.47	27.91	-11,139.11	-1,316.68	3,631.48	3,476.53	154.95	23.437				
22,000.00	12,017.00	18,576.35	8,795.00	189.76	171.09	27.91	-11,239.10	-1,315.68	3,631.47	3,475.14	156.34	23.229				
22,100.00	12,017.00	18,676.35	8,795.00	191.37	172.71	27.91	-11,339.10	-1,314.68	3,631.46	3,473.74	157.72	23.025				
22,167.18	12,017.00	18,743.54	8,795.00	192.45	173.79	27.91	-11,406.28	-1,314.01	3,631.46	3,472.81	158.65	22.890				

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 Tatanka Fed Com 602H
Project:	Lea County, NM (NAD83)	TVD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 602H	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												Tatanka Fed Com - Tatanka 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								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					
22,187.30	12,017.00	18,762.37	8,795.00	192.77	174.10	27.91	-11,425.11	-1,313.82	3,631.46	3,472.54	158.92	22.851	SF				



Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well Tatanka Fed Com 602H
Project:	Lea County, NM (NAD83)	TVD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 602H	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													Tatanka Fed Com - Tatanka 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	-157.34	-1,021.61	-426.50	1,107.15							
100.00	100.00	86.40	86.40	0.13	0.11	-157.34	-1,021.61	-426.50	1,107.06	1,106.90	0.17	6,676.753				
200.00	200.00	186.40	186.40	0.48	0.44	-157.34	-1,021.61	-426.50	1,107.06	1,106.41	0.65	1,701.001				
300.00	300.00	286.40	286.40	0.84	0.79	-157.34	-1,021.61	-426.50	1,107.06	1,105.91	1.16	956.521				
400.00	400.00	386.40	386.40	1.20	1.15	-157.34	-1,021.61	-426.50	1,107.06	1,105.40	1.66	665.229				
500.00	500.00	486.40	486.40	1.56	1.51	-157.34	-1,021.61	-426.50	1,107.06	1,104.89	2.17	509.919				
600.00	600.00	586.40	586.40	1.92	1.87	-157.34	-1,021.61	-426.50	1,107.06	1,104.39	2.68	413.398				
700.00	700.00	686.40	686.40	2.28	2.23	-157.34	-1,021.61	-426.50	1,107.06	1,103.88	3.18	347.600				
800.00	800.00	786.40	786.40	2.63	2.59	-157.34	-1,021.61	-426.50	1,107.06	1,103.37	3.69	299.870				
900.00	900.00	886.40	886.40	2.99	2.94	-157.34	-1,021.61	-426.50	1,107.06	1,102.86	4.20	263.665				
1,000.00	1,000.00	986.40	986.40	3.35	3.30	-157.34	-1,021.61	-426.50	1,107.06	1,102.36	4.71	235.261				
1,100.00	1,100.00	1,086.40	1,086.40	3.71	3.66	-157.34	-1,021.61	-426.50	1,107.06	1,101.85	5.21	212.381				
1,200.00	1,200.00	1,186.40	1,186.40	4.07	4.02	-157.34	-1,021.61	-426.50	1,107.06	1,101.34	5.72	193.557				
1,300.00	1,300.00	1,286.40	1,286.40	4.43	4.38	-157.34	-1,021.61	-426.50	1,107.06	1,100.84	6.23	177.798				
1,400.00	1,400.00	1,386.40	1,386.40	4.79	4.74	-157.34	-1,021.61	-426.50	1,107.06	1,100.33	6.73	164.412				
1,500.00	1,500.00	1,486.40	1,486.40	5.14	5.10	-157.34	-1,021.61	-426.50	1,107.06	1,099.82	7.24	152.900				
1,600.00	1,600.00	1,586.40	1,586.40	5.50	5.45	-157.34	-1,021.61	-426.50	1,107.06	1,099.32	7.75	142.895				
1,700.00	1,700.00	1,686.40	1,686.40	5.86	5.81	-157.34	-1,021.61	-426.50	1,107.06	1,098.81	8.25	134.119				
1,800.00	1,800.00	1,786.40	1,786.40	6.22	6.17	-157.34	-1,021.61	-426.50	1,107.06	1,098.30	8.76	126.359				
1,900.00	1,900.00	1,886.40	1,886.40	6.58	6.53	-157.34	-1,021.61	-426.50	1,107.06	1,097.80	9.27	119.447				
2,000.00	2,000.00	1,986.40	1,986.40	6.94	6.89	-157.34	-1,021.61	-426.50	1,107.06	1,097.29	9.78	113.253				
2,100.00	2,100.00	2,086.40	2,086.40	7.29	7.25	-157.34	-1,021.61	-426.50	1,107.06	1,096.78	10.28	107.669				
2,200.00	2,200.00	2,186.40	2,186.40	7.65	7.60	-157.34	-1,021.61	-426.50	1,107.06	1,096.27	10.79	102.610				
2,300.00	2,300.00	2,286.40	2,286.40	8.01	7.96	-157.34	-1,021.61	-426.50	1,107.06	1,095.77	11.30	98.005				
2,400.00	2,400.00	2,386.40	2,386.40	8.37	8.32	-157.34	-1,021.61	-426.50	1,107.06	1,095.26	11.80	93.795				
2,500.00	2,500.00	2,486.40	2,486.40	8.73	8.68	-157.34	-1,021.61	-426.50	1,107.06	1,094.75	12.31	89.932				
2,600.00	2,600.00	2,586.40	2,586.40	9.09	9.04	-157.34	-1,021.61	-426.50	1,107.06	1,094.25	12.82	86.375				
2,700.00	2,700.00	2,686.40	2,686.40	9.45	9.40	-157.34	-1,021.61	-426.50	1,107.06	1,093.74	13.32	83.089				
2,800.00	2,800.00	2,786.40	2,786.40	9.80	9.76	-157.34	-1,021.61	-426.50	1,107.06	1,093.23	13.83	80.043				
2,900.00	2,900.00	2,886.40	2,886.40	10.16	10.11	-157.34	-1,021.61	-426.50	1,107.06	1,092.73	14.34	77.213				
3,000.00	3,000.00	2,986.40	2,986.40	10.52	10.47	-157.34	-1,021.61	-426.50	1,107.06	1,092.22	14.84	74.576				
3,100.00	3,100.00	3,086.40	3,086.40	10.88	10.83	-157.34	-1,021.61	-426.50	1,107.06	1,091.71	15.35	72.114				
3,200.00	3,200.00	3,186.40	3,186.40	11.24	11.19	-157.34	-1,021.61	-426.50	1,107.06	1,091.20	15.86	69.808				
3,300.00	3,299.99	3,268.17	3,268.17	11.58	11.47	36.89	-1,022.22	-426.50	1,106.73	1,090.43	16.30	67.914				
3,400.00	3,399.91	3,347.08	3,347.04	11.90	11.73	36.94	-1,024.44	-426.50	1,106.19	1,089.48	16.70	66.229				
3,500.00	3,499.69	3,425.99	3,425.86	12.23	11.99	37.03	-1,028.29	-426.50	1,105.46	1,088.36	17.10	64.641				
3,600.00	3,599.27	3,500.00	3,499.69	12.56	12.23	37.15	-1,033.38	-426.50	1,104.57	1,087.09	17.48	63.184				
3,700.00	3,698.57	3,583.86	3,583.21	12.89	12.50	37.31	-1,040.88	-426.50	1,103.47	1,085.58	17.89	61.676				
3,800.00	3,797.54	3,662.82	3,661.68	13.22	12.76	37.51	-1,049.61	-426.50	1,102.22	1,083.94	18.28	60.288				
3,900.00	3,896.09	3,747.69	3,745.82	13.57	13.04	37.75	-1,060.76	-426.48	1,100.78	1,082.08	18.70	58.878				
4,000.00	3,994.16	3,881.59	3,878.63	13.92	13.49	38.17	-1,077.63	-424.25	1,096.18	1,076.88	19.30	56.792				
4,100.00	4,091.70	4,014.82	4,011.00	14.28	13.95	38.65	-1,091.51	-418.41	1,086.47	1,066.57	19.90	54.603				
4,125.65	4,116.62	4,048.82	4,044.79	14.37	14.07	38.78	-1,094.58	-416.33	1,083.16	1,063.11	20.05	54.024				
4,200.00	4,188.79	4,146.96	4,142.35	14.65	14.41	39.05	-1,102.39	-409.03	1,072.25	1,051.76	20.48	52.346				
4,300.00	4,285.87	4,277.97	4,272.49	15.04	14.87	39.32	-1,110.34	-396.23	1,054.94	1,033.88	21.06	50.099				
4,400.00	4,382.95	4,407.59	4,401.00	15.43	15.33	39.49	-1,115.41	-380.15	1,034.65	1,013.03	21.62	47.861				
4,500.00	4,480.03	4,533.79	4,525.75	15.83	15.79	39.56	-1,117.67	-361.25	1,011.42	989.26	22.16	45.638				
4,600.00	4,577.11	4,630.74	4,621.42	16.23	16.14	39.57	-1,118.48	-345.62	986.91	964.24	22.67	43.533				
4,700.00	4,674.18	4,727.68	4,717.09	16.65	16.49	39.58	-1,119.29	-329.98	962.39	939.20	23.18	41.511				
4,800.00	4,771.26	4,824.63	4,812.77	17.07	16.85	39.60	-1,120.10	-314.34	937.87	914.17	23.70	39.569				
4,900.00	4,868.34	4,921.58	4,908.44	17.49	17.22	39.62	-1,120.91	-298.70	913.35	889.13	24.23	37.703				
5,000.00	4,965.42	5,018.53	5,004.12	17.92	17.58	39.63	-1,121.72	-283.06	888.84	864.08	24.75	35.910				

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 Tatanka Fed Com 602H
Project:	Lea County, NM (NAD83)	TVD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 602H	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													Tatanka Fed Com - Tatanka 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							Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor				
5,100.00	5,062.50	5,115.47	5,099.79	18.36	17.95	39.65	-1,122.53	-267.42	864.32	839.04	25.28	34.187				
5,200.00	5,159.57	5,212.42	5,195.47	18.80	18.33	39.67	-1,123.34	-251.79	839.80	813.98	25.82	32.530				
5,300.00	5,256.65	5,309.37	5,291.14	19.25	18.70	39.69	-1,124.15	-236.15	815.28	788.93	26.35	30.936				
5,400.00	5,353.73	5,406.32	5,386.82	19.70	19.08	39.71	-1,124.97	-220.51	790.76	763.87	26.89	29.402				
5,500.00	5,450.81	5,503.26	5,482.49	20.15	19.46	39.73	-1,125.78	-204.87	766.25	738.81	27.44	27.926				
5,600.00	5,547.89	5,600.21	5,578.16	20.61	19.84	39.76	-1,126.59	-189.23	741.73	713.74	27.99	26.504				
5,700.00	5,644.96	5,697.16	5,673.84	21.07	20.22	39.78	-1,127.40	-173.59	717.21	688.68	28.54	25.134				
5,800.00	5,742.04	5,794.11	5,769.51	21.54	20.61	39.81	-1,128.21	-157.95	692.70	663.61	29.09	23.815				
5,900.00	5,839.12	5,891.05	5,865.19	22.00	20.99	39.84	-1,129.02	-142.32	668.18	638.54	29.64	22.542				
6,000.00	5,936.20	5,988.00	5,960.86	22.47	21.38	39.87	-1,129.83	-126.68	643.66	613.46	30.20	21.314				
6,100.00	6,033.28	6,084.95	6,056.54	22.94	21.77	39.90	-1,130.64	-111.04	619.15	588.39	30.76	20.130				
6,200.00	6,130.35	6,181.90	6,152.21	23.42	22.17	39.94	-1,131.45	-95.40	594.63	563.31	31.32	18.987				
6,300.00	6,227.43	6,278.84	6,247.89	23.90	22.56	39.98	-1,132.26	-79.76	570.11	538.23	31.88	17.882				
6,400.00	6,324.51	6,375.79	6,343.56	24.38	22.95	40.03	-1,133.07	-64.12	545.60	513.15	32.45	16.815				
6,500.00	6,421.59	6,472.74	6,439.23	24.86	23.35	40.07	-1,133.88	-48.49	521.08	488.07	33.01	15.784				
6,600.00	6,518.67	6,569.69	6,534.91	25.34	23.75	40.13	-1,134.69	-32.85	496.57	462.99	33.58	14.787				
6,700.00	6,615.75	6,666.63	6,630.58	25.83	24.14	40.18	-1,135.50	-17.21	472.05	437.90	34.15	13.822				
6,800.00	6,712.82	6,763.58	6,726.26	26.31	24.54	40.25	-1,136.31	-1.57	447.54	412.82	34.72	12.888				
6,900.00	6,809.90	6,860.53	6,821.93	26.80	24.94	40.32	-1,137.12	14.07	423.03	387.73	35.30	11.985				
7,000.00	6,906.98	6,957.48	6,917.61	27.29	25.34	40.40	-1,137.93	29.71	398.51	362.64	35.87	11.109				
7,100.00	7,004.06	7,051.33	7,010.37	27.78	25.73	40.62	-1,138.66	43.95	374.36	337.89	36.47	10.266				
7,200.00	7,101.14	7,145.09	7,103.36	28.28	26.10	41.23	-1,139.28	55.92	351.13	314.06	37.07	9.472				
7,300.00	7,198.21	7,239.06	7,196.82	28.77	26.46	42.29	-1,139.79	65.62	328.90	291.22	37.68	8.728				
7,400.00	7,295.29	7,333.10	7,290.57	29.26	26.82	43.90	-1,140.17	73.03	307.84	269.53	38.31	8.036				
7,500.00	7,392.37	7,427.12	7,384.45	29.76	27.16	46.15	-1,140.44	78.13	288.19	249.23	38.96	7.398				
7,600.00	7,489.45	7,521.00	7,478.28	30.26	27.49	49.12	-1,140.58	80.92	270.28	230.66	39.63	6.820				
7,700.00	7,586.53	7,615.65	7,572.93	30.76	27.81	52.92	-1,140.61	81.50	254.57	214.24	40.32	6.313				
7,800.00	7,683.60	7,712.73	7,670.00	31.26	28.14	57.39	-1,140.61	81.50	240.57	199.54	41.03	5.863				
7,900.00	7,780.68	7,809.80	7,767.08	31.76	28.46	62.35	-1,140.61	81.50	228.25	186.49	41.76	5.466				
8,000.00	7,877.76	7,906.88	7,864.16	32.26	28.79	67.81	-1,140.61	81.50	217.88	175.39	42.48	5.129				
8,035.67	7,912.38	7,941.51	7,898.78	32.44	28.91	69.87	-1,140.61	81.50	214.70	171.97	42.74	5.024				
8,100.00	7,974.96	8,004.09	7,961.36	32.76	29.12	73.53	-1,140.61	81.50	209.90	166.72	43.18	4.861				
8,200.00	8,072.71	8,101.84	8,059.11	33.24	29.45	79.00	-1,140.61	81.50	204.78	160.95	43.83	4.672				
8,300.00	8,170.98	8,200.11	8,157.38	33.69	29.78	84.03	-1,140.61	81.50	201.99	157.58	44.41	4.548				
8,380.40	8,250.32	8,278.15	8,235.42	34.05	30.05	87.56	-1,140.77	81.50	201.08	156.25	44.83	4.485 CC, ES				
8,400.00	8,269.70	8,295.93	8,253.19	34.13	30.11	88.12	-1,141.46	81.51	201.18	156.26	44.92	4.478 SF				
8,500.00	8,368.80	8,387.40	8,343.75	34.55	30.41	88.29	-1,153.68	81.63	204.32	158.98	45.34	4.506				
8,600.00	8,468.22	8,475.95	8,428.48	34.94	30.71	84.26	-1,179.09	81.88	212.38	166.81	45.58	4.660				
8,700.00	8,567.89	8,556.86	8,501.65	35.31	30.98	77.72	-1,213.47	82.22	228.58	183.35	45.22	5.054				
8,800.00	8,667.73	8,627.46	8,561.00	35.66	31.21	70.73	-1,251.62	82.60	256.76	212.79	43.97	5.840				
8,900.00	8,767.69	8,687.12	8,607.17	35.99	31.40	64.68	-1,289.35	82.97	298.65	256.65	42.00	7.110				
8,961.32	8,829.00	8,718.56	8,629.85	36.17	31.51	-132.53	-1,311.11	83.18	330.79	290.13	40.66	8.135				
9,000.00	8,867.68	8,736.63	8,642.34	36.28	31.57	-134.50	-1,324.17	83.31	353.25	313.42	39.82	8.870				
9,100.00	8,967.68	8,778.20	8,669.47	36.57	31.72	-138.75	-1,355.66	83.62	417.50	379.68	37.81	11.041				
9,200.00	9,067.68	8,813.40	8,690.60	36.86	31.84	-142.04	-1,383.81	83.90	488.90	452.80	36.10	13.543				
9,300.00	9,167.68	8,850.00	8,710.69	37.16	31.98	-145.15	-1,414.39	84.20	565.76	530.81	34.95	16.188				
9,400.00	9,267.68	8,869.07	8,720.37	37.45	32.05	-146.65	-1,430.81	84.37	646.54	613.01	33.53	19.282				
9,500.00	9,367.68	8,900.00	8,734.91	37.74	32.18	-148.90	-1,458.11	84.63	730.63	697.76	32.88	22.224				
9,600.00	9,467.68	8,900.00	8,734.91	38.04	32.18	-148.90	-1,458.11	84.63	817.11	785.56	31.55	25.899				
9,700.00	9,567.68	8,927.46	8,746.56	38.33	32.30	-150.73	-1,482.98	84.88	905.31	874.06	31.25	28.973				
9,800.00	9,667.68	8,950.00	8,755.22	38.63	32.39	-152.11	-1,503.78	85.09	995.31	964.37	30.95	32.162				
9,900.00	9,767.68	8,950.00	8,755.22	38.93	32.39	-152.11	-1,503.78	85.09	1,086.47	1,056.19	30.28	35.881				

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 Tatanka Fed Com 602H
Project:	Lea County, NM (NAD83)	TVD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 602H	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 Tatanka Fed Com - Tatanka 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	
10,000.00	9,867.68	8,967.39	8,761.34	39.23	32.47	-153.12	-1,520.06	85.25	1,178.68	1,148.57	30.11	39.152		
10,100.00	9,967.68	8,977.97	8,764.82	39.53	32.52	-153.70	-1,530.05	85.34	1,271.80	1,241.91	29.89	42.555		
10,200.00	10,067.68	9,000.00	8,771.47	39.83	32.63	-154.86	-1,551.05	85.55	1,365.85	1,335.92	29.93	45.640		
10,300.00	10,167.68	9,000.00	8,771.47	40.13	32.63	-154.86	-1,551.05	85.55	1,460.16	1,430.48	29.68	49.202		
10,400.00	10,267.68	9,000.00	8,771.47	40.43	32.63	-154.86	-1,551.05	85.55	1,555.18	1,525.68	29.50	52.713		
10,500.00	10,367.68	9,000.00	8,771.47	40.74	32.63	-154.86	-1,551.05	85.55	1,650.79	1,621.40	29.39	56.163		
10,600.00	10,467.68	9,000.00	8,771.47	41.04	32.63	-154.86	-1,551.05	85.55	1,746.89	1,717.56	29.33	59.552		
10,700.00	10,567.68	9,023.81	8,777.75	41.35	32.74	-156.03	-1,574.01	85.78	1,842.76	1,813.19	29.58	62.302		
10,800.00	10,667.68	9,029.39	8,779.08	41.66	32.77	-156.29	-1,579.43	85.83	1,939.31	1,909.66	29.64	65.427		
10,900.00	10,767.68	9,050.00	8,783.54	41.96	32.87	-157.21	-1,599.55	86.03	2,036.39	2,006.51	29.88	68.163		
11,000.00	10,867.68	9,050.00	8,783.54	42.27	32.87	-157.21	-1,599.55	86.03	2,133.30	2,103.37	29.93	71.275		
11,100.00	10,967.68	9,050.00	8,783.54	42.58	32.87	-157.21	-1,599.55	86.03	2,230.49	2,200.48	30.01	74.324		
11,200.00	11,067.68	9,050.00	8,783.54	42.89	32.87	-157.21	-1,599.55	86.03	2,327.92	2,297.80	30.12	77.300		
11,300.00	11,167.68	9,050.00	8,783.54	43.20	32.87	-157.21	-1,599.55	86.03	2,425.55	2,395.31	30.24	80.202		
11,400.00	11,267.68	9,050.00	8,783.54	43.51	32.87	-157.21	-1,599.55	86.03	2,523.37	2,492.98	30.39	83.034		
11,500.00	11,367.68	9,050.00	8,783.54	43.82	32.87	-157.21	-1,599.55	86.03	2,621.36	2,590.81	30.55	85.803		
11,576.36	11,444.04	9,050.00	8,783.54	44.06	32.87	-157.21	-1,599.55	86.03	2,696.28	2,665.59	30.68	87.871		
11,600.00	11,467.68	9,050.00	8,783.54	44.14	32.87	19.32	-1,599.55	86.03	2,719.40	2,688.67	30.72	88.508		
11,650.00	11,517.48	9,050.00	8,783.54	44.33	32.87	14.08	-1,599.55	86.03	2,767.61	2,736.81	30.80	89.860		
11,700.00	11,566.73	9,050.00	8,783.54	44.54	32.87	11.07	-1,599.55	86.03	2,814.62	2,783.76	30.86	91.212		
11,750.00	11,615.04	9,050.00	8,783.54	44.78	32.87	9.14	-1,599.55	86.03	2,860.14	2,829.24	30.90	92.551		
11,800.00	11,662.05	9,074.80	8,787.95	45.04	33.00	7.69	-1,623.95	86.27	2,903.28	2,872.20	31.08	93.419		
11,850.00	11,707.40	9,100.00	8,791.34	45.33	33.13	6.67	-1,648.92	86.52	2,945.23	2,914.00	31.24	94.289		
11,900.00	11,750.75	9,100.00	8,791.34	45.65	33.13	5.99	-1,648.92	86.52	2,984.26	2,953.02	31.24	95.536		
11,950.00	11,791.76	9,100.00	8,791.34	45.98	33.13	5.45	-1,648.92	86.52	3,020.80	2,989.57	31.23	96.731		
12,000.00	11,830.12	9,100.00	8,791.34	46.33	33.13	5.03	-1,648.92	86.52	3,054.68	3,023.47	31.21	97.862		
12,050.00	11,865.55	9,100.00	8,791.34	46.70	33.13	4.69	-1,648.92	86.52	3,085.73	3,054.54	31.19	98.932		
12,100.00	11,897.77	9,100.00	8,791.34	47.09	33.13	4.42	-1,648.92	86.52	3,113.80	3,082.64	31.16	99.931		
12,150.00	11,926.54	9,100.00	8,791.34	47.50	33.13	4.21	-1,648.92	86.52	3,138.77	3,107.64	31.13	100.827		
12,200.00	11,951.63	9,121.92	8,793.40	47.92	33.25	4.02	-1,670.74	86.73	3,160.01	3,128.83	31.18	101.332		
12,250.00	11,972.86	9,150.00	8,794.81	48.35	33.40	3.88	-1,698.78	87.01	3,178.51	3,147.25	31.26	101.693		
12,300.00	11,990.07	9,150.00	8,794.81	48.80	33.40	3.78	-1,698.78	87.01	3,192.78	3,161.57	31.21	102.306		
12,350.00	12,003.12	9,150.00	8,794.81	49.25	33.40	3.70	-1,698.78	87.01	3,203.56	3,172.40	31.17	102.790		
12,400.00	12,011.92	9,150.00	8,794.81	49.70	33.40	3.66	-1,698.78	87.01	3,210.83	3,179.70	31.13	103.145		
12,450.00	12,016.39	9,164.76	8,795.00	50.16	33.48	3.63	-1,713.54	87.16	3,214.48	3,183.35	31.14	103.234		
12,476.36	12,017.00	9,164.76	8,795.00	50.40	33.48	3.63	-1,713.54	87.16	3,214.88	3,183.76	31.12	103.301		
12,500.00	12,017.00	9,175.81	8,795.00	50.61	33.55	3.63	-1,724.58	87.27	3,214.85	3,183.71	31.14	103.230		
12,502.75	12,017.00	9,178.56	8,795.00	50.64	33.56	3.63	-1,727.33	87.29	3,214.85	3,183.70	31.15	103.206		
12,600.00	12,017.00	9,275.81	8,795.00	51.55	34.15	3.63	-1,824.58	88.25	3,214.85	3,183.44	31.41	102.339		
12,700.00	12,017.00	9,375.81	8,795.00	52.52	34.82	3.63	-1,924.57	89.24	3,214.85	3,183.13	31.72	101.350		
12,800.00	12,017.00	9,475.81	8,795.00	53.53	35.56	3.63	-2,024.57	90.23	3,214.85	3,182.79	32.06	100.267		
12,900.00	12,017.00	9,575.81	8,795.00	54.57	36.35	3.63	-2,124.56	91.21	3,214.85	3,182.41	32.44	99.100		
13,000.00	12,017.00	9,675.81	8,795.00	55.63	37.21	3.63	-2,224.56	92.20	3,214.85	3,182.00	32.85	97.860		
13,100.00	12,017.00	9,775.81	8,795.00	56.73	38.11	3.63	-2,324.55	93.19	3,214.85	3,181.56	33.30	96.556		
13,200.00	12,017.00	9,875.81	8,795.00	57.85	39.06	3.63	-2,424.55	94.18	3,214.85	3,181.08	33.77	95.199		
13,300.00	12,017.00	9,975.81	8,795.00	58.99	40.06	3.63	-2,524.54	95.16	3,214.85	3,180.58	34.27	93.797		
13,400.00	12,017.00	10,075.81	8,795.00	60.16	41.10	3.63	-2,624.54	96.15	3,214.85	3,180.04	34.81	92.361		
13,500.00	12,017.00	10,175.81	8,795.00	61.35	42.18	3.63	-2,724.53	97.14	3,214.85	3,179.48	35.37	90.897		
13,600.00	12,017.00	10,275.81	8,795.00	62.57	43.29	3.63	-2,824.53	98.12	3,214.85	3,178.89	35.95	89.415		
13,700.00	12,017.00	10,375.81	8,795.00	63.80	44.44	3.63	-2,924.53	99.11	3,214.85	3,178.28	36.57	87.920		
13,800.00	12,017.00	10,475.81	8,795.00	65.05	45.62	3.63	-3,024.52	100.10	3,214.85	3,177.65	37.20	86.420		
13,900.00	12,017.00	10,575.81	8,795.00	66.32	46.82	3.63	-3,124.52	101.09	3,214.85	3,176.99	37.86	84.921		

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 Tatanka Fed Com 602H
Project:	Lea County, NM (NAD83)	TVD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 602H	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													Tatanka Fed Com - Tatanka 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							Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor				
14,000.00	12,017.00	10,675.81	8,795.00	67.60	48.06	3.63	-3,224.51	102.07	3,214.85	3,176.31	38.54	83.426				
14,100.00	12,017.00	10,775.81	8,795.00	68.90	49.31	3.63	-3,324.51	103.06	3,214.85	3,175.61	39.23	81.942				
14,200.00	12,017.00	10,875.81	8,795.00	70.22	50.59	3.63	-3,424.50	104.05	3,214.85	3,174.90	39.95	80.470				
14,300.00	12,017.00	10,975.81	8,795.00	71.55	51.90	3.63	-3,524.50	105.04	3,214.85	3,174.16	40.69	79.016				
14,400.00	12,017.00	11,075.81	8,795.00	72.89	53.22	3.63	-3,624.49	106.02	3,214.85	3,173.41	41.44	77.582				
14,500.00	12,017.00	11,175.81	8,795.00	74.25	54.55	3.63	-3,724.49	107.01	3,214.85	3,172.64	42.21	76.169				
14,600.00	12,017.00	11,275.81	8,795.00	75.61	55.91	3.63	-3,824.48	108.00	3,214.84	3,171.85	42.99	74.780				
14,700.00	12,017.00	11,375.81	8,795.00	76.99	57.28	3.63	-3,924.48	108.98	3,214.84	3,171.06	43.79	73.417				
14,800.00	12,017.00	11,475.81	8,795.00	78.38	58.67	3.63	-4,024.47	109.97	3,214.84	3,170.24	44.60	72.080				
14,900.00	12,017.00	11,575.81	8,795.00	79.78	60.06	3.63	-4,124.47	110.96	3,214.84	3,169.42	45.43	70.771				
15,000.00	12,017.00	11,675.81	8,795.00	81.18	61.48	3.63	-4,224.46	111.95	3,214.84	3,168.58	46.26	69.491				
15,100.00	12,017.00	11,775.81	8,795.00	82.60	62.90	3.63	-4,324.46	112.93	3,214.84	3,167.73	47.11	68.239				
15,200.00	12,017.00	11,875.81	8,795.00	84.03	64.33	3.63	-4,424.45	113.92	3,214.84	3,166.87	47.97	67.016				
15,300.00	12,017.00	11,975.81	8,795.00	85.46	65.78	3.63	-4,524.45	114.91	3,214.84	3,166.00	48.84	65.822				
15,400.00	12,017.00	12,075.81	8,795.00	86.90	67.23	3.63	-4,624.44	115.90	3,214.84	3,165.12	49.72	64.657				
15,500.00	12,017.00	12,175.81	8,795.00	88.35	68.69	3.63	-4,724.44	116.88	3,214.84	3,164.23	50.61	63.520				
15,600.00	12,017.00	12,275.81	8,795.00	89.80	70.16	3.63	-4,824.43	117.87	3,214.84	3,163.33	51.51	62.413				
15,700.00	12,017.00	12,375.81	8,795.00	91.27	71.64	3.63	-4,924.43	118.86	3,214.84	3,162.42	52.42	61.333				
15,800.00	12,017.00	12,475.81	8,795.00	92.74	73.13	3.63	-5,024.42	119.84	3,214.84	3,161.51	53.33	60.281				
15,900.00	12,017.00	12,575.81	8,795.00	94.21	74.62	3.63	-5,124.42	120.83	3,214.84	3,160.59	54.25	59.256				
16,000.00	12,017.00	12,675.81	8,795.00	95.69	76.12	3.63	-5,224.41	121.82	3,214.84	3,159.66	55.18	58.258				
16,100.00	12,017.00	12,775.81	8,795.00	97.18	77.63	3.63	-5,324.41	122.81	3,214.84	3,158.72	56.12	57.286				
16,200.00	12,017.00	12,875.81	8,795.00	98.67	79.14	3.63	-5,424.40	123.79	3,214.84	3,157.78	57.06	56.340				
16,300.00	12,017.00	12,975.81	8,795.00	100.16	80.65	3.63	-5,524.40	124.78	3,214.84	3,156.83	58.01	55.418				
16,400.00	12,017.00	13,075.81	8,795.00	101.67	82.18	3.63	-5,624.39	125.77	3,214.84	3,155.87	58.97	54.521				
16,500.00	12,017.00	13,175.81	8,795.00	103.17	83.70	3.63	-5,724.39	126.75	3,214.84	3,154.91	59.93	53.647				
16,600.00	12,017.00	13,275.81	8,795.00	104.68	85.24	3.63	-5,824.38	127.74	3,214.84	3,153.94	60.89	52.796				
16,700.00	12,017.00	13,375.81	8,795.00	106.20	86.77	3.63	-5,924.38	128.73	3,214.84	3,152.97	61.86	51.967				
16,800.00	12,017.00	13,475.81	8,795.00	107.71	88.31	3.63	-6,024.37	129.72	3,214.84	3,152.00	62.84	51.160				
16,900.00	12,017.00	13,575.81	8,795.00	109.24	89.86	3.63	-6,124.37	130.70	3,214.84	3,151.02	63.82	50.374				
17,000.00	12,017.00	13,675.81	8,795.00	110.76	91.40	3.63	-6,224.36	131.69	3,214.83	3,150.03	64.80	49.609				
17,100.00	12,017.00	13,775.81	8,795.00	112.29	92.96	3.63	-6,324.36	132.68	3,214.83	3,149.04	65.79	48.863				
17,200.00	12,017.00	13,875.81	8,795.00	113.82	94.51	3.63	-6,424.35	133.67	3,214.83	3,148.05	66.79	48.137				
17,300.00	12,017.00	13,975.81	8,795.00	115.36	96.07	3.63	-6,524.35	134.65	3,214.83	3,147.05	67.78	47.429				
17,400.00	12,017.00	14,075.81	8,795.00	116.90	97.63	3.63	-6,624.34	135.64	3,214.83	3,146.05	68.78	46.739				
17,500.00	12,017.00	14,175.81	8,795.00	118.44	99.19	3.63	-6,724.34	136.63	3,214.83	3,145.05	69.79	46.066				
17,600.00	12,017.00	14,275.81	8,795.00	119.99	100.76	3.63	-6,824.34	137.61	3,214.83	3,144.04	70.79	45.411				
17,700.00	12,017.00	14,375.81	8,795.00	121.53	102.33	3.62	-6,924.33	138.60	3,214.83	3,143.03	71.80	44.773				
17,800.00	12,017.00	14,475.81	8,795.00	123.09	103.90	3.62	-7,024.33	139.59	3,214.83	3,142.02	72.82	44.150				
17,900.00	12,017.00	14,575.81	8,795.00	124.64	105.48	3.62	-7,124.32	140.58	3,214.83	3,141.00	73.83	43.542				
18,000.00	12,017.00	14,675.81	8,795.00	126.19	107.05	3.62	-7,224.32	141.56	3,214.83	3,139.98	74.85	42.950				
18,100.00	12,017.00	14,775.81	8,795.00	127.75	108.63	3.62	-7,324.31	142.55	3,214.83	3,138.96	75.87	42.372				
18,200.00	12,017.00	14,875.81	8,795.00	129.31	110.21	3.62	-7,424.31	143.54	3,214.83	3,137.93	76.90	41.807				
18,300.00	12,017.00	14,975.81	8,795.00	130.88	111.80	3.62	-7,524.30	144.52	3,214.83	3,136.91	77.92	41.256				
18,400.00	12,017.00	15,075.81	8,795.00	132.44	113.38	3.62	-7,624.30	145.51	3,214.83	3,135.88	78.95	40.719				
18,500.00	12,017.00	15,175.81	8,795.00	134.01	114.97	3.62	-7,724.29	146.50	3,214.83	3,134.85	79.98	40.194				
18,600.00	12,017.00	15,275.81	8,795.00	135.58	116.56	3.62	-7,824.29	147.49	3,214.83	3,133.81	81.01	39.682				
18,700.00	12,017.00	15,375.81	8,795.00	137.15	118.15	3.62	-7,924.28	148.47	3,214.83	3,132.78	82.05	39.181				
18,800.00	12,017.00	15,475.81	8,795.00	138.72	119.74	3.62	-8,024.28	149.46	3,214.83	3,131.74	83.09	38.691				
18,900.00	12,017.00	15,575.81	8,795.00	140.29	121.34	3.62	-8,124.27	150.45	3,214.83	3,130.70	84.13	38.213				
19,000.00	12,017.00	15,675.81	8,795.00	141.87	122.93	3.62	-8,224.27	151.44	3,214.83	3,129.65	85.17	37.745				
19,100.00	12,017.00	15,775.81	8,795.00	143.45	124.53	3.62	-8,324.26	152.42	3,214.83	3,128.61	86.22	37.288				

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 Tatanka Fed Com 602H
Project:	Lea County, NM (NAD83)	TVD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 602H	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													Tatanka Fed Com - Tatanka 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						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)								
19,200.00	12,017.00	15,875.81	8,795.00	145.03	126.13	3.62	-8,424.26	153.41	3,214.83	3,127.56	87.26	36.841				
19,300.00	12,017.00	15,975.81	8,795.00	146.61	127.72	3.62	-8,524.25	154.40	3,214.83	3,126.52	88.31	36.404				
19,400.00	12,017.00	16,075.81	8,795.00	148.19	129.33	3.62	-8,624.25	155.38	3,214.83	3,125.47	89.36	35.977				
19,500.00	12,017.00	16,175.81	8,795.00	149.78	130.93	3.62	-8,724.24	156.37	3,214.82	3,124.41	90.41	35.558				
19,600.00	12,017.00	16,275.81	8,795.00	151.36	132.53	3.62	-8,824.24	157.36	3,214.82	3,123.36	91.46	35.149				
19,700.00	12,017.00	16,375.81	8,795.00	152.95	134.14	3.62	-8,924.23	158.35	3,214.82	3,122.31	92.52	34.749				
19,800.00	12,017.00	16,475.81	8,795.00	154.54	135.74	3.62	-9,024.23	159.33	3,214.82	3,121.25	93.57	34.357				
19,900.00	12,017.00	16,575.81	8,795.00	156.13	137.35	3.62	-9,124.22	160.32	3,214.82	3,120.19	94.63	33.973				
20,000.00	12,017.00	16,675.81	8,795.00	157.72	138.96	3.62	-9,224.22	161.31	3,214.82	3,119.14	95.69	33.597				
20,100.00	12,017.00	16,775.81	8,795.00	159.31	140.56	3.62	-9,324.21	162.29	3,214.82	3,118.08	96.75	33.229				
20,200.00	12,017.00	16,875.81	8,795.00	160.90	142.17	3.62	-9,424.21	163.28	3,214.82	3,117.01	97.81	32.869				
20,300.00	12,017.00	16,975.81	8,795.00	162.50	143.78	3.62	-9,524.20	164.27	3,214.82	3,115.95	98.87	32.516				
20,400.00	12,017.00	17,075.81	8,795.00	164.09	145.40	3.62	-9,624.20	165.26	3,214.82	3,114.89	99.93	32.170				
20,500.00	12,017.00	17,175.81	8,795.00	165.69	147.01	3.62	-9,724.19	166.24	3,214.82	3,113.82	101.00	31.831				
20,600.00	12,017.00	17,275.81	8,795.00	167.29	148.62	3.62	-9,824.19	167.23	3,214.82	3,112.76	102.06	31.499				
20,700.00	12,017.00	17,375.81	8,795.00	168.89	150.24	3.62	-9,924.18	168.22	3,214.82	3,111.69	103.13	31.173				
20,800.00	12,017.00	17,475.81	8,795.00	170.49	151.85	3.62	-10,024.18	169.21	3,214.82	3,110.62	104.19	30.854				
20,900.00	12,017.00	17,575.81	8,795.00	172.09	153.47	3.62	-10,124.17	170.19	3,214.82	3,109.56	105.26	30.541				
21,000.00	12,017.00	17,675.81	8,795.00	173.69	155.08	3.62	-10,224.17	171.18	3,214.82	3,108.49	106.33	30.234				
21,100.00	12,017.00	17,775.81	8,795.00	175.29	156.70	3.62	-10,324.16	172.17	3,214.82	3,107.42	107.40	29.933				
21,200.00	12,017.00	17,875.81	8,795.00	176.90	158.32	3.62	-10,424.16	173.15	3,214.82	3,106.35	108.47	29.637				
21,300.00	12,017.00	17,975.81	8,795.00	178.50	159.94	3.62	-10,524.15	174.14	3,214.82	3,105.27	109.54	29.348				
21,400.00	12,017.00	18,075.81	8,795.00	180.11	161.56	3.62	-10,624.15	175.13	3,214.82	3,104.20	110.61	29.063				
21,500.00	12,017.00	18,175.81	8,795.00	181.71	163.18	3.62	-10,724.15	176.12	3,214.82	3,103.13	111.69	28.784				
21,600.00	12,017.00	18,275.81	8,795.00	183.32	164.80	3.62	-10,824.14	177.10	3,214.82	3,102.05	112.76	28.510				
21,700.00	12,017.00	18,375.81	8,795.00	184.93	166.42	3.62	-10,924.14	178.09	3,214.82	3,100.98	113.84	28.241				
21,800.00	12,017.00	18,475.81	8,795.00	186.54	168.04	3.62	-11,024.13	179.08	3,214.82	3,099.90	114.91	27.976				
21,900.00	12,017.00	18,575.81	8,795.00	188.15	169.66	3.62	-11,124.13	180.06	3,214.81	3,098.83	115.99	27.717				
22,000.00	12,017.00	18,675.81	8,795.00	189.76	171.29	3.62	-11,224.12	181.05	3,214.81	3,097.75	117.07	27.462				
22,100.00	12,017.00	18,775.81	8,795.00	191.37	172.91	3.62	-11,324.12	182.04	3,214.81	3,096.67	118.14	27.211				
22,162.46	12,017.00	18,838.27	8,795.00	192.37	173.92	3.62	-11,386.57	182.66	3,214.81	3,096.00	118.82	27.057				
22,187.30	12,017.00	18,862.99	8,795.00	192.77	174.32	3.62	-11,411.29	182.90	3,214.81	3,095.73	119.08	26.996				

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 Tatanka Fed Com 602H
Project:	Lea County, NM (NAD83)	TVD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 602H	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 Tatanka Fed Com - Tatanka Fed Com 103H - 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	121.76	-1,001.93	1,618.78	1,903.83					
100.00	100.00	83.70	83.70	0.13	0.11	121.76	-1,001.93	1,618.78	1,903.76	1,903.60	0.16	N/A		
200.00	200.00	183.70	183.70	0.48	0.43	121.76	-1,001.93	1,618.78	1,903.76	1,903.12	0.64	2,954.323		
300.00	300.00	283.70	283.70	0.84	0.78	121.76	-1,001.93	1,618.78	1,903.76	1,902.61	1.15	1,654.338		
400.00	400.00	383.70	383.70	1.20	1.14	121.76	-1,001.93	1,618.78	1,903.76	1,902.11	1.66	1,148.576		
500.00	500.00	483.70	483.70	1.56	1.50	121.76	-1,001.93	1,618.78	1,903.76	1,901.60	2.16	879.607		
600.00	600.00	583.70	583.70	1.92	1.86	121.76	-1,001.93	1,618.78	1,903.76	1,901.09	2.67	712.696		
700.00	700.00	683.70	683.70	2.28	2.22	121.76	-1,001.93	1,618.78	1,903.76	1,900.58	3.18	599.022		
800.00	800.00	783.70	783.70	2.63	2.58	121.76	-1,001.93	1,618.78	1,903.76	1,900.08	3.69	516.620		
900.00	900.00	883.70	883.70	2.99	2.93	121.76	-1,001.93	1,618.78	1,903.76	1,899.57	4.19	454.146		
1,000.00	1,000.00	983.70	983.70	3.35	3.29	121.76	-1,001.93	1,618.78	1,903.76	1,899.06	4.70	405.151		
1,100.00	1,100.00	1,083.70	1,083.70	3.71	3.65	121.76	-1,001.93	1,618.78	1,903.76	1,898.56	5.21	365.698		
1,200.00	1,200.00	1,183.70	1,183.70	4.07	4.01	121.76	-1,001.93	1,618.78	1,903.76	1,898.05	5.71	333.247		
1,300.00	1,300.00	1,283.70	1,283.70	4.43	4.37	121.76	-1,001.93	1,618.78	1,903.76	1,897.54	6.22	306.085		
1,400.00	1,400.00	1,383.70	1,383.70	4.79	4.73	121.76	-1,001.93	1,618.78	1,903.76	1,897.04	6.73	283.017		
1,500.00	1,500.00	1,483.70	1,483.70	5.14	5.09	121.76	-1,001.93	1,618.78	1,903.76	1,896.53	7.23	263.183		
1,600.00	1,600.00	1,583.70	1,583.70	5.50	5.44	121.76	-1,001.93	1,618.78	1,903.76	1,896.02	7.74	245.946		
1,700.00	1,700.00	1,683.70	1,683.70	5.86	5.80	121.76	-1,001.93	1,618.78	1,903.76	1,895.52	8.25	230.829		
1,800.00	1,800.00	1,783.70	1,783.70	6.22	6.16	121.76	-1,001.93	1,618.78	1,903.76	1,895.01	8.75	217.462		
1,900.00	1,900.00	1,883.70	1,883.70	6.58	6.52	121.76	-1,001.93	1,618.78	1,903.76	1,894.50	9.26	205.559		
2,000.00	2,000.00	1,983.70	1,983.70	6.94	6.88	121.76	-1,001.93	1,618.78	1,903.76	1,893.99	9.77	194.891		
2,100.00	2,100.00	2,083.70	2,083.70	7.29	7.24	121.76	-1,001.93	1,618.78	1,903.76	1,893.49	10.28	185.276		
2,200.00	2,200.00	2,183.70	2,183.70	7.65	7.59	121.76	-1,001.93	1,618.78	1,903.76	1,892.98	10.78	176.564		
2,300.00	2,300.00	2,283.70	2,283.70	8.01	7.95	121.76	-1,001.93	1,618.78	1,903.76	1,892.47	11.29	168.636		
2,400.00	2,400.00	2,383.70	2,383.70	8.37	8.31	121.76	-1,001.93	1,618.78	1,903.76	1,891.97	11.80	161.388		
2,500.00	2,500.00	2,483.70	2,483.70	8.73	8.67	121.76	-1,001.93	1,618.78	1,903.76	1,891.46	12.30	154.738		
2,600.00	2,600.00	2,583.70	2,583.70	9.09	9.03	121.76	-1,001.93	1,618.78	1,903.76	1,890.95	12.81	148.615		
2,700.00	2,700.00	2,683.70	2,683.70	9.45	9.39	121.76	-1,001.93	1,618.78	1,903.76	1,890.45	13.32	142.957		
2,800.00	2,800.00	2,783.70	2,783.70	9.80	9.75	121.76	-1,001.93	1,618.78	1,903.76	1,889.94	13.82	137.715		
2,900.00	2,900.00	2,883.70	2,883.70	10.16	10.10	121.76	-1,001.93	1,618.78	1,903.76	1,889.43	14.33	132.843		
3,000.00	3,000.00	2,983.70	2,983.70	10.52	10.46	121.76	-1,001.93	1,618.78	1,903.76	1,888.92	14.84	128.304		
3,100.00	3,100.00	3,066.16	3,066.16	10.88	10.75	121.77	-1,002.50	1,618.78	1,904.15	1,888.86	15.29	124.524		
3,200.00	3,200.00	3,145.15	3,145.12	11.24	11.01	121.83	-1,004.69	1,618.80	1,905.62	1,889.89	15.73	121.164		
3,300.00	3,299.99	3,224.07	3,223.94	11.58	11.26	-43.88	-1,008.50	1,618.82	1,907.26	1,891.11	16.15	118.131		
3,400.00	3,399.91	3,300.00	3,299.69	11.90	11.51	-43.80	-1,013.70	1,618.85	1,908.12	1,891.57	16.54	115.348		
3,500.00	3,499.69	3,381.77	3,381.14	12.23	11.78	-43.72	-1,020.99	1,618.90	1,908.19	1,891.24	16.96	112.544		
3,600.00	3,599.27	3,460.57	3,459.45	12.56	12.04	-43.66	-1,029.66	1,618.95	1,907.49	1,890.13	17.36	109.871		
3,700.00	3,698.57	3,541.01	3,539.20	12.89	12.30	-43.61	-1,040.17	1,619.02	1,906.00	1,888.23	17.77	107.240		
3,800.00	3,797.54	3,640.95	3,638.17	13.22	12.64	-43.58	-1,054.07	1,619.11	1,903.10	1,884.85	18.25	104.303		
3,900.00	3,896.09	3,740.83	3,737.08	13.57	12.99	-43.63	-1,067.96	1,619.19	1,898.30	1,879.57	18.72	101.385		
4,000.00	3,994.16	3,840.58	3,835.87	13.92	13.33	-43.75	-1,081.84	1,619.28	1,891.60	1,872.40	19.21	98.482		
4,100.00	4,091.70	3,940.15	3,934.46	14.28	13.69	-43.95	-1,095.69	1,619.37	1,883.03	1,863.33	19.70	95.597		
4,125.65	4,116.62	3,965.65	3,959.71	14.37	13.78	-44.02	-1,099.24	1,619.39	1,880.53	1,860.71	19.82	94.859		
4,200.00	4,188.79	4,039.53	4,032.88	14.65	14.04	-44.13	-1,109.51	1,619.45	1,873.11	1,852.92	20.19	92.755		
4,300.00	4,285.87	4,138.91	4,131.29	15.04	14.40	-44.28	-1,123.34	1,619.54	1,863.14	1,842.44	20.70	90.019		
4,400.00	4,382.95	4,269.11	4,260.47	15.43	14.87	-44.54	-1,139.59	1,619.64	1,852.44	1,831.15	21.30	86.989		
4,500.00	4,480.03	4,401.82	4,392.62	15.83	15.34	-44.92	-1,151.63	1,619.72	1,839.96	1,818.06	21.90	84.029		
4,600.00	4,577.11	4,533.03	4,523.62	16.23	15.80	-45.43	-1,159.01	1,619.76	1,825.74	1,803.25	22.49	81.188		
4,700.00	4,674.18	4,662.47	4,653.02	16.65	16.25	-46.06	-1,161.88	1,619.78	1,809.89	1,786.82	23.07	78.451		
4,800.00	4,771.26	4,764.41	4,754.96	17.07	16.61	-46.63	-1,161.93	1,619.78	1,793.09	1,769.50	23.60	75.993		
4,900.00	4,868.34	4,861.49	4,852.04	17.49	16.95	-47.19	-1,161.93	1,619.78	1,776.44	1,752.33	24.11	73.666		
5,000.00	4,965.42	4,958.57	4,949.12	17.92	17.29	-47.75	-1,161.93	1,619.78	1,759.96	1,735.32	24.64	71.432		

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 Tatanka Fed Com 602H
Project:	Lea County, NM (NAD83)	TVD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 602H	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		
5,100.00	5,062.50	5,055.65	5,046.20	18.36	17.63	-48.33	-1,161.93	1,619.78	1,743.65	1,718.49	25.17	69.286		
5,200.00	5,159.57	5,152.72	5,143.27	18.80	17.97	-48.91	-1,161.93	1,619.78	1,727.53	1,701.83	25.70	67.224		
5,300.00	5,256.65	5,249.80	5,240.35	19.25	18.31	-49.51	-1,161.93	1,619.78	1,711.58	1,685.35	26.23	65.243		
5,400.00	5,353.73	5,346.88	5,337.43	19.70	18.65	-50.11	-1,161.93	1,619.78	1,695.83	1,669.06	26.77	63.339		
5,500.00	5,450.81	5,443.96	5,434.51	20.15	18.99	-50.73	-1,161.93	1,619.78	1,680.27	1,652.95	27.32	61.508		
5,600.00	5,547.89	5,541.04	5,531.59	20.61	19.33	-51.36	-1,161.93	1,619.78	1,664.91	1,637.05	27.87	59.747		
5,700.00	5,644.96	5,638.11	5,628.66	21.07	19.67	-52.00	-1,161.93	1,619.78	1,649.76	1,621.34	28.42	58.054		
5,800.00	5,742.04	5,735.19	5,725.74	21.54	20.01	-52.65	-1,161.93	1,619.78	1,634.82	1,605.85	28.97	56.425		
5,900.00	5,839.12	5,832.27	5,822.82	22.00	20.35	-53.31	-1,161.93	1,619.78	1,620.10	1,590.57	29.53	54.858		
6,000.00	5,936.20	5,929.35	5,919.90	22.47	20.70	-53.98	-1,161.93	1,619.78	1,605.60	1,575.51	30.10	53.350		
6,100.00	6,033.28	6,026.43	6,016.98	22.94	21.04	-54.67	-1,161.93	1,619.78	1,591.33	1,560.67	30.66	51.898		
6,200.00	6,130.35	6,123.50	6,114.05	23.42	21.38	-55.36	-1,161.93	1,619.78	1,577.30	1,546.07	31.23	50.501		
6,300.00	6,227.43	6,220.58	6,211.13	23.90	21.72	-56.07	-1,161.93	1,619.78	1,563.51	1,531.70	31.81	49.155		
6,400.00	6,324.51	6,317.66	6,308.21	24.38	22.07	-56.79	-1,161.93	1,619.78	1,549.97	1,517.58	32.39	47.860		
6,500.00	6,421.59	6,414.74	6,405.29	24.86	22.41	-57.53	-1,161.93	1,619.78	1,536.68	1,503.72	32.97	46.613		
6,600.00	6,518.67	6,511.82	6,502.37	25.34	22.75	-58.27	-1,161.93	1,619.78	1,523.66	1,490.11	33.55	45.412		
6,700.00	6,615.75	6,608.89	6,599.45	25.83	23.10	-59.03	-1,161.93	1,619.78	1,510.90	1,476.76	34.14	44.256		
6,800.00	6,712.82	6,705.97	6,696.52	26.31	23.44	-59.80	-1,161.93	1,619.78	1,498.42	1,463.69	34.73	43.142		
6,900.00	6,809.90	6,803.05	6,793.60	26.80	23.78	-60.58	-1,161.93	1,619.78	1,486.23	1,450.90	35.33	42.070		
7,000.00	6,906.98	6,900.13	6,890.68	27.29	24.13	-61.38	-1,161.93	1,619.78	1,474.32	1,438.39	35.93	41.038		
7,100.00	7,004.06	6,997.21	6,987.76	27.78	24.47	-62.18	-1,161.93	1,619.78	1,462.71	1,426.18	36.53	40.044		
7,200.00	7,101.14	7,094.28	7,084.84	28.28	24.81	-63.00	-1,161.93	1,619.78	1,451.40	1,414.27	37.13	39.087		
7,300.00	7,198.21	7,191.36	7,181.91	28.77	25.16	-63.83	-1,161.93	1,619.78	1,440.41	1,402.67	37.74	38.166		
7,400.00	7,295.29	7,288.44	7,278.99	29.26	25.50	-64.67	-1,161.93	1,619.78	1,429.73	1,391.38	38.35	37.280		
7,500.00	7,392.37	7,385.52	7,376.07	29.76	25.85	-65.53	-1,161.93	1,619.78	1,419.38	1,380.42	38.97	36.427		
7,600.00	7,489.45	7,482.60	7,473.15	30.26	26.19	-66.40	-1,161.93	1,619.78	1,409.36	1,369.78	39.58	35.607		
7,700.00	7,586.53	7,579.67	7,570.23	30.76	26.54	-67.27	-1,161.93	1,619.78	1,399.68	1,359.48	40.20	34.818		
7,800.00	7,683.60	7,676.75	7,667.30	31.26	26.88	-68.16	-1,161.93	1,619.78	1,390.35	1,349.53	40.82	34.059		
7,900.00	7,780.68	7,773.83	7,764.38	31.76	27.22	-69.06	-1,161.93	1,619.78	1,381.37	1,339.93	41.45	33.330		
8,000.00	7,877.76	7,870.91	7,861.46	32.26	27.57	-69.97	-1,161.93	1,619.78	1,372.75	1,330.68	42.07	32.630		
8,035.67	7,912.38	7,905.53	7,896.08	32.44	27.69	-70.30	-1,161.93	1,619.78	1,369.77	1,327.48	42.29	32.387		
8,100.00	7,974.96	7,968.11	7,958.66	32.76	27.91	-70.80	-1,161.93	1,619.78	1,364.68	1,321.99	42.69	31.964		
8,200.00	8,072.71	8,065.86	8,056.41	33.24	28.26	-71.53	-1,161.93	1,619.78	1,357.74	1,314.43	43.30	31.353		
8,300.00	8,170.98	8,156.88	8,147.40	33.69	28.58	-72.07	-1,163.28	1,619.79	1,352.00	1,308.12	43.88	30.810		
8,400.00	8,269.70	8,241.36	8,230.95	34.13	28.88	-72.05	-1,175.27	1,619.91	1,348.15	1,303.74	44.41	30.358		
8,500.00	8,368.80	8,323.92	8,310.03	34.55	29.18	-71.47	-1,198.72	1,620.14	1,346.33	1,301.43	44.90	29.986		
8,526.38	8,395.00	8,344.85	8,329.48	34.65	29.25	-71.23	-1,206.45	1,620.21	1,346.24	1,301.22	45.02	29.905 CC, ES		
8,600.00	8,468.22	8,400.00	8,379.24	34.94	29.46	-70.45	-1,230.18	1,620.44	1,347.03	1,301.69	45.33	29.714		
8,700.00	8,567.89	8,468.73	8,437.69	35.31	29.73	-69.18	-1,266.25	1,620.79	1,351.06	1,305.36	45.69	29.568		
8,800.00	8,667.73	8,527.46	8,483.91	35.66	29.97	-67.88	-1,302.44	1,621.15	1,359.37	1,313.42	45.95	29.583		
8,900.00	8,767.69	8,577.00	8,519.85	35.99	30.18	-66.68	-1,336.52	1,621.48	1,372.82	1,326.73	46.08	29.789		
8,961.32	8,829.00	8,600.00	8,535.51	36.17	30.28	99.65	-1,353.36	1,621.64	1,383.89	1,337.81	46.08	30.035		
9,000.00	8,867.68	8,618.34	8,547.50	36.28	30.37	100.23	-1,367.24	1,621.78	1,391.95	1,345.88	46.07	30.214		
9,100.00	8,967.68	8,650.00	8,567.13	36.57	30.51	101.26	-1,392.07	1,622.02	1,416.35	1,370.45	45.90	30.855		
9,200.00	9,067.68	8,683.56	8,586.41	36.86	30.67	102.38	-1,419.53	1,622.28	1,445.92	1,400.26	45.66	31.665		
9,300.00	9,167.68	8,700.00	8,595.26	37.16	30.75	102.94	-1,433.39	1,622.42	1,480.69	1,435.46	45.23	32.735		
9,400.00	9,267.68	8,732.07	8,611.37	37.45	30.91	104.06	-1,461.12	1,622.69	1,520.31	1,475.46	44.84	33.902		
9,500.00	9,367.68	8,750.00	8,619.68	37.74	30.99	104.70	-1,477.00	1,622.84	1,564.74	1,520.43	44.31	35.316		
9,600.00	9,467.68	8,769.08	8,627.99	38.04	31.09	105.39	-1,494.18	1,623.01	1,613.63	1,569.88	43.75	36.884		
9,700.00	9,567.68	8,800.00	8,640.21	38.33	31.25	106.51	-1,522.57	1,623.29	1,666.89	1,623.63	43.26	38.531		
9,800.00	9,667.68	8,800.00	8,640.21	38.63	31.25	106.51	-1,522.57	1,623.29	1,723.58	1,681.04	42.55	40.510		
9,900.00	9,767.68	8,800.00	8,640.21	38.93	31.25	106.51	-1,522.57	1,623.29	1,784.09	1,742.25	41.84	42.639		

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 Tatanka Fed Com 602H
Project:	Lea County, NM (NAD83)	TVD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 602H	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													Tatanka Fed Com - Tatanka Fed Com 103H - 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				
10,000.00	9,867.68	8,821.17	8,647.69	39.23	31.37	107.28	-1,542.37	1,623.48	1,847.64	1,806.32	41.31	44.721				
10,100.00	9,967.68	8,831.07	8,650.94	39.53	31.42	107.64	-1,551.72	1,623.57	1,914.20	1,873.47	40.73	46.994				
10,200.00	10,067.68	8,850.00	8,656.69	39.83	31.52	108.34	-1,569.75	1,623.75	1,983.51	1,943.27	40.25	49.282				
10,300.00	10,167.68	8,850.00	8,656.69	40.13	31.52	108.34	-1,569.75	1,623.75	2,055.06	2,015.39	39.67	51.805				
10,400.00	10,267.68	8,850.00	8,656.69	40.43	31.52	108.34	-1,569.75	1,623.75	2,128.90	2,089.76	39.13	54.403				
10,500.00	10,367.68	8,850.00	8,656.69	40.74	31.52	108.34	-1,569.75	1,623.75	2,204.80	2,166.16	38.64	57.062				
10,600.00	10,467.68	8,850.00	8,656.69	41.04	31.52	108.34	-1,569.75	1,623.75	2,282.56	2,244.37	38.19	59.770				
10,700.00	10,567.68	8,874.70	8,663.30	41.35	31.66	109.25	-1,593.55	1,623.98	2,361.43	2,323.49	37.94	62.242				
10,800.00	10,667.68	8,880.09	8,664.60	41.66	31.69	109.45	-1,598.78	1,624.03	2,442.09	2,404.49	37.61	64.940				
10,900.00	10,767.68	8,900.00	8,668.99	41.96	31.80	110.18	-1,618.20	1,624.22	2,524.30	2,486.91	37.40	67.501				
11,000.00	10,867.68	8,900.00	8,668.99	42.27	31.80	110.18	-1,618.20	1,624.22	2,607.41	2,570.30	37.11	70.270				
11,100.00	10,967.68	8,900.00	8,668.99	42.58	31.80	110.18	-1,618.20	1,624.22	2,691.67	2,654.81	36.85	73.037				
11,200.00	11,067.68	8,900.00	8,668.99	42.89	31.80	110.18	-1,618.20	1,624.22	2,776.97	2,740.33	36.64	75.796				
11,300.00	11,167.68	8,900.00	8,668.99	43.20	31.80	110.18	-1,618.20	1,624.22	2,863.22	2,826.76	36.45	78.543				
11,400.00	11,267.68	8,900.00	8,668.99	43.51	31.80	110.18	-1,618.20	1,624.22	2,950.34	2,914.04	36.30	81.270				
11,500.00	11,367.68	8,900.00	8,668.99	43.82	31.80	110.18	-1,618.20	1,624.22	3,038.25	3,002.07	36.18	83.969				
11,576.36	11,444.04	8,900.00	8,668.99	44.06	31.80	110.18	-1,618.20	1,624.22	3,105.87	3,069.76	36.11	86.009				
11,600.00	11,467.68	8,900.00	8,668.99	44.14	31.80	-65.11	-1,618.20	1,624.22	3,126.81	3,090.72	36.09	86.636				
11,650.00	11,517.48	8,900.00	8,668.99	44.33	31.80	-57.21	-1,618.20	1,624.22	3,170.53	3,134.48	36.05	87.942				
11,700.00	11,566.73	8,900.00	8,668.99	44.54	31.80	-50.56	-1,618.20	1,624.22	3,213.28	3,177.26	36.02	89.215				
11,750.00	11,615.04	8,900.00	8,668.99	44.78	31.80	-45.06	-1,618.20	1,624.22	3,254.76	3,218.77	35.99	90.445				
11,800.00	11,662.05	8,924.58	8,673.48	45.04	31.94	-40.17	-1,642.36	1,624.45	3,294.14	3,258.07	36.07	91.327				
11,850.00	11,707.40	8,950.00	8,677.03	45.33	32.09	-36.23	-1,667.53	1,624.70	3,332.51	3,296.36	36.16	92.172				
11,900.00	11,750.75	8,950.00	8,677.03	45.65	32.09	-33.32	-1,667.53	1,624.70	3,368.24	3,332.11	36.13	93.220				
11,950.00	11,791.76	8,950.00	8,677.03	45.98	32.09	-30.92	-1,667.53	1,624.70	3,401.72	3,365.61	36.11	94.194				
12,000.00	11,830.12	8,950.00	8,677.03	46.33	32.09	-28.94	-1,667.53	1,624.70	3,432.78	3,396.67	36.10	95.085				
12,050.00	11,865.55	8,950.00	8,677.03	46.70	32.09	-27.31	-1,667.53	1,624.70	3,461.23	3,425.14	36.10	95.889				
12,100.00	11,897.77	8,950.00	8,677.03	47.09	32.09	-25.96	-1,667.53	1,624.70	3,486.95	3,450.85	36.10	96.596				
12,150.00	11,926.54	8,950.00	8,677.03	47.50	32.09	-24.86	-1,667.53	1,624.70	3,509.78	3,473.67	36.11	97.203				
12,200.00	11,951.63	8,950.00	8,677.03	47.92	32.09	-23.97	-1,667.53	1,624.70	3,529.62	3,493.49	36.13	97.701				
12,250.00	11,972.86	8,977.44	8,679.60	48.35	32.25	-23.20	-1,694.85	1,624.96	3,545.64	3,509.40	36.25	97.820				
12,300.00	11,990.07	9,000.00	8,680.73	48.80	32.38	-22.63	-1,717.38	1,625.18	3,559.01	3,522.66	36.35	97.900				
12,350.00	12,003.12	9,000.00	8,680.73	49.25	32.38	-22.26	-1,717.38	1,625.18	3,568.65	3,532.25	36.40	98.044				
12,400.00	12,011.92	9,000.00	8,680.73	49.70	32.38	-22.02	-1,717.38	1,625.18	3,574.98	3,538.52	36.46	98.060				
12,450.00	12,016.39	9,000.00	8,680.73	50.16	32.38	-21.90	-1,717.38	1,625.18	3,577.98	3,541.45	36.53	97.949				
12,476.36	12,017.00	9,017.49	8,681.00	50.40	32.49	-21.90	-1,734.86	1,625.35	3,578.16	3,541.54	36.62	97.715				
12,500.00	12,017.00	9,017.49	8,681.00	50.61	32.49	-21.90	-1,734.86	1,625.35	3,577.91	3,541.25	36.66	97.598				
12,544.97	12,017.00	9,037.19	8,681.00	51.03	32.61	-21.90	-1,754.56	1,625.54	3,577.82	3,541.02	36.80	97.228				
12,600.00	12,017.00	9,092.23	8,681.00	51.55	32.96	-21.90	-1,809.60	1,626.08	3,577.82	3,540.77	37.05	96.571				
12,700.00	12,017.00	9,192.23	8,681.00	52.52	33.64	-21.90	-1,909.59	1,627.05	3,577.82	3,540.27	37.54	95.304				
12,800.00	12,017.00	9,292.23	8,681.00	53.53	34.40	-21.90	-2,009.59	1,628.02	3,577.81	3,539.74	38.07	93.968				
12,900.00	12,017.00	9,392.23	8,681.00	54.57	35.21	-21.90	-2,109.58	1,628.99	3,577.81	3,539.16	38.65	92.575				
13,000.00	12,017.00	9,492.23	8,681.00	55.63	36.08	-21.90	-2,209.58	1,629.97	3,577.81	3,538.55	39.26	91.136				
13,100.00	12,017.00	9,592.23	8,681.00	56.73	37.01	-21.90	-2,309.57	1,630.94	3,577.80	3,537.90	39.90	89.666				
13,200.00	12,017.00	9,692.23	8,681.00	57.85	37.98	-21.90	-2,409.57	1,631.91	3,577.80	3,537.22	40.58	88.168				
13,300.00	12,017.00	9,792.23	8,681.00	58.99	39.00	-21.90	-2,509.56	1,632.88	3,577.80	3,536.50	41.29	86.647				
13,400.00	12,017.00	9,892.23	8,681.00	60.16	40.07	-21.90	-2,609.56	1,633.85	3,577.79	3,535.76	42.03	85.117				
13,500.00	12,017.00	9,992.23	8,681.00	61.35	41.17	-21.90	-2,709.55	1,634.83	3,577.79	3,534.99	42.80	83.587				
13,600.00	12,017.00	10,092.23	8,681.00	62.57	42.30	-21.90	-2,809.55	1,635.80	3,577.79	3,534.19	43.60	82.060				
13,700.00	12,017.00	10,192.23	8,681.00	63.80	43.47	-21.90	-2,909.54	1,636.77	3,577.78	3,533.36	44.42	80.541				
13,800.00	12,017.00	10,292.23	8,681.00	65.05	44.67	-21.90	-3,009.54	1,637.74	3,577.78	3,532.51	45.27	79.032				
13,900.00	12,017.00	10,392.23	8,681.00	66.32	45.90	-21.90	-3,109.54	1,638.72	3,577.78	3,531.64	46.14	77.538				

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 Tatanka Fed Com 602H
Project:	Lea County, NM (NAD83)	TVD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 602H	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		
14,000.00	12,017.00	10,492.23	8,681.00	67.60	47.16	-21.90	-3,209.53	1,639.69	3,577.77	3,530.74	47.04	76.065		
14,100.00	12,017.00	10,592.23	8,681.00	68.90	48.43	-21.90	-3,309.53	1,640.66	3,577.77	3,529.82	47.95	74.614		
14,200.00	12,017.00	10,692.23	8,681.00	70.22	49.73	-21.89	-3,409.52	1,641.63	3,577.77	3,528.88	48.88	73.191		
14,300.00	12,017.00	10,792.23	8,681.00	71.55	51.05	-21.89	-3,509.52	1,642.60	3,577.76	3,527.93	49.83	71.796		
14,400.00	12,017.00	10,892.23	8,681.00	72.89	52.39	-21.89	-3,609.51	1,643.58	3,577.76	3,526.96	50.80	70.430		
14,500.00	12,017.00	10,992.23	8,681.00	74.25	53.75	-21.89	-3,709.51	1,644.55	3,577.76	3,525.98	51.78	69.092		
14,600.00	12,017.00	11,092.23	8,681.00	75.61	55.12	-21.89	-3,809.50	1,645.52	3,577.75	3,524.97	52.78	67.785		
14,700.00	12,017.00	11,192.23	8,681.00	76.99	56.51	-21.89	-3,909.50	1,646.49	3,577.75	3,523.96	53.79	66.508		
14,800.00	12,017.00	11,292.23	8,681.00	78.38	57.91	-21.89	-4,009.49	1,647.47	3,577.75	3,522.93	54.82	65.261		
14,900.00	12,017.00	11,392.23	8,681.00	79.78	59.33	-21.89	-4,109.49	1,648.44	3,577.75	3,521.88	55.86	64.046		
15,000.00	12,017.00	11,492.23	8,681.00	81.18	60.75	-21.89	-4,209.48	1,649.41	3,577.74	3,520.83	56.92	62.861		
15,100.00	12,017.00	11,592.23	8,681.00	82.60	62.19	-21.89	-4,309.48	1,650.38	3,577.74	3,519.76	57.98	61.707		
15,200.00	12,017.00	11,692.23	8,681.00	84.03	63.64	-21.89	-4,409.47	1,651.35	3,577.74	3,518.68	59.06	60.583		
15,300.00	12,017.00	11,792.23	8,681.00	85.46	65.09	-21.89	-4,509.47	1,652.33	3,577.73	3,517.59	60.14	59.489		
15,400.00	12,017.00	11,892.23	8,681.00	86.90	66.56	-21.89	-4,609.46	1,653.30	3,577.73	3,516.49	61.24	58.425		
15,500.00	12,017.00	11,992.23	8,681.00	88.35	68.04	-21.89	-4,709.46	1,654.27	3,577.73	3,515.39	62.34	57.392		
15,600.00	12,017.00	12,092.23	8,681.00	89.80	69.52	-21.89	-4,809.45	1,655.24	3,577.72	3,514.27	63.45	56.387		
15,700.00	12,017.00	12,192.23	8,681.00	91.27	71.01	-21.89	-4,909.45	1,656.22	3,577.72	3,513.15	64.57	55.410		
15,800.00	12,017.00	12,292.23	8,681.00	92.74	72.51	-21.89	-5,009.45	1,657.19	3,577.72	3,512.02	65.70	54.459		
15,900.00	12,017.00	12,392.23	8,681.00	94.21	74.01	-21.89	-5,109.44	1,658.16	3,577.71	3,510.88	66.83	53.534		
16,000.00	12,017.00	12,492.23	8,681.00	95.69	75.52	-21.89	-5,209.44	1,659.13	3,577.71	3,509.74	67.97	52.634		
16,100.00	12,017.00	12,592.23	8,681.00	97.18	77.04	-21.89	-5,309.43	1,660.10	3,577.71	3,508.58	69.12	51.758		
16,200.00	12,017.00	12,692.23	8,681.00	98.67	78.56	-21.89	-5,409.43	1,661.08	3,577.70	3,507.43	70.28	50.908		
16,300.00	12,017.00	12,792.23	8,681.00	100.16	80.08	-21.89	-5,509.42	1,662.05	3,577.70	3,506.26	71.44	50.081		
16,400.00	12,017.00	12,892.23	8,681.00	101.67	81.62	-21.89	-5,609.42	1,663.02	3,577.70	3,505.09	72.60	49.277		
16,500.00	12,017.00	12,992.23	8,681.00	103.17	83.15	-21.89	-5,709.41	1,663.99	3,577.69	3,503.92	73.77	48.495		
16,600.00	12,017.00	13,092.23	8,681.00	104.68	84.69	-21.89	-5,809.41	1,664.97	3,577.69	3,502.74	74.95	47.735		
16,700.00	12,017.00	13,192.23	8,681.00	106.20	86.24	-21.89	-5,909.40	1,665.94	3,577.69	3,501.56	76.13	46.994		
16,800.00	12,017.00	13,292.23	8,681.00	107.71	87.79	-21.89	-6,009.40	1,666.91	3,577.68	3,500.37	77.32	46.274		
16,900.00	12,017.00	13,392.23	8,681.00	109.24	89.34	-21.89	-6,109.39	1,667.88	3,577.68	3,499.17	78.51	45.572		
17,000.00	12,017.00	13,492.23	8,681.00	110.76	90.89	-21.89	-6,209.39	1,668.85	3,577.68	3,497.98	79.70	44.888		
17,100.00	12,017.00	13,592.23	8,681.00	112.29	92.45	-21.89	-6,309.38	1,669.83	3,577.68	3,496.77	80.90	44.223		
17,200.00	12,017.00	13,692.23	8,681.00	113.82	94.01	-21.89	-6,409.38	1,670.80	3,577.67	3,495.57	82.10	43.576		
17,300.00	12,017.00	13,792.23	8,681.00	115.36	95.58	-21.89	-6,509.37	1,671.77	3,577.67	3,494.36	83.31	42.946		
17,400.00	12,017.00	13,892.23	8,681.00	116.90	97.15	-21.89	-6,609.37	1,672.74	3,577.67	3,493.15	84.51	42.333		
17,500.00	12,017.00	13,992.23	8,681.00	118.44	98.72	-21.89	-6,709.37	1,673.72	3,577.66	3,491.94	85.72	41.735		
17,600.00	12,017.00	14,092.23	8,681.00	119.99	100.29	-21.89	-6,809.36	1,674.69	3,577.66	3,490.72	86.94	41.152		
17,700.00	12,017.00	14,192.23	8,681.00	121.53	101.87	-21.89	-6,909.36	1,675.66	3,577.66	3,489.50	88.16	40.583		
17,800.00	12,017.00	14,292.23	8,681.00	123.09	103.44	-21.89	-7,009.35	1,676.63	3,577.65	3,488.28	89.38	40.029		
17,900.00	12,017.00	14,392.23	8,681.00	124.64	105.02	-21.89	-7,109.35	1,677.60	3,577.65	3,487.05	90.60	39.488		
18,000.00	12,017.00	14,492.23	8,681.00	126.19	106.61	-21.89	-7,209.34	1,678.58	3,577.65	3,485.82	91.83	38.961		
18,100.00	12,017.00	14,592.23	8,681.00	127.75	108.19	-21.89	-7,309.34	1,679.55	3,577.64	3,484.59	93.06	38.446		
18,200.00	12,017.00	14,692.23	8,681.00	129.31	109.78	-21.89	-7,409.33	1,680.52	3,577.64	3,483.35	94.29	37.944		
18,300.00	12,017.00	14,792.23	8,681.00	130.88	111.37	-21.89	-7,509.33	1,681.49	3,577.64	3,482.11	95.52	37.454		
18,400.00	12,017.00	14,892.23	8,681.00	132.44	112.96	-21.89	-7,609.32	1,682.47	3,577.63	3,480.87	96.76	36.975		
18,500.00	12,017.00	14,992.23	8,681.00	134.01	114.55	-21.89	-7,709.32	1,683.44	3,577.63	3,479.63	98.00	36.508		
18,600.00	12,017.00	15,092.23	8,681.00	135.58	116.14	-21.89	-7,809.31	1,684.41	3,577.63	3,478.39	99.23	36.052		
18,700.00	12,017.00	15,192.23	8,681.00	137.15	117.74	-21.89	-7,909.31	1,685.38	3,577.62	3,477.15	100.47	35.607		
18,800.00	12,017.00	15,292.23	8,681.00	138.72	119.33	-21.89	-8,009.30	1,686.35	3,577.62	3,475.90	101.72	35.172		
18,900.00	12,017.00	15,392.23	8,681.00	140.29	120.93	-21.89	-8,109.30	1,687.33	3,577.62	3,474.66	102.96	34.747		
19,000.00	12,017.00	15,492.23	8,681.00	141.87	122.53	-21.89	-8,209.29	1,688.30	3,577.61	3,473.41	104.21	34.331		
19,100.00	12,017.00	15,592.23	8,681.00	143.45	124.13	-21.89	-8,309.29	1,689.27	3,577.61	3,472.15	105.46	33.925		

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 Tatanka Fed Com 602H
Project:	Lea County, NM (NAD83)	TVD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 602H	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		
19,200.00	12,017.00	15,692.23	8,681.00	145.03	125.74	-21.89	-8,409.28	1,690.24	3,577.61	3,470.90	106.71	33.527		
19,300.00	12,017.00	15,792.23	8,681.00	146.61	127.34	-21.89	-8,509.28	1,691.21	3,577.61	3,469.65	107.96	33.139		
19,400.00	12,017.00	15,892.23	8,681.00	148.19	128.94	-21.89	-8,609.28	1,692.19	3,577.60	3,468.39	109.21	32.758		
19,500.00	12,017.00	15,992.23	8,681.00	149.78	130.55	-21.89	-8,709.27	1,693.16	3,577.60	3,467.14	110.46	32.387		
19,600.00	12,017.00	16,092.23	8,681.00	151.36	132.16	-21.89	-8,809.27	1,694.13	3,577.60	3,465.88	111.72	32.024		
19,700.00	12,017.00	16,192.23	8,681.00	152.95	133.76	-21.89	-8,909.26	1,695.10	3,577.59	3,464.62	112.97	31.668		
19,800.00	12,017.00	16,292.23	8,681.00	154.54	135.37	-21.89	-9,009.26	1,696.08	3,577.59	3,463.36	114.23	31.319		
19,900.00	12,017.00	16,392.23	8,681.00	156.13	136.98	-21.89	-9,109.25	1,697.05	3,577.59	3,462.10	115.49	30.978		
20,000.00	12,017.00	16,492.23	8,681.00	157.72	138.59	-21.89	-9,209.25	1,698.02	3,577.58	3,460.83	116.75	30.643		
20,100.00	12,017.00	16,592.23	8,681.00	159.31	140.21	-21.89	-9,309.24	1,698.99	3,577.58	3,459.57	118.01	30.316		
20,200.00	12,017.00	16,692.23	8,681.00	160.90	141.82	-21.89	-9,409.24	1,699.96	3,577.58	3,458.30	119.27	29.995		
20,300.00	12,017.00	16,792.23	8,681.00	162.50	143.43	-21.89	-9,509.23	1,700.94	3,577.57	3,457.04	120.53	29.681		
20,400.00	12,017.00	16,892.23	8,681.00	164.09	145.05	-21.89	-9,609.23	1,701.91	3,577.57	3,455.78	121.79	29.374		
20,500.00	12,017.00	16,992.23	8,681.00	165.69	146.66	-21.89	-9,709.22	1,702.88	3,577.57	3,454.51	123.06	29.072		
20,600.00	12,017.00	17,092.23	8,681.00	167.29	148.28	-21.89	-9,809.22	1,703.85	3,577.56	3,453.24	124.32	28.777		
20,700.00	12,017.00	17,192.23	8,681.00	168.89	149.90	-21.89	-9,909.21	1,704.83	3,577.56	3,451.97	125.59	28.487		
20,800.00	12,017.00	17,292.23	8,681.00	170.49	151.52	-21.89	-10,009.21	1,705.80	3,577.56	3,450.70	126.85	28.202		
20,900.00	12,017.00	17,392.23	8,681.00	172.09	153.13	-21.89	-10,109.20	1,706.77	3,577.55	3,449.43	128.12	27.923		
21,000.00	12,017.00	17,492.23	8,681.00	173.69	154.75	-21.89	-10,209.20	1,707.74	3,577.55	3,448.16	129.39	27.650		
21,100.00	12,017.00	17,592.23	8,681.00	175.29	156.37	-21.89	-10,309.19	1,708.71	3,577.55	3,446.89	130.66	27.381		
21,200.00	12,017.00	17,692.23	8,681.00	176.90	157.99	-21.89	-10,409.19	1,709.69	3,577.54	3,445.62	131.93	27.117		
21,300.00	12,017.00	17,792.23	8,681.00	178.50	159.61	-21.89	-10,509.19	1,710.66	3,577.54	3,444.34	133.20	26.859		
21,400.00	12,017.00	17,892.23	8,681.00	180.11	161.24	-21.89	-10,609.18	1,711.63	3,577.54	3,443.07	134.47	26.604		
21,500.00	12,017.00	17,992.23	8,681.00	181.71	162.86	-21.89	-10,709.18	1,712.60	3,577.54	3,441.79	135.74	26.355		
21,600.00	12,017.00	18,092.23	8,681.00	183.32	164.48	-21.89	-10,809.17	1,713.58	3,577.53	3,440.51	137.02	26.110		
21,700.00	12,017.00	18,192.23	8,681.00	184.93	166.11	-21.89	-10,909.17	1,714.55	3,577.53	3,439.24	138.29	25.870		
21,800.00	12,017.00	18,292.23	8,681.00	186.54	167.73	-21.89	-11,009.16	1,715.52	3,577.53	3,437.96	139.56	25.634		
21,900.00	12,017.00	18,392.23	8,681.00	188.15	169.35	-21.89	-11,109.16	1,716.49	3,577.52	3,436.69	140.83	25.403		
22,000.00	12,017.00	18,492.23	8,681.00	189.76	170.98	-21.89	-11,209.15	1,717.46	3,577.52	3,435.41	142.11	25.175		
22,100.00	12,017.00	18,592.23	8,681.00	191.37	172.60	-21.88	-11,309.15	1,718.44	3,577.52	3,434.14	143.38	24.952		
22,187.30	12,017.00	18,679.53	8,681.00	192.77	174.02	-21.88	-11,396.45	1,719.29	3,577.51	3,433.02	144.49	24.760 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 Tatanka Fed Com 602H
Project:	Lea County, NM (NAD83)	TVD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 602H	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													Tatanka Fed Com - Tatanka 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									
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	121.36	-1,001.69	1,643.78	1,925.01							
100.00	100.00	83.10	83.10	0.13	0.10	121.36	-1,001.69	1,643.78	1,924.94	1,924.78	0.16	N/A				
200.00	200.00	183.10	183.10	0.48	0.42	121.36	-1,001.69	1,643.78	1,924.94	1,924.30	0.64	2,993.776				
300.00	300.00	283.10	283.10	0.84	0.78	121.36	-1,001.69	1,643.78	1,924.94	1,923.79	1.15	1,674.872				
400.00	400.00	383.10	383.10	1.20	1.14	121.36	-1,001.69	1,643.78	1,924.94	1,923.28	1.66	1,162.392				
500.00	500.00	483.10	483.10	1.56	1.50	121.36	-1,001.69	1,643.78	1,924.94	1,922.78	2.16	890.005				
600.00	600.00	583.10	583.10	1.92	1.86	121.36	-1,001.69	1,643.78	1,924.94	1,922.27	2.67	721.028				
700.00	700.00	683.10	683.10	2.28	2.22	121.36	-1,001.69	1,643.78	1,924.94	1,921.76	3.18	605.972				
800.00	800.00	783.10	783.10	2.63	2.57	121.36	-1,001.69	1,643.78	1,924.94	1,921.26	3.68	522.580				
900.00	900.00	883.10	883.10	2.99	2.93	121.36	-1,001.69	1,643.78	1,924.94	1,920.75	4.19	459.363				
1,000.00	1,000.00	983.10	983.10	3.35	3.29	121.36	-1,001.69	1,643.78	1,924.94	1,920.24	4.70	409.789				
1,100.00	1,100.00	1,083.10	1,083.10	3.71	3.65	121.36	-1,001.69	1,643.78	1,924.94	1,919.74	5.20	369.873				
1,200.00	1,200.00	1,183.10	1,183.10	4.07	4.01	121.36	-1,001.69	1,643.78	1,924.94	1,919.23	5.71	337.043				
1,300.00	1,300.00	1,283.10	1,283.10	4.43	4.37	121.36	-1,001.69	1,643.78	1,924.94	1,918.72	6.22	309.565				
1,400.00	1,400.00	1,383.10	1,383.10	4.79	4.73	121.36	-1,001.69	1,643.78	1,924.94	1,918.22	6.73	286.230				
1,500.00	1,500.00	1,483.10	1,483.10	5.14	5.08	121.36	-1,001.69	1,643.78	1,924.94	1,917.71	7.23	266.166				
1,600.00	1,600.00	1,583.10	1,583.10	5.50	5.44	121.36	-1,001.69	1,643.78	1,924.94	1,917.20	7.74	248.731				
1,700.00	1,700.00	1,683.10	1,683.10	5.86	5.80	121.36	-1,001.69	1,643.78	1,924.94	1,916.69	8.25	233.439				
1,800.00	1,800.00	1,783.10	1,783.10	6.22	6.16	121.36	-1,001.69	1,643.78	1,924.94	1,916.19	8.75	219.919				
1,900.00	1,900.00	1,883.10	1,883.10	6.58	6.52	121.36	-1,001.69	1,643.78	1,924.94	1,915.68	9.26	207.879				
2,000.00	2,000.00	1,983.10	1,983.10	6.94	6.88	121.36	-1,001.69	1,643.78	1,924.94	1,915.17	9.77	197.089	CC, ES			
2,100.00	2,100.00	2,051.32	2,051.31	7.29	7.12	121.35	-1,001.76	1,644.23	1,925.63	1,915.44	10.19	188.989				
2,200.00	2,200.00	2,100.00	2,099.98	7.65	7.28	121.34	-1,001.95	1,645.51	1,928.34	1,917.78	10.56	182.643				
2,300.00	2,300.00	2,174.63	2,174.52	8.01	7.54	121.30	-1,002.48	1,649.04	1,932.90	1,921.91	10.99	175.937				
2,400.00	2,400.00	2,236.07	2,235.80	8.37	7.75	121.25	-1,003.13	1,653.39	1,939.50	1,928.12	11.38	170.455				
2,500.00	2,500.00	2,300.00	2,299.45	8.73	7.97	121.18	-1,004.01	1,659.30	1,948.09	1,936.31	11.77	165.457				
2,600.00	2,600.00	2,358.25	2,357.31	9.09	8.18	121.10	-1,005.00	1,665.90	1,958.63	1,946.48	12.15	161.195				
2,700.00	2,700.00	2,400.00	2,398.70	9.45	8.32	121.04	-1,005.81	1,671.35	1,971.28	1,958.81	12.47	158.043				
2,800.00	2,800.00	2,479.13	2,476.90	9.80	8.61	120.90	-1,007.60	1,683.31	1,985.59	1,972.68	12.90	153.874				
2,900.00	2,900.00	2,538.96	2,535.78	10.16	8.83	120.79	-1,009.16	1,693.77	2,001.97	1,988.70	13.27	150.830				
3,000.00	3,000.00	2,600.00	2,595.62	10.52	9.06	120.65	-1,010.94	1,705.70	2,020.28	2,006.64	13.64	148.097				
3,100.00	3,100.00	2,657.15	2,651.40	10.88	9.28	120.52	-1,012.78	1,718.00	2,040.49	2,026.50	13.99	145.815				
3,200.00	3,200.00	2,700.00	2,693.06	11.24	9.44	120.41	-1,014.27	1,727.94	2,062.68	2,048.39	14.29	144.355				
3,300.00	3,299.99	2,773.19	2,763.84	11.58	9.74	-45.34	-1,017.02	1,746.35	2,085.66	2,070.98	14.68	142.113				
3,400.00	3,399.91	2,830.45	2,818.87	11.90	9.99	-45.30	-1,019.35	1,761.99	2,108.82	2,093.83	14.99	140.697				
3,500.00	3,499.69	2,900.21	2,885.46	12.23	10.29	-45.35	-1,022.42	1,782.52	2,132.14	2,116.79	15.35	138.924				
3,600.00	3,599.27	2,973.88	2,955.53	12.56	10.63	-45.46	-1,025.79	1,805.04	2,154.90	2,139.18	15.72	137.041				
3,700.00	3,698.57	3,069.72	3,046.68	12.89	11.08	-45.73	-1,030.17	1,834.34	2,176.15	2,159.95	16.20	134.368				
3,800.00	3,797.54	3,165.55	3,137.82	13.22	11.55	-46.06	-1,034.54	1,863.63	2,195.79	2,179.12	16.67	131.704				
3,900.00	3,896.09	3,261.30	3,228.88	13.57	12.03	-46.44	-1,038.92	1,892.90	2,213.86	2,196.70	17.15	129.054				
4,000.00	3,994.16	3,356.90	3,319.80	13.92	12.52	-46.87	-1,043.28	1,922.12	2,230.39	2,212.75	17.64	126.420				
4,100.00	4,091.70	3,452.29	3,410.51	14.28	13.01	-47.35	-1,047.64	1,951.28	2,245.45	2,227.31	18.14	123.802				
4,125.65	4,116.62	3,476.71	3,433.74	14.37	13.14	-47.48	-1,048.76	1,958.75	2,249.07	2,230.81	18.27	123.135				
4,200.00	4,188.79	3,547.48	3,501.05	14.65	13.52	-47.98	-1,051.99	1,980.38	2,259.54	2,240.91	18.64	121.226				
4,300.00	4,285.87	3,642.67	3,591.57	15.04	14.03	-48.65	-1,056.34	2,009.48	2,273.91	2,254.76	19.15	118.754				
4,400.00	4,382.95	3,737.86	3,682.10	15.43	14.55	-49.31	-1,060.69	2,038.58	2,288.60	2,268.94	19.66	116.389				
4,500.00	4,480.03	3,833.05	3,772.63	15.83	15.08	-49.96	-1,065.03	2,067.68	2,303.60	2,283.42	20.18	114.126				
4,600.00	4,577.11	3,928.23	3,863.15	16.23	15.61	-50.60	-1,069.38	2,096.77	2,318.91	2,298.20	20.71	111.962				
4,700.00	4,674.18	4,023.42	3,953.68	16.65	16.15	-51.23	-1,073.73	2,125.87	2,334.52	2,313.28	21.24	109.892				
4,800.00	4,771.26	4,118.61	4,044.21	17.07	16.69	-51.86	-1,078.08	2,154.97	2,350.43	2,328.65	21.78	107.911				
4,900.00	4,868.34	4,213.79	4,134.73	17.49	17.24	-52.47	-1,082.43	2,184.07	2,366.63	2,344.31	22.32	106.016				
5,000.00	4,965.42	4,308.98	4,225.26	17.92	17.79	-53.08	-1,086.77	2,213.17	2,383.11	2,360.24	22.87	104.202				

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 Tatanka Fed Com 602H
Project:	Lea County, NM (NAD83)	TVD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 602H	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		
5,100.00	5,062.50	4,404.17	4,315.79	18.36	18.34	-53.69	-1,091.12	2,242.26	2,399.87	2,376.45	23.42	102.465		
5,200.00	5,159.57	4,499.36	4,406.31	18.80	18.90	-54.28	-1,095.47	2,271.36	2,416.90	2,392.93	23.98	100.802		
5,300.00	5,256.65	4,594.54	4,496.84	19.25	19.46	-54.87	-1,099.82	2,300.46	2,434.20	2,409.67	24.54	99.208		
5,400.00	5,353.73	4,689.73	4,587.36	19.70	20.02	-55.45	-1,104.17	2,329.56	2,451.76	2,426.66	25.10	97.680		
5,500.00	5,450.81	4,784.92	4,677.89	20.15	20.59	-56.02	-1,108.51	2,358.66	2,469.58	2,443.91	25.67	96.215		
5,600.00	5,547.89	4,880.10	4,768.42	20.61	21.15	-56.58	-1,112.86	2,387.75	2,487.65	2,461.41	26.24	94.810		
5,700.00	5,644.96	4,975.29	4,858.94	21.07	21.72	-57.14	-1,117.21	2,416.85	2,505.96	2,479.14	26.81	93.461		
5,800.00	5,742.04	5,070.48	4,949.47	21.54	22.29	-57.68	-1,121.56	2,445.95	2,524.51	2,497.12	27.39	92.166		
5,900.00	5,839.12	5,165.67	5,040.00	22.00	22.86	-58.22	-1,125.91	2,475.05	2,543.29	2,515.32	27.97	90.922		
6,000.00	5,936.20	5,260.85	5,130.52	22.47	23.44	-58.76	-1,130.26	2,504.14	2,562.31	2,533.75	28.56	89.726		
6,100.00	6,033.28	5,356.04	5,221.05	22.94	24.01	-59.28	-1,134.60	2,533.24	2,581.54	2,552.40	29.14	88.576		
6,200.00	6,130.35	5,451.23	5,311.57	23.42	24.59	-59.80	-1,138.95	2,562.34	2,601.00	2,571.26	29.74	87.470		
6,300.00	6,227.43	5,546.42	5,402.10	23.90	25.17	-60.31	-1,143.30	2,591.44	2,620.67	2,590.34	30.33	86.406		
6,400.00	6,324.51	5,641.60	5,492.63	24.38	25.75	-60.81	-1,147.65	2,620.54	2,640.55	2,609.62	30.93	85.381		
6,500.00	6,421.59	5,736.79	5,583.15	24.86	26.33	-61.31	-1,152.00	2,649.63	2,660.63	2,629.10	31.53	84.394		
6,600.00	6,518.67	5,831.98	5,673.68	25.34	26.91	-61.80	-1,156.34	2,678.73	2,680.91	2,648.79	32.13	83.444		
6,700.00	6,615.75	5,927.16	5,764.21	25.83	27.49	-62.28	-1,160.69	2,707.83	2,701.39	2,668.66	32.73	82.527		
6,800.00	6,712.82	6,022.35	5,854.73	26.31	28.08	-62.76	-1,165.04	2,736.93	2,722.06	2,688.72	33.34	81.643		
6,900.00	6,809.90	6,117.54	5,945.26	26.80	28.66	-63.23	-1,169.39	2,766.03	2,742.92	2,708.97	33.95	80.790		
7,000.00	6,906.98	6,212.73	6,035.78	27.29	29.25	-63.69	-1,173.74	2,795.12	2,763.96	2,729.40	34.56	79.967		
7,100.00	7,004.06	6,307.91	6,126.31	27.78	29.83	-64.14	-1,178.08	2,824.22	2,785.18	2,750.00	35.18	79.172		
7,200.00	7,101.14	6,403.10	6,216.84	28.28	30.42	-64.59	-1,182.43	2,853.32	2,806.57	2,770.77	35.80	78.404		
7,300.00	7,198.21	6,498.29	6,307.36	28.77	31.01	-65.03	-1,186.78	2,882.42	2,828.13	2,791.72	36.42	77.661		
7,400.00	7,295.29	6,593.47	6,397.89	29.26	31.59	-65.47	-1,191.13	2,911.51	2,849.86	2,812.82	37.04	76.943		
7,500.00	7,392.37	6,688.66	6,488.42	29.76	32.18	-65.90	-1,195.48	2,940.61	2,871.75	2,834.09	37.66	76.248		
7,600.00	7,489.45	6,783.85	6,578.94	30.26	32.77	-66.32	-1,199.83	2,969.71	2,893.80	2,855.51	38.29	75.576		
7,700.00	7,586.53	7,790.49	7,569.63	30.76	33.02	-70.74	-1,221.69	3,116.03	2,891.96	2,850.42	41.54	69.614		
7,800.00	7,683.60	7,887.57	7,666.70	31.26	33.26	-71.17	-1,221.69	3,116.03	2,883.92	2,841.79	42.13	68.454		
7,900.00	7,780.68	7,984.64	7,763.78	31.76	33.51	-71.62	-1,221.69	3,116.03	2,876.06	2,833.34	42.72	67.325		
8,000.00	7,877.76	8,081.72	7,860.86	32.26	33.76	-72.06	-1,221.69	3,116.03	2,868.38	2,825.06	43.31	66.227		
8,035.67	7,912.38	8,116.35	7,895.48	32.44	33.85	-72.22	-1,221.69	3,116.03	2,865.68	2,822.16	43.52	65.842		
8,100.00	7,974.96	8,178.93	7,958.06	32.76	38.02	-72.43	-1,221.69	3,116.03	2,861.04	2,817.13	43.90	65.167		
8,200.00	8,072.71	8,276.68	8,055.81	33.24	38.27	-72.73	-1,221.69	3,116.03	2,854.59	2,810.11	44.48	64.173		
8,300.00	8,170.98	8,350.00	8,128.99	33.69	38.46	-72.84	-1,225.50	3,116.07	2,849.40	2,804.38	45.02	63.289		
8,400.00	8,269.70	8,428.38	8,205.99	34.13	38.67	-72.74	-1,239.81	3,116.21	2,845.85	2,800.31	45.54	62.487		
8,500.00	8,368.80	8,500.00	8,274.05	34.55	38.88	-72.45	-1,261.96	3,116.43	2,843.99	2,797.96	46.03	61.779		
8,548.42	8,416.90	8,535.26	8,306.41	34.74	38.98	-72.24	-1,275.95	3,116.56	2,843.76	2,797.49	46.26	61.469		
8,600.00	8,468.22	8,569.59	8,337.03	34.94	39.08	-71.99	-1,291.45	3,116.72	2,844.04	2,797.54	46.50	61.161		
8,700.00	8,567.89	8,630.71	8,389.06	35.31	39.26	-71.46	-1,323.48	3,117.03	2,846.32	2,799.39	46.93	60.650		
8,800.00	8,667.73	8,684.18	8,431.54	35.66	39.41	-70.93	-1,355.91	3,117.35	2,851.21	2,803.89	47.32	60.255		
8,900.00	8,767.69	8,730.08	8,465.47	35.99	39.55	-70.44	-1,386.81	3,117.65	2,859.07	2,811.41	47.66	59.985		
8,961.32	8,829.00	8,750.00	8,479.40	36.17	39.61	95.55	-1,401.04	3,117.79	2,865.49	2,817.66	47.84	59.903		
9,000.00	8,867.68	8,769.08	8,492.28	36.28	39.67	95.83	-1,415.12	3,117.93	2,870.13	2,822.18	47.95	59.858		
9,100.00	8,967.68	8,800.00	8,512.12	36.57	39.77	96.30	-1,438.82	3,118.17	2,883.94	2,835.75	48.19	59.848		
9,200.00	9,067.68	8,832.01	8,531.29	36.86	39.87	96.81	-1,464.45	3,118.42	2,900.46	2,852.06	48.40	59.922		
9,300.00	9,167.68	8,850.00	8,541.43	37.16	39.93	97.11	-1,479.31	3,118.56	2,919.80	2,871.24	48.56	60.131		
9,400.00	9,267.68	8,880.03	8,557.29	37.45	40.02	97.61	-1,504.81	3,118.82	2,941.93	2,893.22	48.71	60.394		
9,500.00	9,367.68	8,900.00	8,567.09	37.74	40.09	97.96	-1,522.21	3,118.99	2,966.92	2,918.12	48.81	60.787		
9,600.00	9,467.68	8,917.39	8,575.12	38.04	40.15	98.26	-1,537.62	3,119.14	2,994.76	2,945.88	48.87	61.278		
9,700.00	9,567.68	8,933.03	8,581.95	38.33	40.20	98.54	-1,551.70	3,119.28	3,025.39	2,976.49	48.90	61.866		
9,800.00	9,667.68	8,950.00	8,588.91	38.63	40.26	98.85	-1,567.17	3,119.43	3,058.79	3,009.88	48.91	62.540		
9,900.00	9,767.68	8,950.00	8,588.91	38.93	40.26	98.85	-1,567.17	3,119.43	3,094.93	3,046.09	48.84	63.375		

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 Tatanka Fed Com 602H
Project:	Lea County, NM (NAD83)	TVD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 602H	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		
10,000.00	9,867.68	8,971.05	8,596.91	39.23	40.33	99.23	-1,586.64	3,119.62	3,133.60	3,084.79	48.81	64.199		
10,100.00	9,967.68	8,981.38	8,600.58	39.53	40.37	99.42	-1,596.30	3,119.72	3,174.88	3,126.15	48.73	65.152		
10,200.00	10,067.68	9,000.00	8,606.74	39.83	40.44	99.76	-1,613.87	3,119.89	3,218.68	3,170.02	48.66	66.144		
10,300.00	10,167.68	9,000.00	8,606.74	40.13	40.44	99.76	-1,613.87	3,119.89	3,264.77	3,216.25	48.51	67.297		
10,400.00	10,267.68	9,000.00	8,606.74	40.43	40.44	99.76	-1,613.87	3,119.89	3,313.23	3,264.88	48.35	68.525		
10,500.00	10,367.68	9,000.00	8,606.74	40.74	40.44	99.76	-1,613.87	3,119.89	3,363.97	3,315.79	48.18	69.824		
10,600.00	10,467.68	9,021.28	8,613.08	41.04	40.52	100.16	-1,634.18	3,120.09	3,416.60	3,368.52	48.08	71.059		
10,700.00	10,567.68	9,027.50	8,614.78	41.35	40.54	100.28	-1,640.16	3,120.15	3,471.39	3,423.47	47.92	72.441		
10,800.00	10,667.68	9,050.00	8,620.42	41.66	40.63	100.70	-1,661.94	3,120.36	3,528.30	3,480.48	47.82	73.784		
10,900.00	10,767.68	9,050.00	8,620.42	41.96	40.63	100.70	-1,661.94	3,120.36	3,586.77	3,539.14	47.63	75.302		
11,000.00	10,867.68	9,050.00	8,620.42	42.27	40.63	100.70	-1,661.94	3,120.36	3,647.06	3,599.61	47.44	76.870		
11,100.00	10,967.68	9,050.00	8,620.42	42.58	40.63	100.70	-1,661.94	3,120.36	3,709.06	3,661.80	47.26	78.483		
11,200.00	11,067.68	9,050.00	8,620.42	42.89	40.63	100.70	-1,661.94	3,120.36	3,772.69	3,725.61	47.08	80.137		
11,300.00	11,167.68	9,050.00	8,620.42	43.20	40.63	100.70	-1,661.94	3,120.36	3,837.87	3,790.97	46.90	81.828		
11,400.00	11,267.68	9,050.00	8,620.42	43.51	40.63	100.70	-1,661.94	3,120.36	3,904.52	3,857.79	46.73	83.552		
11,500.00	11,367.68	9,050.00	8,620.42	43.82	40.63	100.70	-1,661.94	3,120.36	3,972.58	3,926.01	46.57	85.305		
11,576.36	11,444.04	9,050.00	8,620.42	44.06	40.63	100.70	-1,661.94	3,120.36	4,025.44	3,978.99	46.45	86.660		
11,600.00	11,467.68	9,050.00	8,620.42	44.14	40.63	-76.50	-1,661.94	3,120.36	4,041.89	3,995.47	46.42	87.078		
11,650.00	11,517.48	9,050.00	8,620.42	44.33	40.63	-71.93	-1,661.94	3,120.36	4,076.34	4,029.98	46.36	87.934		
11,700.00	11,566.73	9,073.04	8,625.31	44.54	40.72	-67.26	-1,684.45	3,120.58	4,109.72	4,063.32	46.40	88.563		
11,750.00	11,615.04	9,076.52	8,625.97	44.78	40.73	-63.27	-1,687.87	3,120.62	4,142.48	4,096.09	46.39	89.299		
11,800.00	11,662.05	9,100.00	8,629.87	45.04	40.83	-59.39	-1,711.02	3,120.84	4,174.35	4,127.89	46.46	89.839		
11,850.00	11,707.40	9,100.00	8,629.87	45.33	40.83	-56.21	-1,711.02	3,120.84	4,204.44	4,157.97	46.47	90.481		
11,900.00	11,750.75	9,100.00	8,629.87	45.65	40.83	-53.37	-1,711.02	3,120.84	4,232.94	4,186.45	46.49	91.056		
11,950.00	11,791.76	9,100.00	8,629.87	45.98	40.83	-50.87	-1,711.02	3,120.84	4,259.69	4,213.17	46.52	91.560		
12,000.00	11,830.12	9,100.00	8,629.87	46.33	40.83	-48.69	-1,711.02	3,120.84	4,284.51	4,237.94	46.58	91.987		
12,050.00	11,865.55	9,100.00	8,629.87	46.70	40.83	-46.80	-1,711.02	3,120.84	4,307.25	4,260.61	46.65	92.334		
12,100.00	11,897.77	9,100.00	8,629.87	47.09	40.83	-45.18	-1,711.02	3,120.84	4,327.78	4,281.04	46.74	92.595		
12,150.00	11,926.54	9,100.00	8,629.87	47.50	40.83	-43.81	-1,711.02	3,120.84	4,345.96	4,299.11	46.85	92.769		
12,200.00	11,951.63	9,126.48	8,633.12	47.92	40.94	-42.59	-1,737.30	3,121.10	4,361.14	4,314.07	47.07	92.653		
12,250.00	11,972.86	9,150.00	8,635.00	48.35	41.04	-41.63	-1,760.74	3,121.33	4,374.21	4,326.92	47.30	92.487		
12,300.00	11,990.07	9,150.00	8,635.00	48.80	41.04	-40.95	-1,760.74	3,121.33	4,384.22	4,336.76	47.46	92.375		
12,350.00	12,003.12	9,150.00	8,635.00	49.25	41.04	-40.47	-1,760.74	3,121.33	4,391.54	4,343.90	47.65	92.169		
12,400.00	12,011.92	9,150.00	8,635.00	49.70	41.04	-40.17	-1,760.74	3,121.33	4,396.13	4,348.28	47.85	91.870		
12,450.00	12,016.39	9,150.00	8,635.00	50.16	41.04	-40.05	-1,760.74	3,121.33	4,397.96	4,349.88	48.08	91.480		
12,476.36	12,017.00	9,165.93	8,635.72	50.40	41.11	-40.07	-1,776.65	3,121.49	4,397.61	4,349.36	48.25	91.140		
12,500.00	12,017.00	9,169.37	8,635.81	50.61	41.13	-40.07	-1,780.09	3,121.52	4,397.09	4,348.72	48.38	90.893		
12,599.81	12,017.00	9,183.90	8,636.00	51.55	41.19	-40.07	-1,794.62	3,121.67	4,396.13	4,347.20	48.93	89.845		
12,600.00	12,017.00	9,184.01	8,636.00	51.55	41.19	-40.07	-1,794.72	3,121.67	4,396.13	4,347.19	48.93	89.842		
12,700.00	12,017.00	9,284.01	8,636.00	52.52	41.68	-40.07	-1,894.72	3,122.65	4,396.13	4,346.35	49.77	88.322		
12,800.00	12,017.00	9,384.01	8,636.00	53.53	42.22	-40.07	-1,994.71	3,123.64	4,396.13	4,345.47	50.66	86.779		
12,900.00	12,017.00	9,484.01	8,636.00	54.57	42.82	-40.07	-2,094.71	3,124.62	4,396.13	4,344.55	51.59	85.219		
13,000.00	12,017.00	9,584.01	8,636.00	55.63	43.48	-40.07	-2,194.71	3,125.60	4,396.13	4,343.58	52.55	83.650		
13,100.00	12,017.00	9,684.01	8,636.00	56.73	44.19	-40.07	-2,294.70	3,126.59	4,396.14	4,342.58	53.56	82.079		
13,200.00	12,017.00	9,784.01	8,636.00	57.85	44.95	-40.07	-2,394.70	3,127.57	4,396.14	4,341.54	54.60	80.512		
13,300.00	12,017.00	9,884.01	8,636.00	58.99	45.77	-40.07	-2,494.69	3,128.56	4,396.14	4,340.46	55.68	78.956		
13,400.00	12,017.00	9,984.01	8,636.00	60.16	46.63	-40.07	-2,594.69	3,129.54	4,396.14	4,339.36	56.79	77.416		
13,500.00	12,017.00	10,084.01	8,636.00	61.35	47.53	-40.07	-2,694.68	3,130.52	4,396.14	4,338.22	57.92	75.900		
13,600.00	12,017.00	10,184.01	8,636.00	62.57	48.48	-40.07	-2,794.68	3,131.51	4,396.15	4,337.06	59.08	74.407		
13,700.00	12,017.00	10,284.01	8,636.00	63.80	49.47	-40.07	-2,894.67	3,132.49	4,396.15	4,335.88	60.27	72.939		
13,800.00	12,017.00	10,384.01	8,636.00	65.05	50.49	-40.07	-2,994.67	3,133.48	4,396.15	4,334.66	61.49	71.497		
13,900.00	12,017.00	10,484.01	8,636.00	66.32	51.55	-40.07	-3,094.66	3,134.46	4,396.15	4,333.43	62.73	70.084		

