

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. 30-025-49869
3a. Address	3b. Phone No. (include area code)	10. Field and Pool, or Exploratory [97088] XXXXXXXXXXXXXX
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At surface At proposed prod. zone		11. Sec., T. R. M. or Blk. and Survey or Area
14. Distance in miles and direction from nearest town or post office*		12. County or Parish 13. State
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)	16. No of acres in lease	17. Spacing Unit dedicated to this well
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.	19. Proposed Depth	20. BLM/BIA Bond No. in file
21. Elevations (Show whether DF, KDB, RT, GL, etc.)	22. Approximate date work will start*	23. Estimated duration
24. Attachments		

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

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

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

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

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

NGMP Rec 03/08/2022

SL

(Continued on page 2)



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 a new 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.

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 30-025-49869	² Pool Code 97088	³ Pool Name WC-025 G-08 S2535340;BONE SPRING
⁴ Property Code 326125	⁵ Property Name TATANKA FED COM	⁶ Well Number 501H
⁷ OGRID No. 373910	⁸ Operator Name FRANKLIN MOUNTAIN ENERGY LLC	⁹ Elevation 3121.3'

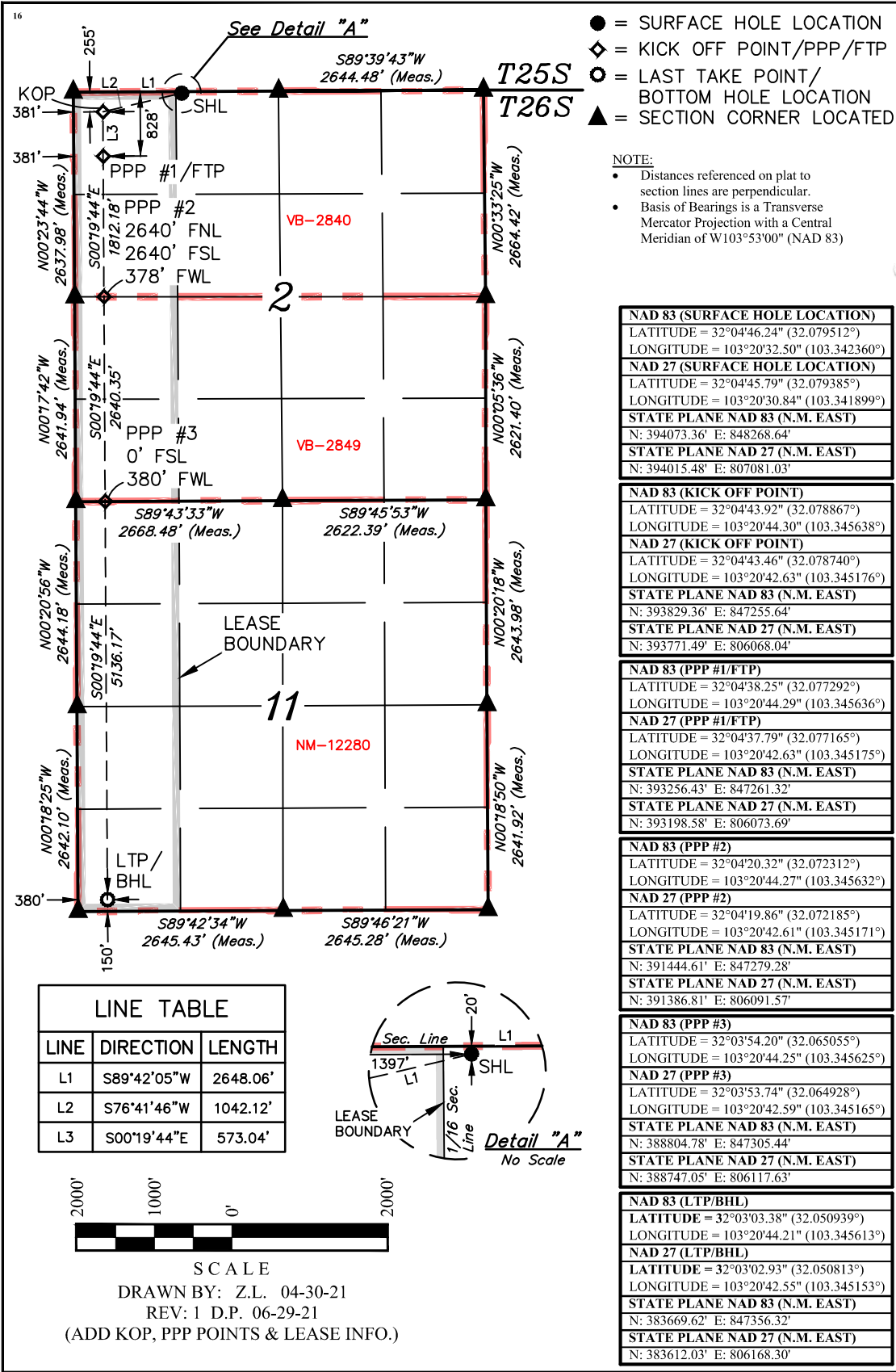
¹⁰ Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
C	2	26S	35E		20	NORTH	1397	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
M	11	26S	35E		150	SOUTH	380	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: 7/8/2021

Printed Name: Shelly Albrecht

salbrecht@fmellc.com
E-mail Address

¹⁸ SURVEYOR
CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

APRIL 19, 2021

Date of Survey
Signature and Seal of Professional Surveyor:

PAUL BUCHELE
NEW MEXICO
23782
06-29-21
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

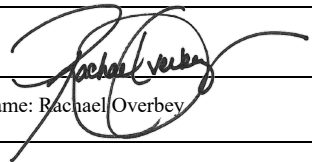
1. If, at any time after Operator submits this Natural Gas Management Plan and before the well is spud:

(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	30-025-49869	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	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	30-025-49869	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	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 501H

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)	3,133'	30'	30'	0	Sand/Gravels/unconsolidated
Rustler	2,305'	858'			Carbonates
Salado	1,921'	1,242'			Salt, Carbonate & Clastics
Base Salt	-453'	3,616'			Shaley Carbonate & Shale
Lamar	-2,024'	5,187'			Carbonate & Clastics
Bell Canyon	-2,118'	5,281'			Sandstone - oil/gas/water
Cherry Canyon	-2,970'	6,133'			Sandstone - oil/gas/water
Brushy Canyon	-4,430'	7,593'			Sand/carb/shales - oil/gas/water
Bone Spring Lime	-5,799'	8,962'			Shale/Carbonates - oil/gas
Avalon	-5,838'	9,001'			Shale/Carbonates - oil/gas
Chert Zone	-6,023'	9,186'			Chert/Carbonate
First Bone Spring Sand	-7,101'	10,264'			Sandstone - oil/gas/water
Second Bone Spring Carbonates	-7,297'	10,460'			Shale/Carbonates - oil/gas
Second Bone Spring Sand	-7,552'	10,715'			Sandstone - oil/gas/water
HZ Target at Landing	-7,607'	10,770'			Overpressure shale/sand- Oil/Gas
Third Bone Spring Carbonates	-8,113'	11,276'			Shale/Carbonates - oil/gas

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

Upper Permian Sands	0- 400'	Fresh Water
Delaware Sands	5,281'	Oil
Bone Spring Sand	10,264'	Oil
Bone Spring Carbonate	11,276'	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	5200	1.77	1.74	2.97	3.38
Intermediate 7 5/8"	29.7	HCP-110	8280	7150	827	Stinger 564	11254	1.18	1.36	1.90	1.30
Long string 5 1/2"	23	P-110	14520	14520	729	Eagle 606 TVD	20841 10770	1.32	1.49	1.26	1.05 1.74

7 5/8" casing will be set at 11,254' MD/10,770' TVD at 90° Inc. Stress calculations on 5 1/2" casing performed assuming 20,841' depth. Actual max vertical depth is 10,770'.



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	5200	1523	0.125pps Poly-E-Flake Lead, 12.8 ppg, Class C 5% Salt,	1.79	9.74	0	154	1% CaCl ₂ , 0.125pps Celo-Flake Tail, 14.8 ppg, Class C,	1.33	6.37	4850	100%
Int2	8.75	7.625	11254	325	0.125 pps Poly-E-Flake, 3lb/sk Kol-Seal Lite Fill, 9.5 ppg, Class C 3lb/sk Bridgemaker Gel, 5% Salt, 5pps LCM, 0.25pps Cello-Flake	2.13	5.97	4200	94	NeoCem 14.8 ppg, Class C 0.25 pps Cello-Flake, 2% CaCl ₂	1.33	6.29	10254	50%
Prod	6.75	5.5	20841	789	Tail, 14.5 ppg, Gas Migration Control	1.34	6.22	10254						20%

5. Minimum Specifications for Pressure Control:

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

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

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

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

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



6. Types and characteristics of the proposed mud system:

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

Depth	Type	Weight (ppg)	Viscosity	Water Loss
0 – 1,300'	Fresh - Gel	8.6-8.8	28-34	N/c
1,300' – 11,254'	Brine	8.8-10.2	28-34	N/c
11,254' – 20,841' 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 10,770' TVD (deepest point of the well) is 170F with an estimated maximum bottom-hole pressure (BHP) at the same point of 6,720 psig (based on 12 ppg MW). Hydrogen sulfate may be present in the area. All necessary precautions will be taken before drilling operations commence. See Hydrogen Sulfide Plan below:

10. Hydrogen Sulfide Plan:

A. All personnel shall receive proper awareness H₂S training.

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

C. Required Emergency Equipment

a. Well Control Equipment

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

ii. Choke manifold with a remotely operated hydraulic choke.

iii. Mud/gas separator

b. Protective equipment for essential personnel

i. Breathing Apparatus

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

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



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

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

11. Anticipated starting date and duration of operations:

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

**12. Disposal/environmental concerns:**

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

13. Wellhead:

A multi-bowl wellhead system will be utilized.

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

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

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

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

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

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

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

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

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

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

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

Franklin Mountain Energy

Project: Lea County, NM (NAD83)
Site: Tatanka Fed Com
Well: Tatanka Fed Com 501H
Wellbore: OH
Design: Plan #1



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

Magnetic Field
Strength: 47430.8nT
Dip Angle: 59.80°
Date: 6/24/2021
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

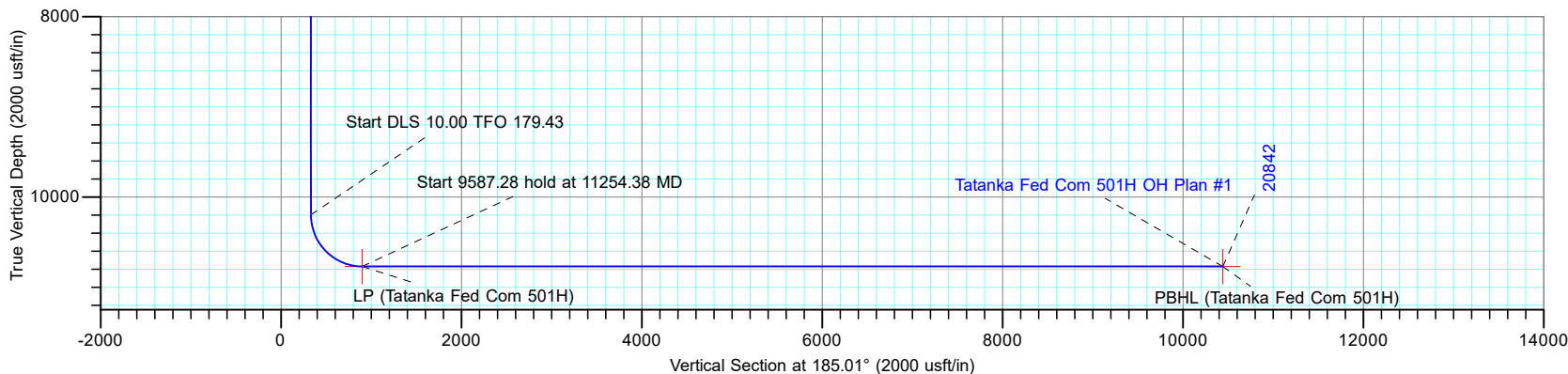
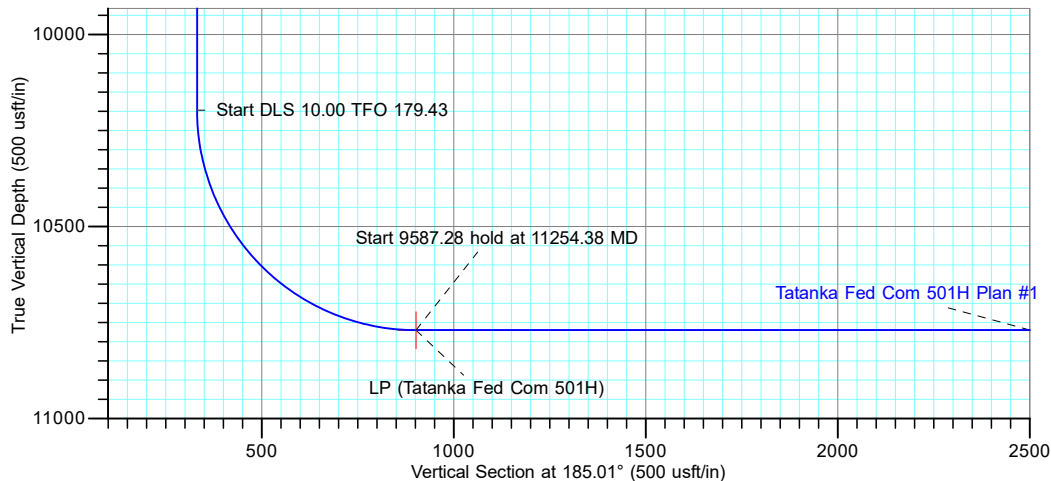
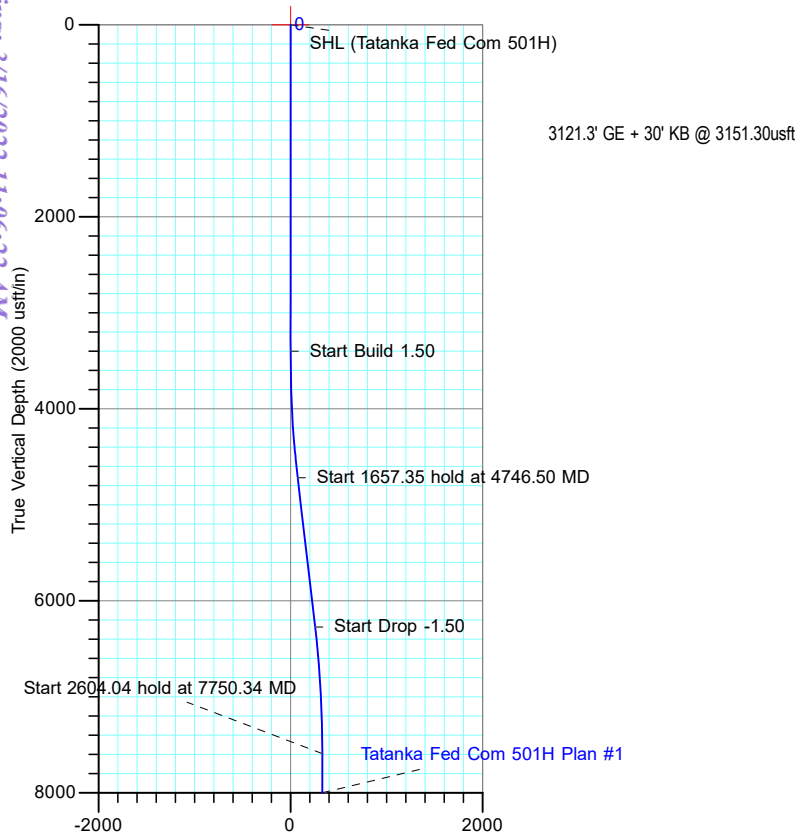


SECTION DETAILS

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	
3400.00	0.00	0.00	3400.00	0.00	0.00	0.00	0.00	0.00	Start Build 1.50
4746.50	20.20	256.46	4718.78	-55.00	-228.35	1.50	256.46	74.74	Start 1657.35 hold at 4746.50 MD
6403.84	20.20	256.46	6274.22	-189.00	-784.65	0.00	0.00	256.82	Start Drop -1.50
7750.34	0.00	0.00	7593.00	-244.00	-1013.00	1.50	180.00	331.56	Start 2604.04 hold at 7750.34 MD
10354.38	0.00	0.00	10197.04	-244.00	-1013.00	0.00	0.00	331.56	Start DLS 10.00 TFO 179.43
11254.38	90.00	179.43	10770.00	-816.93	-1007.32	10.00	179.43	901.80	Start 9587.28 hold at 11254.38 MD
20841.66	90.00	179.43	10770.00	-10403.74	-912.32	0.00	0.00	10443.66	TD at 20841.66

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Latitude	Longitude
LP (Tatanka Fed Com 501H)	10770.00	-816.93	-1007.32	32.077292	-103.345636
PBHL (Tatanka Fed Com 501H)	10770.00	-10403.74	-912.32	32.050939	-103.345613
SHL (Tatanka Fed Com 501H)	0.00	0.00	0.00	32.079512	-103.342360



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

Plan: Plan #1 (Tatanka Fed Com 501H/OH)
Tatanka Fed Com
Created By: Dustin Ault Date: 21:48, June 24 2021
Date: _____
Approved: _____ Date: _____

Franklin Mountain Energy

Project: Lea County, NM (NAD83)
Site: Tatanka Fed Com
Well: Tatanka Fed Com 501H
Wellbore: OH
Design: Plan #1



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

Magnetic Field
Strength: 47430.8nT
Dip Angle: 59.80°
Date: 6/24/2021
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

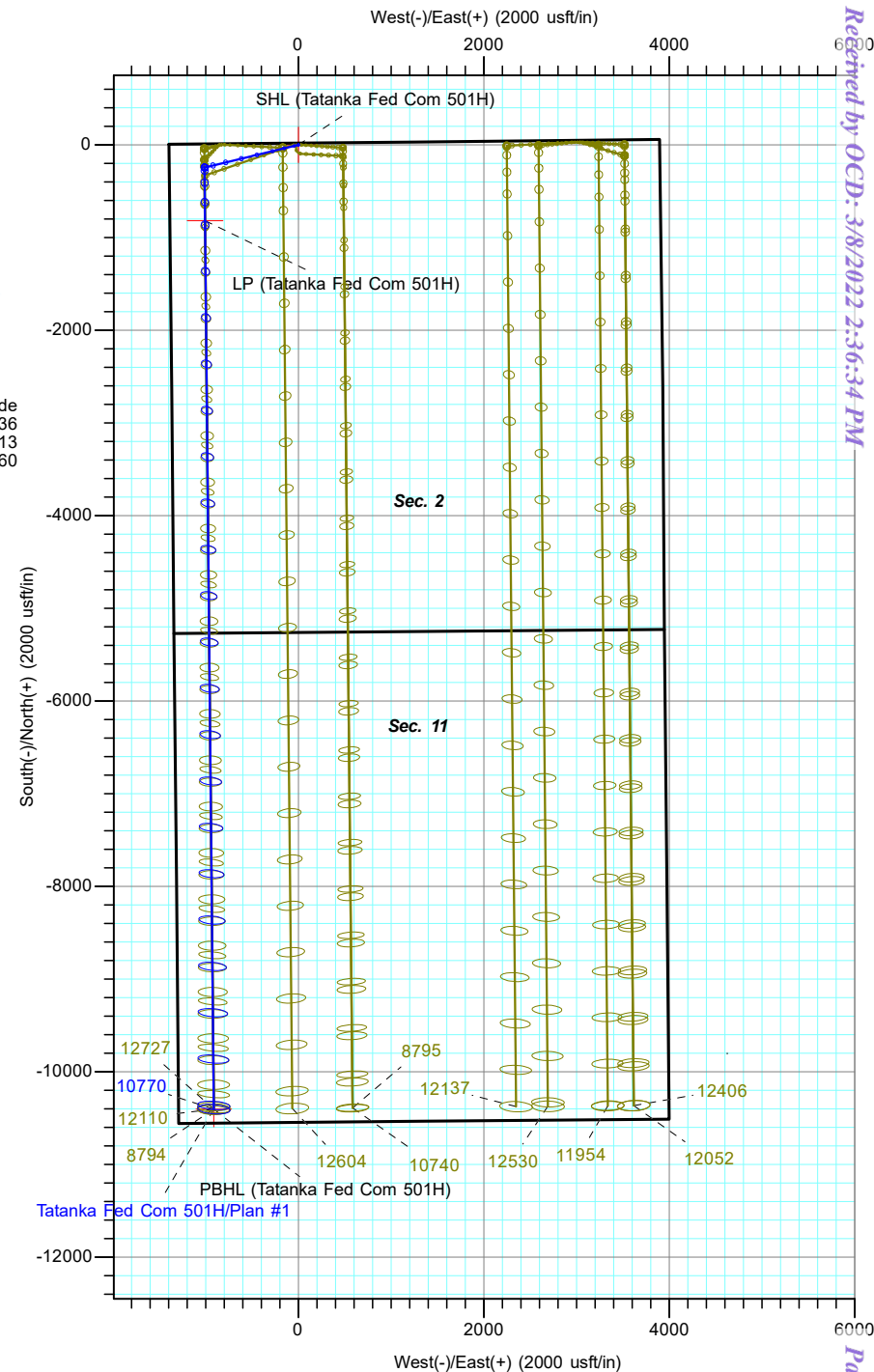
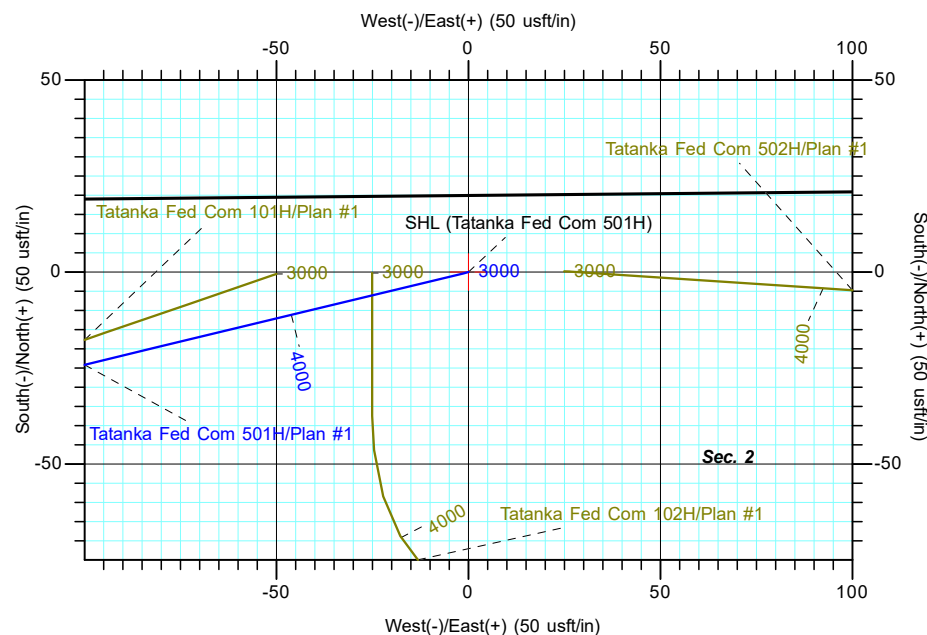


DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
LP (Tatanka Fed Com 501H)	10770.00	-816.93	-1007.32	393256.43	847261.32	32.077292	-103.345636
PBHL (Tatanka Fed Com 501H)	10770.00	-10403.74	-912.32	383669.62	847356.32	32.050939	-103.345613
SHL (Tatanka Fed Com 501H)	0.00	0.00	0.00	394073.36	848268.64	32.079512	-103.342360

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	
3400.00	0.00	0.00	3400.00	0.00	0.00	0.00	0.00	0.00	Start Build 1.50
4746.50	20.20	256.46	4718.78	-55.00	-228.35	1.50	256.46	74.74	Start 1657.35 hold at 4746.50 MD
6403.84	20.20	256.46	6274.22	-189.00	-784.65	0.00	0.00	256.82	Start Drop -1.50
7750.34	0.00	0.00	7593.00	-244.00	-1013.00	1.50	180.00	331.56	Start 2604.04 hold at 7750.34 MD
10354.38	0.00	0.00	10197.04	-244.00	-1013.00	0.00	0.00	331.56	Start DLS 10.00 TFO 179.43
11254.38	90.00	179.43	10770.00	-816.93	-1007.32	10.00	179.43	901.80	Start 9587.28 hold at 11254.38 MD
20841.66	90.00	179.43	10770.00	-10403.74	-912.32	0.00	0.00	10443.66	TD at 20841.66



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

Plan: Plan #1 (Tatanka Fed Com 501H/OH)
Tatanka Fed Com
Created By: Dustin Ault
Date: 21:50, June 24 2021
Approved: _____
Date: _____



Franklin Mountain Energy

Lea County, NM (NAD83)

Tatanka Fed Com

Tatanka Fed Com 501H

OH

Plan: Plan #1

Standard Planning Report

24 June, 2021





Total Directional Services Planning Report



Database:	EDM 5000.15 Single User Db	Local Co-ordinate Reference:	Well Tatanka Fed Com 501H
Company:	Franklin Mountain Energy	TVD Reference:	3121.3' GE + 30' KB @ 3151.30usft
Project:	Lea County, NM (NAD83)	MD Reference:	3121.3' GE + 30' KB @ 3151.30usft
Site:	Tatanka Fed Com	North Reference:	Grid
Well:	Tatanka Fed Com 501H	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 501H					
Well Position	+N/-S	-2.00 usft	Northing:	394,073.36 usft	Latitude:	32.079512
	+E/-W	851.90 usft	Easting:	848,268.64 usft	Longitude:	-103.342361
Position Uncertainty		0.00 usft	Wellhead Elevation:		Ground Level:	3,121.30 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2020	6/24/2021	6.42	59.80	47,430.75915458