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 Tatanka Fed Com 602H
Project:	Lea County, NM (NAD83)	TVD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 602H	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		
14,000.00	12,017.00	10,584.01	8,636.00	67.60	52.64	-40.07	-3,194.66	3,135.44	4,396.15	4,332.17	63.99	68.702		
14,100.00	12,017.00	10,684.01	8,636.00	68.90	53.76	-40.07	-3,294.65	3,136.43	4,396.16	4,330.89	65.27	67.354		
14,200.00	12,017.00	10,784.01	8,636.00	70.22	54.91	-40.07	-3,394.65	3,137.41	4,396.16	4,329.59	66.57	66.039		
14,300.00	12,017.00	10,884.01	8,636.00	71.55	56.09	-40.07	-3,494.64	3,138.39	4,396.16	4,328.27	67.89	64.757		
14,400.00	12,017.00	10,984.01	8,636.00	72.89	57.29	-40.07	-3,594.64	3,139.38	4,396.16	4,326.94	69.22	63.508		
14,500.00	12,017.00	11,084.01	8,636.00	74.25	58.51	-40.07	-3,694.63	3,140.36	4,396.16	4,325.59	70.57	62.292		
14,600.00	12,017.00	11,184.01	8,636.00	75.61	59.76	-40.07	-3,794.63	3,141.35	4,396.17	4,324.23	71.94	61.108		
14,700.00	12,017.00	11,284.01	8,636.00	76.99	61.02	-40.07	-3,894.62	3,142.33	4,396.17	4,322.85	73.32	59.956		
14,800.00	12,017.00	11,384.01	8,636.00	78.38	62.31	-40.07	-3,994.62	3,143.31	4,396.17	4,321.45	74.72	58.837		
14,900.00	12,017.00	11,484.01	8,636.00	79.78	63.61	-40.07	-4,094.61	3,144.30	4,396.17	4,320.05	76.13	57.748		
15,000.00	12,017.00	11,584.01	8,636.00	81.18	64.93	-40.07	-4,194.61	3,145.28	4,396.17	4,318.63	77.55	56.690		
15,100.00	12,017.00	11,684.01	8,636.00	82.60	66.26	-40.07	-4,294.60	3,146.27	4,396.18	4,317.20	78.98	55.663		
15,200.00	12,017.00	11,784.01	8,636.00	84.03	67.61	-40.07	-4,394.60	3,147.25	4,396.18	4,315.76	80.42	54.666		
15,300.00	12,017.00	11,884.01	8,636.00	85.46	68.97	-40.07	-4,494.59	3,148.23	4,396.18	4,314.31	81.87	53.697		
15,400.00	12,017.00	11,984.01	8,636.00	86.90	70.34	-40.07	-4,594.59	3,149.22	4,396.18	4,312.85	83.33	52.755		
15,500.00	12,017.00	12,084.01	8,636.00	88.35	71.73	-40.07	-4,694.58	3,150.20	4,396.18	4,311.38	84.80	51.840		
15,600.00	12,017.00	12,184.01	8,636.00	89.80	73.13	-40.07	-4,794.58	3,151.19	4,396.19	4,309.90	86.28	50.951		
15,700.00	12,017.00	12,284.01	8,636.00	91.27	74.54	-40.07	-4,894.57	3,152.17	4,396.19	4,308.42	87.77	50.088		
15,800.00	12,017.00	12,384.01	8,636.00	92.74	75.96	-40.07	-4,994.57	3,153.15	4,396.19	4,306.92	89.27	49.247		
15,900.00	12,017.00	12,484.01	8,636.00	94.21	77.38	-40.07	-5,094.56	3,154.14	4,396.19	4,305.42	90.77	48.432		
16,000.00	12,017.00	12,584.01	8,636.00	95.69	78.82	-40.07	-5,194.56	3,155.12	4,396.19	4,303.92	92.28	47.641		
16,100.00	12,017.00	12,684.01	8,636.00	97.18	80.27	-40.07	-5,294.56	3,156.11	4,396.20	4,302.40	93.79	46.871		
16,200.00	12,017.00	12,784.01	8,636.00	98.67	81.72	-40.07	-5,394.55	3,157.09	4,396.20	4,300.88	95.32	46.122		
16,300.00	12,017.00	12,884.01	8,636.00	100.16	83.18	-40.07	-5,494.55	3,158.07	4,396.20	4,299.36	96.84	45.394		
16,400.00	12,017.00	12,984.01	8,636.00	101.67	84.65	-40.07	-5,594.54	3,159.06	4,396.20	4,297.82	98.38	44.686		
16,500.00	12,017.00	13,084.01	8,636.00	103.17	86.12	-40.07	-5,694.54	3,160.04	4,396.20	4,296.29	99.92	43.998		
16,600.00	12,017.00	13,184.01	8,636.00	104.68	87.60	-40.07	-5,794.53	3,161.02	4,396.21	4,294.74	101.46	43.328		
16,700.00	12,017.00	13,284.01	8,636.00	106.20	89.09	-40.07	-5,894.53	3,162.01	4,396.21	4,293.19	103.02	42.675		
16,800.00	12,017.00	13,384.01	8,636.00	107.71	90.58	-40.07	-5,994.52	3,162.99	4,396.21	4,291.64	104.57	42.040		
16,900.00	12,017.00	13,484.01	8,636.00	109.24	92.08	-40.07	-6,094.52	3,163.98	4,396.21	4,290.08	106.13	41.424		
17,000.00	12,017.00	13,584.01	8,636.00	110.76	93.59	-40.07	-6,194.51	3,164.96	4,396.21	4,288.53	107.69	40.823		
17,100.00	12,017.00	13,684.01	8,636.00	112.29	95.10	-40.07	-6,294.51	3,165.94	4,396.22	4,286.96	109.25	40.238		
17,200.00	12,017.00	13,784.01	8,636.00	113.82	96.61	-40.07	-6,394.50	3,166.93	4,396.22	4,285.39	110.83	39.667		
17,300.00	12,017.00	13,884.01	8,636.00	115.36	98.13	-40.07	-6,494.50	3,167.91	4,396.22	4,283.82	112.40	39.111		
17,400.00	12,017.00	13,984.01	8,636.00	116.90	99.65	-40.07	-6,594.49	3,168.90	4,396.22	4,282.24	113.98	38.569		
17,500.00	12,017.00	14,084.01	8,636.00	118.44	101.18	-40.07	-6,694.49	3,169.88	4,396.22	4,280.66	115.56	38.042		
17,600.00	12,017.00	14,184.01	8,636.00	119.99	102.71	-40.07	-6,794.48	3,170.86	4,396.23	4,279.08	117.15	37.528		
17,700.00	12,017.00	14,284.01	8,636.00	121.53	104.24	-40.07	-6,894.48	3,171.85	4,396.23	4,277.50	118.73	37.026		
17,800.00	12,017.00	14,384.01	8,636.00	123.09	105.78	-40.07	-6,994.47	3,172.83	4,396.23	4,275.91	120.32	36.537		
17,900.00	12,017.00	14,484.01	8,636.00	124.64	107.32	-40.07	-7,094.47	3,173.82	4,396.23	4,274.32	121.92	36.059		
18,000.00	12,017.00	14,584.01	8,636.00	126.19	108.86	-40.07	-7,194.46	3,174.80	4,396.24	4,272.72	123.51	35.593		
18,100.00	12,017.00	14,684.01	8,636.00	127.75	110.41	-40.07	-7,294.46	3,175.78	4,396.24	4,271.13	125.11	35.139		
18,200.00	12,017.00	14,784.01	8,636.00	129.31	111.96	-40.07	-7,394.45	3,176.77	4,396.24	4,269.53	126.71	34.694		
18,300.00	12,017.00	14,884.01	8,636.00	130.88	113.51	-40.07	-7,494.45	3,177.75	4,396.24	4,267.92	128.32	34.261		
18,400.00	12,017.00	14,984.01	8,636.00	132.44	115.07	-40.07	-7,594.44	3,178.74	4,396.24	4,266.32	129.92	33.837		
18,500.00	12,017.00	15,084.01	8,636.00	134.01	116.63	-40.07	-7,694.44	3,179.72	4,396.25	4,264.71	131.53	33.423		
18,600.00	12,017.00	15,184.01	8,636.00	135.58	118.19	-40.07	-7,794.43	3,180.70	4,396.25	4,263.11	133.14	33.020		
18,700.00	12,017.00	15,284.01	8,636.00	137.15	119.75	-40.07	-7,894.43	3,181.69	4,396.25	4,261.50	134.75	32.625		
18,800.00	12,017.00	15,384.01	8,636.00	138.72	121.32	-40.07	-7,994.42	3,182.67	4,396.25	4,259.89	136.37	32.239		
18,900.00	12,017.00	15,484.01	8,636.00	140.29	122.89	-40.07	-8,094.42	3,183.65	4,396.25	4,258.27	137.98	31.861		
19,000.00	12,017.00	15,584.01	8,636.00	141.87	124.46	-40.07	-8,194.41	3,184.64	4,396.26	4,256.66	139.60	31.492		
19,100.00	12,017.00	15,684.01	8,636.00	143.45	126.03	-40.07	-8,294.41	3,185.62	4,396.26	4,255.04	141.22	31.131		

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 Tatanka Fed Com 602H
Project:	Lea County, NM (NAD83)	TVD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 602H	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													Tatanka Fed Com - Tatanka 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				
19,200.00	12,017.00	15,784.01	8,636.00	145.03	127.61	-40.07	-8,394.41	3,186.61	4,396.26	4,253.42	142.84	30.778				
19,300.00	12,017.00	15,884.01	8,636.00	146.61	129.18	-40.07	-8,494.40	3,187.59	4,396.26	4,251.80	144.46	30.433				
19,400.00	12,017.00	15,984.01	8,636.00	148.19	130.76	-40.07	-8,594.40	3,188.57	4,396.26	4,250.18	146.08	30.095				
19,500.00	12,017.00	16,084.01	8,636.00	149.78	132.34	-40.07	-8,694.39	3,189.56	4,396.27	4,248.56	147.70	29.764				
19,600.00	12,017.00	16,184.01	8,636.00	151.36	133.92	-40.07	-8,794.39	3,190.54	4,396.27	4,246.94	149.33	29.440				
19,700.00	12,017.00	16,284.01	8,636.00	152.95	135.51	-40.07	-8,894.38	3,191.53	4,396.27	4,245.31	150.96	29.122				
19,800.00	12,017.00	16,384.01	8,636.00	154.54	137.09	-40.07	-8,994.38	3,192.51	4,396.27	4,243.68	152.59	28.811				
19,900.00	12,017.00	16,484.01	8,636.00	156.13	138.68	-40.07	-9,094.37	3,193.49	4,396.27	4,242.05	154.22	28.507				
20,000.00	12,017.00	16,584.01	8,636.00	157.72	140.27	-40.07	-9,194.37	3,194.48	4,396.28	4,240.42	155.85	28.208				
20,100.00	12,017.00	16,684.01	8,636.00	159.31	141.86	-40.07	-9,294.36	3,195.46	4,396.28	4,238.79	157.48	27.916				
20,200.00	12,017.00	16,784.01	8,636.00	160.90	143.45	-40.07	-9,394.36	3,196.45	4,396.28	4,237.16	159.12	27.629				
20,300.00	12,017.00	16,884.01	8,636.00	162.50	145.04	-40.07	-9,494.35	3,197.43	4,396.28	4,235.53	160.75	27.349				
20,400.00	12,017.00	16,984.01	8,636.00	164.09	146.63	-40.07	-9,594.35	3,198.41	4,396.28	4,233.90	162.38	27.073				
20,500.00	12,017.00	17,084.01	8,636.00	165.69	148.23	-40.07	-9,694.34	3,199.40	4,396.29	4,232.26	164.02	26.803				
20,600.00	12,017.00	17,184.01	8,636.00	167.29	149.83	-40.07	-9,794.34	3,200.38	4,396.29	4,230.63	165.66	26.538				
20,700.00	12,017.00	17,284.01	8,636.00	168.89	151.42	-40.07	-9,894.33	3,201.37	4,396.29	4,229.00	167.29	26.279				
20,800.00	12,017.00	17,384.01	8,636.00	170.49	153.02	-40.07	-9,994.33	3,202.35	4,396.29	4,227.36	168.93	26.024				
20,900.00	12,017.00	17,484.01	8,636.00	172.09	154.62	-40.07	-10,094.32	3,203.33	4,396.29	4,225.72	170.57	25.774				
21,000.00	12,017.00	17,584.01	8,636.00	173.69	156.22	-40.07	-10,194.32	3,204.32	4,396.30	4,224.09	172.21	25.529				
21,100.00	12,017.00	17,684.01	8,636.00	175.29	157.82	-40.07	-10,294.31	3,205.30	4,396.30	4,222.45	173.85	25.288				
21,200.00	12,017.00	17,784.01	8,636.00	176.90	159.43	-40.07	-10,394.31	3,206.28	4,396.30	4,220.81	175.49	25.051				
21,300.00	12,017.00	17,884.01	8,636.00	178.50	161.03	-40.07	-10,494.30	3,207.27	4,396.30	4,219.17	177.13	24.819				
21,400.00	12,017.00	17,984.01	8,636.00	180.11	162.64	-40.07	-10,594.30	3,208.25	4,396.30	4,217.53	178.78	24.591				
21,500.00	12,017.00	18,084.01	8,636.00	181.71	164.24	-40.07	-10,694.29	3,209.24	4,396.31	4,215.88	180.42	24.367				
21,600.00	12,017.00	18,184.01	8,636.00	183.32	165.85	-40.07	-10,794.29	3,210.22	4,396.31	4,214.24	182.07	24.147				
21,700.00	12,017.00	18,284.01	8,636.00	184.93	167.46	-40.07	-10,894.28	3,211.20	4,396.31	4,212.60	183.71	23.930				
21,800.00	12,017.00	18,384.01	8,636.00	186.54	169.06	-40.07	-10,994.28	3,212.19	4,396.31	4,210.96	185.36	23.718				
21,900.00	12,017.00	18,484.01	8,636.00	188.15	170.67	-40.07	-11,094.27	3,213.17	4,396.31	4,209.31	187.00	23.510				
22,000.00	12,017.00	18,584.01	8,636.00	189.76	172.28	-40.07	-11,194.27	3,214.16	4,396.32	4,207.67	188.65	23.304				
22,100.00	12,017.00	18,684.01	8,636.00	191.37	173.89	-40.07	-11,294.26	3,215.14	4,396.32	4,206.02	190.30	23.103				
22,187.30	12,017.00	18,771.31	8,636.00	192.77	175.30	-40.07	-11,381.56	3,216.00	4,396.32	4,204.59	191.73	22.929 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 Tatanka Fed Com 602H
Project:	Lea County, NM (NAD83)	TVD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 602H	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													Tatanka Fed Com - Tatanka Fed Com 501H - 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	-158.54	-1,021.37	-401.50	1,097.54							
100.00	100.00	86.00	86.00	0.13	0.11	-158.54	-1,021.37	-401.50	1,097.45	1,097.29	0.17	6,631.887				
200.00	200.00	186.00	186.00	0.48	0.43	-158.54	-1,021.37	-401.50	1,097.45	1,096.80	0.65	1,688.717				
300.00	300.00	286.00	286.00	0.84	0.79	-158.54	-1,021.37	-401.50	1,097.45	1,096.29	1.16	949.021				
400.00	400.00	386.00	386.00	1.20	1.15	-158.54	-1,021.37	-401.50	1,097.45	1,095.79	1.66	659.846				
500.00	500.00	486.00	486.00	1.56	1.51	-158.54	-1,021.37	-401.50	1,097.45	1,095.28	2.17	505.724				
600.00	600.00	586.00	586.00	1.92	1.87	-158.54	-1,021.37	-401.50	1,097.45	1,094.77	2.68	409.962				
700.00	700.00	686.00	686.00	2.28	2.23	-158.54	-1,021.37	-401.50	1,097.45	1,094.27	3.18	344.690				
800.00	800.00	786.00	786.00	2.63	2.58	-158.54	-1,021.37	-401.50	1,097.45	1,093.76	3.69	297.347				
900.00	900.00	886.00	886.00	2.99	2.94	-158.54	-1,021.37	-401.50	1,097.45	1,093.25	4.20	261.439				
1,000.00	1,000.00	986.00	986.00	3.35	3.30	-158.54	-1,021.37	-401.50	1,097.45	1,092.75	4.70	233.268				
1,100.00	1,100.00	1,086.00	1,086.00	3.71	3.66	-158.54	-1,021.37	-401.50	1,097.45	1,092.24	5.21	210.578				
1,200.00	1,200.00	1,186.00	1,186.00	4.07	4.02	-158.54	-1,021.37	-401.50	1,097.45	1,091.73	5.72	191.910				
1,300.00	1,300.00	1,286.00	1,286.00	4.43	4.38	-158.54	-1,021.37	-401.50	1,097.45	1,091.23	6.23	176.283				
1,400.00	1,400.00	1,386.00	1,386.00	4.79	4.74	-158.54	-1,021.37	-401.50	1,097.45	1,090.72	6.73	163.009				
1,500.00	1,500.00	1,486.00	1,486.00	5.14	5.09	-158.54	-1,021.37	-401.50	1,097.45	1,090.21	7.24	151.594				
1,600.00	1,600.00	1,586.00	1,586.00	5.50	5.45	-158.54	-1,021.37	-401.50	1,097.45	1,089.70	7.75	141.673				
1,700.00	1,700.00	1,686.00	1,686.00	5.86	5.81	-158.54	-1,021.37	-401.50	1,097.45	1,089.20	8.25	132.971				
1,800.00	1,800.00	1,786.00	1,786.00	6.22	6.17	-158.54	-1,021.37	-401.50	1,097.45	1,088.69	8.76	125.276				
1,900.00	1,900.00	1,886.00	1,886.00	6.58	6.53	-158.54	-1,021.37	-401.50	1,097.45	1,088.18	9.27	118.423				
2,000.00	2,000.00	1,986.00	1,986.00	6.94	6.89	-158.54	-1,021.37	-401.50	1,097.45	1,087.68	9.77	112.281				
2,100.00	2,100.00	2,086.00	2,086.00	7.29	7.24	-158.54	-1,021.37	-401.50	1,097.45	1,087.17	10.28	106.744				
2,200.00	2,200.00	2,186.00	2,186.00	7.65	7.60	-158.54	-1,021.37	-401.50	1,097.45	1,086.66	10.79	101.728				
2,300.00	2,300.00	2,286.00	2,286.00	8.01	7.96	-158.54	-1,021.37	-401.50	1,097.45	1,086.16	11.30	97.162				
2,400.00	2,400.00	2,386.00	2,386.00	8.37	8.32	-158.54	-1,021.37	-401.50	1,097.45	1,085.65	11.80	92.989				
2,500.00	2,500.00	2,486.00	2,486.00	8.73	8.68	-158.54	-1,021.37	-401.50	1,097.45	1,085.14	12.31	89.159				
2,600.00	2,600.00	2,586.00	2,586.00	9.09	9.04	-158.54	-1,021.37	-401.50	1,097.45	1,084.64	12.82	85.632				
2,700.00	2,700.00	2,686.00	2,686.00	9.45	9.40	-158.54	-1,021.37	-401.50	1,097.45	1,084.13	13.32	82.374				
2,800.00	2,800.00	2,786.00	2,786.00	9.80	9.75	-158.54	-1,021.37	-401.50	1,097.45	1,083.62	13.83	79.354				
2,900.00	2,900.00	2,886.00	2,886.00	10.16	10.11	-158.54	-1,021.37	-401.50	1,097.45	1,083.11	14.34	76.548				
3,000.00	3,000.00	2,986.00	2,986.00	10.52	10.47	-158.54	-1,021.37	-401.50	1,097.45	1,082.61	14.84	73.934				
3,100.00	3,100.00	3,086.00	3,086.00	10.88	10.83	-158.54	-1,021.37	-401.50	1,097.45	1,082.10	15.35	71.492				
3,200.00	3,200.00	3,186.00	3,186.00	11.24	11.19	-158.54	-1,021.37	-401.50	1,097.45	1,081.59	15.86	69.207				
3,300.00	3,299.99	3,285.99	3,285.99	11.58	11.55	35.71	-1,021.37	-401.50	1,096.39	1,080.04	16.35	67.050				
3,400.00	3,399.91	3,385.91	3,385.91	11.90	11.90	35.86	-1,021.37	-401.50	1,093.20	1,076.37	16.83	64.940				
3,500.00	3,499.69	3,473.56	3,473.55	12.23	12.21	36.11	-1,021.54	-402.19	1,088.38	1,071.10	17.28	62.985				
3,600.00	3,599.27	3,558.96	3,558.91	12.56	12.50	36.52	-1,022.14	-404.72	1,082.77	1,065.06	17.71	61.124				
3,700.00	3,698.57	3,643.96	3,643.79	12.89	12.79	37.08	-1,023.19	-409.07	1,076.44	1,058.30	18.15	59.324				
3,800.00	3,797.54	3,728.42	3,728.01	13.22	13.08	37.81	-1,024.67	-415.22	1,069.49	1,050.92	18.57	57.578				
3,900.00	3,896.09	3,812.20	3,811.40	13.57	13.37	38.70	-1,026.57	-423.10	1,062.04	1,043.04	19.00	55.889				
4,000.00	3,994.16	3,900.00	3,898.57	13.92	13.67	39.80	-1,029.02	-433.27	1,054.25	1,034.81	19.45	54.214				
4,100.00	4,091.70	3,977.22	3,975.02	14.28	13.94	40.94	-1,031.56	-443.82	1,046.27	1,026.42	19.85	52.698				
4,125.65	4,116.62	4,000.00	3,997.54	14.37	14.02	41.30	-1,032.38	-447.22	1,044.23	1,024.26	19.97	52.289				
4,200.00	4,188.79	4,058.35	4,055.09	14.65	14.23	42.20	-1,034.62	-456.52	1,038.88	1,018.60	20.28	51.232				
4,300.00	4,285.87	4,138.86	4,134.26	15.04	14.52	43.52	-1,038.05	-470.76	1,033.57	1,012.87	20.70	49.928				
4,400.00	4,382.95	4,218.70	4,212.45	15.43	14.82	44.90	-1,041.84	-486.47	1,030.53	1,009.41	21.12	48.791				
4,476.67	4,457.38	4,279.43	4,271.68	15.73	15.05	45.99	-1,044.97	-499.49	1,029.81	1,008.37	21.44	48.030	CC			
4,500.00	4,480.03	4,300.00	4,291.70	15.83	15.12	46.37	-1,046.08	-504.10	1,029.88	1,008.33	21.55	47.793	ES			
4,600.00	4,577.11	4,376.14	4,365.55	16.23	15.42	47.80	-1,050.42	-522.10	1,031.72	1,009.77	21.95	47.003				
4,700.00	4,674.18	4,453.62	4,440.31	16.65	15.73	49.30	-1,055.18	-541.88	1,036.16	1,013.80	22.36	46.346				
4,800.00	4,771.26	4,530.22	4,513.80	17.07	16.04	50.82	-1,060.24	-562.88	1,043.28	1,020.52	22.76	45.844				
4,900.00	4,868.34	4,600.00	4,580.36	17.49	16.34	52.24	-1,065.15	-583.25	1,053.16	1,030.05	23.11	45.576				

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 Tatanka Fed Com 602H
Project:	Lea County, NM (NAD83)	TVD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 602H	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													Tatanka Fed Com - Tatanka Fed Com 501H - 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)								
5,000.00	4,965.42	4,680.57	4,656.71	17.92	16.69	53.89	-1,071.17	-608.24	1,065.79	1,042.26	23.53	45.292				
5,100.00	5,062.50	4,756.12	4,727.82	18.36	17.03	55.45	-1,077.15	-633.08	1,081.26	1,057.34	23.92	45.207				
5,200.00	5,159.57	4,847.14	4,813.23	18.80	17.46	57.31	-1,084.51	-663.63	1,098.64	1,074.21	24.43	44.979				
5,300.00	5,256.65	4,938.15	4,898.65	19.25	17.90	59.11	-1,091.87	-694.18	1,117.29	1,092.35	24.94	44.801				
5,400.00	5,353.73	5,029.16	4,984.07	19.70	18.36	60.86	-1,099.23	-724.73	1,137.15	1,111.69	25.46	44.669				
5,500.00	5,450.81	5,120.17	5,069.48	20.15	18.82	62.56	-1,106.58	-755.28	1,158.14	1,132.16	25.98	44.578				
5,600.00	5,547.89	5,211.19	5,154.90	20.61	19.29	64.21	-1,113.94	-785.83	1,180.22	1,153.72	26.51	44.523				
5,700.00	5,644.96	5,302.20	5,240.32	21.07	19.77	65.80	-1,121.30	-816.38	1,203.32	1,176.28	27.04	44.502				
5,800.00	5,742.04	5,393.21	5,325.73	21.54	20.26	67.33	-1,128.66	-846.92	1,227.39	1,199.81	27.58	44.510				
5,900.00	5,839.12	5,484.23	5,411.15	22.00	20.75	68.81	-1,136.02	-877.47	1,252.36	1,224.25	28.12	44.543				
6,000.00	5,936.20	5,575.24	5,496.56	22.47	21.26	70.25	-1,143.38	-908.02	1,278.19	1,249.53	28.66	44.600				
6,100.00	6,033.28	5,666.25	5,581.98	22.94	21.76	71.62	-1,150.73	-938.57	1,304.83	1,275.62	29.21	44.677				
6,200.00	6,130.35	5,757.27	5,667.40	23.42	22.28	72.95	-1,158.09	-969.12	1,332.22	1,302.46	29.76	44.771				
6,300.00	6,227.43	5,848.28	5,752.81	23.90	22.80	74.23	-1,165.45	-999.67	1,360.32	1,330.01	30.31	44.880				
6,400.00	6,324.51	5,939.29	5,838.23	24.38	23.33	75.47	-1,172.81	-1,030.22	1,389.08	1,358.22	30.87	45.003				
6,500.00	6,421.59	6,030.30	5,923.65	24.86	23.86	76.65	-1,180.17	-1,060.77	1,418.48	1,387.05	31.43	45.136				
6,600.00	6,518.67	6,121.32	6,009.06	25.34	24.40	77.80	-1,187.53	-1,091.32	1,448.46	1,416.47	31.99	45.279				
6,700.00	6,615.75	6,212.33	6,094.48	25.83	24.94	78.90	-1,194.88	-1,121.87	1,479.00	1,446.44	32.56	45.429				
6,800.00	6,712.82	6,303.34	6,179.90	26.31	25.48	79.96	-1,202.24	-1,152.42	1,510.06	1,476.93	33.13	45.587				
6,900.00	6,809.90	6,394.36	6,265.31	26.80	26.03	80.98	-1,209.60	-1,182.97	1,541.60	1,507.90	33.70	45.749				
7,000.00	6,906.98	6,542.24	6,404.94	27.29	26.90	82.55	-1,221.00	-1,230.31	1,572.13	1,537.42	34.71	45.298				
7,100.00	7,004.06	6,700.73	6,556.55	27.78	27.79	84.13	-1,231.81	-1,275.18	1,599.34	1,563.59	35.75	44.738				
7,200.00	7,101.14	6,863.07	6,713.68	28.28	28.64	85.65	-1,241.35	-1,314.76	1,623.02	1,586.26	36.76	44.149				
7,300.00	7,198.21	7,028.77	6,875.71	28.77	29.44	87.13	-1,249.46	-1,348.44	1,643.03	1,605.30	37.74	43.539				
7,400.00	7,295.29	7,197.31	7,041.90	29.26	30.19	88.58	-1,256.01	-1,375.65	1,659.23	1,620.57	38.66	42.920				
7,500.00	7,392.37	7,368.10	7,211.39	29.76	30.87	90.01	-1,260.90	-1,395.92	1,671.51	1,631.99	39.52	42.294				
7,600.00	7,489.45	7,540.47	7,383.23	30.26	31.49	91.42	-1,264.02	-1,408.90	1,679.80	1,639.48	40.32	41.663				
7,700.00	7,586.53	7,713.75	7,556.41	30.76	32.05	92.83	-1,265.33	-1,414.33	1,684.04	1,642.99	41.05	41.028				
7,800.00	7,683.60	7,826.95	7,669.60	31.26	32.38	93.76	-1,265.37	-1,414.50	1,685.58	1,643.93	41.66	40.464				
7,900.00	7,780.68	7,924.02	7,766.68	31.76	32.67	94.55	-1,265.37	-1,414.50	1,687.37	1,645.12	42.25	39.939				
8,000.00	7,877.76	8,021.10	7,863.76	32.26	32.95	95.33	-1,265.37	-1,414.50	1,689.50	1,646.66	42.84	39.436				
8,035.67	7,912.38	8,055.72	7,898.38	32.44	33.06	95.61	-1,265.37	-1,414.50	1,690.34	1,647.29	43.05	39.262				
8,100.00	7,974.96	8,118.31	7,960.96	32.76	33.24	96.13	-1,265.37	-1,414.50	1,691.91	1,648.48	43.43	38.955				
8,200.00	8,072.71	8,216.06	8,058.71	33.24	33.54	96.86	-1,265.37	-1,414.50	1,694.35	1,650.34	44.01	38.499				
8,300.00	8,170.98	8,314.32	8,156.98	33.69	33.83	97.50	-1,265.37	-1,414.50	1,696.70	1,652.13	44.57	38.066				
8,400.00	8,269.70	8,413.04	8,255.70	34.13	34.13	98.06	-1,265.37	-1,414.50	1,698.88	1,653.76	45.12	37.653				
8,500.00	8,368.80	8,512.15	8,354.80	34.55	34.43	98.53	-1,265.37	-1,414.50	1,700.83	1,655.17	45.65	37.256				
8,600.00	8,468.22	8,611.56	8,454.22	34.94	34.73	98.91	-1,265.37	-1,414.50	1,702.47	1,656.30	46.17	36.874				
8,700.00	8,567.89	8,711.23	8,553.89	35.31	35.03	99.20	-1,265.37	-1,414.50	1,703.75	1,657.08	46.67	36.506				
8,800.00	8,667.73	8,811.07	8,653.73	35.66	35.33	99.39	-1,265.37	-1,414.50	1,704.65	1,657.49	47.16	36.149				
8,900.00	8,767.69	8,911.03	8,753.69	35.99	35.64	99.50	-1,265.37	-1,414.50	1,705.12	1,657.50	47.63	35.802				
8,961.32	8,829.00	8,972.34	8,815.00	36.17	35.83	-94.69	-1,265.37	-1,414.50	1,705.21	1,657.30	47.90	35.597				
9,000.00	8,867.68	9,011.03	8,853.68	36.28	35.95	-94.69	-1,265.37	-1,414.50	1,705.21	1,657.13	48.07	35.471				
9,100.00	8,967.68	9,111.03	8,953.68	36.57	36.25	-94.69	-1,265.37	-1,414.50	1,705.21	1,656.69	48.52	35.147				
9,200.00	9,067.68	9,211.03	9,053.68	36.86	36.56	-94.69	-1,265.37	-1,414.50	1,705.21	1,656.25	48.96	34.829				
9,300.00	9,167.68	9,311.03	9,153.68	37.16	36.87	-94.69	-1,265.37	-1,414.50	1,705.21	1,655.80	49.40	34.515				
9,400.00	9,267.68	9,411.03	9,253.68	37.45	37.18	-94.69	-1,265.37	-1,414.50	1,705.21	1,655.35	49.85	34.207				
9,500.00	9,367.68	9,511.03	9,353.68	37.74	37.50	-94.69	-1,265.37	-1,414.50	1,705.21	1,654.91	50.30	33.903				
9,600.00	9,467.68	9,611.03	9,453.68	38.04	37.81	-94.69	-1,265.37	-1,414.50	1,705.21	1,654.46	50.75	33.603				
9,700.00	9,567.68	9,711.03	9,553.68	38.33	38.12	-94.69	-1,265.37	-1,414.50	1,705.21	1,654.01	51.19	33.308				
9,800.00	9,667.68	9,811.03	9,653.68	38.63	38.43	-94.69	-1,265.37	-1,414.50	1,705.21	1,653.56	51.65	33.018				
9,900.00	9,767.68	9,911.03	9,753.68	38.93	38.75	-94.69	-1,265.37	-1,414.50	1,705.21	1,653.11	52.10	32.732				

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 Tatanka Fed Com 602H
Project:	Lea County, NM (NAD83)	TVD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 602H	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		
10,000.00	9,867.68	10,011.03	9,853.68	39.23	39.06	-94.69	-1,265.37	-1,414.50	1,705.21	1,652.66	52.55	32.450		
10,100.00	9,967.68	10,111.03	9,953.68	39.53	39.38	-94.69	-1,265.37	-1,414.50	1,705.21	1,652.20	53.00	32.172		
10,200.00	10,067.68	10,211.03	10,053.68	39.83	39.70	-94.69	-1,265.37	-1,414.50	1,705.21	1,651.75	53.46	31.899		
10,300.00	10,167.68	10,311.03	10,153.68	40.13	40.01	-94.69	-1,265.37	-1,414.50	1,705.21	1,651.29	53.91	31.629		
10,301.22	10,168.90	10,312.24	10,154.90	40.14	40.02	-94.69	-1,265.37	-1,414.50	1,705.21	1,651.29	53.92	31.626		
10,400.00	10,267.68	10,400.00	10,242.61	40.43	40.30	-94.75	-1,267.19	-1,414.48	1,705.37	1,651.02	54.35	31.377		
10,500.00	10,367.68	10,481.31	10,322.93	40.74	40.55	-95.16	-1,279.37	-1,414.36	1,706.55	1,651.77	54.77	31.157		
10,600.00	10,467.68	10,556.93	10,395.40	41.04	40.79	-95.87	-1,300.80	-1,414.15	1,709.11	1,653.93	55.18	30.972		
10,700.00	10,567.68	10,625.87	10,458.48	41.35	41.01	-96.80	-1,328.49	-1,413.87	1,713.55	1,657.98	55.56	30.839		
10,800.00	10,667.68	10,687.27	10,511.51	41.66	41.20	-97.82	-1,359.38	-1,413.57	1,720.41	1,664.51	55.90	30.774		
10,900.00	10,767.68	10,750.00	10,561.96	41.96	41.40	-99.05	-1,396.61	-1,413.20	1,730.28	1,674.06	56.22	30.779		
11,000.00	10,867.68	10,787.93	10,590.38	42.27	41.52	-99.88	-1,421.71	-1,412.95	1,743.51	1,687.12	56.39	30.919		
11,100.00	10,967.68	10,828.50	10,618.87	42.58	41.64	-100.82	-1,450.58	-1,412.66	1,760.54	1,704.04	56.51	31.157		
11,200.00	11,067.68	10,863.66	10,641.86	42.89	41.75	-101.69	-1,477.18	-1,412.40	1,781.60	1,725.07	56.53	31.513		
11,300.00	11,167.68	10,900.00	10,663.85	43.20	41.86	-102.62	-1,506.10	-1,412.11	1,806.82	1,750.32	56.51	31.976		
11,400.00	11,267.68	10,920.85	10,675.63	43.51	41.92	-103.18	-1,523.31	-1,411.94	1,836.20	1,779.86	56.33	32.597		
11,500.00	11,367.68	10,950.00	10,691.03	43.82	42.01	-103.97	-1,548.05	-1,411.70	1,869.76	1,813.62	56.14	33.303		
11,576.36	11,444.04	10,950.00	10,691.03	44.06	42.01	-103.97	-1,548.05	-1,411.70	1,898.17	1,842.34	55.83	34.000		
11,600.00	11,467.68	10,950.00	10,691.03	44.14	42.01	75.62	-1,548.05	-1,411.70	1,907.39	1,851.67	55.73	34.227		
11,650.00	11,517.48	10,975.71	10,703.56	44.33	42.09	72.93	-1,570.50	-1,411.48	1,926.52	1,870.84	55.68	34.599		
11,700.00	11,566.73	11,000.00	10,714.45	44.54	42.17	70.40	-1,592.21	-1,411.26	1,945.66	1,890.02	55.63	34.972		
11,750.00	11,615.04	11,000.00	10,714.45	44.78	42.17	68.54	-1,592.21	-1,411.26	1,964.15	1,908.71	55.45	35.425		
11,800.00	11,662.05	11,000.00	10,714.45	45.04	42.17	66.74	-1,592.21	-1,411.26	1,982.26	1,927.00	55.27	35.868		
11,850.00	11,707.40	11,025.62	10,724.93	45.33	42.25	64.58	-1,615.57	-1,411.03	1,999.40	1,944.13	55.27	36.178		
11,900.00	11,750.75	11,050.00	10,733.93	45.65	42.33	62.64	-1,638.23	-1,410.81	2,015.81	1,960.54	55.27	36.472		
11,950.00	11,791.76	11,050.00	10,733.93	45.98	42.33	61.23	-1,638.23	-1,410.81	2,031.01	1,975.87	55.14	36.832		
12,000.00	11,830.12	11,068.07	10,739.97	46.33	42.39	59.71	-1,655.26	-1,410.64	2,045.09	1,989.94	55.15	37.084		
12,050.00	11,865.55	11,082.87	10,744.52	46.70	42.44	58.41	-1,669.35	-1,410.50	2,057.89	2,002.73	55.16	37.311		
12,100.00	11,897.77	11,100.00	10,749.32	47.09	42.50	57.25	-1,685.79	-1,410.33	2,069.28	2,014.08	55.20	37.485		
12,150.00	11,926.54	11,100.00	10,749.32	47.50	42.50	56.40	-1,685.79	-1,410.33	2,079.31	2,024.13	55.18	37.684		
12,200.00	11,951.63	11,128.63	10,756.25	47.92	42.60	55.50	-1,713.56	-1,410.06	2,087.51	2,032.17	55.35	37.716		
12,250.00	11,972.86	11,150.00	10,760.52	48.35	42.68	54.84	-1,734.50	-1,409.85	2,094.24	2,038.74	55.51	37.730		
12,300.00	11,990.07	11,150.00	10,760.52	48.80	42.68	54.42	-1,734.50	-1,409.85	2,099.32	2,043.73	55.58	37.769		
12,350.00	12,003.12	11,175.64	10,764.60	49.25	42.78	54.08	-1,759.81	-1,409.60	2,102.55	2,046.72	55.83	37.660		
12,400.00	12,011.92	11,200.00	10,767.42	49.70	42.87	53.93	-1,784.00	-1,409.36	2,104.16	2,048.06	56.10	37.508		
12,450.00	12,016.39	11,200.00	10,767.42	50.16	42.87	53.95	-1,784.00	-1,409.36	2,103.95	2,047.66	56.29	37.375		
12,476.36	12,017.00	11,200.00	10,767.42	50.40	42.87	54.00	-1,784.00	-1,409.36	2,103.29	2,046.88	56.41	37.285		
12,500.00	12,017.00	11,223.04	10,769.14	50.61	42.96	54.04	-1,806.98	-1,409.13	2,102.25	2,045.63	56.62	37.126		
12,600.00	12,017.00	11,255.50	10,770.00	51.55	43.10	54.06	-1,839.42	-1,408.81	2,100.66	2,043.41	57.25	36.694		
12,700.00	12,017.00	11,355.50	10,770.00	52.52	43.54	54.06	-1,939.42	-1,407.82	2,100.65	2,042.49	58.16	36.118		
12,800.00	12,017.00	11,455.50	10,770.00	53.53	44.05	54.06	-2,039.41	-1,406.83	2,100.64	2,041.52	59.12	35.530		
12,900.00	12,017.00	11,555.50	10,770.00	54.57	44.62	54.06	-2,139.41	-1,405.84	2,100.63	2,040.50	60.13	34.932		
13,000.00	12,017.00	11,655.50	10,770.00	55.63	45.24	54.06	-2,239.40	-1,404.85	2,100.62	2,039.43	61.19	34.327		
13,100.00	12,017.00	11,755.50	10,770.00	56.73	45.92	54.06	-2,339.40	-1,403.86	2,100.62	2,038.32	62.30	33.718		
13,200.00	12,017.00	11,855.50	10,770.00	57.85	46.65	54.06	-2,439.39	-1,402.87	2,100.61	2,037.16	63.45	33.107		
13,300.00	12,017.00	11,955.50	10,770.00	58.99	47.43	54.06	-2,539.39	-1,401.87	2,100.60	2,035.96	64.64	32.498		
13,400.00	12,017.00	12,055.50	10,770.00	60.16	48.26	54.06	-2,639.38	-1,400.88	2,100.59	2,034.73	65.87	31.892		
13,500.00	12,017.00	12,155.50	10,770.00	61.35	49.13	54.06	-2,739.38	-1,399.89	2,100.58	2,033.45	67.13	31.291		
13,600.00	12,017.00	12,255.50	10,770.00	62.57	50.05	54.06	-2,839.37	-1,398.90	2,100.57	2,032.15	68.43	30.698		
13,700.00	12,017.00	12,355.50	10,770.00	63.80	51.00	54.06	-2,939.37	-1,397.91	2,100.57	2,030.81	69.76	30.113		
13,800.00	12,017.00	12,455.50	10,770.00	65.05	51.99	54.06	-3,039.36	-1,396.92	2,100.56	2,029.44	71.11	29.538		
13,900.00	12,017.00	12,555.50	10,770.00	66.32	53.01	54.06	-3,139.36	-1,395.93	2,100.55	2,028.05	72.50	28.972		

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 Tatanka Fed Com 602H
Project:	Lea County, NM (NAD83)	TVD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 602H	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													Tatanka Fed Com - Tatanka Fed Com 501H - 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				
14,000.00	12,017.00	12,655.50	10,770.00	67.60	54.07	54.06	-3,239.35	-1,394.94	2,100.54	2,026.62	73.92	28.417				
14,100.00	12,017.00	12,755.50	10,770.00	68.90	55.16	54.06	-3,339.35	-1,393.95	2,100.53	2,025.18	75.36	27.874				
14,200.00	12,017.00	12,855.50	10,770.00	70.22	56.28	54.06	-3,439.34	-1,392.96	2,100.53	2,023.70	76.82	27.343				
14,300.00	12,017.00	12,955.50	10,770.00	71.55	57.42	54.06	-3,539.34	-1,391.97	2,100.52	2,022.21	78.31	26.824				
14,400.00	12,017.00	13,055.50	10,770.00	72.89	58.59	54.06	-3,639.33	-1,390.97	2,100.51	2,020.69	79.81	26.317				
14,500.00	12,017.00	13,155.50	10,770.00	74.25	59.78	54.06	-3,739.33	-1,389.98	2,100.50	2,019.16	81.34	25.823				
14,600.00	12,017.00	13,255.50	10,770.00	75.61	60.99	54.06	-3,839.32	-1,388.99	2,100.49	2,017.60	82.89	25.341				
14,700.00	12,017.00	13,355.50	10,770.00	76.99	62.22	54.06	-3,939.32	-1,388.00	2,100.48	2,016.03	84.45	24.871				
14,800.00	12,017.00	13,455.50	10,770.00	78.38	63.48	54.05	-4,039.31	-1,387.01	2,100.48	2,014.44	86.04	24.414				
14,900.00	12,017.00	13,555.50	10,770.00	79.78	64.75	54.05	-4,139.31	-1,386.02	2,100.47	2,012.84	87.63	23.969				
15,000.00	12,017.00	13,655.50	10,770.00	81.18	66.04	54.05	-4,239.30	-1,385.03	2,100.46	2,011.22	89.24	23.537				
15,100.00	12,017.00	13,755.50	10,770.00	82.60	67.34	54.05	-4,339.30	-1,384.04	2,100.45	2,009.58	90.87	23.116				
15,200.00	12,017.00	13,855.50	10,770.00	84.03	68.66	54.05	-4,439.29	-1,383.05	2,100.44	2,007.94	92.51	22.706				
15,300.00	12,017.00	13,955.50	10,770.00	85.46	70.00	54.05	-4,539.29	-1,382.06	2,100.44	2,006.28	94.16	22.307				
15,400.00	12,017.00	14,055.50	10,770.00	86.90	71.35	54.05	-4,639.28	-1,381.07	2,100.43	2,004.60	95.82	21.920				
15,500.00	12,017.00	14,155.50	10,770.00	88.35	72.71	54.05	-4,739.28	-1,380.07	2,100.42	2,002.92	97.50	21.543				
15,600.00	12,017.00	14,255.50	10,770.00	89.80	74.08	54.05	-4,839.27	-1,379.08	2,100.41	2,001.23	99.18	21.177				
15,700.00	12,017.00	14,355.50	10,770.00	91.27	75.46	54.05	-4,939.27	-1,378.09	2,100.40	1,999.52	100.88	20.821				
15,800.00	12,017.00	14,455.50	10,770.00	92.74	76.86	54.05	-5,039.26	-1,377.10	2,100.39	1,997.81	102.59	20.474				
15,900.00	12,017.00	14,555.50	10,770.00	94.21	78.26	54.05	-5,139.26	-1,376.11	2,100.39	1,996.08	104.30	20.138				
16,000.00	12,017.00	14,655.50	10,770.00	95.69	79.68	54.05	-5,239.25	-1,375.12	2,100.38	1,994.35	106.02	19.811				
16,100.00	12,017.00	14,755.50	10,770.00	97.18	81.10	54.05	-5,339.25	-1,374.13	2,100.37	1,992.62	107.75	19.492				
16,200.00	12,017.00	14,855.50	10,770.00	98.67	82.53	54.05	-5,439.24	-1,373.14	2,100.36	1,990.87	109.49	19.182				
16,300.00	12,017.00	14,955.50	10,770.00	100.16	83.97	54.05	-5,539.24	-1,372.15	2,100.35	1,989.11	111.24	18.881				
16,400.00	12,017.00	15,055.50	10,770.00	101.67	85.42	54.05	-5,639.23	-1,371.16	2,100.34	1,987.35	112.99	18.588				
16,500.00	12,017.00	15,155.50	10,770.00	103.17	86.87	54.05	-5,739.23	-1,370.17	2,100.34	1,985.58	114.75	18.303				
16,600.00	12,017.00	15,255.50	10,770.00	104.68	88.34	54.05	-5,839.22	-1,369.17	2,100.33	1,983.81	116.52	18.025				
16,700.00	12,017.00	15,355.50	10,770.00	106.20	89.80	54.05	-5,939.22	-1,368.18	2,100.32	1,982.03	118.29	17.755				
16,800.00	12,017.00	15,455.50	10,770.00	107.71	91.28	54.05	-6,039.22	-1,367.19	2,100.31	1,980.24	120.07	17.492				
16,900.00	12,017.00	15,555.50	10,770.00	109.24	92.76	54.05	-6,139.21	-1,366.20	2,100.30	1,978.45	121.85	17.236				
17,000.00	12,017.00	15,655.50	10,770.00	110.76	94.25	54.05	-6,239.21	-1,365.21	2,100.30	1,976.65	123.64	16.987				
17,100.00	12,017.00	15,755.50	10,770.00	112.29	95.74	54.05	-6,339.20	-1,364.22	2,100.29	1,974.85	125.44	16.744				
17,200.00	12,017.00	15,855.50	10,770.00	113.82	97.24	54.05	-6,439.20	-1,363.23	2,100.28	1,973.04	127.24	16.507				
17,300.00	12,017.00	15,955.50	10,770.00	115.36	98.74	54.05	-6,539.19	-1,362.24	2,100.27	1,971.23	129.04	16.276				
17,400.00	12,017.00	16,055.50	10,770.00	116.90	100.25	54.05	-6,639.19	-1,361.25	2,100.26	1,969.42	130.84	16.052				
17,500.00	12,017.00	16,155.50	10,770.00	118.44	101.76	54.05	-6,739.18	-1,360.26	2,100.25	1,967.60	132.66	15.832				
17,600.00	12,017.00	16,255.50	10,770.00	119.99	103.27	54.05	-6,839.18	-1,359.27	2,100.25	1,965.77	134.47	15.619				
17,700.00	12,017.00	16,355.50	10,770.00	121.53	104.79	54.05	-6,939.17	-1,358.27	2,100.24	1,963.95	136.29	15.410				
17,800.00	12,017.00	16,455.50	10,770.00	123.09	106.32	54.05	-7,039.17	-1,357.28	2,100.23	1,962.12	138.11	15.207				
17,900.00	12,017.00	16,555.50	10,770.00	124.64	107.84	54.05	-7,139.16	-1,356.29	2,100.22	1,960.28	139.94	15.008				
18,000.00	12,017.00	16,655.50	10,770.00	126.19	109.38	54.05	-7,239.16	-1,355.30	2,100.21	1,958.45	141.77	14.815				
18,100.00	12,017.00	16,755.50	10,770.00	127.75	110.91	54.05	-7,339.15	-1,354.31	2,100.20	1,956.61	143.60	14.626				
18,200.00	12,017.00	16,855.50	10,770.00	129.31	112.45	54.05	-7,439.15	-1,353.32	2,100.20	1,954.76	145.43	14.441				
18,300.00	12,017.00	16,955.50	10,770.00	130.88	113.99	54.05	-7,539.14	-1,352.33	2,100.19	1,952.92	147.27	14.261				
18,400.00	12,017.00	17,055.50	10,770.00	132.44	115.53	54.05	-7,639.14	-1,351.34	2,100.18	1,951.07	149.11	14.085				
18,500.00	12,017.00	17,155.50	10,770.00	134.01	117.08	54.05	-7,739.13	-1,350.35	2,100.17	1,949.22	150.95	13.913				
18,600.00	12,017.00	17,255.50	10,770.00	135.58	118.63	54.05	-7,839.13	-1,349.36	2,100.16	1,947.37	152.80	13.745				
18,700.00	12,017.00	17,355.50	10,770.00	137.15	120.18	54.05	-7,939.12	-1,348.37	2,100.16	1,945.51	154.65	13.580				
18,800.00	12,017.00	17,455.50	10,770.00	138.72	121.74	54.05	-8,039.12	-1,347.37	2,100.15	1,943.65	156.49	13.420				
18,900.00	12,017.00	17,555.50	10,770.00	140.29	123.30	54.05	-8,139.11	-1,346.38	2,100.14	1,941.79	158.35	13.263				
19,000.00	12,017.00	17,655.50	10,770.00	141.87	124.86	54.05	-8,239.11	-1,345.39	2,100.13	1,939.93	160.20	13.109				
19,100.00	12,017.00	17,755.50	10,770.00	143.45	126.42	54.05	-8,339.10	-1,344.40	2,100.12	1,938.07	162.06	12.959				

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 Tatanka Fed Com 602H
Project:	Lea County, NM (NAD83)	TVD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 602H	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													Tatanka Fed Com - Tatanka Fed Com 501H - 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				
19,200.00	12,017.00	17,855.50	10,770.00	145.03	127.99	54.05	-8,439.10	-1,343.41	2,100.11	1,936.20	163.91	12.812				
19,300.00	12,017.00	17,955.50	10,770.00	146.61	129.55	54.05	-8,539.09	-1,342.42	2,100.11	1,934.33	165.77	12.669				
19,400.00	12,017.00	18,055.50	10,770.00	148.19	131.12	54.05	-8,639.09	-1,341.43	2,100.10	1,932.46	167.63	12.528				
19,500.00	12,017.00	18,155.50	10,770.00	149.78	132.69	54.05	-8,739.08	-1,340.44	2,100.09	1,930.59	169.50	12.390				
19,600.00	12,017.00	18,255.50	10,770.00	151.36	134.27	54.05	-8,839.08	-1,339.45	2,100.08	1,928.72	171.36	12.255				
19,700.00	12,017.00	18,355.50	10,770.00	152.95	135.84	54.05	-8,939.07	-1,338.46	2,100.07	1,926.85	173.23	12.123				
19,800.00	12,017.00	18,455.50	10,770.00	154.54	137.42	54.05	-9,039.07	-1,337.47	2,100.06	1,924.97	175.09	11.994				
19,900.00	12,017.00	18,555.50	10,770.00	156.13	139.00	54.05	-9,139.06	-1,336.47	2,100.06	1,923.09	176.96	11.867				
20,000.00	12,017.00	18,655.50	10,770.00	157.72	140.58	54.05	-9,239.06	-1,335.48	2,100.05	1,921.22	178.83	11.743				
20,100.00	12,017.00	18,755.50	10,770.00	159.31	142.16	54.05	-9,339.05	-1,334.49	2,100.04	1,919.34	180.70	11.622				
20,200.00	12,017.00	18,855.50	10,770.00	160.90	143.74	54.05	-9,439.05	-1,333.50	2,100.03	1,917.46	182.58	11.502				
20,300.00	12,017.00	18,955.50	10,770.00	162.50	145.33	54.05	-9,539.04	-1,332.51	2,100.02	1,915.58	184.45	11.385				
20,400.00	12,017.00	19,055.50	10,770.00	164.09	146.91	54.05	-9,639.04	-1,331.52	2,100.02	1,913.69	186.32	11.271				
20,500.00	12,017.00	19,155.50	10,770.00	165.69	148.50	54.05	-9,739.03	-1,330.53	2,100.01	1,911.81	188.20	11.159				
20,600.00	12,017.00	19,255.50	10,770.00	167.29	150.09	54.05	-9,839.03	-1,329.54	2,100.00	1,909.92	190.07	11.048				
20,700.00	12,017.00	19,355.50	10,770.00	168.89	151.68	54.05	-9,939.02	-1,328.55	2,099.99	1,908.04	191.95	10.940				
20,800.00	12,017.00	19,455.50	10,770.00	170.49	153.27	54.05	-10,039.02	-1,327.56	2,099.98	1,906.15	193.83	10.834				
20,900.00	12,017.00	19,555.50	10,770.00	172.09	154.86	54.04	-10,139.01	-1,326.56	2,099.97	1,904.27	195.71	10.730				
21,000.00	12,017.00	19,655.50	10,770.00	173.69	156.46	54.04	-10,239.01	-1,325.57	2,099.97	1,902.38	197.59	10.628				
21,100.00	12,017.00	19,755.50	10,770.00	175.29	158.05	54.04	-10,339.00	-1,324.58	2,099.96	1,900.49	199.47	10.528				
21,200.00	12,017.00	19,855.50	10,770.00	176.90	159.65	54.04	-10,439.00	-1,323.59	2,099.95	1,898.60	201.35	10.429				
21,300.00	12,017.00	19,955.50	10,770.00	178.50	161.25	54.04	-10,538.99	-1,322.60	2,099.94	1,896.71	203.23	10.333				
21,400.00	12,017.00	20,055.50	10,770.00	180.11	162.85	54.04	-10,638.99	-1,321.61	2,099.93	1,894.82	205.11	10.238				
21,500.00	12,017.00	20,155.50	10,770.00	181.71	164.45	54.04	-10,738.98	-1,320.62	2,099.92	1,892.93	207.00	10.145				
21,600.00	12,017.00	20,255.50	10,770.00	183.32	166.05	54.04	-10,838.98	-1,319.63	2,099.92	1,891.04	208.88	10.053				
21,700.00	12,017.00	20,355.50	10,770.00	184.93	167.65	54.04	-10,938.97	-1,318.64	2,099.91	1,889.14	210.76	9.963				
21,800.00	12,017.00	20,455.50	10,770.00	186.54	169.25	54.04	-11,038.97	-1,317.65	2,099.90	1,887.25	212.65	9.875				
21,900.00	12,017.00	20,555.50	10,770.00	188.15	170.86	54.04	-11,138.96	-1,316.66	2,099.89	1,885.36	214.53	9.788				
22,000.00	12,017.00	20,655.50	10,770.00	189.76	172.46	54.04	-11,238.96	-1,315.66	2,099.88	1,883.46	216.42	9.703				
22,100.00	12,017.00	20,755.50	10,770.00	191.37	174.07	54.04	-11,338.95	-1,314.67	2,099.88	1,881.57	218.30	9.619				
22,163.90	12,017.00	20,819.41	10,770.00	192.40	175.07	54.04	-11,402.86	-1,314.04	2,099.87	1,880.39	219.48	9.567				
22,187.30	12,017.00	20,841.66	10,770.00	192.77	175.40	54.04	-11,425.11	-1,313.82	2,099.87	1,879.99	219.88	9.550 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 Tatanka Fed Com 602H
Project:	Lea County, NM (NAD83)	TVD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 602H	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	-159.76	-1,021.13	-376.51	1,088.43					
100.00	100.00	85.50	85.50	0.13	0.11	-159.76	-1,021.13	-376.51	1,088.33	1,088.17	0.17	6,593.049		
200.00	200.00	185.50	185.50	0.48	0.43	-159.76	-1,021.13	-376.51	1,088.33	1,087.68	0.65	1,677.770		
300.00	300.00	285.50	285.50	0.84	0.79	-159.76	-1,021.13	-376.51	1,088.33	1,087.18	1.16	942.135		
400.00	400.00	385.50	385.50	1.20	1.15	-159.76	-1,021.13	-376.51	1,088.33	1,086.67	1.66	654.851		
500.00	500.00	485.50	485.50	1.56	1.51	-159.76	-1,021.13	-376.51	1,088.33	1,086.16	2.17	501.810		
600.00	600.00	585.50	585.50	1.92	1.87	-159.76	-1,021.13	-376.51	1,088.33	1,085.66	2.68	406.745		
700.00	700.00	685.50	685.50	2.28	2.22	-159.76	-1,021.13	-376.51	1,088.33	1,085.15	3.18	341.961		
800.00	800.00	785.50	785.50	2.63	2.58	-159.76	-1,021.13	-376.51	1,088.33	1,084.64	3.69	294.977		
900.00	900.00	885.50	885.50	2.99	2.94	-159.76	-1,021.13	-376.51	1,088.33	1,084.14	4.20	259.344		
1,000.00	1,000.00	985.50	985.50	3.35	3.30	-159.76	-1,021.13	-376.51	1,088.33	1,083.63	4.70	231.392		
1,100.00	1,100.00	1,085.50	1,085.50	3.71	3.66	-159.76	-1,021.13	-376.51	1,088.33	1,083.12	5.21	208.878		
1,200.00	1,200.00	1,185.50	1,185.50	4.07	4.02	-159.76	-1,021.13	-376.51	1,088.33	1,082.61	5.72	190.357		
1,300.00	1,300.00	1,285.50	1,285.50	4.43	4.38	-159.76	-1,021.13	-376.51	1,088.33	1,082.11	6.22	174.853		
1,400.00	1,400.00	1,385.50	1,385.50	4.79	4.73	-159.76	-1,021.13	-376.51	1,088.33	1,081.60	6.73	161.685		
1,500.00	1,500.00	1,485.50	1,485.50	5.14	5.09	-159.76	-1,021.13	-376.51	1,088.33	1,081.09	7.24	150.361		
1,600.00	1,600.00	1,585.50	1,585.50	5.50	5.45	-159.76	-1,021.13	-376.51	1,088.33	1,080.59	7.75	140.519		
1,700.00	1,700.00	1,685.50	1,685.50	5.86	5.81	-159.76	-1,021.13	-376.51	1,088.33	1,080.08	8.25	131.886		
1,800.00	1,800.00	1,785.50	1,785.50	6.22	6.17	-159.76	-1,021.13	-376.51	1,088.33	1,079.57	8.76	124.253		
1,900.00	1,900.00	1,885.50	1,885.50	6.58	6.53	-159.76	-1,021.13	-376.51	1,088.33	1,079.07	9.27	117.455		
2,000.00	2,000.00	1,985.50	1,985.50	6.94	6.88	-159.76	-1,021.13	-376.51	1,088.33	1,078.56	9.77	111.362		
2,100.00	2,100.00	2,085.50	2,085.50	7.29	7.24	-159.76	-1,021.13	-376.51	1,088.33	1,078.05	10.28	105.870		
2,200.00	2,200.00	2,185.50	2,185.50	7.65	7.60	-159.76	-1,021.13	-376.51	1,088.33	1,077.55	10.79	100.895		
2,300.00	2,300.00	2,285.50	2,285.50	8.01	7.96	-159.76	-1,021.13	-376.51	1,088.33	1,077.04	11.29	96.366		
2,400.00	2,400.00	2,385.50	2,385.50	8.37	8.32	-159.76	-1,021.13	-376.51	1,088.33	1,076.53	11.80	92.226		
2,500.00	2,500.00	2,485.50	2,485.50	8.73	8.68	-159.76	-1,021.13	-376.51	1,088.33	1,076.02	12.31	88.427		
2,600.00	2,600.00	2,585.50	2,585.50	9.09	9.04	-159.76	-1,021.13	-376.51	1,088.33	1,075.52	12.81	84.929		
2,700.00	2,700.00	2,685.50	2,685.50	9.45	9.39	-159.76	-1,021.13	-376.51	1,088.33	1,075.01	13.32	81.697		
2,800.00	2,800.00	2,785.50	2,785.50	9.80	9.75	-159.76	-1,021.13	-376.51	1,088.33	1,074.50	13.83	78.702		
2,900.00	2,900.00	2,885.50	2,885.50	10.16	10.11	-159.76	-1,021.13	-376.51	1,088.33	1,074.00	14.34	75.919		
3,000.00	3,000.00	2,985.50	2,985.50	10.52	10.47	-159.76	-1,021.13	-376.51	1,088.33	1,073.49	14.84	73.326		
3,100.00	3,100.00	3,085.50	3,085.50	10.88	10.83	-159.76	-1,021.13	-376.51	1,088.33	1,072.98	15.35	70.904		
3,200.00	3,200.00	3,185.50	3,185.50	11.24	11.19	-159.76	-1,021.13	-376.51	1,088.33	1,072.48	15.86	68.637		
3,300.00	3,299.99	3,293.00	3,292.99	11.58	11.56	34.44	-1,021.20	-375.38	1,086.96	1,070.59	16.36	66.428		
3,400.00	3,399.91	3,401.61	3,401.52	11.90	11.93	34.39	-1,021.48	-371.20	1,082.63	1,065.78	16.85	64.239		
3,500.00	3,499.69	3,509.90	3,509.56	12.23	12.31	34.30	-1,021.95	-363.97	1,075.35	1,058.00	17.34	62.000		
3,600.00	3,599.27	3,617.69	3,616.86	12.56	12.68	34.15	-1,022.63	-353.74	1,065.14	1,047.30	17.84	59.716		
3,700.00	3,698.57	3,718.90	3,717.39	12.89	13.03	34.01	-1,023.39	-342.09	1,052.23	1,033.91	18.32	57.439		
3,800.00	3,797.54	3,817.70	3,815.52	13.22	13.38	33.96	-1,024.15	-330.61	1,037.16	1,018.36	18.80	55.169		
3,900.00	3,896.09	3,916.19	3,913.34	13.57	13.73	34.01	-1,024.90	-319.17	1,019.96	1,000.67	19.28	52.895		
4,000.00	3,994.16	4,014.30	4,010.79	13.92	14.09	34.16	-1,025.65	-307.77	1,000.62	980.85	19.77	50.617		
4,100.00	4,091.70	4,111.96	4,107.78	14.28	14.44	34.42	-1,026.40	-296.43	979.16	958.91	20.26	48.338		
4,125.65	4,116.62	4,136.94	4,132.59	14.37	14.53	34.50	-1,026.59	-293.53	973.32	952.94	20.38	47.752		
4,200.00	4,188.79	4,209.26	4,204.42	14.65	14.79	34.61	-1,027.14	-285.13	956.19	935.44	20.75	46.086		
4,300.00	4,285.87	4,306.54	4,301.04	15.04	15.15	34.76	-1,027.89	-273.83	933.15	911.90	21.24	43.927		
4,400.00	4,382.95	4,403.82	4,397.66	15.43	15.50	34.91	-1,028.63	-262.53	910.11	888.37	21.74	41.859		
4,500.00	4,480.03	4,501.10	4,494.27	15.83	15.86	35.08	-1,029.37	-251.23	887.09	864.84	22.25	39.875		
4,600.00	4,577.11	4,598.38	4,590.89	16.23	16.22	35.25	-1,030.12	-239.93	864.07	841.31	22.75	37.973		
4,700.00	4,674.18	4,695.66	4,687.51	16.65	16.59	35.44	-1,030.86	-228.63	841.05	817.79	23.27	36.149		
4,800.00	4,771.26	4,792.94	4,784.13	17.07	16.95	35.63	-1,031.60	-217.33	818.05	794.27	23.78	34.398		
4,900.00	4,868.34	4,890.22	4,880.75	17.49	17.31	35.84	-1,032.35	-206.02	795.06	770.76	24.30	32.717		
5,000.00	4,965.42	4,987.50	4,977.37	17.92	17.68	36.06	-1,033.09	-194.72	772.07	747.25	24.82	31.103		

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 Tatanka Fed Com 602H
Project:	Lea County, NM (NAD83)	TVD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 602H	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													Tatanka Fed Com - Tatanka Fed Com 502H - 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				
5,100.00	5,062.50	5,084.78	5,073.98	18.36	18.05	36.29	-1,033.83	-183.42	749.10	723.75	25.35	29.552				
5,200.00	5,159.57	5,182.06	5,170.60	18.80	18.41	36.53	-1,034.58	-172.12	726.14	700.26	25.88	28.061				
5,300.00	5,256.65	5,279.34	5,267.22	19.25	18.78	36.79	-1,035.32	-160.82	703.19	676.79	26.41	26.627				
5,400.00	5,353.73	5,376.62	5,363.84	19.70	19.15	37.07	-1,036.06	-149.52	680.26	653.32	26.94	25.248				
5,500.00	5,450.81	5,473.90	5,460.46	20.15	19.52	37.37	-1,036.81	-138.22	657.35	629.87	27.48	23.921				
5,600.00	5,547.89	5,571.18	5,557.08	20.61	19.89	37.69	-1,037.55	-126.92	634.45	606.43	28.02	22.642				
5,700.00	5,644.96	5,668.46	5,653.69	21.07	20.27	38.04	-1,038.29	-115.62	611.57	583.01	28.56	21.411				
5,800.00	5,742.04	5,765.74	5,750.31	21.54	20.64	38.41	-1,039.04	-104.32	588.72	559.61	29.11	20.224				
5,900.00	5,839.12	5,863.02	5,846.93	22.00	21.01	38.81	-1,039.78	-93.02	565.89	536.23	29.66	19.080				
6,000.00	5,936.20	5,960.30	5,943.55	22.47	21.39	39.24	-1,040.52	-81.72	543.09	512.88	30.21	17.976				
6,100.00	6,033.28	6,057.58	6,040.17	22.94	21.76	39.72	-1,041.27	-70.42	520.32	489.56	30.77	16.912				
6,200.00	6,130.35	6,154.86	6,136.79	23.42	22.14	40.23	-1,042.01	-59.12	497.59	466.27	31.32	15.885				
6,300.00	6,227.43	6,252.14	6,233.40	23.90	22.52	40.80	-1,042.75	-47.82	474.90	443.02	31.89	14.894				
6,400.00	6,324.51	6,349.42	6,330.02	24.38	22.89	41.42	-1,043.50	-36.52	452.26	419.81	32.45	13.937				
6,500.00	6,421.59	6,446.70	6,426.64	24.86	23.27	42.11	-1,044.24	-25.22	429.68	396.65	33.02	13.012				
6,600.00	6,518.67	6,543.98	6,523.26	25.34	23.65	42.87	-1,044.98	-13.92	407.16	373.56	33.59	12.120				
6,700.00	6,615.75	6,641.26	6,619.88	25.83	24.03	43.72	-1,045.73	-2.62	384.71	350.54	34.17	11.258				
6,800.00	6,712.82	6,738.54	6,716.50	26.31	24.41	44.68	-1,046.47	8.68	362.36	327.60	34.76	10.426				
6,900.00	6,809.90	6,835.82	6,813.11	26.80	24.79	45.76	-1,047.22	19.98	340.12	304.77	35.35	9.622				
7,000.00	6,906.98	6,933.09	6,909.73	27.29	25.17	46.99	-1,047.96	31.28	318.00	282.06	35.94	8.847				
7,100.00	7,004.06	7,030.37	7,006.35	27.78	25.55	48.40	-1,048.70	42.58	296.05	259.51	36.55	8.100				
7,200.00	7,101.14	7,127.56	7,102.88	28.28	25.93	50.04	-1,049.44	53.87	274.30	237.14	37.16	7.381				
7,300.00	7,198.21	7,221.47	7,196.28	28.77	26.29	52.11	-1,050.08	63.57	253.49	215.67	37.82	6.702				
7,400.00	7,295.29	7,315.45	7,289.96	29.26	26.64	55.01	-1,050.57	70.98	234.47	195.97	38.51	6.089				
7,500.00	7,392.37	7,409.39	7,383.76	29.76	26.98	58.85	-1,050.91	76.09	217.73	178.51	39.22	5.552				
7,600.00	7,489.45	7,503.17	7,477.49	30.26	27.31	63.71	-1,051.09	78.89	203.87	163.93	39.94	5.104				
7,700.00	7,586.53	7,597.70	7,572.03	30.76	27.64	69.64	-1,051.13	79.49	193.63	152.96	40.67	4.761				
7,800.00	7,683.60	7,694.78	7,669.10	31.26	27.97	76.38	-1,051.13	79.49	186.41	145.04	41.37	4.506				
7,900.00	7,780.68	7,791.86	7,766.18	31.76	28.30	83.52	-1,051.13	79.49	182.09	140.07	42.02	4.333				
7,988.18	7,866.28	7,877.46	7,851.78	32.20	28.59	90.00	-1,051.13	79.49	180.86	138.32	42.54	4.252 CC				
8,000.00	7,877.76	7,888.94	7,863.26	32.26	28.63	90.87	-1,051.13	79.49	180.88	138.28	42.60	4.246 ES				
8,035.67	7,912.38	7,923.56	7,897.88	32.44	28.75	93.50	-1,051.13	79.49	181.22	138.43	42.79	4.235				
8,100.00	7,974.96	7,986.14	7,960.46	32.76	28.96	98.07	-1,051.13	79.49	182.76	139.67	43.09	4.241				
8,200.00	8,072.71	8,083.89	8,058.21	33.24	29.30	104.40	-1,051.13	79.49	186.96	143.44	43.52	4.296				
8,300.00	8,170.98	8,182.16	8,156.48	33.69	29.63	109.75	-1,051.13	79.49	192.49	148.58	43.91	4.384				
8,400.00	8,269.70	8,280.88	8,255.20	34.13	29.97	114.11	-1,051.13	79.49	198.51	154.22	44.29	4.482				
8,500.00	8,368.80	8,379.98	8,354.30	34.55	30.31	117.59	-1,051.13	79.49	204.37	159.70	44.67	4.575				
8,600.00	8,468.22	8,479.40	8,453.72	34.94	30.65	120.25	-1,051.13	79.49	209.60	164.52	45.07	4.650				
8,700.00	8,567.89	8,579.07	8,553.39	35.31	31.00	122.18	-1,051.13	79.49	213.83	168.34	45.49	4.701				
8,800.00	8,667.73	8,678.91	8,653.23	35.66	31.34	123.45	-1,051.13	79.49	216.83	170.91	45.92	4.722				
8,900.00	8,767.69	8,778.86	8,753.19	35.99	31.68	124.11	-1,051.13	79.49	218.45	172.08	46.37	4.711				
8,961.32	8,829.00	8,840.18	8,814.50	36.17	31.89	-69.98	-1,051.13	79.49	218.72	172.07	46.65	4.689				
9,000.00	8,867.68	8,878.86	8,853.18	36.28	32.03	-69.98	-1,051.13	79.49	218.72	171.90	46.83	4.671				
9,100.00	8,967.68	8,978.86	8,953.18	36.57	32.37	-69.98	-1,051.13	79.49	218.72	171.44	47.28	4.626				
9,200.00	9,067.68	9,078.86	9,053.18	36.86	32.72	-69.98	-1,051.13	79.49	218.72	170.98	47.74	4.581				
9,300.00	9,167.68	9,178.86	9,153.18	37.16	33.06	-69.98	-1,051.13	79.49	218.72	170.52	48.20	4.538				
9,400.00	9,267.68	9,278.86	9,253.18	37.45	33.41	-69.98	-1,051.13	79.49	218.72	170.06	48.66	4.495				
9,500.00	9,367.68	9,378.86	9,353.18	37.74	33.76	-69.98	-1,051.13	79.49	218.72	169.60	49.12	4.452				
9,600.00	9,467.68	9,478.86	9,453.18	38.04	34.10	-69.98	-1,051.13	79.49	218.72	169.14	49.59	4.411				
9,700.00	9,567.68	9,578.86	9,553.18	38.33	34.45	-69.98	-1,051.13	79.49	218.72	168.67	50.05	4.370				
9,800.00	9,667.68	9,678.86	9,653.18	38.63	34.79	-69.98	-1,051.13	79.49	218.72	168.21	50.51	4.330				
9,900.00	9,767.68	9,778.86	9,753.18	38.93	35.14	-69.98	-1,051.13	79.49	218.72	167.75	50.98	4.291				

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 Tatanka Fed Com 602H
Project:	Lea County, NM (NAD83)	TVD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 602H	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		
10,000.00	9,867.68	9,878.86	9,853.18	39.23	35.49	-69.98	-1,051.13	79.49	218.72	167.28	51.44	4.252		
10,100.00	9,967.68	9,978.86	9,953.18	39.53	35.84	-69.98	-1,051.13	79.49	218.72	166.81	51.91	4.214		
10,200.00	10,067.68	10,078.86	10,053.18	39.83	36.18	-69.98	-1,051.13	79.49	218.72	166.35	52.38	4.176		
10,300.00	10,167.68	10,178.86	10,153.18	40.13	36.53	-69.98	-1,051.13	79.49	218.72	165.88	52.84	4.139		
10,400.00	10,267.68	10,291.36	10,265.18	40.43	36.90	-72.13	-1,059.77	79.58	216.17	162.70	53.47	4.043		
10,500.00	10,367.68	10,398.42	10,368.29	40.74	37.24	-79.51	-1,088.01	79.86	209.18	154.98	54.19	3.860		
10,599.61	10,467.29	10,492.03	10,452.79	41.04	37.53	-90.57	-1,128.04	80.26	204.75	149.79	54.96	3.725		
10,600.00	10,467.68	10,492.37	10,453.08	41.04	37.53	-90.62	-1,128.21	80.26	204.75	149.79	54.97	3.725 SF		
10,700.00	10,567.68	10,571.43	10,518.56	41.35	37.75	-102.80	-1,172.41	80.70	212.35	157.56	54.79	3.876		
10,800.00	10,667.68	10,636.53	10,567.50	41.66	37.92	-113.65	-1,215.29	81.13	238.49	185.76	52.74	4.522		
10,900.00	10,767.68	10,689.79	10,603.71	41.96	38.07	-122.24	-1,254.32	81.52	283.22	233.60	49.61	5.709		
11,000.00	10,867.68	10,733.47	10,630.60	42.27	38.19	-128.70	-1,288.72	81.86	342.47	295.86	46.61	7.348		
11,100.00	10,967.68	10,769.54	10,650.78	42.58	38.29	-133.52	-1,318.60	82.16	411.94	367.77	44.16	9.328		
11,200.00	11,067.68	10,800.00	10,666.33	42.89	38.38	-137.20	-1,344.80	82.42	488.44	446.13	42.31	11.545		
11,300.00	11,167.68	10,824.92	10,678.00	43.20	38.45	-139.96	-1,366.81	82.64	569.86	528.99	40.87	13.942		
11,400.00	11,267.68	10,850.00	10,688.76	43.51	38.53	-142.50	-1,389.46	82.87	654.86	614.93	39.93	16.401		
11,500.00	11,367.68	10,864.95	10,694.70	43.82	38.58	-143.92	-1,403.17	83.00	742.44	703.43	39.01	19.032		
11,576.36	11,444.04	10,877.37	10,699.37	44.06	38.62	-145.03	-1,414.69	83.12	810.71	772.17	38.54	21.035		
11,600.00	11,467.68	10,881.15	10,700.74	44.14	38.63	32.56	-1,418.21	83.15	831.87	793.46	38.41	21.658		
11,650.00	11,517.48	10,900.00	10,707.22	44.33	38.70	26.95	-1,435.91	83.33	875.82	837.45	38.37	22.826		
11,700.00	11,566.73	10,900.00	10,707.22	44.54	38.70	23.59	-1,435.91	83.33	918.01	880.16	37.85	24.252		
11,750.00	11,615.04	10,900.00	10,707.22	44.78	38.70	20.92	-1,435.91	83.33	958.82	921.47	37.35	25.672		
11,800.00	11,662.05	10,921.72	10,713.96	45.04	38.77	18.29	-1,456.55	83.54	997.48	960.21	37.28	26.760		
11,850.00	11,707.40	10,933.76	10,717.36	45.33	38.81	16.44	-1,468.11	83.65	1,034.29	997.29	36.99	27.960		
11,900.00	11,750.75	10,950.00	10,721.56	45.65	38.87	14.91	-1,483.79	83.81	1,068.95	1,032.18	36.77	29.068		
11,950.00	11,791.76	10,950.00	10,721.56	45.98	38.87	13.85	-1,483.79	83.81	1,101.43	1,065.13	36.30	30.345		
12,000.00	11,830.12	10,973.12	10,726.77	46.33	38.96	12.78	-1,506.31	84.03	1,131.29	1,095.11	36.18	31.267		
12,050.00	11,865.55	11,000.00	10,731.67	46.70	39.06	11.89	-1,532.74	84.30	1,158.99	1,122.88	36.11	32.100		
12,100.00	11,897.77	11,000.00	10,731.67	47.09	39.06	11.32	-1,532.74	84.30	1,183.67	1,147.99	35.68	33.170		
12,150.00	11,926.54	11,000.00	10,731.67	47.50	39.06	10.83	-1,532.74	84.30	1,206.22	1,170.90	35.32	34.151		
12,200.00	11,951.63	11,030.86	10,735.77	47.92	39.18	10.32	-1,563.31	84.60	1,225.39	1,190.10	35.30	34.717		
12,250.00	11,972.86	11,050.00	10,737.48	48.35	39.25	9.96	-1,582.38	84.79	1,242.11	1,206.95	35.17	35.322		
12,300.00	11,990.07	11,050.00	10,737.48	48.80	39.25	9.71	-1,582.38	84.79	1,256.10	1,221.18	34.92	35.974		
12,350.00	12,003.12	11,076.50	10,738.80	49.25	39.36	9.47	-1,608.84	85.06	1,266.91	1,232.02	34.89	36.313		
12,400.00	12,011.92	11,092.51	10,739.00	49.70	39.43	9.32	-1,624.85	85.22	1,274.95	1,240.14	34.82	36.618		
12,450.00	12,016.39	11,142.29	10,739.00	50.16	39.64	9.21	-1,674.63	85.71	1,279.37	1,244.43	34.94	36.621		
12,476.36	12,017.00	11,168.64	10,739.00	50.40	39.76	9.20	-1,700.97	85.98	1,279.97	1,244.97	35.00	36.571		
12,500.00	12,017.00	11,192.28	10,739.00	50.61	39.87	9.20	-1,724.62	86.21	1,279.97	1,244.91	35.06	36.511		
12,600.00	12,017.00	11,292.28	10,739.00	51.55	40.37	9.20	-1,824.61	87.21	1,279.96	1,244.64	35.33	36.231		
12,700.00	12,017.00	11,392.28	10,739.00	52.52	40.94	9.20	-1,924.61	88.21	1,279.96	1,244.33	35.63	35.919		
12,800.00	12,017.00	11,492.28	10,739.00	53.53	41.56	9.20	-2,024.60	89.21	1,279.96	1,243.98	35.98	35.579		
12,900.00	12,017.00	11,592.28	10,739.00	54.57	42.24	9.20	-2,124.60	90.20	1,279.96	1,243.61	36.35	35.212		
13,000.00	12,017.00	11,692.28	10,739.00	55.63	42.97	9.20	-2,224.59	91.20	1,279.95	1,243.20	36.76	34.823		
13,100.00	12,017.00	11,792.28	10,739.00	56.73	43.75	9.20	-2,324.59	92.20	1,279.95	1,242.76	37.19	34.413		
13,200.00	12,017.00	11,892.28	10,739.00	57.85	44.57	9.19	-2,424.58	93.20	1,279.95	1,242.29	37.66	33.987		
13,300.00	12,017.00	11,992.28	10,739.00	58.99	45.44	9.19	-2,524.58	94.20	1,279.94	1,241.79	38.16	33.545		
13,400.00	12,017.00	12,092.28	10,739.00	60.16	46.36	9.19	-2,624.57	95.20	1,279.94	1,241.26	38.68	33.091		
13,500.00	12,017.00	12,192.28	10,739.00	61.35	47.31	9.19	-2,724.57	96.19	1,279.94	1,240.71	39.23	32.627		
13,600.00	12,017.00	12,292.28	10,739.00	62.57	48.30	9.19	-2,824.56	97.19	1,279.94	1,240.13	39.81	32.154		
13,700.00	12,017.00	12,392.28	10,739.00	63.80	49.33	9.19	-2,924.56	98.19	1,279.93	1,239.53	40.41	31.676		
13,800.00	12,017.00	12,492.28	10,739.00	65.05	50.39	9.19	-3,024.55	99.19	1,279.93	1,238.90	41.03	31.194		
13,900.00	12,017.00	12,592.28	10,739.00	66.32	51.48	9.19	-3,124.55	100.19	1,279.93	1,238.25	41.68	30.710		

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 Tatanka Fed Com 602H
Project:	Lea County, NM (NAD83)	TVD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 602H	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													Tatanka Fed Com - Tatanka Fed Com 502H - 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				
14,000.00	12,017.00	12,692.28	10,739.00	67.60	52.60	9.19	-3,224.54	101.18	1,279.92	1,237.58	42.35	30.225				
14,100.00	12,017.00	12,792.28	10,739.00	68.90	53.75	9.19	-3,324.54	102.18	1,279.92	1,236.89	43.04	29.741				
14,200.00	12,017.00	12,892.28	10,739.00	70.22	54.92	9.19	-3,424.53	103.18	1,279.92	1,236.18	43.74	29.260				
14,300.00	12,017.00	12,992.28	10,739.00	71.55	56.11	9.19	-3,524.53	104.18	1,279.92	1,235.45	44.47	28.782				
14,400.00	12,017.00	13,092.28	10,739.00	72.89	57.33	9.19	-3,624.52	105.18	1,279.91	1,234.70	45.21	28.309				
14,500.00	12,017.00	13,192.28	10,739.00	74.25	58.58	9.18	-3,724.52	106.17	1,279.91	1,233.94	45.97	27.841				
14,600.00	12,017.00	13,292.28	10,739.00	75.61	59.84	9.18	-3,824.51	107.17	1,279.91	1,233.16	46.75	27.380				
14,700.00	12,017.00	13,392.28	10,739.00	76.99	61.11	9.18	-3,924.51	108.17	1,279.91	1,232.37	47.54	26.925				
14,800.00	12,017.00	13,492.28	10,739.00	78.38	62.41	9.18	-4,024.50	109.17	1,279.90	1,231.56	48.34	26.477				
14,900.00	12,017.00	13,592.28	10,739.00	79.78	63.72	9.18	-4,124.50	110.17	1,279.90	1,230.74	49.16	26.036				
15,000.00	12,017.00	13,692.28	10,739.00	81.18	65.05	9.18	-4,224.49	111.16	1,279.90	1,229.91	49.99	25.603				
15,100.00	12,017.00	13,792.28	10,739.00	82.60	66.40	9.18	-4,324.49	112.16	1,279.89	1,229.06	50.83	25.178				
15,200.00	12,017.00	13,892.28	10,739.00	84.03	67.75	9.18	-4,424.48	113.16	1,279.89	1,228.20	51.69	24.761				
15,300.00	12,017.00	13,992.28	10,739.00	85.46	69.12	9.18	-4,524.48	114.16	1,279.89	1,227.33	52.56	24.353				
15,400.00	12,017.00	14,092.28	10,739.00	86.90	70.50	9.18	-4,624.47	115.16	1,279.89	1,226.45	53.43	23.953				
15,500.00	12,017.00	14,192.28	10,739.00	88.35	71.90	9.18	-4,724.47	116.16	1,279.88	1,225.56	54.32	23.562				
15,600.00	12,017.00	14,292.28	10,739.00	89.80	73.30	9.18	-4,824.46	117.15	1,279.88	1,224.66	55.22	23.180				
15,700.00	12,017.00	14,392.28	10,739.00	91.27	74.71	9.18	-4,924.46	118.15	1,279.88	1,223.76	56.12	22.806				
15,800.00	12,017.00	14,492.28	10,739.00	92.74	76.14	9.17	-5,024.45	119.15	1,279.87	1,222.84	57.03	22.441				
15,900.00	12,017.00	14,592.28	10,739.00	94.21	77.57	9.17	-5,124.45	120.15	1,279.87	1,221.92	57.95	22.085				
16,000.00	12,017.00	14,692.28	10,739.00	95.69	79.01	9.17	-5,224.44	121.15	1,279.87	1,220.99	58.88	21.736				
16,100.00	12,017.00	14,792.28	10,739.00	97.18	80.46	9.17	-5,324.44	122.14	1,279.87	1,220.05	59.82	21.396				
16,200.00	12,017.00	14,892.28	10,739.00	98.67	81.91	9.17	-5,424.43	123.14	1,279.86	1,219.10	60.76	21.063				
16,300.00	12,017.00	14,992.28	10,739.00	100.16	83.38	9.17	-5,524.43	124.14	1,279.86	1,218.15	61.71	20.739				
16,400.00	12,017.00	15,092.28	10,739.00	101.67	84.85	9.17	-5,624.42	125.14	1,279.86	1,217.19	62.67	20.422				
16,500.00	12,017.00	15,192.28	10,739.00	103.17	86.33	9.17	-5,724.42	126.14	1,279.86	1,216.22	63.63	20.113				
16,600.00	12,017.00	15,292.28	10,739.00	104.68	87.81	9.17	-5,824.41	127.13	1,279.85	1,215.25	64.60	19.811				
16,700.00	12,017.00	15,392.28	10,739.00	106.20	89.30	9.17	-5,924.41	128.13	1,279.85	1,214.27	65.58	19.517				
16,800.00	12,017.00	15,492.28	10,739.00	107.71	90.79	9.17	-6,024.40	129.13	1,279.85	1,213.29	66.56	19.229				
16,900.00	12,017.00	15,592.28	10,739.00	109.24	92.29	9.17	-6,124.40	130.13	1,279.84	1,212.30	67.54	18.949				
17,000.00	12,017.00	15,692.28	10,739.00	110.76	93.80	9.17	-6,224.39	131.13	1,279.84	1,211.31	68.53	18.676				
17,100.00	12,017.00	15,792.28	10,739.00	112.29	95.31	9.17	-6,324.39	132.13	1,279.84	1,210.32	69.52	18.409				
17,200.00	12,017.00	15,892.28	10,739.00	113.82	96.83	9.16	-6,424.38	133.12	1,279.84	1,209.32	70.52	18.148				
17,300.00	12,017.00	15,992.28	10,739.00	115.36	98.34	9.16	-6,524.38	134.12	1,279.83	1,208.31	71.52	17.894				
17,400.00	12,017.00	16,092.28	10,739.00	116.90	99.87	9.16	-6,624.37	135.12	1,279.83	1,207.30	72.53	17.646				
17,500.00	12,017.00	16,192.28	10,739.00	118.44	101.40	9.16	-6,724.37	136.12	1,279.83	1,206.29	73.54	17.403				
17,600.00	12,017.00	16,292.28	10,739.00	119.99	102.93	9.16	-6,824.36	137.12	1,279.83	1,205.27	74.55	17.166				
17,700.00	12,017.00	16,392.28	10,739.00	121.53	104.46	9.16	-6,924.36	138.11	1,279.82	1,204.25	75.57	16.935				
17,800.00	12,017.00	16,492.28	10,739.00	123.09	106.00	9.16	-7,024.35	139.11	1,279.82	1,203.23	76.59	16.709				
17,900.00	12,017.00	16,592.28	10,739.00	124.64	107.54	9.16	-7,124.35	140.11	1,279.82	1,202.20	77.62	16.488				
18,000.00	12,017.00	16,692.28	10,739.00	126.19	109.09	9.16	-7,224.34	141.11	1,279.81	1,201.17	78.65	16.273				
18,100.00	12,017.00	16,792.28	10,739.00	127.75	110.64	9.16	-7,324.34	142.11	1,279.81	1,200.13	79.68	16.062				
18,200.00	12,017.00	16,892.28	10,739.00	129.31	112.19	9.16	-7,424.33	143.10	1,279.81	1,199.10	80.71	15.857				
18,300.00	12,017.00	16,992.28	10,739.00	130.88	113.74	9.16	-7,524.33	144.10	1,279.81	1,198.06	81.75	15.656				
18,400.00	12,017.00	17,092.28	10,739.00	132.44	115.30	9.16	-7,624.32	145.10	1,279.80	1,197.02	82.78	15.460				
18,500.00	12,017.00	17,192.28	10,739.00	134.01	116.86	9.15	-7,724.32	146.10	1,279.80	1,195.98	83.82	15.268				
18,600.00	12,017.00	17,292.28	10,739.00	135.58	118.42	9.15	-7,824.31	147.10	1,279.80	1,194.93	84.87	15.080				
18,700.00	12,017.00	17,392.28	10,739.00	137.15	119.98	9.15	-7,924.31	148.09	1,279.79	1,193.88	85.91	14.896				
18,800.00	12,017.00	17,492.28	10,739.00	138.72	121.55	9.15	-8,024.30	149.09	1,279.79	1,192.83	86.96	14.717				
18,900.00	12,017.00	17,592.28	10,739.00	140.29	123.12	9.15	-8,124.30	150.09	1,279.79	1,191.78	88.01	14.541				
19,000.00	12,017.00	17,692.28	10,739.00	141.87	124.69	9.15	-8,224.29	151.09	1,279.79	1,190.72	89.07	14.369				
19,100.00	12,017.00	17,792.28	10,739.00	143.45	126.26	9.15	-8,324.29	152.09	1,279.78	1,189.66	90.12	14.201				

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 Tatanka Fed Com 602H
Project:	Lea County, NM (NAD83)	TVD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 602H	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		
19,200.00	12,017.00	17,892.28	10,739.00	145.03	127.84	9.15	-8,424.28	153.09	1,279.78	1,188.60	91.18	14.036		
19,300.00	12,017.00	17,992.28	10,739.00	146.61	129.41	9.15	-8,524.28	154.08	1,279.78	1,187.54	92.24	13.875		
19,400.00	12,017.00	18,092.28	10,739.00	148.19	130.99	9.15	-8,624.27	155.08	1,279.78	1,186.48	93.30	13.717		
19,500.00	12,017.00	18,192.28	10,739.00	149.78	132.57	9.15	-8,724.27	156.08	1,279.77	1,185.41	94.36	13.563		
19,600.00	12,017.00	18,292.28	10,739.00	151.36	134.15	9.15	-8,824.26	157.08	1,279.77	1,184.35	95.42	13.412		
19,700.00	12,017.00	18,392.28	10,739.00	152.95	135.74	9.15	-8,924.26	158.08	1,279.77	1,183.28	96.49	13.264		
19,800.00	12,017.00	18,492.28	10,739.00	154.54	137.32	9.14	-9,024.25	159.07	1,279.76	1,182.21	97.55	13.119		
19,900.00	12,017.00	18,592.28	10,739.00	156.13	138.91	9.14	-9,124.25	160.07	1,279.76	1,181.14	98.62	12.977		
20,000.00	12,017.00	18,692.28	10,739.00	157.72	140.50	9.14	-9,224.24	161.07	1,279.76	1,180.07	99.69	12.837		
20,100.00	12,017.00	18,792.28	10,739.00	159.31	142.09	9.14	-9,324.24	162.07	1,279.76	1,178.99	100.76	12.701		
20,200.00	12,017.00	18,892.28	10,739.00	160.90	143.68	9.14	-9,424.23	163.07	1,279.75	1,177.92	101.83	12.567		
20,300.00	12,017.00	18,992.28	10,739.00	162.50	145.27	9.14	-9,524.23	164.06	1,279.75	1,176.84	102.91	12.436		
20,400.00	12,017.00	19,092.28	10,739.00	164.09	146.87	9.14	-9,624.22	165.06	1,279.75	1,175.76	103.98	12.307		
20,500.00	12,017.00	19,192.28	10,739.00	165.69	148.46	9.14	-9,724.22	166.06	1,279.75	1,174.69	105.06	12.181		
20,600.00	12,017.00	19,292.28	10,739.00	167.29	150.06	9.14	-9,824.21	167.06	1,279.74	1,173.60	106.14	12.057		
20,700.00	12,017.00	19,392.28	10,739.00	168.89	151.65	9.14	-9,924.21	168.06	1,279.74	1,172.52	107.22	11.936		
20,800.00	12,017.00	19,492.28	10,739.00	170.49	153.25	9.14	-10,024.20	169.05	1,279.74	1,171.44	108.30	11.817		
20,900.00	12,017.00	19,592.28	10,739.00	172.09	154.85	9.14	-10,124.20	170.05	1,279.73	1,170.36	109.38	11.700		
21,000.00	12,017.00	19,692.28	10,739.00	173.69	156.45	9.14	-10,224.19	171.05	1,279.73	1,169.27	110.46	11.586		
21,100.00	12,017.00	19,792.28	10,739.00	175.29	158.06	9.13	-10,324.19	172.05	1,279.73	1,168.19	111.54	11.473		
21,200.00	12,017.00	19,892.28	10,739.00	176.90	159.66	9.13	-10,424.18	173.05	1,279.73	1,167.10	112.63	11.363		
21,300.00	12,017.00	19,992.28	10,739.00	178.50	161.26	9.13	-10,524.18	174.05	1,279.72	1,166.01	113.71	11.254		
21,400.00	12,017.00	20,092.28	10,739.00	180.11	162.87	9.13	-10,624.17	175.04	1,279.72	1,164.93	114.79	11.148		
21,500.00	12,017.00	20,192.28	10,739.00	181.71	164.47	9.13	-10,724.17	176.04	1,279.72	1,163.84	115.88	11.043		
21,600.00	12,017.00	20,292.28	10,739.00	183.32	166.08	9.13	-10,824.16	177.04	1,279.71	1,162.75	116.97	10.941		
21,700.00	12,017.00	20,392.28	10,739.00	184.93	167.69	9.13	-10,924.16	178.04	1,279.71	1,161.66	118.06	10.840		
21,800.00	12,017.00	20,492.28	10,739.00	186.54	169.30	9.13	-11,024.15	179.04	1,279.71	1,160.56	119.14	10.741		
21,900.00	12,017.00	20,592.28	10,739.00	188.15	170.90	9.13	-11,124.15	180.03	1,279.71	1,159.47	120.23	10.643		
22,000.00	12,017.00	20,692.28	10,739.00	189.76	172.51	9.13	-11,224.14	181.03	1,279.70	1,158.38	121.32	10.548		
22,100.00	12,017.00	20,792.28	10,739.00	191.37	174.13	9.13	-11,324.14	182.03	1,279.70	1,157.28	122.42	10.454		
22,167.27	12,017.00	20,859.55	10,739.00	192.45	175.21	9.13	-11,391.40	182.70	1,279.70	1,156.55	123.15	10.391		
22,187.30	12,017.00	20,879.44	10,739.00	192.77	175.53	9.13	-11,411.29	182.90	1,279.70	1,156.33	123.37	10.373		

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 Tatanka Fed Com 602H
Project:	Lea County, NM (NAD83)	TVD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 602H	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													Tatanka Fed Com - Tatanka Fed Com 503H - 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	122.58	-1,002.41	1,568.79	1,861.78							
100.00	100.00	83.00	83.00	0.13	0.10	122.58	-1,002.41	1,568.79	1,861.70	1,861.54	0.16	N/A				
200.00	200.00	183.00	183.00	0.48	0.42	122.58	-1,002.41	1,568.79	1,861.70	1,861.06	0.64	2,895.953				
300.00	300.00	283.00	283.00	0.84	0.78	122.58	-1,002.41	1,568.79	1,861.70	1,860.55	1.15	1,620.019				
400.00	400.00	383.00	383.00	1.20	1.14	122.58	-1,002.41	1,568.79	1,861.70	1,860.04	1.66	1,124.287				
500.00	500.00	483.00	483.00	1.56	1.50	122.58	-1,002.41	1,568.79	1,861.70	1,859.54	2.16	860.815				
600.00	600.00	583.00	583.00	1.92	1.86	122.58	-1,002.41	1,568.79	1,861.70	1,859.03	2.67	697.372				
700.00	700.00	683.00	683.00	2.28	2.22	122.58	-1,002.41	1,568.79	1,861.70	1,858.52	3.18	586.087				
800.00	800.00	783.00	783.00	2.63	2.57	122.58	-1,002.41	1,568.79	1,861.70	1,858.02	3.68	505.429				
900.00	900.00	883.00	883.00	2.99	2.93	122.58	-1,002.41	1,568.79	1,861.70	1,857.51	4.19	444.285				
1,000.00	1,000.00	983.00	983.00	3.35	3.29	122.58	-1,002.41	1,568.79	1,861.70	1,857.00	4.70	396.337				
1,100.00	1,100.00	1,083.00	1,083.00	3.71	3.65	122.58	-1,002.41	1,568.79	1,861.70	1,856.50	5.20	357.730				
1,200.00	1,200.00	1,183.00	1,183.00	4.07	4.01	122.58	-1,002.41	1,568.79	1,861.70	1,855.99	5.71	325.977				
1,300.00	1,300.00	1,283.00	1,283.00	4.43	4.37	122.58	-1,002.41	1,568.79	1,861.70	1,855.48	6.22	299.401				
1,400.00	1,400.00	1,383.00	1,383.00	4.79	4.72	122.58	-1,002.41	1,568.79	1,861.70	1,854.98	6.73	276.832				
1,500.00	1,500.00	1,483.00	1,483.00	5.14	5.08	122.58	-1,002.41	1,568.79	1,861.70	1,854.47	7.23	257.426				
1,600.00	1,600.00	1,583.00	1,583.00	5.50	5.44	122.58	-1,002.41	1,568.79	1,861.70	1,853.96	7.74	240.563				
1,700.00	1,700.00	1,683.00	1,683.00	5.86	5.80	122.58	-1,002.41	1,568.79	1,861.70	1,853.45	8.25	225.774				
1,800.00	1,800.00	1,783.00	1,783.00	6.22	6.16	122.58	-1,002.41	1,568.79	1,861.70	1,852.95	8.75	212.697				
1,900.00	1,900.00	1,883.00	1,883.00	6.58	6.52	122.58	-1,002.41	1,568.79	1,861.70	1,852.44	9.26	201.053				
2,000.00	2,000.00	1,983.00	1,983.00	6.94	6.88	122.58	-1,002.41	1,568.79	1,861.70	1,851.93	9.77	190.617				
2,100.00	2,100.00	2,083.00	2,083.00	7.29	7.23	122.58	-1,002.41	1,568.79	1,861.70	1,851.43	10.27	181.211				
2,200.00	2,200.00	2,183.00	2,183.00	7.65	7.59	122.58	-1,002.41	1,568.79	1,861.70	1,850.92	10.78	172.690				
2,300.00	2,300.00	2,283.00	2,283.00	8.01	7.95	122.58	-1,002.41	1,568.79	1,861.70	1,850.41	11.29	164.934				
2,400.00	2,400.00	2,383.00	2,383.00	8.37	8.31	122.58	-1,002.41	1,568.79	1,861.70	1,849.91	11.79	157.845				
2,500.00	2,500.00	2,483.00	2,483.00	8.73	8.67	122.58	-1,002.41	1,568.79	1,861.70	1,849.40	12.30	151.340				
2,600.00	2,600.00	2,583.00	2,583.00	9.09	9.03	122.58	-1,002.41	1,568.79	1,861.70	1,848.89	12.81	145.350				
2,700.00	2,700.00	2,683.00	2,683.00	9.45	9.38	122.58	-1,002.41	1,568.79	1,861.70	1,848.38	13.32	139.816				
2,800.00	2,800.00	2,783.00	2,783.00	9.80	9.74	122.58	-1,002.41	1,568.79	1,861.70	1,847.88	13.82	134.688				
2,900.00	2,900.00	2,883.00	2,883.00	10.16	10.10	122.58	-1,002.41	1,568.79	1,861.70	1,847.37	14.33	129.923				
3,000.00	3,000.00	2,983.00	2,983.00	10.52	10.46	122.58	-1,002.41	1,568.79	1,861.70	1,846.86	14.84	125.483				
3,100.00	3,100.00	3,083.00	3,083.00	10.88	10.82	122.58	-1,002.41	1,568.79	1,861.70	1,846.36	15.34	121.337				
3,200.00	3,200.00	3,183.00	3,183.00	11.24	11.18	122.58	-1,002.41	1,568.79	1,861.70	1,845.85	15.85	117.456				
3,300.00	3,299.99	3,282.99	3,282.99	11.58	11.54	-43.26	-1,002.41	1,568.79	1,860.75	1,844.40	16.34	113.848				
3,400.00	3,399.91	3,382.91	3,382.91	11.90	11.89	-43.37	-1,002.41	1,568.79	1,857.89	1,841.06	16.83	110.418				
3,500.00	3,499.69	3,482.69	3,482.69	12.23	12.25	-43.56	-1,002.41	1,568.79	1,853.14	1,835.83	17.31	107.065				
3,600.00	3,599.27	3,582.27	3,582.27	12.56	12.61	-43.82	-1,002.41	1,568.79	1,846.51	1,828.72	17.79	103.784				
3,700.00	3,698.57	3,681.57	3,681.57	12.89	12.96	-44.16	-1,002.41	1,568.79	1,838.02	1,819.75	18.28	100.571				
3,800.00	3,797.54	3,780.54	3,780.54	13.22	13.32	-44.58	-1,002.41	1,568.79	1,827.71	1,808.95	18.76	97.420				
3,900.00	3,896.09	3,879.09	3,879.09	13.57	13.67	-45.08	-1,002.41	1,568.79	1,815.62	1,796.37	19.25	94.329				
4,000.00	3,994.16	3,977.16	3,977.16	13.92	14.02	-45.67	-1,002.41	1,568.79	1,801.78	1,782.04	19.74	91.292				
4,100.00	4,091.70	4,074.70	4,074.70	14.28	14.37	-46.34	-1,002.41	1,568.79	1,786.25	1,766.02	20.23	88.307				
4,125.65	4,116.62	4,099.62	4,099.62	14.37	14.46	-46.53	-1,002.41	1,568.79	1,782.00	1,761.65	20.35	87.548				
4,200.00	4,188.79	4,171.79	4,171.79	14.65	14.72	-46.94	-1,002.41	1,568.79	1,769.58	1,748.86	20.72	85.393				
4,300.00	4,285.87	4,268.87	4,268.87	15.04	15.07	-47.50	-1,002.41	1,568.79	1,753.03	1,731.80	21.22	82.603				
4,400.00	4,382.95	4,365.95	4,365.95	15.43	15.42	-48.08	-1,002.41	1,568.79	1,736.64	1,714.92	21.73	79.930				
4,500.00	4,480.03	4,463.03	4,463.03	15.83	15.77	-48.66	-1,002.41	1,568.79	1,720.44	1,698.20	22.24	77.369				
4,600.00	4,577.11	4,541.58	4,541.58	16.23	16.04	-49.14	-1,002.53	1,568.98	1,704.74	1,682.04	22.70	75.093				
4,700.00	4,674.18	4,600.00	4,599.99	16.65	16.24	-49.50	-1,003.08	1,569.91	1,690.86	1,667.74	23.11	73.151				
4,800.00	4,771.26	4,681.22	4,681.15	17.07	16.51	-50.00	-1,004.61	1,572.45	1,678.80	1,655.22	23.58	71.196				
4,900.00	4,868.34	4,778.95	4,778.79	17.49	16.84	-50.61	-1,006.81	1,576.12	1,667.59	1,643.50	24.09	69.216				
5,000.00	4,965.42	4,876.68	4,876.42	17.92	17.17	-51.23	-1,009.00	1,579.78	1,656.59	1,631.97	24.61	67.311				

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 Tatanka Fed Com 602H
Project:	Lea County, NM (NAD83)	TVD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 602H	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		
5,100.00	5,062.50	4,974.41	4,974.06	18.36	17.49	-51.86	-1,011.20	1,583.44	1,645.78	1,620.64	25.13	65.481		
5,200.00	5,159.57	5,072.14	5,071.70	18.80	17.82	-52.49	-1,013.40	1,587.10	1,635.17	1,609.51	25.66	63.721		
5,300.00	5,256.65	5,169.87	5,169.33	19.25	18.15	-53.13	-1,015.59	1,590.76	1,624.77	1,598.58	26.19	62.028		
5,400.00	5,353.73	5,267.59	5,266.97	19.70	18.49	-53.78	-1,017.79	1,594.43	1,614.58	1,587.85	26.73	60.401		
5,500.00	5,450.81	5,365.32	5,364.60	20.15	18.82	-54.44	-1,019.99	1,598.09	1,604.61	1,577.34	27.27	58.835		
5,600.00	5,547.89	5,463.05	5,462.24	20.61	19.15	-55.10	-1,022.19	1,601.75	1,594.86	1,567.04	27.82	57.330		
5,700.00	5,644.96	5,560.78	5,559.87	21.07	19.49	-55.78	-1,024.38	1,605.41	1,585.33	1,556.96	28.37	55.882		
5,800.00	5,742.04	5,658.51	5,657.51	21.54	19.82	-56.46	-1,026.58	1,609.08	1,576.03	1,547.10	28.92	54.489		
5,900.00	5,839.12	5,756.24	5,755.15	22.00	20.16	-57.14	-1,028.78	1,612.74	1,566.95	1,537.47	29.48	53.148		
6,000.00	5,936.20	5,867.00	5,865.81	22.47	20.54	-57.93	-1,031.20	1,616.77	1,558.04	1,527.96	30.08	51.800		
6,100.00	6,033.28	6,017.50	6,016.28	22.94	21.06	-59.06	-1,032.41	1,618.79	1,546.68	1,515.91	30.76	50.275		
6,200.00	6,130.35	6,114.58	6,113.35	23.42	21.41	-59.81	-1,032.41	1,618.79	1,534.21	1,502.86	31.34	48.949		
6,300.00	6,227.43	6,211.65	6,210.43	23.90	21.76	-60.57	-1,032.41	1,618.79	1,522.01	1,490.08	31.92	47.675		
6,400.00	6,324.51	6,308.73	6,307.51	24.38	22.10	-61.35	-1,032.41	1,618.79	1,510.10	1,477.58	32.51	46.449		
6,500.00	6,421.59	6,405.81	6,404.59	24.86	22.45	-62.14	-1,032.41	1,618.79	1,498.47	1,465.37	33.10	45.272		
6,600.00	6,518.67	6,502.89	6,501.67	25.34	22.79	-62.93	-1,032.41	1,618.79	1,487.14	1,453.45	33.69	44.140		
6,700.00	6,615.75	6,599.97	6,598.75	25.83	23.14	-63.74	-1,032.41	1,618.79	1,476.12	1,441.83	34.29	43.052		
6,800.00	6,712.82	6,697.04	6,695.82	26.31	23.49	-64.57	-1,032.41	1,618.79	1,465.40	1,430.52	34.89	42.006		
6,900.00	6,809.90	6,794.12	6,792.90	26.80	23.83	-65.40	-1,032.41	1,618.79	1,455.01	1,419.52	35.49	41.000		
7,000.00	6,906.98	6,891.20	6,889.98	27.29	24.18	-66.24	-1,032.41	1,618.79	1,444.93	1,408.84	36.09	40.034		
7,100.00	7,004.06	6,988.28	6,987.06	27.78	24.53	-67.10	-1,032.41	1,618.79	1,435.19	1,398.49	36.70	39.106		
7,200.00	7,101.14	7,085.36	7,084.14	28.28	24.87	-67.96	-1,032.41	1,618.79	1,425.78	1,388.47	37.31	38.214		
7,300.00	7,198.21	7,182.43	7,181.21	28.77	25.22	-68.84	-1,032.41	1,618.79	1,416.72	1,378.80	37.92	37.358		
7,400.00	7,295.29	7,279.51	7,278.29	29.26	25.57	-69.73	-1,032.41	1,618.79	1,408.01	1,369.47	38.54	36.536		
7,500.00	7,392.37	7,376.59	7,375.37	29.76	25.91	-70.63	-1,032.41	1,618.79	1,399.66	1,360.50	39.16	35.746		
7,600.00	7,489.45	7,473.67	7,472.45	30.26	26.26	-71.53	-1,032.41	1,618.79	1,391.67	1,351.89	39.77	34.989		
7,700.00	7,586.53	7,570.75	7,569.53	30.76	26.61	-72.45	-1,032.41	1,618.79	1,384.05	1,343.65	40.40	34.262		
7,800.00	7,683.60	7,667.82	7,666.60	31.26	26.95	-73.38	-1,032.41	1,618.79	1,376.80	1,335.79	41.02	33.565		
7,900.00	7,780.68	7,764.90	7,763.68	31.76	27.30	-74.31	-1,032.41	1,618.79	1,369.94	1,328.30	41.64	32.897		
8,000.00	7,877.76	7,861.98	7,860.76	32.26	27.65	-75.26	-1,032.41	1,618.79	1,363.47	1,321.20	42.27	32.256		
8,035.67	7,912.38	7,896.60	7,895.38	32.44	27.77	-75.60	-1,032.41	1,618.79	1,361.25	1,318.76	42.49	32.035		
8,100.00	7,974.96	7,959.19	7,957.96	32.76	28.00	-76.14	-1,032.41	1,618.79	1,357.52	1,314.62	42.89	31.649		
8,200.00	8,072.71	8,056.94	8,055.71	33.24	28.35	-76.91	-1,032.41	1,618.79	1,352.50	1,309.00	43.50	31.091		
8,300.00	8,170.98	8,155.20	8,153.98	33.69	28.70	-77.60	-1,032.41	1,618.79	1,348.34	1,304.25	44.09	30.579		
8,400.00	8,269.70	8,253.92	8,252.70	34.13	29.05	-78.21	-1,032.41	1,618.79	1,344.96	1,300.29	44.67	30.110		
8,500.00	8,368.80	8,353.03	8,351.80	34.55	29.40	-78.72	-1,032.41	1,618.79	1,342.27	1,297.05	45.23	29.680		
8,600.00	8,468.22	8,452.44	8,451.22	34.94	29.76	-79.14	-1,032.41	1,618.79	1,340.20	1,294.43	45.76	29.285		
8,700.00	8,567.89	8,552.11	8,550.89	35.31	30.12	-79.46	-1,032.41	1,618.79	1,338.68	1,292.39	46.28	28.923		
8,800.00	8,667.73	8,651.95	8,650.73	35.66	30.47	-79.68	-1,032.41	1,618.79	1,337.68	1,290.89	46.79	28.591		
8,900.00	8,767.69	8,751.91	8,750.69	35.99	30.83	-79.79	-1,032.41	1,618.79	1,337.16	1,289.89	47.27	28.287		
8,961.32	8,829.00	8,813.22	8,812.00	36.17	31.05	85.99	-1,032.41	1,618.79	1,337.07	1,289.51	47.56	28.116		
9,000.00	8,867.68	8,851.91	8,850.68	36.28	31.19	85.99	-1,032.41	1,618.79	1,337.07	1,289.34	47.73	28.013		
9,100.00	8,967.68	8,951.91	8,950.68	36.57	31.55	85.99	-1,032.41	1,618.79	1,337.07	1,288.89	48.18	27.749		
9,200.00	9,067.68	9,051.91	9,050.68	36.86	31.90	85.99	-1,032.41	1,618.79	1,337.07	1,288.43	48.64	27.490		
9,300.00	9,167.68	9,151.91	9,150.68	37.16	32.26	85.99	-1,032.41	1,618.79	1,337.07	1,287.98	49.09	27.235		
9,400.00	9,267.68	9,251.91	9,250.68	37.45	32.62	85.99	-1,032.41	1,618.79	1,337.07	1,287.52	49.55	26.985		
9,500.00	9,367.68	9,351.91	9,350.68	37.74	32.98	85.99	-1,032.41	1,618.79	1,337.07	1,287.06	50.01	26.738		
9,600.00	9,467.68	9,451.91	9,450.68	38.04	33.33	85.99	-1,032.41	1,618.79	1,337.07	1,286.60	50.46	26.495		
9,700.00	9,567.68	9,551.91	9,550.68	38.33	33.69	85.99	-1,032.41	1,618.79	1,337.07	1,286.15	50.92	26.256		
9,800.00	9,667.68	9,651.91	9,650.68	38.63	34.05	85.99	-1,032.41	1,618.79	1,337.07	1,285.69	51.38	26.021		
9,900.00	9,767.68	9,751.91	9,750.68	38.93	34.41	85.99	-1,032.41	1,618.79	1,337.07	1,285.22	51.85	25.790		
10,000.00	9,867.68	9,851.91	9,850.68	39.23	34.76	85.99	-1,032.41	1,618.79	1,337.07	1,284.76	52.31	25.562		

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 Tatanka Fed Com 602H
Project:	Lea County, NM (NAD83)	TVD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 602H	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		
10,100.00	9,967.68	9,951.91	9,950.68	39.53	35.12	85.99	-1,032.41	1,618.79	1,337.07	1,284.30	52.77	25.338		
10,200.00	10,067.68	10,051.91	10,050.68	39.83	35.48	85.99	-1,032.41	1,618.79	1,337.07	1,283.84	53.23	25.117		
10,300.00	10,167.68	10,152.50	10,151.28	40.13	35.84	85.99	-1,032.43	1,618.79	1,337.07	1,283.37	53.70	24.900		
10,400.00	10,267.68	10,267.15	10,265.08	40.43	36.21	86.51	-1,044.70	1,618.91	1,336.46	1,282.31	54.16	24.678		
10,500.00	10,367.68	10,372.99	10,366.05	40.74	36.55	87.85	-1,075.92	1,619.21	1,335.24	1,280.66	54.58	24.463		
10,589.47	10,457.15	10,455.95	10,440.15	41.01	36.80	89.44	-1,113.06	1,619.57	1,334.63	1,279.70	54.93	24.296 CC		
10,600.00	10,467.68	10,464.92	10,447.82	41.04	36.83	89.64	-1,117.70	1,619.62	1,334.65	1,279.67	54.97	24.279 ES		
10,700.00	10,567.68	10,541.75	10,510.32	41.35	37.06	91.56	-1,162.29	1,620.05	1,336.15	1,280.84	55.31	24.156		
10,800.00	10,667.68	10,604.78	10,556.77	41.66	37.26	93.38	-1,204.86	1,620.46	1,341.08	1,285.50	55.58	24.130		
10,900.00	10,767.68	10,650.00	10,587.07	41.96	37.41	94.81	-1,238.40	1,620.79	1,350.46	1,294.75	55.70	24.243		
11,000.00	10,867.68	10,700.00	10,617.37	42.27	37.57	96.50	-1,278.15	1,621.17	1,364.90	1,309.16	55.74	24.487		
11,100.00	10,967.68	10,733.35	10,635.61	42.58	37.68	97.67	-1,306.06	1,621.44	1,384.84	1,329.24	55.60	24.908		
11,200.00	11,067.68	10,762.45	10,650.18	42.89	37.78	98.73	-1,331.25	1,621.69	1,410.41	1,355.10	55.31	25.498		
11,300.00	11,167.68	10,786.97	10,661.45	43.20	37.87	99.64	-1,353.03	1,621.90	1,441.59	1,386.69	54.90	26.257		
11,400.00	11,267.68	10,800.00	10,667.05	43.51	37.91	100.13	-1,364.79	1,622.01	1,478.26	1,423.92	54.34	27.205		
11,500.00	11,367.68	10,825.81	10,677.35	43.82	38.01	101.10	-1,388.45	1,622.24	1,520.02	1,466.24	53.78	28.264		
11,576.36	11,444.04	10,850.00	10,686.04	44.06	38.09	102.03	-1,411.02	1,622.46	1,555.35	1,502.00	53.35	29.153		
11,600.00	11,467.68	10,850.00	10,686.04	44.14	38.09	-76.15	-1,411.02	1,622.46	1,566.66	1,513.49	53.17	29.464		
11,650.00	11,517.48	10,850.00	10,686.04	44.33	38.09	-73.50	-1,411.02	1,622.46	1,590.77	1,537.97	52.80	30.128		
11,700.00	11,566.73	10,850.00	10,686.04	44.54	38.09	-70.86	-1,411.02	1,622.46	1,615.01	1,562.57	52.44	30.797		
11,750.00	11,615.04	10,870.14	10,692.53	44.78	38.17	-67.67	-1,430.09	1,622.65	1,638.85	1,586.63	52.22	31.383		
11,800.00	11,662.05	10,881.34	10,695.85	45.04	38.21	-64.92	-1,440.78	1,622.75	1,662.29	1,610.33	51.97	31.988		
11,850.00	11,707.40	10,900.00	10,700.92	45.33	38.28	-62.15	-1,458.74	1,622.92	1,685.11	1,633.33	51.77	32.547		
11,900.00	11,750.75	10,900.00	10,700.92	45.65	38.28	-60.02	-1,458.74	1,622.92	1,707.00	1,655.49	51.50	33.144		
11,950.00	11,791.76	10,918.62	10,705.39	45.98	38.35	-57.67	-1,476.80	1,623.10	1,727.82	1,676.46	51.36	33.640		
12,000.00	11,830.12	10,932.03	10,708.25	46.33	38.40	-55.64	-1,489.91	1,623.23	1,747.45	1,696.23	51.22	34.115		
12,050.00	11,865.55	10,950.00	10,711.59	46.70	38.47	-53.75	-1,507.56	1,623.40	1,765.74	1,714.60	51.14	34.531		
12,100.00	11,897.77	10,950.00	10,711.59	47.09	38.47	-52.32	-1,507.56	1,623.40	1,782.57	1,731.57	51.00	34.952		
12,150.00	11,926.54	10,974.44	10,715.25	47.50	38.57	-50.78	-1,531.73	1,623.63	1,797.62	1,746.61	51.01	35.238		
12,200.00	11,951.63	11,000.00	10,717.97	47.92	38.67	-49.46	-1,557.14	1,623.88	1,811.13	1,760.07	51.06	35.470		
12,250.00	11,972.86	11,000.00	10,717.97	48.35	38.67	-48.57	-1,557.14	1,623.88	1,822.62	1,771.56	51.06	35.699		
12,300.00	11,990.07	11,019.13	10,719.26	48.80	38.74	-47.70	-1,576.22	1,624.06	1,832.28	1,781.12	51.16	35.814		
12,350.00	12,003.12	11,048.26	10,720.00	49.25	38.86	-46.98	-1,605.34	1,624.35	1,840.16	1,788.83	51.33	35.850		
12,400.00	12,011.92	11,052.78	10,720.00	49.70	38.88	-46.56	-1,609.86	1,624.39	1,845.68	1,794.20	51.48	35.852		
12,450.00	12,016.39	11,102.57	10,720.00	50.16	39.09	-46.24	-1,659.64	1,624.87	1,848.77	1,796.98	51.78	35.701		
12,476.36	12,017.00	11,128.92	10,720.00	50.40	39.21	-46.20	-1,685.99	1,625.13	1,849.18	1,797.22	51.97	35.583		
12,500.00	12,017.00	11,152.56	10,720.00	50.61	39.32	-46.20	-1,709.63	1,625.36	1,849.18	1,797.04	52.14	35.466		
12,600.00	12,017.00	11,252.56	10,720.00	51.55	39.82	-46.20	-1,809.63	1,626.33	1,849.17	1,796.28	52.89	34.961		
12,700.00	12,017.00	11,352.56	10,720.00	52.52	40.38	-46.20	-1,909.62	1,627.30	1,849.17	1,795.47	53.70	34.436		
12,800.00	12,017.00	11,452.56	10,720.00	53.53	41.01	-46.19	-2,009.62	1,628.27	1,849.16	1,794.60	54.55	33.896		
12,900.00	12,017.00	11,552.56	10,720.00	54.57	41.68	-46.19	-2,109.61	1,629.24	1,849.15	1,793.69	55.46	33.343		
13,000.00	12,017.00	11,652.56	10,720.00	55.63	42.41	-46.19	-2,209.61	1,630.20	1,849.14	1,792.73	56.41	32.782		
13,100.00	12,017.00	11,752.56	10,720.00	56.73	43.20	-46.19	-2,309.60	1,631.17	1,849.13	1,791.74	57.40	32.216		
13,200.00	12,017.00	11,852.56	10,720.00	57.85	44.03	-46.19	-2,409.60	1,632.14	1,849.13	1,790.70	58.43	31.648		
13,300.00	12,017.00	11,952.56	10,720.00	58.99	44.90	-46.19	-2,509.60	1,633.11	1,849.12	1,789.62	59.50	31.079		
13,400.00	12,017.00	12,052.56	10,720.00	60.16	45.82	-46.19	-2,609.59	1,634.08	1,849.11	1,788.51	60.60	30.512		
13,500.00	12,017.00	12,152.56	10,720.00	61.35	46.78	-46.19	-2,709.59	1,635.05	1,849.10	1,787.36	61.74	29.948		
13,600.00	12,017.00	12,252.56	10,720.00	62.57	47.77	-46.19	-2,809.58	1,636.02	1,849.09	1,786.18	62.92	29.390		
13,700.00	12,017.00	12,352.56	10,720.00	63.80	48.81	-46.19	-2,909.58	1,636.99	1,849.09	1,784.97	64.12	28.839		
13,800.00	12,017.00	12,452.56	10,720.00	65.05	49.87	-46.19	-3,009.57	1,637.96	1,849.08	1,783.73	65.35	28.296		
13,900.00	12,017.00	12,552.56	10,720.00	66.32	50.97	-46.19	-3,109.57	1,638.93	1,849.07	1,782.46	66.61	27.761		
14,000.00	12,017.00	12,652.56	10,720.00	67.60	52.09	-46.19	-3,209.56	1,639.90	1,849.06	1,781.17	67.89	27.236		

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 Tatanka Fed Com 602H
Project:	Lea County, NM (NAD83)	TVD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 602H	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	12,017.00	12,752.56	10,720.00	68.90	53.25	-46.19	-3,309.56	1,640.87	1,849.05	1,779.85	69.20	26.720		
14,200.00	12,017.00	12,852.56	10,720.00	70.22	54.43	-46.19	-3,409.55	1,641.84	1,849.04	1,778.51	70.53	26.216		
14,300.00	12,017.00	12,952.56	10,720.00	71.55	55.63	-46.19	-3,509.55	1,642.81	1,849.04	1,777.15	71.88	25.722		
14,400.00	12,017.00	13,052.56	10,720.00	72.89	56.85	-46.19	-3,609.54	1,643.78	1,849.03	1,775.77	73.26	25.241		
14,500.00	12,017.00	13,152.56	10,720.00	74.25	58.10	-46.19	-3,709.54	1,644.75	1,849.02	1,774.37	74.65	24.770		
14,600.00	12,017.00	13,252.56	10,720.00	75.61	59.37	-46.19	-3,809.53	1,645.72	1,849.01	1,772.95	76.06	24.311		
14,700.00	12,017.00	13,352.56	10,720.00	76.99	60.65	-46.19	-3,909.53	1,646.69	1,849.00	1,771.52	77.48	23.863		
14,800.00	12,017.00	13,452.56	10,720.00	78.38	61.95	-46.19	-4,009.52	1,647.66	1,849.00	1,770.07	78.93	23.427		
14,900.00	12,017.00	13,552.56	10,720.00	79.78	63.27	-46.19	-4,109.52	1,648.63	1,848.99	1,768.61	80.38	23.003		
15,000.00	12,017.00	13,652.56	10,720.00	81.18	64.61	-46.19	-4,209.52	1,649.60	1,848.98	1,767.13	81.85	22.589		
15,100.00	12,017.00	13,752.56	10,720.00	82.60	65.96	-46.19	-4,309.51	1,650.57	1,848.97	1,765.63	83.34	22.186		
15,200.00	12,017.00	13,852.56	10,720.00	84.03	67.32	-46.19	-4,409.51	1,651.54	1,848.96	1,764.13	84.83	21.795		
15,300.00	12,017.00	13,952.56	10,720.00	85.46	68.69	-46.19	-4,509.50	1,652.51	1,848.96	1,762.61	86.34	21.414		
15,400.00	12,017.00	14,052.56	10,720.00	86.90	70.08	-46.19	-4,609.50	1,653.48	1,848.95	1,761.09	87.86	21.044		
15,500.00	12,017.00	14,152.56	10,720.00	88.35	71.48	-46.19	-4,709.49	1,654.45	1,848.94	1,759.55	89.39	20.684		
15,600.00	12,017.00	14,252.56	10,720.00	89.80	72.88	-46.19	-4,809.49	1,655.41	1,848.93	1,758.00	90.93	20.333		
15,700.00	12,017.00	14,352.56	10,720.00	91.27	74.30	-46.19	-4,909.48	1,656.38	1,848.92	1,756.44	92.48	19.992		
15,800.00	12,017.00	14,452.56	10,720.00	92.74	75.73	-46.19	-5,009.48	1,657.35	1,848.92	1,754.87	94.04	19.660		
15,900.00	12,017.00	14,552.56	10,720.00	94.21	77.17	-46.19	-5,109.47	1,658.32	1,848.91	1,753.30	95.61	19.338		
16,000.00	12,017.00	14,652.56	10,720.00	95.69	78.61	-46.19	-5,209.47	1,659.29	1,848.90	1,751.72	97.18	19.025		
16,100.00	12,017.00	14,752.56	10,720.00	97.18	80.07	-46.19	-5,309.46	1,660.26	1,848.89	1,750.12	98.77	18.720		
16,200.00	12,017.00	14,852.56	10,720.00	98.67	81.53	-46.19	-5,409.46	1,661.23	1,848.88	1,748.53	100.36	18.423		
16,300.00	12,017.00	14,952.56	10,720.00	100.16	82.99	-46.19	-5,509.45	1,662.20	1,848.88	1,746.92	101.96	18.134		
16,400.00	12,017.00	15,052.56	10,720.00	101.67	84.47	-46.19	-5,609.45	1,663.17	1,848.87	1,745.31	103.56	17.853		
16,500.00	12,017.00	15,152.56	10,720.00	103.17	85.95	-46.19	-5,709.45	1,664.14	1,848.86	1,743.69	105.17	17.580		
16,600.00	12,017.00	15,252.56	10,720.00	104.68	87.44	-46.19	-5,809.44	1,665.11	1,848.85	1,742.07	106.79	17.314		
16,700.00	12,017.00	15,352.56	10,720.00	106.20	88.93	-46.19	-5,909.44	1,666.08	1,848.84	1,740.44	108.41	17.055		
16,800.00	12,017.00	15,452.56	10,720.00	107.71	90.43	-46.19	-6,009.43	1,667.05	1,848.84	1,738.81	110.03	16.803		
16,900.00	12,017.00	15,552.56	10,720.00	109.24	91.93	-46.19	-6,109.43	1,668.02	1,848.83	1,737.17	111.66	16.557		
17,000.00	12,017.00	15,652.56	10,720.00	110.76	93.44	-46.18	-6,209.42	1,668.99	1,848.82	1,735.52	113.30	16.318		
17,100.00	12,017.00	15,752.56	10,720.00	112.29	94.95	-46.18	-6,309.42	1,669.96	1,848.81	1,733.87	114.94	16.085		
17,200.00	12,017.00	15,852.56	10,720.00	113.82	96.47	-46.18	-6,409.41	1,670.93	1,848.80	1,732.22	116.58	15.858		
17,300.00	12,017.00	15,952.56	10,720.00	115.36	97.99	-46.18	-6,509.41	1,671.90	1,848.80	1,730.56	118.23	15.637		
17,400.00	12,017.00	16,052.56	10,720.00	116.90	99.52	-46.18	-6,609.40	1,672.87	1,848.79	1,728.90	119.89	15.421		
17,500.00	12,017.00	16,152.56	10,720.00	118.44	101.05	-46.18	-6,709.40	1,673.84	1,848.78	1,727.24	121.54	15.211		
17,600.00	12,017.00	16,252.56	10,720.00	119.99	102.59	-46.18	-6,809.39	1,674.81	1,848.77	1,725.57	123.20	15.006		
17,700.00	12,017.00	16,352.56	10,720.00	121.53	104.12	-46.18	-6,909.39	1,675.78	1,848.76	1,723.90	124.86	14.806		
17,800.00	12,017.00	16,452.56	10,720.00	123.09	105.66	-46.18	-7,009.38	1,676.75	1,848.76	1,722.23	126.53	14.611		
17,900.00	12,017.00	16,552.56	10,720.00	124.64	107.21	-46.18	-7,109.38	1,677.72	1,848.75	1,720.55	128.20	14.421		
18,000.00	12,017.00	16,652.56	10,720.00	126.19	108.76	-46.18	-7,209.37	1,678.69	1,848.74	1,718.87	129.87	14.235		
18,100.00	12,017.00	16,752.56	10,720.00	127.75	110.31	-46.18	-7,309.37	1,679.65	1,848.73	1,717.19	131.54	14.054		
18,200.00	12,017.00	16,852.56	10,720.00	129.31	111.86	-46.18	-7,409.37	1,680.62	1,848.72	1,715.50	133.22	13.877		
18,300.00	12,017.00	16,952.56	10,720.00	130.88	113.42	-46.18	-7,509.36	1,681.59	1,848.72	1,713.81	134.90	13.704		
18,400.00	12,017.00	17,052.56	10,720.00	132.44	114.98	-46.18	-7,609.36	1,682.56	1,848.71	1,712.12	136.58	13.535		
18,500.00	12,017.00	17,152.56	10,720.00	134.01	116.54	-46.18	-7,709.35	1,683.53	1,848.70	1,710.43	138.27	13.371		
18,600.00	12,017.00	17,252.56	10,720.00	135.58	118.10	-46.18	-7,809.35	1,684.50	1,848.69	1,708.74	139.95	13.209		
18,700.00	12,017.00	17,352.56	10,720.00	137.15	119.67	-46.18	-7,909.34	1,685.47	1,848.68	1,707.04	141.64	13.052		
18,800.00	12,017.00	17,452.56	10,720.00	138.72	121.24	-46.18	-8,009.34	1,686.44	1,848.67	1,705.34	143.33	12.898		
18,900.00	12,017.00	17,552.56	10,720.00	140.29	122.81	-46.18	-8,109.33	1,687.41	1,848.67	1,703.65	145.02	12.748		
19,000.00	12,017.00	17,652.56	10,720.00	141.87	124.38	-46.18	-8,209.33	1,688.38	1,848.66	1,701.94	146.71	12.600		
19,100.00	12,017.00	17,752.56	10,720.00	143.45	125.95	-46.18	-8,309.32	1,689.35	1,848.65	1,700.24	148.41	12.456		
19,200.00	12,017.00	17,852.56	10,720.00	145.03	127.53	-46.18	-8,409.32	1,690.32	1,848.64	1,698.54	150.11	12.316		

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 Tatanka Fed Com 602H
Project:	Lea County, NM (NAD83)	TVD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 602H	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		
19,300.00	12,017.00	17,952.56	10,720.00	146.61	129.11	-46.18	-8,509.31	1,691.29	1,848.63	1,696.83	151.80	12.178		
19,400.00	12,017.00	18,052.56	10,720.00	148.19	130.69	-46.18	-8,609.31	1,692.26	1,848.63	1,695.12	153.50	12.043		
19,500.00	12,017.00	18,152.56	10,720.00	149.78	132.27	-46.18	-8,709.30	1,693.23	1,848.62	1,693.41	155.20	11.911		
19,600.00	12,017.00	18,252.56	10,720.00	151.36	133.86	-46.18	-8,809.30	1,694.20	1,848.61	1,691.71	156.91	11.782		
19,700.00	12,017.00	18,352.56	10,720.00	152.95	135.44	-46.18	-8,909.29	1,695.17	1,848.60	1,689.99	158.61	11.655		
19,800.00	12,017.00	18,452.56	10,720.00	154.54	137.03	-46.18	-9,009.29	1,696.14	1,848.59	1,688.28	160.31	11.531		
19,900.00	12,017.00	18,552.56	10,720.00	156.13	138.62	-46.18	-9,109.29	1,697.11	1,848.59	1,686.57	162.02	11.410		
20,000.00	12,017.00	18,652.56	10,720.00	157.72	140.21	-46.18	-9,209.28	1,698.08	1,848.58	1,684.85	163.72	11.291		
20,100.00	12,017.00	18,752.56	10,720.00	159.31	141.80	-46.18	-9,309.28	1,699.05	1,848.57	1,683.14	165.43	11.174		
20,200.00	12,017.00	18,852.56	10,720.00	160.90	143.39	-46.18	-9,409.27	1,700.02	1,848.56	1,681.42	167.14	11.060		
20,300.00	12,017.00	18,952.56	10,720.00	162.50	144.98	-46.18	-9,509.27	1,700.99	1,848.55	1,679.71	168.85	10.948		
20,400.00	12,017.00	19,052.56	10,720.00	164.09	146.58	-46.18	-9,609.26	1,701.96	1,848.55	1,677.99	170.56	10.838		
20,500.00	12,017.00	19,152.56	10,720.00	165.69	148.18	-46.18	-9,709.26	1,702.93	1,848.54	1,676.27	172.27	10.731		
20,600.00	12,017.00	19,252.56	10,720.00	167.29	149.77	-46.18	-9,809.25	1,703.90	1,848.53	1,674.55	173.98	10.625		
20,700.00	12,017.00	19,352.56	10,720.00	168.89	151.37	-46.18	-9,909.25	1,704.86	1,848.52	1,672.83	175.69	10.522		
20,800.00	12,017.00	19,452.56	10,720.00	170.49	152.97	-46.18	-10,009.24	1,705.83	1,848.51	1,671.11	177.40	10.420		
20,900.00	12,017.00	19,552.56	10,720.00	172.09	154.57	-46.18	-10,109.24	1,706.80	1,848.51	1,669.39	179.11	10.320		
21,000.00	12,017.00	19,652.56	10,720.00	173.69	156.18	-46.18	-10,209.23	1,707.77	1,848.50	1,667.67	180.83	10.223		
21,100.00	12,017.00	19,752.56	10,720.00	175.29	157.78	-46.18	-10,309.23	1,708.74	1,848.49	1,665.95	182.54	10.126		
21,200.00	12,017.00	19,852.56	10,720.00	176.90	159.38	-46.17	-10,409.22	1,709.71	1,848.48	1,664.23	184.25	10.032		
21,300.00	12,017.00	19,952.56	10,720.00	178.50	160.99	-46.17	-10,509.22	1,710.68	1,848.47	1,662.51	185.97	9.940		
21,400.00	12,017.00	20,052.56	10,720.00	180.11	162.59	-46.17	-10,609.21	1,711.65	1,848.47	1,660.78	187.68	9.849		
21,500.00	12,017.00	20,152.56	10,720.00	181.71	164.20	-46.17	-10,709.21	1,712.62	1,848.46	1,659.06	189.40	9.760		
21,600.00	12,017.00	20,252.56	10,720.00	183.32	165.81	-46.17	-10,809.21	1,713.59	1,848.45	1,657.34	191.11	9.672		
21,700.00	12,017.00	20,352.56	10,720.00	184.93	167.42	-46.17	-10,909.20	1,714.56	1,848.44	1,655.61	192.83	9.586		
21,800.00	12,017.00	20,452.56	10,720.00	186.54	169.03	-46.17	-11,009.20	1,715.53	1,848.43	1,653.89	194.54	9.501		
21,900.00	12,017.00	20,552.56	10,720.00	188.15	170.64	-46.17	-11,109.19	1,716.50	1,848.43	1,652.17	196.26	9.418		
22,000.00	12,017.00	20,652.56	10,720.00	189.76	172.25	-46.17	-11,209.19	1,717.47	1,848.42	1,650.44	197.98	9.337		
22,100.00	12,017.00	20,752.56	10,720.00	191.37	173.86	-46.17	-11,309.18	1,718.44	1,848.41	1,648.72	199.69	9.256		
22,187.30	12,017.00	20,839.86	10,720.00	192.77	175.20	-46.17	-11,396.48	1,719.29	1,848.40	1,647.28	201.12	9.190 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 Tatanka Fed Com 602H
Project:	Lea County, NM (NAD83)	TVD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 602H	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													Tatanka Fed Com - Tatanka Fed Com 504H - 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				
0.00	0.00	0.00	0.00	0.00	0.00	122.16	-1,002.17	1,593.79	1,882.77							
100.00	100.00	82.70	82.70	0.13	0.10	122.16	-1,002.17	1,593.79	1,882.69	1,882.52	0.16	N/A				
200.00	200.00	182.70	182.70	0.48	0.42	122.16	-1,002.17	1,593.79	1,882.69	1,882.05	0.64	2,932.363				
300.00	300.00	282.70	282.70	0.84	0.78	122.16	-1,002.17	1,593.79	1,882.69	1,881.54	1.15	1,639.498				
400.00	400.00	382.70	382.70	1.20	1.14	122.16	-1,002.17	1,593.79	1,882.69	1,881.03	1.66	1,137.555				
500.00	500.00	482.70	482.70	1.56	1.50	122.16	-1,002.17	1,593.79	1,882.69	1,880.53	2.16	870.869				
600.00	600.00	582.70	582.70	1.92	1.86	122.16	-1,002.17	1,593.79	1,882.69	1,880.02	2.67	705.465				
700.00	700.00	682.70	682.70	2.28	2.21	122.16	-1,002.17	1,593.79	1,882.69	1,879.51	3.18	592.857				
800.00	800.00	782.70	782.70	2.63	2.57	122.16	-1,002.17	1,593.79	1,882.69	1,879.00	3.68	511.248				
900.00	900.00	882.70	882.70	2.99	2.93	122.16	-1,002.17	1,593.79	1,882.69	1,878.50	4.19	449.387				
1,000.00	1,000.00	982.70	982.70	3.35	3.29	122.16	-1,002.17	1,593.79	1,882.69	1,877.99	4.70	400.880				
1,100.00	1,100.00	1,082.70	1,082.70	3.71	3.65	122.16	-1,002.17	1,593.79	1,882.69	1,877.48	5.20	361.824				
1,200.00	1,200.00	1,182.70	1,182.70	4.07	4.01	122.16	-1,002.17	1,593.79	1,882.69	1,876.98	5.71	329.703				
1,300.00	1,300.00	1,282.70	1,282.70	4.43	4.37	122.16	-1,002.17	1,593.79	1,882.69	1,876.47	6.22	302.819				
1,400.00	1,400.00	1,382.70	1,382.70	4.79	4.72	122.16	-1,002.17	1,593.79	1,882.69	1,875.96	6.72	279.989				
1,500.00	1,500.00	1,482.70	1,482.70	5.14	5.08	122.16	-1,002.17	1,593.79	1,882.69	1,875.46	7.23	260.360				
1,600.00	1,600.00	1,582.70	1,582.70	5.50	5.44	122.16	-1,002.17	1,593.79	1,882.69	1,874.95	7.74	243.303				
1,700.00	1,700.00	1,682.70	1,682.70	5.86	5.80	122.16	-1,002.17	1,593.79	1,882.69	1,874.44	8.24	228.343				
1,800.00	1,800.00	1,782.70	1,782.70	6.22	6.16	122.16	-1,002.17	1,593.79	1,882.69	1,873.94	8.75	215.117				
1,900.00	1,900.00	1,882.70	1,882.70	6.58	6.52	122.16	-1,002.17	1,593.79	1,882.69	1,873.43	9.26	203.339				
2,000.00	2,000.00	1,982.70	1,982.70	6.94	6.87	122.16	-1,002.17	1,593.79	1,882.69	1,872.92	9.77	192.783				
2,100.00	2,100.00	2,082.70	2,082.70	7.29	7.23	122.16	-1,002.17	1,593.79	1,882.69	1,872.41	10.27	183.269				
2,200.00	2,200.00	2,182.70	2,182.70	7.65	7.59	122.16	-1,002.17	1,593.79	1,882.69	1,871.91	10.78	174.651				
2,300.00	2,300.00	2,282.70	2,282.70	8.01	7.95	122.16	-1,002.17	1,593.79	1,882.69	1,871.40	11.29	166.806				
2,400.00	2,400.00	2,382.70	2,382.70	8.37	8.31	122.16	-1,002.17	1,593.79	1,882.69	1,870.89	11.79	159.636				
2,500.00	2,500.00	2,482.70	2,482.70	8.73	8.67	122.16	-1,002.17	1,593.79	1,882.69	1,870.39	12.30	153.057				
2,600.00	2,600.00	2,582.70	2,582.70	9.09	9.03	122.16	-1,002.17	1,593.79	1,882.69	1,869.88	12.81	146.998				
2,700.00	2,700.00	2,682.70	2,682.70	9.45	9.38	122.16	-1,002.17	1,593.79	1,882.69	1,869.37	13.31	141.401				
2,800.00	2,800.00	2,782.70	2,782.70	9.80	9.74	122.16	-1,002.17	1,593.79	1,882.69	1,868.87	13.82	136.215				
2,900.00	2,900.00	2,882.70	2,882.70	10.16	10.10	122.16	-1,002.17	1,593.79	1,882.69	1,868.36	14.33	131.396				
3,000.00	3,000.00	2,982.70	2,982.70	10.52	10.46	122.16	-1,002.17	1,593.79	1,882.69	1,867.85	14.84	126.905				
3,100.00	3,100.00	3,082.70	3,082.70	10.88	10.82	122.16	-1,002.17	1,593.79	1,882.69	1,867.34	15.34	122.712				
3,200.00	3,200.00	3,182.70	3,182.70	11.24	11.18	122.16	-1,002.17	1,593.79	1,882.69	1,866.84	15.85	118.787				
3,300.00	3,299.99	3,282.69	3,282.69	11.58	11.53	-43.67	-1,002.17	1,593.79	1,881.74	1,865.40	16.34	115.139				
3,400.00	3,399.91	3,351.55	3,351.54	11.90	11.78	-43.76	-1,002.24	1,594.25	1,879.58	1,862.84	16.74	112.276				
3,500.00	3,499.69	3,400.00	3,399.98	12.23	11.94	-43.86	-1,002.44	1,595.51	1,877.60	1,860.52	17.08	109.938				
3,600.00	3,599.27	3,475.98	3,475.87	12.56	12.20	-44.06	-1,002.99	1,599.13	1,875.58	1,858.10	17.48	107.282				
3,700.00	3,698.57	3,537.94	3,537.67	12.89	12.41	-44.29	-1,003.68	1,603.55	1,873.80	1,855.95	17.85	105.001				
3,800.00	3,797.54	3,600.00	3,599.45	13.22	12.63	-44.57	-1,004.56	1,609.30	1,872.21	1,854.00	18.21	102.838				
3,900.00	3,896.09	3,661.08	3,660.12	13.57	12.84	-44.88	-1,005.63	1,616.25	1,870.84	1,852.28	18.56	100.802				
4,000.00	3,994.16	3,722.14	3,720.62	13.92	13.05	-45.25	-1,006.90	1,624.47	1,869.73	1,850.82	18.91	98.867				
4,100.00	4,091.70	3,800.00	3,797.47	14.28	13.33	-45.77	-1,008.80	1,636.80	1,869.07	1,849.75	19.32	96.730				
4,125.65	4,116.62	3,800.00	3,797.47	14.37	13.33	-45.78	-1,008.80	1,636.80	1,868.80	1,849.45	19.36	96.546				
4,160.11	4,150.07	3,819.05	3,816.21	14.50	13.40	-45.91	-1,009.32	1,640.13	1,868.76	1,849.29	19.47	95.979 CC, ES				
4,200.00	4,188.79	3,843.06	3,839.81	14.65	13.48	-46.09	-1,009.99	1,644.51	1,869.03	1,849.43	19.61	95.316				
4,300.00	4,285.87	3,900.00	3,895.62	15.04	13.69	-46.51	-1,011.71	1,655.66	1,871.29	1,851.35	19.94	93.835				
4,400.00	4,382.95	3,962.81	3,956.91	15.43	13.92	-46.99	-1,013.80	1,669.23	1,875.78	1,855.48	20.30	92.411				
4,500.00	4,480.03	4,022.21	4,014.58	15.83	14.15	-47.45	-1,015.97	1,683.28	1,882.51	1,861.87	20.64	91.213				
4,600.00	4,577.11	4,097.19	4,086.94	16.23	14.43	-48.04	-1,018.96	1,702.71	1,891.60	1,870.56	21.05	89.874				
4,700.00	4,674.18	4,167.03	4,154.10	16.65	14.71	-48.60	-1,021.89	1,721.67	1,902.22	1,880.79	21.43	88.744				
4,800.00	4,771.26	4,262.95	4,246.32	17.07	15.11	-49.36	-1,025.90	1,747.71	1,913.38	1,891.43	21.95	87.179				
4,900.00	4,868.34	4,358.86	4,338.55	17.49	15.51	-50.11	-1,029.92	1,773.75	1,924.89	1,902.42	22.47	85.676				

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 Tatanka Fed Com 602H
Project:	Lea County, NM (NAD83)	TVD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 602H	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	4,965.42	4,454.78	4,430.78	17.92	15.92	-50.85	-1,033.93	1,799.79	1,936.74	1,913.75	22.99	84.235		
5,100.00	5,062.50	4,550.70	4,523.00	18.36	16.34	-51.58	-1,037.95	1,825.83	1,948.93	1,925.41	23.52	82.852		
5,200.00	5,159.57	4,646.61	4,615.23	18.80	16.77	-52.31	-1,041.97	1,851.87	1,961.46	1,937.40	24.06	81.526		
5,300.00	5,256.65	4,742.53	4,707.45	19.25	17.21	-53.02	-1,045.98	1,877.91	1,974.31	1,949.70	24.60	80.254		
5,400.00	5,353.73	4,838.44	4,799.68	19.70	17.65	-53.73	-1,050.00	1,903.95	1,987.47	1,962.33	25.15	79.034		
5,500.00	5,450.81	4,934.36	4,891.91	20.15	18.10	-54.43	-1,054.01	1,929.99	2,000.96	1,975.26	25.70	77.864		
5,600.00	5,547.89	5,030.28	4,984.13	20.61	18.55	-55.12	-1,058.03	1,956.03	2,014.75	1,988.49	26.25	76.742		
5,700.00	5,644.96	5,126.19	5,076.36	21.07	19.01	-55.80	-1,062.04	1,982.07	2,028.84	2,002.02	26.81	75.666		
5,800.00	5,742.04	5,222.11	5,168.59	21.54	19.48	-56.47	-1,066.06	2,008.10	2,043.22	2,015.84	27.38	74.633		
5,900.00	5,839.12	5,318.02	5,260.81	22.00	19.95	-57.13	-1,070.07	2,034.14	2,057.89	2,029.95	27.94	73.642		
6,000.00	5,936.20	5,413.94	5,353.04	22.47	20.43	-57.79	-1,074.09	2,060.18	2,072.85	2,044.33	28.52	72.690		
6,100.00	6,033.28	5,509.86	5,445.26	22.94	20.91	-58.43	-1,078.10	2,086.22	2,088.08	2,058.99	29.09	71.776		
6,200.00	6,130.35	5,605.77	5,537.49	23.42	21.39	-59.07	-1,082.12	2,112.26	2,103.58	2,073.91	29.67	70.899		
6,300.00	6,227.43	5,701.69	5,629.72	23.90	21.88	-59.69	-1,086.13	2,138.30	2,119.34	2,089.09	30.25	70.056		
6,400.00	6,324.51	5,797.60	5,721.94	24.38	22.37	-60.31	-1,090.15	2,164.34	2,135.37	2,104.53	30.84	69.245		
6,500.00	6,421.59	5,893.52	5,814.17	24.86	22.86	-60.92	-1,094.16	2,190.38	2,151.64	2,120.22	31.43	68.466		
6,600.00	6,518.67	5,989.44	5,906.40	25.34	23.36	-61.52	-1,098.18	2,216.42	2,168.16	2,136.15	32.02	67.717		
6,700.00	6,615.75	6,085.35	5,998.62	25.83	23.85	-62.11	-1,102.19	2,242.46	2,184.93	2,152.32	32.61	66.996		
6,800.00	6,712.82	6,181.27	6,090.85	26.31	24.36	-62.70	-1,106.21	2,268.50	2,201.93	2,168.72	33.21	66.302		
6,900.00	6,809.90	6,277.18	6,183.08	26.80	24.86	-63.27	-1,110.23	2,294.54	2,219.16	2,185.35	33.81	65.634		
7,000.00	6,906.98	6,373.10	6,275.30	27.29	25.37	-63.84	-1,114.24	2,320.58	2,236.61	2,202.20	34.41	64.991		
7,100.00	7,004.06	6,469.02	6,367.53	27.78	25.88	-64.39	-1,118.26	2,346.62	2,254.29	2,219.27	35.02	64.371		
7,200.00	7,101.14	6,564.93	6,459.75	28.28	26.39	-64.94	-1,122.27	2,372.66	2,272.18	2,236.55	35.63	63.774		
7,300.00	7,198.21	6,660.85	6,551.98	28.77	26.90	-65.49	-1,126.29	2,398.70	2,290.28	2,254.04	36.24	63.198		
7,400.00	7,295.29	6,756.76	6,644.21	29.26	27.41	-66.02	-1,130.30	2,424.74	2,308.58	2,271.73	36.85	62.643		
7,500.00	7,392.37	6,852.68	6,736.43	29.76	27.93	-66.54	-1,134.32	2,450.78	2,327.08	2,289.62	37.47	62.107		
7,600.00	7,489.45	6,948.60	6,828.66	30.26	28.45	-67.06	-1,138.33	2,476.82	2,345.78	2,307.70	38.09	61.590		
7,700.00	7,586.53	7,044.51	6,920.89	30.76	28.97	-67.57	-1,142.35	2,502.86	2,364.67	2,325.97	38.71	61.091		
7,800.00	7,683.60	7,140.43	7,013.11	31.26	29.49	-68.07	-1,146.36	2,528.90	2,383.75	2,344.42	39.33	60.609		
7,900.00	7,780.68	7,236.34	7,105.34	31.76	30.01	-68.57	-1,150.38	2,554.94	2,403.01	2,363.05	39.95	60.144		
8,000.00	7,877.76	7,332.26	7,197.56	32.26	30.53	-69.05	-1,154.39	2,580.98	2,422.44	2,381.86	40.58	59.694		
8,035.67	7,912.38	7,366.47	7,230.46	32.44	30.72	-69.23	-1,155.83	2,590.27	2,429.41	2,388.61	40.81	59.537		
8,100.00	7,974.96	7,428.24	7,289.85	32.76	31.06	-69.70	-1,158.41	2,607.04	2,442.23	2,401.03	41.21	59.268		
8,200.00	8,072.71	7,524.49	7,382.40	33.24	31.59	-70.41	-1,162.44	2,633.17	2,463.00	2,421.18	41.82	58.897		
8,300.00	8,170.98	7,620.96	7,475.16	33.69	32.12	-71.08	-1,166.48	2,659.36	2,484.73	2,442.31	42.42	58.580		
8,400.00	8,269.70	7,717.59	7,568.08	34.13	32.65	-71.69	-1,170.53	2,685.59	2,507.36	2,464.37	43.00	58.315		
8,500.00	8,368.80	7,814.32	7,661.08	34.55	33.18	-72.26	-1,174.57	2,711.85	2,530.85	2,487.29	43.56	58.099		
8,600.00	8,468.22	7,911.06	7,754.10	34.94	33.72	-72.78	-1,178.62	2,738.11	2,555.13	2,511.02	44.11	57.929		
8,700.00	8,567.89	8,007.77	7,847.08	35.31	34.25	-73.26	-1,182.67	2,764.37	2,580.18	2,535.54	44.64	57.803		
8,800.00	8,667.73	8,104.36	7,939.96	35.66	34.79	-73.69	-1,186.72	2,790.59	2,605.96	2,560.81	45.15	57.719		
8,900.00	8,767.69	8,200.78	8,032.68	35.99	35.32	-74.07	-1,190.75	2,816.77	2,632.46	2,586.81	45.64	57.675		
8,961.32	8,829.00	8,259.79	8,089.41	36.17	35.65	91.51	-1,193.22	2,832.79	2,649.05	2,603.11	45.93	57.671		
9,000.00	8,867.68	8,296.99	8,125.18	36.28	35.86	91.54	-1,194.78	2,842.89	2,659.59	2,613.48	46.11	57.676		
9,100.00	8,967.68	8,393.14	8,217.63	36.57	36.39	91.61	-1,198.81	2,868.99	2,686.86	2,640.29	46.58	57.686		
9,200.00	9,067.68	8,489.29	8,310.09	36.86	36.93	91.69	-1,202.83	2,895.10	2,714.14	2,667.10	47.04	57.696		
9,300.00	9,167.68	8,585.45	8,402.54	37.16	37.47	91.76	-1,206.86	2,921.20	2,741.42	2,693.91	47.51	57.703		
9,400.00	9,267.68	8,681.60	8,495.00	37.45	38.01	91.83	-1,210.88	2,947.30	2,768.70	2,720.72	47.98	57.709		
9,500.00	9,367.68	8,777.75	8,587.45	37.74	38.54	91.89	-1,214.91	2,973.41	2,795.98	2,747.53	48.45	57.713		
9,600.00	9,467.68	8,873.91	8,679.91	38.04	39.08	91.96	-1,218.93	2,999.51	2,823.27	2,774.35	48.92	57.716		
9,700.00	9,567.68	8,970.06	8,776.06	38.33	42.74	92.25	-1,237.17	3,117.79	2,834.97	2,783.16	51.81	54.721		
9,800.00	9,667.68	9,066.21	8,872.21	38.63	43.02	92.25	-1,237.17	3,117.79	2,834.97	2,782.72	52.25	54.259		
9,900.00	9,767.68	9,162.36	8,968.36	38.93	43.30	92.25	-1,237.17	3,117.79	2,834.97	2,782.28	52.69	53.803		

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 Tatanka Fed Com 602H
Project:	Lea County, NM (NAD83)	TVD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 602H	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													Tatanka Fed Com - Tatanka Fed Com 504H - 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						
10,000.00	9,867.68	10,055.96	9,850.38	39.23	43.58	92.25	-1,237.17	3,117.79	2,834.97	2,781.84	53.13	53.354						
10,100.00	9,967.68	10,155.96	9,950.38	39.53	43.86	92.25	-1,237.17	3,117.79	2,834.97	2,781.39	53.58	52.911						
10,200.00	10,067.68	10,255.96	10,050.38	39.83	44.15	92.25	-1,237.17	3,117.79	2,834.97	2,780.95	54.03	52.475						
10,213.70	10,081.38	10,269.66	10,064.08	39.87	44.19	92.25	-1,237.17	3,117.79	2,834.97	2,780.88	54.09	52.415						
10,300.00	10,167.68	10,350.00	10,144.42	40.13	44.41	92.25	-1,237.22	3,117.79	2,834.98	2,780.51	54.47	52.050						
10,400.00	10,267.68	10,433.12	10,227.17	40.43	44.65	92.39	-1,244.30	3,117.86	2,835.42	2,780.54	54.89	51.659						
10,500.00	10,367.68	10,509.52	10,301.59	40.74	44.87	92.73	-1,261.31	3,118.02	2,836.67	2,781.38	55.30	51.300						
10,600.00	10,467.68	10,580.29	10,367.96	41.04	45.08	93.23	-1,285.76	3,118.26	2,838.96	2,783.27	55.69	50.977						
10,700.00	10,567.68	10,650.00	10,429.89	41.35	45.29	93.87	-1,317.66	3,118.57	2,842.60	2,786.52	56.08	50.692						
10,800.00	10,667.68	10,700.00	10,471.70	41.66	45.44	94.42	-1,345.06	3,118.83	2,847.90	2,791.48	56.42	50.474						
10,900.00	10,767.68	10,750.00	10,510.96	41.96	45.58	95.04	-1,375.99	3,119.13	2,855.19	2,798.44	56.75	50.310						
11,000.00	10,867.68	10,800.00	10,547.37	42.27	45.73	95.73	-1,410.23	3,119.47	2,864.75	2,807.69	57.06	50.204						
11,100.00	10,967.68	10,830.81	10,568.27	42.58	45.82	96.18	-1,432.86	3,119.68	2,876.74	2,819.43	57.31	50.195						
11,200.00	11,067.68	10,863.41	10,589.03	42.89	45.92	96.68	-1,458.00	3,119.93	2,891.35	2,833.81	57.54	50.253						
11,300.00	11,167.68	10,900.00	10,610.58	43.20	46.03	97.27	-1,487.56	3,120.21	2,908.70	2,850.96	57.74	50.376						
11,400.00	11,267.68	10,916.79	10,619.82	43.51	46.08	97.55	-1,501.57	3,120.35	2,928.80	2,870.93	57.86	50.614						
11,500.00	11,367.68	10,950.00	10,636.89	43.82	46.18	98.11	-1,530.05	3,120.63	2,951.80	2,893.80	58.00	50.894						
11,576.36	11,444.04	10,950.00	10,636.89	44.06	46.18	98.11	-1,530.05	3,120.63	2,971.18	2,913.17	58.01	51.217						
11,600.00	11,467.68	10,950.00	10,636.89	44.14	46.18	-80.68	-1,530.05	3,120.63	2,977.48	2,919.46	58.01	51.324						
11,650.00	11,517.48	10,968.54	10,645.69	44.33	46.24	-79.02	-1,546.37	3,120.78	2,990.71	2,932.62	58.09	51.486						
11,700.00	11,566.73	10,979.55	10,650.66	44.54	46.28	-77.52	-1,556.19	3,120.88	3,003.84	2,945.69	58.16	51.652						
11,750.00	11,615.04	11,000.00	10,659.39	44.78	46.34	-75.93	-1,574.68	3,121.06	3,016.76	2,958.49	58.27	51.775						
11,800.00	11,662.05	11,000.00	10,659.39	45.04	46.34	-74.68	-1,574.68	3,121.06	3,029.23	2,970.90	58.33	51.931						
11,850.00	11,707.40	11,000.00	10,659.39	45.33	46.34	-73.48	-1,574.68	3,121.06	3,041.37	2,982.95	58.41	52.066						
11,900.00	11,750.75	11,029.57	10,670.85	45.65	46.44	-72.02	-1,601.95	3,121.32	3,052.64	2,994.03	58.61	52.084						
11,950.00	11,791.76	11,050.00	10,677.93	45.98	46.50	-70.77	-1,621.10	3,121.51	3,063.36	3,004.56	58.80	52.102						
12,000.00	11,830.12	11,050.00	10,677.93	46.33	46.50	-69.82	-1,621.10	3,121.51	3,073.24	3,014.30	58.94	52.143						
12,050.00	11,865.55	11,071.54	10,684.65	46.70	46.58	-68.79	-1,641.57	3,121.71	3,082.20	3,023.03	59.17	52.090						
12,100.00	11,897.77	11,100.00	10,692.34	47.09	46.67	-67.84	-1,668.96	3,121.97	3,090.30	3,030.86	59.44	51.987						
12,150.00	11,926.54	11,100.00	10,692.34	47.50	46.67	-67.20	-1,668.96	3,121.97	3,097.16	3,037.50	59.66	51.916						
12,200.00	11,951.63	11,100.00	10,692.34	47.92	46.67	-66.65	-1,668.96	3,121.97	3,103.14	3,043.24	59.89	51.811						
12,250.00	11,972.86	11,130.91	10,699.14	48.35	46.78	-66.09	-1,699.11	3,122.26	3,107.69	3,047.45	60.25	51.583						
12,300.00	11,990.07	11,150.00	10,702.53	48.80	46.85	-65.72	-1,717.89	3,122.44	3,111.18	3,050.60	60.59	51.351						
12,350.00	12,003.12	11,150.00	10,702.53	49.25	46.85	-65.51	-1,717.89	3,122.44	3,113.50	3,052.60	60.90	51.126						
12,400.00	12,011.92	11,176.68	10,706.21	49.70	46.95	-65.39	-1,744.31	3,122.70	3,114.43	3,053.13	61.30	50.802						
12,450.00	12,016.39	11,200.00	10,708.41	50.16	47.04	-65.42	-1,767.53	3,122.92	3,114.21	3,052.49	61.72	50.457						
12,476.36	12,017.00	11,200.00	10,708.41	50.40	47.04	-65.48	-1,767.53	3,122.92	3,113.53	3,051.61	61.92	50.285						
12,500.00	12,017.00	11,200.00	10,708.41	50.61	47.04	-65.48	-1,767.53	3,122.92	3,112.89	3,050.79	62.10	50.128						
12,600.00	12,017.00	11,242.62	10,710.00	51.55	47.21	-65.51	-1,810.10	3,123.34	3,111.41	3,048.43	62.98	49.400						
12,640.78	12,017.00	11,268.45	10,710.00	51.95	47.32	-65.51	-1,835.94	3,123.59	3,111.37	3,048.00	63.38	49.094						
12,700.00	12,017.00	11,327.67	10,710.00	52.52	47.58	-65.51	-1,895.15	3,124.16	3,111.37	3,047.37	64.00	48.617						
12,800.00	12,017.00	11,427.67	10,710.00	53.53	48.05	-65.51	-1,995.15	3,125.13	3,111.36	3,046.26	65.09	47.798						
12,900.00	12,017.00	11,527.67	10,710.00	54.57	48.58	-65.51	-2,095.14	3,126.10	3,111.34	3,045.10	66.24	46.968						
13,000.00	12,017.00	11,627.67	10,710.00	55.63	49.16	-65.51	-2,195.14	3,127.06	3,111.33	3,043.89	67.44	46.134						
13,100.00	12,017.00	11,727.67	10,710.00	56.73	49.79	-65.51	-2,295.13	3,128.03	3,111.32	3,042.64	68.69	45.298						
13,200.00	12,017.00	11,827.67	10,710.00	57.85	50.47	-65.51	-2,395.13	3,129.00	3,111.31	3,041.33	69.98	44.462						
13,300.00	12,017.00	11,927.67	10,710.00	58.99	51.19	-65.51	-2,495.12	3,129.97	3,111.30	3,039.99	71.31	43.631						
13,400.00	12,017.00	12,027.67	10,710.00	60.16	51.96	-65.51	-2,595.12	3,130.94	3,111.29	3,038.60	72.68	42.806						
13,500.00	12,017.00	12,127.67	10,710.00	61.35	52.77	-65.51	-2,695.12	3,131.90	3,111.27	3,037.18	74.09	41.991						
13,600.00	12,017.00	12,227.67	10,710.00	62.57	53.62	-65.51	-2,795.11	3,132.87	3,111.26	3,035.72	75.54	41.186						
13,700.00	12,017.00	12,327.67	10,710.00	63.80	54.51	-65.51	-2,895.11	3,133.84	3,111.25	3,034.23	77.02	40.393						
13,800.00	12,017.00	12,427.67	10,710.00	65.05	55.44	-65.51	-2,995.10	3,134.81	3,111.24	3,032.70	78.54	39.615						

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 Tatanka Fed Com 602H
Project:	Lea County, NM (NAD83)	TVD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 602H	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		
13,900.00	12,017.00	12,527.67	10,710.00	66.32	56.40	-65.51	-3,095.10	3,135.78	3,111.23	3,031.15	80.08	38.851		
14,000.00	12,017.00	12,627.67	10,710.00	67.60	57.39	-65.51	-3,195.09	3,136.75	3,111.22	3,029.56	81.65	38.102		
14,100.00	12,017.00	12,727.67	10,710.00	68.90	58.42	-65.51	-3,295.09	3,137.71	3,111.21	3,027.95	83.25	37.370		
14,200.00	12,017.00	12,827.67	10,710.00	70.22	59.48	-65.51	-3,395.08	3,138.68	3,111.19	3,026.32	84.88	36.655		
14,300.00	12,017.00	12,927.67	10,710.00	71.55	60.56	-65.51	-3,495.08	3,139.65	3,111.18	3,024.66	86.53	35.956		
14,400.00	12,017.00	13,027.67	10,710.00	72.89	61.67	-65.51	-3,595.07	3,140.62	3,111.17	3,022.97	88.20	35.275		
14,500.00	12,017.00	13,127.67	10,710.00	74.25	62.80	-65.51	-3,695.07	3,141.59	3,111.16	3,021.27	89.89	34.610		
14,600.00	12,017.00	13,227.67	10,710.00	75.61	63.96	-65.51	-3,795.06	3,142.55	3,111.15	3,019.54	91.60	33.963		
14,700.00	12,017.00	13,327.67	10,710.00	76.99	65.14	-65.51	-3,895.06	3,143.52	3,111.14	3,017.80	93.34	33.333		
14,800.00	12,017.00	13,427.67	10,710.00	78.38	66.34	-65.51	-3,995.05	3,144.49	3,111.12	3,016.04	95.08	32.720		
14,900.00	12,017.00	13,527.67	10,710.00	79.78	67.56	-65.51	-4,095.05	3,145.46	3,111.11	3,014.27	96.85	32.124		
15,000.00	12,017.00	13,627.67	10,710.00	81.18	68.80	-65.51	-4,195.05	3,146.43	3,111.10	3,012.47	98.63	31.544		
15,100.00	12,017.00	13,727.67	10,710.00	82.60	70.06	-65.51	-4,295.04	3,147.39	3,111.09	3,010.67	100.42	30.980		
15,200.00	12,017.00	13,827.67	10,710.00	84.03	71.33	-65.51	-4,395.04	3,148.36	3,111.08	3,008.85	102.23	30.432		
15,300.00	12,017.00	13,927.67	10,710.00	85.46	72.62	-65.51	-4,495.03	3,149.33	3,111.07	3,007.01	104.06	29.898		
15,400.00	12,017.00	14,027.67	10,710.00	86.90	73.92	-65.51	-4,595.03	3,150.30	3,111.06	3,005.16	105.89	29.379		
15,500.00	12,017.00	14,127.67	10,710.00	88.35	75.24	-65.51	-4,695.02	3,151.27	3,111.04	3,003.30	107.74	28.875		
15,600.00	12,017.00	14,227.67	10,710.00	89.80	76.57	-65.51	-4,795.02	3,152.23	3,111.03	3,001.43	109.60	28.385		
15,700.00	12,017.00	14,327.67	10,710.00	91.27	77.91	-65.51	-4,895.01	3,153.20	3,111.02	2,999.55	111.47	27.908		
15,800.00	12,017.00	14,427.67	10,710.00	92.74	79.27	-65.51	-4,995.01	3,154.17	3,111.01	2,997.65	113.36	27.445		
15,900.00	12,017.00	14,527.67	10,710.00	94.21	80.64	-65.51	-5,095.00	3,155.14	3,111.00	2,995.75	115.25	26.994		
16,000.00	12,017.00	14,627.67	10,710.00	95.69	82.01	-65.51	-5,195.00	3,156.11	3,110.99	2,993.84	117.15	26.556		
16,100.00	12,017.00	14,727.67	10,710.00	97.18	83.40	-65.51	-5,294.99	3,157.07	3,110.97	2,991.91	119.06	26.130		
16,200.00	12,017.00	14,827.67	10,710.00	98.67	84.80	-65.51	-5,394.99	3,158.04	3,110.96	2,989.98	120.98	25.715		
16,300.00	12,017.00	14,927.67	10,710.00	100.16	86.20	-65.51	-5,494.98	3,159.01	3,110.95	2,988.04	122.91	25.311		
16,400.00	12,017.00	15,027.67	10,710.00	101.67	87.62	-65.51	-5,594.98	3,159.98	3,110.94	2,986.10	124.84	24.919		
16,500.00	12,017.00	15,127.67	10,710.00	103.17	89.04	-65.51	-5,694.97	3,160.95	3,110.93	2,984.14	126.78	24.537		
16,600.00	12,017.00	15,227.67	10,710.00	104.68	90.47	-65.51	-5,794.97	3,161.91	3,110.92	2,982.19	128.73	24.166		
16,700.00	12,017.00	15,327.67	10,710.00	106.20	91.91	-65.51	-5,894.97	3,162.88	3,110.91	2,980.22	130.69	23.804		
16,800.00	12,017.00	15,427.67	10,710.00	107.71	93.35	-65.51	-5,994.96	3,163.85	3,110.89	2,978.24	132.65	23.452		
16,900.00	12,017.00	15,527.67	10,710.00	109.24	94.81	-65.51	-6,094.96	3,164.82	3,110.88	2,976.26	134.62	23.109		
17,000.00	12,017.00	15,627.67	10,710.00	110.76	96.27	-65.51	-6,194.95	3,165.79	3,110.87	2,974.28	136.59	22.775		
17,100.00	12,017.00	15,727.67	10,710.00	112.29	97.73	-65.51	-6,294.95	3,166.76	3,110.86	2,972.29	138.57	22.450		
17,200.00	12,017.00	15,827.67	10,710.00	113.82	99.20	-65.51	-6,394.94	3,167.72	3,110.85	2,970.29	140.55	22.133		
17,300.00	12,017.00	15,927.67	10,710.00	115.36	100.68	-65.51	-6,494.94	3,168.69	3,110.84	2,968.29	142.54	21.824		
17,400.00	12,017.00	16,027.67	10,710.00	116.90	102.16	-65.51	-6,594.93	3,169.66	3,110.82	2,966.29	144.54	21.523		
17,500.00	12,017.00	16,127.67	10,710.00	118.44	103.65	-65.51	-6,694.93	3,170.63	3,110.81	2,964.28	146.53	21.229		
17,600.00	12,017.00	16,227.67	10,710.00	119.99	105.14	-65.51	-6,794.92	3,171.60	3,110.80	2,962.26	148.54	20.943		
17,700.00	12,017.00	16,327.67	10,710.00	121.53	106.64	-65.51	-6,894.92	3,172.56	3,110.79	2,960.24	150.55	20.663		
17,800.00	12,017.00	16,427.67	10,710.00	123.09	108.14	-65.51	-6,994.91	3,173.53	3,110.78	2,958.22	152.56	20.391		
17,900.00	12,017.00	16,527.67	10,710.00	124.64	109.64	-65.51	-7,094.91	3,174.50	3,110.77	2,956.19	154.58	20.125		
18,000.00	12,017.00	16,627.67	10,710.00	126.19	111.15	-65.51	-7,194.90	3,175.47	3,110.76	2,954.16	156.60	19.865		
18,100.00	12,017.00	16,727.67	10,710.00	127.75	112.67	-65.51	-7,294.90	3,176.44	3,110.74	2,952.12	158.62	19.611		
18,200.00	12,017.00	16,827.67	10,710.00	129.31	114.18	-65.51	-7,394.90	3,177.40	3,110.73	2,950.09	160.65	19.364		
18,300.00	12,017.00	16,927.67	10,710.00	130.88	115.71	-65.51	-7,494.89	3,178.37	3,110.72	2,948.05	162.68	19.122		
18,400.00	12,017.00	17,027.67	10,710.00	132.44	117.23	-65.51	-7,594.89	3,179.34	3,110.71	2,946.00	164.71	18.886		
18,500.00	12,017.00	17,127.67	10,710.00	134.01	118.76	-65.51	-7,694.88	3,180.31	3,110.70	2,943.95	166.74	18.656		
18,600.00	12,017.00	17,227.67	10,710.00	135.58	120.29	-65.51	-7,794.88	3,181.28	3,110.69	2,941.90	168.78	18.430		
18,700.00	12,017.00	17,327.67	10,710.00	137.15	121.83	-65.51	-7,894.87	3,182.24	3,110.67	2,939.85	170.83	18.210		
18,800.00	12,017.00	17,427.67	10,710.00	138.72	123.36	-65.51	-7,994.87	3,183.21	3,110.66	2,937.79	172.87	17.994		
18,900.00	12,017.00	17,527.67	10,710.00	140.29	124.90	-65.51	-8,094.86	3,184.18	3,110.65	2,935.73	174.92	17.783		
19,000.00	12,017.00	17,627.67	10,710.00	141.87	126.45	-65.51	-8,194.86	3,185.15	3,110.64	2,933.67	176.97	17.577		

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 Tatanka Fed Com 602H
Project:	Lea County, NM (NAD83)	TVD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 602H	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													Tatanka Fed Com - Tatanka Fed Com 504H - 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)								
19,100.00	12,017.00	17,727.67	10,710.00	143.45	127.99	-65.51	-8,294.85	3,186.12	3,110.63	2,931.61	179.02	17.376				
19,200.00	12,017.00	17,827.67	10,710.00	145.03	129.54	-65.51	-8,394.85	3,187.08	3,110.62	2,929.54	181.07	17.179				
19,300.00	12,017.00	17,927.67	10,710.00	146.61	131.10	-65.50	-8,494.84	3,188.05	3,110.61	2,927.47	183.13	16.986				
19,400.00	12,017.00	18,027.67	10,710.00	148.19	132.65	-65.50	-8,594.84	3,189.02	3,110.59	2,925.40	185.19	16.797				
19,500.00	12,017.00	18,127.67	10,710.00	149.78	134.21	-65.50	-8,694.83	3,189.99	3,110.58	2,923.33	187.25	16.612				
19,600.00	12,017.00	18,227.67	10,710.00	151.36	135.76	-65.50	-8,794.83	3,190.96	3,110.57	2,921.26	189.32	16.431				
19,700.00	12,017.00	18,327.67	10,710.00	152.95	137.32	-65.50	-8,894.82	3,191.93	3,110.56	2,919.18	191.38	16.253				
19,800.00	12,017.00	18,427.67	10,710.00	154.54	138.89	-65.50	-8,994.82	3,192.89	3,110.55	2,917.10	193.45	16.079				
19,900.00	12,017.00	18,527.67	10,710.00	156.13	140.45	-65.50	-9,094.82	3,193.86	3,110.54	2,915.02	195.52	15.909				
20,000.00	12,017.00	18,627.67	10,710.00	157.72	142.02	-65.50	-9,194.81	3,194.83	3,110.52	2,912.94	197.59	15.743				
20,100.00	12,017.00	18,727.67	10,710.00	159.31	143.59	-65.50	-9,294.81	3,195.80	3,110.51	2,910.85	199.66	15.579				
20,200.00	12,017.00	18,827.67	10,710.00	160.90	145.16	-65.50	-9,394.80	3,196.77	3,110.50	2,908.77	201.73	15.419				
20,300.00	12,017.00	18,927.67	10,710.00	162.50	146.73	-65.50	-9,494.80	3,197.73	3,110.49	2,906.68	203.81	15.262				
20,400.00	12,017.00	19,027.67	10,710.00	164.09	148.30	-65.50	-9,594.79	3,198.70	3,110.48	2,904.59	205.89	15.108				
20,500.00	12,017.00	19,127.67	10,710.00	165.69	149.88	-65.50	-9,694.79	3,199.67	3,110.47	2,902.50	207.97	14.957				
20,600.00	12,017.00	19,227.67	10,710.00	167.29	151.46	-65.50	-9,794.78	3,200.64	3,110.46	2,900.41	210.05	14.808				
20,700.00	12,017.00	19,327.67	10,710.00	168.89	153.04	-65.50	-9,894.78	3,201.61	3,110.44	2,898.32	212.13	14.663				
20,800.00	12,017.00	19,427.67	10,710.00	170.49	154.62	-65.50	-9,994.77	3,202.57	3,110.43	2,896.22	214.21	14.521				
20,900.00	12,017.00	19,527.67	10,710.00	172.09	156.20	-65.50	-10,094.77	3,203.54	3,110.42	2,894.13	216.29	14.381				
21,000.00	12,017.00	19,627.67	10,710.00	173.69	157.78	-65.50	-10,194.76	3,204.51	3,110.41	2,892.03	218.38	14.243				
21,100.00	12,017.00	19,727.67	10,710.00	175.29	159.37	-65.50	-10,294.76	3,205.48	3,110.40	2,889.93	220.46	14.108				
21,200.00	12,017.00	19,827.67	10,710.00	176.90	160.95	-65.50	-10,394.75	3,206.45	3,110.39	2,887.83	222.55	13.976				
21,300.00	12,017.00	19,927.67	10,710.00	178.50	162.54	-65.50	-10,494.75	3,207.41	3,110.37	2,885.73	224.64	13.846				
21,400.00	12,017.00	20,027.67	10,710.00	180.11	164.13	-65.50	-10,594.75	3,208.38	3,110.36	2,883.63	226.73	13.718				
21,500.00	12,017.00	20,127.67	10,710.00	181.71	165.72	-65.50	-10,694.74	3,209.35	3,110.35	2,881.53	228.82	13.593				
21,600.00	12,017.00	20,227.67	10,710.00	183.32	167.31	-65.50	-10,794.74	3,210.32	3,110.34	2,879.43	230.91	13.470				
21,700.00	12,017.00	20,327.67	10,710.00	184.93	168.90	-65.50	-10,894.73	3,211.29	3,110.33	2,877.32	233.01	13.349				
21,800.00	12,017.00	20,427.67	10,710.00	186.54	170.50	-65.50	-10,994.73	3,212.25	3,110.32	2,875.22	235.10	13.230				
21,900.00	12,017.00	20,527.67	10,710.00	188.15	172.09	-65.50	-11,094.72	3,213.22	3,110.31	2,873.11	237.19	13.113				
22,000.00	12,017.00	20,627.67	10,710.00	189.76	173.69	-65.50	-11,194.72	3,214.19	3,110.29	2,871.00	239.29	12.998				
22,100.00	12,017.00	20,727.67	10,710.00	191.37	175.28	-65.50	-11,294.71	3,215.16	3,110.28	2,868.90	241.39	12.885				
22,187.30	12,017.00	20,814.97	10,710.00	192.77	176.68	-65.50	-11,382.01	3,216.00	3,110.27	2,867.05	243.22	12.788 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 Tatanka Fed Com 602H
Project:	Lea County, NM (NAD83)	TVD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 602H	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 Tatanka Fed Com - Tatanka Fed Com 601H - OH - Plan #2													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	-129.12	-1,019.37	-1,253.40	1,615.59					
100.00	100.00	99.20	99.20	0.13	0.12	-129.12	-1,019.37	-1,253.40	1,615.59	1,615.41	0.18	9,141.755		
200.00	200.00	199.20	199.20	0.48	0.48	-129.12	-1,019.37	-1,253.40	1,615.59	1,614.91	0.68	2,367.631		
300.00	300.00	299.20	299.20	0.84	0.84	-129.12	-1,019.37	-1,253.40	1,615.59	1,614.40	1.19	1,358.415		
400.00	400.00	399.20	399.20	1.20	1.20	-129.12	-1,019.37	-1,253.40	1,615.59	1,613.89	1.70	952.434		
500.00	500.00	499.20	499.20	1.56	1.56	-129.12	-1,019.37	-1,253.40	1,615.59	1,613.39	2.20	733.282		
600.00	600.00	599.20	599.20	1.92	1.91	-129.12	-1,019.37	-1,253.40	1,615.59	1,612.88	2.71	596.118		
700.00	700.00	699.20	699.20	2.28	2.27	-129.12	-1,019.37	-1,253.40	1,615.59	1,612.37	3.22	502.182		
800.00	800.00	799.20	799.20	2.63	2.63	-129.12	-1,019.37	-1,253.40	1,615.59	1,611.86	3.72	433.821		
900.00	900.00	899.20	899.20	2.99	2.99	-129.12	-1,019.37	-1,253.40	1,615.59	1,611.36	4.23	381.841		
1,000.00	1,000.00	999.20	999.20	3.35	3.35	-129.12	-1,019.37	-1,253.40	1,615.59	1,610.85	4.74	340.985		
1,100.00	1,100.00	1,099.20	1,099.20	3.71	3.71	-129.12	-1,019.37	-1,253.40	1,615.59	1,610.34	5.24	308.027		
1,200.00	1,200.00	1,199.20	1,199.20	4.07	4.07	-129.12	-1,019.37	-1,253.40	1,615.59	1,609.84	5.75	280.878		
1,300.00	1,300.00	1,299.20	1,299.20	4.43	4.42	-129.12	-1,019.37	-1,253.40	1,615.59	1,609.33	6.26	258.128		
1,400.00	1,400.00	1,399.20	1,399.20	4.79	4.78	-129.12	-1,019.37	-1,253.40	1,615.59	1,608.82	6.77	238.787		
1,500.00	1,500.00	1,499.20	1,499.20	5.14	5.14	-129.12	-1,019.37	-1,253.40	1,615.59	1,608.32	7.27	222.142		
1,600.00	1,600.00	1,599.20	1,599.20	5.50	5.50	-129.12	-1,019.37	-1,253.40	1,615.59	1,607.81	7.78	207.666		
1,700.00	1,700.00	1,699.20	1,699.20	5.86	5.86	-129.12	-1,019.37	-1,253.40	1,615.59	1,607.30	8.29	194.962		
1,800.00	1,800.00	1,799.20	1,799.20	6.22	6.22	-129.12	-1,019.37	-1,253.40	1,615.59	1,606.80	8.79	183.722		
1,900.00	1,900.00	1,899.20	1,899.20	6.58	6.58	-129.12	-1,019.37	-1,253.40	1,615.59	1,606.29	9.30	173.708		
2,000.00	2,000.00	1,999.20	1,999.20	6.94	6.93	-129.12	-1,019.37	-1,253.40	1,615.59	1,605.78	9.81	164.729		
2,100.00	2,100.00	2,099.20	2,099.20	7.29	7.29	-129.12	-1,019.37	-1,253.40	1,615.59	1,605.27	10.31	156.633		
2,200.00	2,200.00	2,199.20	2,199.20	7.65	7.65	-129.12	-1,019.37	-1,253.40	1,615.59	1,604.77	10.82	149.295		
2,300.00	2,300.00	2,299.20	2,299.20	8.01	8.01	-129.12	-1,019.37	-1,253.40	1,615.59	1,604.26	11.33	142.614		
2,400.00	2,400.00	2,399.20	2,399.20	8.37	8.37	-129.12	-1,019.37	-1,253.40	1,615.59	1,603.75	11.84	136.505		
2,500.00	2,500.00	2,499.20	2,499.20	8.73	8.73	-129.12	-1,019.37	-1,253.40	1,615.59	1,603.25	12.34	130.898		
2,600.00	2,600.00	2,599.20	2,599.20	9.09	9.08	-129.12	-1,019.37	-1,253.40	1,615.59	1,602.74	12.85	125.734		
2,700.00	2,700.00	2,699.20	2,699.20	9.45	9.44	-129.12	-1,019.37	-1,253.40	1,615.59	1,602.23	13.36	120.961		
2,800.00	2,800.00	2,799.20	2,799.20	9.80	9.80	-129.12	-1,019.37	-1,253.40	1,615.59	1,601.73	13.86	116.538		
2,900.00	2,900.00	2,899.20	2,899.20	10.16	10.16	-129.12	-1,019.37	-1,253.40	1,615.59	1,601.22	14.37	112.427		
3,000.00	3,000.00	2,999.20	2,999.20	10.52	10.52	-129.12	-1,019.37	-1,253.40	1,615.59	1,600.71	14.88	108.596		
3,100.00	3,100.00	3,099.20	3,099.20	10.88	10.88	-129.12	-1,019.37	-1,253.40	1,615.59	1,600.20	15.38	105.017		
3,200.00	3,200.00	3,199.20	3,199.20	11.24	11.24	-129.12	-1,019.37	-1,253.40	1,615.59	1,599.70	15.89	101.667		
3,300.00	3,299.99	3,269.81	3,269.81	11.58	11.48	65.11	-1,019.82	-1,253.85	1,615.94	1,599.64	16.30	99.133		
3,400.00	3,399.91	3,340.14	3,340.11	11.90	11.71	65.17	-1,021.18	-1,255.22	1,617.02	1,600.33	16.69	96.891		
3,500.00	3,499.69	3,410.38	3,410.27	12.23	11.94	65.28	-1,023.45	-1,257.51	1,618.85	1,601.78	17.07	94.830		
3,600.00	3,599.27	3,486.20	3,485.93	12.56	12.20	65.46	-1,026.89	-1,260.97	1,621.40	1,603.93	17.47	92.826		
3,700.00	3,698.57	3,585.68	3,585.17	12.89	12.53	65.78	-1,031.79	-1,265.89	1,623.50	1,605.56	17.93	90.525		
3,800.00	3,797.54	3,684.91	3,684.16	13.22	12.86	66.19	-1,036.67	-1,270.81	1,624.60	1,606.20	18.41	88.268		
3,900.00	3,896.09	3,783.82	3,782.83	13.57	13.19	66.70	-1,041.54	-1,275.71	1,624.76	1,605.88	18.88	86.052		
4,000.00	3,994.16	3,882.35	3,881.12	13.92	13.53	67.30	-1,046.39	-1,280.59	1,624.04	1,604.68	19.36	83.876		
4,100.00	4,091.70	3,980.43	3,978.96	14.28	13.86	68.00	-1,051.22	-1,285.45	1,622.52	1,602.67	19.85	81.737		
4,125.65	4,116.62	4,005.51	4,003.98	14.37	13.95	68.19	-1,052.45	-1,286.69	1,622.01	1,602.03	19.98	81.195		
4,200.00	4,188.79	4,078.14	4,076.44	14.65	14.20	68.74	-1,056.03	-1,290.29	1,620.54	1,600.20	20.35	79.650		
4,300.00	4,285.87	4,175.84	4,173.89	15.04	14.54	69.47	-1,060.84	-1,295.12	1,618.81	1,597.96	20.85	77.645		
4,400.00	4,382.95	4,273.53	4,271.35	15.43	14.87	70.21	-1,065.65	-1,299.96	1,617.36	1,596.00	21.36	75.723		
4,500.00	4,480.03	4,371.23	4,368.80	15.83	15.21	70.95	-1,070.46	-1,304.80	1,616.19	1,594.31	21.88	73.881		
4,600.00	4,577.11	4,468.92	4,466.26	16.23	15.55	71.69	-1,075.27	-1,309.64	1,615.30	1,592.90	22.40	72.117		
4,700.00	4,674.18	4,566.62	4,563.72	16.65	15.90	72.43	-1,080.07	-1,314.48	1,614.69	1,591.76	22.93	70.427		
4,800.00	4,771.26	4,664.31	4,661.17	17.07	16.24	73.17	-1,084.88	-1,319.32	1,614.36	1,590.90	23.46	68.808		
4,865.48	4,834.83	4,728.28	4,724.98	17.35	16.47	73.65	-1,088.03	-1,322.49	1,614.30	1,590.49	23.82	67.785 CC		
4,900.00	4,868.34	4,762.01	4,758.63	17.49	16.58	73.91	-1,089.69	-1,324.16	1,614.32	1,590.32	24.00	67.259		

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 Tatanka Fed Com 602H
Project:	Lea County, NM (NAD83)	TVD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 602H	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													Tatanka Fed Com - Tatanka Fed Com 601H - OH - Plan #2		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	4,965.42	4,859.70	4,856.08	17.92	16.93	74.65	-1,094.50	-1,329.00	1,614.56	1,590.01	24.55	65.775				
5,100.00	5,062.50	4,957.40	4,953.54	18.36	17.28	75.39	-1,099.31	-1,333.83	1,615.08	1,589.98	25.10	64.355				
5,200.00	5,159.57	5,055.09	5,051.00	18.80	17.62	76.13	-1,104.12	-1,338.67	1,615.88	1,590.23	25.65	62.996				
5,300.00	5,256.65	5,152.79	5,148.45	19.25	17.97	76.86	-1,108.93	-1,343.51	1,616.97	1,590.76	26.21	61.695				
5,400.00	5,353.73	5,250.48	5,245.91	19.70	18.32	77.60	-1,113.74	-1,348.35	1,618.33	1,591.56	26.77	60.450				
5,500.00	5,450.81	5,348.17	5,343.36	20.15	18.67	78.34	-1,118.55	-1,353.19	1,619.98	1,592.64	27.34	59.258				
5,600.00	5,547.89	5,445.87	5,440.82	20.61	19.02	79.07	-1,123.36	-1,358.03	1,621.90	1,593.99	27.91	58.117				
5,700.00	5,644.96	5,543.56	5,538.28	21.07	19.37	79.80	-1,128.17	-1,362.87	1,624.10	1,595.62	28.48	57.024				
5,800.00	5,742.04	5,641.26	5,635.73	21.54	19.72	80.54	-1,132.97	-1,367.71	1,626.58	1,597.53	29.06	55.979				
5,900.00	5,839.12	5,738.95	5,733.19	22.00	20.08	81.26	-1,137.78	-1,372.54	1,629.34	1,599.70	29.64	54.978				
6,000.00	5,936.20	5,836.65	5,830.64	22.47	20.43	81.99	-1,142.59	-1,377.38	1,632.37	1,602.15	30.22	54.019				
6,100.00	6,033.28	5,934.34	5,928.10	22.94	20.78	82.71	-1,147.40	-1,382.22	1,635.67	1,604.87	30.80	53.102				
6,200.00	6,130.35	6,032.04	6,025.56	23.42	21.14	83.43	-1,152.21	-1,387.06	1,639.25	1,607.86	31.39	52.223				
6,300.00	6,227.43	6,129.73	6,123.01	23.90	21.49	84.15	-1,157.02	-1,391.90	1,643.10	1,611.12	31.98	51.382				
6,400.00	6,324.51	6,227.43	6,220.47	24.38	21.84	84.87	-1,161.83	-1,396.74	1,647.21	1,614.64	32.57	50.576				
6,500.00	6,421.59	6,325.12	6,317.93	24.86	22.20	85.58	-1,166.64	-1,401.58	1,651.59	1,618.42	33.16	49.804				
6,600.00	6,518.67	6,422.81	6,415.38	25.34	22.56	86.28	-1,171.45	-1,406.42	1,656.23	1,622.47	33.76	49.064				
6,700.00	6,615.75	6,538.89	6,531.20	25.83	22.98	87.12	-1,176.95	-1,411.95	1,660.97	1,626.56	34.41	48.272				
6,800.00	6,712.82	6,696.51	6,688.70	26.31	23.54	88.33	-1,181.02	-1,416.05	1,663.30	1,628.13	35.16	47.302				
6,900.00	6,809.90	6,816.92	6,809.10	26.80	23.96	89.32	-1,181.37	-1,416.40	1,663.10	1,627.29	35.81	46.445				
6,984.76	6,892.19	6,899.20	6,891.39	27.22	24.24	90.00	-1,181.37	-1,416.40	1,662.97	1,626.66	36.31	45.799				
7,000.00	6,906.98	6,914.00	6,906.18	27.29	24.29	90.12	-1,181.37	-1,416.40	1,662.98	1,626.58	36.40	45.685				
7,100.00	7,004.06	7,011.07	7,003.26	27.78	24.63	90.92	-1,181.37	-1,416.40	1,663.20	1,626.21	36.99	44.959				
7,200.00	7,101.14	7,108.15	7,100.34	28.28	24.96	91.73	-1,181.37	-1,416.40	1,663.78	1,626.19	37.59	44.264				
7,300.00	7,198.21	7,205.23	7,197.41	28.77	25.30	92.53	-1,181.37	-1,416.40	1,664.69	1,626.51	38.18	43.599				
7,400.00	7,295.29	7,302.31	7,294.49	29.26	25.64	93.33	-1,181.37	-1,416.40	1,665.96	1,627.18	38.78	42.963				
7,500.00	7,392.37	7,399.39	7,391.57	29.76	25.97	94.13	-1,181.37	-1,416.40	1,667.56	1,628.19	39.37	42.356				
7,600.00	7,489.45	7,496.46	7,488.65	30.26	26.31	94.93	-1,181.37	-1,416.40	1,669.51	1,629.55	39.96	41.776				
7,700.00	7,586.53	7,593.54	7,585.73	30.76	26.65	95.72	-1,181.37	-1,416.40	1,671.81	1,631.25	40.56	41.221				
7,800.00	7,683.60	7,690.62	7,682.80	31.26	26.99	96.52	-1,181.37	-1,416.40	1,674.44	1,633.29	41.15	40.691				
7,900.00	7,780.68	7,787.70	7,779.88	31.76	27.32	97.31	-1,181.37	-1,416.40	1,677.41	1,635.67	41.74	40.185				
8,000.00	7,877.76	7,884.78	7,876.96	32.26	27.66	98.09	-1,181.37	-1,416.40	1,680.72	1,638.39	42.33	39.702				
8,035.67	7,912.38	7,919.40	7,911.58	32.44	27.78	98.37	-1,181.37	-1,416.40	1,681.99	1,639.44	42.54	39.535				
8,100.00	7,974.96	7,981.98	7,974.16	32.76	28.00	98.90	-1,181.37	-1,416.40	1,684.29	1,641.37	42.92	39.242				
8,200.00	8,072.71	8,079.73	8,071.91	33.24	28.34	99.64	-1,181.37	-1,416.40	1,687.76	1,644.26	43.50	38.803				
8,300.00	8,170.98	8,178.00	8,170.18	33.69	28.69	100.30	-1,181.37	-1,416.40	1,691.02	1,646.96	44.06	38.384				
8,400.00	8,269.70	8,276.72	8,268.90	34.13	29.03	100.86	-1,181.37	-1,416.40	1,693.98	1,649.38	44.60	37.980				
8,500.00	8,368.80	8,375.82	8,368.00	34.55	29.38	101.34	-1,181.37	-1,416.40	1,696.57	1,651.44	45.13	37.590				
8,600.00	8,468.22	8,475.24	8,467.42	34.94	29.73	101.73	-1,181.37	-1,416.40	1,698.73	1,653.08	45.65	37.211				
8,700.00	8,567.89	8,574.90	8,567.09	35.31	30.07	102.02	-1,181.37	-1,416.40	1,700.41	1,654.26	46.15	36.842				
8,800.00	8,667.73	8,674.75	8,666.93	35.66	30.42	102.22	-1,181.37	-1,416.40	1,701.58	1,654.93	46.64	36.480				
8,900.00	8,767.69	8,774.70	8,766.89	35.99	30.77	102.32	-1,181.37	-1,416.40	1,702.20	1,655.08	47.12	36.125				
8,961.32	8,829.00	8,836.02	8,828.20	36.17	30.99	-91.86	-1,181.37	-1,416.40	1,702.30	1,654.90	47.40	35.913				
9,000.00	8,867.68	8,874.70	8,866.88	36.28	31.12	-91.86	-1,181.37	-1,416.40	1,702.30	1,654.73	47.57	35.782				
9,100.00	8,967.68	8,974.70	8,966.88	36.57	31.48	-91.86	-1,181.37	-1,416.40	1,702.30	1,654.28	48.02	35.447				
9,200.00	9,067.68	9,074.70	9,066.88	36.86	31.83	-91.86	-1,181.37	-1,416.40	1,702.30	1,653.83	48.47	35.118				
9,300.00	9,167.68	9,174.70	9,166.88	37.16	32.18	-91.86	-1,181.37	-1,416.40	1,702.30	1,653.38	48.93	34.794				
9,400.00	9,267.68	9,274.70	9,266.88	37.45	32.53	-91.86	-1,181.37	-1,416.40	1,702.30	1,652.92	49.38	34.475				
9,500.00	9,367.68	9,374.70	9,366.88	37.74	32.88	-91.86	-1,181.37	-1,416.40	1,702.30	1,652.47	49.83	34.161				
9,600.00	9,467.68	9,474.70	9,466.88	38.04	33.23	-91.86	-1,181.37	-1,416.40	1,702.30	1,652.01	50.29	33.852				
9,700.00	9,567.68	9,574.70	9,566.88	38.33	33.58	-91.86	-1,181.37	-1,416.40	1,702.30	1,651.56	50.74	33.548				
9,800.00	9,667.68	9,674.70	9,666.88	38.63	33.94	-91.86	-1,181.37	-1,416.40	1,702.30	1,651.10	51.20	33.248				

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 Tatanka Fed Com 602H
Project:	Lea County, NM (NAD83)	TVD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 602H	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		
9,900.00	9,767.68	9,774.70	9,766.88	38.93	34.29	-91.86	-1,181.37	-1,416.40	1,702.30	1,650.64	51.66	32.954		
10,000.00	9,867.68	9,874.70	9,866.88	39.23	34.64	-91.86	-1,181.37	-1,416.40	1,702.30	1,650.18	52.12	32.664		
10,100.00	9,967.68	9,974.70	9,966.88	39.53	34.99	-91.86	-1,181.37	-1,416.40	1,702.30	1,649.73	52.58	32.378		
10,200.00	10,067.68	10,074.70	10,066.88	39.83	35.34	-91.86	-1,181.37	-1,416.40	1,702.30	1,649.26	53.04	32.097		
10,300.00	10,167.68	10,174.70	10,166.88	40.13	35.70	-91.86	-1,181.37	-1,416.40	1,702.30	1,648.80	53.50	31.820		
10,400.00	10,267.68	10,274.70	10,266.88	40.43	36.05	-91.86	-1,181.37	-1,416.40	1,702.30	1,648.34	53.96	31.548		
10,500.00	10,367.68	10,374.70	10,366.88	40.74	36.40	-91.86	-1,181.37	-1,416.40	1,702.30	1,647.88	54.42	31.280		
10,600.00	10,467.68	10,474.70	10,466.88	41.04	36.76	-91.86	-1,181.37	-1,416.40	1,702.30	1,647.42	54.89	31.016		
10,700.00	10,567.68	10,574.70	10,566.88	41.35	37.11	-91.86	-1,181.37	-1,416.40	1,702.30	1,646.95	55.35	30.755		
10,800.00	10,667.68	10,674.70	10,666.88	41.66	37.46	-91.86	-1,181.37	-1,416.40	1,702.30	1,646.49	55.81	30.499		
10,900.00	10,767.68	10,774.70	10,766.88	41.96	37.81	-91.86	-1,181.37	-1,416.40	1,702.30	1,646.02	56.28	30.247		
11,000.00	10,867.68	10,874.70	10,866.88	42.27	38.17	-91.86	-1,181.37	-1,416.40	1,702.30	1,645.55	56.75	29.998		
11,100.00	10,967.68	10,974.70	10,966.88	42.58	38.52	-91.86	-1,181.37	-1,416.40	1,702.30	1,645.09	57.21	29.753		
11,200.00	11,067.68	11,074.70	11,066.88	42.89	38.87	-91.86	-1,181.37	-1,416.40	1,702.30	1,644.62	57.68	29.512		
11,300.00	11,167.68	11,174.70	11,166.88	43.20	39.23	-91.86	-1,181.37	-1,416.40	1,702.30	1,644.15	58.15	29.274		
11,400.00	11,267.68	11,274.70	11,266.88	43.51	39.58	-91.86	-1,181.37	-1,416.40	1,702.30	1,643.68	58.62	29.040		
11,500.00	11,367.68	11,374.70	11,366.88	43.82	39.94	-91.86	-1,181.37	-1,416.40	1,702.30	1,643.21	59.09	28.809		
11,576.36	11,444.04	11,451.06	11,443.24	44.06	40.21	-91.86	-1,181.37	-1,416.40	1,702.30	1,642.85	59.45	28.635		
11,600.00	11,467.68	11,474.69	11,466.88	44.14	40.29	88.72	-1,181.37	-1,416.40	1,702.29	1,642.73	59.56	28.580		
11,650.00	11,517.48	11,524.50	11,516.68	44.33	40.47	88.87	-1,181.37	-1,416.40	1,702.20	1,642.38	59.82	28.457		
11,700.00	11,566.73	11,573.07	11,565.26	44.54	40.64	89.15	-1,181.57	-1,416.40	1,702.05	1,641.97	60.09	28.327		
11,750.00	11,615.04	11,620.46	11,612.52	44.78	40.80	89.47	-1,184.79	-1,416.37	1,701.94	1,641.57	60.37	28.192		
11,800.00	11,662.05	11,668.60	11,660.09	45.04	40.97	89.79	-1,192.04	-1,416.29	1,701.87	1,641.20	60.67	28.050		
11,834.55	11,693.58	11,702.32	11,692.98	45.24	41.08	90.01	-1,199.48	-1,416.22	1,701.86	1,640.96	60.90	27.947		
11,850.00	11,707.40	11,717.53	11,707.65	45.33	41.14	90.12	-1,203.47	-1,416.18	1,701.86	1,640.86	61.00	27.901		
11,900.00	11,750.75	11,767.30	11,754.85	45.65	41.31	90.44	-1,219.22	-1,416.02	1,701.91	1,640.57	61.34	27.746		
11,950.00	11,791.76	11,817.97	11,801.31	45.98	41.48	90.77	-1,239.40	-1,415.82	1,702.01	1,640.31	61.70	27.584		
12,000.00	11,830.12	11,869.57	11,846.60	46.33	41.66	91.09	-1,264.09	-1,415.57	1,702.17	1,640.08	62.08	27.417		
12,050.00	11,865.55	11,922.15	11,890.28	46.70	41.84	91.41	-1,293.32	-1,415.28	1,702.37	1,639.89	62.48	27.245		
12,100.00	11,897.77	11,975.73	11,931.84	47.09	42.03	91.72	-1,327.11	-1,414.94	1,702.63	1,639.73	62.90	27.068		
12,150.00	11,926.54	12,030.33	11,970.76	47.50	42.23	92.02	-1,365.37	-1,414.56	1,702.92	1,639.58	63.34	26.887		
12,200.00	11,951.63	12,085.97	12,006.49	47.92	42.44	92.31	-1,408.00	-1,414.13	1,703.24	1,639.45	63.79	26.703		
12,250.00	11,972.86	12,142.63	12,038.45	48.35	42.65	92.58	-1,454.75	-1,413.66	1,703.58	1,639.33	64.25	26.515		
12,300.00	11,990.07	12,200.30	12,066.08	48.80	42.88	92.84	-1,505.34	-1,413.16	1,703.92	1,639.19	64.73	26.324		
12,350.00	12,003.12	12,258.92	12,088.81	49.25	43.12	93.07	-1,559.35	-1,412.61	1,704.26	1,639.04	65.22	26.131		
12,400.00	12,011.92	12,318.44	12,106.12	49.70	43.37	93.27	-1,616.26	-1,412.05	1,704.58	1,638.86	65.72	25.936		
12,450.00	12,016.39	12,378.76	12,117.55	50.16	43.63	93.45	-1,675.46	-1,411.45	1,704.87	1,638.63	66.23	25.741		
12,476.36	12,017.00	12,410.85	12,121.07	50.40	43.77	93.53	-1,707.35	-1,411.13	1,705.00	1,638.50	66.50	25.638		
12,500.00	12,017.00	12,439.81	12,122.71	50.61	43.89	93.58	-1,736.26	-1,410.84	1,705.08	1,638.33	66.75	25.544		
12,600.00	12,017.00	12,543.17	12,123.00	51.55	44.37	93.59	-1,839.61	-1,409.81	1,705.07	1,637.30	67.77	25.159		
12,700.00	12,017.00	12,643.17	12,123.00	52.52	44.89	93.59	-1,939.60	-1,408.81	1,705.05	1,636.21	68.84	24.767		
12,800.00	12,017.00	12,743.17	12,123.00	53.53	45.46	93.59	-2,039.60	-1,407.81	1,705.03	1,635.05	69.98	24.365		
12,900.00	12,017.00	12,843.17	12,123.00	54.57	46.08	93.59	-2,139.59	-1,406.80	1,705.01	1,633.84	71.17	23.957		
13,000.00	12,017.00	12,943.17	12,123.00	55.63	46.75	93.59	-2,239.59	-1,405.80	1,704.99	1,632.57	72.42	23.544		
13,100.00	12,017.00	13,043.17	12,123.00	56.73	47.47	93.59	-2,339.58	-1,404.80	1,704.97	1,631.25	73.72	23.129		
13,200.00	12,017.00	13,143.17	12,123.00	57.85	48.23	93.59	-2,439.58	-1,403.80	1,704.95	1,629.88	75.07	22.713		
13,300.00	12,017.00	13,243.17	12,123.00	58.99	49.04	93.59	-2,539.57	-1,402.80	1,704.93	1,628.47	76.46	22.298		
13,400.00	12,017.00	13,343.17	12,123.00	60.16	49.89	93.59	-2,639.57	-1,401.80	1,704.91	1,627.01	77.90	21.885		
13,500.00	12,017.00	13,443.17	12,123.00	61.35	50.77	93.59	-2,739.56	-1,400.80	1,704.89	1,625.50	79.39	21.475		
13,600.00	12,017.00	13,543.17	12,123.00	62.57	51.70	93.59	-2,839.56	-1,399.80	1,704.87	1,623.96	80.91	21.071		
13,700.00	12,017.00	13,643.17	12,123.00	63.80	52.66	93.59	-2,939.55	-1,398.79	1,704.85	1,622.37	82.47	20.671		
13,800.00	12,017.00	13,743.17	12,123.00	65.05	53.66	93.59	-3,039.55	-1,397.79	1,704.83	1,620.76	84.07	20.278		

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 Tatanka Fed Com 602H
Project:	Lea County, NM (NAD83)	TVD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 602H	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													Tatanka Fed Com - Tatanka Fed Com 601H - OH - Plan #2		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			
13,900.00	12,017.00	13,843.17	12,123.00	66.32	54.68	93.59	-3,139.54	-1,396.79	1,704.81	1,619.10	85.70	19.892				
14,000.00	12,017.00	13,943.17	12,123.00	67.60	55.74	93.59	-3,239.54	-1,395.79	1,704.79	1,617.42	87.37	19.513				
14,100.00	12,017.00	14,043.17	12,123.00	68.90	56.83	93.59	-3,339.53	-1,394.79	1,704.77	1,615.71	89.06	19.142				
14,200.00	12,017.00	14,143.17	12,123.00	70.22	57.94	93.59	-3,439.53	-1,393.79	1,704.75	1,613.97	90.78	18.779				
14,300.00	12,017.00	14,243.17	12,123.00	71.55	59.07	93.59	-3,539.52	-1,392.79	1,704.72	1,612.20	92.53	18.424				
14,400.00	12,017.00	14,343.17	12,123.00	72.89	60.24	93.59	-3,639.52	-1,391.78	1,704.70	1,610.40	94.30	18.077				
14,500.00	12,017.00	14,443.17	12,123.00	74.25	61.42	93.59	-3,739.51	-1,390.78	1,704.68	1,608.58	96.10	17.739				
14,600.00	12,017.00	14,543.17	12,123.00	75.61	62.62	93.59	-3,839.51	-1,389.78	1,704.66	1,606.74	97.92	17.409				
14,700.00	12,017.00	14,643.17	12,123.00	76.99	63.85	93.59	-3,939.50	-1,388.78	1,704.64	1,604.88	99.76	17.088				
14,800.00	12,017.00	14,743.17	12,123.00	78.38	65.09	93.59	-4,039.50	-1,387.78	1,704.62	1,603.00	101.62	16.774				
14,900.00	12,017.00	14,843.17	12,123.00	79.78	66.35	93.59	-4,139.49	-1,386.78	1,704.60	1,601.10	103.50	16.469				
15,000.00	12,017.00	14,943.17	12,123.00	81.18	67.63	93.59	-4,239.49	-1,385.78	1,704.58	1,599.18	105.40	16.173				
15,100.00	12,017.00	15,043.17	12,123.00	82.60	68.92	93.59	-4,339.48	-1,384.77	1,704.56	1,597.25	107.31	15.884				
15,200.00	12,017.00	15,143.17	12,123.00	84.03	70.23	93.59	-4,439.48	-1,383.77	1,704.54	1,595.29	109.25	15.603				
15,300.00	12,017.00	15,243.17	12,123.00	85.46	71.56	93.59	-4,539.47	-1,382.77	1,704.52	1,593.33	111.19	15.329				
15,400.00	12,017.00	15,343.17	12,123.00	86.90	72.89	93.59	-4,639.47	-1,381.77	1,704.50	1,591.35	113.15	15.064				
15,500.00	12,017.00	15,443.17	12,123.00	88.35	74.24	93.59	-4,739.46	-1,380.77	1,704.48	1,589.35	115.13	14.805				
15,600.00	12,017.00	15,543.17	12,123.00	89.80	75.60	93.59	-4,839.46	-1,379.77	1,704.46	1,587.34	117.12	14.553				
15,700.00	12,017.00	15,643.17	12,123.00	91.27	76.98	93.59	-4,939.45	-1,378.77	1,704.44	1,585.32	119.12	14.309				
15,800.00	12,017.00	15,743.17	12,123.00	92.74	78.36	93.59	-5,039.45	-1,377.77	1,704.42	1,583.29	121.13	14.071				
15,900.00	12,017.00	15,843.17	12,123.00	94.21	79.75	93.59	-5,139.44	-1,376.76	1,704.40	1,581.24	123.15	13.840				
16,000.00	12,017.00	15,943.17	12,123.00	95.69	81.16	93.59	-5,239.44	-1,375.76	1,704.38	1,579.19	125.19	13.614				
16,100.00	12,017.00	16,043.17	12,123.00	97.18	82.57	93.59	-5,339.43	-1,374.76	1,704.35	1,577.12	127.23	13.396				
16,200.00	12,017.00	16,143.17	12,123.00	98.67	83.99	93.59	-5,439.43	-1,373.76	1,704.33	1,575.05	129.29	13.183				
16,300.00	12,017.00	16,243.17	12,123.00	100.16	85.42	93.59	-5,539.42	-1,372.76	1,704.31	1,572.96	131.35	12.975				
16,400.00	12,017.00	16,343.17	12,123.00	101.67	86.86	93.59	-5,639.42	-1,371.76	1,704.29	1,570.87	133.42	12.774				
16,500.00	12,017.00	16,443.17	12,123.00	103.17	88.30	93.59	-5,739.41	-1,370.76	1,704.27	1,568.77	135.50	12.577				
16,600.00	12,017.00	16,543.17	12,123.00	104.68	89.75	93.59	-5,839.41	-1,369.75	1,704.25	1,566.66	137.59	12.386				
16,700.00	12,017.00	16,643.17	12,123.00	106.20	91.21	93.59	-5,939.40	-1,368.75	1,704.23	1,564.54	139.69	12.200				
16,800.00	12,017.00	16,743.17	12,123.00	107.71	92.68	93.59	-6,039.40	-1,367.75	1,704.21	1,562.42	141.79	12.019				
16,900.00	12,017.00	16,843.17	12,123.00	109.24	94.15	93.59	-6,139.39	-1,366.75	1,704.19	1,560.29	143.91	11.842				
17,000.00	12,017.00	16,943.17	12,123.00	110.76	95.63	93.59	-6,239.39	-1,365.75	1,704.17	1,558.15	146.02	11.671				
17,100.00	12,017.00	17,043.17	12,123.00	112.29	97.11	93.59	-6,339.38	-1,364.75	1,704.15	1,556.00	148.15	11.503				
17,200.00	12,017.00	17,143.17	12,123.00	113.82	98.60	93.59	-6,439.38	-1,363.75	1,704.13	1,553.85	150.28	11.340				
17,300.00	12,017.00	17,243.17	12,123.00	115.36	100.09	93.59	-6,539.37	-1,362.75	1,704.11	1,551.69	152.41	11.181				
17,400.00	12,017.00	17,343.17	12,123.00	116.90	101.59	93.59	-6,639.37	-1,361.74	1,704.09	1,549.53	154.56	11.026				
17,500.00	12,017.00	17,443.17	12,123.00	118.44	103.09	93.59	-6,739.36	-1,360.74	1,704.07	1,547.36	156.70	10.875				
17,600.00	12,017.00	17,543.17	12,123.00	119.99	104.60	93.59	-6,839.36	-1,359.74	1,704.05	1,545.19	158.86	10.727				
17,700.00	12,017.00	17,643.17	12,123.00	121.53	106.11	93.59	-6,939.35	-1,358.74	1,704.03	1,543.01	161.01	10.583				
17,800.00	12,017.00	17,743.17	12,123.00	123.09	107.63	93.59	-7,039.35	-1,357.74	1,704.01	1,540.83	163.17	10.443				
17,900.00	12,017.00	17,843.17	12,123.00	124.64	109.15	93.59	-7,139.34	-1,356.74	1,703.98	1,538.64	165.34	10.306				
18,000.00	12,017.00	17,943.17	12,123.00	126.19	110.67	93.59	-7,239.34	-1,355.74	1,703.96	1,536.45	167.51	10.172				
18,100.00	12,017.00	18,043.17	12,123.00	127.75	112.20	93.59	-7,339.33	-1,354.73	1,703.94	1,534.26	169.69	10.042				
18,200.00	12,017.00	18,143.17	12,123.00	129.31	113.73	93.59	-7,439.33	-1,353.73	1,703.92	1,532.06	171.87	9.914				
18,300.00	12,017.00	18,243.17	12,123.00	130.88	115.26	93.59	-7,539.32	-1,352.73	1,703.90	1,529.85	174.05	9.790				
18,400.00	12,017.00	18,343.17	12,123.00	132.44	116.80	93.59	-7,639.32	-1,351.73	1,703.88	1,527.64	176.24	9.668				
18,500.00	12,017.00	18,443.17	12,123.00	134.01	118.34	93.59	-7,739.31	-1,350.73	1,703.86	1,525.43	178.43	9.549				
18,600.00	12,017.00	18,543.17	12,123.00	135.58	119.88	93.59	-7,839.31	-1,349.73	1,703.84	1,523.22	180.62	9.433				
18,700.00	12,017.00	18,643.17	12,123.00	137.15	121.43	93.59	-7,939.30	-1,348.73	1,703.82	1,521.00	182.82	9.320				
18,800.00	12,017.00	18,743.17	12,123.00	138.72	122.98	93.59	-8,039.30	-1,347.73	1,703.80	1,518.78	185.02	9.209				
18,900.00	12,017.00	18,843.17	12,123.00	140.29	124.53	93.59	-8,139.29	-1,346.72	1,703.78	1,516.55	187.23	9.100				
19,000.00	12,017.00	18,943.17	12,123.00	141.87	126.08	93.59	-8,239.29	-1,345.72	1,703.76	1,514.32	189.44	8.994				