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	185.01

Plan Survey Tool Program	Date	6/24/2021		
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	20,840.74 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	
3,400.00	0.00	0.00	3,400.00	0.00	0.00	0.00	0.00	0.00	0.00	
4,746.50	20.20	256.46	4,718.78	-55.00	-228.35	1.50	1.50	0.00	256.46	
6,403.84	20.20	256.46	6,274.22	-189.00	-784.65	0.00	0.00	0.00	0.00	
7,750.34	0.00	0.00	7,593.00	-244.00	-1,013.00	1.50	-1.50	0.00	180.00	
10,354.38	0.00	0.00	10,197.04	-244.00	-1,013.00	0.00	0.00	0.00	0.00	
11,254.38	90.00	179.43	10,770.00	-816.93	-1,007.32	10.00	10.00	19.94	179.43	
20,841.66	90.00	179.43	10,770.00	-10,403.74	-912.32	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 501H
Company:	Franklin Mountain Energy	TVD Reference:	3121.3' GE + 30' KB @ 3151.30usft
Project:	Lea County, NM (NAD83)	MD Reference:	3121.3' GE + 30' KB @ 3151.30usft
Site:	Tatanka Fed Com	North Reference:	Grid
Well:	Tatanka Fed Com 501H	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 501H)									
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
3,300.00	0.00	0.00	3,300.00	0.00	0.00	0.00	0.00	0.00	0.00
3,400.00	0.00	0.00	3,400.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 1.50									
3,500.00	1.50	256.46	3,499.99	-0.31	-1.27	0.42	1.50	1.50	0.00
3,600.00	3.00	256.46	3,599.91	-1.23	-5.09	1.67	1.50	1.50	0.00
3,700.00	4.50	256.46	3,699.69	-2.76	-11.45	3.75	1.50	1.50	0.00
3,800.00	6.00	256.46	3,799.27	-4.90	-20.34	6.66	1.50	1.50	0.00
3,900.00	7.50	256.46	3,898.57	-7.65	-31.77	10.40	1.50	1.50	0.00
4,000.00	9.00	256.46	3,997.54	-11.01	-45.72	14.96	1.50	1.50	0.00
4,100.00	10.50	256.46	4,096.09	-14.98	-62.18	20.35	1.50	1.50	0.00
4,200.00	12.00	256.46	4,194.16	-19.55	-81.15	26.56	1.50	1.50	0.00
4,300.00	13.50	256.46	4,291.70	-24.71	-102.60	33.58	1.50	1.50	0.00
4,400.00	15.00	256.46	4,388.62	-30.48	-126.53	41.42	1.50	1.50	0.00
4,500.00	16.50	256.46	4,484.86	-36.83	-152.92	50.05	1.50	1.50	0.00
4,600.00	18.00	256.46	4,580.36	-43.78	-181.75	59.49	1.50	1.50	0.00
4,700.00	19.50	256.46	4,675.05	-51.31	-213.00	69.72	1.50	1.50	0.00
4,746.50	20.20	256.46	4,718.78	-55.00	-228.35	74.74	1.50	1.50	0.00
Start 1657.35 hold at 4746.50 MD									
4,800.00	20.20	256.46	4,769.00	-59.33	-246.31	80.62	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 501H
Company:	Franklin Mountain Energy	TVD Reference:	3121.3' GE + 30' KB @ 3151.30usft
Project:	Lea County, NM (NAD83)	MD Reference:	3121.3' GE + 30' KB @ 3151.30usft
Site:	Tatanka Fed Com	North Reference:	Grid
Well:	Tatanka Fed Com 501H	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	20.20	256.46	4,862.85	-67.41	-279.87	91.60	0.00	0.00	0.00
5,000.00	20.20	256.46	4,956.70	-75.50	-313.44	102.59	0.00	0.00	0.00
5,100.00	20.20	256.46	5,050.55	-83.58	-347.01	113.58	0.00	0.00	0.00
5,200.00	20.20	256.46	5,144.40	-91.67	-380.57	124.56	0.00	0.00	0.00
5,300.00	20.20	256.46	5,238.25	-99.75	-414.14	135.55	0.00	0.00	0.00
5,400.00	20.20	256.46	5,332.10	-107.84	-447.70	146.53	0.00	0.00	0.00
5,500.00	20.20	256.46	5,425.95	-115.92	-481.27	157.52	0.00	0.00	0.00
5,600.00	20.20	256.46	5,519.80	-124.01	-514.83	168.51	0.00	0.00	0.00
5,700.00	20.20	256.46	5,613.65	-132.09	-548.40	179.49	0.00	0.00	0.00
5,800.00	20.20	256.46	5,707.50	-140.18	-581.97	190.48	0.00	0.00	0.00
5,900.00	20.20	256.46	5,801.36	-148.26	-615.53	201.47	0.00	0.00	0.00
6,000.00	20.20	256.46	5,895.21	-156.35	-649.10	212.45	0.00	0.00	0.00
6,100.00	20.20	256.46	5,989.06	-164.43	-682.66	223.44	0.00	0.00	0.00
6,200.00	20.20	256.46	6,082.91	-172.52	-716.23	234.42	0.00	0.00	0.00
6,300.00	20.20	256.46	6,176.76	-180.60	-749.79	245.41	0.00	0.00	0.00
6,403.84	20.20	256.46	6,274.22	-189.00	-784.65	256.82	0.00	0.00	0.00
Start Drop -1.50									
6,500.00	18.76	256.46	6,364.87	-196.50	-815.82	267.02	1.50	-1.50	0.00
6,600.00	17.26	256.46	6,459.97	-203.74	-845.87	276.86	1.50	-1.50	0.00
6,700.00	15.76	256.46	6,555.85	-210.40	-873.49	285.90	1.50	-1.50	0.00
6,800.00	14.26	256.46	6,652.43	-216.46	-898.66	294.13	1.50	-1.50	0.00
6,900.00	12.76	256.46	6,749.66	-221.93	-921.36	301.57	1.50	-1.50	0.00
7,000.00	11.26	256.46	6,847.47	-226.80	-941.58	308.18	1.50	-1.50	0.00
7,100.00	9.76	256.46	6,945.80	-231.07	-959.31	313.98	1.50	-1.50	0.00
7,200.00	8.26	256.46	7,044.56	-234.73	-974.52	318.97	1.50	-1.50	0.00
7,300.00	6.76	256.46	7,143.70	-237.79	-987.22	323.12	1.50	-1.50	0.00
7,400.00	5.26	256.46	7,243.15	-240.24	-997.39	326.45	1.50	-1.50	0.00
7,500.00	3.76	256.46	7,342.84	-242.08	-1,005.03	328.95	1.50	-1.50	0.00
7,600.00	2.26	256.46	7,442.70	-243.31	-1,010.12	330.62	1.50	-1.50	0.00
7,700.00	0.76	256.46	7,542.66	-243.92	-1,012.68	331.45	1.50	-1.50	0.00
7,750.34	0.00	0.00	7,593.00	-244.00	-1,013.00	331.56	1.50	-1.50	0.00
Start 2604.04 hold at 7750.34 MD									
7,800.00	0.00	0.00	7,642.66	-244.00	-1,013.00	331.56	0.00	0.00	0.00
7,900.00	0.00	0.00	7,742.66	-244.00	-1,013.00	331.56	0.00	0.00	0.00
8,000.00	0.00	0.00	7,842.66	-244.00	-1,013.00	331.56	0.00	0.00	0.00
8,100.00	0.00	0.00	7,942.66	-244.00	-1,013.00	331.56	0.00	0.00	0.00
8,200.00	0.00	0.00	8,042.66	-244.00	-1,013.00	331.56	0.00	0.00	0.00
8,300.00	0.00	0.00	8,142.66	-244.00	-1,013.00	331.56	0.00	0.00	0.00
8,400.00	0.00	0.00	8,242.66	-244.00	-1,013.00	331.56	0.00	0.00	0.00
8,500.00	0.00	0.00	8,342.66	-244.00	-1,013.00	331.56	0.00	0.00	0.00
8,600.00	0.00	0.00	8,442.66	-244.00	-1,013.00	331.56	0.00	0.00	0.00
8,700.00	0.00	0.00	8,542.66	-244.00	-1,013.00	331.56	0.00	0.00	0.00
8,800.00	0.00	0.00	8,642.66	-244.00	-1,013.00	331.56	0.00	0.00	0.00
8,900.00	0.00	0.00	8,742.66	-244.00	-1,013.00	331.56	0.00	0.00	0.00
9,000.00	0.00	0.00	8,842.66	-244.00	-1,013.00	331.56	0.00	0.00	0.00
9,100.00	0.00	0.00	8,942.66	-244.00	-1,013.00	331.56	0.00	0.00	0.00
9,200.00	0.00	0.00	9,042.66	-244.00	-1,013.00	331.56	0.00	0.00	0.00
9,300.00	0.00	0.00	9,142.66	-244.00	-1,013.00	331.56	0.00	0.00	0.00
9,400.00	0.00	0.00	9,242.66	-244.00	-1,013.00	331.56	0.00	0.00	0.00
9,500.00	0.00	0.00	9,342.66	-244.00	-1,013.00	331.56	0.00	0.00	0.00
9,600.00	0.00	0.00	9,442.66	-244.00	-1,013.00	331.56	0.00	0.00	0.00
9,700.00	0.00	0.00	9,542.66	-244.00	-1,013.00	331.56	0.00	0.00	0.00
9,800.00	0.00	0.00	9,642.66	-244.00	-1,013.00	331.56	0.00	0.00	0.00
9,900.00	0.00	0.00	9,742.66	-244.00	-1,013.00	331.56	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 501H
Company:	Franklin Mountain Energy	TVD Reference:	3121.3' GE + 30' KB @ 3151.30usft
Project:	Lea County, NM (NAD83)	MD Reference:	3121.3' GE + 30' KB @ 3151.30usft
Site:	Tatanka Fed Com	North Reference:	Grid
Well:	Tatanka Fed Com 501H	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)
10,000.00	0.00	0.00	9,842.66	-244.00	-1,013.00	331.56	0.00	0.00	0.00
10,100.00	0.00	0.00	9,942.66	-244.00	-1,013.00	331.56	0.00	0.00	0.00
10,200.00	0.00	0.00	10,042.66	-244.00	-1,013.00	331.56	0.00	0.00	0.00
10,300.00	0.00	0.00	10,142.66	-244.00	-1,013.00	331.56	0.00	0.00	0.00
10,354.38	0.00	0.00	10,197.04	-244.00	-1,013.00	331.56	0.00	0.00	0.00
Start DLS 10.00 TFO 179.43									
10,400.00	4.56	179.43	10,242.61	-245.82	-1,012.98	333.37	10.00	10.00	0.00
10,450.00	9.56	179.43	10,292.22	-251.96	-1,012.92	339.48	10.00	10.00	0.00
10,500.00	14.56	179.43	10,341.10	-262.40	-1,012.82	349.88	10.00	10.00	0.00
10,550.00	19.56	179.43	10,388.88	-277.07	-1,012.67	364.47	10.00	10.00	0.00
10,600.00	24.56	179.43	10,435.20	-295.84	-1,012.49	383.16	10.00	10.00	0.00
10,650.00	29.56	179.43	10,479.72	-318.58	-1,012.26	405.79	10.00	10.00	0.00
10,700.00	34.56	179.43	10,522.08	-345.11	-1,012.00	432.20	10.00	10.00	0.00
10,750.00	39.56	179.43	10,561.96	-375.24	-1,011.70	462.18	10.00	10.00	0.00
10,800.00	44.56	179.43	10,599.07	-408.72	-1,011.37	495.51	10.00	10.00	0.00
10,850.00	49.56	179.43	10,633.12	-445.31	-1,011.01	531.93	10.00	10.00	0.00
10,900.00	54.56	179.43	10,663.85	-484.73	-1,010.61	571.16	10.00	10.00	0.00
10,950.00	59.56	179.43	10,691.03	-526.68	-1,010.20	612.91	10.00	10.00	0.00
11,000.00	64.56	179.43	10,714.45	-570.84	-1,009.76	656.86	10.00	10.00	0.00
11,050.00	69.56	179.43	10,733.93	-616.86	-1,009.31	702.68	10.00	10.00	0.00
11,100.00	74.56	179.43	10,749.32	-664.42	-1,008.83	750.00	10.00	10.00	0.00
11,150.00	79.56	179.43	10,760.52	-713.13	-1,008.35	798.49	10.00	10.00	0.00
11,200.00	84.56	179.43	10,767.42	-762.63	-1,007.86	847.76	10.00	10.00	0.00
11,254.38	90.00	179.43	10,770.00	-816.93	-1,007.32	901.80	10.00	10.00	0.00
Start 9587.28 hold at 11254.38 MD - LP (Tatanka Fed Com 501H)									
11,300.00	90.00	179.43	10,770.00	-862.55	-1,006.87	947.20	0.00	0.00	0.00
11,400.00	90.00	179.43	10,770.00	-962.54	-1,005.88	1,046.73	0.00	0.00	0.00
11,500.00	90.00	179.43	10,770.00	-1,062.54	-1,004.89	1,146.26	0.00	0.00	0.00
11,600.00	90.00	179.43	10,770.00	-1,162.53	-1,003.90	1,245.78	0.00	0.00	0.00
11,700.00	90.00	179.43	10,770.00	-1,262.53	-1,002.91	1,345.31	0.00	0.00	0.00
11,800.00	90.00	179.43	10,770.00	-1,362.52	-1,001.92	1,444.84	0.00	0.00	0.00
11,900.00	90.00	179.43	10,770.00	-1,462.52	-1,000.92	1,544.36	0.00	0.00	0.00
12,000.00	90.00	179.43	10,770.00	-1,562.51	-999.93	1,643.89	0.00	0.00	0.00
12,100.00	90.00	179.43	10,770.00	-1,662.51	-998.94	1,743.41	0.00	0.00	0.00
12,200.00	90.00	179.43	10,770.00	-1,762.50	-997.95	1,842.94	0.00	0.00	0.00
12,300.00	90.00	179.43	10,770.00	-1,862.50	-996.96	1,942.47	0.00	0.00	0.00
12,400.00	90.00	179.43	10,770.00	-1,962.49	-995.97	2,041.99	0.00	0.00	0.00
12,500.00	90.00	179.43	10,770.00	-2,062.49	-994.98	2,141.52	0.00	0.00	0.00
12,600.00	90.00	179.43	10,770.00	-2,162.48	-993.99	2,241.05	0.00	0.00	0.00
12,700.00	90.00	179.43	10,770.00	-2,262.48	-993.00	2,340.57	0.00	0.00	0.00
12,800.00	90.00	179.43	10,770.00	-2,362.47	-992.01	2,440.10	0.00	0.00	0.00
12,900.00	90.00	179.43	10,770.00	-2,462.47	-991.02	2,539.63	0.00	0.00	0.00
13,000.00	90.00	179.43	10,770.00	-2,562.46	-990.02	2,639.15	0.00	0.00	0.00
13,100.00	90.00	179.43	10,770.00	-2,662.46	-989.03	2,738.68	0.00	0.00	0.00
13,200.00	90.00	179.43	10,770.00	-2,762.45	-988.04	2,838.20	0.00	0.00	0.00
13,300.00	90.00	179.43	10,770.00	-2,862.45	-987.05	2,937.73	0.00	0.00	0.00
13,400.00	90.00	179.43	10,770.00	-2,962.44	-986.06	3,037.26	0.00	0.00	0.00
13,500.00	90.00	179.43	10,770.00	-3,062.44	-985.07	3,136.78	0.00	0.00	0.00
13,600.00	90.00	179.43	10,770.00	-3,162.43	-984.08	3,236.31	0.00	0.00	0.00
13,700.00	90.00	179.43	10,770.00	-3,262.43	-983.09	3,335.84	0.00	0.00	0.00
13,800.00	90.00	179.43	10,770.00	-3,362.42	-982.10	3,435.36	0.00	0.00	0.00
13,900.00	90.00	179.43	10,770.00	-3,462.42	-981.11	3,534.89	0.00	0.00	0.00
14,000.00	90.00	179.43	10,770.00	-3,562.41	-980.12	3,634.41	0.00	0.00	0.00
14,100.00	90.00	179.43	10,770.00	-3,662.41	-979.12	3,733.94	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 501H
Company:	Franklin Mountain Energy	TVD Reference:	3121.3' GE + 30' KB @ 3151.30usft
Project:	Lea County, NM (NAD83)	MD Reference:	3121.3' GE + 30' KB @ 3151.30usft
Site:	Tatanka Fed Com	North Reference:	Grid
Well:	Tatanka Fed Com 501H	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)
14,200.00	90.00	179.43	10,770.00	-3,762.40	-978.13	3,833.47	0.00	0.00	0.00
14,300.00	90.00	179.43	10,770.00	-3,862.40	-977.14	3,932.99	0.00	0.00	0.00
14,400.00	90.00	179.43	10,770.00	-3,962.39	-976.15	4,032.52	0.00	0.00	0.00
14,500.00	90.00	179.43	10,770.00	-4,062.39	-975.16	4,132.05	0.00	0.00	0.00
14,600.00	90.00	179.43	10,770.00	-4,162.38	-974.17	4,231.57	0.00	0.00	0.00
14,700.00	90.00	179.43	10,770.00	-4,262.38	-973.18	4,331.10	0.00	0.00	0.00
14,800.00	90.00	179.43	10,770.00	-4,362.37	-972.19	4,430.62	0.00	0.00	0.00
14,900.00	90.00	179.43	10,770.00	-4,462.37	-971.20	4,530.15	0.00	0.00	0.00
15,000.00	90.00	179.43	10,770.00	-4,562.36	-970.21	4,629.68	0.00	0.00	0.00
15,100.00	90.00	179.43	10,770.00	-4,662.36	-969.22	4,729.20	0.00	0.00	0.00
15,200.00	90.00	179.43	10,770.00	-4,762.35	-968.22	4,828.73	0.00	0.00	0.00
15,300.00	90.00	179.43	10,770.00	-4,862.35	-967.23	4,928.26	0.00	0.00	0.00
15,400.00	90.00	179.43	10,770.00	-4,962.34	-966.24	5,027.78	0.00	0.00	0.00
15,500.00	90.00	179.43	10,770.00	-5,062.34	-965.25	5,127.31	0.00	0.00	0.00
15,600.00	90.00	179.43	10,770.00	-5,162.33	-964.26	5,226.83	0.00	0.00	0.00
15,700.00	90.00	179.43	10,770.00	-5,262.33	-963.27	5,326.36	0.00	0.00	0.00
15,800.00	90.00	179.43	10,770.00	-5,362.32	-962.28	5,425.89	0.00	0.00	0.00
15,900.00	90.00	179.43	10,770.00	-5,462.32	-961.29	5,525.41	0.00	0.00	0.00
16,000.00	90.00	179.43	10,770.00	-5,562.32	-960.30	5,624.94	0.00	0.00	0.00
16,100.00	90.00	179.43	10,770.00	-5,662.31	-959.31	5,724.47	0.00	0.00	0.00
16,200.00	90.00	179.43	10,770.00	-5,762.31	-958.32	5,823.99	0.00	0.00	0.00
16,300.00	90.00	179.43	10,770.00	-5,862.30	-957.32	5,923.52	0.00	0.00	0.00
16,400.00	90.00	179.43	10,770.00	-5,962.30	-956.33	6,023.04	0.00	0.00	0.00
16,500.00	90.00	179.43	10,770.00	-6,062.29	-955.34	6,122.57	0.00	0.00	0.00
16,600.00	90.00	179.43	10,770.00	-6,162.29	-954.35	6,222.10	0.00	0.00	0.00
16,700.00	90.00	179.43	10,770.00	-6,262.28	-953.36	6,321.62	0.00	0.00	0.00
16,800.00	90.00	179.43	10,770.00	-6,362.28	-952.37	6,421.15	0.00	0.00	0.00
16,900.00	90.00	179.43	10,770.00	-6,462.27	-951.38	6,520.68	0.00	0.00	0.00
17,000.00	90.00	179.43	10,770.00	-6,562.27	-950.39	6,620.20	0.00	0.00	0.00
17,100.00	90.00	179.43	10,770.00	-6,662.26	-949.40	6,719.73	0.00	0.00	0.00
17,200.00	90.00	179.43	10,770.00	-6,762.26	-948.41	6,819.25	0.00	0.00	0.00
17,300.00	90.00	179.43	10,770.00	-6,862.25	-947.42	6,918.78	0.00	0.00	0.00
17,400.00	90.00	179.43	10,770.00	-6,962.25	-946.42	7,018.31	0.00	0.00	0.00
17,500.00	90.00	179.43	10,770.00	-7,062.24	-945.43	7,117.83	0.00	0.00	0.00
17,600.00	90.00	179.43	10,770.00	-7,162.24	-944.44	7,217.36	0.00	0.00	0.00
17,700.00	90.00	179.43	10,770.00	-7,262.23	-943.45	7,316.89	0.00	0.00	0.00
17,800.00	90.00	179.43	10,770.00	-7,362.23	-942.46	7,416.41	0.00	0.00	0.00
17,900.00	90.00	179.43	10,770.00	-7,462.22	-941.47	7,515.94	0.00	0.00	0.00
18,000.00	90.00	179.43	10,770.00	-7,562.22	-940.48	7,615.46	0.00	0.00	0.00
18,100.00	90.00	179.43	10,770.00	-7,662.21	-939.49	7,714.99	0.00	0.00	0.00
18,200.00	90.00	179.43	10,770.00	-7,762.21	-938.50	7,814.52	0.00	0.00	0.00
18,300.00	90.00	179.43	10,770.00	-7,862.20	-937.51	7,914.04	0.00	0.00	0.00
18,400.00	90.00	179.43	10,770.00	-7,962.20	-936.51	8,013.57	0.00	0.00	0.00
18,500.00	90.00	179.43	10,770.00	-8,062.19	-935.52	8,113.10	0.00	0.00	0.00
18,600.00	90.00	179.43	10,770.00	-8,162.19	-934.53	8,212.62	0.00	0.00	0.00
18,700.00	90.00	179.43	10,770.00	-8,262.18	-933.54	8,312.15	0.00	0.00	0.00
18,800.00	90.00	179.43	10,770.00	-8,362.18	-932.55	8,411.67	0.00	0.00	0.00
18,900.00	90.00	179.43	10,770.00	-8,462.17	-931.56	8,511.20	0.00	0.00	0.00
19,000.00	90.00	179.43	10,770.00	-8,562.17	-930.57	8,610.73	0.00	0.00	0.00
19,100.00	90.00	179.43	10,770.00	-8,662.16	-929.58	8,710.25	0.00	0.00	0.00
19,200.00	90.00	179.43	10,770.00	-8,762.16	-928.59	8,809.78	0.00	0.00	0.00
19,300.00	90.00	179.43	10,770.00	-8,862.15	-927.60	8,909.31	0.00	0.00	0.00
19,400.00	90.00	179.43	10,770.00	-8,962.15	-926.61	9,008.83	0.00	0.00	0.00
19,500.00	90.00	179.43	10,770.00	-9,062.14	-925.61	9,108.36	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 501H
Company:	Franklin Mountain Energy	TVD Reference:	3121.3' GE + 30' KB @ 3151.30usft
Project:	Lea County, NM (NAD83)	MD Reference:	3121.3' GE + 30' KB @ 3151.30usft
Site:	Tatanka Fed Com	North Reference:	Grid
Well:	Tatanka Fed Com 501H	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)	
19,600.00	90.00	179.43	10,770.00	-9,162.14	-924.62	9,207.88	0.00	0.00	0.00	
19,700.00	90.00	179.43	10,770.00	-9,262.13	-923.63	9,307.41	0.00	0.00	0.00	
19,800.00	90.00	179.43	10,770.00	-9,362.13	-922.64	9,406.94	0.00	0.00	0.00	
19,900.00	90.00	179.43	10,770.00	-9,462.12	-921.65	9,506.46	0.00	0.00	0.00	
20,000.00	90.00	179.43	10,770.00	-9,562.12	-920.66	9,605.99	0.00	0.00	0.00	
20,100.00	90.00	179.43	10,770.00	-9,662.11	-919.67	9,705.52	0.00	0.00	0.00	
20,200.00	90.00	179.43	10,770.00	-9,762.11	-918.68	9,805.04	0.00	0.00	0.00	
20,300.00	90.00	179.43	10,770.00	-9,862.10	-917.69	9,904.57	0.00	0.00	0.00	
20,400.00	90.00	179.43	10,770.00	-9,962.10	-916.70	10,004.09	0.00	0.00	0.00	
20,500.00	90.00	179.43	10,770.00	-10,062.09	-915.71	10,103.62	0.00	0.00	0.00	
20,600.00	90.00	179.43	10,770.00	-10,162.09	-914.71	10,203.15	0.00	0.00	0.00	
20,700.00	90.00	179.43	10,770.00	-10,262.08	-913.72	10,302.67	0.00	0.00	0.00	
20,800.00	90.00	179.43	10,770.00	-10,362.08	-912.73	10,402.20	0.00	0.00	0.00	
20,841.66	90.00	179.43	10,770.00	-10,403.74	-912.32	10,443.67	0.00	0.00	0.00	
TD at 20841.66 - PBHL (Tatanka Fed Com 501H)										

Design Targets										
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
SHL (Tatanka Fed Com : - plan hits target center - Point	0.00	0.00	0.00	0.00	0.00	394,073.36	848,268.64	32.079512	-103.342361	
PBHL (Tatanka Fed Com - plan hits target center - Point	0.00	0.00	10,770.00	-10,403.74	-912.32	383,669.62	847,356.32	32.050940	-103.345613	
LP (Tatanka Fed Com 501H - plan hits target center - Point	0.00	0.01	10,770.00	-816.93	-1,007.32	393,256.43	847,261.32	32.077292	-103.345637	

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
3,400.00	3,400.00	0.00	0.00	Start Build 1.50	
4,746.50	4,718.78	-55.00	-228.35	Start 1657.35 hold at 4746.50 MD	
6,403.84	6,274.22	-189.00	-784.65	Start Drop -1.50	
7,750.34	7,593.00	-244.00	-1,013.00	Start 2604.04 hold at 7750.34 MD	
10,354.38	10,197.04	-244.00	-1,013.00	Start DLS 10.00 TFO 179.43	
11,254.38	10,770.00	-816.93	-1,007.32	Start 9587.28 hold at 11254.38 MD	
20,841.66	10,770.00	-10,403.74	-912.32	TD at 20841.66	



Franklin Mountain Energy

Lea County, NM (NAD83)

Tatanka Fed Com

Tatanka Fed Com 501H

OH

Plan #1

Anticollision Report

24 June, 2021





Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well Tatanka Fed Com 501H
Project:	Lea County, NM (NAD83)	TVD Reference:	3121.3' GE + 30' KB @ 3151.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3121.3' GE + 30' KB @ 3151.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 501H	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	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum ellipse separation of 1,000.00 usft	Error Surface:	Combined Separation
Warning Levels Evaluated at:	2.00 Sigma	Casing Method:	Not applied

Survey Tool Program		Date	6/24/2021		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
0.00	20,840.74	Plan #1 (OH)	OWSG (Rev2) MWD	OWSG MWD - Standard	

Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Tatanka Fed Com						
Tatanka Fed Com 101H - OH - Plan #1	3,116.30	3,117.40	49.99	34.52	3.231	CC
Tatanka Fed Com 101H - OH - Plan #1	6,403.84	6,378.30	68.62	33.24	1.939	ES
Tatanka Fed Com 101H - OH - Plan #1	8,400.00	8,380.42	86.83	39.42	1.831	SF
Tatanka Fed Com 102H - OH - Plan #1	3,116.53	3,116.93	25.00	9.53	1.616	CC
Tatanka Fed Com 102H - OH - Plan #1	3,300.00	3,300.37	25.05	8.66	1.529	ES
Tatanka Fed Com 102H - OH - Plan #1	3,400.00	3,400.20	25.60	8.73	1.518	SF
Tatanka Fed Com 502H - OH - Plan #1	3,200.00	3,199.50	24.99	9.10	1.573	CC, ES, SF
Tatanka Fed Com 601H - OH - Plan #2	7,381.20	7,245.45	82.11	42.11	2.053	CC
Tatanka Fed Com 601H - OH - Plan #2	10,354.38	10,218.06	84.02	30.39	1.567	ES, SF
Tatanka Fed Com 604H - OH - Plan #2	3,400.00	3,371.40	3,010.21	2,993.38	178.811	CC, ES
Tatanka Fed Com 604H - OH - Plan #2	20,841.66	22,050.92	4,411.80	4,170.29	18.267	SF
Tatanka Fed Com 704H - OH - Plan #2	4,180.59	4,735.67	2,865.55	2,843.76	131.515	CC
Tatanka Fed Com 704H - OH - Plan #2	4,200.00	4,755.07	2,865.60	2,843.71	130.940	ES
Tatanka Fed Com 704H - OH - Plan #2	20,841.66	22,293.30	3,535.01	3,300.23	15.057	SF
Tatanka Fed Com 705H - OH - Plan #2	3,300.00	3,270.70	3,035.21	3,018.88	185.913	CC
Tatanka Fed Com 705H - OH - Plan #2	3,400.00	3,340.21	3,035.56	3,018.81	181.205	ES
Tatanka Fed Com 705H - OH - Plan #2	20,841.66	22,053.32	4,708.02	4,467.05	19.538	SF
Tatanka Fed Com 801H - OH - Plan #2	7,157.09	7,021.65	199.00	160.08	5.114	CC
Tatanka Fed Com 801H - OH - Plan #2	10,354.38	10,216.55	204.24	150.42	3.795	ES, SF
Tatanka Fed Com 802H - OH - Plan #2	5,448.05	5,419.95	97.85	69.46	3.446	CC, ES, SF
Tatanka Fed Com 805H - OH - Plan #2	3,805.95	4,085.90	2,961.33	2,941.86	152.141	CC, ES
Tatanka Fed Com 805H - OH - Plan #2	20,841.66	22,639.61	4,011.06	3,780.84	17.423	SF
Tatanka Fed Com 806H - OH - Plan #2	3,200.00	3,168.90	3,060.21	3,044.39	193.507	CC
Tatanka Fed Com 806H - OH - Plan #2	3,300.00	3,238.29	3,060.55	3,044.31	188.445	ES
Tatanka Fed Com 806H - OH - Plan #2	20,841.66	22,518.91	4,816.43	4,579.17	20.301	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		Reference		Offset		Distance		Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
0.00	0.00	1.10	1.10	0.00	0.00	-90.54	-0.47	-49.99	49.99				
100.00	100.00	101.10	101.10	0.13	0.13	-90.54	-0.47	-49.99	49.99	49.81	0.18	277.358	
200.00	200.00	201.10	201.10	0.48	0.49	-90.54	-0.47	-49.99	49.99	49.31	0.69	72.749	

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 501H
Project:	Lea County, NM (NAD83)	TVD Reference:	3121.3' GE + 30' KB @ 3151.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3121.3' GE + 30' KB @ 3151.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 501H	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		
300.00	300.00	301.10	301.10	0.84	0.85	-90.54	-0.47	-49.99	49.99	48.80	1.19	41.865		
400.00	400.00	401.10	401.10	1.20	1.20	-90.54	-0.47	-49.99	49.99	48.29	1.70	29.388		
500.00	500.00	501.10	501.10	1.56	1.56	-90.54	-0.47	-49.99	49.99	47.78	2.21	22.641		
600.00	600.00	601.10	601.10	1.92	1.92	-90.54	-0.47	-49.99	49.99	47.28	2.72	18.413		
700.00	700.00	701.10	701.10	2.28	2.28	-90.54	-0.47	-49.99	49.99	46.77	3.22	15.516		
800.00	800.00	801.10	801.10	2.63	2.64	-90.54	-0.47	-49.99	49.99	46.26	3.73	13.407		
900.00	900.00	901.10	901.10	2.99	3.00	-90.54	-0.47	-49.99	49.99	45.76	4.24	11.802		
1,000.00	1,000.00	1,001.10	1,001.10	3.35	3.36	-90.54	-0.47	-49.99	49.99	45.25	4.74	10.541		
1,100.00	1,100.00	1,101.10	1,101.10	3.71	3.71	-90.54	-0.47	-49.99	49.99	44.74	5.25	9.523		
1,200.00	1,200.00	1,201.10	1,201.10	4.07	4.07	-90.54	-0.47	-49.99	49.99	44.24	5.76	8.684		
1,300.00	1,300.00	1,301.10	1,301.10	4.43	4.43	-90.54	-0.47	-49.99	49.99	43.73	6.26	7.981		
1,400.00	1,400.00	1,401.10	1,401.10	4.79	4.79	-90.54	-0.47	-49.99	49.99	43.22	6.77	7.384		
1,500.00	1,500.00	1,501.10	1,501.10	5.14	5.15	-90.54	-0.47	-49.99	49.99	42.71	7.28	6.869		
1,600.00	1,600.00	1,601.10	1,601.10	5.50	5.51	-90.54	-0.47	-49.99	49.99	42.21	7.78	6.422		
1,700.00	1,700.00	1,701.10	1,701.10	5.86	5.86	-90.54	-0.47	-49.99	49.99	41.70	8.29	6.029		
1,800.00	1,800.00	1,801.10	1,801.10	6.22	6.22	-90.54	-0.47	-49.99	49.99	41.19	8.80	5.682		
1,900.00	1,900.00	1,901.10	1,901.10	6.58	6.58	-90.54	-0.47	-49.99	49.99	40.69	9.31	5.372		
2,000.00	2,000.00	2,001.10	2,001.10	6.94	6.94	-90.54	-0.47	-49.99	49.99	40.18	9.81	5.095		
2,100.00	2,100.00	2,101.10	2,101.10	7.29	7.30	-90.54	-0.47	-49.99	49.99	39.67	10.32	4.845		
2,200.00	2,200.00	2,201.10	2,201.10	7.65	7.66	-90.54	-0.47	-49.99	49.99	39.17	10.83	4.618		
2,300.00	2,300.00	2,301.10	2,301.10	8.01	8.02	-90.54	-0.47	-49.99	49.99	38.66	11.33	4.411		
2,400.00	2,400.00	2,401.10	2,401.10	8.37	8.37	-90.54	-0.47	-49.99	49.99	38.15	11.84	4.222		
2,500.00	2,500.00	2,501.10	2,501.10	8.73	8.73	-90.54	-0.47	-49.99	49.99	37.65	12.35	4.049		
2,600.00	2,600.00	2,601.10	2,601.10	9.09	9.09	-90.54	-0.47	-49.99	49.99	37.14	12.85	3.889		
2,700.00	2,700.00	2,701.10	2,701.10	9.45	9.45	-90.54	-0.47	-49.99	49.99	36.63	13.36	3.742		
2,800.00	2,800.00	2,801.10	2,801.10	9.80	9.81	-90.54	-0.47	-49.99	49.99	36.12	13.87	3.605		
2,900.00	2,900.00	2,901.10	2,901.10	10.16	10.17	-90.54	-0.47	-49.99	49.99	35.62	14.37	3.478		
3,000.00	3,000.00	3,001.10	3,001.10	10.52	10.53	-90.54	-0.47	-49.99	49.99	35.11	14.88	3.359		
3,100.00	3,100.00	3,101.10	3,101.10	10.88	10.88	-90.54	-0.47	-49.99	49.99	34.60	15.39	3.249		
3,116.30	3,116.30	3,117.40	3,117.40	10.94	10.94	-90.54	-0.47	-49.99	49.99	34.52	15.47	3.231 CC		
3,200.00	3,200.00	3,201.09	3,201.09	11.24	11.24	-90.54	-0.47	-49.99	49.99	34.10	15.90	3.145		
3,300.00	3,300.00	3,300.00	3,299.99	11.60	11.58	-91.00	-0.89	-51.23	51.25	34.86	16.39	3.127		
3,400.00	3,400.00	3,398.45	3,398.36	11.96	11.92	-92.23	-2.14	-54.87	54.98	38.12	16.85	3.262		
3,500.00	3,499.99	3,496.90	3,496.60	12.30	12.25	9.78	-4.21	-60.90	59.92	42.62	17.30	3.463		
3,600.00	3,599.91	3,595.21	3,594.50	12.64	12.59	8.29	-7.09	-69.31	64.82	47.09	17.73	3.655		
3,700.00	3,699.69	3,693.39	3,692.02	12.98	12.92	6.83	-10.79	-80.09	69.67	51.52	18.15	3.838		
3,800.00	3,799.27	3,791.44	3,789.08	13.32	13.27	5.38	-15.28	-93.22	74.47	55.92	18.56	4.013		
3,900.00	3,898.57	3,889.37	3,885.63	13.67	13.62	3.94	-20.58	-108.68	79.24	60.29	18.95	4.181		
4,000.00	3,997.54	3,987.17	3,981.61	14.02	13.98	2.52	-26.67	-126.45	83.98	64.64	19.34	4.343		
4,100.00	4,096.09	4,084.84	4,076.95	14.38	14.34	1.10	-33.55	-146.51	88.69	68.98	19.71	4.500		
4,200.00	4,194.16	4,182.39	4,171.60	14.75	14.72	-0.32	-41.20	-168.84	93.37	73.31	20.07	4.653		
4,300.00	4,291.70	4,279.82	4,265.50	15.12	15.11	-1.72	-49.62	-193.42	98.05	77.63	20.42	4.802		
4,400.00	4,388.62	4,377.13	4,358.58	15.51	15.52	-3.13	-58.80	-220.22	102.71	81.95	20.76	4.947		
4,500.00	4,484.86	4,476.96	4,453.70	15.92	15.95	-4.56	-68.64	-248.92	106.15	84.90	21.25	4.995		
4,600.00	4,580.36	4,576.92	4,548.92	16.34	16.40	-6.05	-78.49	-277.66	107.06	85.31	21.75	4.922		
4,700.00	4,675.05	4,676.86	4,644.13	16.78	16.86	-7.70	-88.33	-306.40	105.44	83.19	22.25	4.739		
4,746.50	4,718.78	4,723.30	4,688.38	16.99	17.08	-8.56	-92.91	-319.75	103.84	81.36	22.49	4.618		
4,800.00	4,769.00	4,776.73	4,739.28	17.24	17.33	-9.61	-98.17	-335.11	101.71	78.95	22.76	4.469		
4,900.00	4,862.85	4,876.58	4,834.41	17.72	17.81	-11.70	-108.01	-363.82	97.81	74.54	23.28	4.202		
5,000.00	4,956.70	4,976.44	4,929.55	18.21	18.29	-13.95	-117.85	-392.53	94.06	70.25	23.81	3.950		
5,100.00	5,050.55	5,076.30	5,024.68	18.71	18.79	-16.38	-127.69	-421.24	90.46	66.10	24.36	3.713		
5,200.00	5,144.40	5,176.16	5,119.82	19.23	19.29	-19.01	-137.53	-449.95	87.04	62.10	24.94	3.490		

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 501H
Project:	Lea County, NM (NAD83)	TVD Reference:	3121.3' GE + 30' KB @ 3151.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3121.3' GE + 30' KB @ 3151.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 501H	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		
5,300.00	5,238.25	5,276.02	5,214.95	19.76	19.80	-21.85	-147.37	-478.66	83.82	58.28	25.54	3.282		
5,400.00	5,332.10	5,375.88	5,310.09	20.29	20.31	-24.91	-157.21	-507.37	80.82	54.64	26.18	3.087		
5,500.00	5,425.95	5,475.73	5,405.22	20.84	20.84	-28.19	-167.04	-536.08	78.07	51.21	26.85	2.907		
5,600.00	5,519.80	5,575.59	5,500.36	21.39	21.36	-31.70	-176.88	-564.79	75.59	48.01	27.58	2.741		
5,700.00	5,613.65	5,675.45	5,595.49	21.95	21.89	-35.43	-186.72	-593.51	73.42	45.06	28.36	2.589		
5,800.00	5,707.50	5,775.31	5,690.63	22.52	22.43	-39.37	-196.56	-622.22	71.57	42.38	29.19	2.452		
5,900.00	5,801.36	5,875.17	5,785.76	23.10	22.97	-43.49	-206.40	-650.93	70.08	39.99	30.09	2.329		
6,000.00	5,895.21	5,975.03	5,880.90	23.68	23.52	-47.78	-216.24	-679.64	68.97	37.92	31.05	2.221		
6,100.00	5,989.06	6,074.89	5,976.03	24.27	24.07	-52.17	-226.08	-708.35	68.26	36.19	32.06	2.129		
6,200.00	6,082.91	6,174.74	6,071.16	24.86	24.62	-56.64	-235.91	-737.06	67.96	34.83	33.13	2.051		
6,222.77	6,104.28	6,197.48	6,092.83	25.00	24.75	-57.66	-238.15	-743.60	67.95	34.57	33.37	2.036		
6,300.00	6,176.76	6,274.60	6,166.30	25.46	25.18	-61.11	-245.75	-765.77	68.07	33.85	34.22	1.989		
6,403.84	6,274.22	6,378.30	6,265.09	26.09	25.76	-65.71	-255.97	-795.58	68.62	33.24	35.38	1.939 ES		
6,500.00	6,364.87	6,474.36	6,356.61	26.66	26.30	-68.98	-265.43	-823.20	69.95	33.57	36.38	1.923		
6,600.00	6,459.97	6,574.59	6,452.15	27.24	26.86	-70.43	-275.26	-851.88	72.32	35.05	37.27	1.940		
6,700.00	6,555.85	6,675.35	6,548.80	27.79	27.41	-71.34	-284.49	-878.82	74.73	36.61	38.12	1.960		
6,800.00	6,652.43	6,776.12	6,646.17	28.32	27.94	-72.15	-292.90	-903.34	76.93	38.00	38.93	1.976		
6,900.00	6,749.66	6,876.89	6,744.19	28.83	28.45	-72.87	-300.46	-925.42	78.92	39.22	39.70	1.988		
7,000.00	6,847.47	6,977.66	6,842.80	29.31	28.93	-73.51	-307.19	-945.05	80.67	40.25	40.43	1.996		
7,100.00	6,945.80	7,078.43	6,941.93	29.77	29.39	-74.07	-313.07	-962.22	82.21	41.10	41.11	2.000		
7,200.00	7,044.56	7,179.20	7,041.49	30.20	29.83	-74.58	-318.10	-976.90	83.51	41.76	41.75	2.000		
7,300.00	7,143.70	7,279.97	7,141.43	30.61	30.24	-75.03	-322.28	-989.09	84.58	42.22	42.36	1.997		
7,400.00	7,243.15	7,380.74	7,241.67	30.99	30.62	-75.42	-325.60	-998.79	85.41	42.49	42.92	1.990		
7,500.00	7,342.84	7,481.50	7,342.14	31.35	30.99	-75.78	-328.07	-1,005.98	86.01	42.56	43.45	1.979		
7,600.00	7,442.70	7,582.26	7,442.77	31.69	31.33	-76.09	-329.67	-1,010.66	86.37	42.43	43.94	1.966		
7,700.00	7,542.66	7,683.00	7,543.49	32.01	31.65	-76.36	-330.41	-1,012.82	86.49	42.09	44.40	1.948		
7,750.34	7,593.00	7,733.61	7,594.10	32.16	31.80	179.99	-330.47	-1,012.99	86.47	41.85	44.62	1.938		
7,800.00	7,642.66	7,783.27	7,643.76	32.30	31.95	179.99	-330.47	-1,012.99	86.47	41.64	44.83	1.929		
7,900.00	7,742.66	7,883.27	7,743.76	32.60	32.24	179.99	-330.47	-1,012.99	86.47	41.22	45.25	1.911		
8,000.00	7,842.66	7,983.27	7,843.76	32.89	32.54	179.99	-330.47	-1,012.99	86.47	40.80	45.67	1.893		
8,100.00	7,942.66	8,083.27	7,943.76	33.19	32.84	179.99	-330.47	-1,012.99	86.47	40.37	46.10	1.876		
8,200.00	8,042.66	8,183.27	8,043.76	33.49	33.14	179.99	-330.47	-1,012.99	86.47	39.94	46.53	1.858		
8,300.00	8,142.66	8,283.27	8,143.76	33.79	33.44	179.99	-330.47	-1,012.99	86.47	39.51	46.96	1.841		
8,307.42	8,150.08	8,290.69	8,151.18	33.81	33.46	179.99	-330.47	-1,012.99	86.47	39.48	46.99	1.840		
8,400.00	8,242.66	8,380.42	8,240.90	34.09	33.73	179.99	-330.78	-1,012.99	86.83	39.42	47.41	1.831 SF		
8,500.00	8,342.66	8,466.13	8,326.04	34.39	34.00	179.94	-339.99	-1,012.89	97.61	50.57	47.04	2.075		
8,600.00	8,442.66	8,550.00	8,407.11	34.69	34.28	179.85	-361.18	-1,012.68	122.78	76.68	46.10	2.663		
8,700.00	8,542.66	8,621.62	8,473.27	35.00	34.53	179.77	-388.48	-1,012.41	160.76	116.64	44.12	3.643		
8,800.00	8,642.66	8,687.55	8,530.73	35.30	34.77	179.70	-420.73	-1,012.09	209.79	167.43	42.36	4.953		
8,900.00	8,742.66	8,750.00	8,581.41	35.61	35.00	179.66	-457.17	-1,011.72	267.96	226.90	41.06	6.526		
9,000.00	8,842.66	8,800.00	8,618.93	35.91	35.19	179.63	-490.19	-1,011.39	333.41	294.03	39.37	8.468		
9,100.00	8,942.66	8,837.38	8,645.03	36.22	35.33	179.61	-516.94	-1,011.13	404.65	367.19	37.47	10.801		
9,200.00	9,042.66	8,874.09	8,668.90	36.53	35.47	179.59	-544.81	-1,010.85	480.64	444.48	36.15	13.294		
9,300.00	9,142.66	8,900.00	8,684.66	36.84	35.58	179.58	-565.38	-1,010.64	560.42	525.69	34.73	16.136		
9,400.00	9,242.66	8,933.17	8,703.44	37.15	35.71	179.57	-592.72	-1,010.37	643.08	609.03	34.05	18.885		
9,500.00	9,342.66	8,950.00	8,712.36	37.46	35.78	179.56	-606.99	-1,010.23	728.31	695.35	32.96	22.096		
9,600.00	9,442.66	8,977.97	8,726.24	37.77	35.90	179.55	-631.27	-1,009.98	815.36	782.81	32.55	25.049		
9,700.00	9,542.66	9,000.00	8,736.33	38.09	35.99	179.55	-650.85	-1,009.79	904.15	872.05	32.09	28.172		
9,800.00	9,642.66	9,000.00	8,736.33	38.40	35.99	179.55	-650.85	-1,009.79	994.47	963.30	31.17	31.907		
9,900.00	9,742.66	9,027.26	8,747.76	38.71	36.11	179.54	-675.59	-1,009.54	1,085.50	1,054.36	31.14	34.862		
10,000.00	9,842.66	9,050.00	8,756.38	39.03	36.22	179.54	-696.63	-1,009.33	1,177.83	1,146.77	31.05	37.927		
10,100.00	9,942.66	9,050.00	8,756.38	39.35	36.22	179.54	-696.63	-1,009.33	1,270.73	1,240.17	30.55	41.589		

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 501H
Project:	Lea County, NM (NAD83)	TVD Reference:	3121.3' GE + 30' KB @ 3151.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3121.3' GE + 30' KB @ 3151.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 501H	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				
10,200.00	10,042.66	9,050.00	8,756.38	39.66	36.22	179.54	-696.63	-1,009.33	1,364.63	1,334.45	30.18	45.217				
10,300.00	10,142.66	9,072.16	8,763.98	39.98	36.32	179.53	-717.45	-1,009.12	1,458.75	1,428.47	30.28	48.173				
10,354.38	10,197.04	9,077.02	8,765.54	40.15	36.34	179.53	-722.04	-1,009.08	1,510.26	1,480.04	30.23	49.962				
10,400.00	10,242.61	9,081.37	8,766.90	40.30	36.36	0.08	-726.18	-1,009.04	1,552.98	1,522.80	30.18	51.464				
10,450.00	10,292.22	9,100.00	8,772.37	40.45	36.45	0.06	-743.99	-1,008.86	1,598.55	1,568.26	30.29	52.770				
10,500.00	10,341.10	9,100.00	8,772.37	40.61	36.45	0.05	-743.99	-1,008.86	1,642.04	1,611.95	30.08	54.587				
10,550.00	10,388.88	9,100.00	8,772.37	40.77	36.45	0.05	-743.99	-1,008.86	1,683.65	1,653.80	29.85	56.398				
10,600.00	10,435.20	9,100.00	8,772.37	40.93	36.45	0.04	-743.99	-1,008.86	1,723.23	1,693.62	29.61	58.200				
10,650.00	10,479.72	9,100.00	8,772.37	41.09	36.45	0.04	-743.99	-1,008.86	1,760.61	1,731.26	29.36	59.971				
10,700.00	10,522.08	9,125.18	8,778.84	41.25	36.58	0.03	-768.31	-1,008.61	1,794.94	1,765.53	29.40	61.043				
10,750.00	10,561.96	9,150.00	8,784.17	41.40	36.70	0.03	-792.55	-1,008.37	1,827.19	1,797.77	29.42	62.104				
10,800.00	10,599.07	9,150.00	8,784.17	41.55	36.70	0.03	-792.55	-1,008.37	1,856.12	1,826.98	29.14	63.696				
10,850.00	10,633.12	9,150.00	8,784.17	41.71	36.70	0.03	-792.55	-1,008.37	1,882.36	1,853.48	28.87	65.195				
10,900.00	10,663.85	9,150.00	8,784.17	41.86	36.70	0.03	-792.55	-1,008.37	1,905.81	1,877.19	28.62	66.590				
10,950.00	10,691.03	9,174.84	8,788.45	42.01	36.83	0.03	-817.02	-1,008.13	1,925.70	1,897.09	28.61	67.318				
11,000.00	10,714.45	9,200.00	8,791.69	42.17	36.97	0.02	-841.97	-1,007.88	1,942.87	1,914.28	28.59	67.957				
11,050.00	10,733.93	9,200.00	8,791.69	42.33	36.97	0.02	-841.97	-1,007.88	1,956.33	1,927.95	28.38	68.942				
11,100.00	10,749.32	9,200.00	8,791.69	42.50	36.97	0.02	-841.97	-1,007.88	1,966.76	1,938.56	28.20	69.746				
11,150.00	10,760.52	9,200.00	8,791.69	42.68	36.97	0.02	-841.97	-1,007.88	1,974.13	1,946.07	28.06	70.351				
11,200.00	10,767.42	9,229.91	8,794.12	42.87	37.13	0.02	-871.78	-1,007.58	1,977.41	1,949.30	28.11	70.336				
11,254.38	10,770.00	9,250.00	8,794.88	43.09	37.24	0.02	-891.85	-1,007.38	1,977.64	1,949.52	28.12	70.332				
11,300.00	10,770.00	9,250.00	8,794.88	43.29	37.24	0.02	-891.85	-1,007.38	1,976.43	1,948.36	28.08	70.392				
11,400.00	10,770.00	9,320.71	8,795.00	43.76	37.66	0.02	-962.55	-1,006.67	1,976.10	1,947.78	28.32	69.784				
11,411.12	10,770.00	9,331.83	8,795.00	43.82	37.72	0.02	-973.67	-1,006.56	1,976.10	1,947.74	28.36	69.680				
11,500.00	10,770.00	9,420.71	8,795.00	44.29	38.30	0.02	-1,062.54	-1,005.67	1,976.10	1,947.40	28.70	68.850				
11,600.00	10,770.00	9,520.71	8,795.00	44.88	39.00	0.02	-1,162.54	-1,004.67	1,976.10	1,946.98	29.12	67.854				
11,700.00	10,770.00	9,620.71	8,795.00	45.53	39.77	0.02	-1,262.53	-1,003.68	1,976.10	1,946.52	29.58	66.805				
11,800.00	10,770.00	9,720.71	8,795.00	46.23	40.58	0.02	-1,362.53	-1,002.68	1,976.10	1,946.03	30.07	65.714				
11,900.00	10,770.00	9,820.71	8,795.00	46.99	41.46	0.02	-1,462.52	-1,001.68	1,976.10	1,945.51	30.59	64.589				
12,000.00	10,770.00	9,920.71	8,795.00	47.79	42.38	0.02	-1,562.52	-1,000.68	1,976.10	1,944.95	31.15	63.440				
12,100.00	10,770.00	10,020.71	8,795.00	48.64	43.34	0.02	-1,662.51	-999.68	1,976.10	1,944.37	31.73	62.273				
12,200.00	10,770.00	10,120.71	8,795.00	49.53	44.35	0.02	-1,762.51	-998.68	1,976.10	1,943.76	32.34	61.097				
12,300.00	10,770.00	10,220.71	8,795.00	50.46	45.40	0.02	-1,862.50	-997.68	1,976.10	1,943.12	32.98	59.916				
12,400.00	10,770.00	10,320.71	8,795.00	51.43	46.48	0.02	-1,962.50	-996.68	1,976.10	1,942.46	33.64	58.738				
12,500.00	10,770.00	10,420.71	8,795.00	52.44	47.60	0.02	-2,062.49	-995.68	1,976.10	1,941.77	34.33	57.566				
12,600.00	10,770.00	10,520.71	8,795.00	53.48	48.75	0.02	-2,162.49	-994.68	1,976.10	1,941.07	35.03	56.405				
12,700.00	10,770.00	10,620.71	8,795.00	54.55	49.93	0.02	-2,262.48	-993.68	1,976.10	1,940.34	35.76	55.258				
12,800.00	10,770.00	10,720.71	8,795.00	55.65	51.13	0.02	-2,362.48	-992.68	1,976.10	1,939.59	36.51	54.128				
12,900.00	10,770.00	10,820.71	8,795.00	56.78	52.36	0.02	-2,462.47	-991.68	1,976.10	1,938.83	37.27	53.017				
13,000.00	10,770.00	10,920.71	8,795.00	57.93	53.62	0.02	-2,562.47	-990.68	1,976.10	1,938.05	38.05	51.929				
13,100.00	10,770.00	11,020.71	8,795.00	59.11	54.89	0.02	-2,662.46	-989.68	1,976.10	1,937.25	38.85	50.862				
13,200.00	10,770.00	11,120.71	8,795.00	60.31	56.18	0.02	-2,762.46	-988.69	1,976.10	1,936.44	39.66	49.820				
13,300.00	10,770.00	11,220.71	8,795.00	61.54	57.50	0.02	-2,862.45	-987.69	1,976.10	1,935.61	40.49	48.803				
13,400.00	10,770.00	11,320.71	8,795.00	62.78	58.83	0.02	-2,962.45	-986.69	1,976.10	1,934.77	41.33	47.811				
13,500.00	10,770.00	11,420.71	8,795.00	64.04	60.18	0.02	-3,062.44	-985.69	1,976.10	1,933.92	42.18	46.845				
13,600.00	10,770.00	11,520.71	8,795.00	65.32	61.54	0.02	-3,162.44	-984.69	1,976.10	1,933.05	43.05	45.905				
13,700.00	10,770.00	11,620.71	8,795.00	66.62	62.91	0.02	-3,262.43	-983.69	1,976.10	1,932.18	43.92	44.990				
13,800.00	10,770.00	11,720.71	8,795.00	67.93	64.30	0.02	-3,362.43	-982.69	1,976.10	1,931.29	44.81	44.100				
13,900.00	10,770.00	11,820.71	8,795.00	69.25	65.70	0.02	-3,462.42	-981.69	1,976.10	1,930.40	45.70	43.236				
14,000.00	10,770.00	11,920.71	8,795.00	70.59	67.12	0.02	-3,562.42	-980.69	1,976.10	1,929.49	46.61	42.397				
14,100.00	10,770.00	12,020.71	8,795.00	71.95	68.54	0.02	-3,662.41	-979.69	1,976.10	1,928.58	47.52	41.582				
14,200.00	10,770.00	12,120.71	8,795.00	73.31	69.97	0.02	-3,762.41	-978.69	1,976.10	1,927.66	48.44	40.791				