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 Tatanka Fed Com 602H
Project:	Lea County, NM (NAD83)	TVD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 602H	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		
19,100.00	12,017.00	19,043.17	12,123.00	143.45	127.64	93.59	-8,339.28	-1,344.72	1,703.74	1,512.09	191.65	8.890		
19,200.00	12,017.00	19,143.17	12,123.00	145.03	129.20	93.59	-8,439.28	-1,343.72	1,703.72	1,509.86	193.86	8.788		
19,300.00	12,017.00	19,243.17	12,123.00	146.61	130.76	93.59	-8,539.27	-1,342.72	1,703.70	1,507.62	196.07	8.689		
19,400.00	12,017.00	19,343.17	12,123.00	148.19	132.32	93.59	-8,639.27	-1,341.72	1,703.68	1,505.38	198.29	8.592		
19,500.00	12,017.00	19,443.17	12,123.00	149.78	133.89	93.59	-8,739.26	-1,340.72	1,703.66	1,503.14	200.51	8.496		
19,600.00	12,017.00	19,543.17	12,123.00	151.36	135.45	93.59	-8,839.26	-1,339.71	1,703.64	1,500.90	202.74	8.403		
19,700.00	12,017.00	19,643.17	12,123.00	152.95	137.02	93.59	-8,939.25	-1,338.71	1,703.62	1,498.65	204.96	8.312		
19,800.00	12,017.00	19,743.17	12,123.00	154.54	138.59	93.59	-9,039.25	-1,337.71	1,703.59	1,496.40	207.19	8.222		
19,900.00	12,017.00	19,843.17	12,123.00	156.13	140.17	93.59	-9,139.24	-1,336.71	1,703.57	1,494.15	209.42	8.135		
20,000.00	12,017.00	19,943.17	12,123.00	157.72	141.74	93.59	-9,239.24	-1,335.71	1,703.55	1,491.90	211.65	8.049		
20,100.00	12,017.00	20,043.17	12,123.00	159.31	143.32	93.59	-9,339.23	-1,334.71	1,703.53	1,489.65	213.89	7.965		
20,200.00	12,017.00	20,143.17	12,123.00	160.90	144.90	93.59	-9,439.23	-1,333.71	1,703.51	1,487.39	216.12	7.882		
20,300.00	12,017.00	20,243.17	12,123.00	162.50	146.48	93.59	-9,539.22	-1,332.71	1,703.49	1,485.13	218.36	7.801		
20,400.00	12,017.00	20,343.17	12,123.00	164.09	148.06	93.59	-9,639.22	-1,331.70	1,703.47	1,482.87	220.60	7.722		
20,500.00	12,017.00	20,443.17	12,123.00	165.69	149.64	93.59	-9,739.21	-1,330.70	1,703.45	1,480.61	222.85	7.644		
20,600.00	12,017.00	20,543.17	12,123.00	167.29	151.23	93.59	-9,839.21	-1,329.70	1,703.43	1,478.34	225.09	7.568		
20,700.00	12,017.00	20,643.17	12,123.00	168.89	152.81	93.59	-9,939.20	-1,328.70	1,703.41	1,476.07	227.34	7.493		
20,800.00	12,017.00	20,743.17	12,123.00	170.49	154.40	93.59	-10,039.20	-1,327.70	1,703.39	1,473.81	229.58	7.419		
20,900.00	12,017.00	20,843.17	12,123.00	172.09	155.99	93.59	-10,139.19	-1,326.70	1,703.37	1,471.54	231.83	7.347		
21,000.00	12,017.00	20,943.17	12,123.00	173.69	157.58	93.59	-10,239.19	-1,325.70	1,703.35	1,469.26	234.08	7.277		
21,100.00	12,017.00	21,043.17	12,123.00	175.29	159.17	93.59	-10,339.18	-1,324.69	1,703.33	1,466.99	236.34	7.207		
21,200.00	12,017.00	21,143.17	12,123.00	176.90	160.76	93.59	-10,439.18	-1,323.69	1,703.31	1,464.72	238.59	7.139		
21,300.00	12,017.00	21,243.17	12,123.00	178.50	162.36	93.59	-10,539.17	-1,322.69	1,703.29	1,462.44	240.85	7.072		
21,400.00	12,017.00	21,343.17	12,123.00	180.11	163.95	93.59	-10,639.17	-1,321.69	1,703.27	1,460.16	243.10	7.006		
21,500.00	12,017.00	21,443.17	12,123.00	181.71	165.55	93.60	-10,739.16	-1,320.69	1,703.25	1,457.88	245.36	6.942		
21,600.00	12,017.00	21,543.17	12,123.00	183.32	167.14	93.60	-10,839.16	-1,319.69	1,703.22	1,455.60	247.62	6.878		
21,700.00	12,017.00	21,643.17	12,123.00	184.93	168.74	93.60	-10,939.15	-1,318.69	1,703.20	1,453.32	249.88	6.816		
21,800.00	12,017.00	21,743.17	12,123.00	186.54	170.34	93.60	-11,039.15	-1,317.69	1,703.18	1,451.04	252.14	6.755		
21,900.00	12,017.00	21,843.17	12,123.00	188.15	171.94	93.60	-11,139.14	-1,316.68	1,703.16	1,448.76	254.41	6.695		
22,000.00	12,017.00	21,943.17	12,123.00	189.76	173.54	93.60	-11,239.14	-1,315.68	1,703.14	1,446.47	256.67	6.635		
22,100.00	12,017.00	22,043.17	12,123.00	191.37	175.14	93.60	-11,339.13	-1,314.68	1,703.12	1,444.18	258.94	6.577		
22,185.29	12,017.00	22,128.46	12,123.00	192.74	176.46	93.60	-11,424.42	-1,313.83	1,703.10	1,442.27	260.84	6.529		
22,187.30	12,017.00	22,129.15	12,123.00	192.77	176.47	93.60	-11,425.11	-1,313.82	1,703.10	1,442.24	260.87	6.529 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 Tatanka Fed Com 602H
Project:	Lea County, NM (NAD83)	TVD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 602H	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													Tatanka Fed Com - Tatanka Fed Com 603H - 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	0.80	0.80	0.00	0.00	89.46	0.94	99.98	99.98							
100.00	100.00	100.80	100.80	0.13	0.13	89.46	0.94	99.98	99.98	99.80	0.18	557.097				
200.00	200.00	200.80	200.80	0.48	0.49	89.46	0.94	99.98	99.98	99.30	0.69	145.661				
300.00	300.00	300.80	300.80	0.84	0.85	89.46	0.94	99.98	99.98	98.79	1.19	83.783				
400.00	400.00	400.80	400.80	1.20	1.20	89.46	0.94	99.98	99.98	98.28	1.70	58.803				
500.00	500.00	500.80	500.80	1.56	1.56	89.46	0.94	99.98	99.98	97.78	2.21	45.297				
600.00	600.00	600.80	600.80	1.92	1.92	89.46	0.94	99.98	99.98	97.27	2.71	36.837				
700.00	700.00	700.80	700.80	2.28	2.28	89.46	0.94	99.98	99.98	96.76	3.22	31.040				
800.00	800.00	800.80	800.80	2.63	2.64	89.46	0.94	99.98	99.98	96.26	3.73	26.819				
900.00	900.00	900.80	900.80	2.99	3.00	89.46	0.94	99.98	99.98	95.75	4.24	23.608				
1,000.00	1,000.00	1,000.80	1,000.80	3.35	3.35	89.46	0.94	99.98	99.98	95.24	4.74	21.085				
1,100.00	1,100.00	1,100.80	1,100.80	3.71	3.71	89.46	0.94	99.98	99.98	94.74	5.25	19.048				
1,200.00	1,200.00	1,200.80	1,200.80	4.07	4.07	89.46	0.94	99.98	99.98	94.23	5.76	17.371				
1,300.00	1,300.00	1,300.80	1,300.80	4.43	4.43	89.46	0.94	99.98	99.98	93.72	6.26	15.964				
1,400.00	1,400.00	1,400.80	1,400.80	4.79	4.79	89.46	0.94	99.98	99.98	93.21	6.77	14.769				
1,500.00	1,500.00	1,500.80	1,500.80	5.14	5.15	89.46	0.94	99.98	99.98	92.71	7.28	13.740				
1,600.00	1,600.00	1,600.80	1,600.80	5.50	5.51	89.46	0.94	99.98	99.98	92.20	7.78	12.845				
1,700.00	1,700.00	1,700.80	1,700.80	5.86	5.86	89.46	0.94	99.98	99.98	91.69	8.29	12.060				
1,800.00	1,800.00	1,800.80	1,800.80	6.22	6.22	89.46	0.94	99.98	99.98	91.19	8.80	11.365				
1,900.00	1,900.00	1,900.80	1,900.80	6.58	6.58	89.46	0.94	99.98	99.98	90.68	9.30	10.746				
2,000.00	2,000.00	2,000.80	2,000.80	6.94	6.94	89.46	0.94	99.98	99.98	90.17	9.81	10.190				
2,100.00	2,100.00	2,100.80	2,100.80	7.29	7.30	89.46	0.94	99.98	99.98	89.67	10.32	9.690				
2,200.00	2,200.00	2,200.80	2,200.80	7.65	7.66	89.46	0.94	99.98	99.98	89.16	10.83	9.236				
2,300.00	2,300.00	2,300.80	2,300.80	8.01	8.01	89.46	0.94	99.98	99.98	88.65	11.33	8.823				
2,400.00	2,400.00	2,400.80	2,400.80	8.37	8.37	89.46	0.94	99.98	99.98	88.14	11.84	8.445				
2,500.00	2,500.00	2,500.80	2,500.80	8.73	8.73	89.46	0.94	99.98	99.98	87.64	12.35	8.098				
2,600.00	2,600.00	2,600.80	2,600.80	9.09	9.09	89.46	0.94	99.98	99.98	87.13	12.85	7.779				
2,700.00	2,700.00	2,700.80	2,700.80	9.45	9.45	89.46	0.94	99.98	99.98	86.62	13.36	7.484				
2,800.00	2,800.00	2,800.80	2,800.80	9.80	9.81	89.46	0.94	99.98	99.98	86.12	13.87	7.210				
2,900.00	2,900.00	2,900.80	2,900.80	10.16	10.17	89.46	0.94	99.98	99.98	85.61	14.37	6.956				
3,000.00	3,000.00	3,000.80	3,000.80	10.52	10.52	89.46	0.94	99.98	99.98	85.10	14.88	6.719				
3,100.00	3,100.00	3,100.80	3,100.80	10.88	10.88	89.46	0.94	99.98	99.98	84.60	15.39	6.498				
3,116.40	3,116.40	3,117.20	3,117.20	10.94	10.94	89.46	0.94	99.98	99.98	84.51	15.47	6.463 CC				
3,200.00	3,200.00	3,200.00	3,200.00	11.24	11.24	89.46	0.94	99.98	99.99	84.09	15.89	6.291 ES				
3,300.00	3,299.99	3,298.79	3,298.78	11.58	11.58	-76.57	0.14	100.98	100.69	84.32	16.37	6.151				
3,400.00	3,399.91	3,396.75	3,396.67	11.90	11.90	-77.29	-2.22	103.94	102.77	85.95	16.82	6.111				
3,500.00	3,499.69	3,494.64	3,494.35	12.23	12.23	-78.42	-6.16	108.85	106.27	89.01	17.26	6.156				
3,600.00	3,599.27	3,592.41	3,591.72	12.56	12.56	-79.88	-11.64	115.71	111.22	93.52	17.70	6.282				
3,700.00	3,698.57	3,690.03	3,688.69	12.89	12.89	-81.56	-18.67	124.49	117.68	99.54	18.15	6.485				
3,800.00	3,797.54	3,787.46	3,785.15	13.22	13.22	-83.38	-27.22	135.19	125.70	107.10	18.59	6.760				
3,900.00	3,896.09	3,884.66	3,881.00	13.57	13.57	-85.23	-37.29	147.77	135.30	116.25	19.05	7.103				
4,000.00	3,994.16	3,981.60	3,976.16	13.92	13.91	-87.04	-48.84	162.21	146.52	127.01	19.51	7.509				
4,100.00	4,091.70	4,078.24	4,070.52	14.28	14.27	-88.77	-61.85	178.47	159.37	139.38	19.99	7.973				
4,125.65	4,116.62	4,102.98	4,094.59	14.37	14.36	-89.19	-65.43	182.94	162.93	142.82	20.11	8.100				
4,200.00	4,188.79	4,174.59	4,164.05	14.65	14.64	-90.30	-76.31	196.54	173.85	153.37	20.48	8.489				
4,300.00	4,285.87	4,270.63	4,256.67	15.04	15.02	-91.06	-92.18	216.38	189.86	168.88	20.97	9.052				
4,400.00	4,382.95	4,366.27	4,348.23	15.43	15.41	-91.15	-109.42	237.93	207.29	185.82	21.47	9.655				
4,500.00	4,480.03	4,461.68	4,438.86	15.83	15.82	-90.71	-128.04	261.21	226.13	204.16	21.97	10.292				
4,600.00	4,577.11	4,559.74	4,531.71	16.23	16.26	-90.14	-147.77	285.87	245.56	223.02	22.53	10.898				
4,700.00	4,674.18	4,657.81	4,624.55	16.65	16.71	-89.66	-167.50	310.53	265.01	241.90	23.11	11.469				
4,800.00	4,771.26	4,755.88	4,717.39	17.07	17.17	-89.24	-187.23	335.19	284.47	260.78	23.69	12.008				
4,900.00	4,868.34	4,853.95	4,810.23	17.49	17.65	-88.87	-206.96	359.85	303.95	279.67	24.29	12.516				

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 Tatanka Fed Com 602H
Project:	Lea County, NM (NAD83)	TVD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 602H	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	4,965.42	4,952.01	4,903.08	17.92	18.13	-88.55	-226.69	384.51	323.44	298.55	24.89	12.995		
5,100.00	5,062.50	5,050.08	4,995.92	18.36	18.63	-88.26	-246.42	409.17	342.94	317.44	25.50	13.447		
5,200.00	5,159.57	5,148.15	5,088.76	18.80	19.13	-88.01	-266.14	433.84	362.45	336.33	26.12	13.875		
5,300.00	5,256.65	5,246.21	5,181.60	19.25	19.64	-87.78	-285.87	458.50	381.96	355.21	26.75	14.278		
5,400.00	5,353.73	5,344.28	5,274.45	19.70	20.15	-87.57	-305.60	483.16	401.48	374.09	27.39	14.660		
5,500.00	5,450.81	5,442.35	5,367.29	20.15	20.68	-87.38	-325.33	507.82	421.00	392.97	28.03	15.022		
5,600.00	5,547.89	5,540.42	5,460.13	20.61	21.21	-87.21	-345.06	532.48	440.53	411.85	28.67	15.364		
5,700.00	5,644.96	5,638.48	5,552.97	21.07	21.74	-87.06	-364.79	557.14	460.06	430.73	29.33	15.688		
5,800.00	5,742.04	5,736.55	5,645.82	21.54	22.28	-86.91	-384.52	581.80	479.59	449.61	29.98	15.996		
5,900.00	5,839.12	5,834.62	5,738.66	22.00	22.83	-86.78	-404.25	606.46	499.12	468.48	30.64	16.288		
6,000.00	5,936.20	5,932.68	5,831.50	22.47	23.38	-86.66	-423.98	631.12	518.66	487.35	31.31	16.565		
6,100.00	6,033.28	6,030.75	5,924.35	22.94	23.93	-86.54	-443.70	655.79	538.20	506.22	31.98	16.829		
6,200.00	6,130.35	6,128.82	6,017.19	23.42	24.49	-86.44	-463.43	680.45	557.74	525.09	32.66	17.080		
6,300.00	6,227.43	6,226.88	6,110.03	23.90	25.05	-86.34	-483.16	705.11	577.29	543.95	33.33	17.318		
6,400.00	6,324.51	6,324.95	6,202.87	24.38	25.62	-86.25	-502.89	729.77	596.83	562.82	34.02	17.546		
6,500.00	6,421.59	6,423.02	6,295.72	24.86	26.19	-86.16	-522.62	754.43	616.38	581.68	34.70	17.763		
6,600.00	6,518.67	6,521.09	6,388.56	25.34	26.76	-86.08	-542.35	779.09	635.92	600.54	35.39	17.970		
6,700.00	6,615.75	6,619.15	6,481.40	25.83	27.34	-86.00	-562.08	803.75	655.47	619.40	36.08	18.168		
6,800.00	6,712.82	6,717.22	6,574.24	26.31	27.91	-85.93	-581.81	828.41	675.02	638.25	36.77	18.357		
6,900.00	6,809.90	6,815.29	6,667.09	26.80	28.49	-85.87	-601.54	853.07	694.57	657.11	37.47	18.538		
7,000.00	6,906.98	6,913.35	6,759.93	27.29	29.08	-85.80	-621.26	877.74	714.12	675.96	38.16	18.712		
7,100.00	7,004.06	7,011.42	6,852.77	27.78	29.66	-85.74	-640.99	902.40	733.68	694.81	38.87	18.877		
7,200.00	7,101.14	7,109.49	6,945.61	28.28	30.25	-85.68	-660.72	927.06	753.23	713.66	39.57	19.036		
7,300.00	7,198.21	7,207.55	7,038.46	28.77	30.84	-85.63	-680.45	951.72	772.78	732.51	40.27	19.189		
7,400.00	7,295.29	7,305.62	7,131.30	29.26	31.43	-85.58	-700.18	976.38	792.34	751.36	40.98	19.335		
7,500.00	7,392.37	7,403.69	7,224.14	29.76	32.02	-85.53	-719.91	1,001.04	811.89	770.21	41.69	19.476		
7,600.00	7,489.45	7,501.76	7,316.98	30.26	32.62	-85.48	-739.64	1,025.70	831.45	789.05	42.40	19.611		
7,700.00	7,586.53	7,599.82	7,409.83	30.76	33.21	-85.44	-759.37	1,050.36	851.01	807.90	43.11	19.741		
7,800.00	7,683.60	7,697.89	7,502.67	31.26	33.81	-85.39	-779.10	1,075.02	870.56	826.74	43.82	19.865		
7,900.00	7,780.68	7,795.96	7,595.51	31.76	34.41	-85.35	-798.82	1,099.69	890.12	845.58	44.54	19.986		
8,000.00	7,877.76	7,894.02	7,688.35	32.26	35.01	-85.31	-818.55	1,124.35	909.68	864.42	45.25	20.101		
8,035.67	7,912.38	7,929.00	7,721.47	32.44	35.22	-85.30	-825.59	1,133.14	916.65	871.14	45.51	20.142		
8,100.00	7,974.96	7,992.08	7,781.18	32.76	35.61	-85.43	-838.28	1,149.00	929.28	883.31	45.97	20.217		
8,200.00	8,072.71	8,090.03	7,873.92	33.24	36.21	-85.52	-857.99	1,173.64	949.08	902.43	46.65	20.345		
8,300.00	8,170.98	8,187.82	7,966.50	33.69	36.82	-85.46	-877.66	1,198.23	969.10	921.80	47.30	20.487		
8,400.00	8,269.70	8,285.37	8,058.85	34.13	37.42	-85.26	-897.28	1,222.76	989.39	941.46	47.92	20.645		
8,500.00	8,368.80	8,382.62	8,150.92	34.55	38.02	-84.94	-916.85	1,247.21	1,009.98	961.46	48.51	20.819		
8,600.00	8,468.22	8,479.50	8,242.64	34.94	38.62	-84.51	-936.34	1,271.58	1,030.94	981.87	49.07	21.010		
8,700.00	8,567.89	8,575.94	8,333.94	35.31	39.22	-83.98	-955.74	1,295.83	1,052.35	1,002.76	49.59	21.222		
8,800.00	8,667.73	8,671.89	8,424.78	35.66	39.81	-83.35	-975.04	1,319.96	1,074.28	1,024.21	50.07	21.454		
8,900.00	8,767.69	8,767.27	8,515.07	35.99	40.41	-82.65	-994.23	1,343.94	1,096.85	1,046.32	50.52	21.709		
8,961.32	8,829.00	8,825.44	8,570.15	36.17	40.77	83.62	-1,005.93	1,358.57	1,111.03	1,060.25	50.78	21.879		
9,000.00	8,867.68	9,129.79	8,868.48	36.28	42.08	85.32	-1,035.06	1,394.98	1,113.70	1,061.63	52.07	21.388		
9,100.00	8,967.68	9,229.79	8,968.48	36.57	42.33	85.32	-1,035.06	1,394.98	1,113.70	1,061.22	52.48	21.223		
9,200.00	9,067.68	9,329.79	9,068.48	36.86	42.59	85.32	-1,035.06	1,394.98	1,113.70	1,060.82	52.88	21.061		
9,300.00	9,167.68	9,429.79	9,168.48	37.16	42.85	85.32	-1,035.06	1,394.98	1,113.70	1,060.41	53.29	20.900		
9,400.00	9,267.68	9,529.79	9,268.48	37.45	43.11	85.32	-1,035.06	1,394.98	1,113.70	1,060.00	53.70	20.741		
9,500.00	9,367.68	9,629.79	9,368.48	37.74	43.37	85.32	-1,035.06	1,394.98	1,113.70	1,059.59	54.11	20.584		
9,600.00	9,467.68	9,729.79	9,468.48	38.04	43.64	85.32	-1,035.06	1,394.98	1,113.70	1,059.18	54.52	20.428		
9,700.00	9,567.68	9,829.79	9,568.48	38.33	43.90	85.32	-1,035.06	1,394.98	1,113.70	1,058.77	54.93	20.274		
9,800.00	9,667.68	9,929.79	9,668.48	38.63	44.17	85.32	-1,035.06	1,394.98	1,113.70	1,058.35	55.35	20.122		
9,900.00	9,767.68	10,029.79	9,768.48	38.93	44.44	85.32	-1,035.06	1,394.98	1,113.70	1,057.94	55.76	19.972		

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 Tatanka Fed Com 602H
Project:	Lea County, NM (NAD83)	TVD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 602H	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		
10,000.00	9,867.68	10,129.79	9,868.48	39.23	44.71	85.32	-1,035.06	1,394.98	1,113.70	1,057.52	56.18	19.823		
10,100.00	9,967.68	10,229.79	9,968.48	39.53	44.98	85.32	-1,035.06	1,394.98	1,113.70	1,057.10	56.60	19.676		
10,200.00	10,067.68	10,329.79	10,068.48	39.83	45.25	85.32	-1,035.06	1,394.98	1,113.70	1,056.68	57.02	19.531		
10,300.00	10,167.68	10,429.79	10,168.48	40.13	45.52	85.32	-1,035.06	1,394.98	1,113.70	1,056.26	57.44	19.388		
10,400.00	10,267.68	10,529.79	10,268.48	40.43	45.79	85.32	-1,035.06	1,394.98	1,113.70	1,055.83	57.87	19.246		
10,500.00	10,367.68	10,629.79	10,368.48	40.74	46.07	85.32	-1,035.06	1,394.98	1,113.70	1,055.41	58.29	19.105		
10,600.00	10,467.68	10,729.79	10,468.48	41.04	46.34	85.32	-1,035.06	1,394.98	1,113.70	1,054.98	58.72	18.967		
10,700.00	10,567.68	10,829.79	10,568.48	41.35	46.62	85.32	-1,035.06	1,394.98	1,113.70	1,054.55	59.15	18.829		
10,800.00	10,667.68	10,929.79	10,668.48	41.66	46.90	85.32	-1,035.06	1,394.98	1,113.70	1,054.12	59.58	18.694		
10,900.00	10,767.68	11,029.79	10,768.48	41.96	47.18	85.32	-1,035.06	1,394.98	1,113.70	1,053.69	60.01	18.560		
11,000.00	10,867.68	11,129.79	10,868.48	42.27	47.46	85.32	-1,035.06	1,394.98	1,113.70	1,053.26	60.44	18.427		
11,100.00	10,967.68	11,229.79	10,968.48	42.58	47.74	85.32	-1,035.06	1,394.98	1,113.70	1,052.83	60.87	18.297		
11,200.00	11,067.68	11,329.79	11,068.48	42.89	48.02	85.32	-1,035.06	1,394.98	1,113.70	1,052.40	61.30	18.167		
11,300.00	11,167.68	11,429.79	11,168.48	43.20	48.31	85.32	-1,035.06	1,394.98	1,113.70	1,051.96	61.74	18.039		
11,400.00	11,267.68	11,529.79	11,268.48	43.51	48.59	85.32	-1,035.06	1,394.98	1,113.70	1,051.53	62.17	17.913		
11,500.00	11,367.68	11,629.79	11,368.48	43.82	48.88	85.32	-1,035.06	1,394.98	1,113.70	1,051.09	62.61	17.788		
11,576.36	11,444.04	11,706.14	11,444.84	44.06	49.10	85.32	-1,035.06	1,394.98	1,113.70	1,050.75	62.94	17.693		
11,600.00	11,467.68	11,729.78	11,468.48	44.14	49.16	-94.14	-1,035.06	1,394.98	1,113.73	1,050.68	63.05	17.663		
11,650.00	11,517.48	11,784.11	11,522.80	44.33	49.33	-94.32	-1,035.89	1,394.99	1,114.00	1,050.68	63.32	17.594		
11,700.00	11,566.73	11,842.79	11,581.13	44.54	49.52	-94.49	-1,042.03	1,395.05	1,114.25	1,050.64	63.61	17.517		
11,750.00	11,615.04	11,901.89	11,638.92	44.78	49.75	-94.63	-1,054.21	1,395.17	1,114.46	1,050.53	63.93	17.432		
11,800.00	11,662.05	11,961.29	11,695.45	45.04	50.00	-94.72	-1,072.38	1,395.35	1,114.60	1,050.32	64.28	17.339		
11,850.00	11,707.40	12,020.89	11,749.97	45.33	50.28	-94.77	-1,096.40	1,395.58	1,114.68	1,050.02	64.66	17.239		
11,900.00	11,750.75	12,080.57	11,801.76	45.65	50.58	-94.78	-1,125.98	1,395.87	1,114.69	1,049.63	65.06	17.132		
11,950.00	11,791.76	12,140.20	11,850.17	45.98	50.91	-94.74	-1,160.77	1,396.21	1,114.63	1,049.13	65.50	17.018		
12,000.00	11,830.12	12,199.66	11,894.57	46.33	51.25	-94.66	-1,200.28	1,396.60	1,114.50	1,048.55	65.95	16.898		
12,050.00	11,865.55	12,258.85	11,934.47	46.70	51.61	-94.53	-1,243.95	1,397.02	1,114.31	1,047.87	66.44	16.772		
12,100.00	11,897.77	12,317.65	11,969.44	47.09	51.99	-94.37	-1,291.19	1,397.48	1,114.06	1,047.11	66.95	16.640		
12,150.00	11,926.54	12,375.96	11,999.15	47.50	52.38	-94.16	-1,341.33	1,397.98	1,113.77	1,046.28	67.49	16.503		
12,200.00	11,951.63	12,433.69	12,023.41	47.92	52.78	-93.92	-1,393.69	1,398.49	1,113.44	1,045.39	68.05	16.362		
12,250.00	11,972.86	12,490.79	12,042.09	48.35	53.19	-93.65	-1,447.61	1,399.01	1,113.09	1,044.45	68.64	16.217		
12,300.00	11,990.07	12,547.18	12,055.19	48.80	53.61	-93.35	-1,502.44	1,399.55	1,112.73	1,043.49	69.24	16.071		
12,350.00	12,003.12	12,602.82	12,062.77	49.25	54.03	-93.02	-1,557.54	1,400.09	1,112.37	1,042.51	69.86	15.923		
12,400.00	12,011.92	12,657.29	12,065.00	49.70	54.45	-92.67	-1,611.94	1,400.62	1,112.03	1,041.54	70.49	15.775		
12,450.00	12,016.39	12,707.08	12,065.00	50.16	54.84	-92.46	-1,661.72	1,401.11	1,111.83	1,040.70	71.13	15.630		
12,476.36	12,017.00	12,733.42	12,065.00	50.40	55.05	-92.43	-1,688.07	1,401.37	1,111.80	1,040.34	71.47	15.557		
12,500.00	12,017.00	12,757.07	12,065.00	50.61	55.24	-92.43	-1,711.71	1,401.60	1,111.80	1,040.04	71.76	15.493		
12,600.00	12,017.00	12,857.07	12,065.00	51.55	56.07	-92.43	-1,811.71	1,402.58	1,111.80	1,038.75	73.05	15.219		
12,700.00	12,017.00	12,957.07	12,065.00	52.52	56.93	-92.43	-1,911.70	1,403.55	1,111.80	1,037.40	74.39	14.945		
12,800.00	12,017.00	13,057.07	12,065.00	53.53	57.83	-92.43	-2,011.70	1,404.53	1,111.79	1,036.02	75.78	14.672		
12,900.00	12,017.00	13,157.07	12,065.00	54.57	58.76	-92.43	-2,111.69	1,405.51	1,111.79	1,034.58	77.21	14.400		
13,000.00	12,017.00	13,257.07	12,065.00	55.63	59.72	-92.43	-2,211.69	1,406.49	1,111.79	1,033.10	78.68	14.130		
13,100.00	12,017.00	13,357.07	12,065.00	56.73	60.71	-92.43	-2,311.68	1,407.46	1,111.78	1,031.58	80.20	13.863		
13,200.00	12,017.00	13,457.07	12,065.00	57.85	61.73	-92.43	-2,411.68	1,408.44	1,111.78	1,030.03	81.76	13.599		
13,300.00	12,017.00	13,557.07	12,065.00	58.99	62.78	-92.43	-2,511.67	1,409.42	1,111.78	1,028.43	83.35	13.339		
13,400.00	12,017.00	13,657.07	12,065.00	60.16	63.85	-92.43	-2,611.67	1,410.40	1,111.78	1,026.80	84.97	13.084		
13,500.00	12,017.00	13,757.07	12,065.00	61.35	64.95	-92.43	-2,711.66	1,411.38	1,111.77	1,025.14	86.63	12.834		
13,600.00	12,017.00	13,857.07	12,065.00	62.57	66.07	-92.43	-2,811.66	1,412.35	1,111.77	1,023.45	88.32	12.588		
13,700.00	12,017.00	13,957.07	12,065.00	63.80	67.22	-92.43	-2,911.65	1,413.33	1,111.77	1,021.73	90.03	12.348		
13,800.00	12,017.00	14,057.07	12,065.00	65.05	68.38	-92.43	-3,011.65	1,414.31	1,111.76	1,019.99	91.78	12.114		
13,900.00	12,017.00	14,157.07	12,065.00	66.32	69.56	-92.43	-3,111.64	1,415.29	1,111.76	1,018.21	93.55	11.884		
14,000.00	12,017.00	14,257.07	12,065.00	67.60	70.77	-92.43	-3,211.64	1,416.27	1,111.76	1,016.42	95.34	11.661		

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 Tatanka Fed Com 602H
Project:	Lea County, NM (NAD83)	TVD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 602H	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	12,017.00	14,357.07	12,065.00	68.90	71.99	-92.43	-3,311.63	1,417.24	1,111.76	1,014.60	97.16	11.443		
14,200.00	12,017.00	14,457.07	12,065.00	70.22	73.22	-92.43	-3,411.63	1,418.22	1,111.75	1,012.75	99.00	11.230		
14,300.00	12,017.00	14,557.07	12,065.00	71.55	74.48	-92.43	-3,511.62	1,419.20	1,111.75	1,010.89	100.86	11.023		
14,400.00	12,017.00	14,657.07	12,065.00	72.89	75.75	-92.43	-3,611.62	1,420.18	1,111.75	1,009.01	102.74	10.821		
14,500.00	12,017.00	14,757.07	12,065.00	74.25	77.03	-92.43	-3,711.61	1,421.16	1,111.74	1,007.11	104.63	10.625		
14,600.00	12,017.00	14,857.07	12,065.00	75.61	78.33	-92.43	-3,811.61	1,422.13	1,111.74	1,005.20	106.55	10.434		
14,700.00	12,017.00	14,957.07	12,065.00	76.99	79.64	-92.43	-3,911.61	1,423.11	1,111.74	1,003.26	108.48	10.249		
14,800.00	12,017.00	15,057.07	12,065.00	78.38	80.96	-92.43	-4,011.60	1,424.09	1,111.74	1,001.31	110.42	10.068		
14,900.00	12,017.00	15,157.07	12,065.00	79.78	82.30	-92.43	-4,111.60	1,425.07	1,111.73	999.35	112.38	9.892		
15,000.00	12,017.00	15,257.07	12,065.00	81.18	83.64	-92.43	-4,211.59	1,426.04	1,111.73	997.37	114.36	9.722		
15,100.00	12,017.00	15,357.07	12,065.00	82.60	85.00	-92.43	-4,311.59	1,427.02	1,111.73	995.38	116.34	9.555		
15,200.00	12,017.00	15,457.07	12,065.00	84.03	86.37	-92.43	-4,411.58	1,428.00	1,111.72	993.38	118.35	9.394		
15,300.00	12,017.00	15,557.07	12,065.00	85.46	87.75	-92.43	-4,511.58	1,428.98	1,111.72	991.36	120.36	9.237		
15,400.00	12,017.00	15,657.07	12,065.00	86.90	89.13	-92.43	-4,611.57	1,429.96	1,111.72	989.34	122.38	9.084		
15,500.00	12,017.00	15,757.07	12,065.00	88.35	90.53	-92.43	-4,711.57	1,430.93	1,111.72	987.30	124.42	8.935		
15,600.00	12,017.00	15,857.07	12,065.00	89.80	91.93	-92.43	-4,811.56	1,431.91	1,111.71	985.25	126.46	8.791		
15,700.00	12,017.00	15,957.07	12,065.00	91.27	93.34	-92.43	-4,911.56	1,432.89	1,111.71	983.19	128.52	8.650		
15,800.00	12,017.00	16,057.07	12,065.00	92.74	94.76	-92.43	-5,011.55	1,433.87	1,111.71	981.13	130.58	8.514		
15,900.00	12,017.00	16,157.07	12,065.00	94.21	96.19	-92.43	-5,111.55	1,434.85	1,111.70	979.05	132.65	8.381		
16,000.00	12,017.00	16,257.07	12,065.00	95.69	97.63	-92.43	-5,211.54	1,435.82	1,111.70	976.97	134.73	8.251		
16,100.00	12,017.00	16,357.07	12,065.00	97.18	99.07	-92.43	-5,311.54	1,436.80	1,111.70	974.87	136.82	8.125		
16,200.00	12,017.00	16,457.07	12,065.00	98.67	100.52	-92.43	-5,411.53	1,437.78	1,111.70	972.77	138.92	8.002		
16,300.00	12,017.00	16,557.07	12,065.00	100.16	101.97	-92.43	-5,511.53	1,438.76	1,111.69	970.67	141.03	7.883		
16,400.00	12,017.00	16,657.07	12,065.00	101.67	103.43	-92.43	-5,611.52	1,439.73	1,111.69	968.55	143.14	7.767		
16,500.00	12,017.00	16,757.07	12,065.00	103.17	104.90	-92.43	-5,711.52	1,440.71	1,111.69	966.43	145.26	7.653		
16,600.00	12,017.00	16,857.07	12,065.00	104.68	106.37	-92.43	-5,811.51	1,441.69	1,111.68	964.30	147.38	7.543		
16,700.00	12,017.00	16,957.07	12,065.00	106.20	107.84	-92.43	-5,911.51	1,442.67	1,111.68	962.17	149.51	7.435		
16,800.00	12,017.00	17,057.07	12,065.00	107.71	109.32	-92.43	-6,011.50	1,443.65	1,111.68	960.03	151.65	7.331		
16,900.00	12,017.00	17,157.07	12,065.00	109.24	110.81	-92.43	-6,111.50	1,444.62	1,111.68	957.88	153.79	7.228		
17,000.00	12,017.00	17,257.07	12,065.00	110.76	112.30	-92.43	-6,211.50	1,445.60	1,111.67	955.73	155.94	7.129		
17,100.00	12,017.00	17,357.07	12,065.00	112.29	113.80	-92.43	-6,311.49	1,446.58	1,111.67	953.58	158.09	7.032		
17,200.00	12,017.00	17,457.07	12,065.00	113.82	115.30	-92.43	-6,411.49	1,447.56	1,111.67	951.42	160.25	6.937		
17,300.00	12,017.00	17,557.07	12,065.00	115.36	116.80	-92.43	-6,511.48	1,448.54	1,111.66	949.25	162.41	6.845		
17,400.00	12,017.00	17,657.07	12,065.00	116.90	118.31	-92.43	-6,611.48	1,449.51	1,111.66	947.08	164.58	6.754		
17,500.00	12,017.00	17,757.07	12,065.00	118.44	119.82	-92.43	-6,711.47	1,450.49	1,111.66	944.90	166.75	6.666		
17,600.00	12,017.00	17,857.07	12,065.00	119.99	121.34	-92.43	-6,811.47	1,451.47	1,111.66	942.72	168.93	6.581		
17,700.00	12,017.00	17,957.07	12,065.00	121.53	122.85	-92.43	-6,911.46	1,452.45	1,111.65	940.54	171.11	6.497		
17,800.00	12,017.00	18,057.07	12,065.00	123.09	124.38	-92.43	-7,011.46	1,453.43	1,111.65	938.35	173.30	6.415		
17,900.00	12,017.00	18,157.07	12,065.00	124.64	125.90	-92.43	-7,111.45	1,454.40	1,111.65	936.16	175.49	6.335		
18,000.00	12,017.00	18,257.07	12,065.00	126.19	127.43	-92.43	-7,211.45	1,455.38	1,111.64	933.97	177.68	6.257		
18,100.00	12,017.00	18,357.07	12,065.00	127.75	128.96	-92.43	-7,311.44	1,456.36	1,111.64	931.77	179.87	6.180		
18,200.00	12,017.00	18,457.07	12,065.00	129.31	130.50	-92.43	-7,411.44	1,457.34	1,111.64	929.57	182.07	6.105		
18,300.00	12,017.00	18,557.07	12,065.00	130.88	132.03	-92.43	-7,511.43	1,458.31	1,111.64	927.36	184.27	6.033		
18,400.00	12,017.00	18,657.07	12,065.00	132.44	133.57	-92.43	-7,611.43	1,459.29	1,111.63	925.15	186.48	5.961		
18,500.00	12,017.00	18,757.07	12,065.00	134.01	135.12	-92.43	-7,711.42	1,460.27	1,111.63	922.94	188.69	5.891		
18,600.00	12,017.00	18,857.07	12,065.00	135.58	136.66	-92.43	-7,811.42	1,461.25	1,111.63	920.73	190.90	5.823		
18,700.00	12,017.00	18,957.07	12,065.00	137.15	138.21	-92.43	-7,911.41	1,462.23	1,111.62	918.51	193.11	5.756		
18,800.00	12,017.00	19,057.07	12,065.00	138.72	139.76	-92.43	-8,011.41	1,463.20	1,111.62	916.29	195.33	5.691		
18,900.00	12,017.00	19,157.07	12,065.00	140.29	141.31	-92.43	-8,111.40	1,464.18	1,111.62	914.07	197.55	5.627		
19,000.00	12,017.00	19,257.07	12,065.00	141.87	142.87	-92.43	-8,211.40	1,465.16	1,111.62	911.84	199.77	5.564		
19,100.00	12,017.00	19,357.07	12,065.00	143.45	144.42	-92.43	-8,311.39	1,466.14	1,111.61	909.62	202.00	5.503		
19,200.00	12,017.00	19,457.07	12,065.00	145.03	145.98	-92.43	-8,411.39	1,467.12	1,111.61	907.39	204.22	5.443		

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 Tatanka Fed Com 602H
Project:	Lea County, NM (NAD83)	TVD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 602H	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													Tatanka Fed Com - Tatanka Fed Com 603H - 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			
19,300.00	12,017.00	19,557.07	12,065.00	146.61	147.54	-92.43	-8,511.39	1,468.09	1,111.61	905.15	206.45	5.384				
19,400.00	12,017.00	19,657.07	12,065.00	148.19	149.11	-92.43	-8,611.38	1,469.07	1,111.60	902.92	208.69	5.327				
19,500.00	12,017.00	19,757.07	12,065.00	149.78	150.67	-92.43	-8,711.38	1,470.05	1,111.60	900.68	210.92	5.270				
19,600.00	12,017.00	19,857.07	12,065.00	151.36	152.24	-92.43	-8,811.37	1,471.03	1,111.60	898.44	213.16	5.215				
19,700.00	12,017.00	19,957.07	12,065.00	152.95	153.81	-92.43	-8,911.37	1,472.01	1,111.60	896.20	215.39	5.161				
19,800.00	12,017.00	20,057.07	12,065.00	154.54	155.38	-92.43	-9,011.36	1,472.98	1,111.59	893.96	217.63	5.108				
19,900.00	12,017.00	20,157.07	12,065.00	156.13	156.95	-92.43	-9,111.36	1,473.96	1,111.59	891.71	219.88	5.056				
20,000.00	12,017.00	20,257.07	12,065.00	157.72	158.52	-92.43	-9,211.35	1,474.94	1,111.59	889.47	222.12	5.004				
20,100.00	12,017.00	20,357.07	12,065.00	159.31	160.10	-92.43	-9,311.35	1,475.92	1,111.58	887.22	224.37	4.954				
20,200.00	12,017.00	20,457.07	12,065.00	160.90	161.67	-92.43	-9,411.34	1,476.89	1,111.58	884.97	226.61	4.905				
20,300.00	12,017.00	20,557.07	12,065.00	162.50	163.25	-92.43	-9,511.34	1,477.87	1,111.58	882.72	228.86	4.857				
20,400.00	12,017.00	20,657.07	12,065.00	164.09	164.83	-92.43	-9,611.33	1,478.85	1,111.58	880.46	231.11	4.810				
20,500.00	12,017.00	20,757.07	12,065.00	165.69	166.41	-92.43	-9,711.33	1,479.83	1,111.57	878.21	233.36	4.763				
20,600.00	12,017.00	20,857.07	12,065.00	167.29	167.99	-92.43	-9,811.32	1,480.81	1,111.57	875.95	235.62	4.718				
20,700.00	12,017.00	20,957.07	12,065.00	168.89	169.58	-92.43	-9,911.32	1,481.78	1,111.57	873.69	237.87	4.673				
20,800.00	12,017.00	21,057.07	12,065.00	170.49	171.16	-92.43	-10,011.31	1,482.76	1,111.56	871.43	240.13	4.629				
20,900.00	12,017.00	21,157.07	12,065.00	172.09	172.75	-92.43	-10,111.31	1,483.74	1,111.56	869.17	242.39	4.586				
21,000.00	12,017.00	21,257.07	12,065.00	173.69	174.33	-92.43	-10,211.30	1,484.72	1,111.56	866.91	244.65	4.544				
21,100.00	12,017.00	21,357.07	12,065.00	175.29	175.92	-92.43	-10,311.30	1,485.70	1,111.56	864.65	246.91	4.502				
21,200.00	12,017.00	21,457.07	12,065.00	176.90	177.51	-92.43	-10,411.29	1,486.67	1,111.55	862.38	249.17	4.461				
21,300.00	12,017.00	21,557.07	12,065.00	178.50	179.10	-92.43	-10,511.29	1,487.65	1,111.55	860.12	251.43	4.421				
21,400.00	12,017.00	21,657.07	12,065.00	180.11	180.69	-92.43	-10,611.29	1,488.63	1,111.55	857.85	253.70	4.381				
21,500.00	12,017.00	21,757.07	12,065.00	181.71	182.29	-92.43	-10,711.28	1,489.61	1,111.54	855.58	255.96	4.343				
21,600.00	12,017.00	21,857.07	12,065.00	183.32	183.88	-92.43	-10,811.28	1,490.59	1,111.54	853.31	258.23	4.304				
21,700.00	12,017.00	21,957.07	12,065.00	184.93	185.48	-92.43	-10,911.27	1,491.56	1,111.54	851.04	260.50	4.267				
21,800.00	12,017.00	22,057.07	12,065.00	186.54	187.07	-92.43	-11,011.27	1,492.54	1,111.54	848.77	262.77	4.230				
21,900.00	12,017.00	22,157.07	12,065.00	188.15	188.67	-92.43	-11,111.26	1,493.52	1,111.53	846.49	265.04	4.194				
22,000.00	12,017.00	22,257.07	12,065.00	189.76	190.27	-92.43	-11,211.26	1,494.50	1,111.53	844.22	267.31	4.158				
22,100.00	12,017.00	22,357.07	12,065.00	191.37	191.87	-92.43	-11,311.25	1,495.47	1,111.53	841.95	269.58	4.123				
22,187.30	12,017.00	22,444.37	12,065.00	192.77	193.26	-92.43	-11,398.55	1,496.33	1,111.52	839.96	271.57	4.093 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 Tatanka Fed Com 602H
Project:	Lea County, NM (NAD83)	TVD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 602H	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													Tatanka Fed Com - Tatanka Fed Com 604H - OH - Plan #2		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	110.82	-991.90	2,608.57	2,791.11							
100.00	100.00	57.40	57.40	0.13	0.07	110.82	-991.90	2,608.57	2,790.79	2,790.64	0.14	N/A				
200.00	200.00	157.40	157.40	0.48	0.33	110.82	-991.90	2,608.57	2,790.79	2,790.20	0.59	4,758.901				
300.00	300.00	257.40	257.40	0.84	0.69	110.82	-991.90	2,608.57	2,790.79	2,789.70	1.09	2,563.339				
400.00	400.00	357.40	357.40	1.20	1.05	110.82	-991.90	2,608.57	2,790.79	2,789.20	1.59	1,750.830				
500.00	500.00	457.40	457.40	1.56	1.41	110.82	-991.90	2,608.57	2,790.79	2,788.69	2.10	1,328.914				
600.00	600.00	557.40	557.40	1.92	1.77	110.82	-991.90	2,608.57	2,790.79	2,788.18	2.61	1,070.717				
700.00	700.00	657.40	657.40	2.28	2.12	110.82	-991.90	2,608.57	2,790.79	2,787.68	3.11	896.478				
800.00	800.00	757.40	757.40	2.63	2.48	110.82	-991.90	2,608.57	2,790.79	2,787.17	3.62	770.989				
900.00	900.00	857.40	857.40	2.99	2.84	110.82	-991.90	2,608.57	2,790.79	2,786.66	4.13	676.308				
1,000.00	1,000.00	957.40	957.40	3.35	3.20	110.82	-991.90	2,608.57	2,790.79	2,786.16	4.63	602.332				
1,100.00	1,100.00	1,057.40	1,057.40	3.71	3.56	110.82	-991.90	2,608.57	2,790.79	2,785.65	5.14	542.940				
1,200.00	1,200.00	1,157.40	1,157.40	4.07	3.92	110.82	-991.90	2,608.57	2,790.79	2,785.14	5.65	494.208				
1,300.00	1,300.00	1,257.40	1,257.40	4.43	4.27	110.82	-991.90	2,608.57	2,790.79	2,784.64	6.15	453.502				
1,400.00	1,400.00	1,357.40	1,357.40	4.79	4.63	110.82	-991.90	2,608.57	2,790.79	2,784.13	6.66	418.990				
1,500.00	1,500.00	1,457.40	1,457.40	5.14	4.99	110.82	-991.90	2,608.57	2,790.79	2,783.62	7.17	389.359				
1,600.00	1,600.00	1,557.40	1,557.40	5.50	5.35	110.82	-991.90	2,608.57	2,790.79	2,783.11	7.67	363.642				
1,700.00	1,700.00	1,657.40	1,657.40	5.86	5.71	110.82	-991.90	2,608.57	2,790.79	2,782.61	8.18	341.112				
1,800.00	1,800.00	1,757.40	1,757.40	6.22	6.07	110.82	-991.90	2,608.57	2,790.79	2,782.10	8.69	321.210				
1,900.00	1,900.00	1,857.40	1,857.40	6.58	6.43	110.82	-991.90	2,608.57	2,790.79	2,781.59	9.20	303.502				
2,000.00	2,000.00	1,957.40	1,957.40	6.94	6.78	110.82	-991.90	2,608.57	2,790.79	2,781.09	9.70	287.645				
2,100.00	2,100.00	2,057.40	2,057.40	7.29	7.14	110.82	-991.90	2,608.57	2,790.79	2,780.58	10.21	273.362				
2,200.00	2,200.00	2,157.40	2,157.40	7.65	7.50	110.82	-991.90	2,608.57	2,790.79	2,780.07	10.72	260.431				
2,300.00	2,300.00	2,257.40	2,257.40	8.01	7.86	110.82	-991.90	2,608.57	2,790.79	2,779.57	11.22	248.667				
2,400.00	2,400.00	2,357.40	2,357.40	8.37	8.22	110.82	-991.90	2,608.57	2,790.79	2,779.06	11.73	237.921				
2,500.00	2,500.00	2,457.40	2,457.40	8.73	8.58	110.82	-991.90	2,608.57	2,790.79	2,778.55	12.24	228.064				
2,600.00	2,600.00	2,557.40	2,557.40	9.09	8.93	110.82	-991.90	2,608.57	2,790.79	2,778.05	12.74	218.992				
2,700.00	2,700.00	2,657.40	2,657.40	9.45	9.29	110.82	-991.90	2,608.57	2,790.79	2,777.54	13.25	210.614				
2,800.00	2,800.00	2,757.40	2,757.40	9.80	9.65	110.82	-991.90	2,608.57	2,790.79	2,777.03	13.76	202.853				
2,900.00	2,900.00	2,857.40	2,857.40	10.16	10.01	110.82	-991.90	2,608.57	2,790.79	2,776.52	14.26	195.644				
3,000.00	3,000.00	2,957.40	2,957.40	10.52	10.37	110.82	-991.90	2,608.57	2,790.79	2,776.02	14.77	188.930				
3,100.00	3,100.00	3,057.40	3,057.40	10.88	10.73	110.82	-991.90	2,608.57	2,790.79	2,775.51	15.28	182.661				
3,200.00	3,200.00	3,157.40	3,157.40	11.24	11.09	110.82	-991.90	2,608.57	2,790.79	2,775.00	15.79	176.795				
3,300.00	3,299.99	3,257.39	3,257.39	11.58	11.44	-55.01	-991.90	2,608.57	2,790.04	2,773.76	16.28	171.386				
3,400.00	3,399.91	3,357.31	3,357.31	11.90	11.80	-55.10	-991.90	2,608.57	2,787.79	2,771.03	16.76	166.327				
3,500.00	3,499.69	3,433.41	3,433.41	12.23	12.07	-55.23	-991.92	2,608.72	2,784.29	2,767.11	17.18	162.060				
3,600.00	3,599.27	3,500.00	3,499.99	12.56	12.30	-55.38	-992.06	2,609.87	2,780.68	2,763.11	17.57	158.229				
3,700.00	3,698.57	3,549.92	3,549.88	12.89	12.47	-55.54	-992.26	2,611.49	2,777.06	2,759.14	17.92	154.967				
3,800.00	3,797.54	3,600.00	3,599.91	13.22	12.64	-55.71	-992.54	2,613.77	2,773.51	2,755.24	18.27	151.840				
3,900.00	3,896.09	3,666.97	3,666.76	13.57	12.87	-55.97	-993.05	2,617.83	2,769.98	2,751.32	18.66	148.467				
4,000.00	3,994.16	3,763.24	3,762.79	13.92	13.20	-56.37	-993.87	2,624.50	2,765.87	2,746.74	19.13	144.567				
4,100.00	4,091.70	3,861.09	3,860.40	14.28	13.54	-56.85	-994.71	2,631.28	2,760.44	2,740.82	19.62	140.711				
4,125.65	4,116.62	3,886.11	3,885.36	14.37	13.63	-56.98	-994.93	2,633.01	2,758.84	2,739.09	19.74	139.735				
4,200.00	4,188.79	3,958.56	3,957.63	14.65	13.88	-57.30	-995.55	2,638.03	2,754.12	2,734.01	20.11	136.955				
4,300.00	4,285.87	4,056.01	4,054.84	15.04	14.22	-57.74	-996.39	2,644.79	2,747.93	2,727.33	20.61	133.342				
4,400.00	4,382.95	4,153.46	4,152.05	15.43	14.56	-58.18	-997.22	2,651.54	2,741.91	2,720.80	21.11	129.870				
4,500.00	4,480.03	4,250.91	4,249.26	15.83	14.90	-58.63	-998.06	2,658.30	2,736.06	2,714.44	21.62	126.532				
4,600.00	4,577.11	4,348.36	4,346.48	16.23	15.24	-59.07	-998.90	2,665.05	2,730.39	2,708.25	22.14	123.325				
4,700.00	4,674.18	4,445.81	4,443.69	16.65	15.59	-59.52	-999.73	2,671.80	2,724.88	2,702.22	22.66	120.242				
4,800.00	4,771.26	4,543.25	4,540.90	17.07	15.93	-59.97	-1,000.57	2,678.56	2,719.55	2,696.36	23.19	117.280				
4,900.00	4,868.34	4,640.70	4,638.11	17.49	16.28	-60.42	-1,001.41	2,685.31	2,714.40	2,690.68	23.72	114.434				
5,000.00	4,965.42	4,738.15	4,735.32	17.92	16.62	-60.87	-1,002.24	2,692.06	2,709.42	2,685.16	24.26	111.698				

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 Tatanka Fed Com 602H
Project:	Lea County, NM (NAD83)	TVD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 602H	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		
5,100.00	5,062.50	4,835.60	4,832.53	18.36	16.97	-61.32	-1,003.08	2,698.82	2,704.61	2,679.82	24.80	109.068		
5,200.00	5,159.57	4,933.05	4,929.74	18.80	17.32	-61.78	-1,003.92	2,705.57	2,699.99	2,674.65	25.34	106.539		
5,300.00	5,256.65	5,030.50	5,026.95	19.25	17.67	-62.23	-1,004.75	2,712.33	2,695.54	2,669.65	25.89	104.107		
5,400.00	5,353.73	5,127.95	5,124.16	19.70	18.02	-62.69	-1,005.59	2,719.08	2,691.28	2,664.83	26.45	101.768		
5,500.00	5,450.81	5,225.40	5,221.37	20.15	18.37	-63.15	-1,006.43	2,725.83	2,687.19	2,660.19	27.00	99.518		
5,600.00	5,547.89	5,322.84	5,318.58	20.61	18.72	-63.61	-1,007.27	2,732.59	2,683.29	2,655.73	27.56	97.353		
5,700.00	5,644.96	5,420.29	5,415.80	21.07	19.07	-64.07	-1,008.10	2,739.34	2,679.57	2,651.44	28.13	95.268		
5,800.00	5,742.04	5,517.74	5,513.01	21.54	19.42	-64.53	-1,008.94	2,746.10	2,676.03	2,647.34	28.69	93.262		
5,900.00	5,839.12	5,615.19	5,610.22	22.00	19.77	-65.00	-1,009.78	2,752.85	2,672.68	2,643.41	29.26	91.329		
6,000.00	5,936.20	5,712.64	5,707.43	22.47	20.13	-65.46	-1,010.61	2,759.60	2,669.51	2,639.67	29.84	89.468		
6,100.00	6,033.28	5,810.09	5,804.64	22.94	20.48	-65.93	-1,011.45	2,766.36	2,666.52	2,636.11	30.41	87.674		
6,200.00	6,130.35	5,907.54	5,901.85	23.42	20.83	-66.39	-1,012.29	2,773.11	2,663.73	2,632.73	30.99	85.945		
6,300.00	6,227.43	6,004.99	5,999.06	23.90	21.19	-66.86	-1,013.12	2,779.86	2,661.11	2,629.54	31.58	84.278		
6,400.00	6,324.51	6,102.44	6,096.27	24.38	21.54	-67.33	-1,013.96	2,786.62	2,658.69	2,626.53	32.16	82.671		
6,500.00	6,421.59	6,199.88	6,193.48	24.86	21.90	-67.80	-1,014.80	2,793.37	2,656.45	2,623.70	32.75	81.121		
6,600.00	6,518.67	6,297.33	6,290.69	25.34	22.25	-68.27	-1,015.63	2,800.13	2,654.40	2,621.06	33.34	79.625		
6,700.00	6,615.75	6,394.78	6,387.90	25.83	22.61	-68.74	-1,016.47	2,806.88	2,652.54	2,618.61	33.93	78.181		
6,800.00	6,712.82	6,492.23	6,485.12	26.31	22.96	-69.21	-1,017.31	2,813.63	2,650.87	2,616.34	34.52	76.787		
6,900.00	6,809.90	6,589.68	6,582.33	26.80	23.32	-69.68	-1,018.14	2,820.39	2,649.38	2,614.26	35.12	75.442		
7,000.00	6,906.98	6,746.59	6,738.91	27.29	23.69	-70.45	-1,019.37	2,830.31	2,647.79	2,611.92	35.87	73.811		
7,100.00	7,004.06	6,969.20	6,961.46	27.78	24.08	-71.54	-1,019.90	2,834.57	2,641.21	2,604.46	36.75	71.866		
7,200.00	7,101.14	7,066.28	7,058.54	28.28	25.02	-72.02	-1,019.90	2,834.57	2,633.50	2,596.15	37.35	70.507		
7,300.00	7,198.21	7,163.36	7,155.61	28.77	25.36	-72.51	-1,019.90	2,834.57	2,625.99	2,588.04	37.95	69.193		
7,400.00	7,295.29	7,260.44	7,252.69	29.26	25.70	-72.99	-1,019.90	2,834.57	2,618.68	2,580.13	38.55	67.922		
7,500.00	7,392.37	7,357.51	7,349.77	29.76	26.04	-73.48	-1,019.90	2,834.57	2,611.57	2,572.41	39.16	66.692		
7,600.00	7,489.45	7,454.59	7,446.85	30.26	26.38	-73.98	-1,019.90	2,834.57	2,604.66	2,564.90	39.76	65.502		
7,700.00	7,586.53	7,551.67	7,543.93	30.76	26.72	-74.47	-1,019.90	2,834.57	2,597.96	2,557.59	40.37	64.350		
7,800.00	7,683.60	7,648.75	7,641.00	31.26	27.06	-74.97	-1,019.90	2,834.57	2,591.46	2,550.48	40.98	63.235		
7,900.00	7,780.68	7,745.83	7,738.08	31.76	27.40	-75.47	-1,019.90	2,834.57	2,585.16	2,543.57	41.59	62.156		
8,000.00	7,877.76	7,842.90	7,835.16	32.26	27.74	-75.97	-1,019.90	2,834.57	2,579.08	2,536.87	42.20	61.111		
8,035.67	7,912.38	7,877.53	7,869.78	32.44	27.86	-76.15	-1,019.90	2,834.57	2,576.96	2,534.54	42.42	60.746		
8,100.00	7,974.96	7,940.11	7,932.36	32.76	28.08	-76.41	-1,019.90	2,834.57	2,573.33	2,530.51	42.81	60.106		
8,200.00	8,072.71	8,037.86	8,030.11	33.24	28.43	-76.79	-1,019.90	2,834.57	2,568.33	2,524.92	43.41	59.165		
8,300.00	8,170.98	8,136.13	8,128.38	33.69	28.77	-77.12	-1,019.90	2,834.57	2,564.08	2,520.09	43.99	58.286		
8,400.00	8,269.70	8,234.85	8,227.10	34.13	29.12	-77.41	-1,019.90	2,834.57	2,560.53	2,515.97	44.56	57.467		
8,500.00	8,368.80	8,333.95	8,326.20	34.55	29.47	-77.66	-1,019.90	2,834.57	2,557.62	2,512.52	45.11	56.702		
8,600.00	8,468.22	8,433.37	8,425.62	34.94	29.82	-77.86	-1,019.90	2,834.57	2,555.33	2,509.69	45.64	55.991		
8,700.00	8,567.89	8,533.03	8,525.29	35.31	30.17	-78.01	-1,019.90	2,834.57	2,553.62	2,507.47	46.15	55.329		
8,800.00	8,667.73	8,632.88	8,625.13	35.66	30.52	-78.11	-1,019.90	2,834.57	2,552.48	2,505.82	46.65	54.713		
8,900.00	8,767.69	8,732.83	8,725.09	35.99	30.88	-78.17	-1,019.90	2,834.57	2,551.88	2,504.74	47.13	54.142		
8,961.32	8,829.00	8,794.14	8,786.40	36.17	31.09	87.62	-1,019.90	2,834.57	2,551.78	2,504.36	47.42	53.817		
9,000.00	8,867.68	8,832.83	8,825.08	36.28	31.23	87.62	-1,019.90	2,834.57	2,551.78	2,504.19	47.59	53.620		
9,100.00	8,967.68	8,932.83	8,925.08	36.57	31.58	87.62	-1,019.90	2,834.57	2,551.78	2,503.74	48.04	53.116		
9,200.00	9,067.68	9,032.83	9,025.08	36.86	31.94	87.62	-1,019.90	2,834.57	2,551.78	2,503.28	48.49	52.621		
9,300.00	9,167.68	9,132.83	9,125.08	37.16	32.29	87.62	-1,019.90	2,834.57	2,551.78	2,502.83	48.95	52.134		
9,400.00	9,267.68	9,232.83	9,225.08	37.45	32.64	87.62	-1,019.90	2,834.57	2,551.78	2,502.38	49.40	51.654		
9,500.00	9,367.68	9,332.83	9,325.08	37.74	33.00	87.62	-1,019.90	2,834.57	2,551.78	2,501.92	49.86	51.182		
9,600.00	9,467.68	9,432.83	9,425.08	38.04	33.35	87.62	-1,019.90	2,834.57	2,551.78	2,501.46	50.31	50.718		
9,700.00	9,567.68	9,532.83	9,525.08	38.33	33.70	87.62	-1,019.90	2,834.57	2,551.78	2,501.01	50.77	50.261		
9,800.00	9,667.68	9,632.83	9,625.08	38.63	34.06	87.62	-1,019.90	2,834.57	2,551.78	2,500.55	51.23	49.811		
9,900.00	9,767.68	9,732.83	9,725.08	38.93	34.41	87.62	-1,019.90	2,834.57	2,551.78	2,500.09	51.69	49.369		
10,000.00	9,867.68	9,832.83	9,825.08	39.23	34.77	87.62	-1,019.90	2,834.57	2,551.78	2,499.63	52.15	48.933		

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 Tatanka Fed Com 602H
Project:	Lea County, NM (NAD83)	TVD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 602H	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		
10,100.00	9,967.68	9,932.83	9,925.08	39.53	35.12	87.62	-1,019.90	2,834.57	2,551.78	2,499.17	52.61	48.504		
10,200.00	10,067.68	10,032.83	10,025.08	39.83	35.47	87.62	-1,019.90	2,834.57	2,551.78	2,498.71	53.07	48.082		
10,300.00	10,167.68	10,132.83	10,125.08	40.13	35.83	87.62	-1,019.90	2,834.57	2,551.78	2,498.24	53.53	47.667		
10,400.00	10,267.68	10,232.83	10,225.08	40.43	36.18	87.62	-1,019.90	2,834.57	2,551.78	2,497.78	54.00	47.258		
10,500.00	10,367.68	10,332.83	10,325.08	40.74	36.54	87.62	-1,019.90	2,834.57	2,551.78	2,497.32	54.46	46.855		
10,600.00	10,467.68	10,432.83	10,425.08	41.04	36.89	87.62	-1,019.90	2,834.57	2,551.78	2,496.85	54.93	46.458		
10,700.00	10,567.68	10,532.83	10,525.08	41.35	37.25	87.62	-1,019.90	2,834.57	2,551.78	2,496.38	55.39	46.068		
10,800.00	10,667.68	10,632.83	10,625.08	41.66	37.60	87.62	-1,019.90	2,834.57	2,551.78	2,495.92	55.86	45.683		
10,900.00	10,767.68	10,732.83	10,725.08	41.96	37.95	87.62	-1,019.90	2,834.57	2,551.78	2,495.45	56.33	45.304		
11,000.00	10,867.68	10,832.83	10,825.08	42.27	38.31	87.62	-1,019.90	2,834.57	2,551.78	2,494.98	56.79	44.931		
11,100.00	10,967.68	10,932.83	10,925.08	42.58	38.66	87.62	-1,019.90	2,834.57	2,551.78	2,494.52	57.26	44.563		
11,200.00	11,067.68	11,032.83	11,025.08	42.89	39.02	87.62	-1,019.90	2,834.57	2,551.78	2,494.05	57.73	44.201		
11,300.00	11,167.68	11,132.83	11,125.08	43.20	39.37	87.62	-1,019.90	2,834.57	2,551.78	2,493.58	58.20	43.844		
11,400.00	11,267.68	11,232.83	11,225.08	43.51	39.73	87.62	-1,019.90	2,834.57	2,551.78	2,493.11	58.67	43.493		
11,500.00	11,367.68	11,332.83	11,325.08	43.82	40.08	87.62	-1,019.90	2,834.57	2,551.78	2,492.63	59.14	43.147		
11,576.36	11,444.04	11,417.14	11,409.30	44.06	40.37	87.68	-1,022.77	2,834.60	2,551.70	2,492.19	59.51	42.878		
11,600.00	11,467.68	11,444.33	11,436.28	44.14	40.46	-91.70	-1,026.13	2,834.63	2,551.63	2,492.00	59.63	42.794		
11,650.00	11,517.48	11,501.33	11,492.15	44.33	40.65	-91.57	-1,037.29	2,834.74	2,551.46	2,491.58	59.88	42.606		
11,700.00	11,566.73	11,557.58	11,545.93	44.54	40.83	-91.43	-1,053.70	2,834.90	2,551.30	2,491.14	60.16	42.409		
11,750.00	11,615.04	11,613.04	11,597.13	44.78	41.00	-91.28	-1,074.96	2,835.11	2,551.14	2,490.69	60.45	42.202		
11,800.00	11,662.05	11,667.70	11,645.35	45.04	41.16	-91.12	-1,100.66	2,835.36	2,550.99	2,490.23	60.76	41.985		
11,850.00	11,707.40	11,721.54	11,690.24	45.33	41.31	-90.96	-1,130.35	2,835.65	2,550.85	2,489.77	61.08	41.760		
11,900.00	11,750.75	11,774.56	11,731.52	45.65	41.46	-90.78	-1,163.58	2,835.98	2,550.73	2,489.31	61.42	41.527		
11,950.00	11,791.76	11,826.76	11,769.01	45.98	41.60	-90.60	-1,199.89	2,836.33	2,550.63	2,488.85	61.78	41.287		
12,000.00	11,830.12	11,878.17	11,802.54	46.33	41.75	-90.42	-1,238.83	2,836.71	2,550.56	2,488.41	62.15	41.039		
12,050.00	11,865.55	11,928.81	11,832.03	46.70	41.91	-90.24	-1,279.97	2,837.12	2,550.51	2,487.97	62.54	40.784		
12,100.00	11,897.77	11,978.70	11,857.42	47.09	42.06	-90.06	-1,322.90	2,837.54	2,550.48	2,487.55	62.94	40.524		
12,116.68	11,907.76	11,995.19	11,864.98	47.23	42.12	-89.99	-1,337.55	2,837.68	2,550.48	2,487.41	63.08	40.436 CC		
12,150.00	11,926.54	12,027.88	11,878.71	47.50	42.22	-89.87	-1,367.22	2,837.97	2,550.49	2,487.14	63.35	40.259		
12,200.00	11,951.63	12,076.39	11,895.90	47.92	42.39	-89.69	-1,412.56	2,838.41	2,550.52	2,486.74	63.78	39.990		
12,250.00	11,972.86	12,124.26	11,909.04	48.35	42.55	-89.52	-1,458.57	2,838.87	2,550.57	2,486.36	64.22	39.718		
12,300.00	11,990.07	12,171.53	11,918.21	48.80	42.72	-89.34	-1,504.92	2,839.32	2,550.65	2,485.99	64.66	39.445		
12,350.00	12,003.12	12,218.24	11,933.49	49.25	42.89	-89.17	-1,551.32	2,839.77	2,550.75	2,485.63	65.12	39.172		
12,400.00	12,011.92	12,264.79	11,925.00	49.70	43.06	-89.01	-1,597.83	2,840.23	2,550.86	2,485.29	65.57	38.900		
12,450.00	12,016.39	12,314.57	11,925.00	50.16	43.25	-88.91	-1,647.61	2,840.72	2,550.94	2,484.90	66.05	38.623		
12,476.36	12,017.00	12,340.92	11,925.00	50.40	43.37	-88.89	-1,673.96	2,840.97	2,550.96	2,484.65	66.30	38.475		
12,500.00	12,017.00	12,364.56	11,925.00	50.61	43.46	-88.89	-1,697.60	2,841.21	2,550.96	2,484.43	66.53	38.343		
12,600.00	12,017.00	12,464.56	11,925.00	51.55	43.92	-88.89	-1,797.60	2,842.18	2,550.95	2,483.41	67.54	37.770		
12,700.00	12,017.00	12,564.56	11,925.00	52.52	44.44	-88.89	-1,897.59	2,843.16	2,550.95	2,482.34	68.61	37.178		
12,800.00	12,017.00	12,664.56	11,925.00	53.53	45.00	-88.89	-1,997.59	2,844.14	2,550.95	2,481.20	69.75	36.572		
12,900.00	12,017.00	12,764.56	11,925.00	54.57	45.62	-88.89	-2,097.58	2,845.12	2,550.95	2,480.00	70.95	35.956		
13,000.00	12,017.00	12,864.56	11,925.00	55.63	46.29	-88.89	-2,197.58	2,846.10	2,550.95	2,478.75	72.20	35.333		
13,100.00	12,017.00	12,964.56	11,925.00	56.73	47.01	-88.89	-2,297.57	2,847.08	2,550.95	2,477.44	73.50	34.706		
13,200.00	12,017.00	13,064.56	11,925.00	57.85	47.78	-88.89	-2,397.57	2,848.06	2,550.94	2,476.09	74.85	34.079		
13,300.00	12,017.00	13,164.56	11,925.00	58.99	48.59	-88.89	-2,497.56	2,849.04	2,550.94	2,474.69	76.26	33.452		
13,400.00	12,017.00	13,264.56	11,925.00	60.16	49.44	-88.89	-2,597.56	2,850.02	2,550.94	2,473.24	77.70	32.829		
13,500.00	12,017.00	13,364.56	11,925.00	61.35	50.33	-88.89	-2,697.55	2,851.00	2,550.94	2,471.75	79.19	32.212		
13,600.00	12,017.00	13,464.56	11,925.00	62.57	51.26	-88.89	-2,797.55	2,851.98	2,550.94	2,470.22	80.72	31.602		
13,700.00	12,017.00	13,564.56	11,925.00	63.80	52.22	-88.89	-2,897.54	2,852.96	2,550.94	2,468.65	82.29	31.000		
13,800.00	12,017.00	13,664.56	11,925.00	65.05	53.22	-88.89	-2,997.54	2,853.93	2,550.93	2,467.04	83.89	30.408		
13,900.00	12,017.00	13,764.56	11,925.00	66.32	54.25	-88.89	-3,097.53	2,854.91	2,550.93	2,465.41	85.53	29.826		
14,000.00	12,017.00	13,864.56	11,925.00	67.60	55.31	-88.89	-3,197.53	2,855.89	2,550.93	2,463.74	87.19	29.256		

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 Tatanka Fed Com 602H
Project:	Lea County, NM (NAD83)	TVD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 602H	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	12,017.00	13,964.56	11,925.00	68.90	56.40	-88.89	-3,297.52	2,856.87	2,550.93	2,462.04	88.89	28.697		
14,200.00	12,017.00	14,064.56	11,925.00	70.22	57.51	-88.89	-3,397.52	2,857.85	2,550.93	2,460.31	90.62	28.150		
14,300.00	12,017.00	14,164.56	11,925.00	71.55	58.65	-88.89	-3,497.51	2,858.83	2,550.93	2,458.55	92.37	27.616		
14,400.00	12,017.00	14,264.56	11,925.00	72.89	59.81	-88.89	-3,597.51	2,859.81	2,550.92	2,456.77	94.15	27.094		
14,500.00	12,017.00	14,364.56	11,925.00	74.25	61.00	-88.89	-3,697.51	2,860.79	2,550.92	2,454.97	95.95	26.585		
14,600.00	12,017.00	14,464.56	11,925.00	75.61	62.21	-88.89	-3,797.50	2,861.77	2,550.92	2,453.14	97.78	26.089		
14,700.00	12,017.00	14,564.56	11,925.00	76.99	63.44	-88.89	-3,897.50	2,862.75	2,550.92	2,451.29	99.63	25.605		
14,800.00	12,017.00	14,664.56	11,925.00	78.38	64.68	-88.89	-3,997.49	2,863.73	2,550.92	2,449.43	101.49	25.134		
14,900.00	12,017.00	14,764.56	11,925.00	79.78	65.95	-88.89	-4,097.49	2,864.70	2,550.92	2,447.54	103.38	24.676		
15,000.00	12,017.00	14,864.56	11,925.00	81.18	67.23	-88.89	-4,197.48	2,865.68	2,550.91	2,445.63	105.28	24.230		
15,100.00	12,017.00	14,964.56	11,925.00	82.60	68.53	-88.89	-4,297.48	2,866.66	2,550.91	2,443.71	107.20	23.795		
15,200.00	12,017.00	15,064.56	11,925.00	84.03	69.84	-88.89	-4,397.47	2,867.64	2,550.91	2,441.77	109.14	23.373		
15,300.00	12,017.00	15,164.56	11,925.00	85.46	71.16	-88.89	-4,497.47	2,868.62	2,550.91	2,439.82	111.09	22.962		
15,400.00	12,017.00	15,264.56	11,925.00	86.90	72.50	-88.89	-4,597.46	2,869.60	2,550.91	2,437.85	113.06	22.563		
15,500.00	12,017.00	15,364.56	11,925.00	88.35	73.86	-88.89	-4,697.46	2,870.58	2,550.91	2,435.87	115.04	22.175		
15,600.00	12,017.00	15,464.56	11,925.00	89.80	75.22	-88.89	-4,797.45	2,871.56	2,550.90	2,433.87	117.03	21.797		
15,700.00	12,017.00	15,564.56	11,925.00	91.27	76.60	-88.89	-4,897.45	2,872.54	2,550.90	2,431.87	119.04	21.429		
15,800.00	12,017.00	15,664.56	11,925.00	92.74	77.98	-88.89	-4,997.44	2,873.52	2,550.90	2,429.85	121.06	21.072		
15,900.00	12,017.00	15,764.56	11,925.00	94.21	79.38	-88.89	-5,097.44	2,874.50	2,550.90	2,427.82	123.08	20.725		
16,000.00	12,017.00	15,864.56	11,925.00	95.69	80.78	-88.89	-5,197.43	2,875.47	2,550.90	2,425.77	125.12	20.387		
16,100.00	12,017.00	15,964.56	11,925.00	97.18	82.20	-88.89	-5,297.43	2,876.45	2,550.90	2,423.72	127.17	20.058		
16,200.00	12,017.00	16,064.56	11,925.00	98.67	83.62	-88.89	-5,397.42	2,877.43	2,550.89	2,421.66	129.23	19.739		
16,300.00	12,017.00	16,164.56	11,925.00	100.16	85.06	-88.89	-5,497.42	2,878.41	2,550.89	2,419.59	131.30	19.428		
16,400.00	12,017.00	16,264.56	11,925.00	101.67	86.50	-88.89	-5,597.41	2,879.39	2,550.89	2,417.51	133.38	19.125		
16,500.00	12,017.00	16,364.56	11,925.00	103.17	87.94	-88.89	-5,697.41	2,880.37	2,550.89	2,415.42	135.46	18.831		
16,600.00	12,017.00	16,464.56	11,925.00	104.68	89.40	-88.89	-5,797.40	2,881.35	2,550.89	2,413.33	137.56	18.544		
16,700.00	12,017.00	16,564.56	11,925.00	106.20	90.86	-88.89	-5,897.40	2,882.33	2,550.89	2,411.23	139.66	18.265		
16,800.00	12,017.00	16,664.56	11,925.00	107.71	92.33	-88.89	-5,997.39	2,883.31	2,550.88	2,409.12	141.77	17.993		
16,900.00	12,017.00	16,764.56	11,925.00	109.24	93.80	-88.89	-6,097.39	2,884.29	2,550.88	2,407.00	143.89	17.729		
17,000.00	12,017.00	16,864.56	11,925.00	110.76	95.28	-88.89	-6,197.39	2,885.27	2,550.88	2,404.87	146.01	17.471		
17,100.00	12,017.00	16,964.56	11,925.00	112.29	96.76	-88.89	-6,297.38	2,886.24	2,550.88	2,402.74	148.14	17.220		
17,200.00	12,017.00	17,064.56	11,925.00	113.82	98.25	-88.89	-6,397.38	2,887.22	2,550.88	2,400.61	150.27	16.975		
17,300.00	12,017.00	17,164.56	11,925.00	115.36	99.75	-88.89	-6,497.37	2,888.20	2,550.88	2,398.46	152.41	16.737		
17,400.00	12,017.00	17,264.56	11,925.00	116.90	101.25	-88.89	-6,597.37	2,889.18	2,550.87	2,396.32	154.56	16.504		
17,500.00	12,017.00	17,364.56	11,925.00	118.44	102.75	-88.89	-6,697.36	2,890.16	2,550.87	2,394.16	156.71	16.278		
17,600.00	12,017.00	17,464.56	11,925.00	119.99	104.26	-88.89	-6,797.36	2,891.14	2,550.87	2,392.00	158.87	16.056		
17,700.00	12,017.00	17,564.56	11,925.00	121.53	105.78	-88.89	-6,897.35	2,892.12	2,550.87	2,389.84	161.03	15.841		
17,800.00	12,017.00	17,664.56	11,925.00	123.09	107.29	-88.89	-6,997.35	2,893.10	2,550.87	2,387.67	163.20	15.631		
17,900.00	12,017.00	17,764.56	11,925.00	124.64	108.82	-88.89	-7,097.34	2,894.08	2,550.87	2,385.50	165.37	15.425		
18,000.00	12,017.00	17,864.56	11,925.00	126.19	110.34	-88.89	-7,197.34	2,895.06	2,550.86	2,383.32	167.54	15.225		
18,100.00	12,017.00	17,964.56	11,925.00	127.75	111.87	-88.89	-7,297.33	2,896.04	2,550.86	2,381.14	169.73	15.029		
18,200.00	12,017.00	18,064.56	11,925.00	129.31	113.40	-88.89	-7,397.33	2,897.01	2,550.86	2,378.95	171.91	14.838		
18,300.00	12,017.00	18,164.56	11,925.00	130.88	114.94	-88.89	-7,497.32	2,897.99	2,550.86	2,376.76	174.10	14.652		
18,400.00	12,017.00	18,264.56	11,925.00	132.44	116.48	-88.89	-7,597.32	2,898.97	2,550.86	2,374.57	176.29	14.470		
18,500.00	12,017.00	18,364.56	11,925.00	134.01	118.02	-88.89	-7,697.31	2,899.95	2,550.86	2,372.37	178.48	14.292		
18,600.00	12,017.00	18,464.56	11,925.00	135.58	119.56	-88.89	-7,797.31	2,900.93	2,550.85	2,370.17	180.68	14.118		
18,700.00	12,017.00	18,564.56	11,925.00	137.15	121.11	-88.89	-7,897.30	2,901.91	2,550.85	2,367.97	182.89	13.948		
18,800.00	12,017.00	18,664.56	11,925.00	138.72	122.66	-88.89	-7,997.30	2,902.89	2,550.85	2,365.76	185.09	13.782		
18,900.00	12,017.00	18,764.56	11,925.00	140.29	124.21	-88.89	-8,097.29	2,903.87	2,550.85	2,363.55	187.30	13.619		
19,000.00	12,017.00	18,864.56	11,925.00	141.87	125.77	-88.89	-8,197.29	2,904.85	2,550.85	2,361.34	189.51	13.460		
19,100.00	12,017.00	18,964.56	11,925.00	143.45	127.33	-88.89	-8,297.28	2,905.83	2,550.85	2,359.12	191.73	13.305		
19,200.00	12,017.00	19,064.56	11,925.00	145.03	128.89	-88.89	-8,397.28	2,906.81	2,550.84	2,356.90	193.94	13.152		

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 Tatanka Fed Com 602H
Project:	Lea County, NM (NAD83)	TVD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 602H	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		
19,300.00	12,017.00	19,164.56	11,925.00	146.61	130.45	-88.89	-8,497.28	2,907.79	2,550.84	2,354.68	196.17	13.004		
19,400.00	12,017.00	19,264.56	11,925.00	148.19	132.02	-88.89	-8,597.27	2,908.76	2,550.84	2,352.45	198.39	12.858		
19,500.00	12,017.00	19,364.56	11,925.00	149.78	133.58	-88.89	-8,697.27	2,909.74	2,550.84	2,350.23	200.61	12.715		
19,600.00	12,017.00	19,464.56	11,925.00	151.36	135.15	-88.89	-8,797.26	2,910.72	2,550.84	2,348.00	202.84	12.575		
19,700.00	12,017.00	19,564.56	11,925.00	152.95	136.72	-88.89	-8,897.26	2,911.70	2,550.84	2,345.76	205.07	12.439		
19,800.00	12,017.00	19,664.56	11,925.00	154.54	138.29	-88.89	-8,997.25	2,912.68	2,550.83	2,343.53	207.31	12.305		
19,900.00	12,017.00	19,764.56	11,925.00	156.13	139.87	-88.89	-9,097.25	2,913.66	2,550.83	2,341.29	209.54	12.173		
20,000.00	12,017.00	19,864.56	11,925.00	157.72	141.44	-88.89	-9,197.24	2,914.64	2,550.83	2,339.05	211.78	12.045		
20,100.00	12,017.00	19,964.56	11,925.00	159.31	143.02	-88.89	-9,297.24	2,915.62	2,550.83	2,336.81	214.02	11.919		
20,200.00	12,017.00	20,064.56	11,925.00	160.90	144.60	-88.89	-9,397.23	2,916.60	2,550.83	2,334.57	216.26	11.795		
20,300.00	12,017.00	20,164.56	11,925.00	162.50	146.18	-88.89	-9,497.23	2,917.58	2,550.83	2,332.33	218.50	11.674		
20,400.00	12,017.00	20,264.56	11,925.00	164.09	147.76	-88.89	-9,597.22	2,918.56	2,550.83	2,330.08	220.75	11.555		
20,500.00	12,017.00	20,364.56	11,925.00	165.69	149.35	-88.89	-9,697.22	2,919.53	2,550.82	2,327.83	222.99	11.439		
20,600.00	12,017.00	20,464.56	11,925.00	167.29	150.93	-88.89	-9,797.21	2,920.51	2,550.82	2,325.58	225.24	11.325		
20,700.00	12,017.00	20,564.56	11,925.00	168.89	152.52	-88.89	-9,897.21	2,921.49	2,550.82	2,323.33	227.49	11.213		
20,800.00	12,017.00	20,664.56	11,925.00	170.49	154.11	-88.89	-9,997.20	2,922.47	2,550.82	2,321.07	229.74	11.103		
20,900.00	12,017.00	20,764.56	11,925.00	172.09	155.70	-88.89	-10,097.20	2,923.45	2,550.82	2,318.82	232.00	10.995		
21,000.00	12,017.00	20,864.56	11,925.00	173.69	157.29	-88.89	-10,197.19	2,924.43	2,550.82	2,316.56	234.25	10.889		
21,100.00	12,017.00	20,964.56	11,925.00	175.29	158.88	-88.89	-10,297.19	2,925.41	2,550.81	2,314.30	236.51	10.785		
21,200.00	12,017.00	21,064.56	11,925.00	176.90	160.48	-88.89	-10,397.18	2,926.39	2,550.81	2,312.04	238.77	10.683		
21,300.00	12,017.00	21,164.56	11,925.00	178.50	162.07	-88.89	-10,497.18	2,927.37	2,550.81	2,309.78	241.03	10.583		
21,400.00	12,017.00	21,264.56	11,925.00	180.11	163.67	-88.89	-10,597.17	2,928.35	2,550.81	2,307.52	243.29	10.485		
21,500.00	12,017.00	21,364.56	11,925.00	181.71	165.26	-88.89	-10,697.17	2,929.33	2,550.81	2,305.25	245.55	10.388		
21,600.00	12,017.00	21,464.56	11,925.00	183.32	166.86	-88.89	-10,797.16	2,930.30	2,550.81	2,302.99	247.82	10.293		
21,700.00	12,017.00	21,564.56	11,925.00	184.93	168.46	-88.89	-10,897.16	2,931.28	2,550.80	2,300.72	250.08	10.200		
21,800.00	12,017.00	21,664.56	11,925.00	186.54	170.06	-88.89	-10,997.16	2,932.26	2,550.80	2,298.45	252.35	10.108		
21,900.00	12,017.00	21,764.56	11,925.00	188.15	171.66	-88.89	-11,097.15	2,933.24	2,550.80	2,296.18	254.62	10.018		
22,000.00	12,017.00	21,864.56	11,925.00	189.76	173.26	-88.89	-11,197.15	2,934.22	2,550.80	2,293.91	256.89	9.930		
22,100.00	12,017.00	21,964.56	11,925.00	191.37	174.86	-88.89	-11,297.14	2,935.20	2,550.80	2,291.64	259.16	9.843		
22,187.30	12,017.00	22,051.86	11,925.00	192.77	176.26	-88.89	-11,384.44	2,936.05	2,550.80	2,289.66	261.14	9.768 ES, SF		

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



Total Directional Services

Anticollision Report



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Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 602H	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													Tatanka Fed Com - Tatanka Fed Com 702H - 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	-0.23	-25.00	25.00							
100.00	100.00	100.00	100.00	0.13	0.13	-90.53	-0.23	-25.00	25.00	24.82	0.18	140.903				
200.00	200.00	200.00	200.00	0.48	0.48	-90.53	-0.23	-25.00	25.00	24.32	0.68	36.530				
300.00	300.00	300.00	300.00	0.84	0.84	-90.53	-0.23	-25.00	25.00	23.81	1.19	20.986				
400.00	400.00	400.00	400.00	1.20	1.20	-90.53	-0.23	-25.00	25.00	23.30	1.70	14.721				
500.00	500.00	500.00	500.00	1.56	1.56	-90.53	-0.23	-25.00	25.00	22.80	2.21	11.337				
600.00	600.00	600.00	600.00	1.92	1.92	-90.53	-0.23	-25.00	25.00	22.29	2.71	9.218				
700.00	700.00	700.00	700.00	2.28	2.28	-90.53	-0.23	-25.00	25.00	21.78	3.22	7.766				
800.00	800.00	800.00	800.00	2.63	2.63	-90.53	-0.23	-25.00	25.00	21.27	3.73	6.710				
900.00	900.00	900.00	900.00	2.99	2.99	-90.53	-0.23	-25.00	25.00	20.77	4.23	5.906				
1,000.00	1,000.00	1,000.00	1,000.00	3.35	3.35	-90.53	-0.23	-25.00	25.00	20.26	4.74	5.274				
1,100.00	1,100.00	1,100.00	1,100.00	3.71	3.71	-90.53	-0.23	-25.00	25.00	19.75	5.25	4.765				
1,200.00	1,200.00	1,200.00	1,200.00	4.07	4.07	-90.53	-0.23	-25.00	25.00	19.25	5.75	4.345				
1,300.00	1,300.00	1,300.00	1,300.00	4.43	4.43	-90.53	-0.23	-25.00	25.00	18.74	6.26	3.993				
1,400.00	1,400.00	1,400.00	1,400.00	4.79	4.79	-90.53	-0.23	-25.00	25.00	18.23	6.77	3.694				
1,500.00	1,500.00	1,500.00	1,500.00	5.14	5.14	-90.53	-0.23	-25.00	25.00	17.73	7.27	3.437				
1,600.00	1,600.00	1,600.00	1,600.00	5.50	5.50	-90.53	-0.23	-25.00	25.00	17.22	7.78	3.213				
1,700.00	1,700.00	1,700.00	1,700.00	5.86	5.86	-90.53	-0.23	-25.00	25.00	16.71	8.29	3.016				
1,800.00	1,800.00	1,800.00	1,800.00	6.22	6.22	-90.53	-0.23	-25.00	25.00	16.21	8.80	2.842				
1,900.00	1,900.00	1,900.00	1,900.00	6.58	6.58	-90.53	-0.23	-25.00	25.00	15.70	9.30	2.688				
2,000.00	2,000.00	2,000.00	2,000.00	6.94	6.94	-90.53	-0.23	-25.00	25.00	15.19	9.81	2.549				
2,100.00	2,100.00	2,100.00	2,100.00	7.29	7.29	-90.53	-0.23	-25.00	25.00	14.68	10.32	2.423				
2,200.00	2,200.00	2,200.00	2,200.00	7.65	7.65	-90.53	-0.23	-25.00	25.00	14.18	10.82	2.310				
2,300.00	2,300.00	2,300.00	2,300.00	8.01	8.01	-90.53	-0.23	-25.00	25.00	13.67	11.33	2.207				
2,400.00	2,400.00	2,400.00	2,400.00	8.37	8.37	-90.53	-0.23	-25.00	25.00	13.16	11.84	2.112				
2,500.00	2,500.00	2,500.00	2,500.00	8.73	8.73	-90.53	-0.23	-25.00	25.00	12.66	12.34	2.025				
2,600.00	2,600.00	2,600.00	2,600.00	9.09	9.09	-90.53	-0.23	-25.00	25.00	12.15	12.85	1.945				
2,700.00	2,700.00	2,700.00	2,700.00	9.45	9.45	-90.53	-0.23	-25.00	25.00	11.64	13.36	1.872				
2,800.00	2,800.00	2,800.00	2,800.00	9.80	9.80	-90.53	-0.23	-25.00	25.00	11.14	13.87	1.803				
2,900.00	2,900.00	2,900.00	2,900.00	10.16	10.16	-90.53	-0.23	-25.00	25.00	10.63	14.37	1.740				
3,000.00	3,000.00	3,000.00	3,000.00	10.52	10.52	-90.53	-0.23	-25.00	25.00	10.12	14.88	1.680				
3,100.00	3,100.00	3,100.00	3,100.00	10.88	10.88	-90.53	-0.23	-25.00	25.00	9.61	15.39	1.625				
3,200.00	3,200.00	3,200.00	3,200.00	11.24	11.24	-90.53	-0.23	-25.00	25.00	9.11	15.89	1.573 CC				
3,300.00	3,299.99	3,299.99	3,299.99	11.58	11.60	106.55	-0.23	-25.00	25.34	8.96	16.39	1.547 ES, SF				
3,400.00	3,399.91	3,399.91	3,399.91	11.90	11.95	114.62	-0.23	-25.00	26.73	9.86	16.87	1.584				
3,500.00	3,499.69	3,499.91	3,499.90	12.23	12.29	123.60	-1.53	-25.09	29.67	12.33	17.34	1.711				
3,600.00	3,599.27	3,600.03	3,599.94	12.56	12.62	130.08	-5.45	-25.35	33.91	16.11	17.79	1.906				
3,700.00	3,698.57	3,700.25	3,699.94	12.89	12.94	134.35	-12.00	-25.79	39.14	20.89	18.25	2.145				
3,800.00	3,797.54	3,800.57	3,799.83	13.22	13.27	136.93	-21.17	-26.40	45.18	26.48	18.70	2.416				
3,900.00	3,896.09	3,900.97	3,899.53	13.57	13.60	138.30	-32.96	-27.19	51.91	32.75	19.15	2.710				
4,000.00	3,994.16	4,001.45	3,998.96	13.92	13.94	138.81	-47.38	-28.15	59.27	39.66	19.61	3.023				
4,100.00	4,091.70	4,101.99	4,098.04	14.28	14.28	138.74	-64.41	-29.29	67.25	47.17	20.07	3.350				
4,125.65	4,116.62	4,127.79	4,123.39	14.37	14.37	138.65	-69.20	-29.61	69.39	49.20	20.19	3.436				
4,200.00	4,188.79	4,202.62	4,196.73	14.65	14.63	137.95	-84.06	-30.60	75.29	54.75	20.55	3.664				
4,300.00	4,285.87	4,302.94	4,294.60	15.04	14.99	135.90	-106.01	-32.07	82.24	61.19	21.05	3.906				
4,400.00	4,382.95	4,402.66	4,391.79	15.43	15.36	133.92	-128.29	-33.55	89.07	67.48	21.59	4.126				
4,500.00	4,480.03	4,502.39	4,488.98	15.83	15.73	132.22	-150.57	-35.04	95.99	73.86	22.13	4.338				
4,600.00	4,577.11	4,602.11	4,586.18	16.23	16.11	130.75	-172.85	-36.53	102.99	80.31	22.68	4.541				
4,700.00	4,674.18	4,701.83	4,683.37	16.65	16.50	129.47	-195.13	-38.02	110.04	86.80	23.24	4.735				
4,800.00	4,771.26	4,801.55	4,780.56	17.07	16.89	128.34	-217.41	-39.51	117.14	93.33	23.81	4.921				
4,900.00	4,868.34	4,901.28	4,877.75	17.49	17.29	127.34	-239.69	-40.99	124.28	99.90	24.38	5.098				
5,000.00	4,965.42	5,001.00	4,974.94	17.92	17.70	126.45	-261.97	-42.48	131.45	106.49	24.96	5.267				

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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		
5,100.00	5,062.50	5,100.72	5,072.13	18.36	18.11	125.65	-284.25	-43.97	138.66	113.11	25.55	5.427		
5,200.00	5,159.57	5,200.44	5,169.32	18.80	18.53	124.93	-306.53	-45.46	145.88	119.74	26.14	5.581		
5,300.00	5,256.65	5,300.17	5,266.51	19.25	18.95	124.28	-328.81	-46.95	153.13	126.39	26.74	5.726		
5,400.00	5,353.73	5,399.89	5,363.70	19.70	19.37	123.69	-351.09	-48.44	160.40	133.05	27.35	5.865		
5,500.00	5,450.81	5,499.61	5,460.89	20.15	19.80	123.15	-373.37	-49.92	167.68	139.72	27.96	5.997		
5,600.00	5,547.89	5,599.34	5,558.08	20.61	20.24	122.66	-395.65	-51.41	174.97	146.40	28.57	6.123		
5,700.00	5,644.96	5,699.06	5,655.27	21.07	20.67	122.20	-417.93	-52.90	182.28	153.08	29.20	6.243		
5,800.00	5,742.04	5,798.78	5,752.46	21.54	21.11	121.78	-440.21	-54.39	189.59	159.77	29.82	6.358		
5,900.00	5,839.12	5,898.50	5,849.65	22.00	21.55	121.39	-462.49	-55.88	196.92	166.47	30.45	6.467		
6,000.00	5,936.20	5,998.23	5,946.84	22.47	22.00	121.03	-484.77	-57.36	204.25	173.17	31.08	6.571		
6,100.00	6,033.28	6,097.95	6,044.03	22.94	22.45	120.69	-507.05	-58.85	211.60	179.88	31.72	6.671		
6,200.00	6,130.35	6,197.67	6,141.23	23.42	22.90	120.38	-529.32	-60.34	218.95	186.58	32.36	6.765		
6,300.00	6,227.43	6,297.39	6,238.42	23.90	23.35	120.08	-551.60	-61.83	226.30	193.29	33.01	6.856		
6,400.00	6,324.51	6,397.12	6,335.61	24.38	23.80	119.81	-573.88	-63.32	233.66	200.01	33.65	6.943		
6,500.00	6,421.59	6,496.84	6,432.80	24.86	24.26	119.55	-596.16	-64.80	241.03	206.72	34.30	7.026		
6,600.00	6,518.67	6,596.56	6,529.99	25.34	24.72	119.31	-618.44	-66.29	248.40	213.44	34.96	7.106		
6,700.00	6,615.75	6,696.28	6,627.18	25.83	25.18	119.08	-640.72	-67.78	255.77	220.16	35.61	7.182		
6,800.00	6,712.82	6,796.01	6,724.37	26.31	25.64	118.86	-663.00	-69.27	263.15	226.88	36.27	7.255		
6,900.00	6,809.90	6,895.73	6,821.56	26.80	26.11	118.66	-685.28	-70.76	270.53	233.60	36.93	7.325		
7,000.00	6,906.98	6,995.45	6,918.75	27.29	26.58	118.46	-707.56	-72.25	277.92	240.32	37.59	7.392		
7,100.00	7,004.06	7,095.18	7,015.94	27.78	27.04	118.28	-729.84	-73.73	285.30	247.04	38.26	7.457		
7,200.00	7,101.14	7,194.90	7,113.13	28.28	27.51	118.11	-752.12	-75.22	292.70	253.77	38.93	7.519		
7,300.00	7,198.21	7,294.62	7,210.32	28.77	27.98	117.94	-774.40	-76.71	300.09	260.49	39.60	7.579		
7,400.00	7,295.29	7,394.34	7,307.51	29.26	28.45	117.78	-796.68	-78.20	307.48	267.22	40.27	7.636		
7,500.00	7,392.37	7,494.07	7,404.70	29.76	28.93	117.63	-818.96	-79.69	314.88	273.94	40.94	7.692		
7,600.00	7,489.45	7,593.79	7,501.89	30.26	29.40	117.49	-841.24	-81.17	322.28	280.67	41.61	7.745		
7,700.00	7,586.53	7,693.51	7,599.08	30.76	29.88	117.35	-863.52	-82.66	329.68	287.40	42.29	7.796		
7,800.00	7,683.60	7,793.23	7,696.28	31.26	30.35	117.22	-885.80	-84.15	337.09	294.12	42.97	7.845		
7,900.00	7,780.68	7,892.96	7,793.47	31.76	30.83	117.10	-908.08	-85.64	344.49	300.85	43.64	7.893		
8,000.00	7,877.76	7,992.68	7,890.66	32.26	31.31	116.98	-930.36	-87.13	351.90	307.57	44.32	7.939		
8,035.67	7,912.38	8,028.25	7,925.32	32.44	31.48	116.94	-938.30	-87.66	354.54	309.97	44.57	7.955		
8,100.00	7,974.96	8,092.34	7,987.78	32.76	31.79	116.85	-952.62	-88.61	359.06	314.06	45.01	7.978		
8,200.00	8,072.71	8,190.65	8,083.90	33.24	32.25	116.63	-973.22	-89.99	365.36	319.69	45.67	8.000		
8,300.00	8,170.98	8,289.03	8,180.59	33.69	32.70	116.44	-991.36	-91.20	370.89	324.58	46.31	8.009		
8,400.00	8,269.70	8,387.48	8,277.77	34.13	33.12	116.27	-1,007.01	-92.25	375.65	328.73	46.92	8.006		
8,500.00	8,368.80	8,485.98	8,375.38	34.55	33.53	116.14	-1,020.17	-93.13	379.64	332.14	47.50	7.992		
8,600.00	8,468.22	8,584.53	8,473.35	34.94	33.92	116.02	-1,030.82	-93.84	382.84	334.79	48.05	7.967		
8,700.00	8,567.89	8,683.12	8,571.60	35.31	34.29	115.93	-1,038.95	-94.38	385.26	336.69	48.58	7.931		
8,800.00	8,667.73	8,781.73	8,670.05	35.66	34.64	115.85	-1,044.54	-94.75	386.90	337.83	49.07	7.884		
8,900.00	8,767.69	8,880.37	8,768.64	35.99	34.97	115.80	-1,047.60	-94.96	387.75	338.21	49.54	7.827		
8,961.32	8,829.00	8,940.86	8,829.12	36.17	35.16	-78.43	-1,048.22	-95.00	387.88	338.07	49.81	7.788		
8,978.12	8,845.80	8,957.54	8,845.80	36.22	35.21	-78.43	-1,048.23	-95.00	387.88	338.00	49.88	7.777		
9,000.00	8,867.68	8,979.42	8,867.68	36.28	35.28	-78.43	-1,048.23	-95.00	387.88	337.91	49.97	7.762		
9,100.00	8,967.68	9,079.42	8,967.68	36.57	35.57	-78.43	-1,048.23	-95.00	387.88	337.49	50.39	7.698		
9,200.00	9,067.68	9,179.42	9,067.68	36.86	35.87	-78.43	-1,048.23	-95.00	387.88	337.07	50.81	7.634		
9,300.00	9,167.68	9,279.42	9,167.68	37.16	36.17	-78.43	-1,048.23	-95.00	387.88	336.64	51.23	7.571		
9,400.00	9,267.68	9,379.42	9,267.68	37.45	36.47	-78.43	-1,048.23	-95.00	387.88	336.22	51.66	7.509		
9,500.00	9,367.68	9,479.42	9,367.68	37.74	36.77	-78.43	-1,048.23	-95.00	387.88	335.79	52.08	7.447		
9,600.00	9,467.68	9,579.42	9,467.68	38.04	37.08	-78.43	-1,048.23	-95.00	387.88	335.37	52.51	7.387		
9,700.00	9,567.68	9,679.42	9,567.68	38.33	37.38	-78.43	-1,048.23	-95.00	387.88	334.94	52.94	7.327		
9,800.00	9,667.68	9,779.42	9,667.68	38.63	37.69	-78.43	-1,048.23	-95.00	387.88	334.51	53.37	7.268		
9,900.00	9,767.68	9,879.42	9,767.68	38.93	37.99	-78.43	-1,048.23	-95.00	387.88	334.08	53.80	7.210		

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 Tatanka Fed Com 602H
Project:	Lea County, NM (NAD83)	TVD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 602H	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		
10,000.00	9,867.68	9,979.42	9,867.68	39.23	38.30	-78.43	-1,048.23	-95.00	387.88	333.64	54.23	7.152		
10,100.00	9,967.68	10,079.42	9,967.68	39.53	38.61	-78.43	-1,048.23	-95.00	387.88	333.21	54.67	7.095		
10,200.00	10,067.68	10,179.42	10,067.68	39.83	38.92	-78.43	-1,048.23	-95.00	387.88	332.78	55.10	7.039		
10,300.00	10,167.68	10,279.42	10,167.68	40.13	39.22	-78.43	-1,048.23	-95.00	387.88	332.34	55.54	6.984		
10,400.00	10,267.68	10,379.42	10,267.68	40.43	39.53	-78.43	-1,048.23	-95.00	387.88	331.90	55.97	6.930		
10,500.00	10,367.68	10,479.42	10,367.68	40.74	39.85	-78.43	-1,048.23	-95.00	387.88	331.46	56.41	6.876		
10,600.00	10,467.68	10,579.42	10,467.68	41.04	40.16	-78.43	-1,048.23	-95.00	387.88	331.02	56.85	6.822		
10,700.00	10,567.68	10,679.42	10,567.68	41.35	40.47	-78.43	-1,048.23	-95.00	387.88	330.58	57.29	6.770		
10,800.00	10,667.68	10,779.42	10,667.68	41.66	40.78	-78.43	-1,048.23	-95.00	387.88	330.14	57.74	6.718		
10,900.00	10,767.68	10,879.42	10,767.68	41.96	41.10	-78.43	-1,048.23	-95.00	387.88	329.70	58.18	6.667		
11,000.00	10,867.68	10,979.42	10,867.68	42.27	41.41	-78.43	-1,048.23	-95.00	387.88	329.25	58.62	6.617		
11,100.00	10,967.68	11,079.42	10,967.68	42.58	41.73	-78.43	-1,048.23	-95.00	387.88	328.81	59.07	6.567		
11,200.00	11,067.68	11,179.42	11,067.68	42.89	42.04	-78.43	-1,048.23	-95.00	387.88	328.36	59.51	6.517		
11,300.00	11,167.68	11,279.42	11,167.68	43.20	42.36	-78.43	-1,048.23	-95.00	387.88	327.92	59.96	6.469		
11,400.00	11,267.68	11,379.42	11,267.68	43.51	42.68	-78.43	-1,048.23	-95.00	387.88	327.47	60.41	6.421		
11,500.00	11,367.68	11,479.42	11,367.68	43.82	43.00	-78.43	-1,048.23	-95.00	387.88	327.02	60.86	6.374		
11,576.36	11,444.04	11,555.77	11,444.04	44.06	43.24	-78.43	-1,048.23	-95.00	387.88	326.68	61.20	6.338		
11,600.00	11,467.68	11,579.41	11,467.68	44.14	43.31	102.19	-1,048.23	-95.00	387.98	326.67	61.31	6.329		
11,650.00	11,517.48	11,629.22	11,517.48	44.33	43.47	102.71	-1,048.23	-95.00	388.90	327.37	61.52	6.321		
11,700.00	11,566.73	11,678.46	11,566.73	44.54	43.63	103.72	-1,048.23	-95.00	390.88	329.16	61.73	6.333		
11,750.00	11,615.04	11,736.78	11,624.97	44.78	43.84	105.23	-1,050.77	-94.98	393.63	331.65	61.98	6.351		
11,800.00	11,662.05	11,797.51	11,685.01	45.04	44.08	106.64	-1,059.68	-94.89	396.40	334.14	62.27	6.366		
11,850.00	11,707.40	11,859.73	11,745.20	45.33	44.38	107.92	-1,075.34	-94.74	399.10	336.55	62.55	6.380		
11,900.00	11,750.75	11,923.38	11,804.63	45.65	44.72	109.03	-1,098.01	-94.52	401.60	338.78	62.82	6.393		
11,950.00	11,791.76	11,988.30	11,862.29	45.98	45.10	109.97	-1,127.78	-94.23	403.82	340.75	63.07	6.402		
12,000.00	11,830.12	12,054.33	11,917.10	46.33	45.52	110.72	-1,164.54	-93.87	405.65	342.35	63.31	6.408		
12,050.00	11,865.55	12,121.24	11,967.94	46.70	45.98	111.26	-1,207.96	-93.44	407.02	343.49	63.54	6.406		
12,100.00	11,897.77	12,188.75	12,013.77	47.09	46.48	111.59	-1,257.49	-92.96	407.87	344.08	63.79	6.394		
12,150.00	11,926.54	12,256.57	12,053.62	47.50	47.01	111.70	-1,312.31	-92.43	408.16	344.06	64.10	6.368		
12,200.00	11,951.63	12,324.39	12,086.72	47.92	47.57	111.58	-1,371.46	-91.85	407.87	343.38	64.49	6.325		
12,250.00	11,972.86	12,391.90	12,112.50	48.35	48.13	111.25	-1,433.80	-91.25	407.02	342.03	64.99	6.263		
12,300.00	11,990.07	12,458.79	12,130.64	48.80	48.71	110.70	-1,498.15	-90.62	405.64	340.02	65.63	6.181		
12,350.00	12,003.12	12,524.80	12,141.07	49.25	49.29	109.95	-1,563.29	-89.98	403.81	337.41	66.40	6.082		
12,400.00	12,011.92	12,588.11	12,144.00	49.70	49.85	109.04	-1,626.50	-89.37	401.60	334.32	67.28	5.969		
12,450.00	12,016.39	12,637.89	12,144.00	50.16	50.29	108.58	-1,676.28	-88.88	400.15	332.09	68.06	5.879		
12,476.24	12,017.00	12,664.12	12,144.00	50.40	50.53	108.51	-1,702.50	-88.63	399.96	331.57	68.40	5.848		
12,476.36	12,017.00	12,664.24	12,144.00	50.40	50.53	108.51	-1,702.62	-88.63	399.96	331.56	68.40	5.847		
12,500.00	12,017.00	12,687.88	12,144.00	50.61	50.74	108.51	-1,726.27	-88.40	399.97	331.28	68.68	5.823		
12,600.00	12,017.00	12,787.88	12,144.00	51.55	51.68	108.51	-1,826.26	-87.42	399.97	330.06	69.92	5.721		
12,700.00	12,017.00	12,887.88	12,144.00	52.52	52.65	108.51	-1,926.26	-86.45	399.98	328.78	71.20	5.618		
12,800.00	12,017.00	12,987.88	12,144.00	53.53	53.65	108.51	-2,026.25	-85.48	399.99	327.46	72.52	5.515		
12,900.00	12,017.00	13,087.88	12,144.00	54.57	54.69	108.51	-2,126.25	-84.50	399.99	326.10	73.89	5.413		
13,000.00	12,017.00	13,187.88	12,144.00	55.63	55.75	108.51	-2,226.24	-83.53	400.00	324.70	75.30	5.312		
13,100.00	12,017.00	13,287.88	12,144.00	56.73	56.84	108.51	-2,326.24	-82.55	400.01	323.26	76.74	5.212		
13,200.00	12,017.00	13,387.88	12,144.00	57.85	57.96	108.51	-2,426.23	-81.58	400.01	321.79	78.22	5.114		
13,300.00	12,017.00	13,487.88	12,144.00	58.99	59.10	108.51	-2,526.23	-80.61	400.02	320.29	79.73	5.017		
13,400.00	12,017.00	13,587.88	12,144.00	60.16	60.27	108.51	-2,626.22	-79.63	400.03	318.75	81.28	4.922		
13,500.00	12,017.00	13,687.88	12,144.00	61.35	61.46	108.51	-2,726.22	-78.66	400.03	317.18	82.85	4.828		
13,600.00	12,017.00	13,787.88	12,144.00	62.57	62.67	108.51	-2,826.21	-77.69	400.04	315.59	84.45	4.737		
13,700.00	12,017.00	13,887.88	12,144.00	63.80	63.90	108.51	-2,926.21	-76.71	400.04	313.97	86.08	4.647		
13,800.00	12,017.00	13,987.88	12,144.00	65.05	65.15	108.51	-3,026.20	-75.74	400.05	312.32	87.73	4.560		
13,900.00	12,017.00	14,087.88	12,144.00	66.32	66.42	108.51	-3,126.20	-74.77	400.06	310.66	89.40	4.475		

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 Tatanka Fed Com 602H
Project:	Lea County, NM (NAD83)	TVD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 602H	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													Tatanka Fed Com - Tatanka Fed Com 702H - 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						
14,000.00	12,017.00	14,187.88	12,144.00	67.60	67.70	108.51	-3,226.19	-73.79	400.06	308.97	91.10	4.392						
14,100.00	12,017.00	14,287.88	12,144.00	68.90	69.00	108.51	-3,326.19	-72.82	400.07	307.26	92.81	4.310						
14,200.00	12,017.00	14,387.88	12,144.00	70.22	70.31	108.51	-3,426.19	-71.84	400.08	305.53	94.55	4.231						
14,300.00	12,017.00	14,487.88	12,144.00	71.55	71.64	108.51	-3,526.18	-70.87	400.08	303.78	96.30	4.154						
14,400.00	12,017.00	14,587.88	12,144.00	72.89	72.98	108.51	-3,626.18	-69.90	400.09	302.02	98.07	4.080						
14,500.00	12,017.00	14,687.88	12,144.00	74.25	74.33	108.51	-3,726.17	-68.92	400.10	300.24	99.86	4.007						
14,600.00	12,017.00	14,787.88	12,144.00	75.61	75.70	108.51	-3,826.17	-67.95	400.10	298.45	101.66	3.936						
14,700.00	12,017.00	14,887.88	12,144.00	76.99	77.08	108.51	-3,926.16	-66.98	400.11	296.64	103.47	3.867						
14,800.00	12,017.00	14,987.88	12,144.00	78.38	78.46	108.51	-4,026.16	-66.00	400.12	294.82	105.30	3.800						
14,900.00	12,017.00	15,087.88	12,144.00	79.78	79.86	108.51	-4,126.15	-65.03	400.12	292.98	107.14	3.735						
15,000.00	12,017.00	15,187.88	12,144.00	81.18	81.27	108.51	-4,226.15	-64.05	400.13	291.14	108.99	3.671						
15,100.00	12,017.00	15,287.88	12,144.00	82.60	82.68	108.51	-4,326.14	-63.08	400.14	289.28	110.86	3.610						
15,200.00	12,017.00	15,387.88	12,144.00	84.03	84.11	108.50	-4,426.14	-62.11	400.14	287.42	112.73	3.550						
15,300.00	12,017.00	15,487.88	12,144.00	85.46	85.54	108.50	-4,526.13	-61.13	400.15	285.54	114.61	3.491						
15,400.00	12,017.00	15,587.88	12,144.00	86.90	86.98	108.50	-4,626.13	-60.16	400.16	283.65	116.50	3.435						
15,500.00	12,017.00	15,687.88	12,144.00	88.35	88.43	108.50	-4,726.12	-59.19	400.16	281.76	118.41	3.380						
15,600.00	12,017.00	15,787.88	12,144.00	89.80	89.88	108.50	-4,826.12	-58.21	400.17	279.86	120.31	3.326						
15,700.00	12,017.00	15,887.88	12,144.00	91.27	91.34	108.50	-4,926.11	-57.24	400.18	277.95	122.23	3.274						
15,800.00	12,017.00	15,987.88	12,144.00	92.74	92.81	108.50	-5,026.11	-56.26	400.18	276.03	124.15	3.223						
15,900.00	12,017.00	16,087.88	12,144.00	94.21	94.28	108.50	-5,126.10	-55.29	400.19	274.11	126.08	3.174						
16,000.00	12,017.00	16,187.88	12,144.00	95.69	95.76	108.50	-5,226.10	-54.32	400.20	272.18	128.02	3.126						
16,100.00	12,017.00	16,287.88	12,144.00	97.18	97.25	108.50	-5,326.10	-53.34	400.20	270.24	129.96	3.079						
16,200.00	12,017.00	16,387.88	12,144.00	98.67	98.74	108.50	-5,426.09	-52.37	400.21	268.30	131.91	3.034						
16,300.00	12,017.00	16,487.89	12,144.00	100.16	100.23	108.50	-5,526.09	-51.40	400.22	266.35	133.87	2.990						
16,400.00	12,017.00	16,587.89	12,144.00	101.67	101.73	108.50	-5,626.08	-50.42	400.22	264.40	135.82	2.947						
16,500.00	12,017.00	16,687.89	12,144.00	103.17	103.24	108.50	-5,726.08	-49.45	400.23	262.44	137.79	2.905						
16,600.00	12,017.00	16,787.89	12,144.00	104.68	104.75	108.50	-5,826.07	-48.47	400.24	260.48	139.75	2.864						
16,700.00	12,017.00	16,887.89	12,144.00	106.20	106.26	108.50	-5,926.07	-47.50	400.24	258.52	141.72	2.824						
16,800.00	12,017.00	16,987.89	12,144.00	107.71	107.78	108.50	-6,026.06	-46.53	400.25	256.55	143.70	2.785						
16,900.00	12,017.00	17,087.89	12,144.00	109.24	109.30	108.50	-6,126.06	-45.55	400.26	254.58	145.68	2.748						
17,000.00	12,017.00	17,187.89	12,144.00	110.76	110.83	108.50	-6,226.05	-44.58	400.26	252.61	147.66	2.711						
17,100.00	12,017.00	17,287.89	12,144.00	112.29	112.35	108.50	-6,326.05	-43.61	400.27	250.63	149.64	2.675						
17,200.00	12,017.00	17,387.89	12,144.00	113.82	113.89	108.50	-6,426.04	-42.63	400.28	248.65	151.63	2.640						
17,300.00	12,017.00	17,487.89	12,144.00	115.36	115.42	108.50	-6,526.04	-41.66	400.28	246.67	153.62	2.606						
17,400.00	12,017.00	17,587.89	12,144.00	116.90	116.96	108.50	-6,626.03	-40.68	400.29	244.68	155.61	2.572						
17,500.00	12,017.00	17,687.89	12,144.00	118.44	118.50	108.50	-6,726.03	-39.71	400.30	242.70	157.60	2.540						
17,600.00	12,017.00	17,787.89	12,144.00	119.99	120.05	108.50	-6,826.02	-38.74	400.30	240.71	159.60	2.508						
17,700.00	12,017.00	17,887.89	12,144.00	121.53	121.59	108.50	-6,926.02	-37.76	400.31	238.72	161.59	2.477						
17,800.00	12,017.00	17,987.89	12,144.00	123.09	123.14	108.50	-7,026.01	-36.79	400.32	236.72	163.59	2.447						
17,900.00	12,017.00	18,087.89	12,144.00	124.64	124.70	108.50	-7,126.01	-35.82	400.32	234.73	165.59	2.418						
18,000.00	12,017.00	18,187.89	12,144.00	126.19	126.25	108.50	-7,226.01	-34.84	400.33	232.74	167.59	2.389						
18,100.00	12,017.00	18,287.89	12,144.00	127.75	127.81	108.50	-7,326.00	-33.87	400.34	230.74	169.60	2.361						
18,200.00	12,017.00	18,387.89	12,144.00	129.31	129.37	108.50	-7,426.00	-32.89	400.34	228.75	171.60	2.333						
18,300.00	12,017.00	18,487.89	12,144.00	130.88	130.93	108.49	-7,525.99	-31.92	400.35	226.75	173.60	2.306						
18,400.00	12,017.00	18,587.89	12,144.00	132.44	132.50	108.49	-7,625.99	-30.95	400.36	224.75	175.61	2.280						
18,500.00	12,017.00	18,687.89	12,144.00	134.01	134.06	108.49	-7,725.98	-29.97	400.36	222.75	177.61	2.254						
18,600.00	12,017.00	18,787.89	12,144.00	135.58	135.63	108.49	-7,825.98	-29.00	400.37	220.76	179.62	2.229						
18,700.00	12,017.00	18,887.89	12,144.00	137.15	137.20	108.49	-7,925.97	-28.03	400.38	218.76	181.62	2.204						
18,800.00	12,017.00	18,987.89	12,144.00	138.72	138.77	108.49	-8,025.97	-27.05	400.38	216.76	183.63	2.180						
18,900.00	12,017.00	19,087.89	12,144.00	140.29	140.35	108.49	-8,125.96	-26.08	400.39	214.76	185.63	2.157						
19,000.00	12,017.00	19,187.89	12,144.00	141.87	141.92	108.49	-8,225.96	-25.10	400.40	212.76	187.63	2.134						
19,100.00	12,017.00	19,287.89	12,144.00	143.45	143.50	108.49	-8,325.95	-24.13	400.40	210.77	189.64	2.111						

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 Tatanka Fed Com 602H
Project:	Lea County, NM (NAD83)	TVD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 602H	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													Tatanka Fed Com - Tatanka Fed Com 702H - 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					
19,200.00	12,017.00	19,387.89	12,144.00	145.03	145.08	108.49	-8,425.95	-23.16	400.41	208.77	191.64	2.089					
19,300.00	12,017.00	19,487.89	12,144.00	146.61	146.66	108.49	-8,525.94	-22.18	400.42	206.77	193.65	2.068					
19,400.00	12,017.00	19,587.89	12,144.00	148.19	148.24	108.49	-8,625.94	-21.21	400.42	204.78	195.65	2.047					
19,500.00	12,017.00	19,687.89	12,144.00	149.78	149.83	108.49	-8,725.93	-20.24	400.43	202.78	197.65	2.026					
19,600.00	12,017.00	19,787.89	12,144.00	151.36	151.41	108.49	-8,825.93	-19.26	400.44	200.79	199.65	2.006					
19,700.00	12,017.00	19,887.89	12,144.00	152.95	153.00	108.49	-8,925.92	-18.29	400.44	198.79	201.65	1.986					
19,800.00	12,017.00	19,987.89	12,144.00	154.54	154.59	108.49	-9,025.92	-17.31	400.45	196.80	203.65	1.966					
19,900.00	12,017.00	20,087.89	12,144.00	156.13	156.18	108.49	-9,125.92	-16.34	400.46	194.81	205.65	1.947					
20,000.00	12,017.00	20,187.89	12,144.00	157.72	157.77	108.49	-9,225.91	-15.37	400.46	192.82	207.64	1.929					
20,100.00	12,017.00	20,287.89	12,144.00	159.31	159.36	108.49	-9,325.91	-14.39	400.47	190.83	209.64	1.910					
20,200.00	12,017.00	20,387.89	12,144.00	160.90	160.95	108.49	-9,425.90	-13.42	400.48	188.85	211.63	1.892					
20,300.00	12,017.00	20,487.89	12,144.00	162.50	162.55	108.49	-9,525.90	-12.45	400.48	186.86	213.62	1.875					
20,400.00	12,017.00	20,587.89	12,144.00	164.09	164.14	108.49	-9,625.89	-11.47	400.49	184.88	215.61	1.857					
20,500.00	12,017.00	20,687.89	12,144.00	165.69	165.74	108.49	-9,725.89	-10.50	400.50	182.90	217.60	1.841					
20,600.00	12,017.00	20,787.89	12,144.00	167.29	167.34	108.49	-9,825.88	-9.52	400.50	180.92	219.58	1.824					
20,700.00	12,017.00	20,887.89	12,144.00	168.89	168.93	108.49	-9,925.88	-8.55	400.51	178.94	221.57	1.808					
20,800.00	12,017.00	20,987.89	12,144.00	170.49	170.53	108.49	-10,025.87	-7.58	400.52	176.97	223.55	1.792					
20,900.00	12,017.00	21,087.89	12,144.00	172.09	172.13	108.49	-10,125.87	-6.60	400.52	174.99	225.53	1.776					
21,000.00	12,017.00	21,187.89	12,144.00	173.69	173.74	108.49	-10,225.86	-5.63	400.53	173.02	227.51	1.761					
21,100.00	12,017.00	21,287.89	12,144.00	175.29	175.34	108.49	-10,325.86	-4.66	400.54	171.06	229.48	1.745					
21,200.00	12,017.00	21,387.89	12,144.00	176.90	176.94	108.49	-10,425.85	-3.68	400.54	169.09	231.45	1.731					
21,300.00	12,017.00	21,487.89	12,144.00	178.50	178.55	108.49	-10,525.85	-2.71	400.55	167.13	233.42	1.716					
21,400.00	12,017.00	21,587.89	12,144.00	180.11	180.15	108.49	-10,625.84	-1.73	400.56	165.17	235.39	1.702					
21,500.00	12,017.00	21,687.89	12,144.00	181.71	181.76	108.48	-10,725.84	-0.76	400.56	163.21	237.36	1.688					
21,600.00	12,017.00	21,787.89	12,144.00	183.32	183.36	108.48	-10,825.83	0.21	400.57	161.25	239.32	1.674					
21,700.00	12,017.00	21,887.89	12,144.00	184.93	184.97	108.48	-10,925.83	1.19	400.58	159.30	241.28	1.660					
21,800.00	12,017.00	21,987.89	12,144.00	186.54	186.58	108.48	-11,025.83	2.16	400.58	157.35	243.24	1.647					
21,900.00	12,017.00	22,087.89	12,144.00	188.15	188.19	108.48	-11,125.82	3.13	400.59	155.40	245.19	1.634					
22,000.00	12,017.00	22,187.89	12,144.00	189.76	189.80	108.48	-11,225.82	4.11	400.60	153.46	247.14	1.621					
22,100.00	12,017.00	22,287.89	12,144.00	191.37	191.41	108.48	-11,325.81	5.08	400.60	151.52	249.09	1.608					
22,187.30	12,017.00	22,375.19	12,144.00	192.77	192.68	108.48	-11,413.11	5.93	400.61	149.94	250.67	1.598					



Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well Tatanka Fed Com 602H
Project:	Lea County, NM (NAD83)	TVD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 602H	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													Tatanka Fed Com - Tatanka Fed Com 703H - 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	0.70	0.70	0.00	0.00	89.46	0.47	49.99	49.99							
100.00	100.00	100.70	100.70	0.13	0.13	89.46	0.47	49.99	49.99	49.81		0.18	278.947			
200.00	200.00	200.70	200.70	0.48	0.49	89.46	0.47	49.99	49.99	49.31		0.69	72.857			
300.00	300.00	300.70	300.70	0.84	0.84	89.46	0.47	49.99	49.99	48.80		1.19	41.900			
400.00	400.00	400.70	400.70	1.20	1.20	89.46	0.47	49.99	49.99	48.29		1.70	29.406			
500.00	500.00	500.70	500.70	1.56	1.56	89.46	0.47	49.99	49.99	47.79		2.21	22.651			
600.00	600.00	600.70	600.70	1.92	1.92	89.46	0.47	49.99	49.99	47.28		2.71	18.420			
700.00	700.00	700.70	700.70	2.28	2.28	89.46	0.47	49.99	49.99	46.77		3.22	15.521			
800.00	800.00	800.70	800.70	2.63	2.64	89.46	0.47	49.99	49.99	46.26		3.73	13.410			
900.00	900.00	900.70	900.70	2.99	3.00	89.46	0.47	49.99	49.99	45.76		4.23	11.805			
1,000.00	1,000.00	1,000.70	1,000.70	3.35	3.35	89.46	0.47	49.99	49.99	45.25		4.74	10.543			
1,100.00	1,100.00	1,100.70	1,100.70	3.71	3.71	89.46	0.47	49.99	49.99	44.74		5.25	9.525			
1,200.00	1,200.00	1,200.70	1,200.70	4.07	4.07	89.46	0.47	49.99	49.99	44.24		5.76	8.686			
1,300.00	1,300.00	1,300.70	1,300.70	4.43	4.43	89.46	0.47	49.99	49.99	43.73		6.26	7.983			
1,400.00	1,400.00	1,400.70	1,400.70	4.79	4.79	89.46	0.47	49.99	49.99	43.22		6.77	7.385			
1,500.00	1,500.00	1,500.70	1,500.70	5.14	5.15	89.46	0.47	49.99	49.99	42.72		7.28	6.870			
1,600.00	1,600.00	1,600.70	1,600.70	5.50	5.51	89.46	0.47	49.99	49.99	42.21		7.78	6.423			
1,700.00	1,700.00	1,700.70	1,700.70	5.86	5.86	89.46	0.47	49.99	49.99	41.70		8.29	6.030			
1,800.00	1,800.00	1,800.70	1,800.70	6.22	6.22	89.46	0.47	49.99	49.99	41.19		8.80	5.683			
1,900.00	1,900.00	1,900.70	1,900.70	6.58	6.58	89.46	0.47	49.99	49.99	40.69		9.30	5.373			
2,000.00	2,000.00	2,000.70	2,000.70	6.94	6.94	89.46	0.47	49.99	49.99	40.18		9.81	5.095			
2,100.00	2,100.00	2,100.70	2,100.70	7.29	7.30	89.46	0.47	49.99	49.99	39.67		10.32	4.845			
2,200.00	2,200.00	2,200.70	2,200.70	7.65	7.66	89.46	0.47	49.99	49.99	39.17		10.83	4.618			
2,300.00	2,300.00	2,300.70	2,300.70	8.01	8.01	89.46	0.47	49.99	49.99	38.66		11.33	4.412			
2,400.00	2,400.00	2,400.70	2,400.70	8.37	8.37	89.46	0.47	49.99	49.99	38.15		11.84	4.223			
2,500.00	2,500.00	2,500.70	2,500.70	8.73	8.73	89.46	0.47	49.99	49.99	37.65		12.35	4.049			
2,600.00	2,600.00	2,600.70	2,600.70	9.09	9.09	89.46	0.47	49.99	49.99	37.14		12.85	3.890			
2,700.00	2,700.00	2,700.70	2,700.70	9.45	9.45	89.46	0.47	49.99	49.99	36.63		13.36	3.742			
2,800.00	2,800.00	2,800.70	2,800.70	9.80	9.81	89.46	0.47	49.99	49.99	36.13		13.87	3.605			
2,900.00	2,900.00	2,900.70	2,900.70	10.16	10.17	89.46	0.47	49.99	49.99	35.62		14.37	3.478			
3,000.00	3,000.00	3,000.70	3,000.70	10.52	10.52	89.46	0.47	49.99	49.99	35.11		14.88	3.359			
3,100.00	3,100.00	3,100.70	3,100.70	10.88	10.88	89.46	0.47	49.99	49.99	34.60		15.39	3.249			
3,116.43	3,116.43	3,117.13	3,117.13	10.94	10.94	89.46	0.47	49.99	49.99	34.52		15.47	3.231 CC			
3,200.00	3,200.00	3,200.69	3,200.69	11.24	11.24	89.46	0.47	49.99	49.99	34.10		15.89	3.145 ES			
3,300.00	3,299.99	3,300.00	3,299.99	11.58	11.58	-76.60	-0.55	50.82	50.50	34.13		16.37	3.085			
3,400.00	3,399.91	3,399.05	3,398.96	11.90	11.91	-77.40	-3.55	53.26	52.02	35.20		16.82	3.092			
3,500.00	3,499.69	3,498.18	3,497.88	12.23	12.23	-78.63	-8.56	57.33	54.57	37.30		17.27	3.159			
3,600.00	3,599.27	3,597.26	3,596.54	12.56	12.56	-80.18	-15.55	63.01	58.17	40.44		17.72	3.282			
3,700.00	3,698.57	3,696.26	3,694.87	12.89	12.90	-81.90	-24.51	70.29	62.84	44.66		18.18	3.457			
3,800.00	3,797.54	3,795.18	3,792.77	13.22	13.23	-83.68	-35.45	79.17	68.61	49.97		18.64	3.681			
3,900.00	3,896.09	3,893.99	3,890.17	13.57	13.58	-85.43	-48.32	89.64	75.49	56.38		19.11	3.951			
4,000.00	3,994.16	3,992.67	3,986.99	13.92	13.93	-87.06	-63.13	101.67	83.48	63.89		19.59	4.262			
4,100.00	4,091.70	4,091.21	4,083.15	14.28	14.29	-88.56	-79.86	115.25	92.60	72.51		20.09	4.610			
4,125.65	4,116.62	4,116.46	4,107.70	14.37	14.39	-88.92	-84.45	118.99	95.12	74.90		20.22	4.705			
4,200.00	4,188.79	4,189.61	4,178.57	14.65	14.66	-89.62	-98.47	130.38	102.83	82.23		20.60	4.992			
4,300.00	4,285.87	4,287.81	4,273.16	15.04	15.05	-89.39	-118.94	147.01	114.14	93.03		21.11	5.407			
4,400.00	4,382.95	4,386.84	4,368.10	15.43	15.46	-88.51	-140.84	164.80	126.17	104.52		21.65	5.828			
4,500.00	4,480.03	4,486.10	4,463.23	15.83	15.87	-87.76	-162.81	182.65	138.24	116.03		22.21	6.225			
4,600.00	4,577.11	4,585.35	4,558.36	16.23	16.30	-87.13	-184.78	200.51	150.33	127.55		22.78	6.600			
4,700.00	4,674.18	4,684.61	4,653.49	16.65	16.74	-86.59	-206.76	218.36	162.44	139.08		23.36	6.955			
4,800.00	4,771.26	4,783.86	4,748.62	17.07	17.18	-86.13	-228.73	236.22	174.55	150.61		23.95	7.289			
4,900.00	4,868.34	4,883.11	4,843.75	17.49	17.64	-85.73	-250.71	254.07	186.68	162.14		24.55	7.605			

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 Tatanka Fed Com 602H
Project:	Lea County, NM (NAD83)	TVD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 602H	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	4,965.42	4,982.37	4,938.88	17.92	18.10	-85.38	-272.68	271.93	198.82	173.66	25.15	7.904		
5,100.00	5,062.50	5,081.62	5,034.00	18.36	18.57	-85.07	-294.66	289.78	210.96	185.19	25.77	8.186		
5,200.00	5,159.57	5,180.88	5,129.13	18.80	19.05	-84.79	-316.63	307.64	223.11	196.71	26.39	8.453		
5,300.00	5,256.65	5,280.13	5,224.26	19.25	19.53	-84.54	-338.61	325.49	235.26	208.24	27.02	8.706		
5,400.00	5,353.73	5,379.38	5,319.39	19.70	20.02	-84.32	-360.58	343.34	247.41	219.76	27.66	8.945		
5,500.00	5,450.81	5,478.64	5,414.52	20.15	20.51	-84.11	-382.56	361.20	259.57	231.27	28.30	9.172		
5,600.00	5,547.89	5,577.89	5,509.65	20.61	21.01	-83.93	-404.53	379.05	271.74	242.79	28.95	9.388		
5,700.00	5,644.96	5,677.15	5,604.78	21.07	21.51	-83.76	-426.50	396.91	283.90	254.30	29.60	9.592		
5,800.00	5,742.04	5,776.40	5,699.91	21.54	22.02	-83.60	-448.48	414.76	296.07	265.81	30.26	9.786		
5,900.00	5,839.12	5,875.65	5,795.04	22.00	22.53	-83.46	-470.45	432.62	308.24	277.32	30.92	9.970		
6,000.00	5,936.20	5,974.91	5,890.17	22.47	23.04	-83.33	-492.43	450.47	320.41	288.83	31.58	10.145		
6,100.00	6,033.28	6,074.16	5,985.30	22.94	23.56	-83.21	-514.40	468.32	332.58	300.33	32.25	10.312		
6,200.00	6,130.35	6,173.42	6,080.43	23.42	24.08	-83.09	-536.38	486.18	344.75	311.83	32.92	10.471		
6,300.00	6,227.43	6,272.67	6,175.56	23.90	24.60	-82.99	-558.35	504.03	356.93	323.33	33.60	10.623		
6,400.00	6,324.51	6,371.92	6,270.69	24.38	25.13	-82.89	-580.33	521.89	369.10	334.83	34.28	10.768		
6,500.00	6,421.59	6,471.18	6,365.82	24.86	25.66	-82.79	-602.30	539.74	381.28	346.32	34.96	10.906		
6,600.00	6,518.67	6,570.43	6,460.95	25.34	26.19	-82.71	-624.28	557.60	393.46	357.81	35.65	11.038		
6,700.00	6,615.75	6,669.69	6,556.08	25.83	26.73	-82.63	-646.25	575.45	405.64	369.30	36.33	11.164		
6,800.00	6,712.82	6,768.94	6,651.21	26.31	27.26	-82.55	-668.22	593.30	417.82	380.79	37.02	11.285		
6,900.00	6,809.90	6,868.19	6,746.34	26.80	27.80	-82.48	-690.20	611.16	430.00	392.28	37.72	11.401		
7,000.00	6,906.98	6,967.45	6,841.47	27.29	28.34	-82.41	-712.17	629.01	442.18	403.77	38.41	11.512		
7,100.00	7,004.06	7,066.70	6,936.60	27.78	28.88	-82.34	-734.15	646.87	454.36	415.25	39.11	11.618		
7,200.00	7,101.14	7,165.96	7,031.73	28.28	29.43	-82.28	-756.12	664.72	466.54	426.74	39.81	11.720		
7,300.00	7,198.21	7,265.21	7,126.86	28.77	29.97	-82.22	-778.10	682.58	478.73	438.22	40.51	11.818		
7,400.00	7,295.29	7,364.46	7,221.99	29.26	30.52	-82.17	-800.07	700.43	490.91	449.70	41.21	11.912		
7,500.00	7,392.37	7,463.72	7,317.12	29.76	31.07	-82.11	-822.05	718.28	503.09	461.18	41.91	12.003		
7,600.00	7,489.45	7,562.97	7,412.25	30.26	31.62	-82.06	-844.02	736.14	515.28	472.65	42.62	12.090		
7,700.00	7,586.53	7,662.23	7,507.38	30.76	32.17	-82.01	-866.00	753.99	527.46	484.13	43.33	12.174		
7,800.00	7,683.60	7,761.48	7,602.51	31.26	32.72	-81.97	-887.97	771.85	539.64	495.61	44.04	12.254		
7,900.00	7,780.68	7,860.73	7,697.64	31.76	33.28	-81.92	-909.94	789.70	551.83	507.08	44.75	12.332		
8,000.00	7,877.76	7,965.98	7,798.73	32.26	33.86	-81.95	-932.68	808.17	563.64	518.12	45.52	12.383		
8,035.67	7,912.38	8,004.46	7,835.87	32.44	34.06	-82.01	-940.48	814.51	567.52	521.71	45.80	12.391		
8,100.00	7,974.96	8,073.94	7,903.19	32.76	34.43	-82.25	-953.83	825.36	574.10	527.80	46.30	12.399		
8,200.00	8,072.71	8,182.14	8,008.61	33.24	34.97	-82.59	-972.71	840.70	583.41	536.36	47.05	12.399		
8,300.00	8,170.98	8,290.55	8,114.88	33.69	35.48	-82.88	-989.31	854.18	591.57	543.81	47.76	12.385		
8,400.00	8,269.70	8,399.13	8,221.90	34.13	35.97	-83.14	-1,003.58	865.78	598.58	550.15	48.43	12.358		
8,500.00	8,368.80	8,507.88	8,329.55	34.55	36.43	-83.35	-1,015.49	875.46	604.42	555.36	49.06	12.319		
8,600.00	8,468.22	8,616.75	8,437.72	34.94	36.86	-83.52	-1,025.03	883.21	609.09	559.44	49.65	12.267		
8,700.00	8,567.89	8,725.71	8,546.29	35.31	37.25	-83.66	-1,032.19	889.02	612.57	562.37	50.20	12.203		
8,800.00	8,667.73	8,834.74	8,655.14	35.66	37.62	-83.77	-1,036.93	892.88	614.87	564.17	50.70	12.126		
8,900.00	8,767.69	8,943.80	8,764.16	35.99	37.96	-83.84	-1,039.27	894.78	615.98	564.81	51.17	12.038		
8,961.32	8,829.00	9,009.34	8,829.70	36.17	38.15	81.93	-1,039.53	894.99	616.09	564.66	51.43	11.979		
9,000.00	8,867.68	9,048.03	8,868.38	36.28	38.26	81.93	-1,039.53	894.99	616.09	564.50	51.59	11.943		
9,100.00	8,967.68	9,148.03	8,968.38	36.57	38.54	81.93	-1,039.53	894.99	616.09	564.09	51.99	11.849		
9,200.00	9,067.68	9,248.03	9,068.38	36.86	38.82	81.93	-1,039.53	894.99	616.09	563.68	52.40	11.757		
9,300.00	9,167.68	9,348.03	9,168.38	37.16	39.10	81.93	-1,039.53	894.99	616.09	563.27	52.81	11.665		
9,400.00	9,267.68	9,448.03	9,268.38	37.45	39.38	81.93	-1,039.53	894.99	616.09	562.86	53.23	11.575		
9,500.00	9,367.68	9,548.03	9,368.38	37.74	39.67	81.93	-1,039.53	894.99	616.09	562.45	53.64	11.485		
9,600.00	9,467.68	9,648.03	9,468.38	38.04	39.95	81.93	-1,039.53	894.99	616.09	562.03	54.06	11.397		
9,700.00	9,567.68	9,748.03	9,568.38	38.33	40.24	81.93	-1,039.53	894.99	616.09	561.61	54.48	11.309		
9,800.00	9,667.68	9,848.03	9,668.38	38.63	40.52	81.93	-1,039.53	894.99	616.09	561.19	54.89	11.223		
9,900.00	9,767.68	9,948.03	9,768.38	38.93	40.81	81.93	-1,039.53	894.99	616.09	560.77	55.32	11.138		

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 Tatanka Fed Com 602H
Project:	Lea County, NM (NAD83)	TVD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 602H	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													Tatanka Fed Com - Tatanka Fed Com 703H - 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				
10,000.00	9,867.68	10,048.03	9,868.38	39.23	41.10	81.93	-1,039.53	894.99	616.09	560.35	55.74	11.053					
10,100.00	9,967.68	10,148.03	9,968.38	39.53	41.39	81.93	-1,039.53	894.99	616.09	559.93	56.16	10.970					
10,200.00	10,067.68	10,248.03	10,068.38	39.83	41.69	81.93	-1,039.53	894.99	616.09	559.50	56.59	10.888					
10,300.00	10,167.68	10,348.03	10,168.38	40.13	41.98	81.93	-1,039.53	894.99	616.09	559.08	57.01	10.806					
10,400.00	10,267.68	10,448.03	10,268.38	40.43	42.27	81.93	-1,039.53	894.99	616.09	558.65	57.44	10.726					
10,500.00	10,367.68	10,548.03	10,368.38	40.74	42.57	81.93	-1,039.53	894.99	616.09	558.22	57.87	10.646					
10,600.00	10,467.68	10,648.03	10,468.38	41.04	42.86	81.93	-1,039.53	894.99	616.09	557.79	58.30	10.568					
10,700.00	10,567.68	10,748.03	10,568.38	41.35	43.16	81.93	-1,039.53	894.99	616.09	557.36	58.73	10.490					
10,800.00	10,667.68	10,848.03	10,668.38	41.66	43.46	81.93	-1,039.53	894.99	616.09	556.93	59.16	10.414					
10,900.00	10,767.68	10,948.03	10,768.38	41.96	43.76	81.93	-1,039.53	894.99	616.09	556.49	59.60	10.338					
11,000.00	10,867.68	11,048.03	10,868.38	42.27	44.06	81.93	-1,039.53	894.99	616.09	556.06	60.03	10.263					
11,100.00	10,967.68	11,148.03	10,968.38	42.58	44.36	81.93	-1,039.53	894.99	616.09	555.62	60.47	10.189					
11,200.00	11,067.68	11,248.03	11,068.38	42.89	44.66	81.93	-1,039.53	894.99	616.09	555.19	60.90	10.116					
11,300.00	11,167.68	11,348.03	11,168.38	43.20	44.96	81.93	-1,039.53	894.99	616.09	554.75	61.34	10.044					
11,400.00	11,267.68	11,448.03	11,268.38	43.51	45.26	81.93	-1,039.53	894.99	616.09	554.31	61.78	9.972					
11,500.00	11,367.68	11,548.03	11,368.38	43.82	45.57	81.93	-1,039.53	894.99	616.09	553.87	62.22	9.902					
11,576.36	11,444.04	11,624.38	11,444.74	44.06	45.80	81.93	-1,039.53	894.99	616.09	553.53	62.56	9.848					
11,600.00	11,467.68	11,648.02	11,468.38	44.14	45.87	-97.54	-1,039.53	894.99	616.15	553.48	62.67	9.832					
11,650.00	11,517.48	11,697.82	11,518.18	44.33	46.02	-97.88	-1,039.53	894.99	616.72	553.79	62.93	9.799					
11,700.00	11,566.73	11,747.07	11,567.43	44.54	46.17	-98.53	-1,039.53	894.99	617.96	554.72	63.24	9.771					
11,750.00	11,615.04	11,795.38	11,615.74	44.78	46.32	-99.46	-1,039.53	894.99	620.04	556.45	63.59	9.750					
11,800.00	11,662.05	11,842.39	11,662.75	45.04	46.46	-100.60	-1,039.53	894.99	623.18	559.22	63.97	9.742					
11,850.00	11,707.40	11,887.74	11,708.10	45.33	46.60	-101.87	-1,039.53	894.99	627.69	563.32	64.37	9.752					
11,900.00	11,750.75	11,931.09	11,751.45	45.65	46.74	-103.19	-1,039.53	894.99	633.89	569.11	64.78	9.785					
11,950.00	11,791.76	11,983.38	11,803.72	45.98	46.90	-104.99	-1,040.46	895.00	641.93	576.73	65.20	9.846					
12,000.00	11,830.12	12,049.60	11,869.46	46.33	47.14	-107.26	-1,048.05	895.07	650.91	585.33	65.57	9.927					
12,050.00	11,865.55	12,122.68	11,940.46	46.70	47.46	-109.56	-1,065.15	895.24	660.35	594.51	65.84	10.029					
12,100.00	11,897.77	12,203.85	12,016.05	47.09	47.85	-111.85	-1,094.56	895.53	669.84	603.90	65.94	10.159					
12,150.00	11,926.54	12,294.24	12,094.38	47.50	48.35	-114.05	-1,139.48	895.97	678.82	613.03	65.79	10.318					
12,200.00	11,951.63	12,394.47	12,171.76	47.92	48.97	-116.04	-1,202.97	896.59	686.67	621.31	65.36	10.506					
12,250.00	11,972.86	12,504.09	12,242.33	48.35	49.72	-117.62	-1,286.64	897.41	692.70	628.00	64.70	10.706					
12,300.00	11,990.07	12,621.08	12,298.61	48.80	50.58	-118.59	-1,388.97	898.41	696.31	632.32	63.99	10.881					
12,350.00	12,003.12	12,741.65	12,333.66	49.25	51.53	-118.80	-1,504.09	899.54	697.07	633.55	63.51	10.975					
12,400.00	12,011.92	12,861.03	12,343.90	49.70	52.50	-118.20	-1,622.81	900.70	694.88	631.36	63.52	10.939					
12,450.00	12,016.39	12,904.83	12,344.00	50.16	52.87	-118.13	-1,666.61	901.13	692.78	628.55	64.22	10.787					
12,476.36	12,017.00	12,931.18	12,344.00	50.40	53.09	-118.11	-1,692.95	901.39	692.49	627.97	64.52	10.733					
12,500.00	12,017.00	12,954.82	12,344.00	50.61	53.29	-118.11	-1,716.59	901.62	692.49	627.72	64.77	10.692					
12,600.00	12,017.00	13,054.82	12,344.00	51.55	54.17	-118.11	-1,816.59	902.60	692.49	626.64	65.85	10.516					
12,700.00	12,017.00	13,154.82	12,344.00	52.52	55.08	-118.11	-1,916.59	903.57	692.49	625.50	66.98	10.339					
12,800.00	12,017.00	13,254.82	12,344.00	53.53	56.03	-118.11	-2,016.58	904.55	692.48	624.33	68.16	10.160					
12,900.00	12,017.00	13,354.82	12,344.00	54.57	57.00	-118.11	-2,116.58	905.53	692.48	623.11	69.37	9.982					
13,000.00	12,017.00	13,454.82	12,344.00	55.63	58.01	-118.11	-2,216.57	906.51	692.48	621.85	70.63	9.805					
13,100.00	12,017.00	13,554.82	12,344.00	56.73	59.05	-118.11	-2,316.57	907.49	692.48	620.55	71.92	9.628					
13,200.00	12,017.00	13,654.82	12,344.00	57.85	60.11	-118.11	-2,416.56	908.47	692.48	619.22	73.26	9.453					
13,300.00	12,017.00	13,754.82	12,344.00	58.99	61.20	-118.11	-2,516.56	909.45	692.48	617.86	74.62	9.280					
13,400.00	12,017.00	13,854.82	12,344.00	60.16	62.32	-118.11	-2,616.55	910.43	692.47	616.46	76.02	9.109					
13,500.00	12,017.00	13,954.82	12,344.00	61.35	63.45	-118.11	-2,716.55	911.40	692.47	615.03	77.44	8.942					
13,600.00	12,017.00	14,054.82	12,344.00	62.57	64.61	-118.11	-2,816.54	912.38	692.47	613.57	78.90	8.777					
13,700.00	12,017.00	14,154.82	12,344.00	63.80	65.79	-118.11	-2,916.54	913.36	692.47	612.09	80.38	8.615					
13,800.00	12,017.00	14,254.82	12,344.00	65.05	67.00	-118.11	-3,016.53	914.34	692.47	610.58	81.89	8.456					
13,900.00	12,017.00	14,354.82	12,344.00	66.32	68.21	-118.11	-3,116.53	915.32	692.46	609.04	83.42	8.301					
14,000.00	12,017.00	14,454.82	12,344.00	67.60	69.45	-118.11	-3,216.52	916.30	692.46	607.49	84.97	8.149					

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 Tatanka Fed Com 602H
Project:	Lea County, NM (NAD83)	TVD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 602H	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	12,017.00	14,554.82	12,344.00	68.90	70.71	-118.11	-3,316.52	917.28	692.46	605.91	86.55	8.001		
14,200.00	12,017.00	14,654.82	12,344.00	70.22	71.98	-118.11	-3,416.51	918.25	692.46	604.32	88.14	7.856		
14,300.00	12,017.00	14,754.82	12,344.00	71.55	73.26	-118.11	-3,516.51	919.23	692.46	602.70	89.76	7.715		
14,400.00	12,017.00	14,854.82	12,344.00	72.89	74.56	-118.11	-3,616.50	920.21	692.46	601.07	91.39	7.577		
14,500.00	12,017.00	14,954.82	12,344.00	74.25	75.88	-118.11	-3,716.50	921.19	692.45	599.42	93.03	7.443		
14,600.00	12,017.00	15,054.82	12,344.00	75.61	77.20	-118.11	-3,816.49	922.17	692.45	597.76	94.70	7.312		
14,700.00	12,017.00	15,154.82	12,344.00	76.99	78.54	-118.11	-3,916.49	923.15	692.45	596.08	96.37	7.185		
14,800.00	12,017.00	15,254.82	12,344.00	78.38	79.89	-118.11	-4,016.48	924.13	692.45	594.38	98.07	7.061		
14,900.00	12,017.00	15,354.82	12,344.00	79.78	81.25	-118.11	-4,116.48	925.11	692.45	592.68	99.77	6.940		
15,000.00	12,017.00	15,454.82	12,344.00	81.18	82.63	-118.11	-4,216.48	926.08	692.44	590.96	101.49	6.823		
15,100.00	12,017.00	15,554.82	12,344.00	82.60	84.01	-118.11	-4,316.47	927.06	692.44	589.23	103.22	6.709		
15,200.00	12,017.00	15,654.82	12,344.00	84.03	85.40	-118.11	-4,416.47	928.04	692.44	587.48	104.96	6.597		
15,300.00	12,017.00	15,754.82	12,344.00	85.46	86.80	-118.11	-4,516.46	929.02	692.44	585.73	106.71	6.489		
15,400.00	12,017.00	15,854.82	12,344.00	86.90	88.21	-118.11	-4,616.46	930.00	692.44	583.97	108.47	6.384		
15,500.00	12,017.00	15,954.82	12,344.00	88.35	89.63	-118.11	-4,716.45	930.98	692.44	582.20	110.24	6.281		
15,600.00	12,017.00	16,054.82	12,344.00	89.80	91.05	-118.11	-4,816.45	931.96	692.43	580.42	112.01	6.182		
15,700.00	12,017.00	16,154.82	12,344.00	91.27	92.49	-118.11	-4,916.44	932.94	692.43	578.63	113.80	6.085		
15,800.00	12,017.00	16,254.82	12,344.00	92.74	93.93	-118.11	-5,016.44	933.91	692.43	576.84	115.59	5.990		
15,900.00	12,017.00	16,354.82	12,344.00	94.21	95.37	-118.11	-5,116.43	934.89	692.43	575.03	117.39	5.898		
16,000.00	12,017.00	16,454.82	12,344.00	95.69	96.83	-118.11	-5,216.43	935.87	692.43	573.22	119.20	5.809		
16,100.00	12,017.00	16,554.82	12,344.00	97.18	98.29	-118.12	-5,316.42	936.85	692.42	571.41	121.02	5.722		
16,200.00	12,017.00	16,654.82	12,344.00	98.67	99.75	-118.12	-5,416.42	937.83	692.42	569.59	122.84	5.637		
16,300.00	12,017.00	16,754.82	12,344.00	100.16	101.23	-118.12	-5,516.41	938.81	692.42	567.76	124.66	5.554		
16,400.00	12,017.00	16,854.82	12,344.00	101.67	102.70	-118.12	-5,616.41	939.79	692.42	565.92	126.50	5.474		
16,500.00	12,017.00	16,954.82	12,344.00	103.17	104.19	-118.12	-5,716.40	940.76	692.42	564.08	128.33	5.395		
16,600.00	12,017.00	17,054.82	12,344.00	104.68	105.67	-118.12	-5,816.40	941.74	692.42	562.24	130.18	5.319		
16,700.00	12,017.00	17,154.82	12,344.00	106.20	107.16	-118.12	-5,916.39	942.72	692.41	560.39	132.02	5.245		
16,800.00	12,017.00	17,254.82	12,344.00	107.71	108.66	-118.12	-6,016.39	943.70	692.41	558.54	133.87	5.172		
16,900.00	12,017.00	17,354.82	12,344.00	109.24	110.16	-118.12	-6,116.38	944.68	692.41	556.68	135.73	5.101		
17,000.00	12,017.00	17,454.82	12,344.00	110.76	111.67	-118.12	-6,216.38	945.66	692.41	554.82	137.59	5.033		
17,100.00	12,017.00	17,554.82	12,344.00	112.29	113.18	-118.12	-6,316.37	946.64	692.41	552.96	139.45	4.965		
17,200.00	12,017.00	17,654.82	12,344.00	113.82	114.69	-118.12	-6,416.37	947.62	692.40	551.09	141.32	4.900		
17,300.00	12,017.00	17,754.82	12,344.00	115.36	116.21	-118.12	-6,516.37	948.59	692.40	549.22	143.18	4.836		
17,400.00	12,017.00	17,854.82	12,344.00	116.90	117.73	-118.12	-6,616.36	949.57	692.40	547.34	145.06	4.773		
17,500.00	12,017.00	17,954.82	12,344.00	118.44	119.25	-118.12	-6,716.36	950.55	692.40	545.47	146.93	4.712		
17,600.00	12,017.00	18,054.82	12,344.00	119.99	120.78	-118.12	-6,816.35	951.53	692.40	543.59	148.81	4.653		
17,700.00	12,017.00	18,154.82	12,344.00	121.53	122.31	-118.12	-6,916.35	952.51	692.40	541.71	150.69	4.595		
17,800.00	12,017.00	18,254.82	12,344.00	123.09	123.85	-118.12	-7,016.34	953.49	692.39	539.82	152.57	4.538		
17,900.00	12,017.00	18,354.82	12,344.00	124.64	125.38	-118.12	-7,116.34	954.47	692.39	537.94	154.45	4.483		
18,000.00	12,017.00	18,454.82	12,344.00	126.19	126.92	-118.12	-7,216.33	955.45	692.39	536.05	156.34	4.429		
18,100.00	12,017.00	18,554.82	12,344.00	127.75	128.46	-118.12	-7,316.33	956.42	692.39	534.16	158.23	4.376		
18,200.00	12,017.00	18,654.82	12,344.00	129.31	130.01	-118.12	-7,416.32	957.40	692.39	532.27	160.12	4.324		
18,300.00	12,017.00	18,754.82	12,344.00	130.88	131.56	-118.12	-7,516.32	958.38	692.38	530.37	162.01	4.274		
18,400.00	12,017.00	18,854.82	12,344.00	132.44	133.11	-118.12	-7,616.31	959.36	692.38	528.48	163.90	4.224		
18,500.00	12,017.00	18,954.82	12,344.00	134.01	134.66	-118.12	-7,716.31	960.34	692.38	526.58	165.80	4.176		
18,600.00	12,017.00	19,054.82	12,344.00	135.58	136.22	-118.12	-7,816.30	961.32	692.38	524.68	167.69	4.129		
18,700.00	12,017.00	19,154.82	12,344.00	137.15	137.77	-118.12	-7,916.30	962.30	692.38	522.79	169.59	4.083		
18,800.00	12,017.00	19,254.82	12,344.00	138.72	139.33	-118.12	-8,016.29	963.27	692.38	520.89	171.49	4.037		
18,900.00	12,017.00	19,354.82	12,344.00	140.29	140.89	-118.12	-8,116.29	964.25	692.37	518.99	173.39	3.993		
19,000.00	12,017.00	19,454.82	12,344.00	141.87	142.46	-118.12	-8,216.28	965.23	692.37	517.09	175.29	3.950		
19,100.00	12,017.00	19,554.82	12,344.00	143.45	144.02	-118.12	-8,316.28	966.21	692.37	515.18	177.19	3.908		
19,200.00	12,017.00	19,654.82	12,344.00	145.03	145.59	-118.12	-8,416.27	967.19	692.37	513.28	179.09	3.866		

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 Tatanka Fed Com 602H
Project:	Lea County, NM (NAD83)	TVD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 602H	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													Tatanka Fed Com - Tatanka Fed Com 703H - 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				
19,300.00	12,017.00	19,754.82	12,344.00	146.61	147.16	-118.12	-8,516.27	968.17	692.37	511.38	180.99	3.826				
19,400.00	12,017.00	19,854.82	12,344.00	148.19	148.73	-118.12	-8,616.26	969.15	692.36	509.48	182.89	3.786				
19,500.00	12,017.00	19,954.82	12,344.00	149.78	150.30	-118.12	-8,716.26	970.13	692.36	507.57	184.79	3.747				
19,600.00	12,017.00	20,054.82	12,344.00	151.36	151.88	-118.12	-8,816.26	971.10	692.36	505.67	186.69	3.709				
19,700.00	12,017.00	20,154.82	12,344.00	152.95	153.45	-118.12	-8,916.25	972.08	692.36	503.76	188.60	3.671				
19,800.00	12,017.00	20,254.82	12,344.00	154.54	155.03	-118.12	-9,016.25	973.06	692.36	501.86	190.50	3.634				
19,900.00	12,017.00	20,354.82	12,344.00	156.13	156.61	-118.12	-9,116.24	974.04	692.36	499.95	192.40	3.598				
20,000.00	12,017.00	20,454.82	12,344.00	157.72	158.19	-118.12	-9,216.24	975.02	692.35	498.05	194.30	3.563				
20,100.00	12,017.00	20,554.82	12,344.00	159.31	159.77	-118.12	-9,316.23	976.00	692.35	496.15	196.21	3.529				
20,200.00	12,017.00	20,654.82	12,344.00	160.90	161.36	-118.12	-9,416.23	976.98	692.35	494.24	198.11	3.495				
20,300.00	12,017.00	20,754.82	12,344.00	162.50	162.94	-118.12	-9,516.22	977.96	692.35	492.34	200.01	3.462				
20,400.00	12,017.00	20,854.82	12,344.00	164.09	164.53	-118.12	-9,616.22	978.93	692.35	490.43	201.91	3.429				
20,500.00	12,017.00	20,954.82	12,344.00	165.69	166.11	-118.12	-9,716.21	979.91	692.34	488.53	203.82	3.397				
20,600.00	12,017.00	21,054.82	12,344.00	167.29	167.70	-118.12	-9,816.21	980.89	692.34	486.62	205.72	3.365				
20,700.00	12,017.00	21,154.82	12,344.00	168.89	169.29	-118.12	-9,916.20	981.87	692.34	484.72	207.62	3.335				
20,800.00	12,017.00	21,254.82	12,344.00	170.49	170.88	-118.12	-10,016.20	982.85	692.34	482.82	209.52	3.304				
20,900.00	12,017.00	21,354.82	12,344.00	172.09	172.48	-118.12	-10,116.19	983.83	692.34	480.92	211.42	3.275				
21,000.00	12,017.00	21,454.82	12,344.00	173.69	174.07	-118.12	-10,216.19	984.81	692.34	479.02	213.32	3.246				
21,100.00	12,017.00	21,554.82	12,344.00	175.29	175.66	-118.12	-10,316.18	985.78	692.33	477.11	215.22	3.217				
21,200.00	12,017.00	21,654.82	12,344.00	176.90	177.26	-118.12	-10,416.18	986.76	692.33	475.21	217.12	3.189				
21,300.00	12,017.00	21,754.82	12,344.00	178.50	178.85	-118.12	-10,516.17	987.74	692.33	473.31	219.02	3.161				
21,400.00	12,017.00	21,854.82	12,344.00	180.11	180.45	-118.12	-10,616.17	988.72	692.33	471.42	220.91	3.134				
21,500.00	12,017.00	21,954.82	12,344.00	181.71	182.05	-118.12	-10,716.16	989.70	692.33	469.52	222.81	3.107				
21,600.00	12,017.00	22,054.82	12,344.00	183.32	183.65	-118.12	-10,816.16	990.68	692.32	467.62	224.71	3.081				
21,700.00	12,017.00	22,154.82	12,344.00	184.93	185.25	-118.12	-10,916.15	991.66	692.32	465.72	226.60	3.055				
21,800.00	12,017.00	22,254.82	12,344.00	186.54	186.85	-118.12	-11,016.15	992.64	692.32	463.83	228.49	3.030				
21,900.00	12,017.00	22,354.82	12,344.00	188.15	188.45	-118.12	-11,116.14	993.61	692.32	461.93	230.39	3.005				
22,000.00	12,017.00	22,454.82	12,344.00	189.76	190.06	-118.12	-11,216.14	994.59	692.32	460.04	232.28	2.981				
22,100.00	12,017.00	22,554.82	12,344.00	191.37	191.66	-118.12	-11,316.14	995.57	692.32	458.15	234.17	2.956				
22,187.30	12,017.00	22,642.12	12,344.00	192.77	193.00	-118.12	-11,403.43	996.43	692.31	456.58	235.73	2.937 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 Tatanka Fed Com 602H
Project:	Lea County, NM (NAD83)	TVD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 602H	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	111.20	-992.41	2,558.58	2,744.62					
100.00	100.00	58.50	58.50	0.13	0.07	111.20	-992.41	2,558.58	2,744.30	2,744.16	0.15	N/A		
200.00	200.00	158.50	158.50	0.48	0.34	111.20	-992.41	2,558.58	2,744.30	2,743.72	0.59	4,661.859		
300.00	300.00	258.50	258.50	0.84	0.69	111.20	-992.41	2,558.58	2,744.30	2,743.21	1.09	2,514.864		
400.00	400.00	358.50	358.50	1.20	1.05	111.20	-992.41	2,558.58	2,744.30	2,742.71	1.60	1,718.868		
500.00	500.00	458.50	458.50	1.56	1.41	111.20	-992.41	2,558.58	2,744.30	2,742.20	2.10	1,305.137		
600.00	600.00	558.50	558.50	1.92	1.77	111.20	-992.41	2,558.58	2,744.30	2,741.70	2.61	1,051.805		
700.00	700.00	658.50	658.50	2.28	2.13	111.20	-992.41	2,558.58	2,744.30	2,741.19	3.12	880.785		
800.00	800.00	758.50	758.50	2.63	2.49	111.20	-992.41	2,558.58	2,744.30	2,740.68	3.62	757.581		
900.00	900.00	858.50	858.50	2.99	2.84	111.20	-992.41	2,558.58	2,744.30	2,740.18	4.13	664.605		
1,000.00	1,000.00	958.50	958.50	3.35	3.20	111.20	-992.41	2,558.58	2,744.30	2,739.67	4.64	591.951		
1,100.00	1,100.00	1,058.50	1,058.50	3.71	3.56	111.20	-992.41	2,558.58	2,744.30	2,739.16	5.14	533.613		
1,200.00	1,200.00	1,158.50	1,158.50	4.07	3.92	111.20	-992.41	2,558.58	2,744.30	2,738.66	5.65	485.741		
1,300.00	1,300.00	1,258.50	1,258.50	4.43	4.28	111.20	-992.41	2,558.58	2,744.30	2,738.15	6.16	445.750		
1,400.00	1,400.00	1,358.50	1,358.50	4.79	4.64	111.20	-992.41	2,558.58	2,744.30	2,737.64	6.66	411.842		
1,500.00	1,500.00	1,458.50	1,458.50	5.14	5.00	111.20	-992.41	2,558.58	2,744.30	2,737.13	7.17	382.728		
1,600.00	1,600.00	1,558.50	1,558.50	5.50	5.35	111.20	-992.41	2,558.58	2,744.30	2,736.63	7.68	357.457		
1,700.00	1,700.00	1,658.50	1,658.50	5.86	5.71	111.20	-992.41	2,558.58	2,744.30	2,736.12	8.18	335.317		
1,800.00	1,800.00	1,758.50	1,758.50	6.22	6.07	111.20	-992.41	2,558.58	2,744.30	2,735.61	8.69	315.760		
1,900.00	1,900.00	1,858.50	1,858.50	6.58	6.43	111.20	-992.41	2,558.58	2,744.30	2,735.11	9.20	298.358		
2,000.00	2,000.00	1,958.50	1,958.50	6.94	6.79	111.20	-992.41	2,558.58	2,744.30	2,734.60	9.70	282.773		
2,100.00	2,100.00	2,058.50	2,058.50	7.29	7.15	111.20	-992.41	2,558.58	2,744.30	2,734.09	10.21	268.736		
2,200.00	2,200.00	2,158.50	2,158.50	7.65	7.50	111.20	-992.41	2,558.58	2,744.30	2,733.59	10.72	256.027		
2,300.00	2,300.00	2,258.50	2,258.50	8.01	7.86	111.20	-992.41	2,558.58	2,744.30	2,733.08	11.23	244.465		
2,400.00	2,400.00	2,358.50	2,358.50	8.37	8.22	111.20	-992.41	2,558.58	2,744.30	2,732.57	11.73	233.903		
2,500.00	2,500.00	2,458.50	2,458.50	8.73	8.58	111.20	-992.41	2,558.58	2,744.30	2,732.07	12.24	224.215		
2,600.00	2,600.00	2,558.50	2,558.50	9.09	8.94	111.20	-992.41	2,558.58	2,744.30	2,731.56	12.75	215.298		
2,700.00	2,700.00	2,658.50	2,658.50	9.45	9.30	111.20	-992.41	2,558.58	2,744.30	2,731.05	13.25	207.063		
2,800.00	2,800.00	2,758.50	2,758.50	9.80	9.66	111.20	-992.41	2,558.58	2,744.30	2,730.54	13.76	199.434		
2,900.00	2,900.00	2,858.50	2,858.50	10.16	10.01	111.20	-992.41	2,558.58	2,744.30	2,730.04	14.27	192.348		
3,000.00	3,000.00	2,958.50	2,958.50	10.52	10.37	111.20	-992.41	2,558.58	2,744.30	2,729.53	14.77	185.748		
3,100.00	3,100.00	3,058.50	3,058.50	10.88	10.73	111.20	-992.41	2,558.58	2,744.30	2,729.02	15.28	179.586		
3,200.00	3,200.00	3,158.50	3,158.50	11.24	11.09	111.20	-992.41	2,558.58	2,744.30	2,728.52	15.79	173.820		
3,300.00	3,299.99	3,369.53	3,369.47	11.58	11.82	-54.65	-992.61	2,554.82	2,742.36	2,725.83	16.54	165.832		
3,400.00	3,399.91	3,656.99	3,655.90	11.90	12.82	-54.76	-993.84	2,531.31	2,732.62	2,715.22	17.40	157.072		
3,500.00	3,499.69	3,938.37	3,933.78	12.23	13.83	-54.92	-996.14	2,487.54	2,714.65	2,696.46	18.19	149.207		
3,600.00	3,599.27	4,051.09	4,044.28	12.56	14.25	-55.19	-997.31	2,465.29	2,691.40	2,672.72	18.69	144.024		
3,700.00	3,698.57	4,147.97	4,139.24	12.89	14.62	-55.54	-998.32	2,446.12	2,666.68	2,647.52	19.16	139.201		
3,800.00	3,797.54	4,244.42	4,233.77	13.22	14.99	-55.96	-999.32	2,427.02	2,640.53	2,620.90	19.63	134.521		
3,900.00	3,896.09	4,340.36	4,327.81	13.57	15.37	-56.45	-1,000.32	2,408.03	2,612.97	2,592.87	20.10	129.975		
4,000.00	3,994.16	4,435.74	4,421.30	13.92	15.74	-57.01	-1,001.31	2,389.15	2,584.05	2,563.47	20.58	125.556		
4,100.00	4,091.70	4,530.49	4,514.16	14.28	16.12	-57.66	-1,002.29	2,370.39	2,553.80	2,532.74	21.06	121.253		
4,125.65	4,116.62	4,554.68	4,537.88	14.37	16.22	-57.83	-1,002.55	2,365.60	2,545.83	2,524.65	21.19	120.166		
4,200.00	4,188.79	4,624.74	4,606.54	14.65	16.51	-58.05	-1,003.27	2,351.73	2,522.63	2,501.08	21.55	117.077		
4,300.00	4,285.87	4,718.97	4,698.90	15.04	16.89	-58.34	-1,004.25	2,333.08	2,491.48	2,469.44	22.04	113.058		
4,400.00	4,382.95	4,813.19	4,791.26	15.43	17.28	-58.64	-1,005.23	2,314.43	2,460.39	2,437.85	22.53	109.189		
4,500.00	4,480.03	4,907.42	4,883.62	15.83	17.67	-58.95	-1,006.21	2,295.77	2,429.36	2,406.32	23.04	105.463		
4,600.00	4,577.11	5,001.65	4,975.97	16.23	18.07	-59.26	-1,007.19	2,277.12	2,398.40	2,374.85	23.54	101.877		
4,700.00	4,674.18	5,095.88	5,068.33	16.65	18.46	-59.59	-1,008.17	2,258.47	2,367.50	2,343.45	24.05	98.425		
4,800.00	4,771.26	5,190.11	5,160.69	17.07	18.86	-59.92	-1,009.15	2,239.81	2,336.68	2,312.11	24.57	95.101		
4,900.00	4,868.34	5,284.33	5,253.05	17.49	19.27	-60.26	-1,010.13	2,221.16	2,305.93	2,280.84	25.09	91.901		
5,000.00	4,965.42	5,378.56	5,345.40	17.92	19.67	-60.61	-1,011.11	2,202.51	2,275.26	2,249.64	25.62	88.819		

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 Tatanka Fed Com 602H
Project:	Lea County, NM (NAD83)	TVD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 602H	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		
5,100.00	5,062.50	5,472.79	5,437.76	18.36	20.08	-60.97	-1,012.09	2,183.85	2,244.67	2,218.52	26.15	85.852		
5,200.00	5,159.57	5,567.02	5,530.12	18.80	20.49	-61.33	-1,013.07	2,165.20	2,214.16	2,187.48	26.68	82.993		
5,300.00	5,256.65	5,661.24	5,622.48	19.25	20.90	-61.71	-1,014.05	2,146.55	2,183.74	2,156.53	27.22	80.238		
5,400.00	5,353.73	5,755.47	5,714.84	19.70	21.31	-62.10	-1,015.03	2,127.89	2,153.41	2,125.66	27.76	77.583		
5,500.00	5,450.81	5,849.70	5,807.19	20.15	21.73	-62.50	-1,016.01	2,109.24	2,123.18	2,094.88	28.30	75.024		
5,600.00	5,547.89	5,943.93	5,899.55	20.61	22.14	-62.91	-1,016.99	2,090.59	2,093.04	2,064.20	28.85	72.556		
5,700.00	5,644.96	6,038.15	5,991.91	21.07	22.56	-63.34	-1,017.97	2,071.94	2,063.01	2,033.61	29.40	70.176		
5,800.00	5,742.04	6,132.38	6,084.27	21.54	22.98	-63.77	-1,018.95	2,053.28	2,033.09	2,003.14	29.95	67.881		
5,900.00	5,839.12	6,226.61	6,176.63	22.00	23.40	-64.22	-1,019.93	2,034.63	2,003.28	1,972.77	30.51	65.666		
6,000.00	5,936.20	6,320.84	6,268.98	22.47	23.82	-64.68	-1,020.91	2,015.98	1,973.58	1,942.52	31.07	63.529		
6,100.00	6,033.28	6,415.07	6,361.34	22.94	24.25	-65.15	-1,021.89	1,997.32	1,944.01	1,912.39	31.63	61.465		
6,200.00	6,130.35	6,509.29	6,453.70	23.42	24.67	-65.64	-1,022.87	1,978.67	1,914.57	1,882.38	32.19	59.472		
6,300.00	6,227.43	6,603.52	6,546.06	23.90	25.10	-66.15	-1,023.85	1,960.02	1,885.26	1,852.50	32.76	57.547		
6,400.00	6,324.51	6,697.75	6,638.41	24.38	25.52	-66.66	-1,024.83	1,941.36	1,856.10	1,822.77	33.33	55.688		
6,500.00	6,421.59	6,791.98	6,730.77	24.86	25.95	-67.20	-1,025.81	1,922.71	1,827.08	1,793.18	33.90	53.891		
6,600.00	6,518.67	6,886.50	6,798.02	25.34	26.26	-67.60	-1,026.50	1,909.55	1,798.81	1,764.33	34.48	52.174		
6,700.00	6,615.75	6,925.66	6,862.16	25.83	26.54	-68.00	-1,027.10	1,898.14	1,772.24	1,737.19	35.05	50.563		
6,800.00	6,712.82	7,000.00	6,935.58	26.31	26.86	-68.48	-1,027.71	1,886.45	1,747.48	1,711.86	35.63	49.051		
6,900.00	6,809.90	7,057.42	6,992.43	26.80	27.10	-68.86	-1,028.13	1,878.41	1,724.46	1,688.27	36.19	47.648		
7,000.00	6,906.98	7,123.95	7,058.44	27.29	27.37	-69.32	-1,028.57	1,870.15	1,703.31	1,666.55	36.76	46.339		
7,100.00	7,004.06	7,200.00	7,134.06	27.78	27.67	-69.86	-1,028.99	1,862.12	1,684.07	1,646.73	37.33	45.112		
7,200.00	7,101.14	7,258.12	7,191.96	28.28	27.89	-70.28	-1,029.26	1,857.00	1,666.66	1,628.78	37.88	44.000		
7,300.00	7,198.21	7,325.69	7,259.36	28.77	28.14	-70.79	-1,029.51	1,852.16	1,651.23	1,612.80	38.43	42.965		
7,400.00	7,295.29	7,400.00	7,333.56	29.26	28.41	-71.36	-1,029.72	1,848.20	1,637.79	1,598.79	38.99	42.004		
7,500.00	7,392.37	7,461.60	7,395.11	29.76	28.62	-71.85	-1,029.83	1,846.02	1,626.30	1,586.78	39.52	41.152		
7,600.00	7,489.45	7,529.84	7,463.35	30.26	28.85	-72.40	-1,029.90	1,844.76	1,616.85	1,576.80	40.05	40.369		
7,700.00	7,586.53	7,611.52	7,545.03	30.76	29.11	-73.06	-1,029.91	1,844.58	1,609.26	1,568.65	40.61	39.623		
7,800.00	7,683.60	7,708.60	7,642.10	31.26	29.43	-73.86	-1,029.91	1,844.58	1,602.24	1,561.02	41.22	38.872		
7,900.00	7,780.68	7,805.68	7,739.18	31.76	29.74	-74.67	-1,029.91	1,844.58	1,595.55	1,553.73	41.83	38.148		
8,000.00	7,877.76	7,902.76	7,836.26	32.26	30.05	-75.48	-1,029.91	1,844.58	1,589.20	1,546.76	42.43	37.450		
8,035.67	7,912.38	7,937.38	7,870.88	32.44	30.17	-75.77	-1,029.91	1,844.58	1,587.01	1,544.36	42.65	37.208		
8,100.00	7,974.96	7,999.96	7,933.46	32.76	30.37	-76.22	-1,029.91	1,844.58	1,583.31	1,540.27	43.04	36.785		
8,200.00	8,072.71	8,097.71	8,031.21	33.24	30.69	-76.88	-1,029.91	1,844.58	1,578.30	1,534.66	43.64	36.168		
8,300.00	8,170.98	8,195.98	8,129.48	33.69	31.01	-77.46	-1,029.91	1,844.58	1,574.12	1,529.90	44.22	35.599		
8,400.00	8,269.70	8,294.70	8,228.20	34.13	31.33	-77.97	-1,029.91	1,844.58	1,570.69	1,525.91	44.78	35.075		
8,500.00	8,368.80	8,393.80	8,327.30	34.55	31.66	-78.41	-1,029.91	1,844.58	1,567.93	1,522.60	45.33	34.590		
8,600.00	8,468.22	8,493.22	8,426.72	34.94	31.99	-78.76	-1,029.91	1,844.58	1,565.79	1,519.93	45.86	34.144		
8,700.00	8,567.89	8,592.89	8,526.39	35.31	32.31	-79.03	-1,029.91	1,844.58	1,564.22	1,517.85	46.37	33.733		
8,800.00	8,667.73	8,692.73	8,626.23	35.66	32.64	-79.21	-1,029.91	1,844.58	1,563.17	1,516.31	46.87	33.354		
8,900.00	8,767.69	8,792.68	8,726.19	35.99	32.97	-79.31	-1,029.91	1,844.58	1,562.63	1,515.29	47.34	33.006		
8,961.32	8,829.00	8,854.00	8,787.50	36.17	33.18	86.47	-1,029.91	1,844.58	1,562.54	1,514.91	47.62	32.810		
9,000.00	8,867.68	8,892.68	8,826.18	36.28	33.31	86.47	-1,029.91	1,844.58	1,562.54	1,514.74	47.80	32.692		
9,100.00	8,967.68	8,992.68	8,926.18	36.57	33.64	86.47	-1,029.91	1,844.58	1,562.54	1,514.29	48.24	32.389		
9,200.00	9,067.68	9,092.68	9,026.18	36.86	33.97	86.47	-1,029.91	1,844.58	1,562.54	1,513.85	48.69	32.090		
9,300.00	9,167.68	9,192.68	9,126.18	37.16	34.30	86.47	-1,029.91	1,844.58	1,562.54	1,513.40	49.14	31.797		
9,400.00	9,267.68	9,292.68	9,226.18	37.45	34.64	86.47	-1,029.91	1,844.58	1,562.54	1,512.95	49.59	31.508		
9,500.00	9,367.68	9,392.68	9,326.18	37.74	34.97	86.47	-1,029.91	1,844.58	1,562.54	1,512.49	50.04	31.224		
9,600.00	9,467.68	9,492.68	9,426.18	38.04	35.30	86.47	-1,029.91	1,844.58	1,562.54	1,512.04	50.50	30.944		
9,700.00	9,567.68	9,592.68	9,526.18	38.33	35.64	86.47	-1,029.91	1,844.58	1,562.54	1,511.59	50.95	30.668		
9,800.00	9,667.68	9,692.68	9,626.18	38.63	35.97	86.47	-1,029.91	1,844.58	1,562.54	1,511.13	51.40	30.397		
9,900.00	9,767.68	9,792.68	9,726.18	38.93	36.31	86.47	-1,029.91	1,844.58	1,562.54	1,510.68	51.86	30.130		
10,000.00	9,867.68	9,892.68	9,826.18	39.23	36.65	86.47	-1,029.91	1,844.58	1,562.54	1,510.22	52.32	29.867		

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 Tatanka Fed Com 602H
Project:	Lea County, NM (NAD83)	TVD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 602H	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		
10,100.00	9,967.68	9,992.68	9,926.18	39.53	36.98	86.47	-1,029.91	1,844.58	1,562.54	1,509.76	52.77	29.608		
10,200.00	10,067.68	10,092.68	10,026.18	39.83	37.32	86.47	-1,029.91	1,844.58	1,562.54	1,509.30	53.23	29.353		
10,300.00	10,167.68	10,192.68	10,126.18	40.13	37.66	86.47	-1,029.91	1,844.58	1,562.54	1,508.85	53.69	29.102		
10,400.00	10,267.68	10,292.68	10,226.18	40.43	38.00	86.47	-1,029.91	1,844.58	1,562.54	1,508.39	54.15	28.855		
10,500.00	10,367.68	10,392.68	10,326.18	40.74	38.33	86.47	-1,029.91	1,844.58	1,562.54	1,507.92	54.61	28.611		
10,600.00	10,467.68	10,492.68	10,426.18	41.04	38.67	86.47	-1,029.91	1,844.58	1,562.54	1,507.46	55.07	28.371		
10,700.00	10,567.68	10,592.68	10,526.18	41.35	39.01	86.47	-1,029.91	1,844.58	1,562.54	1,507.00	55.54	28.135		
10,800.00	10,667.68	10,692.68	10,626.18	41.66	39.35	86.47	-1,029.91	1,844.58	1,562.54	1,506.54	56.00	27.902		
10,900.00	10,767.68	10,792.68	10,726.18	41.96	39.69	86.47	-1,029.91	1,844.58	1,562.54	1,506.07	56.46	27.673		
11,000.00	10,867.68	10,892.68	10,826.18	42.27	40.03	86.47	-1,029.91	1,844.58	1,562.54	1,505.61	56.93	27.447		
11,100.00	10,967.68	10,992.68	10,926.18	42.58	40.37	86.47	-1,029.91	1,844.58	1,562.54	1,505.14	57.40	27.224		
11,200.00	11,067.68	11,092.68	11,026.18	42.89	40.71	86.47	-1,029.91	1,844.58	1,562.54	1,504.68	57.86	27.005		
11,300.00	11,167.68	11,192.68	11,126.18	43.20	41.05	86.47	-1,029.91	1,844.58	1,562.54	1,504.21	58.33	26.789		
11,400.00	11,267.68	11,292.68	11,226.18	43.51	41.39	86.47	-1,029.91	1,844.58	1,562.54	1,503.74	58.80	26.576		
11,500.00	11,367.68	11,392.68	11,326.18	43.82	41.73	86.47	-1,029.91	1,844.58	1,562.54	1,503.27	59.26	26.366		
11,576.36	11,444.04	11,469.04	11,402.54	44.06	41.99	86.47	-1,029.91	1,844.58	1,562.54	1,502.92	59.62	26.207 CC		
11,600.00	11,467.68	11,492.67	11,426.18	44.14	42.07	-92.98	-1,029.91	1,844.58	1,562.56	1,502.83	59.74	26.158		
11,650.00	11,517.48	11,542.48	11,475.98	44.33	42.25	-93.11	-1,029.91	1,844.58	1,562.79	1,502.79	60.00	26.049		
11,700.00	11,566.73	11,591.72	11,525.23	44.54	42.41	-93.37	-1,029.91	1,844.58	1,563.28	1,503.01	60.28	25.935		
11,750.00	11,615.04	11,648.54	11,581.99	44.78	42.60	-93.77	-1,031.76	1,844.60	1,564.00	1,503.41	60.60	25.811		
11,800.00	11,662.05	11,709.11	11,642.00	45.04	42.79	-94.16	-1,039.79	1,844.68	1,564.75	1,503.82	60.93	25.680		
11,850.00	11,707.40	11,771.30	11,702.37	45.33	42.99	-94.53	-1,054.58	1,844.82	1,565.50	1,504.21	61.29	25.544		
11,900.00	11,750.75	11,835.03	11,762.20	45.65	43.18	-94.85	-1,076.43	1,845.04	1,566.20	1,504.56	61.65	25.405		
11,950.00	11,791.76	11,900.18	11,820.47	45.98	43.36	-95.13	-1,105.49	1,845.32	1,566.84	1,504.82	62.02	25.263		
12,000.00	11,830.12	11,966.57	11,876.07	46.33	43.53	-95.37	-1,141.71	1,845.68	1,567.39	1,504.99	62.40	25.117		
12,050.00	11,865.55	12,033.98	11,927.85	46.70	43.70	-95.54	-1,184.81	1,846.10	1,567.81	1,505.02	62.79	24.968		
12,100.00	11,897.77	12,102.14	11,974.70	47.09	43.85	-95.66	-1,234.27	1,846.58	1,568.10	1,504.90	63.20	24.813		
12,150.00	11,926.54	12,170.74	12,015.58	47.50	44.00	-95.71	-1,289.29	1,847.12	1,568.22	1,504.61	63.61	24.652		
12,200.00	11,951.63	12,239.43	12,049.64	47.92	44.15	-95.69	-1,348.89	1,847.71	1,568.19	1,504.14	64.05	24.484		
12,250.00	11,972.86	12,307.88	12,076.25	48.35	44.31	-95.62	-1,411.92	1,848.33	1,568.00	1,503.49	64.50	24.308		
12,300.00	11,990.07	12,375.76	12,095.03	48.80	44.48	-95.47	-1,477.10	1,848.97	1,567.65	1,502.67	64.98	24.126		
12,350.00	12,003.12	12,442.78	12,105.88	49.25	44.66	-95.28	-1,543.20	1,849.61	1,567.17	1,501.71	65.47	23.938		
12,400.00	12,011.92	12,508.68	12,108.97	49.70	44.87	-95.02	-1,608.98	1,850.26	1,566.59	1,500.62	65.97	23.746		
12,450.00	12,016.39	12,556.98	12,109.00	50.16	45.03	-94.91	-1,657.28	1,850.73	1,566.20	1,499.75	66.45	23.570		
12,476.35	12,017.00	12,583.32	12,109.00	50.40	45.13	-94.89	-1,683.62	1,850.99	1,566.15	1,499.45	66.70	23.482		
12,476.36	12,017.00	12,583.33	12,109.00	50.40	45.13	-94.89	-1,683.62	1,850.99	1,566.15	1,499.45	66.70	23.482		
12,500.00	12,017.00	12,606.97	12,109.00	50.61	45.22	-94.89	-1,707.27	1,851.22	1,566.15	1,499.23	66.92	23.403		
12,600.00	12,017.00	12,706.97	12,109.00	51.55	45.64	-94.89	-1,807.26	1,852.20	1,566.15	1,498.23	67.92	23.058		
12,700.00	12,017.00	12,806.97	12,109.00	52.52	46.12	-94.89	-1,907.26	1,853.19	1,566.15	1,497.16	68.99	22.702		
12,800.00	12,017.00	12,906.97	12,109.00	53.53	46.65	-94.89	-2,007.25	1,854.17	1,566.15	1,496.03	70.11	22.337		
12,900.00	12,017.00	13,006.97	12,109.00	54.57	47.24	-94.89	-2,107.25	1,855.15	1,566.15	1,494.85	71.30	21.966		
13,000.00	12,017.00	13,106.97	12,109.00	55.63	47.88	-94.89	-2,207.24	1,856.13	1,566.15	1,493.61	72.54	21.591		
13,100.00	12,017.00	13,206.97	12,109.00	56.73	48.57	-94.89	-2,307.24	1,857.11	1,566.15	1,492.32	73.83	21.213		
13,200.00	12,017.00	13,306.97	12,109.00	57.85	49.31	-94.89	-2,407.23	1,858.09	1,566.15	1,490.98	75.17	20.834		
13,300.00	12,017.00	13,406.97	12,109.00	58.99	50.09	-94.89	-2,507.23	1,859.07	1,566.15	1,489.59	76.56	20.456		
13,400.00	12,017.00	13,506.97	12,109.00	60.16	50.91	-94.89	-2,607.22	1,860.05	1,566.15	1,488.15	78.00	20.080		
13,500.00	12,017.00	13,606.97	12,109.00	61.35	51.78	-94.89	-2,707.22	1,861.03	1,566.15	1,486.68	79.47	19.707		
13,600.00	12,017.00	13,706.97	12,109.00	62.57	52.68	-94.89	-2,807.21	1,862.01	1,566.15	1,485.16	80.99	19.338		
13,700.00	12,017.00	13,806.97	12,109.00	63.80	53.62	-94.89	-2,907.21	1,862.99	1,566.15	1,483.60	82.54	18.973		
13,800.00	12,017.00	13,906.97	12,109.00	65.05	54.59	-94.89	-3,007.20	1,863.97	1,566.15	1,482.01	84.13	18.615		
13,900.00	12,017.00	14,006.97	12,109.00	66.32	55.59	-94.89	-3,107.20	1,864.96	1,566.15	1,480.39	85.76	18.262		
14,000.00	12,017.00	14,106.97	12,109.00	67.60	56.63	-94.89	-3,207.20	1,865.94	1,566.15	1,478.73	87.41	17.916		

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 Tatanka Fed Com 602H
Project:	Lea County, NM (NAD83)	TVD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 602H	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	12,017.00	14,206.97	12,109.00	68.90	57.69	-94.89	-3,307.19	1,866.92	1,566.15	1,477.05	89.10	17.577		
14,200.00	12,017.00	14,306.97	12,109.00	70.22	58.78	-94.89	-3,407.19	1,867.90	1,566.15	1,475.34	90.81	17.246		
14,300.00	12,017.00	14,406.97	12,109.00	71.55	59.89	-94.89	-3,507.18	1,868.88	1,566.15	1,473.59	92.56	16.921		
14,400.00	12,017.00	14,506.97	12,109.00	72.89	61.04	-94.89	-3,607.18	1,869.86	1,566.15	1,471.83	94.32	16.604		
14,500.00	12,017.00	14,606.97	12,109.00	74.25	62.20	-94.89	-3,707.17	1,870.84	1,566.15	1,470.04	96.11	16.295		
14,600.00	12,017.00	14,706.97	12,109.00	75.61	63.38	-94.89	-3,807.17	1,871.82	1,566.15	1,468.22	97.93	15.993		
14,700.00	12,017.00	14,806.97	12,109.00	76.99	64.59	-94.89	-3,907.16	1,872.80	1,566.15	1,466.39	99.76	15.699		
14,800.00	12,017.00	14,906.97	12,109.00	78.38	65.81	-94.89	-4,007.16	1,873.78	1,566.15	1,464.54	101.61	15.413		
14,900.00	12,017.00	15,006.97	12,109.00	79.78	67.06	-94.89	-4,107.15	1,874.76	1,566.15	1,462.66	103.49	15.134		
15,000.00	12,017.00	15,106.97	12,109.00	81.18	68.32	-94.89	-4,207.15	1,875.74	1,566.15	1,460.77	105.38	14.862		
15,100.00	12,017.00	15,206.97	12,109.00	82.60	69.59	-94.89	-4,307.14	1,876.73	1,566.15	1,458.86	107.29	14.597		
15,200.00	12,017.00	15,306.97	12,109.00	84.03	70.89	-94.89	-4,407.14	1,877.71	1,566.15	1,456.94	109.21	14.340		
15,300.00	12,017.00	15,406.97	12,109.00	85.46	72.19	-94.89	-4,507.13	1,878.69	1,566.15	1,455.00	111.15	14.090		
15,400.00	12,017.00	15,506.97	12,109.00	86.90	73.52	-94.89	-4,607.13	1,879.67	1,566.15	1,453.04	113.11	13.846		
15,500.00	12,017.00	15,606.97	12,109.00	88.35	74.85	-94.89	-4,707.12	1,880.65	1,566.15	1,451.07	115.08	13.609		
15,600.00	12,017.00	15,706.97	12,109.00	89.80	76.20	-94.89	-4,807.12	1,881.63	1,566.15	1,449.09	117.06	13.379		
15,700.00	12,017.00	15,806.97	12,109.00	91.27	77.55	-94.89	-4,907.11	1,882.61	1,566.15	1,447.09	119.06	13.155		
15,800.00	12,017.00	15,906.97	12,109.00	92.74	78.92	-94.89	-5,007.11	1,883.59	1,566.15	1,445.09	121.06	12.937		
15,900.00	12,017.00	16,006.97	12,109.00	94.21	80.30	-94.89	-5,107.10	1,884.57	1,566.15	1,443.07	123.08	12.724		
16,000.00	12,017.00	16,106.97	12,109.00	95.69	81.69	-94.89	-5,207.10	1,885.55	1,566.15	1,441.04	125.11	12.518		
16,100.00	12,017.00	16,206.97	12,109.00	97.18	83.09	-94.89	-5,307.09	1,886.53	1,566.15	1,439.00	127.15	12.317		
16,200.00	12,017.00	16,306.97	12,109.00	98.67	84.50	-94.89	-5,407.09	1,887.52	1,566.15	1,436.95	129.20	12.122		
16,300.00	12,017.00	16,406.97	12,109.00	100.16	85.92	-94.89	-5,507.08	1,888.50	1,566.15	1,434.89	131.26	11.932		
16,400.00	12,017.00	16,506.97	12,109.00	101.67	87.35	-94.89	-5,607.08	1,889.48	1,566.15	1,432.83	133.32	11.747		
16,500.00	12,017.00	16,606.97	12,109.00	103.17	88.78	-94.89	-5,707.08	1,890.46	1,566.15	1,430.75	135.40	11.567		
16,600.00	12,017.00	16,706.97	12,109.00	104.68	90.22	-94.89	-5,807.07	1,891.44	1,566.15	1,428.67	137.48	11.392		
16,700.00	12,017.00	16,806.97	12,109.00	106.20	91.67	-94.89	-5,907.07	1,892.42	1,566.15	1,426.58	139.58	11.221		
16,800.00	12,017.00	16,906.97	12,109.00	107.71	93.12	-94.89	-6,007.06	1,893.40	1,566.15	1,424.48	141.67	11.055		
16,900.00	12,017.00	17,006.97	12,109.00	109.24	94.58	-94.89	-6,107.06	1,894.38	1,566.15	1,422.37	143.78	10.893		
17,000.00	12,017.00	17,106.97	12,109.00	110.76	96.05	-94.89	-6,207.05	1,895.36	1,566.15	1,420.26	145.89	10.735		
17,100.00	12,017.00	17,206.97	12,109.00	112.29	97.52	-94.89	-6,307.05	1,896.34	1,566.15	1,418.14	148.01	10.581		
17,200.00	12,017.00	17,306.97	12,109.00	113.82	99.00	-94.89	-6,407.04	1,897.32	1,566.15	1,416.02	150.14	10.432		
17,300.00	12,017.00	17,406.97	12,109.00	115.36	100.49	-94.89	-6,507.04	1,898.30	1,566.15	1,413.89	152.27	10.286		
17,400.00	12,017.00	17,506.97	12,109.00	116.90	101.98	-94.89	-6,607.03	1,899.29	1,566.15	1,411.75	154.40	10.143		
17,500.00	12,017.00	17,606.97	12,109.00	118.44	103.47	-94.89	-6,707.03	1,900.27	1,566.15	1,409.61	156.54	10.004		
17,600.00	12,017.00	17,706.97	12,109.00	119.99	104.97	-94.89	-6,807.02	1,901.25	1,566.15	1,407.46	158.69	9.869		
17,700.00	12,017.00	17,806.97	12,109.00	121.53	106.47	-94.89	-6,907.02	1,902.23	1,566.15	1,405.31	160.84	9.737		
17,800.00	12,017.00	17,906.97	12,109.00	123.09	107.98	-94.89	-7,007.01	1,903.21	1,566.15	1,403.15	163.00	9.608		
17,900.00	12,017.00	18,006.97	12,109.00	124.64	109.49	-94.89	-7,107.01	1,904.19	1,566.15	1,400.99	165.16	9.482		
18,000.00	12,017.00	18,106.97	12,109.00	126.19	111.01	-94.89	-7,207.00	1,905.17	1,566.15	1,398.82	167.33	9.360		
18,100.00	12,017.00	18,206.97	12,109.00	127.75	112.53	-94.89	-7,307.00	1,906.15	1,566.15	1,396.65	169.50	9.240		
18,200.00	12,017.00	18,306.97	12,109.00	129.31	114.05	-94.89	-7,406.99	1,907.13	1,566.15	1,394.48	171.67	9.123		
18,300.00	12,017.00	18,406.97	12,109.00	130.88	115.58	-94.89	-7,506.99	1,908.11	1,566.15	1,392.30	173.85	9.008		
18,400.00	12,017.00	18,506.97	12,109.00	132.44	117.11	-94.89	-7,606.98	1,909.09	1,566.15	1,390.12	176.04	8.897		
18,500.00	12,017.00	18,606.97	12,109.00	134.01	118.65	-94.89	-7,706.98	1,910.07	1,566.15	1,387.93	178.22	8.788		
18,600.00	12,017.00	18,706.97	12,109.00	135.58	120.18	-94.89	-7,806.97	1,911.06	1,566.15	1,385.74	180.41	8.681		
18,700.00	12,017.00	18,806.97	12,109.00	137.15	121.72	-94.89	-7,906.97	1,912.04	1,566.15	1,383.55	182.60	8.577		
18,800.00	12,017.00	18,906.97	12,109.00	138.72	123.26	-94.89	-8,006.96	1,913.02	1,566.15	1,381.35	184.80	8.475		
18,900.00	12,017.00	19,006.97	12,109.00	140.29	124.81	-94.89	-8,106.96	1,914.00	1,566.15	1,379.15	187.00	8.375		
19,000.00	12,017.00	19,106.97	12,109.00	141.87	126.36	-94.89	-8,206.95	1,914.98	1,566.15	1,376.95	189.20	8.278		
19,100.00	12,017.00	19,206.97	12,109.00	143.45	127.91	-94.89	-8,306.95	1,915.96	1,566.15	1,374.75	191.41	8.182		
19,200.00	12,017.00	19,306.97	12,109.00	145.03	129.46	-94.89	-8,406.95	1,916.94	1,566.15	1,372.54	193.61	8.089		

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 Tatanka Fed Com 602H
Project:	Lea County, NM (NAD83)	TVD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 602H	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		
19,300.00	12,017.00	19,406.97	12,109.00	146.61	131.02	-94.89	-8,506.94	1,917.92	1,566.15	1,370.33	195.82	7.998		
19,400.00	12,017.00	19,506.97	12,109.00	148.19	132.58	-94.89	-8,606.94	1,918.90	1,566.15	1,368.12	198.04	7.908		
19,500.00	12,017.00	19,606.97	12,109.00	149.78	134.14	-94.89	-8,706.93	1,919.88	1,566.15	1,365.90	200.25	7.821		
19,600.00	12,017.00	19,706.97	12,109.00	151.36	135.70	-94.89	-8,806.93	1,920.86	1,566.15	1,363.68	202.47	7.735		
19,700.00	12,017.00	19,806.97	12,109.00	152.95	137.26	-94.89	-8,906.92	1,921.84	1,566.15	1,361.46	204.69	7.651		
19,800.00	12,017.00	19,906.97	12,109.00	154.54	138.83	-94.89	-9,006.92	1,922.83	1,566.15	1,359.24	206.92	7.569		
19,900.00	12,017.00	20,006.97	12,109.00	156.13	140.40	-94.89	-9,106.91	1,923.81	1,566.15	1,357.01	209.14	7.488		
20,000.00	12,017.00	20,106.97	12,109.00	157.72	141.97	-94.89	-9,206.91	1,924.79	1,566.15	1,354.78	211.37	7.410		
20,100.00	12,017.00	20,206.97	12,109.00	159.31	143.54	-94.89	-9,306.90	1,925.77	1,566.15	1,352.55	213.60	7.332		
20,200.00	12,017.00	20,306.97	12,109.00	160.90	145.11	-94.89	-9,406.90	1,926.75	1,566.15	1,350.32	215.83	7.256		
20,300.00	12,017.00	20,406.97	12,109.00	162.50	146.69	-94.89	-9,506.89	1,927.73	1,566.15	1,348.09	218.07	7.182		
20,400.00	12,017.00	20,506.97	12,109.00	164.09	148.27	-94.89	-9,606.89	1,928.71	1,566.15	1,345.85	220.30	7.109		
20,500.00	12,017.00	20,606.97	12,109.00	165.69	149.84	-94.89	-9,706.88	1,929.69	1,566.15	1,343.61	222.54	7.038		
20,600.00	12,017.00	20,706.97	12,109.00	167.29	151.43	-94.89	-9,806.88	1,930.67	1,566.15	1,341.37	224.78	6.968		
20,700.00	12,017.00	20,806.97	12,109.00	168.89	153.01	-94.89	-9,906.87	1,931.65	1,566.15	1,339.13	227.02	6.899		
20,800.00	12,017.00	20,906.97	12,109.00	170.49	154.59	-94.89	-10,006.87	1,932.63	1,566.15	1,336.89	229.26	6.831		
20,900.00	12,017.00	21,006.97	12,109.00	172.09	156.18	-94.89	-10,106.86	1,933.61	1,566.15	1,334.65	231.51	6.765		
21,000.00	12,017.00	21,106.97	12,109.00	173.69	157.76	-94.89	-10,206.86	1,934.60	1,566.15	1,332.40	233.75	6.700		
21,100.00	12,017.00	21,206.97	12,109.00	175.29	159.35	-94.89	-10,306.85	1,935.58	1,566.15	1,330.15	236.00	6.636		
21,200.00	12,017.00	21,306.97	12,109.00	176.90	160.94	-94.89	-10,406.85	1,936.56	1,566.16	1,327.90	238.25	6.574		
21,300.00	12,017.00	21,406.97	12,109.00	178.50	162.53	-94.89	-10,506.84	1,937.54	1,566.16	1,325.65	240.50	6.512		
21,400.00	12,017.00	21,506.97	12,109.00	180.11	164.12	-94.89	-10,606.84	1,938.52	1,566.16	1,323.40	242.75	6.452		
21,500.00	12,017.00	21,606.97	12,109.00	181.71	165.71	-94.89	-10,706.83	1,939.50	1,566.16	1,321.15	245.01	6.392		
21,600.00	12,017.00	21,706.97	12,109.00	183.32	167.30	-94.89	-10,806.83	1,940.48	1,566.16	1,318.89	247.26	6.334		
21,700.00	12,017.00	21,806.97	12,109.00	184.93	168.90	-94.89	-10,906.83	1,941.46	1,566.16	1,316.64	249.52	6.277		
21,800.00	12,017.00	21,906.97	12,109.00	186.54	170.49	-94.89	-11,006.82	1,942.44	1,566.16	1,314.38	251.78	6.220		
21,900.00	12,017.00	22,006.97	12,109.00	188.15	172.09	-94.89	-11,106.82	1,943.42	1,566.16	1,312.12	254.03	6.165		
22,000.00	12,017.00	22,106.97	12,109.00	189.76	173.69	-94.89	-11,206.81	1,944.40	1,566.16	1,309.86	256.29	6.111		
22,100.00	12,017.00	22,206.97	12,109.00	191.37	175.29	-94.89	-11,306.81	1,945.38	1,566.16	1,307.60	258.55	6.057		
22,187.30	12,017.00	22,294.27	12,109.00	192.77	176.68	-94.89	-11,394.10	1,946.24	1,566.16	1,305.63	260.53	6.011 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 Tatanka Fed Com 602H
Project:	Lea County, NM (NAD83)	TVD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 602H	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													Tatanka Fed Com - Tatanka Fed Com 705H - OH - Plan #2		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	110.63	-991.65	2,633.56	2,814.41							
100.00	100.00	56.70	56.70	0.13	0.07	110.63	-991.65	2,633.56	2,814.07	2,813.93	0.14	N/A				
200.00	200.00	156.70	156.70	0.48	0.33	110.63	-991.65	2,633.56	2,814.07	2,813.49	0.59	4,810.201				
300.00	300.00	256.70	256.70	0.84	0.69	110.63	-991.65	2,633.56	2,814.07	2,812.99	1.09	2,588.501				
400.00	400.00	356.70	356.70	1.20	1.05	110.63	-991.65	2,633.56	2,814.07	2,812.48	1.59	1,767.266				
500.00	500.00	456.70	456.70	1.56	1.40	110.63	-991.65	2,633.56	2,814.07	2,811.97	2.10	1,341.074				
600.00	600.00	556.70	556.70	1.92	1.76	110.63	-991.65	2,633.56	2,814.07	2,811.47	2.60	1,080.354				
700.00	700.00	656.70	656.70	2.28	2.12	110.63	-991.65	2,633.56	2,814.07	2,810.96	3.11	904.455				
800.00	800.00	756.70	756.70	2.63	2.48	110.63	-991.65	2,633.56	2,814.07	2,810.46	3.62	777.791				
900.00	900.00	856.70	856.70	2.99	2.84	110.63	-991.65	2,633.56	2,814.07	2,809.95	4.12	682.236				
1,000.00	1,000.00	956.70	956.70	3.35	3.20	110.63	-991.65	2,633.56	2,814.07	2,809.44	4.63	607.584				
1,100.00	1,100.00	1,056.70	1,056.70	3.71	3.55	110.63	-991.65	2,633.56	2,814.07	2,808.93	5.14	547.655				
1,200.00	1,200.00	1,156.70	1,156.70	4.07	3.91	110.63	-991.65	2,633.56	2,814.07	2,808.43	5.65	498.485				
1,300.00	1,300.00	1,256.70	1,256.70	4.43	4.27	110.63	-991.65	2,633.56	2,814.07	2,807.92	6.15	457.415				
1,400.00	1,400.00	1,356.70	1,356.70	4.79	4.63	110.63	-991.65	2,633.56	2,814.07	2,807.41	6.66	422.597				
1,500.00	1,500.00	1,456.70	1,456.70	5.14	4.99	110.63	-991.65	2,633.56	2,814.07	2,806.91	7.17	392.704				
1,600.00	1,600.00	1,556.70	1,556.70	5.50	5.35	110.63	-991.65	2,633.56	2,814.07	2,806.40	7.67	366.760				
1,700.00	1,700.00	1,656.70	1,656.70	5.86	5.71	110.63	-991.65	2,633.56	2,814.07	2,805.89	8.18	344.031				
1,800.00	1,800.00	1,756.70	1,756.70	6.22	6.06	110.63	-991.65	2,633.56	2,814.07	2,805.39	8.69	323.955				
1,900.00	1,900.00	1,856.70	1,856.70	6.58	6.42	110.63	-991.65	2,633.56	2,814.07	2,804.88	9.19	306.093				
2,000.00	2,000.00	1,956.70	1,956.70	6.94	6.78	110.63	-991.65	2,633.56	2,814.07	2,804.37	9.70	290.097				
2,100.00	2,100.00	2,056.70	2,056.70	7.29	7.14	110.63	-991.65	2,633.56	2,814.07	2,803.87	10.21	275.690				
2,200.00	2,200.00	2,156.70	2,156.70	7.65	7.50	110.63	-991.65	2,633.56	2,814.07	2,803.36	10.71	262.646				
2,300.00	2,300.00	2,256.70	2,256.70	8.01	7.86	110.63	-991.65	2,633.56	2,814.07	2,802.85	11.22	250.781				
2,400.00	2,400.00	2,356.70	2,356.70	8.37	8.22	110.63	-991.65	2,633.56	2,814.07	2,802.35	11.73	239.941				
2,500.00	2,500.00	2,456.70	2,456.70	8.73	8.57	110.63	-991.65	2,633.56	2,814.07	2,801.84	12.24	230.000				
2,600.00	2,600.00	2,556.70	2,556.70	9.09	8.93	110.63	-991.65	2,633.56	2,814.07	2,801.33	12.74	220.850				
2,700.00	2,700.00	2,656.70	2,656.70	9.45	9.29	110.63	-991.65	2,633.56	2,814.07	2,800.82	13.25	212.399				
2,800.00	2,800.00	2,756.70	2,756.70	9.80	9.65	110.63	-991.65	2,633.56	2,814.07	2,800.32	13.76	204.572				
2,900.00	2,900.00	2,856.70	2,856.70	10.16	10.01	110.63	-991.65	2,633.56	2,814.07	2,799.81	14.26	197.301				
3,000.00	3,000.00	2,956.70	2,956.70	10.52	10.37	110.63	-991.65	2,633.56	2,814.07	2,799.30	14.77	190.529				
3,100.00	3,100.00	3,056.70	3,056.70	10.88	10.72	110.63	-991.65	2,633.56	2,814.07	2,798.80	15.28	184.206				
3,200.00	3,200.00	3,156.70	3,156.70	11.24	11.08	110.63	-991.65	2,633.56	2,814.07	2,798.29	15.78	178.290				
3,300.00	3,299.99	3,256.69	3,256.69	11.58	11.44	-55.19	-991.65	2,633.56	2,813.33	2,797.05	16.28	172.835				
3,400.00	3,399.91	3,332.64	3,332.64	11.90	11.71	-55.27	-991.69	2,633.69	2,811.33	2,794.63	16.70	168.388				
3,500.00	3,499.69	3,400.00	3,399.99	12.23	11.94	-55.37	-992.03	2,634.81	2,809.24	2,792.15	17.09	164.394				
3,600.00	3,599.27	3,447.69	3,447.65	12.56	12.10	-55.47	-992.48	2,636.29	2,807.11	2,789.69	17.43	161.081				
3,700.00	3,698.57	3,500.00	3,499.91	12.89	12.28	-55.60	-993.17	2,638.57	2,805.07	2,787.29	17.77	157.812				
3,800.00	3,797.54	3,562.34	3,562.13	13.22	12.49	-55.78	-994.26	2,642.18	2,803.06	2,784.91	18.15	154.446				
3,900.00	3,896.09	3,600.00	3,599.69	13.57	12.62	-55.91	-995.06	2,644.83	2,801.25	2,782.79	18.46	151.771				
4,000.00	3,994.16	3,676.34	3,675.73	13.92	12.88	-56.19	-997.02	2,651.29	2,799.30	2,780.43	18.87	148.316				
4,100.00	4,091.70	3,733.03	3,732.10	14.28	13.08	-56.43	-998.76	2,657.03	2,797.59	2,778.35	19.24	145.409				
4,125.65	4,116.62	3,747.53	3,746.51	14.37	13.13	-56.50	-999.24	2,658.62	2,797.17	2,777.84	19.33	144.678				
4,200.00	4,188.79	3,800.00	3,798.57	14.65	13.31	-56.72	-1,001.12	2,664.84	2,796.45	2,776.81	19.64	142.390				
4,226.23	4,214.26	3,804.37	3,802.91	14.75	13.32	-56.74	-1,001.29	2,665.38	2,796.36	2,776.66	19.71	141.902 CC				
4,300.00	4,285.87	3,865.43	3,863.41	15.04	13.54	-56.99	-1,003.68	2,673.28	2,796.64	2,776.60	20.04	139.556				
4,400.00	4,382.95	3,963.29	3,960.36	15.43	13.88	-57.41	-1,007.53	2,685.98	2,797.22	2,776.67	20.54	136.163				
4,500.00	4,480.03	4,061.15	4,057.32	15.83	14.23	-57.82	-1,011.38	2,698.68	2,797.94	2,776.89	21.05	132.898				
4,600.00	4,577.11	4,159.01	4,154.27	16.23	14.58	-58.23	-1,015.22	2,711.38	2,798.82	2,777.25	21.57	129.758				
4,700.00	4,674.18	4,256.87	4,251.23	16.65	14.94	-58.64	-1,019.07	2,724.08	2,799.85	2,777.76	22.09	126.739				
4,800.00	4,771.26	4,354.73	4,348.19	17.07	15.30	-59.05	-1,022.92	2,736.78	2,801.03	2,778.41	22.62	123.836				
4,900.00	4,868.34	4,452.59	4,445.14	17.49	15.66	-59.46	-1,026.76	2,749.48	2,802.36	2,779.21	23.15	121.045				

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 Tatanka Fed Com 602H
Project:	Lea County, NM (NAD83)	TVD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 602H	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	4,965.42	4,550.45	4,542.10	17.92	16.02	-59.88	-1,030.61	2,762.18	2,803.85	2,780.16	23.69	118.361		
5,100.00	5,062.50	4,648.31	4,639.05	18.36	16.39	-60.29	-1,034.46	2,774.88	2,805.48	2,781.25	24.23	115.780		
5,200.00	5,159.57	4,746.17	4,736.01	18.80	16.76	-60.70	-1,038.30	2,787.58	2,807.26	2,782.48	24.78	113.297		
5,300.00	5,256.65	4,844.03	4,832.97	19.25	17.12	-61.10	-1,042.15	2,800.28	2,809.19	2,783.86	25.33	110.909		
5,400.00	5,353.73	4,941.89	4,929.92	19.70	17.50	-61.51	-1,046.00	2,812.98	2,811.27	2,785.39	25.88	108.611		
5,500.00	5,450.81	5,039.75	5,026.88	20.15	17.87	-61.92	-1,049.85	2,825.68	2,813.50	2,787.06	26.44	106.400		
5,600.00	5,547.89	5,137.61	5,123.83	20.61	18.24	-62.33	-1,053.69	2,838.38	2,815.88	2,788.88	27.01	104.271		
5,700.00	5,644.96	5,235.47	5,220.79	21.07	18.62	-62.74	-1,057.54	2,851.09	2,818.41	2,790.84	27.57	102.222		
5,800.00	5,742.04	5,333.33	5,317.75	21.54	19.00	-63.14	-1,061.39	2,863.79	2,821.08	2,792.94	28.14	100.248		
5,900.00	5,839.12	5,431.19	5,414.70	22.00	19.38	-63.55	-1,065.23	2,876.49	2,823.90	2,795.19	28.71	98.346		
6,000.00	5,936.20	5,529.05	5,511.66	22.47	19.76	-63.95	-1,069.08	2,889.19	2,826.87	2,797.58	29.29	96.514		
6,100.00	6,033.28	5,626.91	5,608.62	22.94	20.14	-64.35	-1,072.93	2,901.89	2,829.99	2,800.12	29.87	94.747		
6,200.00	6,130.35	5,724.77	5,705.57	23.42	20.52	-64.76	-1,076.77	2,914.59	2,833.25	2,802.80	30.45	93.043		
6,300.00	6,227.43	5,822.63	5,802.53	23.90	20.91	-65.16	-1,080.62	2,927.29	2,836.65	2,805.62	31.04	91.400		
6,400.00	6,324.51	5,920.49	5,899.48	24.38	21.29	-65.56	-1,084.47	2,939.99	2,840.21	2,808.58	31.62	89.815		
6,500.00	6,421.59	6,018.35	5,996.44	24.86	21.68	-65.96	-1,088.32	2,952.69	2,843.90	2,811.69	32.21	88.284		
6,600.00	6,518.67	6,116.21	6,093.40	25.34	22.06	-66.36	-1,092.16	2,965.39	2,847.74	2,814.94	32.81	86.807		
6,700.00	6,615.75	6,214.07	6,190.35	25.83	22.45	-66.76	-1,096.01	2,978.09	2,851.73	2,818.33	33.40	85.380		
6,800.00	6,712.82	6,311.93	6,287.31	26.31	22.84	-67.15	-1,099.86	2,990.79	2,855.85	2,821.86	34.00	84.002		
6,900.00	6,809.90	6,409.79	6,384.26	26.80	23.23	-67.55	-1,103.70	3,003.49	2,860.12	2,825.52	34.60	82.670		
7,000.00	6,906.98	6,507.65	6,481.22	27.29	23.62	-67.94	-1,107.55	3,016.19	2,864.53	2,829.33	35.20	81.382		
7,100.00	7,004.06	6,605.51	6,578.18	27.78	24.01	-68.34	-1,111.40	3,028.89	2,869.08	2,833.28	35.80	80.137		
7,200.00	7,101.14	6,703.37	6,675.13	28.28	24.40	-68.73	-1,115.24	3,041.59	2,873.77	2,837.36	36.41	78.933		
7,300.00	7,198.21	6,801.23	6,772.09	28.77	24.79	-69.12	-1,119.09	3,054.29	2,878.60	2,841.59	37.02	77.768		
7,400.00	7,295.29	6,899.09	6,869.04	29.26	25.18	-69.51	-1,122.94	3,066.99	2,883.57	2,845.95	37.62	76.641		
7,500.00	7,392.37	6,996.95	6,966.00	29.76	25.58	-69.90	-1,126.79	3,079.69	2,888.68	2,850.44	38.24	75.549		
7,600.00	7,489.45	7,269.93	7,237.46	30.26	26.63	-71.01	-1,134.95	3,106.65	2,890.52	2,851.16	39.36	73.432		
7,700.00	7,586.53	7,575.93	7,543.23	30.76	27.71	-72.36	-1,137.65	3,115.56	2,884.51	2,844.08	40.43	71.348		
7,800.00	7,683.60	7,673.00	7,640.30	31.26	28.03	-72.80	-1,137.65	3,115.56	2,877.13	2,836.10	41.03	70.117		
7,900.00	7,780.68	7,770.08	7,737.38	31.76	28.36	-73.25	-1,137.65	3,115.56	2,869.93	2,828.29	41.64	68.922		
8,000.00	7,877.76	7,867.16	7,834.46	32.26	28.69	-73.69	-1,137.65	3,115.56	2,862.92	2,820.67	42.25	67.764		
8,035.67	7,912.38	7,901.78	7,869.08	32.44	28.81	-73.85	-1,137.65	3,115.56	2,860.46	2,817.99	42.47	67.360		
8,100.00	7,974.96	7,964.36	7,931.66	32.76	29.02	-74.07	-1,137.65	3,115.56	2,856.23	2,813.38	42.85	66.649		
8,200.00	8,072.71	8,062.11	8,029.41	33.24	29.35	-74.39	-1,137.65	3,115.56	2,850.38	2,806.93	43.45	65.605		
8,300.00	8,170.98	8,160.38	8,127.68	33.69	29.68	-74.67	-1,137.65	3,115.56	2,845.36	2,801.33	44.03	64.629		
8,400.00	8,269.70	8,259.10	8,226.40	34.13	30.01	-74.91	-1,137.65	3,115.56	2,841.13	2,796.54	44.59	63.718		
8,500.00	8,368.80	8,358.20	8,325.50	34.55	30.35	-75.12	-1,137.65	3,115.56	2,837.65	2,792.51	45.14	62.870		
8,600.00	8,468.22	8,457.62	8,424.92	34.94	30.69	-75.29	-1,137.65	3,115.56	2,834.89	2,789.23	45.66	62.081		
8,700.00	8,567.89	8,557.29	8,524.59	35.31	31.03	-75.42	-1,137.65	3,115.56	2,832.83	2,786.65	46.18	61.347		
8,800.00	8,667.73	8,657.13	8,624.43	35.66	31.37	-75.51	-1,137.65	3,115.56	2,831.44	2,784.76	46.67	60.666		
8,900.00	8,767.69	8,757.09	8,724.39	35.99	31.71	-75.55	-1,137.65	3,115.56	2,830.71	2,783.56	47.15	60.035		
8,961.32	8,829.00	8,818.40	8,785.70	36.17	31.92	90.24	-1,137.65	3,115.56	2,830.58	2,783.15	47.43	59.677		
9,000.00	8,867.68	8,857.08	8,824.38	36.28	32.05	90.24	-1,137.65	3,115.56	2,830.58	2,782.98	47.60	59.460		
9,100.00	8,967.68	8,957.08	8,924.38	36.57	32.39	90.24	-1,137.65	3,115.56	2,830.58	2,782.53	48.05	58.905		
9,200.00	9,067.68	9,057.08	9,024.38	36.86	32.73	90.24	-1,137.65	3,115.56	2,830.58	2,782.08	48.50	58.359		
9,300.00	9,167.68	9,157.08	9,124.38	37.16	33.08	90.24	-1,137.65	3,115.56	2,830.58	2,781.63	48.95	57.822		
9,400.00	9,267.68	9,257.08	9,224.38	37.45	33.42	90.24	-1,137.65	3,115.56	2,830.58	2,781.18	49.40	57.293		
9,500.00	9,367.68	9,357.08	9,324.38	37.74	33.76	90.24	-1,137.65	3,115.56	2,830.58	2,780.73	49.86	56.773		
9,600.00	9,467.68	9,457.08	9,424.38	38.04	34.11	90.24	-1,137.65	3,115.56	2,830.58	2,780.27	50.31	56.261		
9,700.00	9,567.68	9,557.08	9,524.38	38.33	34.45	90.24	-1,137.65	3,115.56	2,830.58	2,779.82	50.77	55.757		
9,800.00	9,667.68	9,657.08	9,624.38	38.63	34.79	90.24	-1,137.65	3,115.56	2,830.58	2,779.36	51.22	55.261		
9,900.00	9,767.68	9,757.08	9,724.38	38.93	35.14	90.24	-1,137.65	3,115.56	2,830.58	2,778.91	51.68	54.773		