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 501H
Project:	Lea County, NM (NAD83)	TVD Reference:	3121.3' GE + 30' KB @ 3151.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3121.3' GE + 30' KB @ 3151.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 501H	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							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
14,300.00	10,770.00	12,220.71	8,795.00	74.69	71.42	0.02	-3,862.40	-977.69	1,976.10	1,926.73	49.37	40.023		
14,400.00	10,770.00	12,320.71	8,795.00	76.08	72.87	0.02	-3,962.40	-976.69	1,976.10	1,925.79	50.31	39.278		
14,500.00	10,770.00	12,420.71	8,795.00	77.48	74.33	0.02	-4,062.39	-975.69	1,976.10	1,924.85	51.25	38.555		
14,600.00	10,770.00	12,520.71	8,795.00	78.89	75.80	0.02	-4,162.39	-974.69	1,976.10	1,923.90	52.20	37.853		
14,700.00	10,770.00	12,620.71	8,795.00	80.31	77.27	0.01	-4,262.38	-973.70	1,976.10	1,922.94	53.16	37.172		
14,800.00	10,770.00	12,720.71	8,795.00	81.73	78.76	0.01	-4,362.38	-972.70	1,976.10	1,921.98	54.12	36.511		
14,900.00	10,770.00	12,820.71	8,795.00	83.17	80.25	0.01	-4,462.37	-971.70	1,976.10	1,921.01	55.09	35.870		
15,000.00	10,770.00	12,920.71	8,795.00	84.61	81.74	0.01	-4,562.37	-970.70	1,976.10	1,920.04	56.06	35.247		
15,100.00	10,770.00	13,020.71	8,795.00	86.06	83.25	0.01	-4,662.36	-969.70	1,976.10	1,919.06	57.04	34.643		
15,200.00	10,770.00	13,120.71	8,795.00	87.52	84.75	0.01	-4,762.36	-968.70	1,976.10	1,918.08	58.02	34.056		
15,300.00	10,770.00	13,220.71	8,795.00	88.99	86.27	0.01	-4,862.35	-967.70	1,976.10	1,917.09	59.01	33.487		
15,400.00	10,770.00	13,320.71	8,795.00	90.46	87.78	0.01	-4,962.35	-966.70	1,976.10	1,916.10	60.00	32.933		
15,500.00	10,770.00	13,420.71	8,795.00	91.94	89.31	0.01	-5,062.34	-965.70	1,976.10	1,915.10	61.00	32.396		
15,600.00	10,770.00	13,520.71	8,795.00	93.42	90.83	0.01	-5,162.34	-964.70	1,976.10	1,914.10	62.00	31.873		
15,700.00	10,770.00	13,620.71	8,795.00	94.91	92.36	0.01	-5,262.33	-963.70	1,976.10	1,913.10	63.00	31.366		
15,800.00	10,770.00	13,720.71	8,795.00	96.40	93.90	0.01	-5,362.33	-962.70	1,976.10	1,912.09	64.01	30.872		
15,900.00	10,770.00	13,820.71	8,795.00	97.90	95.44	0.01	-5,462.32	-961.70	1,976.10	1,911.08	65.02	30.393		
16,000.00	10,770.00	13,920.71	8,795.00	99.41	96.98	0.01	-5,562.32	-960.70	1,976.10	1,910.07	66.03	29.926		
16,100.00	10,770.00	14,020.71	8,795.00	100.92	98.53	0.01	-5,662.31	-959.70	1,976.10	1,909.05	67.05	29.473		
16,200.00	10,770.00	14,120.71	8,795.00	102.43	100.08	0.01	-5,762.31	-958.71	1,976.10	1,908.03	68.07	29.031		
16,300.00	10,770.00	14,220.71	8,795.00	103.95	101.63	0.01	-5,862.30	-957.71	1,976.10	1,907.01	69.09	28.602		
16,400.00	10,770.00	14,320.71	8,795.00	105.47	103.19	0.01	-5,962.30	-956.71	1,976.10	1,905.99	70.11	28.184		
16,500.00	10,770.00	14,420.71	8,795.00	107.00	104.75	0.01	-6,062.29	-955.71	1,976.10	1,904.96	71.14	27.777		
16,600.00	10,770.00	14,520.71	8,795.00	108.52	106.31	0.01	-6,162.29	-954.71	1,976.10	1,903.93	72.17	27.381		
16,700.00	10,770.00	14,620.71	8,795.00	110.06	107.88	0.01	-6,262.28	-953.71	1,976.10	1,902.90	73.20	26.995		
16,800.00	10,770.00	14,720.71	8,795.00	111.59	109.44	0.01	-6,362.28	-952.71	1,976.10	1,901.86	74.24	26.618		
16,900.00	10,770.00	14,820.71	8,795.00	113.13	111.01	0.01	-6,462.27	-951.71	1,976.10	1,900.83	75.27	26.252		
17,000.00	10,770.00	14,920.71	8,795.00	114.68	112.58	0.01	-6,562.27	-950.71	1,976.10	1,899.79	76.31	25.895		
17,100.00	10,770.00	15,020.71	8,795.00	116.22	114.16	0.01	-6,662.26	-949.71	1,976.10	1,898.75	77.35	25.546		
17,200.00	10,770.00	15,120.71	8,795.00	117.77	115.74	0.01	-6,762.26	-948.71	1,976.10	1,897.70	78.40	25.207		
17,300.00	10,770.00	15,220.71	8,795.00	119.32	117.31	0.01	-6,862.25	-947.71	1,976.10	1,896.66	79.44	24.875		
17,400.00	10,770.00	15,320.71	8,795.00	120.88	118.89	0.01	-6,962.25	-946.71	1,976.10	1,895.61	80.49	24.552		
17,500.00	10,770.00	15,420.71	8,795.00	122.43	120.48	0.01	-7,062.24	-945.71	1,976.10	1,894.57	81.53	24.236		
17,600.00	10,770.00	15,520.71	8,795.00	123.99	122.06	0.01	-7,162.24	-944.71	1,976.10	1,893.52	82.58	23.929		
17,700.00	10,770.00	15,620.71	8,795.00	125.55	123.65	0.01	-7,262.23	-943.72	1,976.10	1,892.47	83.63	23.628		
17,800.00	10,770.00	15,720.71	8,795.00	127.12	125.24	0.01	-7,362.23	-942.72	1,976.10	1,891.41	84.69	23.334		
17,900.00	10,770.00	15,820.71	8,795.00	128.68	126.82	0.01	-7,462.22	-941.72	1,976.10	1,890.36	85.74	23.047		
18,000.00	10,770.00	15,920.71	8,795.00	130.25	128.42	0.01	-7,562.22	-940.72	1,976.10	1,889.30	86.80	22.767		
18,100.00	10,770.00	16,020.71	8,795.00	131.82	130.01	0.01	-7,662.21	-939.72	1,976.10	1,888.25	87.85	22.493		
18,200.00	10,770.00	16,120.71	8,795.00	133.39	131.60	0.01	-7,762.21	-938.72	1,976.10	1,887.19	88.91	22.226		
18,300.00	10,770.00	16,220.71	8,795.00	134.97	133.20	0.01	-7,862.20	-937.72	1,976.10	1,886.13	89.97	21.964		
18,400.00	10,770.00	16,320.71	8,795.00	136.54	134.79	0.01	-7,962.20	-936.72	1,976.10	1,885.07	91.03	21.708		
18,500.00	10,770.00	16,420.71	8,795.00	138.12	136.39	0.01	-8,062.19	-935.72	1,976.10	1,884.01	92.09	21.458		
18,600.00	10,770.00	16,520.71	8,795.00	139.70	137.99	0.01	-8,162.19	-934.72	1,976.10	1,882.95	93.15	21.213		
18,700.00	10,770.00	16,620.71	8,795.00	141.28	139.59	0.01	-8,262.18	-933.72	1,976.10	1,881.88	94.22	20.974		
18,800.00	10,770.00	16,720.71	8,795.00	142.86	141.19	0.00	-8,362.18	-932.72	1,976.10	1,880.82	95.28	20.739		
18,900.00	10,770.00	16,820.71	8,795.00	144.45	142.80	0.00	-8,462.17	-931.72	1,976.10	1,879.75	96.35	20.510		
19,000.00	10,770.00	16,920.71	8,795.00	146.03	144.40	0.00	-8,562.17	-930.72	1,976.10	1,878.68	97.42	20.285		
19,100.00	10,770.00	17,020.71	8,795.00	147.62	146.01	0.00	-8,662.16	-929.72	1,976.10	1,877.62	98.48	20.065		
19,200.00	10,770.00	17,120.71	8,795.00	149.21	147.61	0.00	-8,762.16	-928.73	1,976.10	1,876.55	99.55	19.850		
19,300.00	10,770.00	17,220.71	8,795.00	150.80	149.22	0.00	-8,862.15	-927.73	1,976.10	1,875.48	100.62	19.639		
19,400.00	10,770.00	17,320.71	8,795.00	152.39	150.83	0.00	-8,962.15	-926.73	1,976.10	1,874.41	101.69	19.432		

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 501H
Project:	Lea County, NM (NAD83)	TVD Reference:	3121.3' GE + 30' KB @ 3151.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3121.3' GE + 30' KB @ 3151.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 501H	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					
19,500.00	10,770.00	17,420.71	8,795.00	153.98	152.44	0.00	-9,062.14	-925.73	1,976.10	1,873.34	102.76	19.230					
19,600.00	10,770.00	17,520.71	8,795.00	155.57	154.05	0.00	-9,162.14	-924.73	1,976.10	1,872.27	103.84	19.031					
19,700.00	10,770.00	17,620.71	8,795.00	157.17	155.66	0.00	-9,262.13	-923.73	1,976.10	1,871.19	104.91	18.837					
19,800.00	10,770.00	17,720.71	8,795.00	158.76	157.27	0.00	-9,362.13	-922.73	1,976.10	1,870.12	105.98	18.646					
19,900.00	10,770.00	17,820.71	8,795.00	160.36	158.88	0.00	-9,462.13	-921.73	1,976.10	1,869.04	107.06	18.459					
20,000.00	10,770.00	17,920.71	8,795.00	161.96	160.49	0.00	-9,562.12	-920.73	1,976.10	1,867.97	108.13	18.275					
20,100.00	10,770.00	18,020.71	8,795.00	163.56	162.11	0.00	-9,662.12	-919.73	1,976.10	1,866.89	109.21	18.095					
20,200.00	10,770.00	18,120.71	8,795.00	165.16	163.72	0.00	-9,762.11	-918.73	1,976.10	1,865.82	110.28	17.918					
20,300.00	10,770.00	18,220.71	8,795.00	166.76	165.34	0.00	-9,862.11	-917.73	1,976.10	1,864.74	111.36	17.745					
20,400.00	10,770.00	18,320.71	8,795.00	168.36	166.95	0.00	-9,962.10	-916.73	1,976.10	1,863.66	112.44	17.575					
20,500.00	10,770.00	18,420.71	8,795.00	169.97	168.57	0.00	-10,062.10	-915.73	1,976.10	1,862.58	113.52	17.408					
20,600.00	10,770.00	18,520.71	8,795.00	171.57	170.19	0.00	-10,162.09	-914.74	1,976.10	1,861.50	114.60	17.244					
20,700.00	10,770.00	18,620.71	8,795.00	173.18	171.81	0.00	-10,262.09	-913.74	1,976.10	1,860.43	115.67	17.083					
20,800.00	10,770.00	18,720.71	8,795.00	174.78	173.42	0.00	-10,362.08	-912.74	1,976.10	1,859.35	116.76	16.925					
20,827.97	10,770.00	18,748.67	8,795.00	175.20	173.88	0.00	-10,390.04	-912.46	1,976.10	1,859.12	116.98	16.893					
20,841.66	10,770.00	18,762.37	8,795.00	175.40	174.10	0.00	-10,403.74	-912.32	1,976.10	1,859.01	117.09	16.877					

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 501H
Project:	Lea County, NM (NAD83)	TVD Reference:	3121.3' GE + 30' KB @ 3151.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3121.3' GE + 30' KB @ 3151.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 501H	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	Vertical	Measured	Vertical	Reference	Offset	Highside	Offset Wellbore Centre		Between	Between	Minimum	Separation				
Depth	Depth	Depth	Depth			Toolface	+N/-S	+E/-W	Centres	Ellipses	Separation	Factor				
(usft)	(usft)	(usft)	(usft)	(usft)	(usft)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)					
0.00	0.00	0.40	0.40	0.00	0.00	-90.55	-0.24	-25.00	25.00							
100.00	100.00	100.40	100.40	0.13	0.13	-90.55	-0.24	-25.00	25.00	24.82	0.18	140.101				
200.00	200.00	200.40	200.40	0.48	0.49	-90.55	-0.24	-25.00	25.00	24.32	0.69	36.476				
300.00	300.00	300.40	300.40	0.84	0.84	-90.55	-0.24	-25.00	25.00	23.81	1.19	20.968				
400.00	400.00	400.40	400.40	1.20	1.20	-90.55	-0.24	-25.00	25.00	23.30	1.70	14.712				
500.00	500.00	500.40	500.40	1.56	1.56	-90.55	-0.24	-25.00	25.00	22.79	2.21	11.332				
600.00	600.00	600.40	600.40	1.92	1.92	-90.55	-0.24	-25.00	25.00	22.29	2.71	9.215				
700.00	700.00	700.40	700.40	2.28	2.28	-90.55	-0.24	-25.00	25.00	21.78	3.22	7.764				
800.00	800.00	800.40	800.40	2.63	2.64	-90.55	-0.24	-25.00	25.00	21.27	3.73	6.708				
900.00	900.00	900.40	900.40	2.99	2.99	-90.55	-0.24	-25.00	25.00	20.77	4.23	5.905				
1,000.00	1,000.00	1,000.40	1,000.40	3.35	3.35	-90.55	-0.24	-25.00	25.00	20.26	4.74	5.273				
1,100.00	1,100.00	1,100.40	1,100.40	3.71	3.71	-90.55	-0.24	-25.00	25.00	19.75	5.25	4.764				
1,200.00	1,200.00	1,200.40	1,200.40	4.07	4.07	-90.55	-0.24	-25.00	25.00	19.25	5.75	4.344				
1,300.00	1,300.00	1,300.40	1,300.40	4.43	4.43	-90.55	-0.24	-25.00	25.00	18.74	6.26	3.993				
1,400.00	1,400.00	1,400.40	1,400.40	4.79	4.79	-90.55	-0.24	-25.00	25.00	18.23	6.77	3.694				
1,500.00	1,500.00	1,500.40	1,500.40	5.14	5.15	-90.55	-0.24	-25.00	25.00	17.73	7.28	3.436				
1,600.00	1,600.00	1,600.40	1,600.40	5.50	5.50	-90.55	-0.24	-25.00	25.00	17.22	7.78	3.212				
1,700.00	1,700.00	1,700.40	1,700.40	5.86	5.86	-90.55	-0.24	-25.00	25.00	16.71	8.29	3.016				
1,800.00	1,800.00	1,800.40	1,800.40	6.22	6.22	-90.55	-0.24	-25.00	25.00	16.20	8.80	2.842				
1,900.00	1,900.00	1,900.40	1,900.40	6.58	6.58	-90.55	-0.24	-25.00	25.00	15.70	9.30	2.687				
2,000.00	2,000.00	2,000.40	2,000.40	6.94	6.94	-90.55	-0.24	-25.00	25.00	15.19	9.81	2.548				
2,100.00	2,100.00	2,100.40	2,100.40	7.29	7.30	-90.55	-0.24	-25.00	25.00	14.68	10.32	2.423				
2,200.00	2,200.00	2,200.40	2,200.40	7.65	7.65	-90.55	-0.24	-25.00	25.00	14.18	10.82	2.310				
2,300.00	2,300.00	2,300.40	2,300.40	8.01	8.01	-90.55	-0.24	-25.00	25.00	13.67	11.33	2.206				
2,400.00	2,400.00	2,400.40	2,400.40	8.37	8.37	-90.55	-0.24	-25.00	25.00	13.16	11.84	2.112				
2,500.00	2,500.00	2,500.40	2,500.40	8.73	8.73	-90.55	-0.24	-25.00	25.00	12.66	12.35	2.025				
2,600.00	2,600.00	2,600.40	2,600.40	9.09	9.09	-90.55	-0.24	-25.00	25.00	12.15	12.85	1.945				
2,700.00	2,700.00	2,700.40	2,700.40	9.45	9.45	-90.55	-0.24	-25.00	25.00	11.64	13.36	1.871				
2,800.00	2,800.00	2,800.40	2,800.40	9.80	9.81	-90.55	-0.24	-25.00	25.00	11.13	13.87	1.803				
2,900.00	2,900.00	2,900.40	2,900.40	10.16	10.16	-90.55	-0.24	-25.00	25.00	10.63	14.37	1.739				
3,000.00	3,000.00	3,000.40	3,000.40	10.52	10.52	-90.55	-0.24	-25.00	25.00	10.12	14.88	1.680				
3,100.00	3,100.00	3,100.40	3,100.40	10.88	10.88	-90.55	-0.24	-25.00	25.00	9.61	15.39	1.625				
3,116.53	3,116.53	3,116.93	3,116.93	10.94	10.94	-90.55	-0.24	-25.00	25.00	9.53	15.47	1.616 CC				
3,200.00	3,200.00	3,200.40	3,200.40	11.24	11.24	-90.55	-0.24	-25.00	25.00	9.11	15.89	1.573				
3,200.03	3,200.03	3,200.43	3,200.43	11.24	11.24	-90.55	-0.24	-25.00	25.00	9.11	15.89	1.573				
3,300.00	3,300.00	3,300.37	3,300.36	11.60	11.58	-93.57	-1.56	-25.00	25.05	8.66	16.39	1.529 ES				
3,400.00	3,400.00	3,400.20	3,400.11	11.96	11.90	-102.38	-5.49	-25.00	25.60	8.73	16.87	1.518 SF				
3,500.00	3,499.99	3,499.78	3,499.47	12.30	12.23	-12.68	-12.00	-25.00	26.47	9.14	17.32	1.528				
3,600.00	3,599.91	3,598.95	3,598.23	12.64	12.55	-31.26	-21.06	-25.00	28.18	10.45	17.73	1.590				
3,700.00	3,699.69	3,697.59	3,696.18	12.98	12.87	-51.70	-32.60	-25.00	33.01	14.93	18.09	1.825				
3,800.00	3,799.27	3,796.70	3,794.39	13.32	13.21	-69.92	-45.91	-24.59	41.56	23.00	18.56	2.239				
3,900.00	3,898.57	3,896.02	3,892.95	13.67	13.54	-86.28	-57.90	-22.30	51.49	32.41	19.08	2.698				
4,000.00	3,997.54	3,994.59	3,990.89	14.02	13.88	-101.17	-68.22	-18.03	63.95	44.36	19.59	3.265				
4,100.00	4,096.09	4,092.05	4,087.77	14.38	14.22	-114.16	-76.85	-11.86	80.23	60.16	20.07	3.997				
4,200.00	4,194.16	4,188.04	4,183.17	14.75	14.55	-124.98	-83.82	-3.89	101.14	80.60	20.54	4.924				
4,300.00	4,291.70	4,282.22	4,276.70	15.12	14.89	-133.70	-89.18	5.74	127.01	106.02	20.99	6.051				
4,400.00	4,388.62	4,374.28	4,368.00	15.51	15.21	-140.65	-93.01	16.89	157.87	136.44	21.42	7.369				
4,500.00	4,484.86	4,463.95	4,456.76	15.92	15.53	-146.18	-95.38	29.39	193.59	171.76	21.83	8.866				
4,600.00	4,580.36	4,551.83	4,543.55	16.34	15.85	-150.65	-96.45	43.16	233.97	211.73	22.24	10.519				
4,700.00	4,675.05	4,640.30	4,630.86	16.78	16.17	-154.15	-97.19	57.43	277.89	255.21	22.68	12.251				
4,746.50	4,718.78	4,681.01	4,671.04	16.99	16.32	-155.48	-97.53	63.99	299.32	276.43	22.89	13.077				
4,800.00	4,769.00	4,727.71	4,717.12	17.24	16.49	-156.98	-97.92	71.53	324.41	301.28	23.12	14.029				

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 501H
Project:	Lea County, NM (NAD83)	TVD Reference:	3121.3' GE + 30' KB @ 3151.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3121.3' GE + 30' KB @ 3151.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 501H	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				
4,900.00	4,862.85	4,814.98	4,803.24	17.72	16.82	-159.24	-98.65	85.60	371.69	348.12	23.57	15.772				
5,000.00	4,956.70	4,902.25	4,889.37	18.21	17.14	-161.00	-99.38	99.68	419.32	395.30	24.01	17.462				
5,100.00	5,050.55	4,989.52	4,975.49	18.71	17.47	-162.40	-100.11	113.76	467.19	442.73	24.46	19.099				
5,200.00	5,144.40	5,076.79	5,061.62	19.23	17.81	-163.54	-100.84	127.84	515.25	490.34	24.91	20.682				
5,300.00	5,238.25	5,164.07	5,147.75	19.76	18.14	-164.49	-101.57	141.91	563.44	538.07	25.37	22.212				
5,400.00	5,332.10	5,251.34	5,233.87	20.29	18.48	-165.29	-102.30	155.99	611.72	585.90	25.82	23.689				
5,500.00	5,425.95	5,338.61	5,320.00	20.84	18.81	-165.97	-103.03	170.07	660.09	633.81	26.28	25.116				
5,600.00	5,519.80	5,425.88	5,406.12	21.39	19.15	-166.57	-103.76	184.15	708.52	681.78	26.74	26.494				
5,700.00	5,613.65	5,513.15	5,492.25	21.95	19.50	-167.08	-104.49	198.22	757.00	729.79	27.21	27.825				
5,800.00	5,707.50	5,600.42	5,578.37	22.52	19.84	-167.54	-105.22	212.30	805.52	777.85	27.67	29.112				
5,900.00	5,801.36	5,687.69	5,664.50	23.10	20.19	-167.94	-105.95	226.38	854.08	825.94	28.14	30.355				
6,000.00	5,895.21	5,774.97	5,750.62	23.68	20.53	-168.30	-106.68	240.46	902.66	874.06	28.60	31.557				
6,100.00	5,989.06	5,862.24	5,836.75	24.27	20.88	-168.62	-107.40	254.54	951.27	922.19	29.07	32.718				
6,200.00	6,082.91	5,949.51	5,922.88	24.86	21.23	-168.91	-108.13	268.61	999.90	970.35	29.55	33.842				
6,300.00	6,176.76	6,036.78	6,009.00	25.46	21.58	-169.18	-108.86	282.69	1,048.55	1,018.53	30.02	34.929				
6,403.84	6,274.22	6,127.41	6,098.44	26.09	21.95	-169.43	-109.62	297.31	1,099.08	1,068.57	30.51	36.021				
6,500.00	6,364.87	6,211.90	6,181.82	26.66	22.29	-169.77	-110.33	310.94	1,144.84	1,113.87	30.97	36.964				
6,600.00	6,459.97	6,300.97	6,269.72	27.24	22.65	-170.07	-111.07	325.31	1,190.20	1,158.75	31.45	37.840				
6,700.00	6,555.85	6,391.19	6,358.75	27.79	23.02	-170.32	-111.82	339.86	1,233.26	1,201.32	31.94	38.612				
6,800.00	6,652.43	6,482.50	6,448.86	28.32	23.39	-170.53	-112.59	354.59	1,273.98	1,241.55	32.43	39.283				
6,900.00	6,749.66	6,574.83	6,539.99	28.83	23.77	-170.71	-113.36	369.48	1,312.32	1,279.40	32.92	39.858				
7,000.00	6,847.47	6,668.14	6,632.07	29.31	24.15	-170.85	-114.14	384.53	1,348.28	1,314.85	33.42	40.342				
7,100.00	6,945.80	6,762.35	6,725.04	29.77	24.54	-170.97	-114.93	399.73	1,381.80	1,347.88	33.92	40.738				
7,200.00	7,044.56	6,857.39	6,818.83	30.20	24.93	-171.05	-115.72	415.06	1,412.88	1,378.47	34.42	41.050				
7,300.00	7,143.70	6,953.21	6,913.39	30.61	25.33	-171.12	-116.52	430.52	1,441.50	1,406.58	34.92	41.282				
7,400.00	7,243.15	7,099.90	7,058.51	30.99	25.92	-171.15	-117.63	451.93	1,466.23	1,430.49	35.73	41.031				
7,500.00	7,342.84	7,259.19	7,216.87	31.35	26.54	-171.18	-118.51	468.90	1,484.49	1,447.91	36.57	40.589				
7,600.00	7,442.70	7,421.13	7,378.46	31.69	27.14	-171.20	-119.05	479.37	1,496.07	1,458.70	37.36	40.042				
7,700.00	7,542.66	7,584.55	7,541.82	32.01	27.71	-171.22	-119.24	483.00	1,500.86	1,462.77	38.09	39.403				
7,750.34	7,593.00	7,636.12	7,593.40	32.16	27.88	85.23	-119.24	483.00	1,501.19	1,462.86	38.34	39.158				
7,800.00	7,642.66	7,685.78	7,643.06	32.30	28.05	85.23	-119.24	483.00	1,501.19	1,462.62	38.58	38.915				
7,900.00	7,742.66	7,785.78	7,743.06	32.60	28.38	85.23	-119.24	483.00	1,501.19	1,462.14	39.06	38.436				
8,000.00	7,842.66	7,885.78	7,843.06	32.89	28.72	85.23	-119.24	483.00	1,501.19	1,461.65	39.54	37.968				
8,100.00	7,942.66	7,985.78	7,943.06	33.19	29.06	85.23	-119.24	483.00	1,501.19	1,461.17	40.02	37.510				
8,200.00	8,042.66	8,085.78	8,043.06	33.49	29.40	85.23	-119.24	483.00	1,501.19	1,460.69	40.50	37.063				
8,300.00	8,142.66	8,185.78	8,143.06	33.79	29.73	85.23	-119.24	483.00	1,501.19	1,460.21	40.99	36.626				
8,400.00	8,242.66	8,290.76	8,248.02	34.09	30.09	85.26	-119.83	483.01	1,501.16	1,459.67	41.49	36.184				
8,500.00	8,342.66	8,411.25	8,366.94	34.39	30.49	85.94	-137.86	483.18	1,500.13	1,458.09	42.04	35.681				
8,600.00	8,442.66	8,519.96	8,468.88	34.69	30.85	87.37	-175.14	483.55	1,498.36	1,455.78	42.58	35.188				
8,700.00	8,542.66	8,612.13	8,548.52	35.00	31.16	89.13	-221.35	484.01	1,497.19	1,454.11	43.08	34.752				
8,716.53	8,559.19	8,625.72	8,559.59	35.05	31.20	89.43	-229.22	484.09	1,497.16	1,454.00	43.16	34.688				
8,800.00	8,642.66	8,687.59	8,607.52	35.30	31.41	90.93	-268.30	484.47	1,498.09	1,454.57	43.52	34.421				
8,900.00	8,742.66	8,750.00	8,651.32	35.61	31.62	92.63	-312.71	484.91	1,502.29	1,458.41	43.88	34.235				
9,000.00	8,842.66	8,800.00	8,682.76	35.91	31.79	94.11	-351.57	485.29	1,510.68	1,466.55	44.13	34.235				
9,100.00	8,942.66	8,837.71	8,704.16	36.22	31.93	95.28	-382.61	485.60	1,523.84	1,479.61	44.23	34.453				
9,200.00	9,042.66	8,870.58	8,721.12	36.53	32.06	96.35	-410.75	485.88	1,542.11	1,497.89	44.22	34.874				
9,300.00	9,142.66	8,900.00	8,734.91	36.84	32.18	97.33	-436.74	486.13	1,565.61	1,521.51	44.10	35.502				
9,400.00	9,242.66	8,920.85	8,743.86	37.15	32.27	98.03	-455.57	486.32	1,594.34	1,550.50	43.84	36.367				
9,500.00	9,342.66	8,950.00	8,755.22	37.46	32.39	99.03	-482.41	486.59	1,628.24	1,584.66	43.57	37.369				
9,600.00	9,442.66	8,950.00	8,755.22	37.77	32.39	99.03	-482.41	486.59	1,666.95	1,623.92	43.03	38.739				
9,700.00	9,542.66	8,971.63	8,762.75	38.09	32.49	99.79	-502.68	486.79	1,710.31	1,667.70	42.61	40.138				
9,800.00	9,642.66	8,984.31	8,766.81	38.40	32.55	100.23	-514.69	486.90	1,758.06	1,715.97	42.09	41.764				

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 501H
Project:	Lea County, NM (NAD83)	TVD Reference:	3121.3' GE + 30' KB @ 3151.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3121.3' GE + 30' KB @ 3151.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 501H	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			
9,900.00	9,742.66	9,000.00	8,771.47	38.71	32.63	100.78	-529.68	487.05	1,809.90	1,768.31	41.59	43.519				
10,000.00	9,842.66	9,000.00	8,771.47	39.03	32.63	100.78	-529.68	487.05	1,865.49	1,824.53	40.97	45.537				
10,100.00	9,942.66	9,000.00	8,771.47	39.35	32.63	100.78	-529.68	487.05	1,924.68	1,884.32	40.36	47.693				
10,200.00	10,042.66	9,022.12	8,777.33	39.66	32.73	101.56	-551.00	487.26	1,986.73	1,946.80	39.93	49.759				
10,300.00	10,142.66	9,029.26	8,779.05	39.98	32.77	101.82	-557.93	487.33	2,051.85	2,012.43	39.41	52.059				
10,354.38	10,197.04	9,050.00	8,783.54	40.15	32.87	102.56	-578.18	487.53	2,088.63	2,049.37	39.26	53.196				
10,400.00	10,242.61	9,050.00	8,783.54	40.30	32.87	-72.84	-578.18	487.53	2,119.45	2,080.43	39.02	54.319				
10,450.00	10,292.22	9,050.00	8,783.54	40.45	32.87	-68.59	-578.18	487.53	2,152.92	2,114.17	38.75	55.557				
10,500.00	10,341.10	9,050.00	8,783.54	40.61	32.87	-64.57	-578.18	487.53	2,185.86	2,147.37	38.49	56.789				
10,550.00	10,388.88	9,050.00	8,783.54	40.77	32.87	-60.84	-578.18	487.53	2,218.03	2,179.79	38.24	58.006				
10,600.00	10,435.20	9,050.00	8,783.54	40.93	32.87	-57.41	-578.18	487.53	2,249.24	2,211.24	37.99	59.200				
10,650.00	10,479.72	9,050.00	8,783.54	41.09	32.87	-54.30	-578.18	487.53	2,279.28	2,241.52	37.76	60.360				
10,700.00	10,522.08	9,075.37	8,788.04	41.25	33.00	-51.09	-603.14	487.78	2,307.42	2,269.72	37.70	61.213				
10,750.00	10,561.96	9,100.00	8,791.34	41.40	33.13	-48.30	-627.55	488.02	2,334.38	2,296.75	37.63	62.039				
10,800.00	10,599.07	9,100.00	8,791.34	41.55	33.13	-46.21	-627.55	488.02	2,359.11	2,321.67	37.43	63.023				
10,850.00	10,633.12	9,100.00	8,791.34	41.71	33.13	-44.38	-627.55	488.02	2,382.00	2,344.74	37.26	63.935				
10,900.00	10,663.85	9,100.00	8,791.34	41.86	33.13	-42.79	-627.55	488.02	2,402.93	2,365.83	37.10	64.766				
10,950.00	10,691.03	9,123.01	8,793.48	42.01	33.25	-41.26	-650.45	488.24	2,421.34	2,384.25	37.08	65.293				
11,000.00	10,714.45	9,150.00	8,794.81	42.17	33.40	-39.97	-677.41	488.51	2,437.77	2,400.67	37.10	65.710				
11,050.00	10,733.93	9,150.00	8,794.81	42.33	33.40	-39.08	-677.41	488.51	2,451.30	2,414.29	37.01	66.229				
11,100.00	10,749.32	9,150.00	8,794.81	42.50	33.40	-38.36	-677.41	488.51	2,462.50	2,425.55	36.96	66.634				
11,150.00	10,760.52	9,170.94	8,795.00	42.68	33.52	-37.75	-698.35	488.72	2,471.09	2,434.07	37.01	66.763				
11,200.00	10,767.42	9,220.45	8,795.00	42.87	33.81	-37.32	-747.85	489.21	2,476.58	2,439.37	37.21	66.549				
11,254.38	10,770.00	9,274.75	8,795.00	43.09	34.15	-37.16	-802.15	489.74	2,478.63	2,441.16	37.47	66.147				
11,300.00	10,770.00	9,320.37	8,795.00	43.29	34.44	-37.16	-847.77	490.19	2,478.63	2,440.92	37.71	65.727				
11,400.00	10,770.00	9,420.37	8,795.00	43.76	35.14	-37.16	-947.76	491.18	2,478.63	2,440.35	38.28	64.742				
11,500.00	10,770.00	9,520.37	8,795.00	44.29	35.91	-37.16	-1,047.76	492.17	2,478.63	2,439.71	38.92	63.685				
11,600.00	10,770.00	9,620.37	8,795.00	44.88	36.73	-37.16	-1,147.75	493.15	2,478.63	2,439.01	39.61	62.568				
11,700.00	10,770.00	9,720.37	8,795.00	45.53	37.60	-37.16	-1,247.75	494.14	2,478.62	2,438.26	40.37	61.405				
11,800.00	10,770.00	9,820.37	8,795.00	46.23	38.53	-37.16	-1,347.74	495.13	2,478.62	2,437.45	41.17	60.206				
11,900.00	10,770.00	9,920.37	8,795.00	46.99	39.50	-37.16	-1,447.74	496.12	2,478.62	2,436.60	42.02	58.983				
12,000.00	10,770.00	10,020.37	8,795.00	47.79	40.52	-37.16	-1,547.73	497.10	2,478.62	2,435.69	42.92	57.746				
12,100.00	10,770.00	10,120.37	8,795.00	48.64	41.57	-37.16	-1,647.73	498.09	2,478.62	2,434.75	43.86	56.506				
12,200.00	10,770.00	10,220.37	8,795.00	49.53	42.67	-37.16	-1,747.72	499.08	2,478.61	2,433.76	44.85	55.267				
12,300.00	10,770.00	10,320.37	8,795.00	50.46	43.80	-37.16	-1,847.72	500.06	2,478.61	2,432.74	45.87	54.036				
12,400.00	10,770.00	10,420.37	8,795.00	51.43	44.96	-37.16	-1,947.71	501.05	2,478.61	2,431.68	46.93	52.818				
12,500.00	10,770.00	10,520.37	8,795.00	52.44	46.15	-37.16	-2,047.71	502.04	2,478.61	2,430.59	48.02	51.617				
12,600.00	10,770.00	10,620.37	8,795.00	53.48	47.37	-37.16	-2,147.70	503.03	2,478.60	2,429.46	49.14	50.438				
12,700.00	10,770.00	10,720.37	8,795.00	54.55	48.61	-37.16	-2,247.70	504.01	2,478.60	2,428.31	50.29	49.283				
12,800.00	10,770.00	10,820.37	8,795.00	55.65	49.88	-37.16	-2,347.69	505.00	2,478.60	2,427.13	51.47	48.157				
12,900.00	10,770.00	10,920.37	8,795.00	56.78	51.17	-37.16	-2,447.69	505.99	2,478.60	2,425.93	52.67	47.058				
13,000.00	10,770.00	11,020.37	8,795.00	57.93	52.48	-37.16	-2,547.68	506.98	2,478.60	2,424.70	53.90	45.988				
13,100.00	10,770.00	11,120.37	8,795.00	59.11	53.81	-37.16	-2,647.68	507.96	2,478.59	2,423.45	55.15	44.947				
13,200.00	10,770.00	11,220.37	8,795.00	60.31	55.16	-37.16	-2,747.67	508.95	2,478.59	2,422.18	56.41	43.936				
13,300.00	10,770.00	11,320.37	8,795.00	61.54	56.52	-37.16	-2,847.67	509.94	2,478.59	2,420.89	57.70	42.957				
13,400.00	10,770.00	11,420.37	8,795.00	62.78	57.90	-37.16	-2,947.66	510.92	2,478.59	2,419.58	59.00	42.009				
13,500.00	10,770.00	11,520.37	8,795.00	64.04	59.29	-37.16	-3,047.66	511.91	2,478.58	2,418.26	60.32	41.089				
13,600.00	10,770.00	11,620.37	8,795.00	65.32	60.69	-37.16	-3,147.65	512.90	2,478.58	2,416.92	61.66	40.198				
13,700.00	10,770.00	11,720.37	8,795.00	66.62	62.11	-37.16	-3,247.65	513.89	2,478.58	2,415.57	63.01	39.337				
13,800.00	10,770.00	11,820.37	8,795.00	67.93	63.54	-37.16	-3,347.64	514.87	2,478.58	2,414.21	64.37	38.504				
13,900.00	10,770.00	11,920.37	8,795.00	69.25	64.97	-37.16	-3,447.64	515.86	2,478.57	2,412.83	65.75	37.699				
14,000.00	10,770.00	12,020.37	8,795.00	70.59	66.42	-37.16	-3,547.63	516.85	2,478.57	2,411.44	67.13	36.920				

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 501H
Project:	Lea County, NM (NAD83)	TVD Reference:	3121.3' GE + 30' KB @ 3151.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3121.3' GE + 30' KB @ 3151.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 501H	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	10,770.00	12,120.37	8,795.00	71.95	67.88	-37.16	-3,647.63	517.83	2,478.57	2,410.04	68.53	36.167		
14,200.00	10,770.00	12,220.37	8,795.00	73.31	69.35	-37.16	-3,747.62	518.82	2,478.57	2,408.63	69.94	35.438		
14,300.00	10,770.00	12,320.37	8,795.00	74.69	70.82	-37.16	-3,847.62	519.81	2,478.57	2,407.21	71.36	34.735		
14,400.00	10,770.00	12,420.37	8,795.00	76.08	72.30	-37.16	-3,947.62	520.80	2,478.56	2,405.78	72.78	34.054		
14,500.00	10,770.00	12,520.37	8,795.00	77.48	73.79	-37.16	-4,047.61	521.78	2,478.56	2,404.34	74.22	33.396		
14,600.00	10,770.00	12,620.37	8,795.00	78.89	75.29	-37.16	-4,147.61	522.77	2,478.56	2,402.90	75.66	32.759		
14,700.00	10,770.00	12,720.37	8,795.00	80.31	76.79	-37.16	-4,247.60	523.76	2,478.56	2,401.44	77.11	32.142		
14,800.00	10,770.00	12,820.37	8,795.00	81.73	78.30	-37.16	-4,347.60	524.75	2,478.55	2,399.99	78.57	31.547		
14,900.00	10,770.00	12,920.37	8,795.00	83.17	79.81	-37.16	-4,447.59	525.73	2,478.55	2,398.52	80.03	30.970		
15,000.00	10,770.00	13,020.37	8,795.00	84.61	81.33	-37.16	-4,547.59	526.72	2,478.55	2,397.05	81.50	30.411		
15,100.00	10,770.00	13,120.37	8,795.00	86.06	82.86	-37.16	-4,647.58	527.71	2,478.55	2,395.57	82.98	29.870		
15,200.00	10,770.00	13,220.37	8,795.00	87.52	84.39	-37.16	-4,747.58	528.69	2,478.55	2,394.09	84.46	29.346		
15,300.00	10,770.00	13,320.37	8,795.00	88.99	85.92	-37.16	-4,847.57	529.68	2,478.54	2,392.60	85.94	28.839		
15,400.00	10,770.00	13,420.37	8,795.00	90.46	87.46	-37.16	-4,947.57	530.67	2,478.54	2,391.11	87.43	28.348		
15,500.00	10,770.00	13,520.37	8,795.00	91.94	89.00	-37.16	-5,047.56	531.66	2,478.54	2,389.61	88.93	27.871		
15,600.00	10,770.00	13,620.37	8,795.00	93.42	90.55	-37.16	-5,147.56	532.64	2,478.54	2,388.11	90.43	27.408		
15,700.00	10,770.00	13,720.37	8,795.00	94.91	92.10	-37.16	-5,247.55	533.63	2,478.53	2,386.60	91.93	26.960		
15,800.00	10,770.00	13,820.37	8,795.00	96.40	93.65	-37.16	-5,347.55	534.62	2,478.53	2,385.09	93.44	26.525		
15,900.00	10,770.00	13,920.37	8,795.00	97.90	95.20	-37.15	-5,447.54	535.61	2,478.53	2,383.58	94.95	26.103		
16,000.00	10,770.00	14,020.37	8,795.00	99.41	96.76	-37.15	-5,547.54	536.59	2,478.53	2,382.06	96.47	25.693		
16,100.00	10,770.00	14,120.37	8,795.00	100.92	98.33	-37.15	-5,647.53	537.58	2,478.53	2,380.54	97.98	25.295		
16,200.00	10,770.00	14,220.37	8,795.00	102.43	99.89	-37.15	-5,747.53	538.57	2,478.52	2,379.02	99.50	24.909		
16,300.00	10,770.00	14,320.37	8,795.00	103.95	101.46	-37.15	-5,847.52	539.55	2,478.52	2,377.49	101.03	24.533		
16,400.00	10,770.00	14,420.37	8,795.00	105.47	103.03	-37.15	-5,947.52	540.54	2,478.52	2,375.97	102.55	24.168		
16,500.00	10,770.00	14,520.37	8,795.00	107.00	104.60	-37.15	-6,047.51	541.53	2,478.52	2,374.43	104.08	23.813		
16,600.00	10,770.00	14,620.37	8,795.00	108.52	106.18	-37.15	-6,147.51	542.52	2,478.51	2,372.90	105.61	23.467		
16,700.00	10,770.00	14,720.37	8,795.00	110.06	107.76	-37.15	-6,247.50	543.50	2,478.51	2,371.37	107.15	23.132		
16,800.00	10,770.00	14,820.37	8,795.00	111.59	109.34	-37.15	-6,347.50	544.49	2,478.51	2,369.83	108.68	22.805		
16,900.00	10,770.00	14,920.37	8,795.00	113.13	110.92	-37.15	-6,447.49	545.48	2,478.51	2,368.29	110.22	22.487		
17,000.00	10,770.00	15,020.37	8,795.00	114.68	112.50	-37.15	-6,547.49	546.46	2,478.51	2,366.74	111.76	22.177		
17,100.00	10,770.00	15,120.37	8,795.00	116.22	114.09	-37.15	-6,647.48	547.45	2,478.50	2,365.20	113.30	21.875		
17,200.00	10,770.00	15,220.37	8,795.00	117.77	115.68	-37.15	-6,747.48	548.44	2,478.50	2,363.66	114.85	21.581		
17,300.00	10,770.00	15,320.37	8,795.00	119.32	117.27	-37.15	-6,847.47	549.43	2,478.50	2,362.11	116.39	21.295		
17,400.00	10,770.00	15,420.37	8,795.00	120.88	118.86	-37.15	-6,947.47	550.41	2,478.50	2,360.56	117.94	21.015		
17,500.00	10,770.00	15,520.37	8,795.00	122.43	120.45	-37.15	-7,047.46	551.40	2,478.49	2,359.01	119.49	20.743		
17,600.00	10,770.00	15,620.37	8,795.00	123.99	122.05	-37.15	-7,147.46	552.39	2,478.49	2,357.46	121.03	20.478		
17,700.00	10,770.00	15,720.37	8,795.00	125.55	123.64	-37.15	-7,247.45	553.38	2,478.49	2,355.91	122.58	20.219		
17,800.00	10,770.00	15,820.37	8,795.00	127.12	125.24	-37.15	-7,347.45	554.36	2,478.49	2,354.35	124.14	19.966		
17,900.00	10,770.00	15,920.37	8,795.00	128.68	126.84	-37.15	-7,447.44	555.35	2,478.49	2,352.80	125.69	19.719		
18,000.00	10,770.00	16,020.37	8,795.00	130.25	128.44	-37.15	-7,547.44	556.34	2,478.48	2,351.24	127.24	19.478		
18,100.00	10,770.00	16,120.37	8,795.00	131.82	130.04	-37.15	-7,647.43	557.32	2,478.48	2,349.68	128.80	19.243		
18,200.00	10,770.00	16,220.37	8,795.00	133.39	131.64	-37.15	-7,747.43	558.31	2,478.48	2,348.12	130.35	19.013		
18,300.00	10,770.00	16,320.37	8,795.00	134.97	133.25	-37.15	-7,847.43	559.30	2,478.48	2,346.56	131.91	18.789		
18,400.00	10,770.00	16,420.37	8,795.00	136.54	134.85	-37.15	-7,947.42	560.29	2,478.47	2,345.00	133.47	18.569		
18,500.00	10,770.00	16,520.37	8,795.00	138.12	136.46	-37.15	-8,047.42	561.27	2,478.47	2,343.44	135.03	18.355		
18,600.00	10,770.00	16,620.37	8,795.00	139.70	138.06	-37.15	-8,147.41	562.26	2,478.47	2,341.88	136.59	18.146		
18,700.00	10,770.00	16,720.37	8,795.00	141.28	139.67	-37.15	-8,247.41	563.25	2,478.47	2,340.32	138.15	17.941		
18,800.00	10,770.00	16,820.37	8,795.00	142.86	141.28	-37.15	-8,347.40	564.23	2,478.47	2,338.75	139.71	17.740		
18,900.00	10,770.00	16,920.37	8,795.00	144.45	142.89	-37.15	-8,447.40	565.22	2,478.46	2,337.19	141.27	17.544		
19,000.00	10,770.00	17,020.37	8,795.00	146.03	144.50	-37.15	-8,547.39	566.21	2,478.46	2,335.63	142.83	17.352		
19,100.00	10,770.00	17,120.37	8,795.00	147.62	146.11	-37.15	-8,647.39	567.20	2,478.46	2,334.06	144.40	17.164		
19,200.00	10,770.00	17,220.37	8,795.00	149.21	147.73	-37.15	-8,747.38	568.18	2,478.46	2,332.50	145.96	16.980		

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 501H
Project:	Lea County, NM (NAD83)	TVD Reference:	3121.3' GE + 30' KB @ 3151.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3121.3' GE + 30' KB @ 3151.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 501H	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						
19,300.00	10,770.00	17,320.37	8,795.00	150.80	149.34	-37.15	-8,847.38	569.17	2,478.45	2,330.93	147.52	16.800						
19,400.00	10,770.00	17,420.37	8,795.00	152.39	150.96	-37.15	-8,947.37	570.16	2,478.45	2,329.37	149.09	16.624						
19,500.00	10,770.00	17,520.37	8,795.00	153.98	152.57	-37.15	-9,047.37	571.15	2,478.45	2,327.80	150.65	16.452						
19,600.00	10,770.00	17,620.37	8,795.00	155.57	154.19	-37.15	-9,147.36	572.13	2,478.45	2,326.23	152.22	16.282						
19,700.00	10,770.00	17,720.37	8,795.00	157.17	155.80	-37.15	-9,247.36	573.12	2,478.45	2,324.66	153.78	16.117						
19,800.00	10,770.00	17,820.37	8,795.00	158.76	157.42	-37.15	-9,347.35	574.11	2,478.44	2,323.10	155.35	15.954						
19,900.00	10,770.00	17,920.37	8,795.00	160.36	159.04	-37.15	-9,447.35	575.09	2,478.44	2,321.53	156.91	15.795						
20,000.00	10,770.00	18,020.37	8,795.00	161.96	160.66	-37.15	-9,547.34	576.08	2,478.44	2,319.96	158.48	15.639						
20,100.00	10,770.00	18,120.37	8,795.00	163.56	162.28	-37.15	-9,647.34	577.07	2,478.44	2,318.39	160.05	15.486						
20,200.00	10,770.00	18,220.37	8,795.00	165.16	163.90	-37.15	-9,747.33	578.06	2,478.43	2,316.82	161.61	15.336						
20,300.00	10,770.00	18,320.37	8,795.00	166.76	165.52	-37.15	-9,847.33	579.04	2,478.43	2,315.25	163.18	15.188						
20,400.00	10,770.00	18,420.37	8,795.00	168.36	167.14	-37.15	-9,947.32	580.03	2,478.43	2,313.68	164.75	15.044						
20,500.00	10,770.00	18,520.37	8,795.00	169.97	168.76	-37.15	-10,047.32	581.02	2,478.43	2,312.11	166.31	14.902						
20,600.00	10,770.00	18,620.37	8,795.00	171.57	170.39	-37.15	-10,147.31	582.00	2,478.43	2,310.54	167.88	14.763						
20,700.00	10,770.00	18,720.37	8,795.00	173.18	172.01	-37.15	-10,247.31	582.99	2,478.42	2,308.98	169.45	14.627						
20,800.00	10,770.00	18,820.37	8,795.00	174.78	173.63	-37.15	-10,347.30	583.98	2,478.42	2,307.41	171.01	14.493						
20,841.66	10,770.00	18,862.03	8,795.00	175.40	174.31	-37.15	-10,388.96	584.39	2,478.42	2,306.83	171.59	14.444						