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 Tatanka Fed Com 602H
Project:	Lea County, NM (NAD83)	TVD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 602H	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													Tatanka Fed Com - Tatanka Fed Com 705H - OH - Plan #2		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				
10,000.00	9,867.68	9,857.08	9,824.38	39.23	35.48	90.24	-1,137.65	3,115.56	2,830.58	2,778.45	52.14	54.292				
10,100.00	9,967.68	9,957.08	9,924.38	39.53	35.83	90.24	-1,137.65	3,115.56	2,830.58	2,777.99	52.60	53.818				
10,200.00	10,067.68	10,057.08	10,024.38	39.83	36.17	90.24	-1,137.65	3,115.56	2,830.58	2,777.53	53.05	53.352				
10,300.00	10,167.68	10,157.08	10,124.38	40.13	36.52	90.24	-1,137.65	3,115.56	2,830.58	2,777.07	53.51	52.893				
10,400.00	10,267.68	10,257.08	10,224.38	40.43	36.87	90.24	-1,137.65	3,115.56	2,830.58	2,776.61	53.98	52.441				
10,500.00	10,367.68	10,357.08	10,324.38	40.74	37.21	90.24	-1,137.65	3,115.56	2,830.58	2,776.15	54.44	51.996				
10,600.00	10,467.68	10,457.08	10,424.38	41.04	37.56	90.24	-1,137.65	3,115.56	2,830.58	2,775.68	54.90	51.558				
10,700.00	10,567.68	10,557.08	10,524.38	41.35	37.90	90.24	-1,137.65	3,115.56	2,830.58	2,775.22	55.36	51.126				
10,800.00	10,667.68	10,657.08	10,624.38	41.66	38.25	90.24	-1,137.65	3,115.56	2,830.58	2,774.76	55.83	50.701				
10,900.00	10,767.68	10,757.08	10,724.38	41.96	38.60	90.24	-1,137.65	3,115.56	2,830.58	2,774.29	56.29	50.282				
11,000.00	10,867.68	10,857.08	10,824.38	42.27	38.94	90.24	-1,137.65	3,115.56	2,830.58	2,773.82	56.76	49.870				
11,100.00	10,967.68	10,957.08	10,924.38	42.58	39.29	90.24	-1,137.65	3,115.56	2,830.58	2,773.36	57.23	49.463				
11,200.00	11,067.68	11,057.08	11,024.38	42.89	39.64	90.24	-1,137.65	3,115.56	2,830.58	2,772.89	57.69	49.063				
11,300.00	11,167.68	11,157.08	11,124.38	43.20	39.99	90.24	-1,137.65	3,115.56	2,830.58	2,772.42	58.16	48.668				
11,400.00	11,267.68	11,257.08	11,224.38	43.51	40.34	90.24	-1,137.65	3,115.56	2,830.58	2,771.95	58.63	48.279				
11,500.00	11,367.68	11,357.08	11,324.38	43.82	40.68	90.24	-1,137.65	3,115.56	2,830.58	2,771.49	59.10	47.896				
11,576.36	11,444.04	11,433.44	11,400.74	44.06	40.95	90.24	-1,137.65	3,115.56	2,830.58	2,771.13	59.46	47.607				
11,600.00	11,467.68	11,457.08	11,424.38	44.14	41.03	-89.21	-1,137.65	3,115.56	2,830.58	2,771.01	59.57	47.516				
11,650.00	11,517.48	11,505.49	11,472.79	44.33	41.20	-89.29	-1,138.10	3,115.56	2,830.53	2,770.70	59.83	47.313				
11,700.00	11,566.73	11,552.58	11,519.71	44.54	41.35	-89.38	-1,141.90	3,115.60	2,830.48	2,770.38	60.09	47.100				
11,750.00	11,615.04	11,600.00	11,566.48	44.78	41.51	-89.48	-1,149.61	3,115.68	2,830.43	2,770.04	60.39	46.873				
11,800.00	11,662.05	11,647.82	11,612.84	45.04	41.67	-89.58	-1,161.27	3,115.79	2,830.39	2,769.69	60.70	46.632				
11,850.00	11,707.40	11,696.02	11,658.43	45.33	41.83	-89.69	-1,176.89	3,115.94	2,830.35	2,769.33	61.03	46.380				
11,900.00	11,750.75	11,744.64	11,702.91	45.65	41.99	-89.79	-1,196.47	3,116.14	2,830.33	2,768.95	61.37	46.116				
11,950.00	11,791.76	11,793.69	11,745.95	45.98	42.15	-89.90	-1,219.97	3,116.37	2,830.31	2,768.57	61.74	45.843				
11,994.77	11,826.24	11,838.01	11,782.98	46.30	42.29	-90.00	-1,244.31	3,116.61	2,830.31	2,768.23	62.08	45.590				
12,000.00	11,830.12	11,843.21	11,787.20	46.33	42.31	-90.01	-1,247.35	3,116.64	2,830.31	2,768.19	62.12	45.561				
12,050.00	11,865.55	11,893.20	11,826.28	46.70	42.47	-90.12	-1,278.49	3,116.94	2,830.32	2,767.80	62.52	45.270				
12,100.00	11,897.77	11,943.68	11,862.85	47.09	42.62	-90.23	-1,313.27	3,117.28	2,830.33	2,767.40	62.94	44.972				
12,150.00	11,926.54	11,994.66	11,896.52	47.50	42.78	-90.34	-1,351.52	3,117.66	2,830.36	2,767.00	63.36	44.668				
12,200.00	11,951.63	12,046.15	11,926.94	47.92	42.95	-90.45	-1,393.04	3,118.06	2,830.40	2,766.59	63.81	44.358				
12,250.00	11,972.86	12,098.15	11,953.76	48.35	43.13	-90.55	-1,437.56	3,118.50	2,830.44	2,766.18	64.26	44.044				
12,300.00	11,990.07	12,150.66	11,976.63	48.80	43.31	-90.65	-1,484.80	3,118.96	2,830.49	2,765.76	64.73	43.727				
12,350.00	12,003.12	12,203.66	11,995.24	49.25	43.51	-90.75	-1,534.41	3,119.45	2,830.55	2,765.35	65.21	43.409				
12,400.00	12,011.92	12,257.15	12,009.29	49.70	43.71	-90.84	-1,585.99	3,119.96	2,830.61	2,764.93	65.69	43.091				
12,450.00	12,016.39	12,311.10	12,018.52	50.16	43.93	-90.92	-1,639.12	3,120.48	2,830.68	2,764.50	66.18	42.775				
12,476.36	12,017.00	12,339.71	12,021.38	50.40	44.05	-90.97	-1,667.59	3,120.76	2,830.71	2,764.28	66.43	42.611				
12,500.00	12,017.00	12,365.51	12,022.74	50.61	44.16	-90.99	-1,693.35	3,121.01	2,830.73	2,764.07	66.66	42.463				
12,600.00	12,017.00	12,466.98	12,023.00	51.55	44.61	-91.00	-1,794.82	3,122.00	2,830.74	2,763.07	67.67	41.830				
12,700.00	12,017.00	12,566.98	12,023.00	52.52	45.11	-91.00	-1,894.81	3,122.98	2,830.74	2,762.00	68.74	41.181				
12,800.00	12,017.00	12,666.98	12,023.00	53.53	45.67	-91.00	-1,994.81	3,123.96	2,830.74	2,760.87	69.87	40.516				
12,900.00	12,017.00	12,766.98	12,023.00	54.57	46.27	-91.00	-2,094.80	3,124.94	2,830.74	2,759.68	71.05	39.840				
13,000.00	12,017.00	12,866.98	12,023.00	55.63	46.93	-91.00	-2,194.80	3,125.93	2,830.74	2,758.44	72.30	39.155				
13,100.00	12,017.00	12,966.98	12,023.00	56.73	47.63	-91.00	-2,294.79	3,126.91	2,830.74	2,757.14	73.59	38.465				
13,200.00	12,017.00	13,066.98	12,023.00	57.85	48.38	-91.00	-2,394.79	3,127.89	2,830.73	2,755.80	74.94	37.774				
13,300.00	12,017.00	13,166.98	12,023.00	58.99	49.18	-91.00	-2,494.79	3,128.87	2,830.73	2,754.40	76.33	37.084				
13,400.00	12,017.00	13,266.98	12,023.00	60.16	50.01	-91.00	-2,594.78	3,129.85	2,830.73	2,752.96	77.77	36.398				
13,500.00	12,017.00	13,366.98	12,023.00	61.35	50.88	-91.00	-2,694.78	3,130.83	2,830.73	2,751.48	79.25	35.717				
13,600.00	12,017.00	13,466.98	12,023.00	62.57	51.80	-91.00	-2,794.77	3,131.81	2,830.73	2,749.96	80.78	35.044				
13,700.00	12,017.00	13,566.98	12,023.00	63.80	52.75	-91.00	-2,894.77	3,132.79	2,830.73	2,748.40	82.34	34.380				
13,800.00	12,017.00	13,666.98	12,023.00	65.05	53.73	-91.00	-2,994.76	3,133.77	2,830.73	2,746.80	83.93	33.726				
13,900.00	12,017.00	13,766.98	12,023.00	66.32	54.74	-91.00	-3,094.76	3,134.75	2,830.73	2,745.17	85.56	33.083				

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 Tatanka Fed Com 602H
Project:	Lea County, NM (NAD83)	TVD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 602H	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		
14,000.00	12,017.00	13,866.98	12,023.00	67.60	55.79	-91.00	-3,194.75	3,135.73	2,830.73	2,743.51	87.23	32.453		
14,100.00	12,017.00	13,966.98	12,023.00	68.90	56.86	-91.00	-3,294.75	3,136.71	2,830.73	2,741.81	88.92	31.835		
14,200.00	12,017.00	14,066.98	12,023.00	70.22	57.96	-91.00	-3,394.74	3,137.69	2,830.73	2,740.09	90.64	31.231		
14,300.00	12,017.00	14,166.98	12,023.00	71.55	59.09	-91.00	-3,494.74	3,138.67	2,830.73	2,738.34	92.39	30.640		
14,400.00	12,017.00	14,266.98	12,023.00	72.89	60.24	-91.00	-3,594.73	3,139.65	2,830.73	2,736.57	94.16	30.063		
14,500.00	12,017.00	14,366.98	12,023.00	74.25	61.41	-91.00	-3,694.73	3,140.63	2,830.73	2,734.77	95.96	29.500		
14,600.00	12,017.00	14,466.98	12,023.00	75.61	62.61	-91.00	-3,794.72	3,141.61	2,830.73	2,732.95	97.78	28.951		
14,700.00	12,017.00	14,566.98	12,023.00	76.99	63.82	-91.00	-3,894.72	3,142.59	2,830.73	2,731.11	99.62	28.415		
14,800.00	12,017.00	14,666.98	12,023.00	78.38	65.06	-91.00	-3,994.71	3,143.57	2,830.73	2,729.25	101.48	27.894		
14,900.00	12,017.00	14,766.98	12,023.00	79.78	66.31	-91.00	-4,094.71	3,144.55	2,830.73	2,727.37	103.36	27.386		
15,000.00	12,017.00	14,866.98	12,023.00	81.18	67.58	-91.00	-4,194.70	3,145.53	2,830.73	2,725.47	105.26	26.892		
15,100.00	12,017.00	14,966.98	12,023.00	82.60	68.87	-91.00	-4,294.70	3,146.51	2,830.73	2,723.55	107.18	26.411		
15,200.00	12,017.00	15,066.98	12,023.00	84.03	70.17	-91.00	-4,394.69	3,147.49	2,830.73	2,721.62	109.11	25.944		
15,300.00	12,017.00	15,166.98	12,023.00	85.46	71.49	-91.00	-4,494.69	3,148.47	2,830.73	2,719.67	111.06	25.488		
15,400.00	12,017.00	15,266.98	12,023.00	86.90	72.81	-91.00	-4,594.68	3,149.46	2,830.73	2,717.71	113.02	25.046		
15,500.00	12,017.00	15,366.98	12,023.00	88.35	74.16	-91.00	-4,694.68	3,150.44	2,830.73	2,715.73	115.00	24.615		
15,600.00	12,017.00	15,466.98	12,023.00	89.80	75.51	-91.00	-4,794.67	3,151.42	2,830.73	2,713.74	116.99	24.196		
15,700.00	12,017.00	15,566.98	12,023.00	91.27	76.88	-91.00	-4,894.67	3,152.40	2,830.73	2,711.73	118.99	23.789		
15,800.00	12,017.00	15,666.98	12,023.00	92.74	78.26	-91.00	-4,994.67	3,153.38	2,830.73	2,709.72	121.01	23.393		
15,900.00	12,017.00	15,766.98	12,023.00	94.21	79.64	-91.00	-5,094.66	3,154.36	2,830.73	2,707.69	123.03	23.008		
16,000.00	12,017.00	15,866.98	12,023.00	95.69	81.04	-91.00	-5,194.66	3,155.34	2,830.73	2,705.66	125.07	22.633		
16,100.00	12,017.00	15,966.98	12,023.00	97.18	82.45	-91.00	-5,294.65	3,156.32	2,830.73	2,703.61	127.12	22.269		
16,200.00	12,017.00	16,066.98	12,023.00	98.67	83.86	-91.00	-5,394.65	3,157.30	2,830.73	2,701.55	129.17	21.914		
16,300.00	12,017.00	16,166.98	12,023.00	100.16	85.29	-91.00	-5,494.64	3,158.28	2,830.72	2,699.49	131.24	21.569		
16,400.00	12,017.00	16,266.98	12,023.00	101.67	86.72	-91.00	-5,594.64	3,159.26	2,830.72	2,697.41	133.31	21.233		
16,500.00	12,017.00	16,366.98	12,023.00	103.17	88.16	-91.00	-5,694.63	3,160.24	2,830.72	2,695.33	135.40	20.907		
16,600.00	12,017.00	16,466.98	12,023.00	104.68	89.61	-91.00	-5,794.63	3,161.22	2,830.72	2,693.23	137.49	20.589		
16,700.00	12,017.00	16,566.98	12,023.00	106.20	91.06	-91.00	-5,894.62	3,162.20	2,830.72	2,691.13	139.59	20.279		
16,800.00	12,017.00	16,666.98	12,023.00	107.71	92.52	-91.00	-5,994.62	3,163.18	2,830.72	2,689.03	141.70	19.978		
16,900.00	12,017.00	16,766.98	12,023.00	109.24	93.99	-91.00	-6,094.61	3,164.16	2,830.72	2,686.91	143.81	19.684		
17,000.00	12,017.00	16,866.98	12,023.00	110.76	95.46	-91.00	-6,194.61	3,165.14	2,830.72	2,684.79	145.93	19.398		
17,100.00	12,017.00	16,966.98	12,023.00	112.29	96.94	-91.00	-6,294.60	3,166.12	2,830.72	2,682.67	148.06	19.119		
17,200.00	12,017.00	17,066.98	12,023.00	113.82	98.43	-91.00	-6,394.60	3,167.10	2,830.72	2,680.53	150.19	18.848		
17,300.00	12,017.00	17,166.98	12,023.00	115.36	99.92	-91.00	-6,494.59	3,168.08	2,830.72	2,678.39	152.33	18.583		
17,400.00	12,017.00	17,266.98	12,023.00	116.90	101.41	-91.00	-6,594.59	3,169.06	2,830.72	2,676.25	154.47	18.325		
17,500.00	12,017.00	17,366.98	12,023.00	118.44	102.91	-91.00	-6,694.58	3,170.04	2,830.72	2,674.10	156.62	18.073		
17,600.00	12,017.00	17,466.98	12,023.00	119.99	104.42	-91.00	-6,794.58	3,171.02	2,830.72	2,671.94	158.78	17.828		
17,700.00	12,017.00	17,566.98	12,023.00	121.53	105.93	-91.00	-6,894.57	3,172.01	2,830.72	2,669.78	160.94	17.589		
17,800.00	12,017.00	17,666.98	12,023.00	123.09	107.44	-91.00	-6,994.57	3,172.99	2,830.72	2,667.62	163.10	17.355		
17,900.00	12,017.00	17,766.98	12,023.00	124.64	108.95	-91.00	-7,094.56	3,173.97	2,830.72	2,665.44	165.27	17.127		
18,000.00	12,017.00	17,866.98	12,023.00	126.19	110.48	-91.00	-7,194.56	3,174.95	2,830.72	2,663.27	167.45	16.905		
18,100.00	12,017.00	17,966.98	12,023.00	127.75	112.00	-91.00	-7,294.55	3,175.93	2,830.72	2,661.09	169.63	16.688		
18,200.00	12,017.00	18,066.98	12,023.00	129.31	113.53	-91.00	-7,394.55	3,176.91	2,830.72	2,658.91	171.81	16.476		
18,300.00	12,017.00	18,166.98	12,023.00	130.88	115.06	-91.00	-7,494.55	3,177.89	2,830.72	2,656.72	174.00	16.269		
18,400.00	12,017.00	18,266.98	12,023.00	132.44	116.59	-91.00	-7,594.54	3,178.87	2,830.72	2,654.53	176.19	16.067		
18,500.00	12,017.00	18,366.98	12,023.00	134.01	118.13	-91.00	-7,694.54	3,179.85	2,830.72	2,652.34	178.38	15.869		
18,600.00	12,017.00	18,466.98	12,023.00	135.58	119.67	-91.00	-7,794.53	3,180.83	2,830.72	2,650.14	180.58	15.676		
18,700.00	12,017.00	18,566.98	12,023.00	137.15	121.22	-91.00	-7,894.53	3,181.81	2,830.72	2,647.94	182.78	15.487		
18,800.00	12,017.00	18,666.98	12,023.00	138.72	122.76	-91.00	-7,994.52	3,182.79	2,830.72	2,645.73	184.98	15.302		
18,900.00	12,017.00	18,766.98	12,023.00	140.29	124.31	-91.00	-8,094.52	3,183.77	2,830.72	2,643.52	187.19	15.122		
19,000.00	12,017.00	18,866.98	12,023.00	141.87	125.86	-91.00	-8,194.51	3,184.75	2,830.72	2,641.31	189.40	14.945		
19,100.00	12,017.00	18,966.98	12,023.00	143.45	127.42	-91.00	-8,294.51	3,185.73	2,830.72	2,639.10	191.62	14.773		

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 Tatanka Fed Com 602H
Project:	Lea County, NM (NAD83)	TVD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 602H	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		
19,200.00	12,017.00	19,066.98	12,023.00	145.03	128.97	-91.00	-8,394.50	3,186.71	2,830.72	2,636.88	193.83	14.604		
19,300.00	12,017.00	19,166.98	12,023.00	146.61	130.53	-91.00	-8,494.50	3,187.69	2,830.71	2,634.66	196.05	14.439		
19,400.00	12,017.00	19,266.98	12,023.00	148.19	132.10	-91.00	-8,594.49	3,188.67	2,830.71	2,632.44	198.27	14.277		
19,500.00	12,017.00	19,366.98	12,023.00	149.78	133.66	-91.00	-8,694.49	3,189.65	2,830.71	2,630.22	200.50	14.118		
19,600.00	12,017.00	19,466.98	12,023.00	151.36	135.22	-91.00	-8,794.48	3,190.63	2,830.71	2,627.99	202.73	13.963		
19,700.00	12,017.00	19,566.98	12,023.00	152.95	136.79	-91.00	-8,894.48	3,191.61	2,830.71	2,625.76	204.95	13.811		
19,800.00	12,017.00	19,666.98	12,023.00	154.54	138.36	-91.00	-8,994.47	3,192.59	2,830.71	2,623.53	207.19	13.663		
19,900.00	12,017.00	19,766.98	12,023.00	156.13	139.93	-91.00	-9,094.47	3,193.57	2,830.71	2,621.29	209.42	13.517		
20,000.00	12,017.00	19,866.98	12,023.00	157.72	141.51	-91.00	-9,194.46	3,194.56	2,830.71	2,619.06	211.66	13.374		
20,100.00	12,017.00	19,966.98	12,023.00	159.31	143.08	-91.00	-9,294.46	3,195.54	2,830.71	2,616.82	213.89	13.234		
20,200.00	12,017.00	20,066.98	12,023.00	160.90	144.66	-91.00	-9,394.45	3,196.52	2,830.71	2,614.58	216.14	13.097		
20,300.00	12,017.00	20,166.98	12,023.00	162.50	146.24	-91.00	-9,494.45	3,197.50	2,830.71	2,612.33	218.38	12.962		
20,400.00	12,017.00	20,266.98	12,023.00	164.09	147.82	-91.00	-9,594.44	3,198.48	2,830.71	2,610.09	220.62	12.831		
20,500.00	12,017.00	20,366.98	12,023.00	165.69	149.40	-91.00	-9,694.44	3,199.46	2,830.71	2,607.84	222.87	12.701		
20,600.00	12,017.00	20,466.98	12,023.00	167.29	150.98	-91.00	-9,794.43	3,200.44	2,830.71	2,605.60	225.12	12.574		
20,700.00	12,017.00	20,566.98	12,023.00	168.89	152.57	-91.00	-9,894.43	3,201.42	2,830.71	2,603.35	227.37	12.450		
20,800.00	12,017.00	20,666.98	12,023.00	170.49	154.15	-91.00	-9,994.42	3,202.40	2,830.71	2,601.09	229.62	12.328		
20,900.00	12,017.00	20,766.98	12,023.00	172.09	155.74	-91.00	-10,094.42	3,203.38	2,830.71	2,598.84	231.87	12.208		
21,000.00	12,017.00	20,866.98	12,023.00	173.69	157.33	-91.00	-10,194.42	3,204.36	2,830.71	2,596.59	234.12	12.091		
21,100.00	12,017.00	20,966.98	12,023.00	175.29	158.92	-91.00	-10,294.41	3,205.34	2,830.71	2,594.33	236.38	11.975		
21,200.00	12,017.00	21,066.98	12,023.00	176.90	160.51	-91.00	-10,394.41	3,206.32	2,830.71	2,592.07	238.64	11.862		
21,300.00	12,017.00	21,166.98	12,023.00	178.50	162.10	-91.00	-10,494.40	3,207.30	2,830.71	2,589.81	240.90	11.751		
21,400.00	12,017.00	21,266.98	12,023.00	180.11	163.69	-91.00	-10,594.40	3,208.28	2,830.71	2,587.55	243.16	11.641		
21,500.00	12,017.00	21,366.98	12,023.00	181.71	165.29	-91.00	-10,694.39	3,209.26	2,830.71	2,585.29	245.42	11.534		
21,600.00	12,017.00	21,466.98	12,023.00	183.32	166.88	-91.00	-10,794.39	3,210.24	2,830.71	2,583.02	247.68	11.429		
21,700.00	12,017.00	21,566.98	12,023.00	184.93	168.48	-91.00	-10,894.38	3,211.22	2,830.71	2,580.76	249.95	11.325		
21,800.00	12,017.00	21,666.98	12,023.00	186.54	170.08	-91.00	-10,994.38	3,212.20	2,830.71	2,578.49	252.21	11.223		
21,900.00	12,017.00	21,766.98	12,023.00	188.15	171.68	-91.00	-11,094.37	3,213.18	2,830.71	2,576.23	254.48	11.123		
22,000.00	12,017.00	21,866.98	12,023.00	189.76	173.28	-91.00	-11,194.37	3,214.16	2,830.71	2,573.96	256.75	11.025		
22,100.00	12,017.00	21,966.98	12,023.00	191.37	174.88	-91.00	-11,294.36	3,215.14	2,830.71	2,571.69	259.02	10.929		
22,187.30	12,017.00	22,054.29	12,023.00	192.77	176.19	-91.00	-11,381.66	3,216.00	2,830.71	2,569.77	260.94	10.848 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 Tatanka Fed Com 602H
Project:	Lea County, NM (NAD83)	TVD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 602H	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	-129.68	-1,019.14	-1,228.40	1,596.12					
100.00	100.00	99.00	99.00	0.13	0.12	-129.68	-1,019.14	-1,228.40	1,596.12	1,595.95	0.18	9,040.652		
200.00	200.00	199.00	199.00	0.48	0.48	-129.68	-1,019.14	-1,228.40	1,596.12	1,595.44	0.68	2,340.839		
300.00	300.00	299.00	299.00	0.84	0.84	-129.68	-1,019.14	-1,228.40	1,596.12	1,594.94	1.19	1,342.620		
400.00	400.00	399.00	399.00	1.20	1.20	-129.68	-1,019.14	-1,228.40	1,596.12	1,594.43	1.70	941.240		
500.00	500.00	499.00	499.00	1.56	1.56	-129.68	-1,019.14	-1,228.40	1,596.12	1,593.92	2.20	724.614		
600.00	600.00	599.00	599.00	1.92	1.91	-129.68	-1,019.14	-1,228.40	1,596.12	1,593.41	2.71	589.046		
700.00	700.00	699.00	699.00	2.28	2.27	-129.68	-1,019.14	-1,228.40	1,596.12	1,592.91	3.22	496.210		
800.00	800.00	799.00	799.00	2.63	2.63	-129.68	-1,019.14	-1,228.40	1,596.12	1,592.40	3.72	428.652		
900.00	900.00	899.00	899.00	2.99	2.99	-129.68	-1,019.14	-1,228.40	1,596.12	1,591.89	4.23	377.286		
1,000.00	1,000.00	999.00	999.00	3.35	3.35	-129.68	-1,019.14	-1,228.40	1,596.12	1,591.39	4.74	336.913		
1,100.00	1,100.00	1,099.00	1,099.00	3.71	3.71	-129.68	-1,019.14	-1,228.40	1,596.12	1,590.88	5.24	304.345		
1,200.00	1,200.00	1,199.00	1,199.00	4.07	4.07	-129.68	-1,019.14	-1,228.40	1,596.12	1,590.37	5.75	277.519		
1,300.00	1,300.00	1,299.00	1,299.00	4.43	4.42	-129.68	-1,019.14	-1,228.40	1,596.12	1,589.87	6.26	255.039		
1,400.00	1,400.00	1,399.00	1,399.00	4.79	4.78	-129.68	-1,019.14	-1,228.40	1,596.12	1,589.36	6.77	235.927		
1,500.00	1,500.00	1,499.00	1,499.00	5.14	5.14	-129.68	-1,019.14	-1,228.40	1,596.12	1,588.85	7.27	219.481		
1,600.00	1,600.00	1,599.00	1,599.00	5.50	5.50	-129.68	-1,019.14	-1,228.40	1,596.12	1,588.35	7.78	205.178		
1,700.00	1,700.00	1,699.00	1,699.00	5.86	5.86	-129.68	-1,019.14	-1,228.40	1,596.12	1,587.84	8.29	192.625		
1,800.00	1,800.00	1,799.00	1,799.00	6.22	6.22	-129.68	-1,019.14	-1,228.40	1,596.12	1,587.33	8.79	181.519		
1,900.00	1,900.00	1,899.00	1,899.00	6.58	6.57	-129.68	-1,019.14	-1,228.40	1,596.12	1,586.82	9.30	171.625		
2,000.00	2,000.00	1,999.00	1,999.00	6.94	6.93	-129.68	-1,019.14	-1,228.40	1,596.12	1,586.32	9.81	162.753		
2,100.00	2,100.00	2,099.00	2,099.00	7.29	7.29	-129.68	-1,019.14	-1,228.40	1,596.12	1,585.81	10.31	154.753		
2,200.00	2,200.00	2,199.00	2,199.00	7.65	7.65	-129.68	-1,019.14	-1,228.40	1,596.12	1,585.30	10.82	147.503		
2,300.00	2,300.00	2,299.00	2,299.00	8.01	8.01	-129.68	-1,019.14	-1,228.40	1,596.12	1,584.80	11.33	140.902		
2,400.00	2,400.00	2,399.00	2,399.00	8.37	8.37	-129.68	-1,019.14	-1,228.40	1,596.12	1,584.29	11.83	134.866		
2,500.00	2,500.00	2,499.00	2,499.00	8.73	8.73	-129.68	-1,019.14	-1,228.40	1,596.12	1,583.78	12.34	129.326		
2,600.00	2,600.00	2,599.00	2,599.00	9.09	9.08	-129.68	-1,019.14	-1,228.40	1,596.12	1,583.28	12.85	124.224		
2,700.00	2,700.00	2,699.00	2,699.00	9.45	9.44	-129.68	-1,019.14	-1,228.40	1,596.12	1,582.77	13.36	119.509		
2,800.00	2,800.00	2,799.00	2,799.00	9.80	9.80	-129.68	-1,019.14	-1,228.40	1,596.12	1,582.26	13.86	115.138		
2,900.00	2,900.00	2,899.00	2,899.00	10.16	10.16	-129.68	-1,019.14	-1,228.40	1,596.12	1,581.75	14.37	111.076		
3,000.00	3,000.00	2,999.00	2,999.00	10.52	10.52	-129.68	-1,019.14	-1,228.40	1,596.12	1,581.25	14.88	107.291		
3,100.00	3,100.00	3,099.00	3,099.00	10.88	10.88	-129.68	-1,019.14	-1,228.40	1,596.12	1,580.74	15.38	103.755		
3,200.00	3,200.00	3,199.00	3,199.00	11.24	11.23	-129.68	-1,019.14	-1,228.40	1,596.12	1,580.23	15.89	100.445		
3,300.00	3,299.99	3,298.99	3,298.99	11.58	11.59	64.57	-1,019.14	-1,228.40	1,595.56	1,579.18	16.38	97.382		
3,400.00	3,399.91	3,372.08	3,372.07	11.90	11.85	64.69	-1,019.29	-1,229.06	1,594.71	1,577.92	16.79	94.974		
3,491.14	3,490.86	3,438.31	3,438.28	12.20	12.07	64.86	-1,019.69	-1,230.84	1,594.46	1,577.30	17.16	92.942		
3,500.00	3,499.69	3,444.74	3,444.70	12.23	12.10	64.88	-1,019.74	-1,231.08	1,594.46	1,577.27	17.19	92.753		
3,600.00	3,599.27	3,517.13	3,517.02	12.56	12.34	65.15	-1,020.49	-1,234.42	1,594.84	1,577.25	17.59	90.693		
3,700.00	3,698.57	3,597.57	3,597.27	12.89	12.61	65.53	-1,021.64	-1,239.59	1,595.81	1,577.80	18.00	88.645		
3,800.00	3,797.54	3,696.26	3,695.73	13.22	12.95	66.09	-1,023.14	-1,246.31	1,596.23	1,577.75	18.48	86.391		
3,900.00	3,896.09	3,794.54	3,793.77	13.57	13.29	66.75	-1,024.64	-1,253.00	1,595.78	1,576.83	18.96	84.187		
4,000.00	3,994.16	3,892.34	3,891.33	13.92	13.63	67.50	-1,026.12	-1,259.67	1,594.54	1,575.10	19.44	82.029		
4,100.00	4,091.70	3,989.59	3,988.34	14.28	13.97	68.33	-1,027.60	-1,266.29	1,592.60	1,572.68	19.93	79.917		
4,125.65	4,116.62	4,014.44	4,013.13	14.37	14.05	68.56	-1,027.98	-1,267.98	1,592.01	1,571.95	20.05	79.382		
4,200.00	4,188.79	4,086.40	4,084.92	14.65	14.30	69.21	-1,029.08	-1,272.89	1,590.33	1,569.91	20.42	77.862		
4,300.00	4,285.87	4,183.20	4,181.48	15.04	14.64	70.09	-1,030.55	-1,279.48	1,588.42	1,567.49	20.93	75.896		
4,400.00	4,382.95	4,279.99	4,278.03	15.43	14.98	70.96	-1,032.02	-1,286.07	1,586.91	1,565.47	21.44	74.018		
4,500.00	4,480.03	4,376.78	4,374.59	15.83	15.32	71.84	-1,033.50	-1,292.67	1,585.79	1,563.83	21.96	72.223		
4,600.00	4,577.11	4,473.58	4,471.15	16.23	15.67	72.72	-1,034.97	-1,299.26	1,585.07	1,562.59	22.48	70.510		
4,700.00	4,674.18	4,570.37	4,567.71	16.65	16.01	73.60	-1,036.44	-1,305.85	1,584.74	1,561.74	23.01	68.874		
4,731.22	4,704.49	4,600.59	4,597.85	16.78	16.12	73.87	-1,036.90	-1,307.91	1,584.73	1,561.55	23.18	68.378 CC		
4,800.00	4,771.26	4,667.17	4,664.27	17.07	16.35	74.48	-1,037.92	-1,312.45	1,584.82	1,561.28	23.54	67.314		

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 Tatanka Fed Com 602H
Project:	Lea County, NM (NAD83)	TVD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 602H	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													Tatanka Fed Com - Tatanka Fed Com 801H - OH - Plan #2		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	4,868.34	4,763.96	4,760.82	17.49	16.70	75.36	-1,039.39	-1,319.04	1,585.29	1,561.21	24.08	65.826		ES		
5,000.00	4,965.42	4,860.76	4,857.38	17.92	17.04	76.23	-1,040.86	-1,325.64	1,586.16	1,561.53	24.63	64.406				
5,100.00	5,062.50	4,957.55	4,953.94	18.36	17.39	77.11	-1,042.34	-1,332.23	1,587.43	1,562.25	25.18	63.052				
5,200.00	5,159.57	5,054.34	5,050.50	18.80	17.74	77.99	-1,043.81	-1,338.82	1,589.09	1,563.36	25.73	61.761				
5,300.00	5,256.65	5,151.14	5,147.06	19.25	18.09	78.86	-1,045.28	-1,345.42	1,591.15	1,564.86	26.29	60.531				
5,400.00	5,353.73	5,247.93	5,243.61	19.70	18.43	79.73	-1,046.76	-1,352.01	1,593.60	1,566.76	26.85	59.358				
5,500.00	5,450.81	5,344.73	5,340.17	20.15	18.78	80.60	-1,048.23	-1,358.60	1,596.45	1,569.03	27.41	58.240				
5,600.00	5,547.89	5,441.52	5,436.73	20.61	19.13	81.46	-1,049.70	-1,365.20	1,599.68	1,571.70	27.98	57.175				
5,700.00	5,644.96	5,538.31	5,533.29	21.07	19.48	82.33	-1,051.17	-1,371.79	1,603.30	1,574.75	28.55	56.160				
5,800.00	5,742.04	5,635.11	5,629.85	21.54	19.83	83.18	-1,052.65	-1,378.39	1,607.30	1,578.18	29.12	55.192				
5,900.00	5,839.12	5,731.90	5,726.41	22.00	20.18	84.04	-1,054.12	-1,384.98	1,611.69	1,581.99	29.70	54.271				
6,000.00	5,936.20	5,828.70	5,822.96	22.47	20.53	84.89	-1,055.59	-1,391.57	1,616.45	1,586.18	30.27	53.393				
6,100.00	6,033.28	5,925.49	5,919.52	22.94	20.89	85.73	-1,057.07	-1,398.17	1,621.59	1,590.74	30.85	52.557				
6,200.00	6,130.35	6,022.29	6,016.08	23.42	21.24	86.57	-1,058.54	-1,404.76	1,627.10	1,595.67	31.44	51.760				
6,300.00	6,227.43	6,163.29	6,156.82	23.90	21.75	87.78	-1,060.38	-1,413.00	1,632.17	1,600.02	32.15	50.763				
6,400.00	6,324.51	6,330.02	6,323.51	24.38	22.34	89.19	-1,061.14	-1,416.40	1,633.65	1,600.73	32.91	49.638				
6,499.06	6,420.67	6,426.19	6,419.67	24.85	22.68	90.00	-1,061.14	-1,416.40	1,633.47	1,599.98	33.49	48.771				
6,500.00	6,421.59	6,427.10	6,420.59	24.86	22.68	90.01	-1,061.14	-1,416.40	1,633.47	1,599.97	33.50	48.763				
6,600.00	6,518.67	6,524.18	6,517.67	25.34	23.02	90.82	-1,061.14	-1,416.40	1,633.65	1,599.57	34.09	47.928				
6,700.00	6,615.75	6,621.26	6,614.75	25.83	23.36	91.64	-1,061.14	-1,416.40	1,634.18	1,599.51	34.67	47.130				
6,800.00	6,712.82	6,718.34	6,711.82	26.31	23.70	92.46	-1,061.14	-1,416.40	1,635.07	1,599.80	35.26	46.367				
6,900.00	6,809.90	6,815.42	6,808.90	26.80	24.04	93.27	-1,061.14	-1,416.40	1,636.30	1,600.45	35.85	45.639				
7,000.00	6,906.98	6,912.49	6,905.98	27.29	24.38	94.09	-1,061.14	-1,416.40	1,637.89	1,601.45	36.44	44.944				
7,100.00	7,004.06	7,009.57	7,003.06	27.78	24.72	94.90	-1,061.14	-1,416.40	1,639.83	1,602.79	37.03	44.280				
7,200.00	7,101.14	7,106.65	7,100.14	28.28	25.06	95.71	-1,061.14	-1,416.40	1,642.11	1,604.49	37.62	43.646				
7,300.00	7,198.21	7,203.73	7,197.21	28.77	25.41	96.52	-1,061.14	-1,416.40	1,644.74	1,606.53	38.21	43.041				
7,400.00	7,295.29	7,300.81	7,294.29	29.26	25.75	97.32	-1,061.14	-1,416.40	1,647.72	1,608.91	38.80	42.463				
7,500.00	7,392.37	7,397.88	7,391.37	29.76	26.09	98.12	-1,061.14	-1,416.40	1,651.04	1,611.65	39.39	41.912				
7,600.00	7,489.45	7,494.96	7,488.45	30.26	26.43	98.92	-1,061.14	-1,416.40	1,654.70	1,614.72	39.98	41.387				
7,700.00	7,586.53	7,592.04	7,585.53	30.76	26.77	99.72	-1,061.14	-1,416.40	1,658.70	1,618.13	40.57	40.885				
7,800.00	7,683.60	7,689.12	7,682.60	31.26	27.12	100.51	-1,061.14	-1,416.40	1,663.04	1,621.88	41.16	40.408				
7,900.00	7,780.68	7,786.20	7,779.68	31.76	27.46	101.30	-1,061.14	-1,416.40	1,667.71	1,625.97	41.74	39.952				
8,000.00	7,877.76	7,883.27	7,876.76	32.26	27.80	102.08	-1,061.14	-1,416.40	1,672.71	1,630.38	42.33	39.518				
8,035.67	7,912.38	7,917.90	7,911.38	32.44	27.92	102.36	-1,061.14	-1,416.40	1,674.57	1,632.04	42.54	39.368				
8,100.00	7,974.96	7,980.48	7,973.96	32.76	28.15	102.89	-1,061.14	-1,416.40	1,677.92	1,635.01	42.91	39.104				
8,200.00	8,072.71	8,078.23	8,071.71	33.24	28.49	103.65	-1,061.14	-1,416.40	1,682.87	1,639.39	43.48	38.706				
8,300.00	8,170.98	8,176.50	8,169.98	33.69	28.84	104.32	-1,061.14	-1,416.40	1,687.41	1,643.38	44.03	38.320				
8,400.00	8,269.70	8,275.22	8,268.70	34.13	29.19	104.89	-1,061.14	-1,416.40	1,691.48	1,646.90	44.58	37.945				
8,500.00	8,368.80	8,374.32	8,367.80	34.55	29.54	105.38	-1,061.14	-1,416.40	1,695.00	1,649.89	45.11	37.577				
8,600.00	8,468.22	8,473.74	8,467.22	34.94	29.89	105.77	-1,061.14	-1,416.40	1,697.90	1,652.27	45.62	37.215				
8,700.00	8,567.89	8,573.40	8,566.89	35.31	30.24	106.06	-1,061.14	-1,416.40	1,700.14	1,654.01	46.13	36.858				
8,800.00	8,667.73	8,673.25	8,666.73	35.66	30.60	106.26	-1,061.14	-1,416.40	1,701.68	1,655.06	46.62	36.503				
8,900.00	8,767.69	8,773.20	8,766.69	35.99	30.95	106.37	-1,061.14	-1,416.40	1,702.50	1,655.40	47.10	36.150				
8,961.32	8,829.00	8,834.51	8,828.00	36.17	31.17	-87.82	-1,061.14	-1,416.40	1,702.64	1,655.26	47.38	35.937				
9,000.00	8,867.68	8,873.20	8,866.68	36.28	31.30	-87.82	-1,061.14	-1,416.40	1,702.64	1,655.08	47.55	35.804				
9,100.00	8,967.68	8,973.20	8,966.68	36.57	31.66	-87.82	-1,061.14	-1,416.40	1,702.64	1,654.63	48.01	35.467				
9,200.00	9,067.68	9,073.20	9,066.68	36.86	32.01	-87.82	-1,061.14	-1,416.40	1,702.64	1,654.18	48.46	35.134				
9,300.00	9,167.68	9,173.20	9,166.68	37.16	32.37	-87.82	-1,061.14	-1,416.40	1,702.64	1,653.72	48.92	34.808				
9,400.00	9,267.68	9,273.20	9,266.68	37.45	32.72	-87.82	-1,061.14	-1,416.40	1,702.64	1,653.26	49.37	34.486				
9,500.00	9,367.68	9,373.20	9,366.68	37.74	33.08	-87.82	-1,061.14	-1,416.40	1,702.64	1,652.81	49.83	34.170				
9,600.00	9,467.68	9,473.20	9,466.68	38.04	33.43	-87.82	-1,061.14	-1,416.40	1,702.64	1,652.35	50.29	33.859				
9,700.00	9,567.68	9,573.20	9,566.68	38.33	33.79	-87.82	-1,061.14	-1,416.40	1,702.64	1,651.89	50.75	33.552				

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 Tatanka Fed Com 602H
Project:	Lea County, NM (NAD83)	TVD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 602H	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		
9,800.00	9,667.68	9,673.20	9,666.68	38.63	34.14	-87.82	-1,061.14	-1,416.40	1,702.64	1,651.43	51.21	33.251		
9,900.00	9,767.68	9,773.20	9,766.68	38.93	34.50	-87.82	-1,061.14	-1,416.40	1,702.64	1,650.97	51.67	32.955		
10,000.00	9,867.68	9,873.20	9,866.68	39.23	34.85	-87.82	-1,061.14	-1,416.40	1,702.64	1,650.51	52.13	32.663		
10,100.00	9,967.68	9,973.20	9,966.68	39.53	35.21	-87.82	-1,061.14	-1,416.40	1,702.64	1,650.05	52.59	32.376		
10,200.00	10,067.68	10,073.20	10,066.68	39.83	35.56	-87.82	-1,061.14	-1,416.40	1,702.64	1,649.58	53.05	32.093		
10,300.00	10,167.68	10,173.20	10,166.68	40.13	35.92	-87.82	-1,061.14	-1,416.40	1,702.64	1,649.12	53.52	31.815		
10,400.00	10,267.68	10,273.20	10,266.68	40.43	36.27	-87.82	-1,061.14	-1,416.40	1,702.64	1,648.65	53.98	31.541		
10,500.00	10,367.68	10,373.20	10,366.68	40.74	36.63	-87.82	-1,061.14	-1,416.40	1,702.64	1,648.19	54.45	31.271		
10,600.00	10,467.68	10,473.20	10,466.68	41.04	36.98	-87.82	-1,061.14	-1,416.40	1,702.64	1,647.72	54.91	31.006		
10,700.00	10,567.68	10,573.20	10,566.68	41.35	37.34	-87.82	-1,061.14	-1,416.40	1,702.64	1,647.25	55.38	30.744		
10,800.00	10,667.68	10,673.20	10,666.68	41.66	37.69	-87.82	-1,061.14	-1,416.40	1,702.64	1,646.79	55.85	30.487		
10,900.00	10,767.68	10,773.20	10,766.68	41.96	38.05	-87.82	-1,061.14	-1,416.40	1,702.64	1,646.32	56.32	30.233		
11,000.00	10,867.68	10,873.20	10,866.68	42.27	38.40	-87.82	-1,061.14	-1,416.40	1,702.64	1,645.85	56.79	29.983		
11,100.00	10,967.68	10,973.20	10,966.68	42.58	38.76	-87.82	-1,061.14	-1,416.40	1,702.64	1,645.38	57.26	29.737		
11,200.00	11,067.68	11,073.20	11,066.68	42.89	39.12	-87.82	-1,061.14	-1,416.40	1,702.64	1,644.91	57.73	29.495		
11,300.00	11,167.68	11,173.20	11,166.68	43.20	39.47	-87.82	-1,061.14	-1,416.40	1,702.64	1,644.44	58.20	29.256		
11,400.00	11,267.68	11,273.20	11,266.68	43.51	39.83	-87.82	-1,061.14	-1,416.40	1,702.64	1,643.97	58.67	29.021		
11,500.00	11,367.68	11,373.20	11,366.68	43.82	40.18	-87.82	-1,061.14	-1,416.40	1,702.64	1,643.50	59.14	28.790		
11,576.36	11,444.04	11,449.55	11,443.04	44.06	40.46	-87.82	-1,061.14	-1,416.40	1,702.64	1,643.13	59.50	28.615		
11,600.00	11,467.68	11,473.19	11,466.68	44.14	40.54	92.76	-1,061.14	-1,416.40	1,702.66	1,643.04	59.62	28.561		
11,650.00	11,517.48	11,523.00	11,516.48	44.33	40.72	92.88	-1,061.14	-1,416.40	1,702.87	1,643.00	59.87	28.443		
11,700.00	11,566.73	11,572.24	11,565.73	44.54	40.89	93.12	-1,061.14	-1,416.40	1,703.32	1,643.18	60.14	28.323		
11,750.00	11,615.04	11,620.55	11,614.04	44.78	41.06	93.46	-1,061.14	-1,416.40	1,704.09	1,643.66	60.42	28.203		
11,800.00	11,662.05	11,667.56	11,661.05	45.04	41.23	93.88	-1,061.14	-1,416.40	1,705.24	1,644.53	60.72	28.085		
11,850.00	11,707.40	11,712.91	11,706.40	45.33	41.39	94.35	-1,061.14	-1,416.40	1,706.91	1,645.89	61.02	27.973		
11,900.00	11,750.75	11,756.26	11,749.75	45.65	41.55	94.84	-1,061.14	-1,416.40	1,709.21	1,647.88	61.33	27.870		
11,950.00	11,791.76	11,797.27	11,790.76	45.98	41.69	95.32	-1,061.14	-1,416.40	1,712.30	1,650.66	61.64	27.778		
12,000.00	11,830.12	11,835.64	11,829.12	46.33	41.83	95.73	-1,061.14	-1,416.40	1,716.32	1,654.36	61.96	27.702		
12,050.00	11,865.55	11,871.07	11,864.55	46.70	41.96	96.06	-1,061.14	-1,416.40	1,721.42	1,659.15	62.27	27.644		
12,100.00	11,897.77	11,903.29	11,896.77	47.09	42.07	96.24	-1,061.14	-1,416.40	1,727.75	1,665.17	62.58	27.608		
12,150.00	11,926.54	11,932.05	11,925.54	47.50	42.17	96.25	-1,061.14	-1,416.40	1,735.42	1,672.54	62.88	27.597		
12,200.00	11,951.63	11,957.15	11,950.63	47.92	42.26	96.05	-1,061.14	-1,416.40	1,744.54	1,681.37	63.18	27.613		
12,250.00	11,972.86	11,978.38	11,971.86	48.35	42.34	95.61	-1,061.14	-1,416.40	1,755.18	1,691.73	63.46	27.659		
12,300.00	11,990.07	11,995.58	11,989.07	48.80	42.40	94.90	-1,061.14	-1,416.40	1,767.37	1,703.65	63.72	27.737		
12,350.00	12,003.12	12,008.64	12,002.12	49.25	42.45	93.89	-1,061.14	-1,416.40	1,781.11	1,717.14	63.96	27.847		
12,400.00	12,011.92	12,017.43	12,010.92	49.70	42.48	92.59	-1,061.14	-1,416.40	1,796.34	1,732.16	64.18	27.989		
12,450.00	12,016.39	12,021.91	12,015.39	50.16	42.49	90.97	-1,061.14	-1,416.40	1,812.98	1,748.60	64.38	28.162		
12,476.36	12,017.00	12,022.51	12,016.00	50.40	42.50	90.00	-1,061.14	-1,416.40	1,822.28	1,757.81	64.47	28.266		
12,500.00	12,017.00	12,022.51	12,016.00	50.61	42.50	90.00	-1,061.14	-1,416.40	1,830.90	1,766.35	64.55	28.365		
12,600.00	12,017.00	13,278.89	12,740.00	51.55	46.68	113.06	-1,839.40	-1,408.70	1,848.31	1,782.66	65.65	28.152		
12,700.00	12,017.00	13,378.89	12,740.00	52.52	47.16	113.06	-1,939.39	-1,407.71	1,848.30	1,781.69	66.61	27.747		
12,800.00	12,017.00	13,478.89	12,740.00	53.53	47.70	113.06	-2,039.39	-1,406.72	1,848.30	1,780.67	67.63	27.330		
12,900.00	12,017.00	13,578.89	12,740.00	54.57	48.29	113.06	-2,139.38	-1,405.73	1,848.29	1,779.59	68.70	26.905		
13,000.00	12,017.00	13,678.89	12,740.00	55.63	48.93	113.06	-2,239.38	-1,404.74	1,848.28	1,778.46	69.82	26.472		
13,100.00	12,017.00	13,778.89	12,740.00	56.73	49.61	113.06	-2,339.37	-1,403.75	1,848.27	1,777.28	70.99	26.035		
13,200.00	12,017.00	13,878.89	12,740.00	57.85	50.34	113.06	-2,439.37	-1,402.76	1,848.26	1,776.05	72.21	25.596		
13,300.00	12,017.00	13,978.89	12,740.00	58.99	51.11	113.06	-2,539.36	-1,401.77	1,848.25	1,774.78	73.47	25.156		
13,400.00	12,017.00	14,078.89	12,740.00	60.16	51.92	113.06	-2,639.36	-1,400.78	1,848.25	1,773.47	74.78	24.717		
13,500.00	12,017.00	14,178.89	12,740.00	61.35	52.77	113.06	-2,739.36	-1,399.79	1,848.24	1,772.12	76.12	24.280		
13,600.00	12,017.00	14,278.89	12,740.00	62.57	53.66	113.06	-2,839.35	-1,398.80	1,848.23	1,770.73	77.50	23.847		
13,700.00	12,017.00	14,378.89	12,740.00	63.80	54.58	113.06	-2,939.35	-1,397.81	1,848.22	1,769.30	78.92	23.418		
13,800.00	12,017.00	14,478.89	12,740.00	65.05	55.54	113.06	-3,039.34	-1,396.82	1,848.21	1,767.84	80.38	22.994		

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 Tatanka Fed Com 602H
Project:	Lea County, NM (NAD83)	TVD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 602H	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													Tatanka Fed Com - Tatanka Fed Com 801H - OH - Plan #2		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)	Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning			
13,900.00	12,017.00	14,578.89	12,740.00	66.32	56.53	113.06	-3,139.34	-1,395.83	1,848.20	1,766.34	81.86	22.577				
14,000.00	12,017.00	14,678.89	12,740.00	67.60	57.55	113.06	-3,239.33	-1,394.84	1,848.20	1,764.82	83.38	22.166				
14,100.00	12,017.00	14,778.89	12,740.00	68.90	58.60	113.06	-3,339.33	-1,393.85	1,848.19	1,763.26	84.93	21.762				
14,200.00	12,017.00	14,878.89	12,740.00	70.22	59.67	113.06	-3,439.32	-1,392.86	1,848.18	1,761.68	86.50	21.366				
14,300.00	12,017.00	14,978.89	12,740.00	71.55	60.78	113.06	-3,539.32	-1,391.87	1,848.17	1,760.07	88.10	20.978				
14,400.00	12,017.00	15,078.89	12,740.00	72.89	61.90	113.06	-3,639.31	-1,390.88	1,848.16	1,758.44	89.72	20.598				
14,500.00	12,017.00	15,178.89	12,740.00	74.25	63.05	113.06	-3,739.31	-1,389.89	1,848.16	1,756.78	91.37	20.227				
14,600.00	12,017.00	15,278.89	12,740.00	75.61	64.22	113.06	-3,839.30	-1,388.90	1,848.15	1,755.11	93.04	19.864				
14,700.00	12,017.00	15,378.89	12,740.00	76.99	65.42	113.06	-3,939.30	-1,387.91	1,848.14	1,753.41	94.73	19.510				
14,800.00	12,017.00	15,478.89	12,740.00	78.38	66.63	113.06	-4,039.29	-1,386.92	1,848.13	1,751.70	96.43	19.165				
14,900.00	12,017.00	15,578.89	12,740.00	79.78	67.86	113.06	-4,139.29	-1,385.93	1,848.12	1,749.96	98.16	18.827				
15,000.00	12,017.00	15,678.89	12,740.00	81.18	69.11	113.06	-4,239.28	-1,384.94	1,848.11	1,748.21	99.91	18.499				
15,100.00	12,017.00	15,778.89	12,740.00	82.60	70.37	113.06	-4,339.28	-1,383.95	1,848.11	1,746.44	101.67	18.178				
15,200.00	12,017.00	15,878.89	12,740.00	84.03	71.65	113.06	-4,439.27	-1,382.96	1,848.10	1,744.65	103.44	17.866				
15,300.00	12,017.00	15,978.89	12,740.00	85.46	72.95	113.06	-4,539.27	-1,381.97	1,848.09	1,742.85	105.24	17.561				
15,400.00	12,017.00	16,078.89	12,740.00	86.90	74.25	113.06	-4,639.26	-1,380.98	1,848.08	1,741.04	107.04	17.265				
15,500.00	12,017.00	16,178.89	12,740.00	88.35	75.58	113.06	-4,739.26	-1,379.99	1,848.07	1,739.21	108.87	16.976				
15,600.00	12,017.00	16,278.89	12,740.00	89.80	76.91	113.06	-4,839.25	-1,379.01	1,848.06	1,737.37	110.70	16.695				
15,700.00	12,017.00	16,378.89	12,740.00	91.27	78.26	113.06	-4,939.25	-1,378.02	1,848.06	1,735.51	112.54	16.421				
15,800.00	12,017.00	16,478.89	12,740.00	92.74	79.62	113.06	-5,039.24	-1,377.03	1,848.05	1,733.65	114.40	16.155				
15,900.00	12,017.00	16,578.89	12,740.00	94.21	80.99	113.06	-5,139.24	-1,376.04	1,848.04	1,731.78	116.26	15.895				
16,000.00	12,017.00	16,678.89	12,740.00	95.69	82.37	113.06	-5,239.23	-1,375.05	1,848.03	1,729.89	118.14	15.643				
16,100.00	12,017.00	16,778.89	12,740.00	97.18	83.76	113.06	-5,339.23	-1,374.06	1,848.02	1,727.99	120.03	15.397				
16,200.00	12,017.00	16,878.89	12,740.00	98.67	85.16	113.06	-5,439.22	-1,373.07	1,848.02	1,726.09	121.93	15.157				
16,300.00	12,017.00	16,978.89	12,740.00	100.16	86.57	113.06	-5,539.22	-1,372.08	1,848.01	1,724.18	123.83	14.924				
16,400.00	12,017.00	17,078.89	12,740.00	101.67	87.98	113.07	-5,639.21	-1,371.09	1,848.00	1,722.25	125.75	14.696				
16,500.00	12,017.00	17,178.89	12,740.00	103.17	89.41	113.07	-5,739.21	-1,370.10	1,847.99	1,720.32	127.67	14.475				
16,600.00	12,017.00	17,278.89	12,740.00	104.68	90.84	113.07	-5,839.20	-1,369.11	1,847.98	1,718.38	129.60	14.259				
16,700.00	12,017.00	17,378.89	12,740.00	106.20	92.28	113.07	-5,939.20	-1,368.12	1,847.97	1,716.43	131.54	14.049				
16,800.00	12,017.00	17,478.89	12,740.00	107.71	93.73	113.07	-6,039.19	-1,367.13	1,847.97	1,714.48	133.48	13.844				
16,900.00	12,017.00	17,578.89	12,740.00	109.24	95.18	113.07	-6,139.19	-1,366.14	1,847.96	1,712.52	135.44	13.645				
17,000.00	12,017.00	17,678.89	12,740.00	110.76	96.64	113.07	-6,239.18	-1,365.15	1,847.95	1,710.56	137.39	13.450				
17,100.00	12,017.00	17,778.89	12,740.00	112.29	98.10	113.07	-6,339.18	-1,364.16	1,847.94	1,708.58	139.36	13.260				
17,200.00	12,017.00	17,878.89	12,740.00	113.82	99.58	113.07	-6,439.17	-1,363.17	1,847.93	1,706.60	141.33	13.075				
17,300.00	12,017.00	17,978.89	12,740.00	115.36	101.05	113.07	-6,539.17	-1,362.18	1,847.92	1,704.62	143.30	12.895				
17,400.00	12,017.00	18,078.89	12,740.00	116.90	102.54	113.07	-6,639.16	-1,361.19	1,847.92	1,702.63	145.29	12.719				
17,500.00	12,017.00	18,178.89	12,740.00	118.44	104.02	113.07	-6,739.16	-1,360.20	1,847.91	1,700.64	147.27	12.548				
17,600.00	12,017.00	18,278.89	12,740.00	119.99	105.52	113.07	-6,839.15	-1,359.21	1,847.90	1,698.64	149.26	12.380				
17,700.00	12,017.00	18,378.89	12,740.00	121.53	107.01	113.07	-6,939.15	-1,358.22	1,847.89	1,696.63	151.26	12.217				
17,800.00	12,017.00	18,478.89	12,740.00	123.09	108.51	113.07	-7,039.14	-1,357.23	1,847.88	1,694.62	153.26	12.057				
17,900.00	12,017.00	18,578.89	12,740.00	124.64	110.02	113.07	-7,139.14	-1,356.24	1,847.87	1,692.61	155.27	11.901				
18,000.00	12,017.00	18,678.89	12,740.00	126.19	111.53	113.07	-7,239.13	-1,355.25	1,847.87	1,690.59	157.28	11.749				
18,100.00	12,017.00	18,778.89	12,740.00	127.75	113.04	113.07	-7,339.13	-1,354.26	1,847.86	1,688.57	159.29	11.601				
18,200.00	12,017.00	18,878.89	12,740.00	129.31	114.56	113.07	-7,439.13	-1,353.27	1,847.85	1,686.55	161.30	11.456				
18,300.00	12,017.00	18,978.89	12,740.00	130.88	116.08	113.07	-7,539.12	-1,352.28	1,847.84	1,684.52	163.32	11.314				
18,400.00	12,017.00	19,078.89	12,740.00	132.44	117.61	113.07	-7,639.12	-1,351.29	1,847.83	1,682.48	165.35	11.175				
18,500.00	12,017.00	19,178.89	12,740.00	134.01	119.14	113.07	-7,739.11	-1,350.30	1,847.83	1,680.45	167.38	11.040				
18,600.00	12,017.00	19,278.89	12,740.00	135.58	120.67	113.07	-7,839.11	-1,349.31	1,847.82	1,678.41	169.41	10.907				
18,700.00	12,017.00	19,378.89	12,740.00	137.15	122.20	113.07	-7,939.10	-1,348.32	1,847.81	1,676.37	171.44	10.778				
18,800.00	12,017.00	19,478.89	12,740.00	138.72	123.74	113.07	-8,039.10	-1,347.33	1,847.80	1,674.32	173.48	10.651				
18,900.00	12,017.00	19,578.89	12,740.00	140.29	125.28	113.07	-8,139.09	-1,346.34	1,847.79	1,672.27	175.52	10.527				
19,000.00	12,017.00	19,678.89	12,740.00	141.87	126.82	113.07	-8,239.09	-1,345.35	1,847.78	1,670.22	177.56	10.406				

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 Tatanka Fed Com 602H
Project:	Lea County, NM (NAD83)	TVD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 602H	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													Tatanka Fed Com - Tatanka Fed Com 801H - OH - Plan #2		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					
19,100.00	12,017.00	19,778.89	12,740.00	143.45	128.37	113.07	-8,339.08	-1,344.36	1,847.78	1,668.17	179.61	10.288					
19,200.00	12,017.00	19,878.89	12,740.00	145.03	129.92	113.07	-8,439.08	-1,343.38	1,847.77	1,666.11	181.66	10.172					
19,300.00	12,017.00	19,978.89	12,740.00	146.61	131.47	113.07	-8,539.07	-1,342.39	1,847.76	1,664.05	183.71	10.058					
19,400.00	12,017.00	20,078.89	12,740.00	148.19	133.02	113.07	-8,639.07	-1,341.40	1,847.75	1,661.99	185.76	9.947					
19,500.00	12,017.00	20,178.89	12,740.00	149.78	134.58	113.07	-8,739.06	-1,340.41	1,847.74	1,659.93	187.82	9.838					
19,600.00	12,017.00	20,278.89	12,740.00	151.36	136.14	113.07	-8,839.06	-1,339.42	1,847.73	1,657.86	189.87	9.731					
19,700.00	12,017.00	20,378.89	12,740.00	152.95	137.70	113.07	-8,939.05	-1,338.43	1,847.73	1,655.79	191.93	9.627					
19,800.00	12,017.00	20,478.89	12,740.00	154.54	139.26	113.07	-9,039.05	-1,337.44	1,847.72	1,653.72	193.99	9.525					
19,900.00	12,017.00	20,578.89	12,740.00	156.13	140.83	113.07	-9,139.04	-1,336.45	1,847.71	1,651.65	196.06	9.424					
20,000.00	12,017.00	20,678.89	12,740.00	157.72	142.39	113.07	-9,239.04	-1,335.46	1,847.70	1,649.58	198.12	9.326					
20,100.00	12,017.00	20,778.89	12,740.00	159.31	143.96	113.07	-9,339.03	-1,334.47	1,847.69	1,647.50	200.19	9.230					
20,200.00	12,017.00	20,878.89	12,740.00	160.90	145.53	113.07	-9,439.03	-1,333.48	1,847.68	1,645.43	202.26	9.135					
20,300.00	12,017.00	20,978.89	12,740.00	162.50	147.10	113.07	-9,539.02	-1,332.49	1,847.68	1,643.35	204.33	9.043					
20,400.00	12,017.00	21,078.89	12,740.00	164.09	148.68	113.07	-9,639.02	-1,331.50	1,847.67	1,641.27	206.40	8.952					
20,500.00	12,017.00	21,178.89	12,740.00	165.69	150.25	113.07	-9,739.01	-1,330.51	1,847.66	1,639.19	208.47	8.863					
20,600.00	12,017.00	21,278.89	12,740.00	167.29	151.83	113.07	-9,839.01	-1,329.52	1,847.65	1,637.10	210.55	8.775					
20,700.00	12,017.00	21,378.89	12,740.00	168.89	153.41	113.07	-9,939.00	-1,328.53	1,847.64	1,635.02	212.63	8.690					
20,800.00	12,017.00	21,478.89	12,740.00	170.49	154.99	113.07	-10,039.00	-1,327.54	1,847.64	1,632.93	214.71	8.605					
20,900.00	12,017.00	21,578.89	12,740.00	172.09	156.57	113.07	-10,138.99	-1,326.55	1,847.63	1,630.84	216.79	8.523					
21,000.00	12,017.00	21,678.89	12,740.00	173.69	158.15	113.07	-10,238.99	-1,325.56	1,847.62	1,628.75	218.87	8.442					
21,100.00	12,017.00	21,778.89	12,740.00	175.29	159.74	113.07	-10,338.98	-1,324.57	1,847.61	1,626.66	220.95	8.362					
21,200.00	12,017.00	21,878.89	12,740.00	176.90	161.32	113.07	-10,438.98	-1,323.58	1,847.60	1,624.57	223.03	8.284					
21,300.00	12,017.00	21,978.89	12,740.00	178.50	162.91	113.07	-10,538.97	-1,322.59	1,847.59	1,622.48	225.12	8.207					
21,400.00	12,017.00	22,078.89	12,740.00	180.11	164.50	113.07	-10,638.97	-1,321.60	1,847.59	1,620.38	227.20	8.132					
21,500.00	12,017.00	22,178.89	12,740.00	181.71	166.09	113.07	-10,738.96	-1,320.61	1,847.58	1,618.29	229.29	8.058					
21,600.00	12,017.00	22,278.89	12,740.00	183.32	167.68	113.07	-10,838.96	-1,319.62	1,847.57	1,616.19	231.38	7.985					
21,700.00	12,017.00	22,378.89	12,740.00	184.93	169.27	113.07	-10,938.95	-1,318.63	1,847.56	1,614.10	233.46	7.914					
21,800.00	12,017.00	22,478.89	12,740.00	186.54	170.86	113.07	-11,038.95	-1,317.64	1,847.55	1,612.00	235.55	7.843					
21,900.00	12,017.00	22,578.89	12,740.00	188.15	172.46	113.07	-11,138.94	-1,316.65	1,847.54	1,609.90	237.64	7.774					
22,000.00	12,017.00	22,678.89	12,740.00	189.76	174.05	113.07	-11,238.94	-1,315.66	1,847.54	1,607.80	239.74	7.707					
22,100.00	12,017.00	22,778.89	12,740.00	191.37	175.65	113.07	-11,338.93	-1,314.67	1,847.53	1,605.70	241.83	7.640					
22,163.34	12,017.00	22,842.24	12,740.00	192.39	176.59	113.07	-11,402.27	-1,314.05	1,847.52	1,604.43	243.10	7.600					
22,187.30	12,017.00	22,865.07	12,740.00	192.77	176.91	113.07	-11,425.11	-1,313.82	1,847.52	1,603.96	243.56	7.586 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 Tatanka Fed Com 602H
Project:	Lea County, NM (NAD83)	TVD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 602H	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													Tatanka Fed Com - Tatanka Fed Com 802H - OH - Plan #2		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	-130.25	-1,018.90	-1,203.41	1,576.82							
100.00	100.00	99.00	99.00	0.13	0.12	-130.25	-1,018.90	-1,203.41	1,576.82	1,576.64	0.18	8,931.295				
200.00	200.00	199.00	199.00	0.48	0.48	-130.25	-1,018.90	-1,203.41	1,576.82	1,576.14	0.68	2,312.524				
300.00	300.00	299.00	299.00	0.84	0.84	-130.25	-1,018.90	-1,203.41	1,576.82	1,575.63	1.19	1,326.379				
400.00	400.00	399.00	399.00	1.20	1.20	-130.25	-1,018.90	-1,203.41	1,576.82	1,575.12	1.70	929.855				
500.00	500.00	499.00	499.00	1.56	1.56	-130.25	-1,018.90	-1,203.41	1,576.82	1,574.61	2.20	715.849				
600.00	600.00	599.00	599.00	1.92	1.91	-130.25	-1,018.90	-1,203.41	1,576.82	1,574.11	2.71	581.921				
700.00	700.00	699.00	699.00	2.28	2.27	-130.25	-1,018.90	-1,203.41	1,576.82	1,573.60	3.22	490.207				
800.00	800.00	799.00	799.00	2.63	2.63	-130.25	-1,018.90	-1,203.41	1,576.82	1,573.09	3.72	423.467				
900.00	900.00	899.00	899.00	2.99	2.99	-130.25	-1,018.90	-1,203.41	1,576.82	1,572.59	4.23	372.722				
1,000.00	1,000.00	999.00	999.00	3.35	3.35	-130.25	-1,018.90	-1,203.41	1,576.82	1,572.08	4.74	332.838				
1,100.00	1,100.00	1,099.00	1,099.00	3.71	3.71	-130.25	-1,018.90	-1,203.41	1,576.82	1,571.57	5.24	300.664				
1,200.00	1,200.00	1,199.00	1,199.00	4.07	4.07	-130.25	-1,018.90	-1,203.41	1,576.82	1,571.07	5.75	274.162				
1,300.00	1,300.00	1,299.00	1,299.00	4.43	4.42	-130.25	-1,018.90	-1,203.41	1,576.82	1,570.56	6.26	251.954				
1,400.00	1,400.00	1,399.00	1,399.00	4.79	4.78	-130.25	-1,018.90	-1,203.41	1,576.82	1,570.05	6.77	233.074				
1,500.00	1,500.00	1,499.00	1,499.00	5.14	5.14	-130.25	-1,018.90	-1,203.41	1,576.82	1,569.55	7.27	216.826				
1,600.00	1,600.00	1,599.00	1,599.00	5.50	5.50	-130.25	-1,018.90	-1,203.41	1,576.82	1,569.04	7.78	202.696				
1,700.00	1,700.00	1,699.00	1,699.00	5.86	5.86	-130.25	-1,018.90	-1,203.41	1,576.82	1,568.53	8.29	190.295				
1,800.00	1,800.00	1,799.00	1,799.00	6.22	6.22	-130.25	-1,018.90	-1,203.41	1,576.82	1,568.02	8.79	179.324				
1,900.00	1,900.00	1,899.00	1,899.00	6.58	6.57	-130.25	-1,018.90	-1,203.41	1,576.82	1,567.52	9.30	169.549				
2,000.00	2,000.00	1,999.00	1,999.00	6.94	6.93	-130.25	-1,018.90	-1,203.41	1,576.82	1,567.01	9.81	160.784				
2,100.00	2,100.00	2,099.00	2,099.00	7.29	7.29	-130.25	-1,018.90	-1,203.41	1,576.82	1,566.50	10.31	152.881				
2,200.00	2,200.00	2,199.00	2,199.00	7.65	7.65	-130.25	-1,018.90	-1,203.41	1,576.82	1,566.00	10.82	145.719				
2,300.00	2,300.00	2,299.00	2,299.00	8.01	8.01	-130.25	-1,018.90	-1,203.41	1,576.82	1,565.49	11.33	139.197				
2,400.00	2,400.00	2,399.00	2,399.00	8.37	8.37	-130.25	-1,018.90	-1,203.41	1,576.82	1,564.98	11.83	133.235				
2,500.00	2,500.00	2,499.00	2,499.00	8.73	8.73	-130.25	-1,018.90	-1,203.41	1,576.82	1,564.48	12.34	127.762				
2,600.00	2,600.00	2,599.00	2,599.00	9.09	9.08	-130.25	-1,018.90	-1,203.41	1,576.82	1,563.97	12.85	122.721				
2,700.00	2,700.00	2,699.00	2,699.00	9.45	9.44	-130.25	-1,018.90	-1,203.41	1,576.82	1,563.46	13.36	118.063				
2,800.00	2,800.00	2,799.00	2,799.00	9.80	9.80	-130.25	-1,018.90	-1,203.41	1,576.82	1,562.95	13.86	113.745				
2,900.00	2,900.00	2,899.00	2,899.00	10.16	10.16	-130.25	-1,018.90	-1,203.41	1,576.82	1,562.45	14.37	109.732				
3,000.00	3,000.00	2,999.00	2,999.00	10.52	10.52	-130.25	-1,018.90	-1,203.41	1,576.82	1,561.94	14.88	105.993				
3,100.00	3,100.00	3,099.00	3,099.00	10.88	10.88	-130.25	-1,018.90	-1,203.41	1,576.82	1,561.43	15.38	102.500				
3,200.00	3,200.00	3,199.00	3,199.00	11.24	11.23	-130.25	-1,018.90	-1,203.41	1,576.82	1,560.93	15.89	99.230				
3,300.00	3,299.99	3,341.43	3,341.39	11.58	11.73	63.97	-1,019.04	-1,200.80	1,574.91	1,558.43	16.48	95.591				
3,400.00	3,399.91	3,483.92	3,483.65	11.90	12.22	64.03	-1,019.47	-1,192.88	1,569.14	1,552.10	17.03	92.120				
3,500.00	3,499.69	3,625.67	3,624.79	12.23	12.71	64.14	-1,020.17	-1,179.75	1,559.53	1,541.94	17.58	88.691				
3,600.00	3,599.27	3,766.33	3,764.26	12.56	13.20	64.29	-1,021.15	-1,161.56	1,546.11	1,527.99	18.13	85.301				
3,700.00	3,698.57	3,891.93	3,888.18	12.89	13.66	64.49	-1,022.24	-1,141.14	1,529.09	1,510.45	18.64	82.027				
3,800.00	3,797.54	3,990.16	3,984.95	13.22	14.02	64.79	-1,023.15	-1,124.31	1,510.39	1,491.27	19.12	78.982				
3,900.00	3,896.09	4,088.11	4,081.45	13.57	14.38	65.21	-1,024.05	-1,107.53	1,490.60	1,470.99	19.61	76.013				
4,000.00	3,994.16	4,185.73	4,177.62	13.92	14.75	65.73	-1,024.95	-1,090.81	1,469.75	1,449.65	20.10	73.117				
4,100.00	4,091.70	4,282.93	4,273.38	14.28	15.12	66.38	-1,025.84	-1,074.15	1,447.89	1,427.29	20.60	70.290				
4,125.65	4,116.62	4,307.80	4,297.88	14.37	15.21	66.57	-1,026.07	-1,069.89	1,442.12	1,421.40	20.73	69.575				
4,200.00	4,188.79	4,379.81	4,368.82	14.65	15.49	66.88	-1,026.73	-1,057.55	1,425.35	1,404.24	21.10	67.543				
4,300.00	4,285.87	4,476.67	4,464.25	15.04	15.86	67.32	-1,027.63	-1,040.96	1,402.85	1,381.23	21.61	64.906				
4,400.00	4,382.95	4,573.53	4,559.67	15.43	16.24	67.77	-1,028.52	-1,024.36	1,380.43	1,358.30	22.13	62.376				
4,500.00	4,480.03	4,670.40	4,655.10	15.83	16.63	68.23	-1,029.41	-1,007.76	1,358.09	1,335.44	22.65	59.948				
4,600.00	4,577.11	4,767.26	4,750.52	16.23	17.01	68.72	-1,030.30	-991.17	1,335.85	1,312.66	23.18	57.619				
4,700.00	4,674.18	4,864.12	4,845.95	16.65	17.40	69.21	-1,031.19	-974.57	1,313.70	1,289.98	23.72	55.386				
4,800.00	4,771.26	4,960.98	4,941.37	17.07	17.79	69.73	-1,032.08	-957.98	1,291.64	1,267.39	24.26	53.243				
4,900.00	4,868.34	5,057.84	5,036.80	17.49	18.18	70.26	-1,032.97	-941.38	1,269.70	1,244.89	24.80	51.188				
5,000.00	4,965.42	5,154.70	5,132.22	17.92	18.57	70.81	-1,033.87	-924.78	1,247.86	1,222.50	25.35	49.217				

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 Tatanka Fed Com 602H
Project:	Lea County, NM (NAD83)	TVD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 602H	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													Tatanka Fed Com - Tatanka Fed Com 802H - OH - Plan #2		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			
5,100.00	5,062.50	5,251.56	5,227.65	18.36	18.97	71.38	-1,034.76	-908.19	1,226.13	1,200.22	25.91	47.327				
5,200.00	5,159.57	5,348.42	5,323.07	18.80	19.36	71.96	-1,035.65	-891.59	1,204.53	1,178.06	26.47	45.514				
5,300.00	5,256.65	5,445.29	5,418.50	19.25	19.76	72.57	-1,036.54	-875.00	1,183.05	1,156.02	27.03	43.774				
5,400.00	5,353.73	5,542.15	5,513.92	19.70	20.16	73.21	-1,037.43	-858.40	1,161.71	1,134.12	27.59	42.105				
5,500.00	5,450.81	5,639.01	5,609.35	20.15	20.57	73.86	-1,038.32	-841.81	1,140.51	1,112.35	28.16	40.502				
5,600.00	5,547.89	5,735.87	5,704.77	20.61	20.97	74.54	-1,039.21	-825.21	1,119.46	1,090.73	28.73	38.964				
5,700.00	5,644.96	5,832.73	5,800.20	21.07	21.38	75.25	-1,040.11	-808.61	1,098.57	1,069.27	29.30	37.488				
5,800.00	5,742.04	5,929.59	5,895.62	21.54	21.78	75.98	-1,041.00	-792.02	1,077.85	1,047.97	29.88	36.071				
5,900.00	5,839.12	6,026.45	5,991.05	22.00	22.19	76.74	-1,041.89	-775.42	1,057.31	1,026.85	30.46	34.710				
6,000.00	5,936.20	6,123.31	6,086.47	22.47	22.60	77.53	-1,042.78	-758.83	1,036.96	1,005.91	31.04	33.404				
6,100.00	6,033.28	6,220.18	6,181.89	22.94	23.01	78.35	-1,043.67	-742.23	1,016.80	985.18	31.63	32.150				
6,200.00	6,130.35	6,317.04	6,277.32	23.42	23.42	79.20	-1,044.56	-725.64	996.86	964.65	32.21	30.946				
6,300.00	6,227.43	6,413.90	6,372.74	23.90	23.83	80.08	-1,045.45	-709.04	977.15	944.35	32.80	29.791				
6,400.00	6,324.51	6,510.76	6,468.17	24.38	24.25	81.01	-1,046.35	-692.44	957.67	924.28	33.39	28.682				
6,500.00	6,421.59	6,607.62	6,563.59	24.86	24.66	81.96	-1,047.24	-675.85	938.45	904.47	33.98	27.618				
6,600.00	6,518.67	6,704.48	6,659.02	25.34	25.08	82.96	-1,048.13	-659.25	919.50	884.93	34.57	26.597				
6,700.00	6,615.75	6,801.34	6,754.44	25.83	25.49	84.00	-1,049.02	-642.66	900.84	865.67	35.16	25.618				
6,800.00	6,712.82	6,897.28	6,848.95	26.31	25.90	85.07	-1,049.90	-626.22	882.48	846.72	35.76	24.678				
6,900.00	6,809.90	6,977.45	6,928.09	26.80	26.24	86.02	-1,050.59	-613.41	865.48	829.11	36.38	23.792				
7,000.00	6,906.98	7,057.88	7,007.73	27.29	26.57	87.04	-1,051.19	-602.22	850.75	813.76	36.99	23.001				
7,100.00	7,004.06	7,138.50	7,087.79	27.78	26.89	88.14	-1,051.70	-592.69	838.34	800.76	37.58	22.305				
7,200.00	7,101.14	7,219.24	7,168.14	28.28	27.21	89.31	-1,052.13	-584.83	828.36	790.19	38.17	21.702				
7,300.00	7,198.21	7,300.00	7,248.67	28.77	27.51	90.53	-1,052.46	-578.68	820.86	782.12	38.74	21.190				
7,400.00	7,295.29	7,380.79	7,329.33	29.26	27.80	91.80	-1,052.70	-574.22	815.91	776.62	39.29	20.767				
7,500.00	7,392.37	7,461.46	7,409.95	29.76	28.08	93.11	-1,052.84	-571.47	813.58	773.76	39.82	20.430				
7,532.87	7,424.28	7,487.93	7,436.42	29.92	28.17	93.55	-1,052.87	-570.94	813.39	773.40	39.99	20.338	CC, ES			
7,600.00	7,489.45	7,541.95	7,490.44	30.26	28.35	94.45	-1,052.90	-570.42	813.90	773.57	40.34	20.178				
7,700.00	7,586.53	7,637.04	7,585.53	30.76	28.67	96.05	-1,052.90	-570.41	816.15	775.25	40.89	19.959				
7,800.00	7,683.60	7,734.12	7,682.60	31.26	28.99	97.67	-1,052.90	-570.41	819.10	777.64	41.45	19.759				
7,900.00	7,780.68	7,831.20	7,779.68	31.76	29.31	99.28	-1,052.90	-570.41	822.74	780.73	42.01	19.583				
8,000.00	7,877.76	7,928.28	7,876.76	32.26	29.63	100.88	-1,052.90	-570.41	827.06	784.49	42.57	19.428				
8,035.67	7,912.38	7,962.90	7,911.38	32.44	29.74	101.44	-1,052.90	-570.41	828.77	786.00	42.77	19.378				
8,100.00	7,974.96	8,025.48	7,973.96	32.76	29.95	102.47	-1,052.90	-570.41	831.94	788.82	43.12	19.292				
8,200.00	8,072.71	8,123.23	8,071.71	33.24	30.28	103.92	-1,052.90	-570.41	836.86	793.19	43.66	19.166				
8,300.00	8,170.98	8,221.50	8,169.98	33.69	30.60	105.19	-1,052.90	-570.41	841.59	797.39	44.19	19.043				
8,400.00	8,269.70	8,320.22	8,268.70	34.13	30.93	106.28	-1,052.90	-570.41	845.96	801.25	44.71	18.920				
8,500.00	8,368.80	8,419.32	8,367.80	34.55	31.26	107.20	-1,052.90	-570.41	849.84	804.62	45.22	18.794				
8,600.00	8,468.22	8,518.74	8,467.22	34.94	31.59	107.93	-1,052.90	-570.41	853.10	807.38	45.72	18.660				
8,700.00	8,567.89	8,618.40	8,566.89	35.31	31.93	108.48	-1,052.90	-570.41	855.65	809.44	46.21	18.518				
8,800.00	8,667.73	8,718.25	8,666.73	35.66	32.26	108.86	-1,052.90	-570.41	857.42	810.73	46.69	18.366				
8,900.00	8,767.69	8,818.20	8,766.69	35.99	32.60	109.05	-1,052.90	-570.41	858.37	811.21	47.16	18.202				
8,961.32	8,829.00	8,879.52	8,828.00	36.17	32.80	-85.12	-1,052.90	-570.41	858.53	811.09	47.44	18.098				
9,000.00	8,867.68	8,918.20	8,866.68	36.28	32.94	-85.12	-1,052.90	-570.41	858.53	810.92	47.61	18.032				
9,100.00	8,967.68	9,018.20	8,966.68	36.57	33.27	-85.12	-1,052.90	-570.41	858.53	810.47	48.06	17.863				
9,200.00	9,067.68	9,118.20	9,066.68	36.86	33.61	-85.12	-1,052.90	-570.41	858.53	810.02	48.51	17.697				
9,300.00	9,167.68	9,218.20	9,166.68	37.16	33.95	-85.12	-1,052.90	-570.41	858.53	809.56	48.96	17.534				
9,400.00	9,267.68	9,318.20	9,266.68	37.45	34.28	-85.12	-1,052.90	-570.41	858.53	809.11	49.42	17.373				
9,500.00	9,367.68	9,418.20	9,366.68	37.74	34.62	-85.12	-1,052.90	-570.41	858.53	808.66	49.87	17.214				
9,600.00	9,467.68	9,518.20	9,466.68	38.04	34.96	-85.12	-1,052.90	-570.41	858.53	808.20	50.33	17.059				
9,700.00	9,567.68	9,618.20	9,566.68	38.33	35.30	-85.12	-1,052.90	-570.41	858.53	807.74	50.78	16.905				
9,800.00	9,667.68	9,718.20	9,666.68	38.63	35.64	-85.12	-1,052.90	-570.41	858.53	807.29	51.24	16.754				
9,900.00	9,767.68	9,818.20	9,766.68	38.93	35.98	-85.12	-1,052.90	-570.41	858.53	806.83	51.70	16.606				

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 Tatanka Fed Com 602H
Project:	Lea County, NM (NAD83)	TVD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 602H	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		
10,000.00	9,867.68	9,918.20	9,866.68	39.23	36.32	-85.12	-1,052.90	-570.41	858.53	806.37	52.16	16.460		
10,100.00	9,967.68	10,018.20	9,966.68	39.53	36.66	-85.12	-1,052.90	-570.41	858.53	805.91	52.62	16.316		
10,200.00	10,067.68	10,118.20	10,066.68	39.83	37.00	-85.12	-1,052.90	-570.41	858.53	805.45	53.08	16.174		
10,300.00	10,167.68	10,218.20	10,166.68	40.13	37.35	-85.12	-1,052.90	-570.41	858.53	804.99	53.54	16.035		
10,400.00	10,267.68	10,318.20	10,266.68	40.43	37.69	-85.12	-1,052.90	-570.41	858.53	804.52	54.00	15.897		
10,500.00	10,367.68	10,418.20	10,366.68	40.74	38.03	-85.12	-1,052.90	-570.41	858.53	804.06	54.47	15.762		
10,600.00	10,467.68	10,518.20	10,466.68	41.04	38.37	-85.12	-1,052.90	-570.41	858.53	803.60	54.93	15.629		
10,700.00	10,567.68	10,618.20	10,566.68	41.35	38.71	-85.12	-1,052.90	-570.41	858.53	803.13	55.40	15.498		
10,800.00	10,667.68	10,718.20	10,666.68	41.66	39.06	-85.12	-1,052.90	-570.41	858.53	802.67	55.86	15.369		
10,900.00	10,767.68	10,818.20	10,766.68	41.96	39.40	-85.12	-1,052.90	-570.41	858.53	802.20	56.33	15.242		
11,000.00	10,867.68	10,918.20	10,866.68	42.27	39.74	-85.12	-1,052.90	-570.41	858.53	801.73	56.80	15.116		
11,100.00	10,967.68	11,018.20	10,966.68	42.58	40.09	-85.12	-1,052.90	-570.41	858.53	801.26	57.26	14.993		
11,200.00	11,067.68	11,118.20	11,066.68	42.89	40.43	-85.12	-1,052.90	-570.41	858.53	800.80	57.73	14.871		
11,300.00	11,167.68	11,218.20	11,166.68	43.20	40.78	-85.12	-1,052.90	-570.41	858.53	800.33	58.20	14.751		
11,400.00	11,267.68	11,318.20	11,266.68	43.51	41.12	-85.12	-1,052.90	-570.41	858.53	799.86	58.67	14.633		
11,500.00	11,367.68	11,418.20	11,366.68	43.82	41.46	-85.12	-1,052.90	-570.41	858.53	799.39	59.14	14.517		
11,576.36	11,444.04	11,494.56	11,443.04	44.06	41.73	-85.12	-1,052.90	-570.41	858.53	799.03	59.50	14.429		
11,600.00	11,467.68	11,518.19	11,466.68	44.14	41.81	95.47	-1,052.90	-570.41	858.57	798.96	59.61	14.403		
11,650.00	11,517.48	11,568.00	11,516.48	44.33	41.98	95.71	-1,052.90	-570.41	858.99	799.13	59.86	14.350		
11,700.00	11,566.73	11,617.24	11,565.73	44.54	42.15	96.18	-1,052.90	-570.41	859.89	799.77	60.12	14.303		
11,750.00	11,615.04	11,665.55	11,614.04	44.78	42.32	96.85	-1,052.90	-570.41	861.40	801.01	60.39	14.265		
11,800.00	11,662.05	11,712.56	11,661.05	45.04	42.48	97.68	-1,052.90	-570.41	863.68	803.03	60.66	14.239		
11,850.00	11,707.40	11,757.92	11,706.40	45.33	42.64	98.60	-1,052.90	-570.41	866.97	806.03	60.93	14.228		
11,900.00	11,750.75	11,801.26	11,749.75	45.65	42.79	99.56	-1,052.90	-570.41	871.49	810.29	61.21	14.239		
11,950.00	11,791.76	11,842.27	11,790.76	45.98	42.93	100.49	-1,052.90	-570.41	877.53	816.05	61.47	14.275		
12,000.00	11,830.12	11,880.64	11,829.12	46.33	43.06	101.30	-1,052.90	-570.41	885.35	823.61	61.74	14.341		
12,050.00	11,865.55	11,916.07	11,864.55	46.70	43.18	101.92	-1,052.90	-570.41	895.20	833.21	61.99	14.442		
12,100.00	11,897.77	11,948.29	11,896.77	47.09	43.30	102.28	-1,052.90	-570.41	907.30	845.08	62.22	14.582		
12,150.00	11,926.54	11,977.05	11,925.54	47.50	43.39	102.30	-1,052.90	-570.41	921.83	859.39	62.44	14.764		
12,200.00	11,951.63	12,002.15	11,950.63	47.92	43.48	101.91	-1,052.90	-570.41	938.88	876.25	62.63	14.991		
12,250.00	11,972.86	12,023.38	11,971.86	48.35	43.56	101.06	-1,052.90	-570.41	958.50	895.71	62.80	15.264		
12,300.00	11,990.07	12,040.59	11,989.07	48.80	43.61	99.67	-1,052.90	-570.41	980.64	917.71	62.94	15.582		
12,350.00	12,003.12	12,053.64	12,002.12	49.25	43.66	97.71	-1,052.90	-570.41	1,005.18	942.14	63.04	15.944		
12,400.00	12,011.92	12,062.43	12,010.92	49.70	43.69	95.14	-1,052.90	-570.41	1,031.93	968.80	63.12	16.348		
12,450.00	12,016.39	13,050.76	12,617.00	50.16	46.52	125.12	-1,681.03	-564.20	1,045.12	984.68	60.44	17.291		
12,476.36	12,017.00	13,077.11	12,617.00	50.40	46.62	125.12	-1,707.38	-563.94	1,044.77	984.12	60.66	17.225		
12,500.00	12,017.00	13,100.75	12,617.00	50.61	46.71	125.12	-1,731.02	-563.71	1,044.77	983.93	60.84	17.173		
12,600.00	12,017.00	13,200.75	12,617.00	51.55	47.13	125.12	-1,831.01	-562.72	1,044.76	983.11	61.66	16.945		
12,700.00	12,017.00	13,300.75	12,617.00	52.52	47.61	125.12	-1,931.01	-561.73	1,044.76	982.23	62.53	16.709		
12,800.00	12,017.00	13,400.75	12,617.00	53.53	48.14	125.12	-2,031.00	-560.74	1,044.75	981.31	63.45	16.467		
12,900.00	12,017.00	13,500.75	12,617.00	54.57	48.73	125.12	-2,131.00	-559.76	1,044.75	980.33	64.41	16.219		
13,000.00	12,017.00	13,600.75	12,617.00	55.63	49.36	125.12	-2,230.99	-558.77	1,044.74	979.31	65.43	15.968		
13,100.00	12,017.00	13,700.75	12,617.00	56.73	50.04	125.12	-2,330.99	-557.78	1,044.73	978.25	66.49	15.714		
13,200.00	12,017.00	13,800.75	12,617.00	57.85	50.76	125.12	-2,430.98	-556.79	1,044.73	977.14	67.58	15.458		
13,300.00	12,017.00	13,900.75	12,617.00	58.99	51.52	125.12	-2,530.98	-555.80	1,044.72	976.00	68.72	15.202		
13,400.00	12,017.00	14,000.75	12,617.00	60.16	52.33	125.12	-2,630.97	-554.81	1,044.71	974.82	69.90	14.946		
13,500.00	12,017.00	14,100.75	12,617.00	61.35	53.18	125.12	-2,730.97	-553.83	1,044.71	973.60	71.11	14.691		
13,600.00	12,017.00	14,200.75	12,617.00	62.57	54.06	125.12	-2,830.96	-552.84	1,044.70	972.34	72.36	14.438		
13,700.00	12,017.00	14,300.75	12,617.00	63.80	54.98	125.12	-2,930.96	-551.85	1,044.70	971.06	73.64	14.187		
13,800.00	12,017.00	14,400.75	12,617.00	65.05	55.93	125.12	-3,030.95	-550.86	1,044.69	969.75	74.94	13.940		
13,900.00	12,017.00	14,500.75	12,617.00	66.32	56.92	125.12	-3,130.95	-549.87	1,044.68	968.40	76.28	13.695		
14,000.00	12,017.00	14,600.75	12,617.00	67.60	57.93	125.12	-3,230.94	-548.88	1,044.68	967.03	77.64	13.455		

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 Tatanka Fed Com 602H
Project:	Lea County, NM (NAD83)	TVD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 602H	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													Tatanka Fed Com - Tatanka Fed Com 802H - OH - Plan #2		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)	(°)										
14,100.00	12,017.00	14,700.75	12,617.00	68.90	58.98	125.12	-3,330.94	-547.90	1,044.67	965.64	79.03	13.218				
14,200.00	12,017.00	14,800.75	12,617.00	70.22	60.05	125.12	-3,430.94	-546.91	1,044.67	964.22	80.45	12.986				
14,300.00	12,017.00	14,900.75	12,617.00	71.55	61.14	125.12	-3,530.93	-545.92	1,044.66	962.78	81.88	12.758				
14,400.00	12,017.00	15,000.75	12,617.00	72.89	62.26	125.12	-3,630.93	-544.93	1,044.65	961.31	83.34	12.535				
14,500.00	12,017.00	15,100.75	12,617.00	74.25	63.41	125.12	-3,730.92	-543.94	1,044.65	959.83	84.82	12.316				
14,600.00	12,017.00	15,200.75	12,617.00	75.61	64.58	125.12	-3,830.92	-542.96	1,044.64	958.32	86.32	12.102				
14,700.00	12,017.00	15,300.75	12,617.00	76.99	65.76	125.12	-3,930.91	-541.97	1,044.64	956.80	87.83	11.893				
14,800.00	12,017.00	15,400.75	12,617.00	78.38	66.97	125.12	-4,030.91	-540.98	1,044.63	955.26	89.37	11.689				
14,900.00	12,017.00	15,500.75	12,617.00	79.78	68.20	125.12	-4,130.90	-539.99	1,044.62	953.71	90.92	11.490				
15,000.00	12,017.00	15,600.75	12,617.00	81.18	69.44	125.12	-4,230.90	-539.00	1,044.62	952.13	92.48	11.295				
15,100.00	12,017.00	15,700.75	12,617.00	82.60	70.70	125.12	-4,330.89	-538.01	1,044.61	950.55	94.06	11.106				
15,200.00	12,017.00	15,800.75	12,617.00	84.03	71.97	125.12	-4,430.89	-537.03	1,044.60	948.95	95.65	10.921				
15,300.00	12,017.00	15,900.75	12,617.00	85.46	73.27	125.12	-4,530.88	-536.04	1,044.60	947.34	97.26	10.740				
15,400.00	12,017.00	16,000.75	12,617.00	86.90	74.57	125.12	-4,630.88	-535.05	1,044.59	945.71	98.88	10.564				
15,500.00	12,017.00	16,100.75	12,617.00	88.35	75.89	125.12	-4,730.87	-534.06	1,044.59	944.08	100.51	10.393				
15,600.00	12,017.00	16,200.75	12,617.00	89.80	77.22	125.12	-4,830.87	-533.07	1,044.58	942.43	102.15	10.226				
15,700.00	12,017.00	16,300.75	12,617.00	91.27	78.56	125.12	-4,930.86	-532.08	1,044.57	940.77	103.80	10.063				
15,800.00	12,017.00	16,400.75	12,617.00	92.74	79.92	125.12	-5,030.86	-531.10	1,044.57	939.10	105.46	9.905				
15,900.00	12,017.00	16,500.75	12,617.00	94.21	81.29	125.12	-5,130.85	-530.11	1,044.56	937.43	107.13	9.750				
16,000.00	12,017.00	16,600.75	12,617.00	95.69	82.66	125.13	-5,230.85	-529.12	1,044.56	935.74	108.81	9.599				
16,100.00	12,017.00	16,700.75	12,617.00	97.18	84.05	125.13	-5,330.84	-528.13	1,044.55	934.05	110.50	9.453				
16,200.00	12,017.00	16,800.75	12,617.00	98.67	85.44	125.13	-5,430.84	-527.14	1,044.54	932.34	112.20	9.310				
16,300.00	12,017.00	16,900.75	12,617.00	100.16	86.85	125.13	-5,530.83	-526.16	1,044.54	930.63	113.90	9.170				
16,400.00	12,017.00	17,000.75	12,617.00	101.67	88.26	125.13	-5,630.83	-525.17	1,044.53	928.92	115.61	9.035				
16,500.00	12,017.00	17,100.75	12,617.00	103.17	89.68	125.13	-5,730.82	-524.18	1,044.53	927.19	117.33	8.902				
16,600.00	12,017.00	17,200.75	12,617.00	104.68	91.11	125.13	-5,830.82	-523.19	1,044.52	925.46	119.06	8.773				
16,700.00	12,017.00	17,300.75	12,617.00	106.20	92.55	125.13	-5,930.81	-522.20	1,044.51	923.73	120.79	8.648				
16,800.00	12,017.00	17,400.75	12,617.00	107.71	93.99	125.13	-6,030.81	-521.21	1,044.51	921.98	122.52	8.525				
16,900.00	12,017.00	17,500.75	12,617.00	109.24	95.44	125.13	-6,130.80	-520.23	1,044.50	920.24	124.26	8.406				
17,000.00	12,017.00	17,600.75	12,617.00	110.76	96.90	125.13	-6,230.80	-519.24	1,044.49	918.48	126.01	8.289				
17,100.00	12,017.00	17,700.75	12,617.00	112.29	98.36	125.13	-6,330.79	-518.25	1,044.49	916.72	127.76	8.175				
17,200.00	12,017.00	17,800.75	12,617.00	113.82	99.83	125.13	-6,430.79	-517.26	1,044.48	914.96	129.52	8.064				
17,300.00	12,017.00	17,900.75	12,617.00	115.36	101.31	125.13	-6,530.78	-516.27	1,044.48	913.19	131.28	7.956				
17,400.00	12,017.00	18,000.75	12,617.00	116.90	102.79	125.13	-6,630.78	-515.28	1,044.47	911.42	133.05	7.850				
17,500.00	12,017.00	18,100.75	12,617.00	118.44	104.27	125.13	-6,730.77	-514.30	1,044.46	909.65	134.82	7.747				
17,600.00	12,017.00	18,200.75	12,617.00	119.99	105.76	125.13	-6,830.77	-513.31	1,044.46	907.87	136.59	7.647				
17,700.00	12,017.00	18,300.75	12,617.00	121.53	107.26	125.13	-6,930.76	-512.32	1,044.45	906.09	138.36	7.549				
17,800.00	12,017.00	18,400.75	12,617.00	123.09	108.76	125.13	-7,030.76	-511.33	1,044.45	904.30	140.14	7.453				
17,900.00	12,017.00	18,500.75	12,617.00	124.64	110.26	125.13	-7,130.75	-510.34	1,044.44	902.51	141.93	7.359				
18,000.00	12,017.00	18,600.75	12,617.00	126.19	111.77	125.13	-7,230.75	-509.36	1,044.43	900.72	143.71	7.267				
18,100.00	12,017.00	18,700.75	12,617.00	127.75	113.28	125.13	-7,330.74	-508.37	1,044.43	898.92	145.50	7.178				
18,200.00	12,017.00	18,800.75	12,617.00	129.31	114.79	125.13	-7,430.74	-507.38	1,044.42	897.13	147.30	7.091				
18,300.00	12,017.00	18,900.75	12,617.00	130.88	116.31	125.13	-7,530.74	-506.39	1,044.41	895.32	149.09	7.005				
18,400.00	12,017.00	19,000.75	12,617.00	132.44	117.84	125.13	-7,630.73	-505.40	1,044.41	893.52	150.89	6.922				
18,500.00	12,017.00	19,100.75	12,617.00	134.01	119.36	125.13	-7,730.73	-504.41	1,044.40	891.72	152.69	6.840				
18,600.00	12,017.00	19,200.75	12,617.00	135.58	120.89	125.13	-7,830.72	-503.43	1,044.40	889.91	154.49	6.760				
18,700.00	12,017.00	19,300.75	12,617.00	137.15	122.43	125.13	-7,930.72	-502.44	1,044.39	888.10	156.29	6.682				
18,800.00	12,017.00	19,400.75	12,617.00	138.72	123.96	125.13	-8,030.71	-501.45	1,044.38	886.29	158.10	6.606				
18,900.00	12,017.00	19,500.75	12,617.00	140.29	125.50	125.13	-8,130.71	-500.46	1,044.38	884.47	159.90	6.531				
19,000.00	12,017.00	19,600.75	12,617.00	141.87	127.04	125.13	-8,230.70	-499.47	1,044.37	882.66	161.71	6.458				
19,100.00	12,017.00	19,700.75	12,617.00	143.45	128.59	125.13	-8,330.70	-498.48	1,044.37	880.84	163.52	6.387				
19,200.00	12,017.00	19,800.75	12,617.00	145.03	130.13	125.13	-8,430.69	-497.50	1,044.36	879.02	165.34	6.317				

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 Tatanka Fed Com 602H
Project:	Lea County, NM (NAD83)	TVD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 602H	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		
19,300.00	12,017.00	19,900.75	12,617.00	146.61	131.68	125.13	-8,530.69	-496.51	1,044.35	877.21	167.15	6.248		
19,400.00	12,017.00	20,000.75	12,617.00	148.19	133.23	125.13	-8,630.68	-495.52	1,044.35	875.38	168.96	6.181		
19,500.00	12,017.00	20,100.75	12,617.00	149.78	134.79	125.13	-8,730.68	-494.53	1,044.34	873.56	170.78	6.115		
19,600.00	12,017.00	20,200.75	12,617.00	151.36	136.35	125.13	-8,830.67	-493.54	1,044.34	871.74	172.60	6.051		
19,700.00	12,017.00	20,300.75	12,617.00	152.95	137.90	125.13	-8,930.67	-492.56	1,044.33	869.91	174.41	5.988		
19,800.00	12,017.00	20,400.75	12,617.00	154.54	139.46	125.13	-9,030.66	-491.57	1,044.32	868.09	176.23	5.926		
19,900.00	12,017.00	20,500.75	12,617.00	156.13	141.03	125.13	-9,130.66	-490.58	1,044.32	866.26	178.05	5.865		
20,000.00	12,017.00	20,600.75	12,617.00	157.72	142.59	125.13	-9,230.65	-489.59	1,044.31	864.44	179.88	5.806		
20,100.00	12,017.00	20,700.75	12,617.00	159.31	144.16	125.13	-9,330.65	-488.60	1,044.30	862.61	181.70	5.748		
20,200.00	12,017.00	20,800.75	12,617.00	160.90	145.73	125.14	-9,430.64	-487.61	1,044.30	860.78	183.52	5.690		
20,300.00	12,017.00	20,900.75	12,617.00	162.50	147.30	125.14	-9,530.64	-486.63	1,044.29	858.95	185.34	5.634		
20,400.00	12,017.00	21,000.75	12,617.00	164.09	148.87	125.14	-9,630.63	-485.64	1,044.29	857.12	187.17	5.579		
20,500.00	12,017.00	21,100.75	12,617.00	165.69	150.45	125.14	-9,730.63	-484.65	1,044.28	855.29	188.99	5.526		
20,600.00	12,017.00	21,200.75	12,617.00	167.29	152.02	125.14	-9,830.62	-483.66	1,044.27	853.46	190.82	5.473		
20,700.00	12,017.00	21,300.75	12,617.00	168.89	153.60	125.14	-9,930.62	-482.67	1,044.27	851.63	192.64	5.421		
20,800.00	12,017.00	21,400.75	12,617.00	170.49	155.18	125.14	-10,030.61	-481.68	1,044.26	849.80	194.47	5.370		
20,900.00	12,017.00	21,500.75	12,617.00	172.09	156.76	125.14	-10,130.61	-480.70	1,044.26	847.96	196.29	5.320		
21,000.00	12,017.00	21,600.75	12,617.00	173.69	158.34	125.14	-10,230.60	-479.71	1,044.25	846.13	198.12	5.271		
21,100.00	12,017.00	21,700.75	12,617.00	175.29	159.92	125.14	-10,330.60	-478.72	1,044.24	844.30	199.95	5.223		
21,200.00	12,017.00	21,800.75	12,617.00	176.90	161.51	125.14	-10,430.59	-477.73	1,044.24	842.47	201.77	5.175		
21,300.00	12,017.00	21,900.75	12,617.00	178.50	163.09	125.14	-10,530.59	-476.74	1,044.23	840.63	203.60	5.129		
21,400.00	12,017.00	22,000.75	12,617.00	180.11	164.68	125.14	-10,630.58	-475.76	1,044.23	838.80	205.43	5.083		
21,500.00	12,017.00	22,100.75	12,617.00	181.71	166.27	125.14	-10,730.58	-474.77	1,044.22	836.97	207.25	5.038		
21,600.00	12,017.00	22,200.75	12,617.00	183.32	167.86	125.14	-10,830.57	-473.78	1,044.21	835.13	209.08	4.994		
21,700.00	12,017.00	22,300.75	12,617.00	184.93	169.45	125.14	-10,930.57	-472.79	1,044.21	833.30	210.91	4.951		
21,800.00	12,017.00	22,400.75	12,617.00	186.54	171.04	125.14	-11,030.56	-471.80	1,044.20	831.47	212.73	4.909		
21,900.00	12,017.00	22,500.75	12,617.00	188.15	172.63	125.14	-11,130.56	-470.81	1,044.19	829.63	214.56	4.867		
22,000.00	12,017.00	22,600.75	12,617.00	189.76	174.23	125.14	-11,230.55	-469.83	1,044.19	827.80	216.38	4.826		
22,100.00	12,017.00	22,700.75	12,617.00	191.37	175.82	125.14	-11,330.55	-468.84	1,044.18	825.97	218.21	4.785		
22,162.77	12,017.00	22,763.52	12,617.00	192.38	176.72	125.14	-11,393.31	-468.22	1,044.18	824.91	219.27	4.762		
22,187.30	12,017.00	22,787.51	12,617.00	192.77	177.07	125.14	-11,417.30	-467.98	1,044.18	824.51	219.67	4.753 SF		



Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well Tatanka Fed Com 602H
Project:	Lea County, NM (NAD83)	TVD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 602H	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		Tatanka Fed Com - Tatanka 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		
0.00	0.00	0.50	0.50	0.00	0.00	89.45	0.24	24.99	24.99					
100.00	100.00	100.50	100.50	0.13	0.13	89.45	0.24	24.99	24.99	24.81	0.18	139.845		
200.00	200.00	200.50	200.50	0.48	0.49	89.45	0.24	24.99	24.99	24.31	0.69	36.448		
300.00	300.00	300.50	300.50	0.84	0.84	89.45	0.24	24.99	24.99	23.80	1.19	20.955		
400.00	400.00	400.50	400.50	1.20	1.20	89.45	0.24	24.99	24.99	23.29	1.70	14.704		
500.00	500.00	500.50	500.50	1.56	1.56	89.45	0.24	24.99	24.99	22.78	2.21	11.326		
600.00	600.00	600.50	600.50	1.92	1.92	89.45	0.24	24.99	24.99	22.28	2.71	9.210		
700.00	700.00	700.50	700.50	2.28	2.28	89.45	0.24	24.99	24.99	21.77	3.22	7.760		
800.00	800.00	800.50	800.50	2.63	2.64	89.45	0.24	24.99	24.99	21.26	3.73	6.705		
900.00	900.00	900.50	900.50	2.99	3.00	89.45	0.24	24.99	24.99	20.76	4.23	5.902		
1,000.00	1,000.00	1,000.50	1,000.50	3.35	3.35	89.45	0.24	24.99	24.99	20.25	4.74	5.271		
1,100.00	1,100.00	1,100.50	1,100.50	3.71	3.71	89.45	0.24	24.99	24.99	19.74	5.25	4.762		
1,200.00	1,200.00	1,200.50	1,200.50	4.07	4.07	89.45	0.24	24.99	24.99	19.24	5.76	4.342		
1,300.00	1,300.00	1,300.50	1,300.50	4.43	4.43	89.45	0.24	24.99	24.99	18.73	6.26	3.991		
1,400.00	1,400.00	1,400.50	1,400.50	4.79	4.79	89.45	0.24	24.99	24.99	18.22	6.77	3.692		
1,500.00	1,500.00	1,500.50	1,500.50	5.14	5.15	89.45	0.24	24.99	24.99	17.72	7.28	3.435		
1,600.00	1,600.00	1,600.50	1,600.50	5.50	5.50	89.45	0.24	24.99	24.99	17.21	7.78	3.211		
1,700.00	1,700.00	1,700.50	1,700.50	5.86	5.86	89.45	0.24	24.99	24.99	16.70	8.29	3.015		
1,800.00	1,800.00	1,800.50	1,800.50	6.22	6.22	89.45	0.24	24.99	24.99	16.19	8.80	2.841		
1,900.00	1,900.00	1,900.50	1,900.50	6.58	6.58	89.45	0.24	24.99	24.99	15.69	9.30	2.686		
2,000.00	2,000.00	2,000.50	2,000.50	6.94	6.94	89.45	0.24	24.99	24.99	15.18	9.81	2.547		
2,100.00	2,100.00	2,100.50	2,100.50	7.29	7.30	89.45	0.24	24.99	24.99	14.67	10.32	2.422		
2,200.00	2,200.00	2,200.50	2,200.50	7.65	7.66	89.45	0.24	24.99	24.99	14.17	10.82	2.309		
2,300.00	2,300.00	2,300.50	2,300.50	8.01	8.01	89.45	0.24	24.99	24.99	13.66	11.33	2.205		
2,400.00	2,400.00	2,400.50	2,400.50	8.37	8.37	89.45	0.24	24.99	24.99	13.15	11.84	2.111		
2,500.00	2,500.00	2,500.50	2,500.50	8.73	8.73	89.45	0.24	24.99	24.99	12.65	12.35	2.024		
2,600.00	2,600.00	2,600.50	2,600.50	9.09	9.09	89.45	0.24	24.99	24.99	12.14	12.85	1.944		
2,700.00	2,700.00	2,700.50	2,700.50	9.45	9.45	89.45	0.24	24.99	24.99	11.63	13.36	1.871		
2,800.00	2,800.00	2,800.50	2,800.50	9.80	9.81	89.45	0.24	24.99	24.99	11.12	13.87	1.802		
2,900.00	2,900.00	2,900.50	2,900.50	10.16	10.16	89.45	0.24	24.99	24.99	10.62	14.37	1.739		
3,000.00	3,000.00	3,000.50	3,000.50	10.52	10.52	89.45	0.24	24.99	24.99	10.11	14.88	1.679		
3,100.00	3,100.00	3,100.50	3,100.50	10.88	10.88	89.45	0.24	24.99	24.99	9.60	15.39	1.624		
3,200.00	3,200.00	3,200.50	3,200.50	11.24	11.24	89.45	0.24	24.99	24.99	9.10	15.89	1.572		
3,300.00	3,299.99	3,300.49	3,300.49	11.58	11.60	-79.30	0.24	24.99	24.71	8.33	16.39	1.508		
3,400.00	3,399.91	3,400.34	3,400.33	11.90	11.94	-85.35	-1.02	25.38	24.43	7.57	16.86	1.449 Level 3		
3,420.57	3,420.45	3,420.89	3,420.87	11.97	12.00	-86.61	-1.59	25.55	24.42	7.47	16.95	1.441 Level 3, CC		
3,500.00	3,499.69	3,500.25	3,500.16	12.23	12.26	-91.47	-4.78	26.53	24.55	7.23	17.32	1.418 Level 3, ES		
3,600.00	3,599.27	3,600.24	3,599.93	12.56	12.59	-97.44	-11.04	28.44	25.07	7.30	17.78	1.411 Level 3, SF		
3,700.00	3,698.57	3,700.29	3,699.56	12.89	12.92	-103.04	-19.80	31.12	25.98	7.74	18.24	1.425 Level 3		
3,800.00	3,797.54	3,800.41	3,798.98	13.22	13.25	-108.14	-31.06	34.57	27.24	8.55	18.70	1.457 Level 3		
3,900.00	3,896.09	3,900.60	3,898.12	13.57	13.58	-112.65	-44.82	38.77	28.82	9.67	19.15	1.505		
4,000.00	3,994.16	4,000.85	3,996.92	13.92	13.93	-116.55	-61.07	43.75	30.66	11.06	19.60	1.565		
4,100.00	4,091.70	4,101.17	4,095.31	14.28	14.28	-119.88	-79.81	49.48	32.74	12.70	20.05	1.634		
4,125.65	4,116.62	4,126.91	4,120.47	14.37	14.37	-120.65	-85.02	51.07	33.31	13.15	20.16	1.652		
4,200.00	4,188.79	4,201.49	4,193.15	14.65	14.64	-121.75	-100.98	55.96	34.66	14.15	20.51	1.690		
4,300.00	4,285.87	4,301.48	4,290.47	15.04	15.01	-122.30	-122.92	62.67	36.20	15.17	21.03	1.722		
4,400.00	4,382.95	4,401.46	4,387.79	15.43	15.39	-122.81	-144.86	69.38	37.74	16.19	21.55	1.751		
4,500.00	4,480.03	4,501.45	4,485.11	15.83	15.78	-123.28	-166.80	76.09	39.29	17.20	22.09	1.779		
4,600.00	4,577.11	4,601.44	4,582.43	16.23	16.17	-123.71	-188.74	82.80	40.83	18.20	22.63	1.804		
4,700.00	4,674.18	4,701.43	4,679.75	16.65	16.58	-124.12	-210.68	89.52	42.38	19.20	23.18	1.828		
4,800.00	4,771.26	4,801.41	4,777.07	17.07	16.98	-124.49	-232.62	96.23	43.93	20.20	23.73	1.851		
4,900.00	4,868.34	4,901.40	4,874.39	17.49	17.40	-124.84	-254.56	102.94	45.49	21.19	24.30	1.872		

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 Tatanka Fed Com 602H
Project:	Lea County, NM (NAD83)	TVD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 602H	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													Tatanka Fed Com - Tatanka 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	4,965.42	5,001.39	4,971.71	17.92	17.82	-125.16	-276.50	109.65	47.04	22.18	24.86	1.892				
5,100.00	5,062.50	5,101.38	5,069.03	18.36	18.24	-125.46	-298.44	116.37	48.60	23.17	25.43	1.911				
5,200.00	5,159.57	5,201.37	5,166.35	18.80	18.67	-125.75	-320.38	123.08	50.16	24.15	26.01	1.928				
5,300.00	5,256.65	5,301.35	5,263.67	19.25	19.10	-126.02	-342.33	129.79	51.72	25.13	26.59	1.945				
5,400.00	5,353.73	5,401.34	5,360.99	19.70	19.54	-126.27	-364.27	136.50	53.28	26.10	27.17	1.961				
5,500.00	5,450.81	5,501.33	5,458.31	20.15	19.98	-126.51	-386.21	143.21	54.84	27.08	27.76	1.975				
5,600.00	5,547.89	5,601.32	5,555.62	20.61	20.42	-126.73	-408.15	149.93	56.40	28.05	28.35	1.989				
5,700.00	5,644.96	5,701.30	5,652.94	21.07	20.87	-126.94	-430.09	156.64	57.96	29.02	28.94	2.003				
5,800.00	5,742.04	5,801.29	5,750.26	21.54	21.32	-127.15	-452.03	163.35	59.53	29.99	29.54	2.015				
5,900.00	5,839.12	5,901.28	5,847.58	22.00	21.78	-127.34	-473.97	170.06	61.09	30.95	30.14	2.027				
6,000.00	5,936.20	6,001.27	5,944.90	22.47	22.23	-127.52	-495.91	176.78	62.66	31.92	30.74	2.038				
6,100.00	6,033.28	6,101.25	6,042.22	22.94	22.69	-127.69	-517.85	183.49	64.22	32.88	31.34	2.049				
6,200.00	6,130.35	6,201.24	6,139.54	23.42	23.15	-127.86	-539.79	190.20	65.79	33.84	31.95	2.059				
6,300.00	6,227.43	6,301.23	6,236.86	23.90	23.62	-128.01	-561.73	196.91	67.35	34.80	32.55	2.069				
6,400.00	6,324.51	6,401.22	6,334.18	24.38	24.08	-128.16	-583.67	203.62	68.92	35.76	33.16	2.078				
6,500.00	6,421.59	6,501.20	6,431.50	24.86	24.55	-128.30	-605.61	210.34	70.49	36.72	33.77	2.087				
6,600.00	6,518.67	6,601.19	6,528.82	25.34	25.02	-128.44	-627.55	217.05	72.06	37.67	34.38	2.096				
6,700.00	6,615.75	6,701.18	6,626.14	25.83	25.49	-128.57	-649.49	223.76	73.62	38.63	35.00	2.104				
6,800.00	6,712.82	6,801.17	6,723.46	26.31	25.97	-128.70	-671.43	230.47	75.19	39.58	35.61	2.111				
6,900.00	6,809.90	6,901.15	6,820.78	26.80	26.44	-128.82	-693.37	237.19	76.76	40.53	36.23	2.119				
7,000.00	6,906.98	7,001.14	6,918.10	27.29	26.92	-128.93	-715.32	243.90	78.33	41.48	36.85	2.126				
7,100.00	7,004.06	7,101.13	7,015.42	27.78	27.40	-129.04	-737.26	250.61	79.90	42.44	37.47	2.133				
7,200.00	7,101.14	7,201.12	7,112.74	28.28	27.88	-129.15	-759.20	257.32	81.47	43.39	38.09	2.139				
7,300.00	7,198.21	7,301.10	7,210.05	28.77	28.36	-129.25	-781.14	264.03	83.04	44.33	38.71	2.145				
7,400.00	7,295.29	7,401.09	7,307.37	29.26	28.84	-129.35	-803.08	270.75	84.61	45.28	39.33	2.151				
7,500.00	7,392.37	7,501.08	7,404.69	29.76	29.33	-129.45	-825.02	277.46	86.18	46.23	39.95	2.157				
7,600.00	7,489.45	7,601.07	7,502.01	30.26	29.81	-129.54	-846.96	284.17	87.75	47.18	40.58	2.163				
7,700.00	7,586.53	7,701.05	7,599.33	30.76	30.30	-129.63	-868.90	290.88	89.32	48.12	41.20	2.168				
7,800.00	7,683.60	7,801.04	7,696.65	31.26	30.78	-129.71	-890.84	297.60	90.90	49.07	41.83	2.173				
7,900.00	7,780.68	7,901.03	7,793.97	31.76	31.27	-129.80	-912.78	304.31	92.47	50.01	42.45	2.178				
8,000.00	7,877.76	8,001.02	7,891.29	32.26	31.76	-129.88	-934.72	311.02	94.04	50.96	43.08	2.183				
8,035.67	7,912.38	8,036.68	7,926.00	32.44	31.93	-129.90	-942.55	313.41	94.60	51.30	43.30	2.185				
8,100.00	7,974.96	8,100.00	7,987.67	32.76	32.24	-129.81	-956.27	317.61	95.38	51.63	43.74	2.180				
8,200.00	8,072.71	8,198.95	8,084.47	33.24	32.71	-129.61	-975.89	323.62	96.40	52.00	44.40	2.171				
8,300.00	8,170.98	8,297.45	8,181.32	33.69	33.16	-129.44	-993.03	328.86	97.31	52.28	45.03	2.161				
8,400.00	8,269.70	8,395.94	8,278.60	34.13	33.58	-129.30	-1,007.78	333.37	98.09	52.46	45.63	2.150				
8,500.00	8,368.80	8,494.43	8,376.24	34.55	33.99	-129.19	-1,020.12	337.15	98.75	52.56	46.19	2.138				
8,600.00	8,468.22	8,592.92	8,474.17	34.94	34.38	-129.11	-1,030.06	340.19	99.29	52.57	46.72	2.125				
8,700.00	8,567.89	8,691.40	8,572.33	35.31	34.74	-129.05	-1,037.57	342.48	99.70	52.49	47.21	2.112				
8,800.00	8,667.73	8,789.88	8,670.66	35.66	35.09	-129.02	-1,042.66	344.04	99.99	52.32	47.66	2.098				
8,900.00	8,767.69	8,888.35	8,769.10	35.99	35.41	-129.01	-1,045.33	344.86	100.15	52.07	48.08	2.083				
8,961.32	8,829.00	8,948.76	8,829.50	36.17	35.60	36.78	-1,045.76	344.99	100.19	51.87	48.32	2.073				
9,000.00	8,867.68	8,987.44	8,868.18	36.28	35.71	36.78	-1,045.76	344.99	100.19	51.70	48.49	2.066				
9,100.00	8,967.68	9,087.44	8,968.18	36.57	36.01	36.78	-1,045.76	344.99	100.19	51.26	48.92	2.048				
9,200.00	9,067.68	9,187.44	9,068.18	36.86	36.30	36.78	-1,045.76	344.99	100.19	50.83	49.36	2.030				
9,300.00	9,167.68	9,287.44	9,168.18	37.16	36.60	36.78	-1,045.76	344.99	100.19	50.39	49.80	2.012				
9,400.00	9,267.68	9,387.44	9,268.18	37.45	36.90	36.78	-1,045.76	344.99	100.19	49.95	50.24	1.994				
9,500.00	9,367.68	9,487.44	9,368.18	37.74	37.20	36.78	-1,045.76	344.99	100.19	49.51	50.68	1.977				
9,600.00	9,467.68	9,587.44	9,468.18	38.04	37.50	36.78	-1,045.76	344.99	100.19	49.07	51.12	1.960				
9,700.00	9,567.68	9,687.44	9,568.18	38.33	37.80	36.78	-1,045.76	344.99	100.19	48.62	51.56	1.943				
9,800.00	9,667.68	9,787.44	9,668.18	38.63	38.10	36.78	-1,045.76	344.99	100.19	48.18	52.01	1.926				
9,900.00	9,767.68	9,887.44	9,768.18	38.93	38.40	36.78	-1,045.76	344.99	100.19	47.73	52.45	1.910				

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 Tatanka Fed Com 602H
Project:	Lea County, NM (NAD83)	TVD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 602H	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													Tatanka Fed Com - Tatanka 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	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						
10,000.00	9,867.68	9,987.44	9,868.18	39.23	38.71	36.78	-1,045.76	344.99	100.19	47.29	52.90	1.894						
10,100.00	9,967.68	10,087.44	9,968.18	39.53	39.01	36.78	-1,045.76	344.99	100.19	46.84	53.35	1.878						
10,200.00	10,067.68	10,187.44	10,068.18	39.83	39.32	36.78	-1,045.76	344.99	100.19	46.39	53.80	1.862						
10,300.00	10,167.68	10,287.44	10,168.18	40.13	39.63	36.78	-1,045.76	344.99	100.19	45.94	54.25	1.847						
10,400.00	10,267.68	10,387.44	10,268.18	40.43	39.93	36.78	-1,045.76	344.99	100.19	45.49	54.70	1.832						
10,500.00	10,367.68	10,487.44	10,368.18	40.74	40.24	36.78	-1,045.76	344.99	100.19	45.04	55.15	1.817						
10,600.00	10,467.68	10,587.44	10,468.18	41.04	40.55	36.78	-1,045.76	344.99	100.19	44.58	55.60	1.802						
10,700.00	10,567.68	10,687.44	10,568.18	41.35	40.86	36.78	-1,045.76	344.99	100.19	44.13	56.06	1.787						
10,800.00	10,667.68	10,787.44	10,668.18	41.66	41.17	36.78	-1,045.76	344.99	100.19	43.68	56.51	1.773						
10,900.00	10,767.68	10,887.44	10,768.18	41.96	41.48	36.78	-1,045.76	344.99	100.19	43.22	56.96	1.759						
11,000.00	10,867.68	10,987.44	10,868.18	42.27	41.80	36.78	-1,045.76	344.99	100.19	42.76	57.42	1.745						
11,100.00	10,967.68	11,087.44	10,968.18	42.58	42.11	36.78	-1,045.76	344.99	100.19	42.31	57.88	1.731						
11,200.00	11,067.68	11,187.44	11,068.18	42.89	42.42	36.78	-1,045.76	344.99	100.19	41.85	58.34	1.717						
11,300.00	11,167.68	11,287.44	11,168.18	43.20	42.74	36.78	-1,045.76	344.99	100.19	41.39	58.79	1.704						
11,400.00	11,267.68	11,387.44	11,268.18	43.51	43.05	36.78	-1,045.76	344.99	100.19	40.93	59.25	1.691						
11,500.00	11,367.68	11,487.44	11,368.18	43.82	43.37	36.78	-1,045.76	344.99	100.19	40.47	59.71	1.678						
11,576.36	11,444.04	11,563.80	11,444.54	44.06	43.61	36.78	-1,045.76	344.99	100.19	40.12	60.07	1.668						
11,600.00	11,467.68	11,587.43	11,468.18	44.14	43.69	-142.80	-1,045.76	344.99	100.57	40.41	60.16	1.672						
11,650.00	11,517.48	11,637.24	11,517.98	44.33	43.84	-144.01	-1,045.76	344.99	103.98	43.69	60.29	1.725						
11,700.00	11,566.73	11,686.48	11,567.23	44.54	44.00	-146.20	-1,045.76	344.99	111.04	50.72	60.33	1.841						
11,750.00	11,615.04	11,734.80	11,615.54	44.78	44.15	-148.95	-1,045.76	344.99	121.98	61.67	60.31	2.023						
11,800.00	11,662.05	11,781.81	11,662.55	45.04	44.30	-151.84	-1,045.76	344.99	136.97	76.69	60.27	2.272						
11,850.00	11,707.40	11,827.16	11,707.90	45.33	44.45	-154.55	-1,045.76	344.99	156.08	95.84	60.24	2.591						
11,900.00	11,750.75	11,870.50	11,751.25	45.65	44.59	-156.90	-1,045.76	344.99	179.27	119.03	60.24	2.976						
11,950.00	11,791.76	11,911.51	11,792.26	45.98	44.72	-158.81	-1,045.76	344.99	206.37	146.11	60.26	3.425						
12,000.00	11,830.12	11,949.88	11,830.62	46.33	44.84	-160.26	-1,045.76	344.99	237.18	176.88	60.30	3.933						
12,050.00	11,865.55	11,985.31	11,866.05	46.70	44.95	-161.26	-1,045.76	344.99	271.41	211.05	60.36	4.496						
12,100.00	11,897.77	12,017.53	11,898.27	47.09	45.05	-161.80	-1,045.76	344.99	308.78	248.35	60.43	5.110						
12,150.00	11,926.54	12,046.29	11,927.04	47.50	45.15	-161.84	-1,045.76	344.99	348.95	288.45	60.50	5.768						
12,200.00	11,951.63	12,071.39	11,952.13	47.92	45.23	-161.29	-1,045.76	344.99	391.59	331.02	60.56	6.466						
12,250.00	11,972.86	12,092.62	11,973.36	48.35	45.30	-159.93	-1,045.76	344.99	436.34	375.73	60.62	7.198						
12,300.00	11,990.07	12,109.83	11,990.57	48.80	45.35	-157.28	-1,045.76	344.99	482.86	422.20	60.66	7.960						
12,350.00	12,003.12	12,122.88	12,003.62	49.25	45.39	-152.21	-1,045.76	344.99	530.76	470.07	60.69	8.745						
12,400.00	12,011.92	12,131.67	12,012.42	49.70	45.42	-141.57	-1,045.76	344.99	579.67	518.96	60.71	9.548						
12,450.00	12,016.39	13,119.53	12,620.00	50.16	51.96	-174.18	-1,671.92	351.81	606.23	566.72	39.51	15.345						
12,476.29	12,017.00	13,145.82	12,620.00	50.40	52.19	-174.17	-1,698.20	352.10	605.63	566.06	39.57	15.305						
12,476.36	12,017.00	13,145.88	12,620.00	50.40	52.19	-174.17	-1,698.26	352.10	605.63	566.06	39.57	15.305						
12,500.00	12,017.00	13,169.52	12,620.00	50.61	52.40	-174.17	-1,721.90	352.35	605.63	566.00	39.63	15.283						
12,600.00	12,017.00	13,269.52	12,620.00	51.55	53.30	-174.16	-1,821.90	353.44	605.64	565.75	39.89	15.184						
12,700.00	12,017.00	13,369.52	12,620.00	52.52	54.24	-174.15	-1,921.89	354.53	605.65	565.47	40.18	15.074						
12,800.00	12,017.00	13,469.52	12,620.00	53.53	55.21	-174.14	-2,021.88	355.62	605.66	565.17	40.50	14.955						
12,900.00	12,017.00	13,569.52	12,620.00	54.57	56.22	-174.13	-2,121.88	356.71	605.68	564.83	40.85	14.828						
13,000.00	12,017.00	13,669.52	12,620.00	55.63	57.25	-174.12	-2,221.87	357.80	605.69	564.46	41.22	14.693						
13,100.00	12,017.00	13,769.52	12,620.00	56.73	58.32	-174.11	-2,321.87	358.89	605.70	564.07	41.63	14.550						
13,200.00	12,017.00	13,869.52	12,620.00	57.85	59.40	-174.10	-2,421.86	359.98	605.71	563.65	42.06	14.402						
13,300.00	12,017.00	13,969.52	12,620.00	58.99	60.52	-174.09	-2,521.85	361.07	605.72	563.21	42.51	14.248						
13,400.00	12,017.00	14,069.52	12,620.00	60.16	61.66	-174.08	-2,621.85	362.15	605.73	562.74	42.99	14.089						
13,500.00	12,017.00	14,169.52	12,620.00	61.35	62.82	-174.07	-2,721.84	363.24	605.74	562.25	43.50	13.926						
13,600.00	12,017.00	14,269.52	12,620.00	62.57	64.00	-174.06	-2,821.84	364.33	605.75	561.73	44.02	13.760						
13,700.00	12,017.00	14,369.52	12,620.00	63.80	65.21	-174.05	-2,921.83	365.42	605.76	561.19	44.57	13.591						
13,800.00	12,017.00	14,469.52	12,620.00	65.05	66.43	-174.04	-3,021.83	366.51	605.78	560.63	45.14	13.420						
13,900.00	12,017.00	14,569.52	12,620.00	66.32	67.67	-174.03	-3,121.82	367.60	605.79	560.05	45.73	13.246						

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 Tatanka Fed Com 602H
Project:	Lea County, NM (NAD83)	TVD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 602H	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													Tatanka Fed Com - Tatanka 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				
14,000.00	12,017.00	14,669.52	12,620.00	67.60	68.93	-174.02	-3,221.81	368.69	605.80	559.46	46.34	13.072				
14,100.00	12,017.00	14,769.52	12,620.00	68.90	70.20	-174.01	-3,321.81	369.78	605.81	558.84	46.97	12.897				
14,200.00	12,017.00	14,869.52	12,620.00	70.22	71.49	-174.00	-3,421.80	370.87	605.82	558.20	47.62	12.722				
14,300.00	12,017.00	14,969.52	12,620.00	71.55	72.80	-173.99	-3,521.80	371.96	605.83	557.55	48.29	12.547				
14,400.00	12,017.00	15,069.52	12,620.00	72.89	74.12	-173.98	-3,621.79	373.04	605.84	556.87	48.97	12.372				
14,500.00	12,017.00	15,169.52	12,620.00	74.25	75.45	-173.97	-3,721.78	374.13	605.86	556.19	49.67	12.198				
14,600.00	12,017.00	15,269.52	12,620.00	75.61	76.79	-173.96	-3,821.78	375.22	605.87	555.49	50.38	12.026				
14,700.00	12,017.00	15,369.52	12,620.00	76.99	78.15	-173.95	-3,921.77	376.31	605.88	554.77	51.11	11.854				
14,800.00	12,017.00	15,469.52	12,620.00	78.38	79.51	-173.94	-4,021.77	377.40	605.89	554.04	51.85	11.685				
14,900.00	12,017.00	15,569.52	12,620.00	79.78	80.89	-173.93	-4,121.76	378.49	605.90	553.29	52.61	11.517				
15,000.00	12,017.00	15,669.52	12,620.00	81.18	82.28	-173.92	-4,221.75	379.58	605.91	552.53	53.38	11.351				
15,100.00	12,017.00	15,769.52	12,620.00	82.60	83.68	-173.91	-4,321.75	380.67	605.92	551.76	54.16	11.188				
15,200.00	12,017.00	15,869.52	12,620.00	84.03	85.08	-173.90	-4,421.74	381.76	605.94	550.98	54.95	11.026				
15,300.00	12,017.00	15,969.52	12,620.00	85.46	86.50	-173.89	-4,521.74	382.85	605.95	550.19	55.76	10.867				
15,400.00	12,017.00	16,069.52	12,620.00	86.90	87.92	-173.88	-4,621.73	383.93	605.96	549.38	56.57	10.711				
15,500.00	12,017.00	16,169.52	12,620.00	88.35	89.35	-173.87	-4,721.72	385.02	605.97	548.57	57.40	10.557				
15,600.00	12,017.00	16,269.52	12,620.00	89.80	90.79	-173.86	-4,821.72	386.11	605.98	547.74	58.24	10.405				
15,700.00	12,017.00	16,369.52	12,620.00	91.27	92.24	-173.85	-4,921.71	387.20	605.99	546.91	59.08	10.257				
15,800.00	12,017.00	16,469.52	12,620.00	92.74	93.69	-173.84	-5,021.71	388.29	606.00	546.07	59.94	10.111				
15,900.00	12,017.00	16,569.52	12,620.00	94.21	95.15	-173.82	-5,121.70	389.38	606.02	545.21	60.80	9.967				
16,000.00	12,017.00	16,669.52	12,620.00	95.69	96.61	-173.81	-5,221.69	390.47	606.03	544.35	61.67	9.826				
16,100.00	12,017.00	16,769.52	12,620.00	97.18	98.08	-173.80	-5,321.69	391.56	606.04	543.49	62.55	9.688				
16,200.00	12,017.00	16,869.52	12,620.00	98.67	99.56	-173.79	-5,421.68	392.65	606.05	542.61	63.44	9.553				
16,300.00	12,017.00	16,969.52	12,620.00	100.16	101.04	-173.78	-5,521.68	393.74	606.06	541.72	64.34	9.420				
16,400.00	12,017.00	17,069.52	12,620.00	101.67	102.53	-173.77	-5,621.67	394.82	606.07	540.83	65.24	9.290				
16,500.00	12,017.00	17,169.52	12,620.00	103.17	104.02	-173.76	-5,721.66	395.91	606.09	539.94	66.15	9.162				
16,600.00	12,017.00	17,269.52	12,620.00	104.68	105.52	-173.75	-5,821.66	397.00	606.10	539.03	67.07	9.037				
16,700.00	12,017.00	17,369.52	12,620.00	106.20	107.02	-173.74	-5,921.65	398.09	606.11	538.12	67.99	8.915				
16,800.00	12,017.00	17,469.52	12,620.00	107.71	108.53	-173.73	-6,021.65	399.18	606.12	537.21	68.92	8.795				
16,900.00	12,017.00	17,569.52	12,620.00	109.24	110.04	-173.72	-6,121.64	400.27	606.13	536.28	69.85	8.678				
17,000.00	12,017.00	17,669.52	12,620.00	110.76	111.55	-173.71	-6,221.63	401.36	606.15	535.36	70.79	8.563				
17,100.00	12,017.00	17,769.52	12,620.00	112.29	113.07	-173.70	-6,321.63	402.45	606.16	534.42	71.73	8.450				
17,200.00	12,017.00	17,869.52	12,620.00	113.82	114.59	-173.69	-6,421.62	403.54	606.17	533.49	72.68	8.340				
17,300.00	12,017.00	17,969.52	12,620.00	115.36	116.12	-173.68	-6,521.62	404.63	606.18	532.54	73.64	8.232				
17,400.00	12,017.00	18,069.52	12,620.00	116.90	117.65	-173.67	-6,621.61	405.71	606.19	531.60	74.60	8.126				
17,500.00	12,017.00	18,169.52	12,620.00	118.44	119.18	-173.66	-6,721.60	406.80	606.20	530.64	75.56	8.023				
17,600.00	12,017.00	18,269.52	12,620.00	119.99	120.71	-173.65	-6,821.60	407.89	606.22	529.69	76.53	7.921				
17,700.00	12,017.00	18,369.52	12,620.00	121.53	122.25	-173.64	-6,921.59	408.98	606.23	528.73	77.50	7.822				
17,800.00	12,017.00	18,469.52	12,620.00	123.09	123.79	-173.63	-7,021.59	410.07	606.24	527.76	78.48	7.725				
17,900.00	12,017.00	18,569.52	12,620.00	124.64	125.34	-173.62	-7,121.58	411.16	606.25	526.79	79.46	7.630				
18,000.00	12,017.00	18,669.52	12,620.00	126.19	126.88	-173.61	-7,221.57	412.25	606.26	525.82	80.44	7.537				
18,100.00	12,017.00	18,769.52	12,620.00	127.75	128.43	-173.60	-7,321.57	413.34	606.28	524.85	81.43	7.445				
18,200.00	12,017.00	18,869.52	12,620.00	129.31	129.98	-173.59	-7,421.56	414.43	606.29	523.87	82.42	7.356				
18,300.00	12,017.00	18,969.52	12,620.00	130.88	131.54	-173.58	-7,521.56	415.52	606.30	522.88	83.42	7.268				
18,400.00	12,017.00	19,069.52	12,620.00	132.44	133.10	-173.57	-7,621.55	416.60	606.31	521.90	84.41	7.183				
18,500.00	12,017.00	19,169.52	12,620.00	134.01	134.65	-173.56	-7,721.54	417.69	606.33	520.91	85.42	7.098				
18,600.00	12,017.00	19,269.52	12,620.00	135.58	136.22	-173.55	-7,821.54	418.78	606.34	519.92	86.42	7.016				
18,700.00	12,017.00	19,369.52	12,620.00	137.15	137.78	-173.54	-7,921.53	419.87	606.35	518.92	87.43	6.935				
18,800.00	12,017.00	19,469.52	12,620.00	138.72	139.34	-173.53	-8,021.53	420.96	606.36	517.93	88.44	6.856				
18,900.00	12,017.00	19,569.52	12,620.00	140.29	140.91	-173.52	-8,121.52	422.05	606.37	516.92	89.45	6.779				
19,000.00	12,017.00	19,669.52	12,620.00	141.87	142.48	-173.51	-8,221.51	423.14	606.39	515.92	90.46	6.703				
19,100.00	12,017.00	19,769.52	12,620.00	143.45	144.05	-173.50	-8,321.51	424.23	606.40	514.92	91.48	6.629				

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 Tatanka Fed Com 602H
Project:	Lea County, NM (NAD83)	TVD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 602H	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												Tatanka Fed Com - Tatanka 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		
19,200.00	12,017.00	19,869.52	12,620.00	145.03	145.62	-173.49	-8,421.50	425.32	606.41	513.91	92.50	6.556			
19,300.00	12,017.00	19,969.52	12,620.00	146.61	147.20	-173.48	-8,521.50	426.41	606.42	512.90	93.52	6.484			
19,400.00	12,017.00	20,069.52	12,620.00	148.19	148.77	-173.47	-8,621.49	427.49	606.44	511.89	94.55	6.414			
19,500.00	12,017.00	20,169.52	12,620.00	149.78	150.35	-173.46	-8,721.48	428.58	606.45	510.87	95.58	6.345			
19,600.00	12,017.00	20,269.52	12,620.00	151.36	151.93	-173.45	-8,821.48	429.67	606.46	509.85	96.61	6.278			
19,700.00	12,017.00	20,369.52	12,620.00	152.95	153.51	-173.44	-8,921.47	430.76	606.47	508.84	97.64	6.212			
19,800.00	12,017.00	20,469.52	12,620.00	154.54	155.09	-173.43	-9,021.47	431.85	606.48	507.81	98.67	6.147			
19,900.00	12,017.00	20,569.52	12,620.00	156.13	156.68	-173.42	-9,121.46	432.94	606.50	506.79	99.71	6.083			
20,000.00	12,017.00	20,669.52	12,620.00	157.72	158.26	-173.41	-9,221.45	434.03	606.51	505.77	100.74	6.020			
20,100.00	12,017.00	20,769.52	12,620.00	159.31	159.85	-173.40	-9,321.45	435.12	606.52	504.74	101.78	5.959			
20,200.00	12,017.00	20,869.52	12,620.00	160.90	161.44	-173.39	-9,421.44	436.21	606.53	503.71	102.82	5.899			
20,300.00	12,017.00	20,969.52	12,620.00	162.50	163.03	-173.38	-9,521.44	437.30	606.55	502.68	103.87	5.840			
20,400.00	12,017.00	21,069.52	12,620.00	164.09	164.62	-173.37	-9,621.43	438.38	606.56	501.65	104.91	5.782			
20,500.00	12,017.00	21,169.52	12,620.00	165.69	166.21	-173.36	-9,721.42	439.47	606.57	500.62	105.96	5.725			
20,600.00	12,017.00	21,269.52	12,620.00	167.29	167.80	-173.35	-9,821.42	440.56	606.58	499.58	107.00	5.669			
20,700.00	12,017.00	21,369.52	12,620.00	168.89	169.39	-173.34	-9,921.41	441.65	606.60	498.54	108.05	5.614			
20,800.00	12,017.00	21,469.52	12,620.00	170.49	170.99	-173.33	-10,021.41	442.74	606.61	497.51	109.10	5.560			
20,900.00	12,017.00	21,569.52	12,620.00	172.09	172.59	-173.32	-10,121.40	443.83	606.62	496.47	110.15	5.507			
21,000.00	12,017.00	21,669.52	12,620.00	173.69	174.18	-173.31	-10,221.39	444.92	606.63	495.43	111.21	5.455			
21,100.00	12,017.00	21,769.52	12,620.00	175.29	175.78	-173.30	-10,321.39	446.01	606.65	494.38	112.26	5.404			
21,200.00	12,017.00	21,869.52	12,620.00	176.90	177.38	-173.29	-10,421.38	447.10	606.66	493.34	113.32	5.354			
21,300.00	12,017.00	21,969.52	12,620.00	178.50	178.98	-173.28	-10,521.38	448.19	606.67	492.30	114.38	5.304			
21,400.00	12,017.00	22,069.52	12,620.00	180.11	180.58	-173.27	-10,621.37	449.27	606.69	491.25	115.43	5.256			
21,500.00	12,017.00	22,169.52	12,620.00	181.71	182.18	-173.26	-10,721.36	450.36	606.70	490.20	116.49	5.208			
21,600.00	12,017.00	22,269.52	12,620.00	183.32	183.79	-173.25	-10,821.36	451.45	606.71	489.16	117.56	5.161			
21,700.00	12,017.00	22,369.52	12,620.00	184.93	185.39	-173.24	-10,921.35	452.54	606.72	488.11	118.62	5.115			
21,800.00	12,017.00	22,469.52	12,620.00	186.54	186.99	-173.23	-11,021.35	453.63	606.74	487.06	119.68	5.070			
21,900.00	12,017.00	22,569.52	12,620.00	188.15	188.60	-173.22	-11,121.34	454.72	606.75	486.00	120.75	5.025			
22,000.00	12,017.00	22,669.52	12,620.00	189.76	190.20	-173.21	-11,221.33	455.81	606.76	484.95	121.81	4.981			
22,100.00	12,017.00	22,769.52	12,620.00	191.37	191.81	-173.19	-11,321.33	456.90	606.77	483.90	122.88	4.938			
22,187.30	12,017.00	22,856.82	12,620.00	192.77	193.21	-173.19	-11,408.63	457.85	606.79	482.98	123.81	4.901			

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 Tatanka Fed Com 602H
Project:	Lea County, NM (NAD83)	TVD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 602H	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		Tatanka Fed Com - Tatanka 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	0.70	0.70	0.00	0.00	89.46	0.71	74.98	74.98					
100.00	100.00	100.70	100.70	0.13	0.13	89.46	0.71	74.98	74.98	74.80	0.18	418.393		
200.00	200.00	200.70	200.70	0.48	0.49	89.46	0.71	74.98	74.98	74.30	0.69	109.279		
300.00	300.00	300.70	300.70	0.84	0.84	89.46	0.71	74.98	74.98	73.79	1.19	62.846		
400.00	400.00	400.70	400.70	1.20	1.20	89.46	0.71	74.98	74.98	73.28	1.70	44.106		
500.00	500.00	500.70	500.70	1.56	1.56	89.46	0.71	74.98	74.98	72.78	2.21	33.975		
600.00	600.00	600.70	600.70	1.92	1.92	89.46	0.71	74.98	74.98	72.27	2.71	27.628		
700.00	700.00	700.70	700.70	2.28	2.28	89.46	0.71	74.98	74.98	71.76	3.22	23.280		
800.00	800.00	800.70	800.70	2.63	2.64	89.46	0.71	74.98	74.98	71.26	3.73	20.114		
900.00	900.00	900.70	900.70	2.99	3.00	89.46	0.71	74.98	74.98	70.75	4.23	17.706		
1,000.00	1,000.00	1,000.70	1,000.70	3.35	3.35	89.46	0.71	74.98	74.98	70.24	4.74	15.813		
1,100.00	1,100.00	1,100.70	1,100.70	3.71	3.71	89.46	0.71	74.98	74.98	69.73	5.25	14.286		
1,200.00	1,200.00	1,200.70	1,200.70	4.07	4.07	89.46	0.71	74.98	74.98	69.23	5.76	13.028		
1,300.00	1,300.00	1,300.70	1,300.70	4.43	4.43	89.46	0.71	74.98	74.98	68.72	6.26	11.973		
1,400.00	1,400.00	1,400.70	1,400.70	4.79	4.79	89.46	0.71	74.98	74.98	68.21	6.77	11.076		
1,500.00	1,500.00	1,500.70	1,500.70	5.14	5.15	89.46	0.71	74.98	74.98	67.71	7.28	10.305		
1,600.00	1,600.00	1,600.70	1,600.70	5.50	5.51	89.46	0.71	74.98	74.98	67.20	7.78	9.634		
1,700.00	1,700.00	1,700.70	1,700.70	5.86	5.86	89.46	0.71	74.98	74.98	66.69	8.29	9.044		
1,800.00	1,800.00	1,800.70	1,800.70	6.22	6.22	89.46	0.71	74.98	74.98	66.19	8.80	8.523		
1,900.00	1,900.00	1,900.70	1,900.70	6.58	6.58	89.46	0.71	74.98	74.98	65.68	9.30	8.059		
2,000.00	2,000.00	2,000.70	2,000.70	6.94	6.94	89.46	0.71	74.98	74.98	65.17	9.81	7.643		
2,100.00	2,100.00	2,100.70	2,100.70	7.29	7.30	89.46	0.71	74.98	74.98	64.67	10.32	7.267		
2,200.00	2,200.00	2,200.70	2,200.70	7.65	7.66	89.46	0.71	74.98	74.98	64.16	10.83	6.927		
2,300.00	2,300.00	2,300.70	2,300.70	8.01	8.01	89.46	0.71	74.98	74.98	63.65	11.33	6.617		
2,400.00	2,400.00	2,400.70	2,400.70	8.37	8.37	89.46	0.71	74.98	74.98	63.14	11.84	6.333		
2,500.00	2,500.00	2,500.70	2,500.70	8.73	8.73	89.46	0.71	74.98	74.98	62.64	12.35	6.073		
2,600.00	2,600.00	2,600.70	2,600.70	9.09	9.09	89.46	0.71	74.98	74.98	62.13	12.85	5.834		
2,700.00	2,700.00	2,700.70	2,700.70	9.45	9.45	89.46	0.71	74.98	74.98	61.62	13.36	5.613		
2,800.00	2,800.00	2,800.70	2,800.70	9.80	9.81	89.46	0.71	74.98	74.98	61.12	13.87	5.407		
2,900.00	2,900.00	2,900.70	2,900.70	10.16	10.17	89.46	0.71	74.98	74.98	60.61	14.37	5.217		
3,000.00	3,000.00	3,000.70	3,000.70	10.52	10.52	89.46	0.71	74.98	74.98	60.10	14.88	5.039		
3,100.00	3,100.00	3,100.70	3,100.70	10.88	10.88	89.46	0.71	74.98	74.98	59.60	15.39	4.873		
3,200.00	3,200.00	3,200.70	3,200.70	11.24	11.24	89.46	0.71	74.98	74.98	59.09	15.89	4.717		
3,300.00	3,299.99	3,300.00	3,300.00	11.58	11.60	-77.31	0.71	74.98	74.69	58.30	16.39	4.558		
3,328.06	3,328.04	3,328.34	3,328.34	11.67	11.69	-77.88	0.64	75.06	74.58	58.06	16.52	4.515		
3,340.21	3,340.17	3,340.31	3,340.31	11.71	11.73	-78.14	0.57	75.14	74.57	58.00	16.58	4.499 CC		
3,400.00	3,399.91	3,399.26	3,399.25	11.90	11.94	-79.53	-0.15	75.94	74.83	57.97	16.85	4.440 ES		
3,500.00	3,499.69	3,497.86	3,497.77	12.23	12.26	-82.20	-2.72	78.78	76.44	59.13	17.30	4.417		
3,600.00	3,599.27	3,596.43	3,596.14	12.56	12.59	-85.16	-6.99	83.52	79.60	61.84	17.76	4.483		
3,700.00	3,698.57	3,694.95	3,694.25	12.89	12.92	-88.21	-12.95	90.13	84.37	66.16	18.21	4.633		
3,800.00	3,797.54	3,793.38	3,792.01	13.22	13.25	-91.17	-20.60	98.61	90.80	72.13	18.67	4.863		
3,900.00	3,896.09	3,891.69	3,889.33	13.57	13.59	-93.92	-29.92	108.95	98.90	79.76	19.14	5.167		
4,000.00	3,994.16	3,989.86	3,986.11	13.92	13.93	-96.37	-40.89	121.12	108.66	89.03	19.62	5.537		
4,100.00	4,091.70	4,087.84	4,082.26	14.28	14.29	-98.49	-53.51	135.11	120.05	99.93	20.12	5.967		
4,125.65	4,116.62	4,112.94	4,106.82	14.37	14.38	-98.98	-57.00	138.98	123.23	102.98	20.25	6.086		
4,200.00	4,188.79	4,185.65	4,177.74	14.65	14.65	-100.13	-67.74	150.89	132.91	112.29	20.62	6.445		
4,300.00	4,285.87	4,283.31	4,272.49	15.04	15.02	-100.63	-83.58	168.46	146.82	125.69	21.14	6.947		
4,400.00	4,382.95	4,380.70	4,366.34	15.43	15.40	-100.22	-100.99	187.76	161.69	140.04	21.65	7.468		
4,500.00	4,480.03	4,477.69	4,459.12	15.83	15.80	-99.13	-119.91	208.75	177.57	155.39	22.17	8.009		
4,600.00	4,577.11	4,574.16	4,550.67	16.23	16.21	-97.56	-140.29	231.35	194.54	171.85	22.69	8.573		
4,700.00	4,674.18	4,670.00	4,640.81	16.65	16.64	-95.66	-162.06	255.49	212.76	189.56	23.21	9.169		
4,800.00	4,771.26	4,767.78	4,732.33	17.07	17.10	-93.72	-185.12	281.05	231.83	208.06	23.77	9.755		

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 Tatanka Fed Com 602H
Project:	Lea County, NM (NAD83)	TVD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 602H	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		Tatanka Fed Com - Tatanka 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		
4,900.00	4,868.34	4,865.67	4,823.95	17.49	17.58	-92.08	-208.19	306.65	251.11	226.77	24.34	10.317		
5,000.00	4,965.42	4,963.55	4,915.57	17.92	18.06	-90.67	-231.27	332.24	270.57	245.64	24.93	10.854		
5,100.00	5,062.50	5,061.44	5,007.19	18.36	18.56	-89.45	-254.35	357.84	290.16	264.63	25.52	11.368		
5,200.00	5,159.57	5,159.33	5,098.81	18.80	19.07	-88.39	-277.43	383.43	309.86	283.73	26.13	11.858		
5,300.00	5,256.65	5,257.21	5,190.43	19.25	19.59	-87.45	-300.51	409.02	329.65	302.90	26.75	12.325		
5,400.00	5,353.73	5,355.10	5,282.05	19.70	20.13	-86.62	-323.59	434.62	349.52	322.15	27.37	12.770		
5,500.00	5,450.81	5,452.99	5,373.67	20.15	20.66	-85.88	-346.67	460.21	369.45	341.45	28.00	13.194		
5,600.00	5,547.89	5,550.87	5,465.29	20.61	21.21	-85.21	-369.75	485.81	389.44	360.80	28.64	13.598		
5,700.00	5,644.96	5,648.76	5,556.91	21.07	21.77	-84.61	-392.83	511.40	409.47	380.19	29.28	13.983		
5,800.00	5,742.04	5,746.65	5,648.53	21.54	22.33	-84.06	-415.90	536.99	429.54	399.61	29.93	14.351		
5,900.00	5,839.12	5,844.54	5,740.15	22.00	22.90	-83.57	-438.98	562.59	449.64	419.06	30.59	14.701		
6,000.00	5,936.20	5,942.42	5,831.77	22.47	23.47	-83.11	-462.06	588.18	469.78	438.53	31.25	15.035		
6,100.00	6,033.28	6,040.31	5,923.39	22.94	24.05	-82.69	-485.14	613.77	489.94	458.03	31.91	15.354		
6,200.00	6,130.35	6,138.20	6,015.01	23.42	24.63	-82.31	-508.22	639.37	510.12	477.54	32.58	15.659		
6,300.00	6,227.43	6,236.08	6,106.63	23.90	25.22	-81.96	-531.30	664.96	530.32	497.08	33.25	15.951		
6,400.00	6,324.51	6,333.97	6,198.25	24.38	25.82	-81.63	-554.38	690.56	550.55	516.62	33.92	16.229		
6,500.00	6,421.59	6,431.86	6,289.87	24.86	26.42	-81.32	-577.46	716.15	570.78	536.18	34.60	16.496		
6,600.00	6,518.67	6,529.74	6,381.49	25.34	27.02	-81.04	-600.54	741.74	591.04	555.75	35.28	16.751		
6,700.00	6,615.75	6,627.63	6,473.11	25.83	27.62	-80.77	-623.62	767.34	611.30	575.33	35.97	16.995		
6,800.00	6,712.82	6,725.52	6,564.73	26.31	28.23	-80.52	-646.69	792.93	631.58	594.92	36.66	17.230		
6,900.00	6,809.90	6,823.41	6,656.35	26.80	28.85	-80.29	-669.77	818.52	651.87	614.52	37.35	17.454		
7,000.00	6,906.98	6,921.29	6,747.97	27.29	29.46	-80.07	-692.85	844.12	672.16	634.12	38.04	17.670		
7,100.00	7,004.06	7,019.18	6,839.59	27.78	30.08	-79.86	-715.93	869.71	692.47	653.74	38.74	17.877		
7,200.00	7,101.14	7,117.07	6,931.21	28.28	30.70	-79.67	-739.01	895.31	712.78	673.35	39.43	18.076		
7,300.00	7,198.21	7,214.95	7,022.83	28.77	31.32	-79.49	-762.09	920.90	733.11	692.98	40.13	18.268		
7,400.00	7,295.29	7,312.84	7,114.45	29.26	31.95	-79.31	-785.17	946.49	753.44	712.60	40.83	18.452		
7,500.00	7,392.37	7,410.73	7,206.07	29.76	32.58	-79.15	-808.25	972.09	773.77	732.23	41.54	18.629		
7,600.00	7,489.45	7,508.61	7,297.69	30.26	33.21	-78.99	-831.33	997.68	794.11	751.87	42.24	18.800		
7,700.00	7,586.53	7,606.50	7,389.31	30.76	33.84	-78.84	-854.40	1,023.27	814.46	771.51	42.95	18.964		
7,800.00	7,683.60	7,708.14	7,484.47	31.26	34.50	-78.70	-878.32	1,049.79	834.76	791.07	43.70	19.104		
7,900.00	7,780.68	7,824.08	7,593.84	31.76	35.22	-78.67	-904.07	1,078.35	853.65	809.06	44.59	19.146		
8,000.00	7,877.76	7,940.87	7,705.15	32.26	35.91	-78.80	-927.75	1,104.62	870.46	824.99	45.47	19.144		
8,035.67	7,912.38	7,982.70	7,745.26	32.44	36.15	-78.89	-935.68	1,113.40	875.95	830.17	45.78	19.133		
8,100.00	7,974.96	8,058.33	7,818.12	32.76	36.57	-79.20	-949.26	1,128.47	885.29	838.95	46.33	19.107		
8,200.00	8,072.71	8,176.33	7,932.56	33.24	37.20	-79.64	-968.52	1,149.82	898.49	851.33	47.15	19.055		
8,300.00	8,170.98	8,294.82	8,048.31	33.69	37.79	-80.02	-985.46	1,168.61	910.06	862.13	47.93	18.989		
8,400.00	8,269.70	8,413.74	8,165.22	34.13	38.33	-80.34	-1,000.04	1,184.78	919.97	871.33	48.65	18.911		
8,500.00	8,368.80	8,533.03	8,283.11	34.55	38.84	-80.61	-1,012.21	1,198.27	928.22	878.90	49.32	18.821		
8,600.00	8,468.22	8,652.61	8,401.80	34.94	39.31	-80.84	-1,021.93	1,209.05	934.77	884.84	49.94	18.719		
8,700.00	8,567.89	8,772.41	8,521.11	35.31	39.75	-81.01	-1,029.17	1,217.08	939.62	889.12	50.50	18.605		
8,800.00	8,667.73	8,892.37	8,640.85	35.66	40.14	-81.14	-1,033.90	1,222.33	942.76	891.74	51.02	18.477		
8,900.00	8,767.69	9,012.41	8,760.84	35.99	40.50	-81.22	-1,036.11	1,224.78	944.18	892.69	51.49	18.338		
8,961.32	8,829.00	9,081.27	8,829.70	36.17	40.68	-84.55	-1,036.29	1,224.98	944.25	892.51	51.74	18.249		
9,000.00	8,867.68	9,119.95	8,868.38	36.28	40.78	-84.55	-1,036.29	1,224.98	944.25	892.35	51.90	18.194		
9,100.00	8,967.68	9,219.95	8,968.38	36.57	41.05	-84.55	-1,036.29	1,224.98	944.25	891.95	52.30	18.053		
9,200.00	9,067.68	9,319.95	9,068.38	36.86	41.31	-84.55	-1,036.29	1,224.98	944.25	891.54	52.71	17.914		
9,300.00	9,167.68	9,419.95	9,168.38	37.16	41.58	-84.55	-1,036.29	1,224.98	944.25	891.13	53.12	17.776		
9,400.00	9,267.68	9,519.95	9,268.38	37.45	41.85	-84.55	-1,036.29	1,224.98	944.25	890.72	53.53	17.640		
9,500.00	9,367.68	9,619.95	9,368.38	37.74	42.12	-84.55	-1,036.29	1,224.98	944.25	890.31	53.94	17.505		
9,600.00	9,467.68	9,719.95	9,468.38	38.04	42.39	-84.55	-1,036.29	1,224.98	944.25	889.90	54.35	17.372		
9,700.00	9,567.68	9,819.95	9,568.38	38.33	42.66	-84.55	-1,036.29	1,224.98	944.25	889.48	54.77	17.240		
9,800.00	9,667.68	9,919.95	9,668.38	38.63	42.94	-84.55	-1,036.29	1,224.98	944.25	889.06	55.19	17.110		

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 Tatanka Fed Com 602H
Project:	Lea County, NM (NAD83)	TVD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 602H	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												Tatanka Fed Com - Tatanka 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				
9,900.00	9,767.68	10,019.95	9,768.38	38.93	43.21	84.55	-1,036.29	1,224.98	944.25	888.65	55.60	16.982				
10,000.00	9,867.68	10,119.95	9,868.38	39.23	43.49	84.55	-1,036.29	1,224.98	944.25	888.23	56.02	16.854				
10,100.00	9,967.68	10,219.95	9,968.38	39.53	43.76	84.55	-1,036.29	1,224.98	944.25	887.81	56.44	16.729				
10,200.00	10,067.68	10,319.95	10,068.38	39.83	44.04	84.55	-1,036.29	1,224.98	944.25	887.38	56.87	16.604				
10,300.00	10,167.68	10,419.95	10,168.38	40.13	44.32	84.55	-1,036.29	1,224.98	944.25	886.96	57.29	16.482				
10,400.00	10,267.68	10,519.95	10,268.38	40.43	44.60	84.55	-1,036.29	1,224.98	944.25	886.54	57.72	16.360				
10,500.00	10,367.68	10,619.95	10,368.38	40.74	44.88	84.55	-1,036.29	1,224.98	944.25	886.11	58.14	16.240				
10,600.00	10,467.68	10,719.95	10,468.38	41.04	45.17	84.55	-1,036.29	1,224.98	944.25	885.68	58.57	16.122				
10,700.00	10,567.68	10,819.95	10,568.38	41.35	45.45	84.55	-1,036.29	1,224.98	944.25	885.25	59.00	16.004				
10,800.00	10,667.68	10,919.95	10,668.38	41.66	45.73	84.55	-1,036.29	1,224.98	944.25	884.82	59.43	15.889				
10,900.00	10,767.68	11,019.95	10,768.38	41.96	46.02	84.55	-1,036.29	1,224.98	944.25	884.39	59.86	15.774				
11,000.00	10,867.68	11,119.95	10,868.38	42.27	46.31	84.55	-1,036.29	1,224.98	944.25	883.96	60.29	15.661				
11,100.00	10,967.68	11,219.95	10,968.38	42.58	46.60	84.55	-1,036.29	1,224.98	944.25	883.52	60.73	15.549				
11,200.00	11,067.68	11,319.95	11,068.38	42.89	46.88	84.55	-1,036.29	1,224.98	944.25	883.09	61.16	15.438				
11,300.00	11,167.68	11,419.95	11,168.38	43.20	47.17	84.55	-1,036.29	1,224.98	944.25	882.65	61.60	15.329				
11,400.00	11,267.68	11,519.95	11,268.38	43.51	47.46	84.55	-1,036.29	1,224.98	944.25	882.22	62.04	15.221				
11,500.00	11,367.68	11,619.95	11,368.38	43.82	47.76	84.55	-1,036.29	1,224.98	944.25	881.78	62.47	15.114				
11,576.36	11,444.04	11,696.31	11,444.74	44.06	47.98	84.55	-1,036.29	1,224.98	944.25	881.44	62.81	15.034				
11,600.00	11,467.68	11,719.94	11,468.38	44.14	48.05	-94.92	-1,036.29	1,224.98	944.29	881.37	62.92	15.008				
11,650.00	11,517.48	11,769.75	11,518.18	44.33	48.20	-95.13	-1,036.29	1,224.98	944.67	881.48	63.18	14.951				
11,700.00	11,566.73	11,818.99	11,567.43	44.54	48.34	-95.56	-1,036.29	1,224.98	945.48	881.98	63.50	14.891				
11,750.00	11,615.04	11,867.31	11,615.74	44.78	48.48	-96.17	-1,036.29	1,224.98	946.83	882.99	63.85	14.830				
11,800.00	11,662.05	11,914.32	11,662.75	45.04	48.62	-96.93	-1,036.29	1,224.98	948.90	884.66	64.23	14.772				
11,850.00	11,707.40	11,959.67	11,708.10	45.33	48.75	-97.77	-1,036.29	1,224.98	951.86	887.21	64.65	14.722				
11,900.00	11,750.75	12,003.01	11,751.45	45.65	48.88	-98.65	-1,036.29	1,224.98	955.96	890.86	65.10	14.684				
11,950.00	11,791.76	12,044.02	11,792.46	45.98	49.00	-99.50	-1,036.29	1,224.98	961.44	895.87	65.57	14.664				
12,000.00	11,830.12	12,082.39	11,830.82	46.33	49.12	-100.24	-1,036.29	1,224.98	968.54	902.50	66.04	14.665				
12,050.00	11,865.55	12,117.82	11,866.25	46.70	49.22	-100.82	-1,036.29	1,224.98	977.52	911.00	66.52	14.694				
12,100.00	11,897.77	12,177.86	11,926.22	47.09	49.41	-102.34	-1,038.76	1,225.01	988.22	921.22	67.01	14.748				
12,150.00	11,926.54	12,256.13	12,003.42	47.50	49.70	-104.41	-1,051.32	1,225.18	999.78	932.37	67.41	14.831				
12,200.00	11,951.63	12,352.52	12,094.99	47.92	50.12	-106.88	-1,081.02	1,225.58	1,011.63	943.99	67.65	14.955				
12,250.00	11,972.86	12,474.81	12,201.84	48.35	50.75	-109.72	-1,140.01	1,226.37	1,022.90	955.36	67.54	15.144				
12,300.00	11,990.07	12,631.13	12,316.11	48.80	51.69	-112.60	-1,245.96	1,227.80	1,032.19	965.25	66.94	15.419				
12,350.00	12,003.12	12,786.43	12,396.81	49.25	52.74	-114.24	-1,378.02	1,229.58	1,037.61	971.30	66.31	15.647				
12,400.00	12,011.92	13,028.42	12,445.99	49.70	54.56	-114.49	-1,613.00	1,232.74	1,037.74	972.25	65.48	15.848				
12,450.00	12,016.39	13,075.32	12,446.00	50.16	54.93	-114.44	-1,659.90	1,233.37	1,036.04	969.92	66.13	15.668				
12,471.76	12,016.98	13,097.07	12,446.00	50.36	55.10	-114.42	-1,681.65	1,233.66	1,035.87	969.50	66.37	15.607				
12,476.36	12,017.00	13,101.66	12,446.00	50.40	55.14	-114.42	-1,686.25	1,233.72	1,035.88	969.46	66.42	15.595				
12,500.00	12,017.00	13,125.31	12,446.00	50.61	55.33	-114.42	-1,709.89	1,234.04	1,035.96	969.27	66.68	15.535				
12,600.00	12,017.00	13,225.31	12,446.00	51.55	56.16	-114.41	-1,809.88	1,235.38	1,036.29	968.48	67.81	15.282				
12,700.00	12,017.00	13,325.31	12,446.00	52.52	57.03	-114.40	-1,909.87	1,236.73	1,036.62	967.63	68.99	15.026				
12,800.00	12,017.00	13,425.31	12,446.00	53.53	57.94	-114.40	-2,009.86	1,238.07	1,036.95	966.74	70.21	14.769				
12,900.00	12,017.00	13,525.31	12,446.00	54.57	58.87	-114.39	-2,109.85	1,239.42	1,037.28	965.80	71.48	14.512				
13,000.00	12,017.00	13,625.31	12,446.00	55.63	59.84	-114.38	-2,209.84	1,240.76	1,037.61	964.83	72.79	14.255				
13,100.00	12,017.00	13,725.30	12,446.00	56.73	60.83	-114.37	-2,309.83	1,242.11	1,037.95	963.81	74.14	14.000				
13,200.00	12,017.00	13,825.30	12,446.00	57.85	61.86	-114.36	-2,409.82	1,243.45	1,038.28	962.75	75.52	13.748				
13,300.00	12,017.00	13,925.30	12,446.00	58.99	62.91	-114.35	-2,509.81	1,244.80	1,038.61	961.66	76.94	13.498				
13,400.00	12,017.00	14,025.30	12,446.00	60.16	63.99	-114.35	-2,609.80	1,246.14	1,038.94	960.54	78.40	13.252				
13,500.00	12,017.00	14,125.30	12,446.00	61.35	65.09	-114.34	-2,709.79	1,247.49	1,039.27	959.38	79.89	13.009				
13,600.00	12,017.00	14,225.30	12,446.00	62.57	66.21	-114.33	-2,809.78	1,248.83	1,039.60	958.20	81.41	12.771				
13,700.00	12,017.00	14,325.30	12,446.00	63.80	67.36	-114.32	-2,909.77	1,250.18	1,039.94	956.98	82.95	12.537				
13,800.00	12,017.00	14,425.30	12,446.00	65.05	68.53	-114.31	-3,009.76	1,251.52	1,040.27	955.74	84.52	12.307				

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 Tatanka Fed Com 602H
Project:	Lea County, NM (NAD83)	TVD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 602H	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		
13,900.00	12,017.00	14,525.30	12,446.00	66.32	69.71	-114.30	-3,109.75	1,252.87	1,040.60	954.48	86.12	12.083		
14,000.00	12,017.00	14,625.30	12,446.00	67.60	70.92	-114.30	-3,209.74	1,254.21	1,040.93	953.19	87.74	11.864		
14,100.00	12,017.00	14,725.30	12,446.00	68.90	72.14	-114.29	-3,309.73	1,255.55	1,041.26	951.88	89.39	11.649		
14,200.00	12,017.00	14,825.30	12,446.00	70.22	73.38	-114.28	-3,409.72	1,256.90	1,041.59	950.54	91.05	11.440		
14,300.00	12,017.00	14,925.30	12,446.00	71.55	74.64	-114.27	-3,509.71	1,258.24	1,041.93	949.19	92.73	11.236		
14,400.00	12,017.00	15,025.30	12,446.00	72.89	75.91	-114.26	-3,609.70	1,259.59	1,042.26	947.82	94.44	11.036		
14,500.00	12,017.00	15,125.30	12,446.00	74.25	77.19	-114.26	-3,709.69	1,260.93	1,042.59	946.43	96.16	10.842		
14,600.00	12,017.00	15,225.29	12,446.00	75.61	78.49	-114.25	-3,809.68	1,262.28	1,042.92	945.02	97.90	10.653		
14,700.00	12,017.00	15,325.29	12,446.00	76.99	79.81	-114.24	-3,909.67	1,263.62	1,043.25	943.60	99.65	10.469		
14,800.00	12,017.00	15,425.29	12,446.00	78.38	81.13	-114.23	-4,009.66	1,264.97	1,043.59	942.16	101.42	10.290		
14,900.00	12,017.00	15,525.29	12,446.00	79.78	82.47	-114.22	-4,109.66	1,266.31	1,043.92	940.71	103.21	10.115		
15,000.00	12,017.00	15,625.29	12,446.00	81.18	83.82	-114.21	-4,209.65	1,267.66	1,044.25	939.25	105.00	9.945		
15,100.00	12,017.00	15,725.29	12,446.00	82.60	85.17	-114.21	-4,309.64	1,269.00	1,044.58	937.77	106.82	9.779		
15,200.00	12,017.00	15,825.29	12,446.00	84.03	86.54	-114.20	-4,409.63	1,270.35	1,044.91	936.27	108.64	9.618		
15,300.00	12,017.00	15,925.29	12,446.00	85.46	87.92	-114.19	-4,509.62	1,271.69	1,045.25	934.77	110.47	9.462		
15,400.00	12,017.00	16,025.29	12,446.00	86.90	89.31	-114.18	-4,609.61	1,273.04	1,045.58	933.26	112.32	9.309		
15,500.00	12,017.00	16,125.29	12,446.00	88.35	90.71	-114.17	-4,709.60	1,274.38	1,045.91	931.74	114.17	9.161		
15,600.00	12,017.00	16,225.29	12,446.00	89.80	92.11	-114.17	-4,809.59	1,275.73	1,046.24	930.20	116.04	9.016		
15,700.00	12,017.00	16,325.29	12,446.00	91.27	93.53	-114.16	-4,909.58	1,277.07	1,046.57	928.66	117.92	8.876		
15,800.00	12,017.00	16,425.29	12,446.00	92.74	94.95	-114.15	-5,009.57	1,278.42	1,046.91	927.11	119.80	8.739		
15,900.00	12,017.00	16,525.29	12,446.00	94.21	96.38	-114.14	-5,109.56	1,279.76	1,047.24	925.55	121.69	8.606		
16,000.00	12,017.00	16,625.29	12,446.00	95.69	97.81	-114.13	-5,209.55	1,281.11	1,047.57	923.98	123.59	8.476		
16,100.00	12,017.00	16,725.28	12,446.00	97.18	99.26	-114.12	-5,309.54	1,282.45	1,047.90	922.40	125.50	8.350		
16,200.00	12,017.00	16,825.28	12,446.00	98.67	100.71	-114.12	-5,409.53	1,283.79	1,048.23	920.81	127.42	8.227		
16,300.00	12,017.00	16,925.28	12,446.00	100.16	102.16	-114.11	-5,509.52	1,285.14	1,048.57	919.22	129.34	8.107		
16,400.00	12,017.00	17,025.28	12,446.00	101.67	103.62	-114.10	-5,609.51	1,286.48	1,048.90	917.63	131.27	7.990		
16,500.00	12,017.00	17,125.28	12,446.00	103.17	105.09	-114.09	-5,709.50	1,287.83	1,049.23	916.02	133.21	7.877		
16,600.00	12,017.00	17,225.28	12,446.00	104.68	106.56	-114.08	-5,809.49	1,289.17	1,049.56	914.41	135.15	7.766		
16,700.00	12,017.00	17,325.28	12,446.00	106.20	108.04	-114.08	-5,909.48	1,290.52	1,049.90	912.80	137.10	7.658		
16,800.00	12,017.00	17,425.28	12,446.00	107.71	109.52	-114.07	-6,009.47	1,291.86	1,050.23	911.18	139.05	7.553		
16,900.00	12,017.00	17,525.28	12,446.00	109.24	111.01	-114.06	-6,109.46	1,293.21	1,050.56	909.55	141.01	7.450		
17,000.00	12,017.00	17,625.28	12,446.00	110.76	112.50	-114.05	-6,209.45	1,294.55	1,050.89	907.92	142.98	7.350		
17,100.00	12,017.00	17,725.28	12,446.00	112.29	114.00	-114.04	-6,309.44	1,295.90	1,051.23	906.28	144.95	7.253		
17,200.00	12,017.00	17,825.28	12,446.00	113.82	115.50	-114.04	-6,409.43	1,297.24	1,051.56	904.64	146.92	7.157		
17,300.00	12,017.00	17,925.28	12,446.00	115.36	117.00	-114.03	-6,509.42	1,298.59	1,051.89	902.99	148.90	7.065		
17,400.00	12,017.00	18,025.28	12,446.00	116.90	118.51	-114.02	-6,609.41	1,299.93	1,052.22	901.34	150.88	6.974		
17,500.00	12,017.00	18,125.28	12,446.00	118.44	120.02	-114.01	-6,709.40	1,301.28	1,052.56	899.69	152.87	6.885		
17,600.00	12,017.00	18,225.27	12,446.00	119.99	121.54	-114.00	-6,809.39	1,302.62	1,052.89	898.03	154.86	6.799		
17,700.00	12,017.00	18,325.27	12,446.00	121.53	123.06	-114.00	-6,909.38	1,303.97	1,053.22	896.37	156.85	6.715		
17,800.00	12,017.00	18,425.27	12,446.00	123.09	124.58	-113.99	-7,009.37	1,305.31	1,053.55	894.71	158.85	6.632		
17,900.00	12,017.00	18,525.27	12,446.00	124.64	126.11	-113.98	-7,109.36	1,306.66	1,053.89	893.04	160.85	6.552		
18,000.00	12,017.00	18,625.27	12,446.00	126.19	127.64	-113.97	-7,209.35	1,308.00	1,054.22	891.37	162.85	6.473		
18,100.00	12,017.00	18,725.27	12,446.00	127.75	129.17	-113.96	-7,309.34	1,309.34	1,054.55	889.69	164.86	6.397		
18,200.00	12,017.00	18,825.27	12,446.00	129.31	130.71	-113.95	-7,409.33	1,310.69	1,054.88	888.01	166.87	6.322		
18,300.00	12,017.00	18,925.27	12,446.00	130.88	132.24	-113.95	-7,509.33	1,312.03	1,055.22	886.33	168.88	6.248		
18,400.00	12,017.00	19,025.27	12,446.00	132.44	133.79	-113.94	-7,609.32	1,313.38	1,055.55	884.65	170.90	6.176		
18,500.00	12,017.00	19,125.27	12,446.00	134.01	135.33	-113.93	-7,709.31	1,314.72	1,055.88	882.97	172.92	6.106		
18,600.00	12,017.00	19,225.27	12,446.00	135.58	136.88	-113.92	-7,809.30	1,316.07	1,056.21	881.28	174.94	6.038		
18,700.00	12,017.00	19,325.27	12,446.00	137.15	138.42	-113.91	-7,909.29	1,317.41	1,056.55	879.59	176.96	5.971		
18,800.00	12,017.00	19,425.27	12,446.00	138.72	139.97	-113.91	-8,009.28	1,318.76	1,056.88	877.89	178.99	5.905		
18,900.00	12,017.00	19,525.27	12,446.00	140.29	141.53	-113.90	-8,109.27	1,320.10	1,057.21	876.20	181.01	5.841		
19,000.00	12,017.00	19,625.27	12,446.00	141.87	143.08	-113.89	-8,209.26	1,321.45	1,057.55	874.50	183.04	5.778		

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 Tatanka Fed Com 602H
Project:	Lea County, NM (NAD83)	TVD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 602H	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		
19,100.00	12,017.00	19,725.26	12,446.00	143.45	144.64	-113.88	-8,309.25	1,322.79	1,057.88	872.80	185.08	5.716		
19,200.00	12,017.00	19,825.26	12,446.00	145.03	146.20	-113.87	-8,409.24	1,324.14	1,058.21	871.10	187.11	5.656		
19,300.00	12,017.00	19,925.26	12,446.00	146.61	147.76	-113.87	-8,509.23	1,325.48	1,058.54	869.40	189.15	5.596		
19,400.00	12,017.00	20,025.26	12,446.00	148.19	149.33	-113.86	-8,609.22	1,326.83	1,058.88	867.69	191.18	5.539		
19,500.00	12,017.00	20,125.26	12,446.00	149.78	150.89	-113.85	-8,709.21	1,328.17	1,059.21	865.99	193.22	5.482		
19,600.00	12,017.00	20,225.26	12,446.00	151.36	152.46	-113.84	-8,809.20	1,329.52	1,059.54	864.28	195.26	5.426		
19,700.00	12,017.00	20,325.26	12,446.00	152.95	154.03	-113.84	-8,909.19	1,330.86	1,059.88	862.57	197.31	5.372		
19,800.00	12,017.00	20,425.26	12,446.00	154.54	155.60	-113.83	-9,009.18	1,332.21	1,060.21	860.86	199.35	5.318		
19,900.00	12,017.00	20,525.26	12,446.00	156.13	157.17	-113.82	-9,109.17	1,333.55	1,060.54	859.15	201.40	5.266		
20,000.00	12,017.00	20,625.26	12,446.00	157.72	158.75	-113.81	-9,209.16	1,334.89	1,060.88	857.43	203.44	5.215		
20,100.00	12,017.00	20,725.26	12,446.00	159.31	160.32	-113.80	-9,309.15	1,336.24	1,061.21	855.72	205.49	5.164		
20,200.00	12,017.00	20,825.26	12,446.00	160.90	161.90	-113.80	-9,409.14	1,337.58	1,061.54	854.00	207.54	5.115		
20,300.00	12,017.00	20,925.26	12,446.00	162.50	163.48	-113.79	-9,509.13	1,338.93	1,061.87	852.28	209.59	5.066		
20,400.00	12,017.00	21,025.26	12,446.00	164.09	165.06	-113.78	-9,609.12	1,340.27	1,062.21	850.56	211.64	5.019		
20,500.00	12,017.00	21,125.26	12,446.00	165.69	166.64	-113.77	-9,709.11	1,341.62	1,062.54	848.84	213.70	4.972		
20,600.00	12,017.00	21,225.26	12,446.00	167.29	168.22	-113.76	-9,809.10	1,342.96	1,062.87	847.12	215.75	4.926		
20,700.00	12,017.00	21,325.25	12,446.00	168.89	169.81	-113.76	-9,909.09	1,344.31	1,063.21	845.40	217.81	4.881		
20,800.00	12,017.00	21,425.25	12,446.00	170.49	171.39	-113.75	-10,009.08	1,345.65	1,063.54	843.68	219.86	4.837		
20,900.00	12,017.00	21,525.25	12,446.00	172.09	172.98	-113.74	-10,109.07	1,347.00	1,063.87	841.95	221.92	4.794		
21,000.00	12,017.00	21,625.25	12,446.00	173.69	174.57	-113.73	-10,209.06	1,348.34	1,064.21	840.23	223.98	4.751		
21,100.00	12,017.00	21,725.25	12,446.00	175.29	176.16	-113.72	-10,309.05	1,349.69	1,064.54	838.50	226.04	4.710		
21,200.00	12,017.00	21,825.25	12,446.00	176.90	177.75	-113.72	-10,409.04	1,351.03	1,064.87	836.78	228.10	4.669		
21,300.00	12,017.00	21,925.25	12,446.00	178.50	179.34	-113.71	-10,509.03	1,352.38	1,065.21	835.05	230.16	4.628		
21,400.00	12,017.00	22,025.25	12,446.00	180.11	180.93	-113.70	-10,609.02	1,353.72	1,065.54	833.32	232.22	4.588		
21,500.00	12,017.00	22,125.25	12,446.00	181.71	182.53	-113.69	-10,709.01	1,355.07	1,065.87	831.59	234.28	4.550		
21,600.00	12,017.00	22,225.25	12,446.00	183.32	184.12	-113.68	-10,809.01	1,356.41	1,066.21	829.86	236.34	4.511		
21,700.00	12,017.00	22,325.25	12,446.00	184.93	185.72	-113.68	-10,909.00	1,357.76	1,066.54	828.13	238.41	4.474		
21,800.00	12,017.00	22,425.25	12,446.00	186.54	187.31	-113.67	-11,008.99	1,359.10	1,066.87	826.40	240.47	4.437		
21,900.00	12,017.00	22,525.25	12,446.00	188.15	188.91	-113.66	-11,108.98	1,360.44	1,067.21	824.67	242.54	4.400		
22,000.00	12,017.00	22,625.25	12,446.00	189.76	190.51	-113.65	-11,208.97	1,361.79	1,067.54	822.94	244.60	4.364		
22,100.00	12,017.00	22,725.25	12,446.00	191.37	192.11	-113.65	-11,308.96	1,363.13	1,067.87	821.20	246.67	4.329		
22,187.30	12,017.00	22,812.55	12,446.00	192.77	193.51	-113.64	-11,396.25	1,364.31	1,068.16	819.69	248.47	4.299 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 Tatanka Fed Com 602H
Project:	Lea County, NM (NAD83)	TVD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 602H	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	111.01	-992.15	2,583.57	2,767.85					
100.00	100.00	57.70	57.70	0.13	0.07	111.01	-992.15	2,583.57	2,767.53	2,767.38	0.14	N/A		
200.00	200.00	157.70	157.70	0.48	0.33	111.01	-992.15	2,583.57	2,767.53	2,766.94	0.59	4,714.343		
300.00	300.00	257.70	257.70	0.84	0.69	111.01	-992.15	2,583.57	2,767.53	2,766.44	1.09	2,540.381		
400.00	400.00	357.70	357.70	1.20	1.05	111.01	-992.15	2,583.57	2,767.53	2,765.93	1.59	1,735.465		
500.00	500.00	457.70	457.70	1.56	1.41	111.01	-992.15	2,583.57	2,767.53	2,765.42	2.10	1,317.384		
600.00	600.00	557.70	557.70	1.92	1.77	111.01	-992.15	2,583.57	2,767.53	2,764.92	2.61	1,061.495		
700.00	700.00	657.70	657.70	2.28	2.12	111.01	-992.15	2,583.57	2,767.53	2,764.41	3.11	888.796		
800.00	800.00	757.70	757.70	2.63	2.48	111.01	-992.15	2,583.57	2,767.53	2,763.90	3.62	764.407		
900.00	900.00	857.70	857.70	2.99	2.84	111.01	-992.15	2,583.57	2,767.53	2,763.40	4.13	670.550		
1,000.00	1,000.00	957.70	957.70	3.35	3.20	111.01	-992.15	2,583.57	2,767.53	2,762.89	4.63	597.215		
1,100.00	1,100.00	1,057.70	1,057.70	3.71	3.56	111.01	-992.15	2,583.57	2,767.53	2,762.38	5.14	538.336		
1,200.00	1,200.00	1,157.70	1,157.70	4.07	3.92	111.01	-992.15	2,583.57	2,767.53	2,761.88	5.65	490.023		
1,300.00	1,300.00	1,257.70	1,257.70	4.43	4.28	111.01	-992.15	2,583.57	2,767.53	2,761.37	6.15	449.667		
1,400.00	1,400.00	1,357.70	1,357.70	4.79	4.63	111.01	-992.15	2,583.57	2,767.53	2,760.86	6.66	415.451		
1,500.00	1,500.00	1,457.70	1,457.70	5.14	4.99	111.01	-992.15	2,583.57	2,767.53	2,760.36	7.17	386.073		
1,600.00	1,600.00	1,557.70	1,557.70	5.50	5.35	111.01	-992.15	2,583.57	2,767.53	2,759.85	7.68	360.576		
1,700.00	1,700.00	1,657.70	1,657.70	5.86	5.71	111.01	-992.15	2,583.57	2,767.53	2,759.34	8.18	338.237		
1,800.00	1,800.00	1,757.70	1,757.70	6.22	6.07	111.01	-992.15	2,583.57	2,767.53	2,758.84	8.69	318.505		
1,900.00	1,900.00	1,857.70	1,857.70	6.58	6.43	111.01	-992.15	2,583.57	2,767.53	2,758.33	9.20	300.948		
2,000.00	2,000.00	1,957.70	1,957.70	6.94	6.78	111.01	-992.15	2,583.57	2,767.53	2,757.82	9.70	285.225		
2,100.00	2,100.00	2,057.70	2,057.70	7.29	7.14	111.01	-992.15	2,583.57	2,767.53	2,757.32	10.21	271.063		
2,200.00	2,200.00	2,157.70	2,157.70	7.65	7.50	111.01	-992.15	2,583.57	2,767.53	2,756.81	10.72	258.241		
2,300.00	2,300.00	2,257.70	2,257.70	8.01	7.86	111.01	-992.15	2,583.57	2,767.53	2,756.30	11.22	246.578		
2,400.00	2,400.00	2,357.70	2,357.70	8.37	8.22	111.01	-992.15	2,583.57	2,767.53	2,755.79	11.73	235.922		
2,500.00	2,500.00	2,457.70	2,457.70	8.73	8.58	111.01	-992.15	2,583.57	2,767.53	2,755.29	12.24	226.149		
2,600.00	2,600.00	2,557.70	2,557.70	9.09	8.94	111.01	-992.15	2,583.57	2,767.53	2,754.78	12.74	217.154		
2,700.00	2,700.00	2,657.70	2,657.70	9.45	9.29	111.01	-992.15	2,583.57	2,767.53	2,754.27	13.25	208.846		
2,800.00	2,800.00	2,757.70	2,757.70	9.80	9.65	111.01	-992.15	2,583.57	2,767.53	2,753.77	13.76	201.151		
2,900.00	2,900.00	2,857.70	2,857.70	10.16	10.01	111.01	-992.15	2,583.57	2,767.53	2,753.26	14.27	194.003		
3,000.00	3,000.00	2,957.70	2,957.70	10.52	10.37	111.01	-992.15	2,583.57	2,767.53	2,752.75	14.77	187.346		
3,100.00	3,100.00	3,057.70	3,057.70	10.88	10.73	111.01	-992.15	2,583.57	2,767.53	2,752.25	15.28	181.130		
3,200.00	3,200.00	3,157.70	3,157.70	11.24	11.09	111.01	-992.15	2,583.57	2,767.53	2,751.74	15.79	175.313		
3,300.00	3,299.99	3,257.69	3,257.69	11.58	11.44	-54.82	-992.15	2,583.57	2,766.77	2,750.49	16.28	169.949		
3,400.00	3,399.91	3,464.96	3,464.91	11.90	12.17	-54.98	-992.46	2,580.02	2,763.39	2,746.38	17.01	162.475		
3,500.00	3,499.69	3,715.02	3,714.21	12.23	13.03	-55.21	-994.11	2,561.17	2,752.54	2,734.74	17.79	154.684		
3,600.00	3,599.27	3,813.91	3,812.56	12.56	13.37	-55.46	-995.00	2,550.96	2,737.99	2,719.73	18.26	149.911		
3,700.00	3,698.57	3,912.48	3,910.60	12.89	13.72	-55.77	-995.89	2,540.77	2,721.99	2,703.26	18.74	145.285		
3,800.00	3,797.54	4,010.67	4,008.27	13.22	14.07	-56.14	-996.77	2,530.63	2,704.55	2,685.34	19.21	140.797		
3,900.00	3,896.09	4,108.41	4,105.48	13.57	14.41	-56.59	-997.66	2,520.53	2,685.70	2,666.02	19.68	136.435		
4,000.00	3,994.16	4,205.63	4,202.18	13.92	14.76	-57.10	-998.53	2,510.49	2,665.49	2,645.32	20.16	132.190		
4,100.00	4,091.70	4,302.27	4,298.30	14.28	15.11	-57.69	-999.41	2,500.50	2,643.94	2,623.29	20.65	128.054		
4,125.65	4,116.62	4,326.96	4,322.85	14.37	15.20	-57.85	-999.63	2,497.95	2,638.20	2,617.43	20.77	127.007		
4,200.00	4,188.79	4,398.45	4,393.96	14.65	15.46	-58.11	-1,000.27	2,490.57	2,621.49	2,600.35	21.14	124.035		
4,300.00	4,285.87	4,494.61	4,489.59	15.04	15.81	-58.46	-1,001.14	2,480.63	2,599.09	2,577.46	21.63	120.168		
4,400.00	4,382.95	4,590.76	4,585.23	15.43	16.16	-58.82	-1,002.01	2,470.70	2,576.78	2,554.65	22.13	116.448		
4,500.00	4,480.03	4,686.92	4,680.87	15.83	16.51	-59.19	-1,002.88	2,460.77	2,554.58	2,531.95	22.63	112.869		
4,600.00	4,577.11	4,783.08	4,776.51	16.23	16.86	-59.56	-1,003.74	2,450.83	2,532.48	2,509.34	23.14	109.425		
4,700.00	4,674.18	4,879.23	4,872.14	16.65	17.22	-59.93	-1,004.61	2,440.90	2,510.48	2,486.83	23.66	106.112		
4,800.00	4,771.26	4,975.39	4,967.78	17.07	17.57	-60.32	-1,005.48	2,430.96	2,488.60	2,464.42	24.18	102.924		
4,900.00	4,868.34	5,071.55	5,063.42	17.49	17.93	-60.71	-1,006.35	2,421.03	2,466.82	2,442.12	24.70	99.856		
5,000.00	4,965.42	5,167.70	5,159.06	17.92	18.28	-61.11	-1,007.21	2,411.10	2,445.16	2,419.93	25.23	96.903		

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 Tatanka Fed Com 602H
Project:	Lea County, NM (NAD83)	TVD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 602H	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		
5,100.00	5,062.50	5,263.86	5,254.70	18.36	18.64	-61.51	-1,008.08	2,401.16	2,423.62	2,397.86	25.77	94.061		
5,200.00	5,159.57	5,360.01	5,350.33	18.80	19.00	-61.92	-1,008.95	2,391.23	2,402.20	2,375.90	26.30	91.324		
5,300.00	5,256.65	5,456.17	5,445.97	19.25	19.36	-62.34	-1,009.82	2,381.30	2,380.90	2,354.06	26.85	88.689		
5,400.00	5,353.73	5,552.33	5,541.61	19.70	19.72	-62.77	-1,010.68	2,371.36	2,359.73	2,332.34	27.39	86.150		
5,500.00	5,450.81	5,648.48	5,637.25	20.15	20.08	-63.20	-1,011.55	2,361.43	2,338.69	2,310.75	27.94	83.705		
5,600.00	5,547.89	5,744.64	5,732.88	20.61	20.44	-63.64	-1,012.42	2,351.49	2,317.79	2,289.30	28.49	81.348		
5,700.00	5,644.96	5,840.80	5,828.52	21.07	20.81	-64.09	-1,013.29	2,341.56	2,297.02	2,267.97	29.05	79.076		
5,800.00	5,742.04	5,936.95	5,924.16	21.54	21.17	-64.54	-1,014.16	2,331.63	2,276.40	2,246.79	29.61	76.886		
5,900.00	5,839.12	6,033.11	6,019.80	22.00	21.53	-65.01	-1,015.02	2,321.69	2,255.92	2,225.75	30.17	74.773		
6,000.00	5,936.20	6,129.26	6,115.44	22.47	21.90	-65.48	-1,015.89	2,311.76	2,235.59	2,204.85	30.74	72.736		
6,100.00	6,033.28	6,225.42	6,211.07	22.94	22.26	-65.96	-1,016.76	2,301.82	2,215.41	2,184.10	31.30	70.770		
6,200.00	6,130.35	6,321.58	6,306.71	23.42	22.63	-66.45	-1,017.63	2,291.89	2,195.39	2,163.51	31.88	68.872		
6,300.00	6,227.43	6,417.73	6,402.35	23.90	22.99	-66.95	-1,018.49	2,281.96	2,175.53	2,143.08	32.45	67.041		
6,400.00	6,324.51	6,513.89	6,497.99	24.38	23.36	-67.45	-1,019.36	2,272.02	2,155.85	2,122.82	33.03	65.273		
6,500.00	6,421.59	6,610.04	6,593.62	24.86	23.73	-67.97	-1,020.23	2,262.09	2,136.33	2,102.72	33.61	63.565		
6,600.00	6,518.67	6,706.20	6,689.26	25.34	24.09	-68.49	-1,021.10	2,252.15	2,116.99	2,082.79	34.19	61.916		
6,700.00	6,615.75	6,802.36	6,784.90	25.83	24.46	-69.03	-1,021.96	2,242.22	2,097.83	2,063.05	34.78	60.322		
6,800.00	6,712.82	6,898.51	6,880.54	26.31	24.83	-69.57	-1,022.83	2,232.29	2,078.85	2,043.49	35.37	58.782		
6,900.00	6,809.90	6,994.67	6,976.17	26.80	25.20	-70.12	-1,023.70	2,222.35	2,060.07	2,024.11	35.96	57.294		
7,000.00	6,906.98	7,090.83	7,071.81	27.29	25.57	-70.69	-1,024.57	2,212.42	2,041.48	2,004.93	36.55	55.856		
7,100.00	7,004.06	7,186.14	7,165.74	27.78	25.85	-71.13	-1,025.22	2,204.97	2,023.44	1,986.32	37.12	54.508		
7,200.00	7,101.14	7,282.65	7,260.04	28.28	26.09	-71.52	-1,025.68	2,199.63	2,007.09	1,969.41	37.68	53.267		
7,300.00	7,198.21	7,300.00	7,280.22	28.77	26.35	-71.97	-1,026.10	2,194.87	1,992.57	1,954.32	38.25	52.099		
7,400.00	7,295.29	7,356.40	7,336.55	29.26	26.56	-72.33	-1,026.35	2,192.06	1,979.83	1,941.05	38.78	51.048		
7,500.00	7,392.37	7,420.55	7,400.66	29.76	26.79	-72.75	-1,026.54	2,189.86	1,968.96	1,929.63	39.33	50.066		
7,600.00	7,489.45	7,500.00	7,480.10	30.26	27.07	-73.27	-1,026.65	2,188.62	1,960.04	1,920.14	39.90	49.126		
7,700.00	7,586.53	7,564.13	7,544.23	30.76	27.29	-73.71	-1,026.65	2,188.57	1,952.66	1,912.23	40.43	48.296		
7,800.00	7,683.60	7,661.20	7,641.30	31.26	27.62	-74.37	-1,026.65	2,188.57	1,945.87	1,904.83	41.04	47.414		
7,900.00	7,780.68	7,758.28	7,738.38	31.76	27.95	-75.03	-1,026.65	2,188.57	1,939.37	1,897.72	41.65	46.563		
8,000.00	7,877.76	7,855.36	7,835.46	32.26	28.29	-75.70	-1,026.65	2,188.57	1,933.13	1,890.87	42.26	45.742		
8,035.67	7,912.38	7,889.98	7,870.08	32.44	28.41	-75.94	-1,026.65	2,188.57	1,930.98	1,888.50	42.48	45.456		
8,100.00	7,974.96	7,952.56	7,932.66	32.76	28.62	-76.30	-1,026.65	2,188.57	1,927.31	1,884.43	42.87	44.955		
8,200.00	8,072.71	8,050.31	8,030.41	33.24	28.96	-76.83	-1,026.65	2,188.57	1,922.30	1,878.83	43.47	44.223		
8,300.00	8,170.98	8,148.58	8,128.68	33.69	29.30	-77.30	-1,026.65	2,188.57	1,918.09	1,874.04	44.05	43.543		
8,400.00	8,269.70	8,247.30	8,227.40	34.13	29.64	-77.71	-1,026.65	2,188.57	1,914.59	1,869.98	44.62	42.913		
8,500.00	8,368.80	8,346.40	8,326.50	34.55	29.98	-78.05	-1,026.65	2,188.57	1,911.77	1,866.60	45.16	42.330		
8,600.00	8,468.22	8,445.82	8,425.92	34.94	30.32	-78.33	-1,026.65	2,188.57	1,909.56	1,863.86	45.70	41.789		
8,700.00	8,567.89	8,545.49	8,525.59	35.31	30.67	-78.55	-1,026.65	2,188.57	1,907.92	1,861.71	46.21	41.288		
8,800.00	8,667.73	8,645.33	8,625.43	35.66	31.01	-78.69	-1,026.65	2,188.57	1,906.83	1,860.12	46.71	40.825		
8,900.00	8,767.69	8,745.29	8,725.39	35.99	31.36	-78.77	-1,026.65	2,188.57	1,906.26	1,859.07	47.19	40.398		
8,961.32	8,829.00	8,806.60	8,786.70	36.17	31.57	87.01	-1,026.65	2,188.57	1,906.16	1,858.69	47.47	40.157		
9,000.00	8,867.68	8,845.28	8,825.38	36.28	31.71	87.01	-1,026.65	2,188.57	1,906.16	1,858.52	47.64	40.010		
9,100.00	8,967.68	8,945.28	8,925.38	36.57	32.05	87.01	-1,026.65	2,188.57	1,906.16	1,858.07	48.09	39.636		
9,200.00	9,067.68	9,045.28	9,025.38	36.86	32.40	87.01	-1,026.65	2,188.57	1,906.16	1,857.62	48.54	39.268		
9,300.00	9,167.68	9,145.28	9,125.38	37.16	32.75	87.01	-1,026.65	2,188.57	1,906.16	1,857.17	48.99	38.906		
9,400.00	9,267.68	9,245.28	9,225.38	37.45	33.10	87.01	-1,026.65	2,188.57	1,906.16	1,856.71	49.45	38.550		
9,500.00	9,367.68	9,345.28	9,325.38	37.74	33.44	87.01	-1,026.65	2,188.57	1,906.16	1,856.26	49.90	38.199		
9,600.00	9,467.68	9,445.28	9,425.38	38.04	33.79	87.01	-1,026.65	2,188.57	1,906.16	1,855.81	50.36	37.854		
9,700.00	9,567.68	9,545.28	9,525.38	38.33	34.14	87.01	-1,026.65	2,188.57	1,906.16	1,855.35	50.81	37.514		
9,800.00	9,667.68	9,645.28	9,625.38	38.63	34.49	87.01	-1,026.65	2,188.57	1,906.16	1,854.89	51.27	37.180		
9,900.00	9,767.68	9,745.28	9,725.38	38.93	34.84	87.01	-1,026.65	2,188.57	1,906.16	1,854.43	51.73	36.851		
10,000.00	9,867.68	9,845.28	9,825.38	39.23	35.19	87.01	-1,026.65	2,188.57	1,906.16	1,853.98	52.19	36.527		

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 Tatanka Fed Com 602H
Project:	Lea County, NM (NAD83)	TVD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 602H	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		Tatanka Fed Com - Tatanka Fed Com 805H - OH - Plan #2											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		
10,100.00	9,967.68	9,945.28	9,925.38	39.53	35.54	87.01	-1,026.65	2,188.57	1,906.16	1,853.52	52.64	36.208		
10,200.00	10,067.68	10,045.28	10,025.38	39.83	35.89	87.01	-1,026.65	2,188.57	1,906.16	1,853.06	53.11	35.894		
10,300.00	10,167.68	10,145.28	10,125.38	40.13	36.24	87.01	-1,026.65	2,188.57	1,906.16	1,852.59	53.57	35.585		
10,400.00	10,267.68	10,245.28	10,225.38	40.43	36.59	87.01	-1,026.65	2,188.57	1,906.16	1,852.13	54.03	35.281		
10,500.00	10,367.68	10,345.28	10,325.38	40.74	36.94	87.01	-1,026.65	2,188.57	1,906.16	1,851.67	54.49	34.981		
10,600.00	10,467.68	10,445.28	10,425.38	41.04	37.29	87.01	-1,026.65	2,188.57	1,906.16	1,851.21	54.96	34.686		
10,700.00	10,567.68	10,545.28	10,525.38	41.35	37.64	87.01	-1,026.65	2,188.57	1,906.16	1,850.74	55.42	34.395		
10,800.00	10,667.68	10,645.28	10,625.38	41.66	37.99	87.01	-1,026.65	2,188.57	1,906.16	1,850.28	55.88	34.109		
10,900.00	10,767.68	10,745.28	10,725.38	41.96	38.34	87.01	-1,026.65	2,188.57	1,906.16	1,849.81	56.35	33.827		
11,000.00	10,867.68	10,845.28	10,825.38	42.27	38.69	87.01	-1,026.65	2,188.57	1,906.16	1,849.34	56.82	33.549		
11,100.00	10,967.68	10,945.28	10,925.38	42.58	39.04	87.01	-1,026.65	2,188.57	1,906.16	1,848.88	57.28	33.275		
11,200.00	11,067.68	11,045.28	11,025.38	42.89	39.39	87.01	-1,026.65	2,188.57	1,906.16	1,848.41	57.75	33.006		
11,300.00	11,167.68	11,145.28	11,125.38	43.20	39.74	87.01	-1,026.65	2,188.57	1,906.16	1,847.94	58.22	32.740		
11,400.00	11,267.68	11,245.28	11,225.38	43.51	40.09	87.01	-1,026.65	2,188.57	1,906.16	1,847.47	58.69	32.478		
11,500.00	11,367.68	11,345.28	11,325.38	43.82	40.44	87.01	-1,026.65	2,188.57	1,906.16	1,847.00	59.16	32.220		
11,576.36	11,444.04	11,421.64	11,401.74	44.06	40.71	87.01	-1,026.65	2,188.57	1,906.16	1,846.64	59.52	32.026 CC		
11,600.00	11,467.68	11,445.28	11,425.38	44.14	40.79	-92.44	-1,026.65	2,188.57	1,906.18	1,846.55	59.63	31.965		
11,650.00	11,517.48	11,495.08	11,475.18	44.33	40.97	-92.55	-1,026.65	2,188.57	1,906.37	1,846.47	59.89	31.829		
11,700.00	11,566.73	11,544.33	11,524.43	44.54	41.14	-92.76	-1,026.65	2,188.57	1,906.77	1,846.60	60.17	31.688		
11,750.00	11,615.04	11,592.64	11,572.74	44.78	41.31	-93.06	-1,026.65	2,188.57	1,907.44	1,846.97	60.47	31.542		
11,800.00	11,662.05	11,639.65	11,619.75	45.04	41.48	-93.44	-1,026.65	2,188.57	1,908.47	1,847.68	60.79	31.394		
11,850.00	11,707.40	11,685.00	11,665.10	45.33	41.64	-93.86	-1,026.65	2,188.57	1,909.95	1,848.82	61.12	31.247		
11,900.00	11,750.75	11,728.35	11,708.45	45.65	41.79	-94.30	-1,026.65	2,188.57	1,912.00	1,850.53	61.47	31.104		
11,950.00	11,791.76	11,769.36	11,749.46	45.98	41.93	-94.73	-1,026.65	2,188.57	1,914.74	1,852.91	61.83	30.968		
12,000.00	11,830.12	11,807.72	11,787.82	46.33	42.07	-95.11	-1,026.65	2,188.57	1,918.33	1,856.13	62.20	30.843		
12,050.00	11,865.55	11,843.15	11,823.25	46.70	42.19	-95.40	-1,026.65	2,188.57	1,922.88	1,860.31	62.57	30.731		
12,100.00	11,897.77	11,875.37	11,855.47	47.09	42.31	-95.56	-1,026.65	2,188.57	1,928.53	1,865.58	62.95	30.636		
12,150.00	11,926.54	11,904.14	11,884.24	47.50	42.41	-95.57	-1,026.65	2,188.57	1,935.39	1,872.06	63.33	30.562		
12,200.00	11,951.63	11,929.23	11,909.33	47.92	42.50	-95.40	-1,026.65	2,188.57	1,943.55	1,879.85	63.70	30.509		
12,250.00	11,972.86	11,955.18	11,935.28	48.35	42.59	-95.13	-1,026.68	2,188.57	1,953.08	1,889.00	64.09	30.476		
12,300.00	11,990.07	12,031.27	12,011.02	48.80	42.84	-96.11	-1,033.06	2,188.63	1,963.49	1,898.92	64.57	30.410		
12,350.00	12,003.12	12,303.37	12,261.29	49.25	43.66	-101.44	-1,132.82	2,189.61	1,973.68	1,908.65	65.03	30.350		
12,400.00	12,011.92	12,853.49	12,502.00	49.70	45.25	-105.49	-1,604.13	2,194.23	1,977.46	1,912.19	65.28	30.293		
12,450.00	12,016.39	12,903.28	12,502.00	50.16	45.43	-105.48	-1,653.91	2,194.72	1,976.26	1,910.52	65.75	30.059		
12,476.36	12,017.00	12,929.62	12,502.00	50.40	45.54	-105.48	-1,680.26	2,194.98	1,976.10	1,910.11	65.99	29.945		
12,500.00	12,017.00	12,953.27	12,502.00	50.61	45.63	-105.48	-1,703.90	2,195.21	1,976.10	1,909.89	66.21	29.847		
12,600.00	12,017.00	13,053.27	12,502.00	51.55	46.07	-105.48	-1,803.90	2,196.19	1,976.10	1,908.94	67.16	29.424		
12,700.00	12,017.00	13,153.27	12,502.00	52.52	46.57	-105.48	-1,903.89	2,197.17	1,976.10	1,907.93	68.17	28.986		
12,800.00	12,017.00	13,253.27	12,502.00	53.53	47.11	-105.48	-2,003.89	2,198.15	1,976.10	1,906.85	69.25	28.537		
12,900.00	12,017.00	13,353.27	12,502.00	54.57	47.70	-105.48	-2,103.88	2,199.13	1,976.10	1,905.72	70.38	28.078		
13,000.00	12,017.00	13,453.27	12,502.00	55.63	48.35	-105.48	-2,203.88	2,200.11	1,976.10	1,904.54	71.56	27.614		
13,100.00	12,017.00	13,553.27	12,502.00	56.73	49.04	-105.48	-2,303.87	2,201.09	1,976.10	1,903.30	72.80	27.145		
13,200.00	12,017.00	13,653.27	12,502.00	57.85	49.77	-105.48	-2,403.87	2,202.07	1,976.10	1,902.02	74.08	26.674		
13,300.00	12,017.00	13,753.27	12,502.00	58.99	50.55	-105.48	-2,503.86	2,203.05	1,976.10	1,900.68	75.41	26.204		
13,400.00	12,017.00	13,853.27	12,502.00	60.16	51.37	-105.48	-2,603.86	2,204.03	1,976.10	1,899.31	76.79	25.734		
13,500.00	12,017.00	13,953.27	12,502.00	61.35	52.23	-105.48	-2,703.86	2,205.01	1,976.10	1,897.89	78.20	25.268		
13,600.00	12,017.00	14,053.27	12,502.00	62.57	53.12	-105.48	-2,803.85	2,205.99	1,976.10	1,896.44	79.66	24.807		
13,700.00	12,017.00	14,153.27	12,502.00	63.80	54.05	-105.48	-2,903.85	2,206.97	1,976.10	1,894.94	81.15	24.350		
13,800.00	12,017.00	14,253.27	12,502.00	65.05	55.02	-105.48	-3,003.84	2,207.95	1,976.10	1,893.41	82.68	23.900		
13,900.00	12,017.00	14,353.27	12,502.00	66.32	56.02	-105.48	-3,103.84	2,208.93	1,976.09	1,891.85	84.24	23.457		
14,000.00	12,017.00	14,453.27	12,502.00	67.60	57.04	-105.48	-3,203.83	2,209.91	1,976.09	1,890.26	85.83	23.022		
14,100.00	12,017.00	14,553.27	12,502.00	68.90	58.10	-105.48	-3,303.83	2,210.89	1,976.09	1,888.64	87.46	22.595		

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 Tatanka Fed Com 602H
Project:	Lea County, NM (NAD83)	TVD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 602H	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	12,017.00	14,653.27	12,502.00	70.22	59.18	-105.48	-3,403.82	2,211.87	1,976.09	1,886.99	89.11	22.177		
14,300.00	12,017.00	14,753.27	12,502.00	71.55	60.29	-105.48	-3,503.82	2,212.86	1,976.09	1,885.31	90.78	21.768		
14,400.00	12,017.00	14,853.27	12,502.00	72.89	61.42	-105.48	-3,603.81	2,213.84	1,976.09	1,883.61	92.48	21.367		
14,500.00	12,017.00	14,953.27	12,502.00	74.25	62.58	-105.48	-3,703.81	2,214.82	1,976.09	1,881.88	94.21	20.976		
14,600.00	12,017.00	15,053.27	12,502.00	75.61	63.76	-105.48	-3,803.80	2,215.80	1,976.09	1,880.14	95.96	20.594		
14,700.00	12,017.00	15,153.27	12,502.00	76.99	64.96	-105.48	-3,903.80	2,216.78	1,976.09	1,878.37	97.72	20.221		
14,800.00	12,017.00	15,253.27	12,502.00	78.38	66.17	-105.48	-4,003.79	2,217.76	1,976.09	1,876.58	99.51	19.858		
14,900.00	12,017.00	15,353.27	12,502.00	79.78	67.41	-105.48	-4,103.79	2,218.74	1,976.09	1,874.77	101.32	19.503		
15,000.00	12,017.00	15,453.27	12,502.00	81.18	68.66	-105.48	-4,203.78	2,219.72	1,976.09	1,872.94	103.15	19.158		
15,100.00	12,017.00	15,553.27	12,502.00	82.60	69.93	-105.48	-4,303.78	2,220.70	1,976.09	1,871.10	104.99	18.822		
15,200.00	12,017.00	15,653.27	12,502.00	84.03	71.22	-105.48	-4,403.77	2,221.68	1,976.09	1,869.24	106.85	18.494		
15,300.00	12,017.00	15,753.27	12,502.00	85.46	72.52	-105.48	-4,503.77	2,222.66	1,976.09	1,867.37	108.72	18.176		
15,400.00	12,017.00	15,853.27	12,502.00	86.90	73.84	-105.48	-4,603.76	2,223.64	1,976.09	1,865.48	110.61	17.866		
15,500.00	12,017.00	15,953.27	12,502.00	88.35	75.16	-105.48	-4,703.76	2,224.62	1,976.09	1,863.58	112.51	17.564		
15,600.00	12,017.00	16,053.27	12,502.00	89.80	76.51	-105.48	-4,803.75	2,225.60	1,976.09	1,861.66	114.43	17.270		
15,700.00	12,017.00	16,153.27	12,502.00	91.27	77.86	-105.48	-4,903.75	2,226.58	1,976.09	1,859.73	116.35	16.983		
15,800.00	12,017.00	16,253.27	12,502.00	92.74	79.22	-105.48	-5,003.74	2,227.56	1,976.09	1,857.79	118.29	16.705		
15,900.00	12,017.00	16,353.27	12,502.00	94.21	80.60	-105.48	-5,103.74	2,228.54	1,976.09	1,855.84	120.24	16.434		
16,000.00	12,017.00	16,453.27	12,502.00	95.69	81.98	-105.48	-5,203.74	2,229.52	1,976.09	1,853.88	122.21	16.170		
16,100.00	12,017.00	16,553.27	12,502.00	97.18	83.38	-105.48	-5,303.73	2,230.50	1,976.09	1,851.91	124.18	15.913		
16,200.00	12,017.00	16,653.27	12,502.00	98.67	84.78	-105.48	-5,403.73	2,231.48	1,976.08	1,849.93	126.16	15.663		
16,300.00	12,017.00	16,753.27	12,502.00	100.16	86.19	-105.48	-5,503.72	2,232.46	1,976.08	1,847.93	128.15	15.420		
16,400.00	12,017.00	16,853.27	12,502.00	101.67	87.61	-105.48	-5,603.72	2,233.44	1,976.08	1,845.93	130.15	15.183		
16,500.00	12,017.00	16,953.27	12,502.00	103.17	89.04	-105.48	-5,703.71	2,234.42	1,976.08	1,843.92	132.16	14.952		
16,600.00	12,017.00	17,053.27	12,502.00	104.68	90.48	-105.48	-5,803.71	2,235.40	1,976.08	1,841.91	134.18	14.728		
16,700.00	12,017.00	17,153.27	12,502.00	106.20	91.92	-105.48	-5,903.70	2,236.38	1,976.08	1,839.88	136.20	14.509		
16,800.00	12,017.00	17,253.27	12,502.00	107.71	93.37	-105.48	-6,003.70	2,237.36	1,976.08	1,837.85	138.23	14.296		
16,900.00	12,017.00	17,353.27	12,502.00	109.24	94.83	-105.48	-6,103.69	2,238.34	1,976.08	1,835.81	140.27	14.088		
17,000.00	12,017.00	17,453.27	12,502.00	110.76	96.30	-105.48	-6,203.69	2,239.32	1,976.08	1,833.77	142.31	13.886		
17,100.00	12,017.00	17,553.27	12,502.00	112.29	97.76	-105.48	-6,303.68	2,240.30	1,976.08	1,831.72	144.36	13.688		
17,200.00	12,017.00	17,653.27	12,502.00	113.82	99.24	-105.48	-6,403.68	2,241.28	1,976.08	1,829.66	146.42	13.496		
17,300.00	12,017.00	17,753.27	12,502.00	115.36	100.72	-105.48	-6,503.67	2,242.26	1,976.08	1,827.60	148.48	13.309		
17,400.00	12,017.00	17,853.27	12,502.00	116.90	102.21	-105.48	-6,603.67	2,243.24	1,976.08	1,825.53	150.55	13.126		
17,500.00	12,017.00	17,953.27	12,502.00	118.44	103.70	-105.48	-6,703.66	2,244.22	1,976.08	1,823.46	152.62	12.947		
17,600.00	12,017.00	18,053.27	12,502.00	119.99	105.19	-105.48	-6,803.66	2,245.21	1,976.08	1,821.38	154.70	12.773		
17,700.00	12,017.00	18,153.27	12,502.00	121.53	106.69	-105.48	-6,903.65	2,246.19	1,976.08	1,819.29	156.79	12.604		
17,800.00	12,017.00	18,253.27	12,502.00	123.09	108.20	-105.48	-7,003.65	2,247.17	1,976.08	1,817.20	158.87	12.438		
17,900.00	12,017.00	18,353.27	12,502.00	124.64	109.71	-105.48	-7,103.64	2,248.15	1,976.08	1,815.11	160.97	12.276		
18,000.00	12,017.00	18,453.27	12,502.00	126.19	111.22	-105.48	-7,203.64	2,249.13	1,976.08	1,813.01	163.07	12.118		
18,100.00	12,017.00	18,553.27	12,502.00	127.75	112.74	-105.48	-7,303.63	2,250.11	1,976.08	1,810.91	165.17	11.964		
18,200.00	12,017.00	18,653.27	12,502.00	129.31	114.26	-105.48	-7,403.63	2,251.09	1,976.08	1,808.80	167.27	11.813		
18,300.00	12,017.00	18,753.27	12,502.00	130.88	115.78	-105.48	-7,503.62	2,252.07	1,976.08	1,806.69	169.39	11.666		
18,400.00	12,017.00	18,853.27	12,502.00	132.44	117.31	-105.48	-7,603.62	2,253.05	1,976.08	1,804.58	171.50	11.522		
18,500.00	12,017.00	18,953.27	12,502.00	134.01	118.84	-105.48	-7,703.62	2,254.03	1,976.08	1,802.46	173.61	11.382		
18,600.00	12,017.00	19,053.27	12,502.00	135.58	120.37	-105.48	-7,803.61	2,255.01	1,976.07	1,800.34	175.73	11.245		
18,700.00	12,017.00	19,153.27	12,502.00	137.15	121.91	-105.48	-7,903.61	2,255.99	1,976.07	1,798.22	177.86	11.110		
18,800.00	12,017.00	19,253.27	12,502.00	138.72	123.45	-105.48	-8,003.60	2,256.97	1,976.07	1,796.09	179.98	10.979		
18,900.00	12,017.00	19,353.27	12,502.00	140.29	125.00	-105.48	-8,103.60	2,257.95	1,976.07	1,793.96	182.11	10.851		
19,000.00	12,017.00	19,453.27	12,502.00	141.87	126.54	-105.48	-8,203.59	2,258.93	1,976.07	1,791.83	184.25	10.725		
19,100.00	12,017.00	19,553.27	12,502.00	143.45	128.09	-105.48	-8,303.59	2,259.91	1,976.07	1,789.69	186.38	10.602		
19,200.00	12,017.00	19,653.27	12,502.00	145.03	129.64	-105.48	-8,403.58	2,260.89	1,976.07	1,787.55	188.52	10.482		
19,300.00	12,017.00	19,753.27	12,502.00	146.61	131.19	-105.48	-8,503.58	2,261.87	1,976.07	1,785.41	190.66	10.364		