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 501H
Project:	Lea County, NM (NAD83)	TVD Reference:	3121.3' GE + 30' KB @ 3151.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3121.3' GE + 30' KB @ 3151.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 501H	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	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor				
(usft)	(usft)	(usft)	(usft)	(usft)	(usft)	(°)	+N/-S (usft)	+E/-W (usft)	(usft)	(usft)	(usft)					
0.00	0.00	0.00	0.00	0.00	0.00	89.45	0.24	24.99	25.00							
100.00	100.00	99.50	99.50	0.13	0.12	89.45	0.24	24.99	24.99	24.81	0.18	141.200				
200.00	200.00	199.50	199.50	0.48	0.48	89.45	0.24	24.99	24.99	24.31	0.68	36.584				
300.00	300.00	299.50	299.50	0.84	0.84	89.45	0.24	24.99	24.99	23.80	1.19	21.000				
400.00	400.00	399.50	399.50	1.20	1.20	89.45	0.24	24.99	24.99	23.29	1.70	14.726				
500.00	500.00	499.50	499.50	1.56	1.56	89.45	0.24	24.99	24.99	22.79	2.20	11.339				
600.00	600.00	599.50	599.50	1.92	1.92	89.45	0.24	24.99	24.99	22.28	2.71	9.219				
700.00	700.00	699.50	699.50	2.28	2.27	89.45	0.24	24.99	24.99	21.77	3.22	7.766				
800.00	800.00	799.50	799.50	2.63	2.63	89.45	0.24	24.99	24.99	21.27	3.72	6.709				
900.00	900.00	899.50	899.50	2.99	2.99	89.45	0.24	24.99	24.99	20.76	4.23	5.906				
1,000.00	1,000.00	999.50	999.50	3.35	3.35	89.45	0.24	24.99	24.99	20.25	4.74	5.274				
1,100.00	1,100.00	1,099.50	1,099.50	3.71	3.71	89.45	0.24	24.99	24.99	19.75	5.25	4.764				
1,200.00	1,200.00	1,199.50	1,199.50	4.07	4.07	89.45	0.24	24.99	24.99	19.24	5.75	4.344				
1,300.00	1,300.00	1,299.50	1,299.50	4.43	4.43	89.45	0.24	24.99	24.99	18.73	6.26	3.992				
1,400.00	1,400.00	1,399.50	1,399.50	4.79	4.78	89.45	0.24	24.99	24.99	18.22	6.77	3.693				
1,500.00	1,500.00	1,499.50	1,499.50	5.14	5.14	89.45	0.24	24.99	24.99	17.72	7.27	3.436				
1,600.00	1,600.00	1,599.50	1,599.50	5.50	5.50	89.45	0.24	24.99	24.99	17.21	7.78	3.212				
1,700.00	1,700.00	1,699.50	1,699.50	5.86	5.86	89.45	0.24	24.99	24.99	16.70	8.29	3.016				
1,800.00	1,800.00	1,799.50	1,799.50	6.22	6.22	89.45	0.24	24.99	24.99	16.20	8.79	2.842				
1,900.00	1,900.00	1,899.50	1,899.50	6.58	6.58	89.45	0.24	24.99	24.99	15.69	9.30	2.687				
2,000.00	2,000.00	1,999.50	1,999.50	6.94	6.93	89.45	0.24	24.99	24.99	15.18	9.81	2.548				
2,100.00	2,100.00	2,099.50	2,099.50	7.29	7.29	89.45	0.24	24.99	24.99	14.68	10.32	2.423				
2,200.00	2,200.00	2,199.50	2,199.50	7.65	7.65	89.45	0.24	24.99	24.99	14.17	10.82	2.309				
2,300.00	2,300.00	2,299.50	2,299.50	8.01	8.01	89.45	0.24	24.99	24.99	13.66	11.33	2.206				
2,400.00	2,400.00	2,399.50	2,399.50	8.37	8.37	89.45	0.24	24.99	24.99	13.16	11.84	2.111				
2,500.00	2,500.00	2,499.50	2,499.50	8.73	8.73	89.45	0.24	24.99	24.99	12.65	12.34	2.025				
2,600.00	2,600.00	2,599.50	2,599.50	9.09	9.09	89.45	0.24	24.99	24.99	12.14	12.85	1.945				
2,700.00	2,700.00	2,699.50	2,699.50	9.45	9.44	89.45	0.24	24.99	24.99	11.63	13.36	1.871				
2,800.00	2,800.00	2,799.50	2,799.50	9.80	9.80	89.45	0.24	24.99	24.99	11.13	13.86	1.803				
2,900.00	2,900.00	2,899.50	2,899.50	10.16	10.16	89.45	0.24	24.99	24.99	10.62	14.37	1.739				
3,000.00	3,000.00	2,999.50	2,999.50	10.52	10.52	89.45	0.24	24.99	24.99	10.11	14.88	1.680				
3,100.00	3,100.00	3,099.50	3,099.50	10.88	10.88	89.45	0.24	24.99	24.99	9.61	15.38	1.624				
3,200.00	3,200.00	3,199.50	3,199.50	11.24	11.24	89.45	0.24	24.99	24.99	9.10	15.89	1.573	CC, ES, SF			
3,300.00	3,300.00	3,298.83	3,298.82	11.60	11.58	89.66	0.16	26.27	26.28	8.99	16.38	1.604				
3,400.00	3,400.00	3,398.03	3,397.94	11.96	11.92	90.18	-0.10	30.11	30.15	13.31	16.85	1.790				
3,500.00	3,499.99	3,496.85	3,496.55	12.30	12.26	-166.11	-0.52	36.49	37.88	20.59	17.29	2.190				
3,600.00	3,599.91	3,594.89	3,594.19	12.64	12.60	-166.51	-1.10	45.34	50.70	32.97	17.73	2.860				
3,700.00	3,699.69	3,692.60	3,691.27	12.98	12.94	-167.09	-1.82	56.36	68.27	50.09	18.18	3.754				
3,800.00	3,799.27	3,790.48	3,788.49	13.32	13.29	-167.76	-2.57	67.73	88.70	70.03	18.66	4.752				
3,900.00	3,898.57	3,887.80	3,885.15	13.67	13.63	-168.43	-3.32	79.03	111.64	92.49	19.14	5.832				
4,000.00	3,997.54	3,984.50	3,981.18	14.02	13.98	-169.06	-4.05	90.26	137.08	117.46	19.62	6.988				
4,100.00	4,096.09	4,080.50	4,076.53	14.38	14.32	-169.63	-4.79	101.42	165.02	144.93	20.09	8.214				
4,200.00	4,194.16	4,175.74	4,171.13	14.75	14.67	-170.15	-5.52	112.48	195.44	174.88	20.56	9.506				
4,300.00	4,291.70	4,270.16	4,264.90	15.12	15.01	-170.62	-6.24	123.45	228.32	207.30	21.03	10.859				
4,400.00	4,388.62	4,363.68	4,357.79	15.51	15.36	-171.04	-6.95	134.31	263.65	242.16	21.49	12.268				
4,500.00	4,484.86	4,456.25	4,449.73	15.92	15.70	-171.42	-7.66	145.06	301.41	279.45	21.95	13.729				
4,600.00	4,580.36	4,547.81	4,540.66	16.34	16.04	-171.76	-8.36	155.70	341.56	319.15	22.41	15.240				
4,700.00	4,675.05	4,638.28	4,630.52	16.78	16.37	-172.06	-9.05	166.21	384.09	361.22	22.87	16.796				
4,746.50	4,718.78	4,679.96	4,671.92	16.99	16.53	-172.19	-9.37	171.05	404.66	381.58	23.08	17.533				
4,800.00	4,769.00	4,727.78	4,719.41	17.24	16.71	-172.38	-9.73	176.61	428.63	405.31	23.32	18.379				
4,900.00	4,862.85	4,817.16	4,808.18	17.72	17.04	-172.68	-10.42	186.99	473.44	449.66	23.77	19.914				
5,000.00	4,956.70	4,906.53	4,896.95	18.21	17.37	-172.93	-11.10	197.37	518.25	494.02	24.23	21.389				

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 501H
Project:	Lea County, NM (NAD83)	TVD Reference:	3121.3' GE + 30' KB @ 3151.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3121.3' GE + 30' KB @ 3151.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 501H	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	5,050.55	4,995.91	4,985.72	18.71	17.71	-173.14	-11.78	207.75	563.07	538.38	24.69	22.808				
5,200.00	5,144.40	5,085.28	5,074.48	19.23	18.05	-173.32	-12.47	218.13	607.90	582.75	25.15	24.173				
5,300.00	5,238.25	5,174.66	5,163.25	19.76	18.39	-173.48	-13.15	228.52	652.73	627.12	25.61	25.487				
5,400.00	5,332.10	5,264.03	5,252.02	20.29	18.72	-173.61	-13.83	238.90	697.56	671.49	26.08	26.752				
5,500.00	5,425.95	5,353.41	5,340.79	20.84	19.06	-173.73	-14.52	249.28	742.40	715.86	26.54	27.971				
5,600.00	5,519.80	5,442.79	5,429.56	21.39	19.40	-173.83	-15.20	259.66	787.24	760.22	27.01	29.145				
5,700.00	5,613.65	5,532.16	5,518.32	21.95	19.75	-173.93	-15.88	270.05	832.08	804.59	27.48	30.277				
5,800.00	5,707.50	5,621.54	5,607.09	22.52	20.09	-174.01	-16.57	280.43	876.92	848.96	27.95	31.370				
5,900.00	5,801.36	5,710.91	5,695.86	23.10	20.43	-174.09	-17.25	290.81	921.76	893.33	28.43	32.424				
6,000.00	5,895.21	5,800.29	5,784.63	23.68	20.77	-174.16	-17.93	301.19	966.60	937.70	28.90	33.441				
6,100.00	5,989.06	5,889.66	5,873.39	24.27	21.12	-174.22	-18.61	311.57	1,011.45	982.07	29.38	34.424				
6,200.00	6,082.91	5,979.04	5,962.16	24.86	21.46	-174.28	-19.30	321.96	1,056.30	1,026.44	29.86	35.374				
6,300.00	6,176.76	6,068.41	6,050.93	25.46	21.81	-174.33	-19.98	332.34	1,101.14	1,070.80	30.34	36.292				
6,403.84	6,274.22	6,161.22	6,143.11	26.09	22.16	-174.38	-20.69	343.12	1,147.72	1,116.87	30.84	37.213				
6,500.00	6,364.87	6,247.70	6,228.99	26.66	22.50	-174.48	-21.35	353.16	1,189.76	1,158.45	31.31	38.002				
6,600.00	6,459.97	6,338.71	6,319.39	27.24	22.85	-174.57	-22.05	363.74	1,231.17	1,199.37	31.80	38.721				
6,700.00	6,555.85	6,430.78	6,410.83	27.79	23.21	-174.64	-22.75	374.43	1,270.20	1,237.91	32.29	39.339				
6,800.00	6,652.43	6,523.83	6,503.25	28.32	23.57	-174.69	-23.46	385.24	1,306.81	1,274.02	32.78	39.861				
6,900.00	6,749.66	6,617.81	6,596.59	28.83	23.94	-174.73	-24.18	396.16	1,340.98	1,307.70	33.28	40.290				
7,000.00	6,847.47	6,712.64	6,690.78	29.31	24.31	-174.75	-24.90	407.17	1,372.70	1,338.91	33.78	40.632				
7,100.00	6,945.80	6,808.27	6,785.76	29.77	24.68	-174.76	-25.63	418.28	1,401.93	1,367.64	34.29	40.890				
7,200.00	7,044.56	6,904.62	6,881.45	30.20	25.05	-174.76	-26.37	429.48	1,428.66	1,393.87	34.79	41.068				
7,300.00	7,143.70	7,001.64	6,977.81	30.61	25.43	-174.74	-27.11	440.74	1,452.87	1,417.58	35.29	41.170				
7,400.00	7,243.15	7,099.25	7,074.76	30.99	25.81	-174.72	-27.86	452.08	1,474.54	1,438.75	35.79	41.198				
7,500.00	7,342.84	7,242.20	7,216.93	31.35	26.37	-174.66	-28.83	466.91	1,492.58	1,456.04	36.54	40.851				
7,600.00	7,442.70	7,403.39	7,377.77	31.69	26.96	-174.62	-29.52	477.34	1,504.12	1,466.80	37.33	40.296				
7,700.00	7,542.66	7,566.05	7,540.37	32.01	27.53	-174.62	-29.76	480.99	1,508.94	1,470.88	38.06	39.648				
7,750.34	7,593.00	7,618.18	7,592.50	32.16	27.71	81.84	-29.76	480.99	1,509.27	1,470.96	38.31	39.397				
7,800.00	7,642.66	7,667.84	7,642.16	32.30	27.88	81.84	-29.76	480.99	1,509.27	1,470.72	38.55	39.152				
7,900.00	7,742.66	7,767.84	7,742.16	32.60	28.22	81.84	-29.76	480.99	1,509.27	1,470.24	39.03	38.667				
8,000.00	7,842.66	7,867.84	7,842.16	32.89	28.56	81.84	-29.76	480.99	1,509.27	1,469.76	39.52	38.194				
8,100.00	7,942.66	7,967.84	7,942.16	33.19	28.90	81.84	-29.76	480.99	1,509.27	1,469.27	40.00	37.731				
8,200.00	8,042.66	8,067.84	8,042.16	33.49	29.24	81.84	-29.76	480.99	1,509.27	1,468.79	40.49	37.279				
8,300.00	8,142.66	8,167.84	8,142.16	33.79	29.58	81.84	-29.76	480.99	1,509.27	1,468.30	40.97	36.837				
8,400.00	8,242.66	8,267.84	8,242.16	34.09	29.93	81.84	-29.76	480.99	1,509.27	1,467.82	41.46	36.405				
8,500.00	8,342.66	8,367.84	8,342.16	34.39	30.27	81.84	-29.76	480.99	1,509.27	1,467.33	41.94	35.983				
8,600.00	8,442.66	8,467.84	8,442.16	34.69	30.61	81.84	-29.76	480.99	1,509.27	1,466.84	42.43	35.570				
8,700.00	8,542.66	8,567.84	8,542.16	35.00	30.96	81.84	-29.76	480.99	1,509.27	1,466.35	42.92	35.166				
8,800.00	8,642.66	8,667.84	8,642.16	35.30	31.30	81.84	-29.76	480.99	1,509.27	1,465.87	43.41	34.771				
8,900.00	8,742.66	8,767.84	8,742.16	35.61	31.65	81.84	-29.76	480.99	1,509.27	1,465.38	43.90	34.384				
9,000.00	8,842.66	8,867.84	8,842.16	35.91	31.99	81.84	-29.76	480.99	1,509.27	1,464.89	44.38	34.005				
9,100.00	8,942.66	8,967.84	8,942.16	36.22	32.33	81.84	-29.76	480.99	1,509.27	1,464.40	44.87	33.634				
9,200.00	9,042.66	9,067.84	9,042.16	36.53	32.68	81.84	-29.76	480.99	1,509.27	1,463.91	45.36	33.271				
9,300.00	9,142.66	9,167.84	9,142.16	36.84	33.03	81.84	-29.76	480.99	1,509.27	1,463.42	45.85	32.916				
9,400.00	9,242.66	9,267.84	9,242.16	37.15	33.37	81.84	-29.76	480.99	1,509.27	1,462.93	46.34	32.567				
9,500.00	9,342.66	9,367.84	9,342.16	37.46	33.72	81.84	-29.76	480.99	1,509.27	1,462.44	46.83	32.226				
9,600.00	9,442.66	9,467.84	9,442.16	37.77	34.06	81.84	-29.76	480.99	1,509.27	1,461.95	47.33	31.892				
9,700.00	9,542.66	9,567.84	9,542.16	38.09	34.41	81.84	-29.76	480.99	1,509.27	1,461.46	47.82	31.564				
9,800.00	9,642.66	9,667.84	9,642.16	38.40	34.76	81.84	-29.76	480.99	1,509.27	1,460.96	48.31	31.243				
9,900.00	9,742.66	9,767.84	9,742.16	38.71	35.10	81.84	-29.76	480.99	1,509.27	1,460.47	48.80	30.928				
10,000.00	9,842.66	9,867.84	9,842.16	39.03	35.45	81.84	-29.76	480.99	1,509.27	1,459.98	49.29	30.619				
10,100.00	9,942.66	9,967.84	9,942.16	39.35	35.80	81.84	-29.76	480.99	1,509.27	1,459.49	49.79	30.316				

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 501H	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						
10,200.00	10,042.66	10,067.84	10,042.16	39.66	36.15	81.84	-29.76	480.99	1,509.27	1,458.99	50.28	30.019						
10,300.00	10,142.66	10,167.84	10,142.16	39.98	36.49	81.84	-29.76	480.99	1,509.27	1,458.50	50.77	29.727						
10,354.38	10,197.04	10,238.39	10,212.66	40.15	36.73	81.91	-31.66	481.01	1,509.11	1,458.02	51.08	29.541						
10,400.00	10,242.61	10,307.34	10,280.88	40.30	36.95	-97.32	-41.39	481.11	1,508.51	1,457.14	51.37	29.368						
10,450.00	10,292.22	10,381.38	10,352.26	40.45	37.19	-97.01	-60.87	481.30	1,507.61	1,455.95	51.66	29.182						
10,500.00	10,341.10	10,453.40	10,418.72	40.61	37.41	-96.62	-88.49	481.58	1,506.51	1,454.56	51.95	29.000						
10,550.00	10,388.88	10,523.10	10,479.26	40.77	37.61	-96.17	-122.95	481.92	1,505.26	1,453.03	52.23	28.819						
10,600.00	10,435.20	10,590.30	10,533.24	40.93	37.80	-95.67	-162.89	482.32	1,503.94	1,451.42	52.51	28.639						
10,650.00	10,479.72	10,654.93	10,580.42	41.09	37.98	-95.12	-207.02	482.76	1,502.59	1,449.79	52.80	28.459						
10,700.00	10,522.08	10,717.01	10,620.78	41.25	38.14	-94.55	-254.15	483.23	1,501.27	1,448.19	53.09	28.279						
10,750.00	10,561.96	10,776.63	10,654.52	41.40	38.31	-93.95	-303.26	483.72	1,500.04	1,446.66	53.38	28.099						
10,800.00	10,599.07	10,833.92	10,681.97	41.55	38.48	-93.34	-353.51	484.22	1,498.93	1,445.25	53.68	27.922						
10,850.00	10,633.12	10,889.02	10,703.51	41.71	38.66	-92.72	-404.20	484.73	1,497.98	1,443.99	53.98	27.748						
10,900.00	10,663.85	10,942.10	10,719.57	41.86	38.84	-92.09	-454.78	485.23	1,497.20	1,442.92	54.29	27.579						
10,950.00	10,691.03	10,993.34	10,730.57	42.01	39.03	-91.46	-504.80	485.73	1,496.63	1,442.04	54.59	27.417						
11,000.00	10,714.45	11,042.91	10,736.92	42.17	39.22	-90.83	-553.94	486.22	1,496.26	1,441.37	54.89	27.261						
11,050.00	10,733.93	11,090.95	10,739.00	42.33	39.42	-90.20	-601.92	486.70	1,496.09	1,440.91	55.18	27.113						
11,065.62	10,739.18	11,105.67	10,739.00	42.38	39.48	-90.01	-616.64	486.85	1,496.08	1,440.81	55.27	27.067						
11,100.00	10,749.32	11,138.52	10,739.00	42.50	39.63	-89.64	-649.48	487.18	1,496.12	1,440.63	55.48	26.965						
11,150.00	10,760.52	11,187.23	10,739.00	42.68	39.85	-89.21	-698.20	487.66	1,496.24	1,440.44	55.80	26.815						
11,200.00	10,767.42	11,236.74	10,739.00	42.87	40.09	-88.94	-747.70	488.16	1,496.35	1,440.21	56.14	26.655						
11,254.38	10,770.00	11,291.04	10,739.00	43.09	40.37	-88.83	-802.00	488.70	1,496.41	1,439.88	56.52	26.474						
11,300.00	10,770.00	11,336.65	10,739.00	43.29	40.62	-88.83	-847.61	489.15	1,496.41	1,439.54	56.87	26.312						
11,400.00	10,770.00	11,436.65	10,739.00	43.76	41.21	-88.83	-947.61	490.15	1,496.42	1,438.73	57.69	25.938						
11,500.00	10,770.00	11,536.65	10,739.00	44.29	41.86	-88.83	-1,047.60	491.15	1,496.42	1,437.83	58.59	25.540						
11,600.00	10,770.00	11,636.65	10,739.00	44.88	42.56	-88.83	-1,147.60	492.15	1,496.43	1,436.86	59.57	25.121						
11,700.00	10,770.00	11,736.65	10,739.00	45.53	43.31	-88.83	-1,247.59	493.15	1,496.44	1,435.82	60.62	24.684						
11,800.00	10,770.00	11,836.65	10,739.00	46.23	44.11	-88.83	-1,347.59	494.14	1,496.45	1,434.70	61.75	24.235						
11,900.00	10,770.00	11,936.65	10,739.00	46.99	44.96	-88.83	-1,447.58	495.14	1,496.45	1,433.52	62.94	23.777						
12,000.00	10,770.00	12,036.65	10,739.00	47.79	45.85	-88.83	-1,547.58	496.14	1,496.46	1,432.27	64.19	23.314						
12,100.00	10,770.00	12,136.65	10,739.00	48.64	46.78	-88.83	-1,647.57	497.14	1,496.47	1,430.97	65.50	22.847						
12,200.00	10,770.00	12,236.65	10,739.00	49.53	47.75	-88.83	-1,747.57	498.14	1,496.47	1,429.61	66.87	22.380						
12,300.00	10,770.00	12,336.65	10,739.00	50.46	48.76	-88.83	-1,847.56	499.13	1,496.48	1,428.19	68.29	21.914						
12,400.00	10,770.00	12,436.65	10,739.00	51.43	49.80	-88.83	-1,947.56	500.13	1,496.49	1,426.73	69.76	21.453						
12,500.00	10,770.00	12,536.65	10,739.00	52.44	50.87	-88.83	-2,047.55	501.13	1,496.50	1,425.22	71.27	20.997						
12,600.00	10,770.00	12,636.65	10,739.00	53.48	51.97	-88.83	-2,147.55	502.13	1,496.50	1,423.67	72.83	20.547						
12,700.00	10,770.00	12,736.65	10,739.00	54.55	53.11	-88.83	-2,247.54	503.13	1,496.51	1,422.08	74.43	20.106						
12,800.00	10,770.00	12,836.65	10,739.00	55.65	54.26	-88.83	-2,347.54	504.12	1,496.52	1,420.45	76.07	19.673						
12,900.00	10,770.00	12,936.65	10,739.00	56.78	55.45	-88.83	-2,447.53	505.12	1,496.52	1,418.78	77.74	19.250						
13,000.00	10,770.00	13,036.65	10,739.00	57.93	56.66	-88.83	-2,547.53	506.12	1,496.53	1,417.08	79.45	18.836						
13,100.00	10,770.00	13,136.65	10,739.00	59.11	57.88	-88.83	-2,647.52	507.12	1,496.54	1,415.35	81.19	18.433						
13,200.00	10,770.00	13,236.65	10,739.00	60.31	59.13	-88.83	-2,747.52	508.12	1,496.55	1,413.59	82.95	18.040						
13,300.00	10,770.00	13,336.65	10,739.00	61.54	60.40	-88.83	-2,847.51	509.12	1,496.55	1,411.80	84.75	17.658						
13,400.00	10,770.00	13,436.65	10,739.00	62.78	61.69	-88.83	-2,947.51	510.11	1,496.56	1,409.99	86.57	17.287						
13,500.00	10,770.00	13,536.65	10,739.00	64.04	62.99	-88.83	-3,047.50	511.11	1,496.57	1,408.15	88.42	16.927						
13,600.00	10,770.00	13,636.65	10,739.00	65.32	64.31	-88.83	-3,147.50	512.11	1,496.57	1,406.29	90.28	16.577						
13,700.00	10,770.00	13,736.65	10,739.00	66.62	65.65	-88.83	-3,247.49	513.11	1,496.58	1,404.41	92.17	16.237						
13,800.00	10,770.00	13,836.65	10,739.00	67.93	67.00	-88.83	-3,347.49	514.11	1,496.59	1,402.51	94.08	15.907						
13,900.00	10,770.00	13,936.65	10,739.00	69.25	68.36	-88.83	-3,447.48	515.10	1,496.60	1,400.59	96.01	15.588						
14,000.00	10,770.00	14,036.65	10,739.00	70.59	69.73	-88.83	-3,547.48	516.10	1,496.60	1,398.65	97.95	15.279						
14,100.00	10,770.00	14,136.65	10,739.00	71.95	71.12	-88.83	-3,647.47	517.10	1,496.61	1,396.69	99.92	14.979						
14,200.00	10,770.00	14,236.65	10,739.00	73.31	72.52	-88.83	-3,747.47	518.10	1,496.62	1,394.72	101.89	14.688						