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 Tatanka Fed Com 602H
Project:	Lea County, NM (NAD83)	TVD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 602H	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		
19,400.00	12,017.00	19,853.27	12,502.00	148.19	132.75	-105.48	-8,603.57	2,262.85	1,976.07	1,783.27	192.80	10.249		
19,500.00	12,017.00	19,953.27	12,502.00	149.78	134.31	-105.48	-8,703.57	2,263.83	1,976.07	1,781.12	194.95	10.136		
19,600.00	12,017.00	20,053.27	12,502.00	151.36	135.87	-105.48	-8,803.56	2,264.81	1,976.07	1,778.97	197.10	10.026		
19,700.00	12,017.00	20,153.27	12,502.00	152.95	137.43	-105.48	-8,903.56	2,265.79	1,976.07	1,776.82	199.25	9.917		
19,800.00	12,017.00	20,253.27	12,502.00	154.54	138.99	-105.48	-9,003.55	2,266.77	1,976.07	1,774.66	201.41	9.811		
19,900.00	12,017.00	20,353.27	12,502.00	156.13	140.56	-105.48	-9,103.55	2,267.75	1,976.07	1,772.51	203.56	9.707		
20,000.00	12,017.00	20,453.27	12,502.00	157.72	142.13	-105.48	-9,203.54	2,268.73	1,976.07	1,770.35	205.72	9.606		
20,100.00	12,017.00	20,553.27	12,502.00	159.31	143.70	-105.48	-9,303.54	2,269.71	1,976.07	1,768.19	207.88	9.506		
20,200.00	12,017.00	20,653.27	12,502.00	160.90	145.27	-105.48	-9,403.53	2,270.69	1,976.07	1,766.03	210.04	9.408		
20,300.00	12,017.00	20,753.27	12,502.00	162.50	146.85	-105.48	-9,503.53	2,271.67	1,976.07	1,763.87	212.20	9.312		
20,400.00	12,017.00	20,853.27	12,502.00	164.09	148.42	-105.48	-9,603.52	2,272.65	1,976.07	1,761.70	214.37	9.218		
20,500.00	12,017.00	20,953.27	12,502.00	165.69	150.00	-105.48	-9,703.52	2,273.63	1,976.07	1,759.53	216.53	9.126		
20,600.00	12,017.00	21,053.27	12,502.00	167.29	151.58	-105.48	-9,803.51	2,274.61	1,976.07	1,757.36	218.70	9.035		
20,700.00	12,017.00	21,153.27	12,502.00	168.89	153.16	-105.48	-9,903.51	2,275.59	1,976.07	1,755.19	220.87	8.947		
20,800.00	12,017.00	21,253.27	12,502.00	170.49	154.74	-105.48	-10,003.50	2,276.58	1,976.07	1,753.02	223.04	8.860		
20,900.00	12,017.00	21,353.27	12,502.00	172.09	156.32	-105.48	-10,103.50	2,277.56	1,976.06	1,750.85	225.22	8.774		
21,000.00	12,017.00	21,453.27	12,502.00	173.69	157.91	-105.48	-10,203.49	2,278.54	1,976.06	1,748.67	227.39	8.690		
21,100.00	12,017.00	21,553.27	12,502.00	175.29	159.49	-105.48	-10,303.49	2,279.52	1,976.06	1,746.50	229.57	8.608		
21,200.00	12,017.00	21,653.27	12,502.00	176.90	161.08	-105.48	-10,403.49	2,280.50	1,976.06	1,744.32	231.74	8.527		
21,300.00	12,017.00	21,753.27	12,502.00	178.50	162.67	-105.48	-10,503.48	2,281.48	1,976.06	1,742.14	233.92	8.448		
21,400.00	12,017.00	21,853.27	12,502.00	180.11	164.26	-105.48	-10,603.48	2,282.46	1,976.06	1,739.96	236.10	8.369		
21,500.00	12,017.00	21,953.27	12,502.00	181.71	165.85	-105.48	-10,703.47	2,283.44	1,976.06	1,737.78	238.28	8.293		
21,600.00	12,017.00	22,053.27	12,502.00	183.32	167.44	-105.48	-10,803.47	2,284.42	1,976.06	1,735.59	240.47	8.218		
21,700.00	12,017.00	22,153.27	12,502.00	184.93	169.03	-105.48	-10,903.46	2,285.40	1,976.06	1,733.41	242.65	8.144		
21,800.00	12,017.00	22,253.27	12,502.00	186.54	170.63	-105.48	-11,003.46	2,286.38	1,976.06	1,731.23	244.83	8.071		
21,900.00	12,017.00	22,353.27	12,502.00	188.15	172.22	-105.48	-11,103.45	2,287.36	1,976.06	1,729.04	247.02	8.000		
22,000.00	12,017.00	22,453.27	12,502.00	189.76	173.82	-105.48	-11,203.45	2,288.34	1,976.06	1,726.85	249.21	7.929		
22,100.00	12,017.00	22,553.27	12,502.00	191.37	175.42	-105.48	-11,303.44	2,289.32	1,976.06	1,724.67	251.39	7.860		
22,187.30	12,017.00	22,640.57	12,502.00	192.77	176.74	-105.48	-11,390.74	2,290.18	1,976.06	1,722.80	253.25	7.803 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 Tatanka Fed Com 602H
Project:	Lea County, NM (NAD83)	TVD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 602H	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	110.45	-991.40	2,658.56	2,837.75					
100.00	100.00	54.90	54.90	0.13	0.07	110.45	-991.40	2,658.56	2,837.40	2,837.25	0.14	N/A		
200.00	200.00	154.90	154.90	0.48	0.32	110.45	-991.40	2,658.56	2,837.40	2,836.81	0.58	4,880.106		
300.00	300.00	254.90	254.90	0.84	0.68	110.45	-991.40	2,658.56	2,837.40	2,836.31	1.08	2,619.755		
400.00	400.00	354.90	354.90	1.20	1.04	110.45	-991.40	2,658.56	2,837.40	2,835.81	1.59	1,786.658		
500.00	500.00	454.90	454.90	1.56	1.40	110.45	-991.40	2,658.56	2,837.40	2,835.30	2.09	1,354.973		
600.00	600.00	554.90	554.90	1.92	1.76	110.45	-991.40	2,658.56	2,837.40	2,834.80	2.60	1,091.135		
700.00	700.00	654.90	654.90	2.28	2.11	110.45	-991.40	2,658.56	2,837.40	2,834.29	3.11	913.241		
800.00	800.00	754.90	754.90	2.63	2.47	110.45	-991.40	2,658.56	2,837.40	2,833.78	3.61	785.197		
900.00	900.00	854.90	854.90	2.99	2.83	110.45	-991.40	2,658.56	2,837.40	2,833.28	4.12	688.631		
1,000.00	1,000.00	954.90	954.90	3.35	3.19	110.45	-991.40	2,658.56	2,837.40	2,832.77	4.63	613.209		
1,100.00	1,100.00	1,054.90	1,054.90	3.71	3.55	110.45	-991.40	2,658.56	2,837.40	2,832.26	5.13	552.674		
1,200.00	1,200.00	1,154.90	1,154.90	4.07	3.91	110.45	-991.40	2,658.56	2,837.40	2,831.76	5.64	503.015		
1,300.00	1,300.00	1,254.90	1,254.90	4.43	4.27	110.45	-991.40	2,658.56	2,837.40	2,831.25	6.15	461.542		
1,400.00	1,400.00	1,354.90	1,354.90	4.79	4.62	110.45	-991.40	2,658.56	2,837.40	2,830.74	6.65	426.386		
1,500.00	1,500.00	1,454.90	1,454.90	5.14	4.98	110.45	-991.40	2,658.56	2,837.40	2,830.23	7.16	396.207		
1,600.00	1,600.00	1,554.90	1,554.90	5.50	5.34	110.45	-991.40	2,658.56	2,837.40	2,829.73	7.67	370.016		
1,700.00	1,700.00	1,654.90	1,654.90	5.86	5.70	110.45	-991.40	2,658.56	2,837.40	2,829.22	8.18	347.074		
1,800.00	1,800.00	1,754.90	1,754.90	6.22	6.06	110.45	-991.40	2,658.56	2,837.40	2,828.71	8.68	326.810		
1,900.00	1,900.00	1,854.90	1,854.90	6.58	6.42	110.45	-991.40	2,658.56	2,837.40	2,828.21	9.19	308.781		
2,000.00	2,000.00	1,954.90	1,954.90	6.94	6.77	110.45	-991.40	2,658.56	2,837.40	2,827.70	9.70	292.637		
2,100.00	2,100.00	2,054.90	2,054.90	7.29	7.13	110.45	-991.40	2,658.56	2,837.40	2,827.19	10.20	278.098		
2,200.00	2,200.00	2,154.90	2,154.90	7.65	7.49	110.45	-991.40	2,658.56	2,837.40	2,826.69	10.71	264.935		
2,300.00	2,300.00	2,254.90	2,254.90	8.01	7.85	110.45	-991.40	2,658.56	2,837.40	2,826.18	11.22	252.961		
2,400.00	2,400.00	2,354.90	2,354.90	8.37	8.21	110.45	-991.40	2,658.56	2,837.40	2,825.67	11.72	242.023		
2,500.00	2,500.00	2,454.90	2,454.90	8.73	8.57	110.45	-991.40	2,658.56	2,837.40	2,825.17	12.23	231.992		
2,600.00	2,600.00	2,554.90	2,554.90	9.09	8.93	110.45	-991.40	2,658.56	2,837.40	2,824.66	12.74	222.759		
2,700.00	2,700.00	2,654.90	2,654.90	9.45	9.28	110.45	-991.40	2,658.56	2,837.40	2,824.15	13.24	214.233		
2,800.00	2,800.00	2,754.90	2,754.90	9.80	9.64	110.45	-991.40	2,658.56	2,837.40	2,823.64	13.75	206.335		
2,900.00	2,900.00	2,854.90	2,854.90	10.16	10.00	110.45	-991.40	2,658.56	2,837.40	2,823.14	14.26	198.999		
3,000.00	3,000.00	2,954.90	2,954.90	10.52	10.36	110.45	-991.40	2,658.56	2,837.40	2,822.63	14.77	192.167		
3,100.00	3,100.00	3,054.90	3,054.90	10.88	10.72	110.45	-991.40	2,658.56	2,837.40	2,822.12	15.27	185.788		
3,200.00	3,200.00	3,154.90	3,154.90	11.24	11.08	110.45	-991.40	2,658.56	2,837.40	2,821.62	15.78	179.819		
3,300.00	3,299.99	3,232.11	3,232.11	11.58	11.35	-55.37	-991.41	2,658.69	2,836.87	2,820.66	16.21	174.974		
3,400.00	3,399.91	3,300.00	3,299.99	11.90	11.59	-55.43	-991.47	2,659.87	2,836.20	2,819.60	16.61	170.779		
3,500.00	3,499.69	3,348.92	3,348.88	12.23	11.75	-55.50	-991.57	2,661.46	2,835.46	2,818.51	16.95	167.291		
3,600.00	3,599.27	3,400.00	3,399.91	12.56	11.93	-55.60	-991.70	2,663.79	2,834.76	2,817.47	17.29	163.914		
3,700.00	3,698.57	3,465.21	3,465.00	12.89	12.15	-55.76	-991.92	2,667.75	2,834.04	2,816.36	17.68	160.335		
3,800.00	3,797.54	3,523.05	3,522.67	13.22	12.35	-55.93	-992.18	2,672.19	2,833.35	2,815.31	18.04	157.075		
3,900.00	3,896.09	3,600.00	3,599.27	13.57	12.62	-56.20	-992.59	2,679.45	2,832.83	2,814.38	18.46	153.496		
4,000.00	3,994.16	3,637.90	3,636.94	13.92	12.75	-56.36	-992.83	2,683.59	2,832.17	2,813.40	18.76	150.928		
4,100.00	4,091.70	3,725.99	3,724.42	14.28	13.06	-56.76	-993.42	2,693.94	2,831.31	2,812.08	19.22	147.285		
4,125.65	4,116.62	3,750.96	3,749.21	14.37	13.15	-56.88	-993.58	2,696.87	2,830.89	2,811.54	19.35	146.307		
4,200.00	4,188.79	3,823.26	3,821.01	14.65	13.40	-57.22	-994.07	2,705.38	2,829.62	2,809.91	19.72	143.520		
4,300.00	4,285.87	3,920.51	3,917.59	15.04	13.75	-57.68	-994.72	2,716.82	2,828.09	2,807.87	20.22	139.897		
4,400.00	4,382.95	4,017.76	4,014.16	15.43	14.10	-58.14	-995.37	2,728.27	2,826.74	2,806.02	20.72	136.414		
4,500.00	4,480.03	4,115.01	4,110.73	15.83	14.45	-58.60	-996.03	2,739.71	2,825.58	2,804.35	21.23	133.068		
4,600.00	4,577.11	4,212.26	4,207.30	16.23	14.81	-59.06	-996.68	2,751.15	2,824.62	2,802.87	21.75	129.854		
4,700.00	4,674.18	4,309.51	4,303.88	16.65	15.16	-59.52	-997.33	2,762.60	2,823.84	2,801.57	22.28	126.766		
4,800.00	4,771.26	4,406.76	4,400.45	17.07	15.52	-59.97	-997.98	2,774.04	2,823.26	2,800.46	22.81	123.800		
4,900.00	4,868.34	4,504.01	4,497.02	17.49	15.88	-60.43	-998.64	2,785.49	2,822.87	2,799.54	23.34	120.951		
5,000.00	4,965.42	4,601.26	4,593.59	17.92	16.24	-60.89	-999.29	2,796.93	2,822.68	2,798.80	23.88	118.213		

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 Tatanka Fed Com 602H
Project:	Lea County, NM (NAD83)	TVD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 602H	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		
5,052.44	5,016.33	4,652.26	4,644.24	18.15	16.43	-61.13	-999.63	2,802.93	2,822.65	2,798.49	24.16	116.819	CC	
5,100.00	5,062.50	4,698.51	4,690.17	18.36	16.60	-61.35	-999.94	2,808.37	2,822.67	2,798.25	24.42	115.583		
5,200.00	5,159.57	4,795.76	4,786.74	18.80	16.96	-61.81	-1,000.59	2,819.82	2,822.86	2,797.89	24.97	113.056		
5,300.00	5,256.65	4,893.01	4,883.31	19.25	17.33	-62.27	-1,001.25	2,831.26	2,823.24	2,797.72	25.52	110.627		
5,400.00	5,353.73	4,990.26	4,979.88	19.70	17.70	-62.73	-1,001.90	2,842.70	2,823.81	2,797.74	26.08	108.292		
5,500.00	5,450.81	5,087.51	5,076.46	20.15	18.06	-63.19	-1,002.55	2,854.15	2,824.58	2,797.94	26.64	106.046		
5,600.00	5,547.89	5,184.77	5,173.03	20.61	18.43	-63.65	-1,003.20	2,865.59	2,825.53	2,798.33	27.20	103.887		
5,700.00	5,644.96	5,282.02	5,269.60	21.07	18.80	-64.11	-1,003.86	2,877.03	2,826.68	2,798.91	27.76	101.809		
5,800.00	5,742.04	5,379.27	5,366.17	21.54	19.17	-64.57	-1,004.51	2,888.48	2,828.02	2,799.68	28.33	99.810		
5,900.00	5,839.12	5,476.52	5,462.75	22.00	19.54	-65.03	-1,005.16	2,899.92	2,829.54	2,800.64	28.91	97.885		
6,000.00	5,936.20	5,573.77	5,559.32	22.47	19.92	-65.48	-1,005.81	2,911.36	2,831.26	2,801.78	29.48	96.032		
6,100.00	6,033.28	5,671.02	5,655.89	22.94	20.29	-65.94	-1,006.47	2,922.81	2,833.18	2,803.11	30.06	94.247		
6,200.00	6,130.35	5,768.27	5,752.46	23.42	20.66	-66.40	-1,007.12	2,934.25	2,835.28	2,804.63	30.64	92.528		
6,300.00	6,227.43	5,865.52	5,849.04	23.90	21.04	-66.85	-1,007.77	2,945.69	2,837.57	2,806.34	31.23	90.871		
6,400.00	6,324.51	5,962.77	5,945.61	24.38	21.41	-67.31	-1,008.42	2,957.14	2,840.04	2,808.23	31.81	89.273		
6,500.00	6,421.59	6,060.02	6,042.18	24.86	21.79	-67.76	-1,009.08	2,968.58	2,842.71	2,810.31	32.40	87.733		
6,600.00	6,518.67	6,157.27	6,138.75	25.34	22.16	-68.21	-1,009.73	2,980.02	2,845.57	2,812.57	32.99	86.247		
6,700.00	6,615.75	6,254.52	6,235.33	25.83	22.54	-68.67	-1,010.38	2,991.47	2,848.61	2,815.02	33.59	84.814		
6,800.00	6,712.82	6,351.77	6,331.90	26.31	22.92	-69.12	-1,011.03	3,002.91	2,851.84	2,817.66	34.18	83.431		
6,900.00	6,809.90	6,449.02	6,428.47	26.80	23.30	-69.57	-1,011.69	3,014.35	2,855.26	2,820.48	34.78	82.095		
7,000.00	6,906.98	6,546.27	6,525.04	27.29	23.68	-70.02	-1,012.34	3,025.80	2,858.86	2,823.48	35.38	80.806		
7,100.00	7,004.06	6,643.52	6,621.62	27.78	24.06	-70.46	-1,012.99	3,037.24	2,862.65	2,826.67	35.98	79.560		
7,200.00	7,101.14	6,740.77	6,718.19	28.28	24.44	-70.91	-1,013.64	3,048.68	2,866.62	2,830.03	36.58	78.357		
7,300.00	7,198.21	6,838.02	6,814.76	28.77	24.82	-71.36	-1,014.30	3,060.13	2,870.77	2,833.58	37.19	77.194		
7,400.00	7,295.29	6,935.27	6,911.33	29.26	25.20	-71.80	-1,014.95	3,071.57	2,875.11	2,837.32	37.80	76.069		
7,500.00	7,392.37	7,032.52	7,007.91	29.76	25.58	-72.25	-1,015.60	3,083.02	2,879.63	2,841.23	38.40	74.982		
7,600.00	7,489.45	7,299.12	7,273.30	30.26	26.59	-73.46	-1,017.02	3,107.84	2,882.71	2,843.22	39.50	72.988		
7,700.00	7,586.53	7,567.38	7,541.43	30.76	27.54	-74.69	-1,017.40	3,114.56	2,877.76	2,837.28	40.48	71.099		
7,800.00	7,683.60	7,664.46	7,638.50	31.26	27.87	-75.14	-1,017.40	3,114.56	2,871.34	2,830.26	41.08	69.895		
7,900.00	7,780.68	7,761.54	7,735.58	31.76	28.20	-75.59	-1,017.40	3,114.56	2,865.10	2,823.42	41.69	68.728		
8,000.00	7,877.76	7,858.62	7,832.66	32.26	28.53	-76.04	-1,017.40	3,114.56	2,859.06	2,816.76	42.30	67.597		
8,035.67	7,912.38	7,893.24	7,867.28	32.44	28.65	-76.20	-1,017.40	3,114.56	2,856.95	2,814.43	42.51	67.202		
8,100.00	7,974.96	7,955.82	7,929.86	32.76	28.86	-76.43	-1,017.40	3,114.56	2,853.33	2,810.42	42.90	66.508		
8,200.00	8,072.71	8,053.57	8,027.61	33.24	29.19	-76.76	-1,017.40	3,114.56	2,848.33	2,804.84	43.50	65.486		
8,300.00	8,170.98	8,151.84	8,125.88	33.69	29.53	-77.06	-1,017.40	3,114.56	2,844.07	2,800.00	44.07	64.530		
8,400.00	8,269.70	8,250.56	8,224.60	34.13	29.87	-77.32	-1,017.40	3,114.56	2,840.49	2,795.86	44.64	63.637		
8,500.00	8,368.80	8,349.66	8,323.70	34.55	30.21	-77.53	-1,017.40	3,114.56	2,837.56	2,792.38	45.18	62.802		
8,600.00	8,468.22	8,449.08	8,423.12	34.94	30.55	-77.71	-1,017.40	3,114.56	2,835.24	2,789.53	45.71	62.024		
8,700.00	8,567.89	8,548.75	8,522.79	35.31	30.89	-77.85	-1,017.40	3,114.56	2,833.52	2,787.29	46.23	61.298		
8,800.00	8,667.73	8,648.59	8,622.63	35.66	31.24	-77.94	-1,017.40	3,114.56	2,832.35	2,785.63	46.72	60.623		
8,900.00	8,767.69	8,748.55	8,722.59	35.99	31.58	-77.99	-1,017.40	3,114.56	2,831.75	2,784.55	47.20	59.995		
8,961.32	8,829.00	8,809.86	8,783.90	36.17	31.79	87.80	-1,017.40	3,114.56	2,831.64	2,784.16	47.48	59.637		
9,000.00	8,867.68	8,848.54	8,822.58	36.28	31.93	87.80	-1,017.40	3,114.56	2,831.64	2,783.99	47.65	59.420		
9,100.00	8,967.68	8,948.54	8,922.58	36.57	32.27	87.80	-1,017.40	3,114.56	2,831.64	2,783.54	48.10	58.865		
9,200.00	9,067.68	9,048.54	9,022.58	36.86	32.62	87.80	-1,017.40	3,114.56	2,831.64	2,783.09	48.55	58.319		
9,300.00	9,167.68	9,148.54	9,122.58	37.16	32.96	87.80	-1,017.40	3,114.56	2,831.64	2,782.64	49.01	57.781		
9,400.00	9,267.68	9,248.54	9,222.58	37.45	33.31	87.80	-1,017.40	3,114.56	2,831.64	2,782.18	49.46	57.253		
9,500.00	9,367.68	9,348.54	9,322.58	37.74	33.65	87.80	-1,017.40	3,114.56	2,831.64	2,781.73	49.91	56.732		
9,600.00	9,467.68	9,448.54	9,422.58	38.04	34.00	87.80	-1,017.40	3,114.56	2,831.64	2,781.28	50.37	56.220		
9,700.00	9,567.68	9,548.54	9,522.58	38.33	34.35	87.80	-1,017.40	3,114.56	2,831.64	2,780.82	50.82	55.716		
9,800.00	9,667.68	9,648.54	9,622.58	38.63	34.69	87.80	-1,017.40	3,114.56	2,831.64	2,780.36	51.28	55.220		
9,900.00	9,767.68	9,748.54	9,722.58	38.93	35.04	87.80	-1,017.40	3,114.56	2,831.64	2,779.91	51.74	54.732		

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 Tatanka Fed Com 602H
Project:	Lea County, NM (NAD83)	TVD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 602H	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		
10,000.00	9,867.68	9,848.54	9,822.58	39.23	35.39	87.80	-1,017.40	3,114.56	2,831.64	2,779.45	52.20	54.251		
10,100.00	9,967.68	9,948.54	9,922.58	39.53	35.73	87.80	-1,017.40	3,114.56	2,831.64	2,778.99	52.65	53.778		
10,200.00	10,067.68	10,048.54	10,022.58	39.83	36.08	87.80	-1,017.40	3,114.56	2,831.64	2,778.53	53.11	53.312		
10,300.00	10,167.68	10,148.54	10,122.58	40.13	36.43	87.80	-1,017.40	3,114.56	2,831.64	2,778.07	53.58	52.853		
10,400.00	10,267.68	10,248.54	10,222.58	40.43	36.78	87.80	-1,017.40	3,114.56	2,831.64	2,777.61	54.04	52.401		
10,500.00	10,367.68	10,348.54	10,322.58	40.74	37.13	87.80	-1,017.40	3,114.56	2,831.64	2,777.14	54.50	51.957		
10,600.00	10,467.68	10,448.54	10,422.58	41.04	37.47	87.80	-1,017.40	3,114.56	2,831.64	2,776.68	54.96	51.518		
10,700.00	10,567.68	10,548.54	10,522.58	41.35	37.82	87.80	-1,017.40	3,114.56	2,831.64	2,776.22	55.43	51.087		
10,800.00	10,667.68	10,648.54	10,622.58	41.66	38.17	87.80	-1,017.40	3,114.56	2,831.64	2,775.75	55.89	50.662		
10,900.00	10,767.68	10,748.54	10,722.58	41.96	38.52	87.80	-1,017.40	3,114.56	2,831.64	2,775.28	56.36	50.243		
11,000.00	10,867.68	10,848.54	10,822.58	42.27	38.87	87.80	-1,017.40	3,114.56	2,831.64	2,774.82	56.82	49.831		
11,100.00	10,967.68	10,948.54	10,922.58	42.58	39.22	87.80	-1,017.40	3,114.56	2,831.64	2,774.35	57.29	49.425		
11,200.00	11,067.68	11,048.54	11,022.58	42.89	39.57	87.80	-1,017.40	3,114.56	2,831.64	2,773.88	57.76	49.024		
11,300.00	11,167.68	11,148.54	11,122.58	43.20	39.92	87.80	-1,017.40	3,114.56	2,831.64	2,773.42	58.23	48.630		
11,400.00	11,267.68	11,248.54	11,222.58	43.51	40.27	87.80	-1,017.40	3,114.56	2,831.64	2,772.95	58.70	48.242		
11,500.00	11,367.68	11,348.54	11,322.58	43.82	40.62	87.80	-1,017.40	3,114.56	2,831.64	2,772.48	59.17	47.859		
11,576.36	11,444.04	11,424.90	11,398.94	44.06	40.89	87.80	-1,017.40	3,114.56	2,831.64	2,772.12	59.53	47.570		
11,600.00	11,467.68	11,448.54	11,422.58	44.14	40.97	-91.64	-1,017.40	3,114.56	2,831.66	2,772.02	59.64	47.479		
11,650.00	11,517.48	11,498.34	11,472.38	44.33	41.14	-91.72	-1,017.40	3,114.56	2,831.78	2,771.88	59.90	47.276		
11,700.00	11,566.73	11,547.59	11,521.63	44.54	41.32	-91.86	-1,017.40	3,114.56	2,832.05	2,771.88	60.18	47.061		
11,750.00	11,615.04	11,595.90	11,569.94	44.78	41.49	-92.07	-1,017.40	3,114.56	2,832.51	2,772.03	60.48	46.836		
11,800.00	11,662.05	11,642.91	11,616.95	45.04	41.65	-92.32	-1,017.40	3,114.56	2,833.20	2,772.41	60.79	46.603		
11,850.00	11,707.40	11,688.26	11,662.30	45.33	41.81	-92.60	-1,017.40	3,114.56	2,834.20	2,773.07	61.13	46.367		
11,900.00	11,750.75	11,731.60	11,705.65	45.65	41.96	-92.90	-1,017.40	3,114.56	2,835.58	2,774.11	61.47	46.128		
11,950.00	11,791.76	11,772.62	11,746.66	45.98	42.10	-93.19	-1,017.40	3,114.56	2,837.44	2,775.61	61.83	45.891		
12,000.00	11,830.12	11,810.98	11,785.02	46.33	42.24	-93.44	-1,017.40	3,114.56	2,839.86	2,777.66	62.20	45.659		
12,050.00	11,865.55	11,862.30	11,836.32	46.70	42.41	-93.86	-1,018.43	3,114.57	2,842.88	2,780.28	62.60	45.413		
12,100.00	11,897.77	11,934.61	11,908.03	47.09	42.65	-94.51	-1,027.29	3,114.66	2,846.26	2,783.22	63.04	45.149		
12,150.00	11,926.54	12,019.93	11,990.40	47.50	42.92	-95.26	-1,049.24	3,114.87	2,849.82	2,786.32	63.50	44.880		
12,200.00	11,951.63	12,122.77	12,083.98	47.92	43.22	-96.11	-1,091.56	3,115.29	2,853.36	2,789.40	63.96	44.611		
12,250.00	11,972.86	12,248.04	12,185.45	48.35	43.56	-97.01	-1,164.58	3,116.00	2,856.55	2,792.13	64.42	44.342		
12,300.00	11,990.07	12,398.39	12,282.77	48.80	43.94	-97.81	-1,278.61	3,117.12	2,858.97	2,794.09	64.88	44.066		
12,350.00	12,003.12	12,537.45	12,343.22	49.25	44.33	-98.18	-1,403.42	3,118.34	2,860.12	2,794.76	65.36	43.761		
12,400.00	12,011.92	12,722.80	12,374.87	49.70	44.94	-98.16	-1,585.13	3,120.12	2,859.76	2,793.82	65.94	43.368		
12,450.00	12,016.39	12,782.55	12,375.00	50.16	45.16	-98.11	-1,644.88	3,120.70	2,859.12	2,792.70	66.42	43.045		
12,476.36	12,017.00	12,808.90	12,375.00	50.40	45.26	-98.11	-1,671.23	3,120.96	2,859.04	2,792.37	66.67	42.885		
12,500.00	12,017.00	12,832.54	12,375.00	50.61	45.36	-98.11	-1,694.87	3,121.19	2,859.03	2,792.14	66.89	42.742		
12,600.00	12,017.00	12,932.54	12,375.00	51.55	45.80	-98.11	-1,794.87	3,122.17	2,859.03	2,791.17	67.87	42.127		
12,700.00	12,017.00	13,032.54	12,375.00	52.52	46.30	-98.11	-1,894.86	3,123.15	2,859.03	2,790.12	68.91	41.490		
12,800.00	12,017.00	13,132.54	12,375.00	53.53	46.85	-98.11	-1,994.86	3,124.13	2,859.03	2,789.02	70.01	40.837		
12,900.00	12,017.00	13,232.54	12,375.00	54.57	47.44	-98.11	-2,094.85	3,125.11	2,859.03	2,787.85	71.17	40.171		
13,000.00	12,017.00	13,332.54	12,375.00	55.63	48.09	-98.11	-2,194.85	3,126.08	2,859.02	2,786.64	72.39	39.496		
13,100.00	12,017.00	13,432.54	12,375.00	56.73	48.78	-98.11	-2,294.84	3,127.06	2,859.02	2,785.37	73.66	38.815		
13,200.00	12,017.00	13,532.54	12,375.00	57.85	49.52	-98.11	-2,394.84	3,128.04	2,859.02	2,784.04	74.98	38.132		
13,300.00	12,017.00	13,632.54	12,375.00	58.99	50.30	-98.11	-2,494.83	3,129.02	2,859.02	2,782.68	76.34	37.450		
13,400.00	12,017.00	13,732.54	12,375.00	60.16	51.13	-98.11	-2,594.83	3,130.00	2,859.02	2,781.26	77.75	36.770		
13,500.00	12,017.00	13,832.54	12,375.00	61.35	51.99	-98.11	-2,694.82	3,130.98	2,859.01	2,779.81	79.21	36.094		
13,600.00	12,017.00	13,932.54	12,375.00	62.57	52.89	-98.11	-2,794.82	3,131.96	2,859.01	2,778.31	80.70	35.426		
13,700.00	12,017.00	14,032.54	12,375.00	63.80	53.82	-98.11	-2,894.81	3,132.94	2,859.01	2,776.77	82.24	34.766		
13,800.00	12,017.00	14,132.54	12,375.00	65.05	54.79	-98.11	-2,994.81	3,133.91	2,859.01	2,775.20	83.81	34.115		
13,900.00	12,017.00	14,232.54	12,375.00	66.32	55.80	-98.11	-3,094.80	3,134.89	2,859.01	2,773.60	85.41	33.475		
14,000.00	12,017.00	14,332.54	12,375.00	67.60	56.83	-98.11	-3,194.80	3,135.87	2,859.00	2,771.96	87.04	32.846		

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 Tatanka Fed Com 602H
Project:	Lea County, NM (NAD83)	TVD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 602H	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	12,017.00	14,432.54	12,375.00	68.90	57.89	-98.11	-3,294.79	3,136.85	2,859.00	2,770.29	88.71	32.229		
14,200.00	12,017.00	14,532.54	12,375.00	70.22	58.97	-98.11	-3,394.79	3,137.83	2,859.00	2,768.60	90.40	31.626		
14,300.00	12,017.00	14,632.54	12,375.00	71.55	60.09	-98.11	-3,494.78	3,138.81	2,859.00	2,766.88	92.12	31.035		
14,400.00	12,017.00	14,732.54	12,375.00	72.89	61.22	-98.11	-3,594.78	3,139.79	2,859.00	2,765.13	93.87	30.457		
14,500.00	12,017.00	14,832.54	12,375.00	74.25	62.38	-98.11	-3,694.78	3,140.76	2,858.99	2,763.36	95.64	29.894		
14,600.00	12,017.00	14,932.54	12,375.00	75.61	63.57	-98.11	-3,794.77	3,141.74	2,858.99	2,761.56	97.43	29.343		
14,700.00	12,017.00	15,032.54	12,375.00	76.99	64.77	-98.11	-3,894.77	3,142.72	2,858.99	2,759.74	99.25	28.807		
14,800.00	12,017.00	15,132.54	12,375.00	78.38	65.99	-98.11	-3,994.76	3,143.70	2,858.99	2,757.90	101.08	28.284		
14,900.00	12,017.00	15,232.54	12,375.00	79.78	67.23	-98.11	-4,094.76	3,144.68	2,858.99	2,756.05	102.94	27.774		
15,000.00	12,017.00	15,332.54	12,375.00	81.18	68.49	-98.11	-4,194.75	3,145.66	2,858.98	2,754.17	104.81	27.277		
15,100.00	12,017.00	15,432.54	12,375.00	82.60	69.76	-98.11	-4,294.75	3,146.64	2,858.98	2,752.28	106.70	26.794		
15,200.00	12,017.00	15,532.54	12,375.00	84.03	71.05	-98.11	-4,394.74	3,147.62	2,858.98	2,750.37	108.61	26.323		
15,300.00	12,017.00	15,632.54	12,375.00	85.46	72.36	-98.11	-4,494.74	3,148.59	2,858.98	2,748.44	110.53	25.865		
15,400.00	12,017.00	15,732.54	12,375.00	86.90	73.68	-98.11	-4,594.73	3,149.57	2,858.98	2,746.50	112.47	25.420		
15,500.00	12,017.00	15,832.54	12,375.00	88.35	75.01	-98.11	-4,694.73	3,150.55	2,858.97	2,744.55	114.42	24.986		
15,600.00	12,017.00	15,932.54	12,375.00	89.80	76.35	-98.11	-4,794.72	3,151.53	2,858.97	2,742.58	116.39	24.564		
15,700.00	12,017.00	16,032.54	12,375.00	91.27	77.71	-98.11	-4,894.72	3,152.51	2,858.97	2,740.60	118.37	24.154		
15,800.00	12,017.00	16,132.54	12,375.00	92.74	79.07	-98.11	-4,994.71	3,153.49	2,858.97	2,738.61	120.35	23.755		
15,900.00	12,017.00	16,232.54	12,375.00	94.21	80.45	-98.11	-5,094.71	3,154.47	2,858.97	2,736.61	122.36	23.366		
16,000.00	12,017.00	16,332.54	12,375.00	95.69	81.84	-98.11	-5,194.70	3,155.45	2,858.96	2,734.60	124.37	22.988		
16,100.00	12,017.00	16,432.54	12,375.00	97.18	83.24	-98.11	-5,294.70	3,156.42	2,858.96	2,732.57	126.39	22.620		
16,200.00	12,017.00	16,532.54	12,375.00	98.67	84.64	-98.11	-5,394.69	3,157.40	2,858.96	2,730.54	128.42	22.262		
16,300.00	12,017.00	16,632.54	12,375.00	100.16	86.06	-98.11	-5,494.69	3,158.38	2,858.96	2,728.49	130.46	21.914		
16,400.00	12,017.00	16,732.54	12,375.00	101.67	87.48	-98.11	-5,594.68	3,159.36	2,858.96	2,726.44	132.51	21.575		
16,500.00	12,017.00	16,832.54	12,375.00	103.17	88.91	-98.11	-5,694.68	3,160.34	2,858.95	2,724.38	134.57	21.245		
16,600.00	12,017.00	16,932.54	12,375.00	104.68	90.35	-98.11	-5,794.67	3,161.32	2,858.95	2,722.31	136.64	20.923		
16,700.00	12,017.00	17,032.54	12,375.00	106.20	91.80	-98.11	-5,894.67	3,162.30	2,858.95	2,720.23	138.72	20.610		
16,800.00	12,017.00	17,132.54	12,375.00	107.71	93.25	-98.11	-5,994.66	3,163.27	2,858.95	2,718.15	140.80	20.305		
16,900.00	12,017.00	17,232.54	12,375.00	109.24	94.71	-98.11	-6,094.66	3,164.25	2,858.95	2,716.06	142.89	20.008		
17,000.00	12,017.00	17,332.54	12,375.00	110.76	96.18	-98.11	-6,194.66	3,165.23	2,858.94	2,713.96	144.99	19.719		
17,100.00	12,017.00	17,432.54	12,375.00	112.29	97.65	-98.11	-6,294.65	3,166.21	2,858.94	2,711.85	147.09	19.437		
17,200.00	12,017.00	17,532.54	12,375.00	113.82	99.13	-98.11	-6,394.65	3,167.19	2,858.94	2,709.74	149.20	19.162		
17,300.00	12,017.00	17,632.54	12,375.00	115.36	100.61	-98.11	-6,494.64	3,168.17	2,858.94	2,707.62	151.31	18.894		
17,400.00	12,017.00	17,732.54	12,375.00	116.90	102.10	-98.11	-6,594.64	3,169.15	2,858.93	2,705.50	153.44	18.633		
17,500.00	12,017.00	17,832.54	12,375.00	118.44	103.59	-98.11	-6,694.63	3,170.13	2,858.93	2,703.37	155.56	18.378		
17,600.00	12,017.00	17,932.54	12,375.00	119.99	105.09	-98.11	-6,794.63	3,171.10	2,858.93	2,701.24	157.70	18.129		
17,700.00	12,017.00	18,032.54	12,375.00	121.53	106.59	-98.11	-6,894.62	3,172.08	2,858.93	2,699.10	159.83	17.887		
17,800.00	12,017.00	18,132.54	12,375.00	123.09	108.09	-98.11	-6,994.62	3,173.06	2,858.93	2,696.95	161.98	17.650		
17,900.00	12,017.00	18,232.54	12,375.00	124.64	109.61	-98.11	-7,094.61	3,174.04	2,858.92	2,694.80	164.12	17.419		
18,000.00	12,017.00	18,332.54	12,375.00	126.19	111.12	-98.11	-7,194.61	3,175.02	2,858.92	2,692.65	166.27	17.194		
18,100.00	12,017.00	18,432.54	12,375.00	127.75	112.64	-98.11	-7,294.60	3,176.00	2,858.92	2,690.49	168.43	16.974		
18,200.00	12,017.00	18,532.54	12,375.00	129.31	114.16	-98.11	-7,394.60	3,176.98	2,858.92	2,688.33	170.59	16.759		
18,300.00	12,017.00	18,632.54	12,375.00	130.88	115.69	-98.11	-7,494.59	3,177.96	2,858.92	2,686.16	172.75	16.549		
18,400.00	12,017.00	18,732.54	12,375.00	132.44	117.22	-98.11	-7,594.59	3,178.93	2,858.91	2,683.99	174.92	16.344		
18,500.00	12,017.00	18,832.54	12,375.00	134.01	118.75	-98.11	-7,694.58	3,179.91	2,858.91	2,681.82	177.09	16.143		
18,600.00	12,017.00	18,932.54	12,375.00	135.58	120.28	-98.11	-7,794.58	3,180.89	2,858.91	2,679.64	179.27	15.948		
18,700.00	12,017.00	19,032.54	12,375.00	137.15	121.82	-98.11	-7,894.57	3,181.87	2,858.91	2,677.46	181.45	15.756		
18,800.00	12,017.00	19,132.54	12,375.00	138.72	123.36	-98.11	-7,994.57	3,182.85	2,858.91	2,675.28	183.63	15.569		
18,900.00	12,017.00	19,232.54	12,375.00	140.29	124.91	-98.11	-8,094.56	3,183.83	2,858.90	2,673.09	185.81	15.386		
19,000.00	12,017.00	19,332.54	12,375.00	141.87	126.46	-98.11	-8,194.56	3,184.81	2,858.90	2,670.90	188.00	15.207		
19,100.00	12,017.00	19,432.54	12,375.00	143.45	128.00	-98.11	-8,294.55	3,185.79	2,858.90	2,668.71	190.19	15.032		
19,200.00	12,017.00	19,532.54	12,375.00	145.03	129.56	-98.11	-8,394.55	3,186.76	2,858.90	2,666.51	192.39	14.860		

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 Tatanka Fed Com 602H
Project:	Lea County, NM (NAD83)	TVD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 602H	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		
19,300.00	12,017.00	19,632.54	12,375.00	146.61	131.11	-98.11	-8,494.55	3,187.74	2,858.90	2,664.31	194.58	14.693		
19,400.00	12,017.00	19,732.54	12,375.00	148.19	132.67	-98.11	-8,594.54	3,188.72	2,858.89	2,662.11	196.78	14.528		
19,500.00	12,017.00	19,832.54	12,375.00	149.78	134.23	-98.11	-8,694.54	3,189.70	2,858.89	2,659.91	198.98	14.367		
19,600.00	12,017.00	19,932.54	12,375.00	151.36	135.79	-98.11	-8,794.53	3,190.68	2,858.89	2,657.70	201.19	14.210		
19,700.00	12,017.00	20,032.54	12,375.00	152.95	137.35	-98.11	-8,894.53	3,191.66	2,858.89	2,655.49	203.40	14.056		
19,800.00	12,017.00	20,132.54	12,375.00	154.54	138.92	-98.11	-8,994.52	3,192.64	2,858.89	2,653.28	205.61	13.905		
19,900.00	12,017.00	20,232.54	12,375.00	156.13	140.49	-98.11	-9,094.52	3,193.61	2,858.88	2,651.07	207.82	13.757		
20,000.00	12,017.00	20,332.54	12,375.00	157.72	142.05	-98.11	-9,194.51	3,194.59	2,858.88	2,648.85	210.03	13.612		
20,100.00	12,017.00	20,432.54	12,375.00	159.31	143.63	-98.11	-9,294.51	3,195.57	2,858.88	2,646.63	212.25	13.470		
20,200.00	12,017.00	20,532.54	12,375.00	160.90	145.20	-98.11	-9,394.50	3,196.55	2,858.88	2,644.41	214.46	13.330		
20,300.00	12,017.00	20,632.54	12,375.00	162.50	146.77	-98.11	-9,494.50	3,197.53	2,858.88	2,642.19	216.68	13.194		
20,400.00	12,017.00	20,732.54	12,375.00	164.09	148.35	-98.11	-9,594.49	3,198.51	2,858.87	2,639.97	218.91	13.060		
20,500.00	12,017.00	20,832.54	12,375.00	165.69	149.93	-98.11	-9,694.49	3,199.49	2,858.87	2,637.74	221.13	12.929		
20,600.00	12,017.00	20,932.54	12,375.00	167.29	151.51	-98.11	-9,794.48	3,200.47	2,858.87	2,635.52	223.35	12.800		
20,700.00	12,017.00	21,032.54	12,375.00	168.89	153.09	-98.11	-9,894.48	3,201.44	2,858.87	2,633.29	225.58	12.673		
20,800.00	12,017.00	21,132.55	12,375.00	170.49	154.67	-98.11	-9,994.47	3,202.42	2,858.87	2,631.05	227.81	12.549		
20,900.00	12,017.00	21,232.55	12,375.00	172.09	156.26	-98.11	-10,094.47	3,203.40	2,858.86	2,628.82	230.04	12.428		
21,000.00	12,017.00	21,332.55	12,375.00	173.69	157.84	-98.11	-10,194.46	3,204.38	2,858.86	2,626.59	232.27	12.308		
21,100.00	12,017.00	21,432.55	12,375.00	175.29	159.43	-98.11	-10,294.46	3,205.36	2,858.86	2,624.35	234.51	12.191		
21,200.00	12,017.00	21,532.55	12,375.00	176.90	161.02	-98.11	-10,394.45	3,206.34	2,858.86	2,622.11	236.74	12.076		
21,300.00	12,017.00	21,632.55	12,375.00	178.50	162.60	-98.11	-10,494.45	3,207.32	2,858.86	2,619.88	238.98	11.963		
21,400.00	12,017.00	21,732.55	12,375.00	180.11	164.20	-98.11	-10,594.44	3,208.30	2,858.85	2,617.64	241.22	11.852		
21,500.00	12,017.00	21,832.55	12,375.00	181.71	165.79	-98.11	-10,694.44	3,209.27	2,858.85	2,615.39	243.46	11.743		
21,600.00	12,017.00	21,932.55	12,375.00	183.32	167.38	-98.11	-10,794.44	3,210.25	2,858.85	2,613.15	245.70	11.636		
21,700.00	12,017.00	22,032.55	12,375.00	184.93	168.97	-98.11	-10,894.43	3,211.23	2,858.85	2,610.91	247.94	11.530		
21,800.00	12,017.00	22,132.55	12,375.00	186.54	170.57	-98.11	-10,994.43	3,212.21	2,858.85	2,608.66	250.19	11.427		
21,900.00	12,017.00	22,232.55	12,375.00	188.15	172.17	-98.11	-11,094.42	3,213.19	2,858.84	2,606.41	252.43	11.325		
22,000.00	12,017.00	22,332.55	12,375.00	189.76	173.76	-98.11	-11,194.42	3,214.17	2,858.84	2,604.16	254.68	11.225		
22,100.00	12,017.00	22,432.55	12,375.00	191.37	175.36	-98.11	-11,294.41	3,215.15	2,858.84	2,601.91	256.92	11.127		
22,187.30	12,017.00	22,519.85	12,375.00	192.77	176.73	-98.11	-11,381.71	3,216.00	2,858.84	2,599.97	258.86	11.044 ES, SF		

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Total Directional Services

Anticollision Report

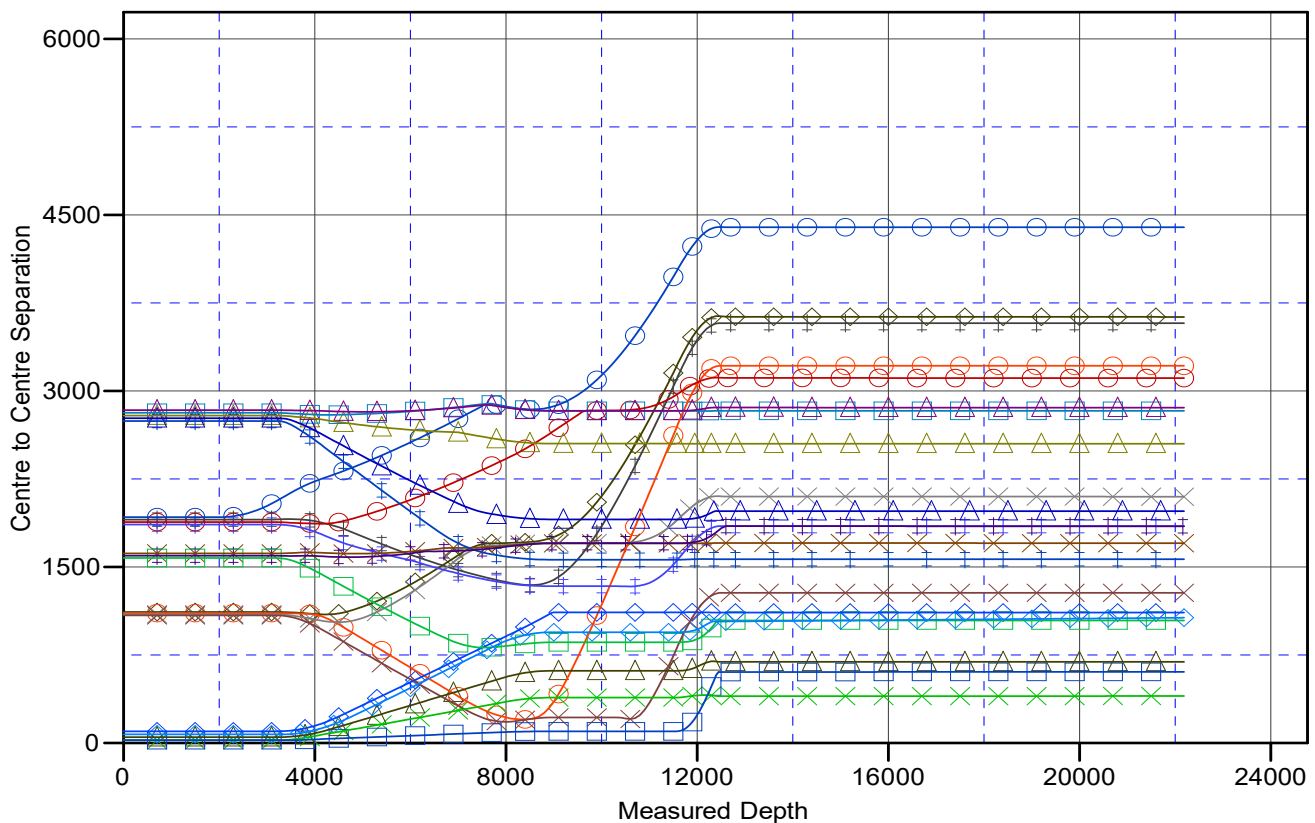


Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well Tatanka Fed Com 602H
Project:	Lea County, NM (NAD83)	TVD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3135.3' GE + 30' KB @ 3165.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 602H	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 3135.3' GE + 30' KB @ 3165.30usft
 Offset Depths are relative to Offset Datum
 Central Meridian is -104.333334

Coordinates are relative to: Tatanka Fed Com 602H
 Coordinate System is US State Plane 1983, New Mexico Eastern Zone
 Grid Convergence at Surface is: 0.53°

Ladder Plot



LEGEND

Tatanka Fed Com 101H, OH, Plan #1 V0	Tatanka Fed Com 504H, OH, Plan #1 V0	Tatanka Fed Com 705H, OH, Plan #2 V0
Tatanka Fed Com 102H, OH, Plan #1 V0	Tatanka Fed Com 601H, OH, Plan #2 V0	Tatanka Fed Com 801H, OH, Plan #2 V0
Tatanka Fed Com 103H, OH, Plan #1 V0	Tatanka Fed Com 603H, OH, Plan #1 V0	Tatanka Fed Com 802H, OH, Plan #2 V0
Tatanka Fed Com 104H, OH, Plan #1 V0	Tatanka Fed Com 604H, OH, Plan #2 V0	Tatanka Fed Com 803H, OH, Plan #1 V0
Tatanka Fed Com 501H, OH, Plan #1 V0	Tatanka Fed Com 702H, OH, Plan #1 V0	Tatanka Fed Com 804H, OH, Plan #1 V0
Tatanka Fed Com 502H, OH, Plan #1 V0	Tatanka Fed Com 703H, OH, Plan #2 V0	Tatanka Fed Com 805H, OH, Plan #2 V0
Tatanka Fed Com 503H, OH, Plan #1 V0	Tatanka Fed Com 704H, OH, Plan #2 V0	Tatanka Fed Com 806H, OH, Plan #2 V0

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Total Directional Services

Anticollision Report



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Project:	Lea County, NM (NAD83)	TVD Reference:	3135.3' GE + 30' KB @ 3165.30usft
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Reference Well:	Tatanka Fed Com 602H	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 3135.3' GE + 30' KB @ 3165.30usft

Offset Depths are relative to Offset Datum

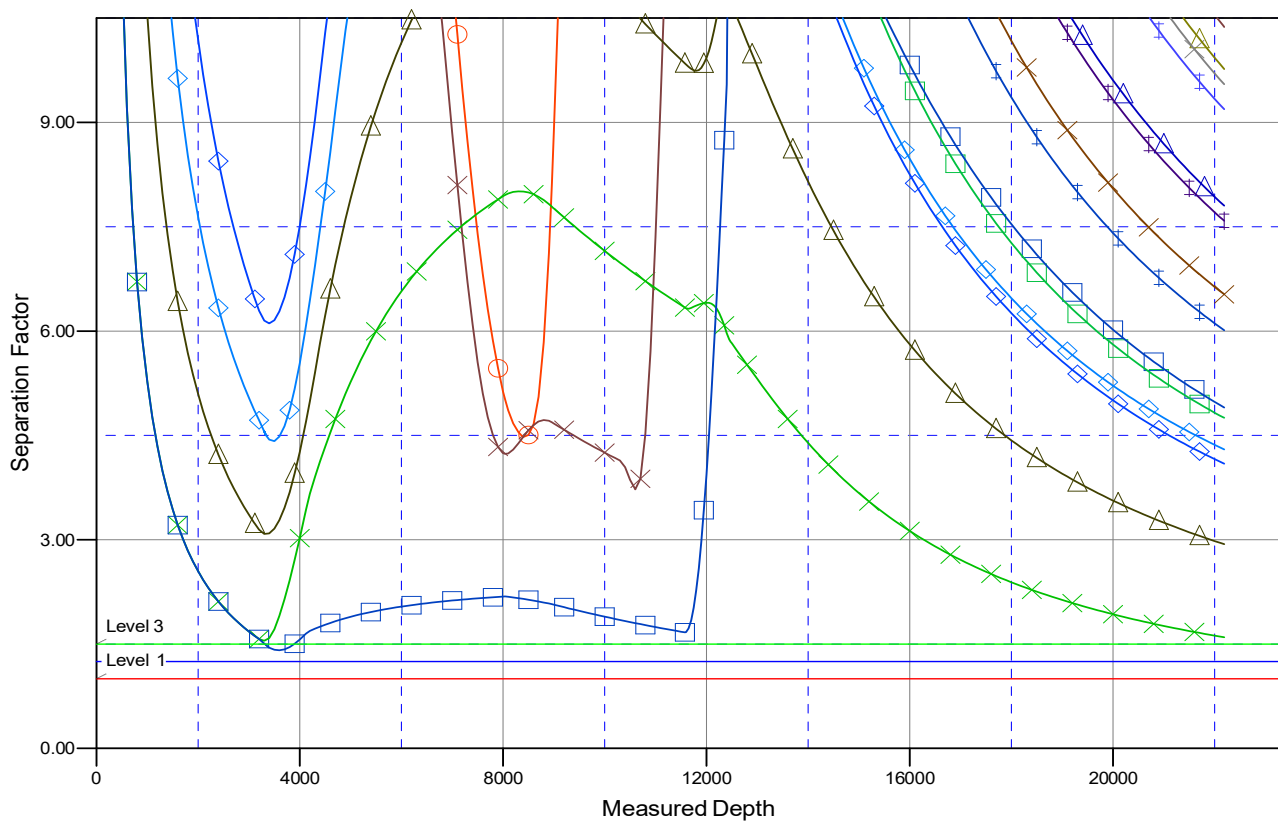
Central Meridian is -104.333334

Coordinates are relative to: Tatanka Fed Com 602H

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

Grid Convergence at Surface is: 0.53°

Separation Factor Plot



LEGEND

Tatanka Fed Com 101H, OH, Plan #1 V0	Tatanka Fed Com 504H, OH, Plan #1 V0	Tatanka Fed Com 705H, OH, Plan #2 V0
Tatanka Fed Com 102H, OH, Plan #1 V0	Tatanka Fed Com 601H, OH, Plan #2 V0	Tatanka Fed Com 801H, OH, Plan #2 V0
Tatanka Fed Com 103H, OH, Plan #1 V0	Tatanka Fed Com 603H, OH, Plan #1 V0	Tatanka Fed Com 802H, OH, Plan #2 V0
Tatanka Fed Com 104H, OH, Plan #1 V0	Tatanka Fed Com 604H, OH, Plan #2 V0	Tatanka Fed Com 803H, OH, Plan #1 V0
Tatanka Fed Com 501H, OH, Plan #1 V0	Tatanka Fed Com 702H, OH, Plan #1 V0	Tatanka Fed Com 804H, OH, Plan #1 V0
Tatanka Fed Com 502H, OH, Plan #1 V0	Tatanka Fed Com 703H, OH, Plan #1 V0	Tatanka Fed Com 805H, OH, Plan #2 V0
Tatanka Fed Com 503H, OH, Plan #1 V0	Tatanka Fed Com 704H, OH, Plan #2 V0	Tatanka Fed Com 806H, OH, Plan #2 V0

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

**PECOS DISTRICT
SURFACE USE
CONDITIONS OF APPROVAL**

OPERATOR'S NAME:	Franklin Mountain Energy LLC
LEASE NO.:	NMNM12280
COUNTY:	Lea County

Wells:

Tatanka Fed Com 601H
Tatanka Fed Com 801H
Tatanka Fed Com 802H
Tatanka Fed Com 502H
Tatanka Fed Com 501H
Tatanka Fed Com 102H
Tatanka Fed Com 101H
Tatanka Fed Com 603H

Tatanka Fed Com 804H
Tatanka Fed Com 703H
Tatanka Fed Com 803H
Tatanka Fed Com 602H
Tatanka Fed Com 702H
Tatanka Fed Com 104H
Tatanka Fed Com 103H
Tatanka Fed Com 504H

Tatanka Fed Com 503H
Tatanka Fed Com 806H
Tatanka Fed Com 705H
Tatanka Fed Com 604H
Tatanka Fed Com 805H
Tatanka Fed Com 704H

TABLE OF CONTENTS

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

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

I. GENERAL PROVISIONS

The approval of the Application For Permit To Drill (APD) is in compliance with all applicable laws and regulations: 43 Code of Federal Regulations 3160, the lease terms, Onshore Oil and Gas Orders, Notices To Lessees, New Mexico Oil Conservation Division (NMOCD) Rules, National Historical Preservation Act As Amended, and instructions and orders of the Authorized Officer. Any request for a variance shall be submitted to the Authorized Officer on Form 3160-5, Sundry Notices and Report on Wells.

II. PERMIT EXPIRATION

If the permit terminates prior to drilling and drilling cannot be commenced within 60 days after expiration, an operator is required to submit Form 3160-5, Sundry Notices and Reports on Wells, requesting surface reclamation requirements for any surface disturbance. However, if the operator will be able to initiate drilling within 60 days after the expiration of the permit, the operator must have set the conductor pipe in order to allow for an extension of 60 days beyond the expiration date of the APD. (Filing of a Sundry Notice is required for this 60 day extension.)

III. ARCHAEOLOGICAL, PALEONTOLOGY & HISTORICAL SITES

Any cultural resource (historic or prehistoric site or object) discovered by the holder, or any person working on the holder's behalf, on public or Federal land shall be immediately reported to the Authorized Officer. The holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery will be made by the Authorized Officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to the proper mitigation measures will be made by the Authorized Officer after consulting with the holder.

The proponent has contributed funds commensurate to the undertaking into an account for offsite mitigation. Participation in the PA serves as mitigation for the effects of this project on cultural resources. If any human skeletal remains, funerary objects, sacred objects, or objects of cultural patrimony are discovered at any time during construction, all construction activities shall halt and the BLM will be notified as soon as possible within 24 hours. Work shall not resume until a Notice to Proceed is issued by the BLM. See information below discussing NAGPRA.

If the proposed project is split between a Class III inventory and a Permian Basin Programmatic Agreement contribution, the portion of the project covered under Class III inventory should default to the first paragraph stipulations.

The holder is hereby obligated to comply with procedures established in the Native American Graves Protection and Repatriation Act (NAGPRA) to protect such cultural items as human remains, associated funerary objects, sacred objects, and objects of cultural patrimony discovered inadvertently during the course of project implementation. In the event that any of the cultural items listed above are discovered during the course of project work, the proponent shall immediately halt the disturbance and contact the BLM within 24 hours for instructions. The proponent or initiator of any project shall be held responsible for protecting, evaluating, reporting, excavating, treating, and disposing of these cultural items according to the procedures established by the BLM in consultation with Indian Tribes."

Any paleontological resource (historic or prehistoric site or object) discovered by the holder, or any person working on the holder's behalf, on public or Federal land shall be immediately reported to the Authorized Officer. The holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery will be made by the Authorized Officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be

responsible for the cost of evaluation and any decision as to the proper mitigation measures will be made by the Authorized Officer after consulting with the holder.

IV. NOXIOUS WEEDS

The operator shall be held responsible if noxious weeds become established within the areas of operations. Weed control shall be required on the disturbed land where noxious weeds exist, which includes the roads, pads, associated pipeline corridor, and adjacent land affected by the establishment of weeds due to this action. The operator shall consult with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policies.

V. SPECIAL REQUIREMENT(S)

Watershed:

The entire well pad(s) will be bermed to prevent oil, salt, and other chemical contaminants from leaving the well pad. The compacted berm shall be constructed at a minimum of 12 inches with impermeable mineral material (e.g. caliche). Topsoil shall not be used to construct the berm. No water flow from the uphill side(s) of the pad shall be allowed to enter the well pad. The integrity of the berm shall be maintained around the surfaced pad throughout the life of the well and around the downsized pad after interim reclamation has been completed. Any water erosion that may occur due to the construction of the well pad during the life of the well will be quickly corrected and proper measures will be taken to prevent future erosion. Stockpiling of topsoil is required. The topsoil shall be stockpiled in an appropriate location to prevent loss of soil due to water or wind erosion and not used for berming or erosion control. If fluid collects within the bermed area, the fluid must be vacuumed into a safe container and disposed of properly at a state approved facility.

TANK BATTERY:

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

BURIED/SURFACE LINE(S):

When crossing ephemeral drainages the pipeline(s) will be buried to a minimum depth of 48 inches from the top of pipe to ground level. Erosion control methods such as gabions and/or rock aprons should be placed on both up and downstream sides of the pipeline crossing. In addition, curled (weed free) wood/straw fiber wattles/logs and/or silt fences should be placed on the downstream side for sediment control during construction and maintained until soils and vegetation have stabilized. Water bars should be placed within the ROW to divert and dissipate surface runoff. A pipeline access road is not permitted to cross these ephemeral drainages. Traffic should be diverted to a preexisting route. Additional seeding may be required in floodplains and drainages to restore energy dissipating vegetation.

Prior to pipeline installation/construction a leak detection plan will be developed. The method(s) could incorporate gauges to detect pressure drops, situating valves and lines so they can be visually inspected periodically or installing electronic sensors to alarm when a leak is present. The leak detection plan will incorporate an automatic shut off system that will be installed for proposed pipelines to minimize the effects of an undesirable event.

ELECTRIC LINE(S):

Any water erosion that may occur due to the construction of overhead electric line and during the life of the power line will be quickly corrected and proper measures will be taken to prevent future erosion. A power pole should not be placed in drainages, playas, wetlands, riparian areas, or

floodplains and must span across the features at a distance away that would not promote further erosion.

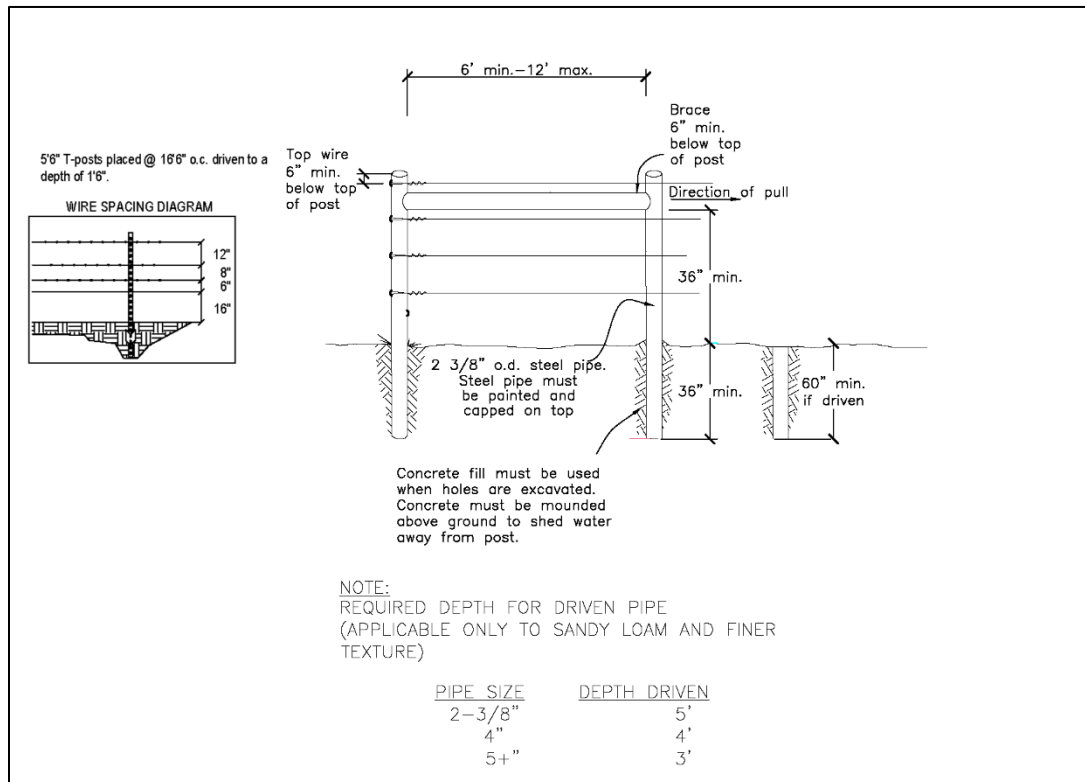
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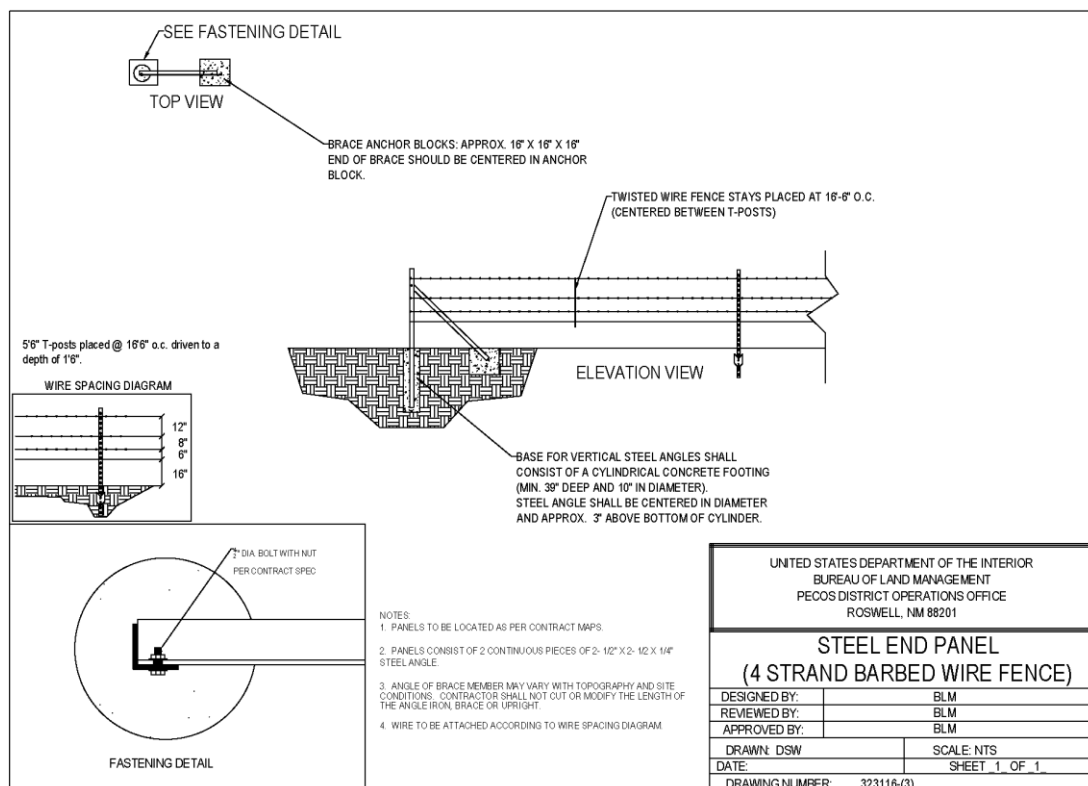
Cattleguards

Where a permanent cattleguard is approved, an appropriately sized cattleguard(s) sufficient to carry out the project shall be installed and maintained at fence crossing(s). Any existing cattleguard(s) on the access road shall be repaired or replaced if they are damaged or have deteriorated beyond practical use. The operator shall be responsible for the condition of the existing cattleguard(s) that are in place and are utilized during lease operations. A gate shall be constructed on one side of the cattleguard and fastened securely to H-braces.

Fence Requirement

Where entry granted across a fence line, the fence must be H-braced or angle iron braced and tied off on both sides of the passageway prior to cutting. Once the work is completed, the fence will be restored to its prior condition, or better. The operator shall consult the private surface landowner or the grazing allotment holder prior to cutting any fence(s).





Livestock Watering Requirement

Structures that provide water to livestock, such as windmills, pipelines, drinking troughs, and earthen reservoirs, will be avoided by moving the proposed action.

Any damage to structures that provide water to livestock throughout the life of the well, caused by operations from the well site, must be immediately corrected by the operator. The operator must notify the BLM office (575-234-5972) and the private surface landowner or the grazing allotment holder if any damage occurs to structures that provide water to livestock.

Timing Limitation Stipulation/Condition of Approval for Lesser Prairie-Chicken:

Oil and gas activities including 3-D geophysical exploration, and drilling will not be allowed in lesser prairie-chicken habitat during the period from March 1st through June 15th annually. During that period, other activities that produce noise or involve human activity, such as the maintenance of oil and gas facilities, geophysical exploration other than 3-D operations, and pipeline, road, and well pad construction, will be allowed except between 3:00 am and 9:00 am. The 3:00 am to 9:00 am restriction will not apply to normal, around-the-clock operations, such as venting, flaring, or pumping, which do not require a human presence during this period. Additionally, no new drilling will be allowed within up to 200 meters of leks known at the time of permitting. Normal vehicle use on existing roads will not be restricted. Exhaust noise from pump jack engines must be muffled or otherwise controlled so as not to exceed 75 db measured at 30 ft. from the source of the noise.

Timing Limitation Exceptions:

The Carlsbad Field Office will publish an annual map of where the LPC timing and noise stipulations and conditions of approval (Limitations) will apply for the identified year (between March 1 and June 15) based on the latest survey information. The LPC Timing Area map will identify areas which are Habitat Areas (HA), Isolated Population Area (IPA), and Primary

Population Area (PPA). The LPC Timing Area map will also have an area in red crosshatch. The red crosshatch area is the only area where an operator is required to submit a request for exception to the LPC Limitations. If an operator is operating outside the red crosshatch area, the LPC Limitations do not apply for that year and an exception to LPC Limitations is not required.

Ground-level Abandoned Well Marker to avoid raptor perching:

Upon the plugging and subsequent abandonment of the well, the well marker will be installed at ground level on a plate containing the pertinent information for the plugged well. For more installation details, contact the Carlsbad Field Office at 575-234-5972.

VRM IV:

Above-ground structures including meter housing that are not subject to safety requirements are painted a flat non-reflective paint color, Carlsbad Canyon from the BLM Standard Environmental Color Chart (CC-001: June 2008).

Short-term mitigation measures include painting all above-ground structures that are not subject to safety requirements (including meter housing) Carlsbad Canyon, which is a flat non-reflective paint color listed in the BLM Standard Environmental Color Chart (CC-001: June 2013). Long-term mitigation measures include the removal of wells and associated infrastructure following abandonment (end of cost-effective production). Previously impacted areas will be reclaimed by removing structures and caliche pads, returning disturbed areas to natural grade, and revegetating with an approved BLM seed mixture; thereby eliminating visual impacts.

VI. CONSTRUCTION

A. NOTIFICATION

The BLM shall administer compliance and monitor construction of the access road and well pad. Notify the Carlsbad Field Office at (575) 234-5909 at least 3 working days prior to commencing construction of the access road and/or well pad.

When construction operations are being conducted on this well, the operator shall have the approved APD and Conditions of Approval (COA) on the well site and they shall be made available upon request by the Authorized Officer.

B. TOPSOIL

The operator shall strip the top portion of the soil (root zone) from the entire well pad area and stockpile the topsoil along the edge of the well pad as depicted in the APD. The root zone is typically six (6) inches in depth. All the stockpiled topsoil will be redistributed over the interim reclamation areas. Topsoil shall not be used for berming the pad or facilities. For final reclamation, the topsoil shall be spread over the entire pad area for seeding preparation.

Other subsoil (below six inches) stockpiles must be completely segregated from the topsoil stockpile. Large rocks or subsoil clods (not evident in the surrounding terrain) must be buried within the approved area for interim and final reclamation.

C. CLOSED LOOP SYSTEM

Tanks are required for drilling operations: No Pits.

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

D. FEDERAL MINERAL MATERIALS PIT

Payment shall be made to the BLM prior to removal of any federal mineral materials. Call the Carlsbad Field Office at (575) 234-5972.

E. WELL PAD SURFACING

Surfacing of the well pad is not required.

If the operator elects to surface the well pad, the surfacing material may be required to be removed at the time of reclamation. The well pad shall be constructed in a manner which creates the smallest possible surface disturbance, consistent with safety and operational needs.

F. EXCLOSURE FENCING (CELLARS & PITS)

Exclosure Fencing

The operator will install and maintain exclosure fencing for all open well cellars to prevent access to public, livestock, and large forms of wildlife before and after drilling operations until the pit is free of fluids and the operator initiates backfilling. (For examples of exclosure fencing design, refer to BLM's Oil and Gas Gold Book, Exclosure Fence Illustrations, Figure 1, Page 18.)

G. ON LEASE ACCESS ROADS

Road Width

The access road shall have a driving surface that creates the smallest possible surface disturbance and does not exceed fourteen (14) feet in width. The maximum width of surface disturbance, when constructing the access road, shall not exceed twenty-five (25) feet.

Surfacing

Surfacing material is not required on the new access road driving surface. If the operator elects to surface the new access road or pad, the surfacing material may be required to be removed at the time of reclamation.

Where possible, no improvements should be made on the unsurfaced access road other than to remove vegetation as necessary, road irregularities, safety issues, or to fill low areas that may sustain standing water.

The Authorized Officer reserves the right to require surfacing of any portion of the access road at any time deemed necessary. Surfacing may be required in the event the road deteriorates, erodes, road traffic increases, or it is determined to be beneficial for future field development. The surfacing depth and type of material will be determined at the time of notification.

Crowning

Crowning shall be done on the access road driving surface. The road crown shall have a grade of approximately 2% (i.e., a 1" crown on a 14' wide road). The road shall conform to Figure 1; cross section and plans for typical road construction.

Ditching

Ditching shall be required on both sides of the road.

Turnouts

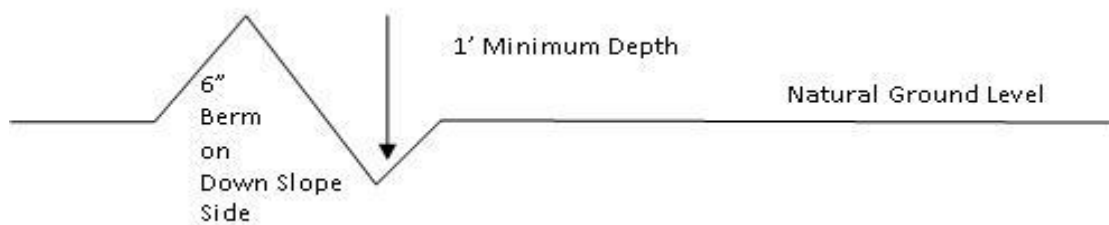
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall conform to Figure 1; cross section and plans for typical road construction.

Drainage

Drainage control systems shall be constructed on the entire length of road (e.g. ditches, sidehill outsloping and insloping, lead-off ditches, culvert installation, and low water crossings).

A typical lead-off ditch has a minimum depth of 1 foot below and a berm of 6 inches above natural ground level. The berm shall be on the down-slope side of the lead-off ditch.

Cross Section of a Typical Lead-off Ditch



All lead-off ditches shall be graded to drain water with a 1 percent minimum to 3 percent maximum ditch slope. The spacing interval are variable for lead-off ditches and shall be determined according to the formula for spacing intervals of lead-off ditches, but may be amended depending upon existing soil types and centerline road slope (in %);

Formula for Spacing Interval of Lead-off Ditches

Example - On a 4% road slope that is 400 feet long, the water flow shall drain water into a lead-off ditch. Spacing interval shall be determined by the following formula:

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

Cattle guards

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

Fence Requirement

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

Public Access

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

Construction Steps

1. Salvage topsoil
2. Construct road

3. Redistribute topsoil
4. Revegetate slopes

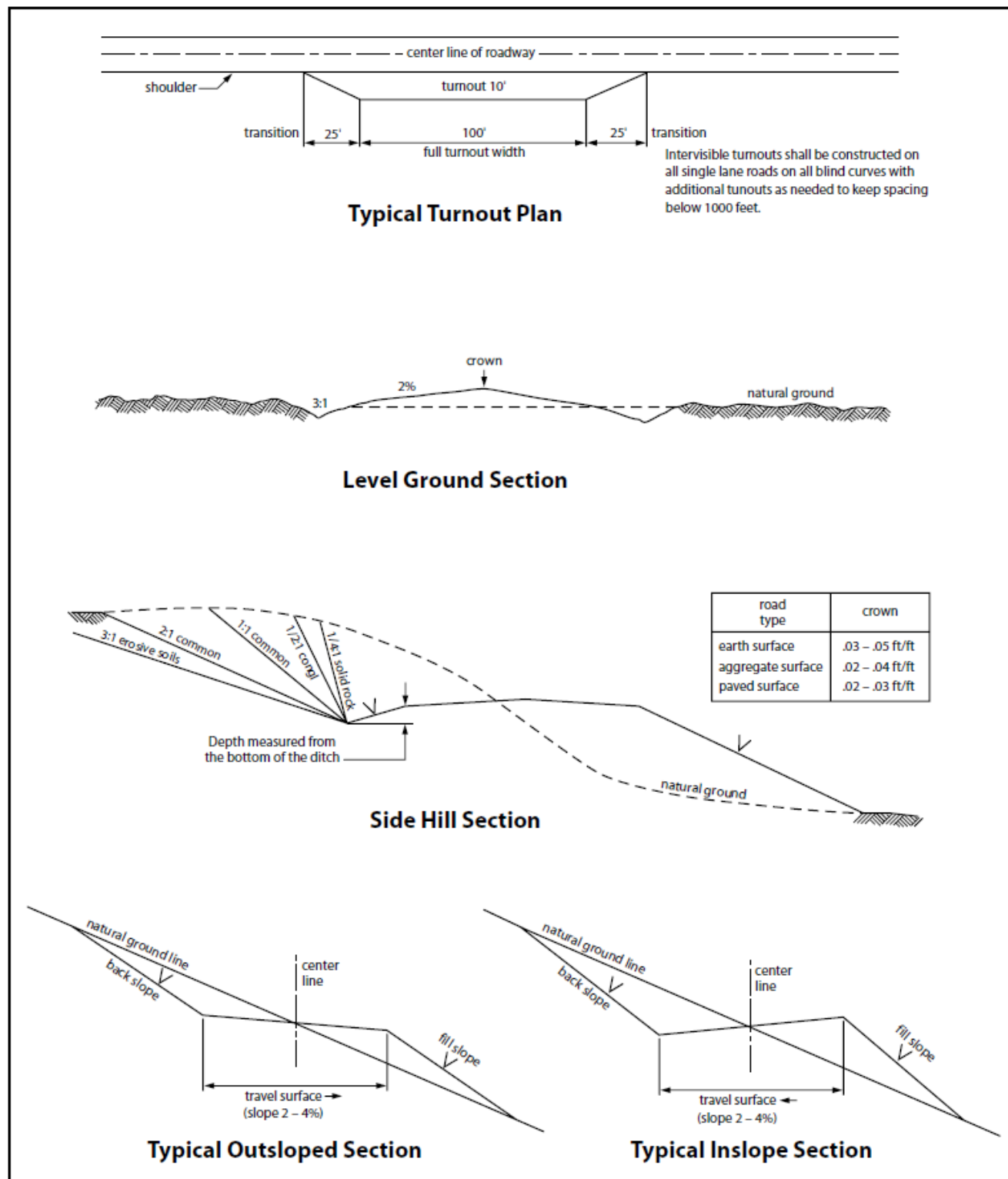


Figure 1. Cross-sections and plans for typical road sections representative of BLM resource or FS local and higher-class roads.

VII. PRODUCTION (POST DRILLING)

A. WELL STRUCTURES & FACILITIES

Placement of Production Facilities

Production facilities should be placed on the well pad to allow for maximum interim recontouring and revegetation of the well location.

Exclosure Netting (Open-top Tanks)

Immediately following active drilling or completion operations, the operator will take actions necessary to prevent wildlife and livestock access, including avian wildlife, to all open-topped tanks that contain or have the potential to contain salinity sufficient to cause harm to wildlife or livestock, hydrocarbons, or Resource Conservation and Recovery Act of 1976-exempt hazardous substances. At a minimum, the operator will net, screen, or cover open-topped tanks to exclude wildlife and livestock and prevent mortality. If the operator uses netting, the operator will cover and secure the open portion of the tank to prevent wildlife entry. The operator will net, screen, or cover the tanks until the operator removes the tanks from the location or the tanks no longer contain substances that could be harmful to wildlife or livestock. Use a maximum netting mesh size of 1 ½ inches. The netting must not be in contact with fluids and must not have holes or gaps.

Chemical and Fuel Secondary Containment and Exclosure Screening

The operator will prevent all hazardous, poisonous, flammable, and toxic substances from coming into contact with soil and water. At a minimum, the operator will install and maintain an impervious secondary containment system for any tank or barrel containing hazardous, poisonous, flammable, or toxic substances sufficient to contain the contents of the tank or barrel and any drips, leaks, and anticipated precipitation. The operator will dispose of fluids within the containment system that do not meet applicable state or U. S. Environmental Protection Agency livestock water standards in accordance with state law; the operator must not drain the fluids to the soil or ground. The operator will design, construct, and maintain all secondary containment systems to prevent wildlife and livestock exposure to harmful substances. At a minimum, the operator will install effective wildlife and livestock exclosure systems such as fencing, netting, expanded metal mesh, lids, and grate covers. Use a maximum netting mesh size of 1 ½ inches.

Open-Vent Exhaust Stack Exclosures

The operator will construct, modify, equip, and maintain all open-vent exhaust stacks on production equipment to prevent birds and bats from entering, and to discourage perching, roosting, and nesting. (*Recommended exclosure structures on open-vent exhaust stacks are in the shape of a cone.*) Production equipment includes, but may not be limited to, tanks, heater-treaters, separators, dehydrators, flare stacks, in-line units, and compressor mufflers.

Containment Structures

Proposed production facilities such as storage tanks and other vessels will have a secondary containment structure that is constructed to hold the capacity of 1.5 times the largest tank, plus freeboard to account for precipitation, unless more stringent protective requirements are deemed necessary.

Painting Requirement

All above-ground structures including meter housing that are not subject to safety requirements shall be painted a flat non-reflective paint color, **Shale Green** from the BLM Standard Environmental Color Chart (CC-001: June 2008).

B. PIPELINES

- The BLM, Carlsbad Field Office, will be informed immediately if any subsurface drainage channels, passages, or voids are intersected by trenching, and no pipe will be laid in the trench at that point until clearance has been issued by the Authorized Officer.
- If a void is encountered alignments may be rerouted to avoid the karst feature and lessen; the potential of subsidence or collapse of karst features, buildup of toxic or combustible gas, or other possible impacts to cave and karst resources from the buried pipeline.
- Special restoration stipulations or realignment may be required at such intersections, if any.
- A leak detection plan **will be submitted to the BLM Carlsbad Field Office for approval** prior to pipeline installation. The method could incorporate gauges to detect pressure drops, siting valves and lines so they can be visually inspected periodically or installing electronic sensors to alarm when a leak is present. The leak detection plan will incorporate an automatic shut off system that will be installed for proposed pipelines to minimize the effects of an undesirable event.
- Regular monitoring is required to quickly identify leaks for their immediate and proper treatment.
- All spills or leaks will be reported to the BLM immediately for their immediate and proper treatment.

BURIED PIPELINE STIPULATIONS

A copy of the application (Grant, APD, or Sundry Notice) and attachments, including conditions of approval, survey plat and/or map, will be on location during construction. BLM personnel may request to you a copy of your permit during construction to ensure compliance with all stipulations.

Holder agrees to comply with the following stipulations to the satisfaction of the Authorized Officer:

1. The Holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant.
2. The Holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976 as amended, 15 USC 2601 et seq. (1982) with regards to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant. (See 40 CFR Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation, and Liability Act, section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the authorized officer concurrent with the filing of the reports to the involved Federal agency or State government.
3. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C.

9601, et seq. or the Resource Conservation and Recovery Act, 42 U.S.C.6901, et seq.) on the Right-of-Way (unless the release or threatened release is wholly unrelated to the Right-of-Way holder's activity on the Right-of-Way), or resulting from the activity of the Right-of-Way holder on the Right-of-Way. This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.

4. If, during any phase of the construction, operation, maintenance, or termination of the pipeline, any oil or other pollutant should be discharged from the pipeline system, impacting Federal lands, the control and total removal, disposal, and cleaning up of such oil or other pollutant, wherever found, shall be the responsibility of holder, regardless of fault. Upon failure of holder to control, dispose of, or clean up such discharge on or affecting Federal lands, or to repair all damages resulting therefrom, on the Federal lands, the Authorized Officer may take such measures as he deems necessary to control and clean up the discharge and restore the area, including where appropriate, the aquatic environment and fish and wildlife habitats, at the full expense of the holder. Such action by the Authorized Officer shall not relieve holder of any responsibility as provided herein.

5. All construction and maintenance activity will be confined to the authorized right-of-way.

6. The pipeline will be buried with a minimum cover of 36 inches between the top of the pipe and ground level.

7. The maximum allowable disturbance for construction in this right-of-way will be 30 feet:

- Blading of vegetation within the right-of-way will be allowed: maximum width of blading operations will not exceed 20 feet. The trench is included in this area. (*Blading is defined as the complete removal of brush and ground vegetation.*)
- Clearing of brush species within the right-of-way will be allowed: maximum width of clearing operations will not exceed 30 feet. The trench and bladed area are included in this area. (*Clearing is defined as the removal of brush while leaving ground vegetation (grasses, weeds, etc.) intact. Clearing is best accomplished by holding the blade 4 to 6 inches above the ground surface.*)
- The remaining area of the right-of-way (if any) shall only be disturbed by compressing the vegetation. (*Compressing can be caused by vehicle tires, placement of equipment, etc.*)

8. The holder shall stockpile an adequate amount of topsoil where blading is allowed. The topsoil to be stripped is approximately 6 inches in depth. The topsoil will be segregated from other spoil piles from trench construction. The topsoil will be evenly distributed over the bladed area for the preparation of seeding.

9. The holder shall minimize disturbance to existing fences and other improvements on public lands. The holder is required to promptly repair improvements to at least their former state. Functional use of these improvements will be maintained at all times. The holder will contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting of the fence. No permanent gates will be allowed unless approved by the Authorized Officer.

10. Vegetation, soil, and rocks left as a result of construction or maintenance activity will be randomly scattered on this right-of-way and will not be left in rows, piles, or berms, unless otherwise approved by the Authorized Officer. The entire right-of-way shall be recontoured to match the surrounding landscape. The backfilled soil shall be compacted and a 6 inch berm will be left over the ditch line to allow for settling back to grade.

11. In those areas where erosion control structures are required to stabilize soil conditions, the holder will install such structures as are suitable for the specific soil conditions being encountered and which are in accordance with sound resource management practices.

12. The holder will reseed all disturbed areas. Seeding will be done according to the attached seeding requirements, using the following seed mix.

☐ Seed Mixture 1

☒ Seed Mixture 2

☐ Seed Mixture 2/LPC

☐ Seed Mixture 3

☐ Seed Mixture 4

☐ Seed Mixture Aplomado Falcon Mixture

13. All above-ground structures not subject to safety requirements shall be painted by the holder to blend with the natural color of the landscape. The paint used shall be color which simulates "Standard Environmental Colors" – **Shale Green**, Munsell Soil Color No. 5Y 4/2.

14. The pipeline will be identified by signs at the point of origin and completion of the right-of-way and at all road crossings. At a minimum, signs will state the holder's name, BLM serial number, and the product being transported. All signs and information thereon will be posted in a permanent, conspicuous manner, and will be maintained in a legible condition for the life of the pipeline.

15. The holder shall not use the pipeline route as a road for purposes other than routine maintenance as determined necessary by the Authorized Officer in consultation with the holder before maintenance begins. The holder will take whatever steps are necessary to ensure that the pipeline route is not used as a roadway. As determined necessary during the life of the pipeline, the Authorized Officer may ask the holder to construct temporary deterrence structures.

16. The proponent has contributed funds commensurate to the undertaking into an account for offsite mitigation. Participation in the PA serves as mitigation for the effects of this project on cultural resources. If any human skeletal remains, funerary objects, sacred objects, or objects of cultural patrimony are discovered at any time during construction, all construction activities shall halt and the BLM will be notified as soon as possible within 24 hours. Work shall not resume until a Notice to Proceed is issued by the BLM. See Stipulation 17 for more information.

If the proposed project is split between a Class III inventory and a Permian Basin Programmatic Agreement contribution, the portion of the project covered under Class III inventory should default to the first paragraph stipulations.

17. The holder is hereby obligated to comply with procedures established in the Native American Graves Protection and Repatriation Act (NAGPRA) to protect such cultural items as human remains, associated funerary objects, sacred objects, and objects of cultural patrimony discovered inadvertently during the course of project implementation. In the event that any of the cultural items listed above are discovered during the course of project work, the proponent shall immediately halt the disturbance and contact the BLM within 24 hours for instructions. The proponent or initiator of any project shall be held responsible for protecting, evaluating, reporting, excavating, treating, and disposing of these cultural items according to the procedures established by the BLM in consultation with Indian Tribes."

18. Any paleontological resource (historic or prehistoric site or object) discovered by the holder, or any person working on the holder's behalf, on public or Federal land shall be immediately reported to the Authorized Officer. The holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery will be made by the Authorized Officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to the proper mitigation measures will be made by the Authorized Officer after consulting with the holder.

19. The operator shall be held responsible if noxious weeds become established within the areas of operations. Weed control shall be required on the disturbed land where noxious weeds exist, which includes associated roads, pipeline corridor and adjacent land affected by the establishment of weeds due to this action. The operator shall consult with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policies.

20. Escape Ramps - The operator will construct and maintain pipeline/utility trenches [that are not otherwise fenced, screened, or netted] to prevent livestock, wildlife, and humans from becoming entrapped. At a minimum, the operator will construct and maintain escape ramps, ladders, or other methods of avian and terrestrial wildlife escape in the trenches according to the following criteria:

- a. Any trench left open for eight (8) hours or less is not required to have escape ramps; however, before the trench is backfilled, the contractor/operator shall inspect the trench for wildlife, remove all trapped wildlife, and release them at least 100 yards from the trench.
- b. For trenches left open for eight (8) hours or more, earthen escape ramps (built at no more than a 30 degree slope and spaced no more than 500 feet apart) shall be placed in the trench.

STANDARD STIPULATIONS FOR SURFACE INSTALLED PIPELINES

A copy of the Grant and attachments, including stipulations, survey plat(s) and/or map(s), shall be on location during construction. BLM personnel may request to review a copy of your permit during construction to ensure compliance with all stipulations.

Holder agrees to comply with the following stipulations to the satisfaction of the Authorized Officer:

1. Holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant.
2. Holder shall comply with all applicable Federal laws and regulations existing or hereafter

enacted or promulgated. In any event, Holder shall comply with the Toxic Substances Control Act of 1976 as amended, 15 USC § 2601 *et seq.* (1982) with regard to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant (see 40 CFR, Part 702-799 and in particular, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193). Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR, Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation, and Liability Act, section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the Authorized Officer concurrent with the filing of the reports to the involved Federal agency or State government.

3. Holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. § 9601, *et seq.* or the Resource Conservation and Recovery Act, 42 U.S.C. 6901, *et seq.*) on the Right-of-Way (unless the release or threatened release is wholly unrelated to activity of the Right-of-Way Holder's activity on the Right-of-Way), or resulting from the activity of the Right-of-Way Holder on the Right-of-Way. This provision applies without regard to whether a release is caused by Holder, its agent, or unrelated third parties.

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

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

c. Acts of God.

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

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

5. If, during any phase of the construction, operation, maintenance, or termination of the pipeline, any oil, salt water, or other pollutant should be discharged from the pipeline system, impacting Federal lands, the control and total removal, disposal, and cleaning up of such oil, salt water, or other pollutant, wherever found, shall be the responsibility of Holder, regardless of fault. Upon failure of Holder to control, dispose of, or clean up such discharge on or affecting Federal lands, or to repair all damages resulting therefrom, on the Federal lands, the Authorized Officer may take such measures as he/she deems necessary to control and clean up the discharge and restore the area, including, where appropriate, the aquatic environment and fish and wildlife habitats, at the full expense of Holder. Such action by the Authorized Officer shall not relieve Holder of any responsibility as provided herein.

6. All construction and maintenance activity shall be confined to the authorized right-of-way width of 30 feet. If the pipeline route follows an existing road or buried pipeline right-of-way, the

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

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

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

9. The pipeline shall be buried with a minimum of 6 inches under all roads, "two-tracks," and trails. Burial of the pipe will continue for 20 feet on each side of each crossing. The condition of the road, upon completion of construction, shall be returned to at least its former state with no bumps or dips remaining in the road surface.

10. The holder shall minimize disturbance to existing fences and other improvements on public lands. The holder is required to promptly repair improvements to at least their former state. Functional use of these improvements will be maintained at all times. The holder will contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting of the fence. No permanent gates will be allowed unless approved by the Authorized Officer.

11. In those areas where erosion control structures are required to stabilize soil conditions, the holder will install such structures as are suitable for the specific soil conditions being encountered and which are in accordance with sound resource management practices.

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

13. The pipeline will be identified by signs at the point of origin and completion of the right-of-way and at all road crossings. At a minimum, signs will state the holder's name, BLM serial number, and the product being transported. Signs will be maintained in a legible condition for the life of the pipeline.

14. The holder shall not use the pipeline route as a road for purposes other than routine maintenance as determined necessary by the Authorized Officer in consultation with the holder. The holder will take whatever steps are necessary to ensure that the pipeline route is not used as a roadway.

15. The proponent has contributed funds commensurate to the undertaking into an account for offsite mitigation. Participation in the PA serves as mitigation for the effects of this project on cultural resources. If any human skeletal remains, funerary objects, sacred objects, or objects of cultural patrimony are discovered at any time during construction, all construction activities shall halt and the BLM will be notified as soon as possible within 24 hours. Work shall not resume until a Notice to Proceed is issued by the BLM. See Stipulation 16 for more information.

If the proposed project is split between a Class III inventory and a Permian Basin Programmatic Agreement contribution, the portion of the project covered under Class III inventory should default to the first paragraph stipulations.

16. The holder is hereby obligated to comply with procedures established in the Native American

Graves Protection and Repatriation Act (NAGPRA) to protect such cultural items as human remains, associated funerary objects, sacred objects, and objects of cultural patrimony discovered inadvertently during the course of project implementation. In the event that any of the cultural items listed above are discovered during the course of project work, the proponent shall immediately halt the disturbance and contact the BLM within 24 hours for instructions. The proponent or initiator of any project shall be held responsible for protecting, evaluating, reporting, excavating, treating, and disposing of these cultural items according to the procedures established by the BLM in consultation with Indian Tribes."

17. Any paleontological resource (historic or prehistoric site or object) discovered by the holder, or any person working on the holder's behalf, on public or Federal land shall be immediately reported to the Authorized Officer. The holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery will be made by the Authorized Officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to the proper mitigation measures will be made by the Authorized Officer after consulting with the holder.

18. The operator shall be held responsible if noxious weeds become established within the areas of operations. Weed control shall be required on the disturbed land where noxious weeds exist, which includes the roads, powerline corridor, and adjacent land affected by the establishment of weeds due to this action. The operator shall consult with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policies.

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

C. ELECTRIC LINES

- Smaller powerlines will be routed around sinkholes and other karst features to avoid or lessen the possibility of encountering near surface voids and to minimize changes to runoff or possible leaks and spills from entering karst systems. Larger powerlines will adjust their pole spacing to avoid cave and karst features.
- The BLM, Carlsbad Field Office, will be informed immediately if any subsurface drainage channels, cave passages, or voids are penetrated during construction.
- No further construction will be done until clearance has been issued by the Authorized Officer.
- Special restoration stipulations or realignment may be required.

STANDARD STIPULATIONS FOR OVERHEAD ELECTRIC DISTRIBUTION LINES

A copy of the grant and attachments, including stipulations, survey plat and/or map, will be on location during construction. BLM personnel may request to you a copy of your permit during construction to ensure compliance with all stipulations.

Holder agrees to comply with the following stipulations to the satisfaction of the Authorized Officer:

1. The holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant.
2. The holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976 as amended, 15 USC 2601 et seq. (1982) with regards to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-

way grant. (See 40 CFR, Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR, Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation, and Liability Act, section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the authorized officer concurrent with the filing of the reports to the involved Federal agency or State government.

3. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et seq. or the Resource Conservation and Recovery Act, 42 U.S.C. 6901, et seq.) on the Right-of-Way (unless the release or threatened release is wholly unrelated to the Right-of-Way holder's activity on the Right-of-Way), or resulting from the activity of the Right-of-Way holder on the Right-of-Way. This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.

4. There will be no clearing or blading of the right-of-way unless otherwise agreed to in writing by the Authorized Officer.

5. Power lines shall be constructed and designed in accordance to standards outlined in "Suggested Practices for Avian Protection on Power lines: The State of the Art in 2006" Edison Electric Institute, APLIC, and the California Energy Commission 2006 . The holder shall assume the burden and expense of proving that pole designs not shown in the above publication deter raptor perching, roosting, and nesting. Such proof shall be provided by a raptor expert approved by the Authorized Officer. The BLM reserves the right to require modification or additions to all powerline structures placed on this right-of-way, should they be necessary to ensure the safety of large perching birds. Such modifications and/or additions shall be made by the holder without liability or expense to the United States.

Raptor deterrence will consist of but not limited to the following: triangle perch discouragers shall be placed on each side of the cross arms and a nonconductive perching deterrence shall be placed on all vertical poles that extend past the cross arms.

6. The holder shall minimize disturbance to existing fences and other improvements on public lands. The holder is required to promptly repair improvements to at least their former state. Functional use of these improvements will be maintained at all times. The holder will contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting the fence. No permanent gates will be allowed unless approved by the Authorized Officer.

7. The BLM serial number assigned to this authorization shall be posted in a permanent, conspicuous manner where the power line crosses roads and at all serviced facilities. Numbers will be at least two inches high and will be affixed to the pole nearest the road crossing and at the facilities served.

8. Upon cancellation, relinquishment, or expiration of this grant, the holder shall comply with those abandonment procedures as prescribed by the Authorized Officer.

9. All surface structures (poles, lines, transformers, etc.) shall be removed within 180 days of abandonment, relinquishment, or termination of use of the serviced facility or facilities or within 180 days of abandonment, relinquishment, cancellation, or expiration of this grant, whichever comes first. This will not apply where the power line extends service to an active, adjoining facility or facilities.

10. The proponent has contributed funds commensurate to the undertaking into an account for offsite mitigation. Participation in the PA serves as mitigation for the effects of this project on cultural resources. If any human skeletal remains, funerary objects, sacred objects, or objects of cultural patrimony are discovered at any time during construction, all construction activities shall halt and the BLM will be notified as soon as possible within 24 hours. Work shall not resume until a Notice to Proceed is issued by the BLM. See Stipulation 11 for more information.

If the proposed project is split between a Class III inventory and a Permian Basin Programmatic Agreement contribution, the portion of the project covered under Class III inventory should default to the first paragraph stipulations.

11. The holder is hereby obligated to comply with procedures established in the Native American Graves Protection and Repatriation Act (NAGPRA) to protect such cultural items as human remains, associated funerary objects, sacred objects, and objects of cultural patrimony discovered inadvertently during the course of project implementation. In the event that any of the cultural items listed above are discovered during the course of project work, the proponent shall immediately halt the disturbance and contact the BLM within 24 hours for instructions. The proponent or initiator of any project shall be held responsible for protecting, evaluating, reporting, excavating, treating, and disposing of these cultural items according to the procedures established by the BLM in consultation with Indian Tribes."

12. Any paleontological resource (historic or prehistoric site or object) discovered by the holder, or any person working on the holder's behalf, on public or Federal land shall be immediately reported to the Authorized Officer. The holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery will be made by the Authorized Officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to the proper mitigation measures will be made by the Authorized Officer after consulting with the holder.

13. Special Stipulations:

For reclamation remove poles, lines, transformer, etc. and dispose of properly.
Fill in any holes from the poles removed.

VIII. INTERIM RECLAMATION

During the life of the development, all disturbed areas not needed for active support of production operations should undergo interim reclamation in order to minimize the environmental impacts of development on other resources and uses.

Within six (6) months of well completion, operators should work with BLM surface management specialists (Jim Amos: 575-234-5909) to devise the best strategies to reduce the size of the location. Interim reclamation should allow for remedial well operations, as well as safe and efficient removal of oil and gas.

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

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

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

IX. FINAL ABANDONMENT & RECLAMATION

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

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

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

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

Ground-level Abandoned Well Marker to avoid raptor perching: Upon the plugging and subsequent abandonment of the well, the well marker will be installed at ground level on a plate containing the pertinent information for the plugged well.

Seed Mixture 2, for Sandy Sites

The holder shall seed all disturbed areas with the seed mixture listed below. The seed mixture shall be planted in the amounts specified in pounds of pure live seed (PLS)* per acre. There shall be no primary or secondary noxious weeds in the seed mixture. Seed will be tested and the viability testing of seed will be done in accordance with State law (s) and within nine (9) months prior to purchase. Commercial seed will be either certified or registered seed. The seed container will be tagged in accordance with State law(s) and available for inspection by the authorized officer.

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

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

Species

	<u>lb/acre</u>
Sand dropseed (<i>Sporobolus cryptandrus</i>)	1.0
Sand love grass (<i>Eragrostis trichodes</i>)	1.0
Plains bristlegrass (<i>Setaria macrostachya</i>)	2.0

*Pounds of pure live seed:

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

PECOS DISTRICT DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Franklin Mountain Energy LLC
LEASE NO.:	NMNM12280
LOCATION:	Section 35, T.25 S., R.35 E., NMPPM
COUNTY:	Lea County, New Mexico
Sundry ID:	N/A

WELL NAME & NO.:	Tatanka Fed Com 602H
SURFACE HOLE FOOTAGE:	998'/S & 1807'/W
BOTTOM HOLE FOOTAGE:	150'/S & 2080'/W

WELL NAME & NO.:	Tatanka Fed Com 603H
SURFACE HOLE FOOTAGE:	998'/S & 1907'/W
BOTTOM HOLE FOOTAGE:	150'/S & 2100'/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

A Hydrogen Sulfide (H2S) Drilling Plan shall be activated 500 feet prior to drilling into the **Strawn** formation. As a result, the Hydrogen Sulfide area must meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, please provide measured values and formations to the BLM.

B. CASING

1. The **13-3/8** inch surface casing shall be set at approximately **1110 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:

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

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 **200 feet** into previous casing string. Operator shall provide method of verification.

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.

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 **10,000 (10M) psi. Variance is approved to use a 5000 (5M) Annular which shall be tested to 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 88312

CONDITIONS

Operator: Franklin Mountain Energy LLC 44 Cook Street Denver, CO 80206	OGRID: 373910
	Action Number: 88312
	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	3/16/2022
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	3/16/2022
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	3/16/2022
pkautz	Cement is required to circulate on both surface and intermediate1 strings of casing	3/16/2022