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 501H
Project:	Lea County, NM (NAD83)	TVD Reference:	3121.3' GE + 30' KB @ 3151.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3121.3' GE + 30' KB @ 3151.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 501H	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				
14,300.00	10,770.00	14,336.65	10,739.00	74.69	73.93	-88.83	-3,847.46	519.10	1,496.62	1,392.74	103.89	14.406				
14,400.00	10,770.00	14,436.65	10,739.00	76.08	75.34	-88.83	-3,947.46	520.09	1,496.63	1,390.74	105.89	14.133				
14,500.00	10,770.00	14,536.65	10,739.00	77.48	76.77	-88.83	-4,047.45	521.09	1,496.64	1,388.73	107.91	13.869				
14,600.00	10,770.00	14,636.65	10,739.00	78.89	78.21	-88.83	-4,147.45	522.09	1,496.65	1,386.70	109.95	13.613				
14,700.00	10,770.00	14,736.65	10,739.00	80.31	79.65	-88.83	-4,247.44	523.09	1,496.65	1,384.66	111.99	13.364				
14,800.00	10,770.00	14,836.65	10,739.00	81.73	81.10	-88.83	-4,347.44	524.09	1,496.66	1,382.61	114.05	13.123				
14,900.00	10,770.00	14,936.65	10,739.00	83.17	82.56	-88.83	-4,447.43	525.09	1,496.67	1,380.56	116.11	12.890				
15,000.00	10,770.00	15,036.65	10,739.00	84.61	84.03	-88.83	-4,547.43	526.08	1,496.67	1,378.49	118.19	12.663				
15,100.00	10,770.00	15,136.65	10,739.00	86.06	85.50	-88.83	-4,647.42	527.08	1,496.68	1,376.41	120.27	12.444				
15,200.00	10,770.00	15,236.65	10,739.00	87.52	86.98	-88.83	-4,747.42	528.08	1,496.69	1,374.32	122.37	12.231				
15,300.00	10,770.00	15,336.65	10,739.00	88.99	88.47	-88.83	-4,847.41	529.08	1,496.70	1,372.22	124.47	12.024				
15,400.00	10,770.00	15,436.65	10,739.00	90.46	89.96	-88.83	-4,947.41	530.08	1,496.70	1,370.12	126.58	11.824				
15,500.00	10,770.00	15,536.65	10,739.00	91.94	91.46	-88.83	-5,047.40	531.07	1,496.71	1,368.01	128.70	11.629				
15,600.00	10,770.00	15,636.65	10,739.00	93.42	92.96	-88.83	-5,147.40	532.07	1,496.72	1,365.89	130.83	11.440				
15,700.00	10,770.00	15,736.65	10,739.00	94.91	94.47	-88.83	-5,247.39	533.07	1,496.73	1,363.76	132.96	11.257				
15,800.00	10,770.00	15,836.65	10,739.00	96.40	95.98	-88.83	-5,347.39	534.07	1,496.73	1,361.63	135.10	11.079				
15,900.00	10,770.00	15,936.65	10,739.00	97.90	97.50	-88.83	-5,447.38	535.07	1,496.74	1,359.49	137.25	10.905				
16,000.00	10,770.00	16,036.65	10,739.00	99.41	99.02	-88.83	-5,547.38	536.06	1,496.75	1,357.35	139.40	10.737				
16,100.00	10,770.00	16,136.65	10,739.00	100.92	100.55	-88.83	-5,647.37	537.06	1,496.75	1,355.19	141.56	10.573				
16,200.00	10,770.00	16,236.65	10,739.00	102.43	102.08	-88.83	-5,747.37	538.06	1,496.76	1,353.04	143.72	10.414				
16,300.00	10,770.00	16,336.65	10,739.00	103.95	103.61	-88.83	-5,847.36	539.06	1,496.77	1,350.88	145.89	10.259				
16,400.00	10,770.00	16,436.65	10,739.00	105.47	105.14	-88.83	-5,947.36	540.06	1,496.78	1,348.71	148.07	10.109				
16,500.00	10,770.00	16,536.65	10,739.00	107.00	106.68	-88.83	-6,047.35	541.05	1,496.78	1,346.54	150.24	9.962				
16,600.00	10,770.00	16,636.65	10,739.00	108.52	108.23	-88.83	-6,147.35	542.05	1,496.79	1,344.36	152.43	9.820				
16,700.00	10,770.00	16,736.65	10,739.00	110.06	109.77	-88.83	-6,247.34	543.05	1,496.80	1,342.18	154.62	9.681				
16,800.00	10,770.00	16,836.65	10,739.00	111.59	111.32	-88.83	-6,347.34	544.05	1,496.80	1,340.00	156.81	9.545				
16,900.00	10,770.00	16,936.65	10,739.00	113.13	112.88	-88.83	-6,447.33	545.05	1,496.81	1,337.81	159.01	9.414				
17,000.00	10,770.00	17,036.65	10,739.00	114.68	114.43	-88.83	-6,547.33	546.05	1,496.82	1,335.61	161.21	9.285				
17,100.00	10,770.00	17,136.65	10,739.00	116.22	115.99	-88.83	-6,647.32	547.04	1,496.83	1,333.42	163.41	9.160				
17,200.00	10,770.00	17,236.65	10,739.00	117.77	117.55	-88.83	-6,747.32	548.04	1,496.83	1,331.22	165.62	9.038				
17,300.00	10,770.00	17,336.65	10,739.00	119.32	119.11	-88.83	-6,847.31	549.04	1,496.84	1,329.01	167.83	8.919				
17,400.00	10,770.00	17,436.65	10,739.00	120.88	120.68	-88.83	-6,947.31	550.04	1,496.85	1,326.80	170.04	8.803				
17,500.00	10,770.00	17,536.65	10,739.00	122.43	122.24	-88.83	-7,047.30	551.04	1,496.85	1,324.59	172.26	8.689				
17,600.00	10,770.00	17,636.65	10,739.00	123.99	123.81	-88.83	-7,147.30	552.03	1,496.86	1,322.38	174.48	8.579				
17,700.00	10,770.00	17,736.65	10,739.00	125.55	125.39	-88.83	-7,247.29	553.03	1,496.87	1,320.16	176.70	8.471				
17,800.00	10,770.00	17,836.65	10,739.00	127.12	126.96	-88.83	-7,347.29	554.03	1,496.88	1,317.95	178.93	8.366				
17,900.00	10,770.00	17,936.65	10,739.00	128.68	128.54	-88.83	-7,447.28	555.03	1,496.88	1,315.72	181.16	8.263				
18,000.00	10,770.00	18,036.65	10,739.00	130.25	130.11	-88.83	-7,547.28	556.03	1,496.89	1,313.50	183.39	8.162				
18,100.00	10,770.00	18,136.65	10,739.00	131.82	131.69	-88.83	-7,647.27	557.02	1,496.90	1,311.27	185.63	8.064				
18,200.00	10,770.00	18,236.65	10,739.00	133.39	133.27	-88.83	-7,747.27	558.02	1,496.90	1,309.04	187.86	7.968				
18,300.00	10,770.00	18,336.65	10,739.00	134.97	134.86	-88.83	-7,847.26	559.02	1,496.91	1,306.81	190.10	7.874				
18,400.00	10,770.00	18,436.65	10,739.00	136.54	136.44	-88.83	-7,947.26	560.02	1,496.92	1,304.58	192.34	7.783				
18,500.00	10,770.00	18,536.65	10,739.00	138.12	138.03	-88.83	-8,047.25	561.02	1,496.93	1,302.34	194.59	7.693				
18,600.00	10,770.00	18,636.65	10,739.00	139.70	139.61	-88.83	-8,147.25	562.01	1,496.93	1,300.10	196.83	7.605				
18,700.00	10,770.00	18,736.65	10,739.00	141.28	141.20	-88.83	-8,247.24	563.01	1,496.94	1,297.86	199.08	7.519				
18,800.00	10,770.00	18,836.65	10,739.00	142.86	142.79	-88.83	-8,347.24	564.01	1,496.95	1,295.62	201.33	7.435				
18,900.00	10,770.00	18,936.65	10,739.00	144.45	144.39	-88.83	-8,447.23	565.01	1,496.95	1,293.37	203.58	7.353				
19,000.00	10,770.00	19,036.65	10,739.00	146.03	145.98	-88.83	-8,547.23	566.01	1,496.96	1,291.13	205.84	7.273				
19,100.00	10,770.00	19,136.65	10,739.00	147.62	147.57	-88.83	-8,647.22	567.01	1,496.97	1,288.88	208.09	7.194				
19,200.00	10,770.00	19,236.65	10,739.00	149.21	149.17	-88.83	-8,747.22	568.00	1,496.98	1,286.63	210.35	7.117				
19,300.00	10,770.00	19,336.65	10,739.00	150.80	150.77	-88.83	-8,847.21	569.00	1,496.98	1,284.38	212.61	7.041				
19,400.00	10,770.00	19,436.65	10,739.00	152.39	152.36	-88.83	-8,947.21	570.00	1,496.99	1,282.12	214.87	6.967				

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 501H
Project:	Lea County, NM (NAD83)	TVD Reference:	3121.3' GE + 30' KB @ 3151.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3121.3' GE + 30' KB @ 3151.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 501H	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	
19,500.00	10,770.00	19,536.65	10,739.00	153.98	153.96	-88.83	-9,047.20	571.00	1,497.00	1,279.87	217.13	6.894	
19,600.00	10,770.00	19,636.65	10,739.00	155.57	155.56	-88.83	-9,147.20	572.00	1,497.01	1,277.61	219.39	6.823	
19,700.00	10,770.00	19,736.65	10,739.00	157.17	157.16	-88.83	-9,247.19	572.99	1,497.01	1,275.35	221.66	6.754	
19,800.00	10,770.00	19,836.65	10,739.00	158.76	158.77	-88.83	-9,347.19	573.99	1,497.02	1,273.09	223.92	6.685	
19,900.00	10,770.00	19,936.65	10,739.00	160.36	160.37	-88.83	-9,447.19	574.99	1,497.03	1,270.83	226.19	6.618	
20,000.00	10,770.00	20,036.65	10,739.00	161.96	161.97	-88.83	-9,547.18	575.99	1,497.03	1,268.57	228.46	6.553	
20,100.00	10,770.00	20,136.65	10,739.00	163.56	163.58	-88.83	-9,647.18	576.99	1,497.04	1,266.31	230.73	6.488	
20,200.00	10,770.00	20,236.65	10,739.00	165.16	165.19	-88.83	-9,747.17	577.98	1,497.05	1,264.04	233.00	6.425	
20,300.00	10,770.00	20,336.65	10,739.00	166.76	166.79	-88.83	-9,847.17	578.98	1,497.06	1,261.78	235.28	6.363	
20,400.00	10,770.00	20,436.65	10,739.00	168.36	168.40	-88.83	-9,947.16	579.98	1,497.06	1,259.51	237.55	6.302	
20,500.00	10,770.00	20,536.65	10,739.00	169.97	170.01	-88.83	-10,047.16	580.98	1,497.07	1,257.24	239.83	6.242	
20,600.00	10,770.00	20,636.65	10,739.00	171.57	171.62	-88.83	-10,147.15	581.98	1,497.08	1,254.97	242.10	6.184	
20,700.00	10,770.00	20,736.65	10,739.00	173.18	173.23	-88.83	-10,247.15	582.97	1,497.08	1,252.70	244.38	6.126	
20,800.00	10,770.00	20,836.65	10,739.00	174.78	174.84	-88.83	-10,347.14	583.97	1,497.09	1,250.43	246.66	6.069	
20,841.66	10,770.00	20,878.32	10,739.00	175.40	175.51	-88.83	-10,388.80	584.39	1,497.09	1,249.54	247.56	6.047	

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 501H
Project:	Lea County, NM (NAD83)	TVD Reference:	3121.3' GE + 30' KB @ 3151.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3121.3' GE + 30' KB @ 3151.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 501H	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	13.20	13.20	0.00	0.02	-89.87	2.00	-851.90	851.90					
100.00	100.00	113.20	113.20	0.13	0.17	-89.87	2.00	-851.90	851.90	851.69	0.21	3,989.589		
200.00	200.00	213.20	213.20	0.48	0.53	-89.87	2.00	-851.90	851.90	851.18	0.72	1,185.456		
300.00	300.00	313.20	313.20	0.84	0.89	-89.87	2.00	-851.90	851.90	850.68	1.23	695.282		
400.00	400.00	413.20	413.20	1.20	1.25	-89.87	2.00	-851.90	851.90	850.17	1.73	491.837		
500.00	500.00	513.20	513.20	1.56	1.61	-89.87	2.00	-851.90	851.90	849.66	2.24	380.489		
600.00	600.00	613.20	613.20	1.92	1.97	-89.87	2.00	-851.90	851.90	849.16	2.75	310.248		
700.00	700.00	713.20	713.20	2.28	2.32	-89.87	2.00	-851.90	851.90	848.65	3.25	261.898		
800.00	800.00	813.20	813.20	2.63	2.68	-89.87	2.00	-851.90	851.90	848.14	3.76	226.586		
900.00	900.00	913.20	913.20	2.99	3.04	-89.87	2.00	-851.90	851.90	847.64	4.27	199.665		
1,000.00	1,000.00	1,013.20	1,013.20	3.35	3.40	-89.87	2.00	-851.90	851.90	847.13	4.77	178.461		
1,100.00	1,100.00	1,113.20	1,113.20	3.71	3.76	-89.87	2.00	-851.90	851.90	846.62	5.28	161.328		
1,200.00	1,200.00	1,213.20	1,213.20	4.07	4.12	-89.87	2.00	-851.90	851.90	846.11	5.79	147.197		
1,300.00	1,300.00	1,313.20	1,313.20	4.43	4.47	-89.87	2.00	-851.90	851.90	845.61	6.29	135.342		
1,400.00	1,400.00	1,413.20	1,413.20	4.79	4.83	-89.87	2.00	-851.90	851.90	845.10	6.80	125.254		
1,500.00	1,500.00	1,513.20	1,513.20	5.14	5.19	-89.87	2.00	-851.90	851.90	844.59	7.31	116.566		
1,600.00	1,600.00	1,613.20	1,613.20	5.50	5.55	-89.87	2.00	-851.90	851.90	844.09	7.82	109.005		
1,700.00	1,700.00	1,713.20	1,713.20	5.86	5.91	-89.87	2.00	-851.90	851.90	843.58	8.32	102.364		
1,800.00	1,800.00	1,813.20	1,813.20	6.22	6.27	-89.87	2.00	-851.90	851.90	843.07	8.83	96.487		
1,900.00	1,900.00	1,913.20	1,913.20	6.58	6.63	-89.87	2.00	-851.90	851.90	842.57	9.34	91.248		
2,000.00	2,000.00	2,013.20	2,013.20	6.94	6.98	-89.87	2.00	-851.90	851.90	842.06	9.84	86.548		
2,100.00	2,100.00	2,113.20	2,113.20	7.29	7.34	-89.87	2.00	-851.90	851.90	841.55	10.35	82.309		
2,200.00	2,200.00	2,213.20	2,213.20	7.65	7.70	-89.87	2.00	-851.90	851.90	841.05	10.86	78.466		
2,300.00	2,300.00	2,313.20	2,313.20	8.01	8.06	-89.87	2.00	-851.90	851.90	840.54	11.36	74.965		
2,400.00	2,400.00	2,413.20	2,413.20	8.37	8.42	-89.87	2.00	-851.90	851.90	840.03	11.87	71.764		
2,500.00	2,500.00	2,513.20	2,513.20	8.73	8.78	-89.87	2.00	-851.90	851.90	839.52	12.38	68.825		
2,600.00	2,600.00	2,613.20	2,613.20	9.09	9.13	-89.87	2.00	-851.90	851.90	839.02	12.88	66.117		
2,700.00	2,700.00	2,713.20	2,713.20	9.45	9.49	-89.87	2.00	-851.90	851.90	838.51	13.39	63.614		
2,800.00	2,800.00	2,813.20	2,813.20	9.80	9.85	-89.87	2.00	-851.90	851.90	838.00	13.90	61.294		
2,900.00	2,900.00	2,913.20	2,913.20	10.16	10.21	-89.87	2.00	-851.90	851.90	837.50	14.41	59.137		
3,000.00	3,000.00	3,013.20	3,013.20	10.52	10.57	-89.87	2.00	-851.90	851.90	836.99	14.91	57.126		
3,100.00	3,100.00	3,113.20	3,113.20	10.88	10.93	-89.87	2.00	-851.90	851.90	836.48	15.42	55.248		
3,111.60	3,111.60	3,124.80	3,124.80	10.92	10.97	-89.87	2.00	-851.90	851.90	836.42	15.48	55.038		
3,200.00	3,200.00	3,211.40	3,211.40	11.24	11.28	-89.87	1.99	-851.91	851.92	836.00	15.92	53.510		
3,300.00	3,300.00	3,300.00	3,299.99	11.60	11.58	-89.93	1.08	-852.83	852.93	836.54	16.39	52.049		
3,400.00	3,400.00	3,384.00	3,383.93	11.96	11.86	-90.08	-1.12	-855.04	855.54	838.72	16.83	50.838		
3,500.00	3,499.99	3,470.62	3,470.40	12.30	12.14	13.23	-4.75	-858.70	858.50	841.24	17.27	49.721		
3,600.00	3,599.91	3,570.53	3,570.06	12.64	12.48	12.96	-9.67	-863.64	859.67	841.94	17.74	48.465		
3,700.00	3,699.69	3,670.46	3,669.75	12.98	12.81	12.74	-14.59	-868.59	858.31	840.10	18.21	47.130		
3,800.00	3,799.27	3,770.34	3,769.39	13.32	13.15	12.56	-19.51	-873.54	854.41	835.72	18.69	45.721		
3,900.00	3,898.57	3,870.11	3,868.91	13.67	13.49	12.43	-24.42	-878.48	847.96	828.80	19.16	44.247		
4,000.00	3,997.54	3,969.68	3,968.24	14.02	13.83	12.34	-29.32	-883.41	838.97	819.33	19.64	42.712		
4,100.00	4,096.09	4,069.01	4,067.32	14.38	14.17	12.30	-34.21	-888.33	827.44	807.32	20.12	41.122		
4,200.00	4,194.16	4,168.01	4,166.08	14.75	14.51	12.30	-39.08	-893.24	813.37	792.77	20.60	39.482		
4,300.00	4,291.70	4,266.62	4,264.45	15.12	14.85	12.34	-43.94	-898.12	796.78	775.69	21.08	37.795		
4,400.00	4,388.62	4,364.77	4,362.36	15.51	15.19	12.44	-48.77	-902.98	777.66	756.10	21.56	36.067		
4,500.00	4,484.86	4,462.40	4,459.75	15.92	15.53	12.60	-53.57	-907.82	756.05	734.01	22.04	34.300		
4,600.00	4,480.36	4,459.43	4,456.55	16.34	15.87	12.81	-58.35	-912.62	731.95	709.43	22.52	32.498		
4,700.00	4,675.05	4,655.81	4,652.69	16.78	16.21	13.09	-63.10	-917.40	705.39	682.39	23.00	30.664		
4,746.50	4,718.78	4,700.38	4,697.15	16.99	16.37	13.25	-65.29	-919.60	692.21	668.98	23.23	29.801		
4,800.00	4,769.00	4,751.58	4,748.22	17.24	16.55	13.39	-67.81	-922.14	676.74	653.25	23.49	28.816		
4,900.00	4,862.85	4,847.26	4,843.67	17.72	16.89	13.67	-72.52	-926.88	647.83	623.87	23.97	27.028		

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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Reference Site:	Tatanka Fed Com	MD Reference:	3121.3' GE + 30' KB @ 3151.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 501H	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	4,956.70	4,942.94	4,939.12	18.21	17.23	13.97	-77.23	-931.62	618.95	594.49	24.46	25.308				
5,100.00	5,050.55	5,038.62	5,034.57	18.71	17.57	14.31	-81.94	-936.36	590.08	565.13	24.95	23.651				
5,200.00	5,144.40	5,134.30	5,130.02	19.23	17.91	14.67	-86.65	-941.10	561.23	535.78	25.44	22.056				
5,300.00	5,238.25	5,229.99	5,225.47	19.76	18.25	15.08	-91.36	-945.84	532.40	506.45	25.95	20.520				
5,400.00	5,332.10	5,325.67	5,320.91	20.29	18.59	15.54	-96.07	-950.57	503.60	477.15	26.45	19.040				
5,500.00	5,425.95	5,421.35	5,416.36	20.84	18.93	16.05	-100.78	-955.31	474.83	447.88	26.96	17.613				
5,600.00	5,519.80	5,517.03	5,511.81	21.39	19.28	16.62	-105.49	-960.05	446.11	418.63	27.47	16.238				
5,700.00	5,613.65	5,612.71	5,607.26	21.95	19.62	17.28	-110.20	-964.79	417.43	389.43	27.99	14.912				
5,800.00	5,707.50	5,708.40	5,702.71	22.52	19.97	18.03	-114.91	-969.53	388.81	360.29	28.52	13.633				
5,900.00	5,801.36	5,804.08	5,798.16	23.10	20.31	18.90	-119.62	-974.27	360.25	331.20	29.05	12.400				
6,000.00	5,895.21	5,899.76	5,893.61	23.68	20.66	19.92	-124.33	-979.01	331.79	302.20	29.59	11.211				
6,100.00	5,989.06	5,995.44	5,989.05	24.27	21.00	21.13	-129.04	-983.75	303.45	273.30	30.15	10.065				
6,200.00	6,082.91	6,091.13	6,084.50	24.86	21.35	22.58	-133.75	-988.49	275.25	244.53	30.72	8.961				
6,300.00	6,176.76	6,186.81	6,179.95	25.46	21.70	24.37	-138.46	-993.23	247.26	215.95	31.31	7.898				
6,403.84	6,274.22	6,286.17	6,279.07	26.09	22.06	26.70	-143.35	-998.15	218.48	186.53	31.95	6.838				
6,500.00	6,364.87	6,378.51	6,371.19	26.66	22.39	29.11	-147.90	-1,002.72	193.24	160.67	32.58	5.932				
6,600.00	6,459.97	6,475.22	6,467.66	27.24	22.75	31.96	-152.66	-1,007.51	169.61	136.35	33.26	5.099				
6,700.00	6,555.85	6,573.88	6,566.14	27.79	23.10	35.55	-156.88	-1,011.76	148.30	114.31	33.99	4.363				
6,800.00	6,652.43	6,672.51	6,664.70	28.32	23.45	40.66	-159.33	-1,014.22	128.92	94.11	34.81	3.703				
6,900.00	6,749.66	6,770.68	6,762.86	28.83	23.80	47.76	-160.00	-1,014.90	112.18	76.40	35.78	3.135				
7,000.00	6,847.47	6,868.49	6,860.67	29.31	24.13	56.39	-160.00	-1,014.90	99.18	62.33	36.86	2.691				
7,100.00	6,945.80	6,966.81	6,959.00	29.77	24.47	65.82	-160.00	-1,014.90	90.23	52.31	37.92	2.379				
7,200.00	7,044.56	7,065.58	7,057.76	30.20	24.82	75.31	-160.00	-1,014.90	84.94	46.10	38.84	2.187				
7,300.00	7,143.70	7,164.72	7,156.90	30.61	25.16	84.00	-160.00	-1,014.90	82.57	43.01	39.56	2.087				
7,381.20	7,224.43	7,245.45	7,237.63	30.92	25.44	90.00	-160.00	-1,014.90	82.11	42.11	40.00	2.053 CC				
7,400.00	7,243.15	7,264.17	7,256.35	30.99	25.50	91.23	-160.00	-1,014.90	82.13	42.04	40.09	2.049				
7,500.00	7,342.84	7,363.85	7,356.04	31.35	25.85	96.67	-160.00	-1,014.90	82.67	42.16	40.52	2.040				
7,600.00	7,442.70	7,463.71	7,455.90	31.69	26.20	100.25	-160.00	-1,014.90	83.44	42.53	40.91	2.040				
7,700.00	7,542.66	7,563.68	7,555.86	32.01	26.54	102.02	-160.00	-1,014.90	83.95	42.63	41.32	2.032				
7,750.34	7,593.00	7,614.02	7,606.20	32.16	26.72	-1.30	-160.00	-1,014.90	84.02	42.47	41.55	2.022				
7,800.00	7,642.66	7,663.67	7,655.86	32.30	26.89	-1.30	-160.00	-1,014.90	84.02	42.25	41.77	2.011				
7,900.00	7,742.66	7,763.67	7,755.86	32.60	27.24	-1.30	-160.00	-1,014.90	84.02	41.80	42.22	1.990				
8,000.00	7,842.66	7,863.67	7,855.86	32.89	27.59	-1.30	-160.00	-1,014.90	84.02	41.34	42.68	1.969				
8,100.00	7,942.66	7,963.67	7,955.86	33.19	27.94	-1.30	-160.00	-1,014.90	84.02	40.89	43.13	1.948				
8,200.00	8,042.66	8,063.67	8,055.86	33.49	28.29	-1.30	-160.00	-1,014.90	84.02	40.43	43.59	1.928				
8,300.00	8,142.66	8,163.67	8,155.86	33.79	28.64	-1.30	-160.00	-1,014.90	84.02	39.98	44.04	1.908				
8,400.00	8,242.66	8,263.67	8,255.86	34.09	28.99	-1.30	-160.00	-1,014.90	84.02	39.52	44.50	1.888				
8,500.00	8,342.66	8,363.67	8,355.86	34.39	29.33	-1.30	-160.00	-1,014.90	84.02	39.06	44.96	1.869				
8,600.00	8,442.66	8,463.67	8,455.86	34.69	29.68	-1.30	-160.00	-1,014.90	84.02	38.60	45.42	1.850				
8,700.00	8,542.66	8,563.67	8,555.86	35.00	30.03	-1.30	-160.00	-1,014.90	84.02	38.14	45.88	1.831				
8,800.00	8,642.66	8,663.67	8,655.86	35.30	30.38	-1.30	-160.00	-1,014.90	84.02	37.68	46.35	1.813				
8,900.00	8,742.66	8,763.67	8,755.86	35.61	30.74	-1.30	-160.00	-1,014.90	84.02	37.21	46.81	1.795				
9,000.00	8,842.66	8,863.67	8,855.86	35.91	31.09	-1.30	-160.00	-1,014.90	84.02	36.75	47.27	1.777				
9,100.00	8,942.66	8,963.67	8,955.86	36.22	31.44	-1.30	-160.00	-1,014.90	84.02	36.28	47.74	1.760				
9,200.00	9,042.66	9,063.67	9,055.86	36.53	31.79	-1.30	-160.00	-1,014.90	84.02	35.82	48.20	1.743				
9,300.00	9,142.66	9,163.67	9,155.86	36.84	32.14	-1.30	-160.00	-1,014.90	84.02	35.35	48.67	1.726				
9,400.00	9,242.66	9,263.67	9,255.86	37.15	32.49	-1.30	-160.00	-1,014.90	84.02	34.88	49.14	1.710				
9,500.00	9,342.66	9,363.67	9,355.86	37.46	32.84	-1.30	-160.00	-1,014.90	84.02	34.42	49.60	1.694				
9,600.00	9,442.66	9,463.67	9,455.86	37.77	33.19	-1.30	-160.00	-1,014.90	84.02	33.95	50.07	1.678				
9,700.00	9,542.66	9,563.67	9,555.86	38.09	33.54	-1.30	-160.00	-1,014.90	84.02	33.48	50.54	1.662				
9,800.00	9,642.66	9,663.67	9,655.86	38.40	33.90	-1.30	-160.00	-1,014.90	84.02	33.01	51.01	1.647				
9,900.00	9,742.66	9,763.67	9,755.86	38.71	34.25	-1.30	-160.00	-1,014.90	84.02	32.54	51.48	1.632				

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



Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well Tatanka Fed Com 501H
Project:	Lea County, NM (NAD83)	TVD Reference:	3121.3' GE + 30' KB @ 3151.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3121.3' GE + 30' KB @ 3151.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 501H	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	9,842.66	9,863.67	9,855.86	39.03	34.60	-1.30	-160.00	-1,014.90	84.02	32.07	51.96	1.617		
10,100.00	9,942.66	9,963.67	9,955.86	39.35	34.95	-1.30	-160.00	-1,014.90	84.02	31.59	52.43	1.603		
10,200.00	10,042.66	10,063.67	10,055.86	39.66	35.31	-1.30	-160.00	-1,014.90	84.02	31.12	52.90	1.588		
10,300.00	10,142.66	10,163.67	10,155.86	39.98	35.66	-1.30	-160.00	-1,014.90	84.02	30.65	53.38	1.574		
10,354.38	10,197.04	10,218.06	10,210.24	40.15	35.85	-1.30	-160.00	-1,014.90	84.02	30.39	53.63	1.567 ES, SF		
10,400.00	10,242.61	10,263.63	10,255.81	40.30	36.01	179.29	-160.00	-1,014.90	85.84	31.99	53.85	1.594		
10,450.00	10,292.22	10,313.23	10,305.42	40.45	36.19	179.33	-160.00	-1,014.90	91.98	37.91	54.07	1.701		
10,500.00	10,341.10	10,362.11	10,354.30	40.61	36.36	179.38	-160.00	-1,014.90	102.43	48.12	54.30	1.886		
10,550.00	10,388.88	10,409.90	10,402.08	40.77	36.53	179.45	-160.00	-1,014.90	117.09	62.57	54.52	2.148		
10,600.00	10,435.20	10,456.22	10,448.40	40.93	36.69	179.51	-160.00	-1,014.90	135.86	81.13	54.73	2.482		
10,650.00	10,479.72	10,500.73	10,492.92	41.09	36.85	179.56	-160.00	-1,014.90	158.60	103.67	54.94	2.887		
10,700.00	10,522.08	10,543.09	10,535.28	41.25	37.00	179.60	-160.00	-1,014.90	185.14	130.01	55.13	3.358		
10,750.00	10,561.96	10,582.98	10,575.16	41.40	37.14	179.63	-160.00	-1,014.90	215.26	159.95	55.31	3.892		
10,800.00	10,599.07	10,620.09	10,612.27	41.55	37.27	179.65	-160.00	-1,014.90	248.75	193.27	55.47	4.484		
10,850.00	10,633.12	10,654.14	10,646.32	41.71	37.39	179.67	-160.00	-1,014.90	285.34	229.72	55.62	5.130		
10,900.00	10,663.85	10,684.87	10,677.05	41.86	37.50	179.68	-160.00	-1,014.90	324.76	269.00	55.75	5.825		
10,950.00	10,691.03	10,712.05	10,704.23	42.01	37.59	179.67	-160.00	-1,014.90	366.71	310.84	55.87	6.564		
11,000.00	10,714.45	10,735.47	10,727.65	42.17	37.68	179.65	-160.00	-1,014.90	410.87	354.90	55.97	7.341		
11,050.00	10,733.93	10,754.95	10,747.13	42.33	37.74	179.62	-160.00	-1,014.90	456.90	400.85	56.04	8.152		
11,100.00	10,749.32	10,770.34	10,762.52	42.50	37.80	179.54	-160.00	-1,014.90	504.45	448.35	56.10	8.991		
11,150.00	10,760.52	10,781.53	10,773.72	42.68	37.84	179.39	-160.00	-1,014.90	553.17	497.02	56.15	9.852		
11,200.00	10,767.42	10,788.44	10,780.62	42.87	37.86	178.93	-160.00	-1,014.90	602.67	546.50	56.18	10.728		
11,254.38	10,770.00	10,791.01	10,783.20	43.09	37.87	90.01	-160.00	-1,014.90	656.97	600.79	56.19	11.693		
11,300.00	10,770.00	10,791.01	10,783.20	43.29	37.87	90.01	-160.00	-1,014.90	702.59	646.40	56.19	12.504		
11,400.00	10,770.00	10,791.01	10,783.20	43.76	37.87	90.01	-160.00	-1,014.90	802.59	746.39	56.20	14.282		
11,500.00	10,770.00	10,791.01	10,783.20	44.29	37.87	90.01	-160.00	-1,014.90	902.59	846.39	56.21	16.059		
11,600.00	10,770.00	10,791.01	10,783.20	44.88	37.87	90.01	-160.00	-1,014.90	1,002.59	946.38	56.21	17.835		
11,700.00	10,770.00	10,791.01	10,783.20	45.53	37.87	90.01	-160.00	-1,014.90	1,102.59	1,046.37	56.22	19.611		
11,800.00	10,770.00	10,791.01	10,783.20	46.23	37.87	90.01	-160.00	-1,014.90	1,202.59	1,146.36	56.23	21.386		
11,900.00	10,770.00	10,791.01	10,783.20	46.99	37.87	90.02	-160.00	-1,014.90	1,302.59	1,246.35	56.24	23.160		
12,000.00	10,770.00	13,287.49	12,123.00	47.79	49.41	179.96	-1,562.52	-1,000.86	1,339.80	1,302.54	37.26	35.960		
12,100.00	10,770.00	13,387.49	12,123.00	48.64	50.27	179.96	-1,662.52	-999.85	1,339.80	1,302.07	37.73	35.507		
12,200.00	10,770.00	13,487.49	12,123.00	49.53	51.18	179.96	-1,762.51	-998.85	1,339.80	1,301.57	38.23	35.041		
12,300.00	10,770.00	13,587.49	12,123.00	50.46	52.12	179.96	-1,862.51	-997.85	1,339.80	1,301.04	38.76	34.565		
12,400.00	10,770.00	13,687.49	12,123.00	51.43	53.10	179.96	-1,962.50	-996.85	1,339.80	1,300.49	39.31	34.081		
12,500.00	10,770.00	13,787.49	12,123.00	52.44	54.11	179.96	-2,062.50	-995.85	1,339.80	1,299.91	39.89	33.590		
12,600.00	10,770.00	13,887.49	12,123.00	53.48	55.15	179.96	-2,162.49	-994.85	1,339.80	1,299.32	40.48	33.095		
12,700.00	10,770.00	13,987.49	12,123.00	54.55	56.22	179.96	-2,262.49	-993.85	1,339.80	1,298.70	41.10	32.597		
12,800.00	10,770.00	14,087.49	12,123.00	55.65	57.31	179.96	-2,362.48	-992.84	1,339.80	1,298.06	41.74	32.099		
12,900.00	10,770.00	14,187.49	12,123.00	56.78	58.44	179.96	-2,462.48	-991.84	1,339.80	1,297.40	42.40	31.601		
13,000.00	10,770.00	14,287.49	12,123.00	57.93	59.58	179.97	-2,562.47	-990.84	1,339.80	1,296.73	43.07	31.104		
13,100.00	10,770.00	14,387.49	12,123.00	59.11	60.76	179.97	-2,662.47	-989.84	1,339.80	1,296.03	43.77	30.611		
13,200.00	10,770.00	14,487.49	12,123.00	60.31	61.95	179.97	-2,762.46	-988.84	1,339.80	1,295.32	44.48	30.121		
13,300.00	10,770.00	14,587.49	12,123.00	61.54	63.16	179.97	-2,862.46	-987.84	1,339.80	1,294.59	45.21	29.637		
13,400.00	10,770.00	14,687.49	12,123.00	62.78	64.40	179.97	-2,962.45	-986.84	1,339.80	1,293.85	45.95	29.158		
13,500.00	10,770.00	14,787.49	12,123.00	64.04	65.65	179.97	-3,062.45	-985.84	1,339.80	1,293.09	46.71	28.685		
13,600.00	10,770.00	14,887.49	12,123.00	65.32	66.92	179.97	-3,162.44	-984.83	1,339.80	1,292.32	47.48	28.220		
13,700.00	10,770.00	14,987.49	12,123.00	66.62	68.20	179.97	-3,262.44	-983.83	1,339.80	1,291.54	48.26	27.761		
13,800.00	10,770.00	15,087.49	12,123.00	67.93	69.50	179.97	-3,362.43	-982.83	1,339.80	1,290.74	49.06	27.310		
13,900.00	10,770.00	15,187.49	12,123.00	69.25	70.82	179.97	-3,462.43	-981.83	1,339.80	1,289.93	49.87	26.867		
14,000.00	10,770.00	15,287.49	12,123.00	70.59	72.15	179.97	-3,562.42	-980.83	1,339.80	1,289.11	50.69	26.432		
14,100.00	10,770.00	15,387.49	12,123.00	71.95	73.49	179.97	-3,662.42	-979.83	1,339.80	1,288.28	51.52	26.006		

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 501H
Project:	Lea County, NM (NAD83)	TVD Reference:	3121.3' GE + 30' KB @ 3151.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3121.3' GE + 30' KB @ 3151.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 501H	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				
14,200.00	10,770.00	15,487.49	12,123.00	73.31	74.84	179.97	-3,762.41	-978.83	1,339.80	1,287.44	52.36	25.588				
14,300.00	10,770.00	15,587.49	12,123.00	74.69	76.21	179.97	-3,862.41	-977.82	1,339.80	1,286.59	53.21	25.179				
14,400.00	10,770.00	15,687.49	12,123.00	76.08	77.59	179.97	-3,962.40	-976.82	1,339.80	1,285.73	54.07	24.778				
14,500.00	10,770.00	15,787.49	12,123.00	77.48	78.97	179.97	-4,062.40	-975.82	1,339.80	1,284.86	54.94	24.386				
14,600.00	10,770.00	15,887.49	12,123.00	78.89	80.37	179.97	-4,162.39	-974.82	1,339.80	1,283.98	55.82	24.002				
14,700.00	10,770.00	15,987.49	12,123.00	80.31	81.78	179.97	-4,262.39	-973.82	1,339.80	1,283.09	56.71	23.627				
14,800.00	10,770.00	16,087.49	12,123.00	81.73	83.20	179.97	-4,362.38	-972.82	1,339.80	1,282.20	57.60	23.260				
14,900.00	10,770.00	16,187.49	12,123.00	83.17	84.62	179.97	-4,462.38	-971.82	1,339.80	1,281.30	58.50	22.902				
15,000.00	10,770.00	16,287.49	12,123.00	84.61	86.05	179.97	-4,562.37	-970.82	1,339.80	1,280.39	59.41	22.552				
15,100.00	10,770.00	16,387.49	12,123.00	86.06	87.50	179.97	-4,662.37	-969.81	1,339.80	1,279.48	60.32	22.210				
15,200.00	10,770.00	16,487.49	12,123.00	87.52	88.94	179.97	-4,762.36	-968.81	1,339.80	1,278.55	61.25	21.876				
15,300.00	10,770.00	16,587.49	12,123.00	88.99	90.40	179.98	-4,862.35	-967.81	1,339.80	1,277.63	62.17	21.549				
15,400.00	10,770.00	16,687.49	12,123.00	90.46	91.86	179.98	-4,962.35	-966.81	1,339.80	1,276.69	63.11	21.231				
15,500.00	10,770.00	16,787.49	12,123.00	91.94	93.33	179.98	-5,062.34	-965.81	1,339.80	1,275.75	64.05	20.919				
15,600.00	10,770.00	16,887.49	12,123.00	93.42	94.80	179.98	-5,162.34	-964.81	1,339.80	1,274.81	64.99	20.615				
15,700.00	10,770.00	16,987.49	12,123.00	94.91	96.28	179.98	-5,262.33	-963.81	1,339.80	1,273.86	65.94	20.318				
15,800.00	10,770.00	17,087.49	12,123.00	96.40	97.77	179.98	-5,362.33	-962.80	1,339.80	1,272.90	66.90	20.028				
15,900.00	10,770.00	17,187.49	12,123.00	97.90	99.26	179.98	-5,462.32	-961.80	1,339.80	1,271.95	67.85	19.745				
16,000.00	10,770.00	17,287.49	12,123.00	99.41	100.75	179.98	-5,562.32	-960.80	1,339.80	1,270.98	68.82	19.469				
16,100.00	10,770.00	17,387.49	12,123.00	100.92	102.25	179.98	-5,662.31	-959.80	1,339.80	1,270.01	69.79	19.199				
16,200.00	10,770.00	17,487.49	12,123.00	102.43	103.76	179.98	-5,762.31	-958.80	1,339.80	1,269.04	70.76	18.935				
16,300.00	10,770.00	17,587.49	12,123.00	103.95	105.27	179.98	-5,862.30	-957.80	1,339.80	1,268.06	71.74	18.677				
16,400.00	10,770.00	17,687.49	12,123.00	105.47	106.78	179.98	-5,962.30	-956.80	1,339.80	1,267.08	72.72	18.425				
16,500.00	10,770.00	17,787.49	12,123.00	107.00	108.30	179.98	-6,062.29	-955.79	1,339.80	1,266.10	73.70	18.179				
16,600.00	10,770.00	17,887.49	12,123.00	108.52	109.82	179.98	-6,162.29	-954.79	1,339.80	1,265.11	74.69	17.939				
16,700.00	10,770.00	17,987.49	12,123.00	110.06	111.35	179.98	-6,262.28	-953.79	1,339.80	1,264.12	75.68	17.704				
16,800.00	10,770.00	18,087.49	12,123.00	111.59	112.87	179.98	-6,362.28	-952.79	1,339.80	1,263.13	76.67	17.475				
16,900.00	10,770.00	18,187.49	12,123.00	113.13	114.41	179.98	-6,462.27	-951.79	1,339.80	1,262.13	77.67	17.250				
17,000.00	10,770.00	18,287.49	12,123.00	114.68	115.94	179.98	-6,562.27	-950.79	1,339.80	1,261.13	78.67	17.031				
17,100.00	10,770.00	18,387.49	12,123.00	116.22	117.48	179.98	-6,662.26	-949.79	1,339.80	1,260.13	79.67	16.816				
17,200.00	10,770.00	18,487.49	12,123.00	117.77	119.02	179.98	-6,762.26	-948.79	1,339.80	1,259.12	80.68	16.607				
17,300.00	10,770.00	18,587.49	12,123.00	119.32	120.57	179.98	-6,862.25	-947.78	1,339.80	1,258.11	81.69	16.402				
17,400.00	10,770.00	18,687.49	12,123.00	120.88	122.11	179.98	-6,962.25	-946.78	1,339.80	1,257.10	82.70	16.201				
17,500.00	10,770.00	18,787.49	12,123.00	122.43	123.66	179.99	-7,062.24	-945.78	1,339.80	1,256.09	83.71	16.005				
17,600.00	10,770.00	18,887.49	12,123.00	123.99	125.22	179.99	-7,162.24	-944.78	1,339.80	1,255.07	84.73	15.813				
17,700.00	10,770.00	18,987.49	12,123.00	125.55	126.77	179.99	-7,262.23	-943.78	1,339.80	1,254.05	85.75	15.625				
17,800.00	10,770.00	19,087.49	12,123.00	127.12	128.33	179.99	-7,362.23	-942.78	1,339.80	1,253.03	86.77	15.441				
17,900.00	10,770.00	19,187.49	12,123.00	128.68	129.89	179.99	-7,462.22	-941.78	1,339.80	1,252.01	87.79	15.261				
18,000.00	10,770.00	19,287.49	12,123.00	130.25	131.45	179.99	-7,562.22	-940.77	1,339.80	1,250.99	88.81	15.085				
18,100.00	10,770.00	19,387.49	12,123.00	131.82	133.01	179.99	-7,662.21	-939.77	1,339.80	1,249.96	89.84	14.913				
18,200.00	10,770.00	19,487.49	12,123.00	133.39	134.58	179.99	-7,762.21	-938.77	1,339.80	1,248.93	90.87	14.744				
18,300.00	10,770.00	19,587.49	12,123.00	134.97	136.15	179.99	-7,862.20	-937.77	1,339.80	1,247.90	91.90	14.579				
18,400.00	10,770.00	19,687.49	12,123.00	136.54	137.72	179.99	-7,962.20	-936.77	1,339.80	1,246.87	92.93	14.417				
18,500.00	10,770.00	19,787.49	12,123.00	138.12	139.29	179.99	-8,062.19	-935.77	1,339.80	1,245.83	93.97	14.258				
18,600.00	10,770.00	19,887.49	12,123.00	139.70	140.87	179.99	-8,162.19	-934.77	1,339.80	1,244.80	95.00	14.102				
18,700.00	10,770.00	19,987.49	12,123.00	141.28	142.44	179.99	-8,262.18	-933.77	1,339.80	1,243.76	96.04	13.950				
18,800.00	10,770.00	20,087.49	12,123.00	142.86	144.02	179.99	-8,362.18	-932.76	1,339.80	1,242.72	97.08	13.801				
18,900.00	10,770.00	20,187.49	12,123.00	144.45	145.60	179.99	-8,462.17	-931.76	1,339.80	1,241.68	98.12	13.654				
19,000.00	10,770.00	20,287.49	12,123.00	146.03	147.18	179.99	-8,562.17	-930.76	1,339.80	1,240.64	99.16	13.511				
19,100.00	10,770.00	20,387.49	12,123.00	147.62	148.76	179.99	-8,662.16	-929.76	1,339.80	1,239.59	100.21	13.370				
19,200.00	10,770.00	20,487.49	12,123.00	149.21	150.34	179.99	-8,762.16	-928.76	1,339.80	1,238.55	101.25	13.232				
19,300.00	10,770.00	20,587.49	12,123.00	150.80	151.93	179.99	-8,862.15	-927.76	1,339.80	1,237.50	102.30	13.097				

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 501H
Project:	Lea County, NM (NAD83)	TVD Reference:	3121.3' GE + 30' KB @ 3151.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3121.3' GE + 30' KB @ 3151.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 501H	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		Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor				
							+N/-S (usft)	+E/-W (usft)								
19,400.00	10,770.00	20,687.49	12,123.00	152.39	153.52	179.99	-8,962.15	-926.76	1,339.80	1,236.45	103.35	12.964				
19,500.00	10,770.00	20,787.49	12,123.00	153.98	155.10	179.99	-9,062.14	-925.75	1,339.80	1,235.40	104.40	12.834				
19,600.00	10,770.00	20,887.49	12,123.00	155.57	156.69	179.99	-9,162.14	-924.75	1,339.80	1,234.35	105.45	12.706				
19,700.00	10,770.00	20,987.49	12,123.00	157.17	158.28	179.99	-9,262.13	-923.75	1,339.80	1,233.30	106.50	12.580				
19,800.00	10,770.00	21,087.49	12,123.00	158.76	159.88	180.00	-9,362.13	-922.75	1,339.80	1,232.25	107.55	12.457				
19,900.00	10,770.00	21,187.49	12,123.00	160.36	161.47	180.00	-9,462.12	-921.75	1,339.80	1,231.19	108.61	12.336				
20,000.00	10,770.00	21,287.49	12,123.00	161.96	163.06	180.00	-9,562.12	-920.75	1,339.80	1,230.14	109.66	12.218				
20,100.00	10,770.00	21,387.49	12,123.00	163.56	164.66	180.00	-9,662.11	-919.75	1,339.80	1,229.08	110.72	12.101				
20,200.00	10,770.00	21,487.49	12,123.00	165.16	166.25	180.00	-9,762.11	-918.75	1,339.80	1,228.02	111.78	11.987				
20,300.00	10,770.00	21,587.49	12,123.00	166.76	167.85	180.00	-9,862.10	-917.74	1,339.80	1,226.97	112.83	11.874				
20,400.00	10,770.00	21,687.49	12,123.00	168.36	169.45	180.00	-9,962.10	-916.74	1,339.80	1,225.91	113.89	11.764				
20,500.00	10,770.00	21,787.49	12,123.00	169.97	171.05	180.00	-10,062.09	-915.74	1,339.80	1,224.85	114.95	11.655				
20,600.00	10,770.00	21,887.49	12,123.00	171.57	172.65	180.00	-10,162.09	-914.74	1,339.80	1,223.79	116.01	11.549				
20,700.00	10,770.00	21,987.49	12,123.00	173.18	174.25	180.00	-10,262.08	-913.74	1,339.80	1,222.72	117.08	11.444				
20,800.00	10,770.00	22,087.49	12,123.00	174.78	175.85	180.00	-10,362.08	-912.74	1,339.80	1,221.66	118.14	11.341				
20,841.66	10,770.00	22,129.15	12,123.00	175.40	176.47	-180.00	-10,403.74	-912.32	1,339.80	1,221.41	118.39	11.317				

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 501H
Project:	Lea County, NM (NAD83)	TVD Reference:	3121.3' GE + 30' KB @ 3151.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3121.3' GE + 30' KB @ 3151.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 501H	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	89.44	29.47	3,010.07	3,010.35							
100.00	100.00	71.40	71.40	0.13	0.09	89.44	29.47	3,010.07	3,010.21	3,010.06	0.15	N/A				
200.00	200.00	171.40	171.40	0.48	0.38	89.44	29.47	3,010.07	3,010.21	3,009.60	0.62	4,885.325				
300.00	300.00	271.40	271.40	0.84	0.74	89.44	29.47	3,010.07	3,010.21	3,009.09	1.12	2,684.822				
400.00	400.00	371.40	371.40	1.20	1.10	89.44	29.47	3,010.07	3,010.21	3,008.59	1.63	1,849.683				
500.00	500.00	471.40	471.40	1.56	1.46	89.44	29.47	3,010.07	3,010.21	3,008.08	2.13	1,410.602				
600.00	600.00	571.40	571.40	1.92	1.82	89.44	29.47	3,010.07	3,010.21	3,007.57	2.64	1,139.925				
700.00	700.00	671.40	671.40	2.28	2.17	89.44	29.47	3,010.07	3,010.21	3,007.07	3.15	956.381				
800.00	800.00	771.40	771.40	2.63	2.53	89.44	29.47	3,010.07	3,010.21	3,006.56	3.65	823.735				
900.00	900.00	871.40	871.40	2.99	2.89	89.44	29.47	3,010.07	3,010.21	3,006.05	4.16	723.398				
1,000.00	1,000.00	971.40	971.40	3.35	3.25	89.44	29.47	3,010.07	3,010.21	3,005.55	4.67	644.848				
1,100.00	1,100.00	1,071.40	1,071.40	3.71	3.61	89.44	29.47	3,010.07	3,010.21	3,005.04	5.18	581.684				
1,200.00	1,200.00	1,171.40	1,171.40	4.07	3.97	89.44	29.47	3,010.07	3,010.21	3,004.53	5.68	529.789				
1,300.00	1,300.00	1,271.40	1,271.40	4.43	4.32	89.44	29.47	3,010.07	3,010.21	3,004.03	6.19	486.395				
1,400.00	1,400.00	1,371.40	1,371.40	4.79	4.68	89.44	29.47	3,010.07	3,010.21	3,003.52	6.70	449.571				
1,500.00	1,500.00	1,471.40	1,471.40	5.14	5.04	89.44	29.47	3,010.07	3,010.21	3,003.01	7.20	417.930				
1,600.00	1,600.00	1,571.40	1,571.40	5.50	5.40	89.44	29.47	3,010.07	3,010.21	3,002.50	7.71	390.450				
1,700.00	1,700.00	1,671.40	1,671.40	5.86	5.76	89.44	29.47	3,010.07	3,010.21	3,002.00	8.22	366.360				
1,800.00	1,800.00	1,771.40	1,771.40	6.22	6.12	89.44	29.47	3,010.07	3,010.21	3,001.49	8.72	345.070				
1,900.00	1,900.00	1,871.40	1,871.40	6.58	6.48	89.44	29.47	3,010.07	3,010.21	3,000.98	9.23	326.119				
2,000.00	2,000.00	1,971.40	1,971.40	6.94	6.83	89.44	29.47	3,010.07	3,010.21	3,000.48	9.74	309.141				
2,100.00	2,100.00	2,071.40	2,071.40	7.29	7.19	89.44	29.47	3,010.07	3,010.21	2,999.97	10.24	293.843				
2,200.00	2,200.00	2,171.40	2,171.40	7.65	7.55	89.44	29.47	3,010.07	3,010.21	2,999.46	10.75	279.987				
2,300.00	2,300.00	2,271.40	2,271.40	8.01	7.91	89.44	29.47	3,010.07	3,010.21	2,998.96	11.26	267.380				
2,400.00	2,400.00	2,371.40	2,371.40	8.37	8.27	89.44	29.47	3,010.07	3,010.21	2,998.45	11.77	255.859				
2,500.00	2,500.00	2,471.40	2,471.40	8.73	8.63	89.44	29.47	3,010.07	3,010.21	2,997.94	12.27	245.290				
2,600.00	2,600.00	2,571.40	2,571.40	9.09	8.98	89.44	29.47	3,010.07	3,010.21	2,997.44	12.78	235.559				
2,700.00	2,700.00	2,671.40	2,671.40	9.45	9.34	89.44	29.47	3,010.07	3,010.21	2,996.93	13.29	226.571				
2,800.00	2,800.00	2,771.40	2,771.40	9.80	9.70	89.44	29.47	3,010.07	3,010.21	2,996.42	13.79	218.243				
2,900.00	2,900.00	2,871.40	2,871.40	10.16	10.06	89.44	29.47	3,010.07	3,010.21	2,995.91	14.30	210.506				
3,000.00	3,000.00	2,971.40	2,971.40	10.52	10.42	89.44	29.47	3,010.07	3,010.21	2,995.41	14.81	203.299				
3,100.00	3,100.00	3,071.40	3,071.40	10.88	10.78	89.44	29.47	3,010.07	3,010.21	2,994.90	15.31	196.569				
3,200.00	3,200.00	3,171.40	3,171.40	11.24	11.14	89.44	29.47	3,010.07	3,010.21	2,994.39	15.82	190.270				
3,300.00	3,300.00	3,271.40	3,271.40	11.60	11.49	89.44	29.47	3,010.07	3,010.21	2,993.89	16.33	184.363				
3,400.00	3,400.00	3,371.40	3,371.40	11.96	11.85	89.44	29.47	3,010.07	3,010.21	2,993.38	16.83	178.811 CC, ES				
3,500.00	3,499.99	3,440.07	3,440.07	12.30	12.09	-167.02	29.44	3,010.28	3,011.86	2,994.61	17.25	174.591				
3,600.00	3,599.91	3,500.00	3,499.99	12.64	12.30	-167.00	29.31	3,011.37	3,017.46	2,999.82	17.63	171.115				
3,700.00	3,699.69	3,551.88	3,551.84	12.98	12.48	-166.98	29.10	3,013.07	3,027.03	3,009.04	17.99	168.254				
3,800.00	3,799.27	3,600.00	3,599.91	13.32	12.64	-166.95	28.83	3,015.27	3,040.59	3,022.26	18.33	165.842				
3,900.00	3,898.57	3,666.97	3,666.76	13.67	12.87	-166.91	28.32	3,019.33	3,058.07	3,039.34	18.72	163.320				
4,000.00	3,997.54	3,756.33	3,755.89	14.02	13.18	-166.88	27.56	3,025.52	3,078.86	3,059.69	19.17	160.578				
4,100.00	4,096.09	3,853.53	3,852.86	14.38	13.51	-166.85	26.72	3,032.25	3,102.15	3,082.51	19.64	157.913				
4,200.00	4,194.16	3,950.09	3,949.18	14.75	13.85	-166.82	25.89	3,038.95	3,127.92	3,107.81	20.11	155.505				
4,300.00	4,291.70	4,045.94	4,044.80	15.12	14.18	-166.80	25.07	3,045.59	3,156.15	3,135.56	20.58	153.336				
4,400.00	4,388.62	4,141.02	4,139.64	15.51	14.51	-166.77	24.25	3,052.18	3,186.81	3,165.76	21.05	151.390				
4,500.00	4,484.86	4,235.25	4,233.65	15.92	14.84	-166.75	23.44	3,058.71	3,219.90	3,198.39	21.52	149.653				
4,600.00	4,580.36	4,328.58	4,326.75	16.34	15.17	-166.72	22.64	3,065.18	3,255.40	3,233.42	21.98	148.111				
4,700.00	4,675.05	4,420.94	4,418.88	16.78	15.50	-166.69	21.85	3,071.58	3,293.27	3,270.83	22.44	146.751				
4,746.50	4,718.78	4,463.53	4,461.37	16.99	15.65	-166.67	21.48	3,074.53	3,311.68	3,289.03	22.66	146.173				
4,800.00	4,769.00	4,512.42	4,510.13	17.24	15.82	-166.74	21.06	3,077.92	3,333.16	3,310.26	22.90	145.542				
4,900.00	4,862.85	4,603.78	4,601.28	17.72	16.15	-166.86	20.28	3,084.25	3,373.32	3,349.96	23.36	144.389				
5,000.00	4,956.70	4,695.14	4,692.42	18.21	16.47	-166.97	19.49	3,090.58	3,413.50	3,389.67	23.83	143.263				

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 501H
Project:	Lea County, NM (NAD83)	TVD Reference:	3121.3' GE + 30' KB @ 3151.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3121.3' GE + 30' KB @ 3151.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 501H	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	5,050.55	4,786.51	4,783.56	18.71	16.80	-167.08	18.71	3,096.92	3,453.68	3,429.38	24.29	142.164		
5,200.00	5,144.40	4,877.87	4,874.70	19.23	17.12	-167.19	17.93	3,103.25	3,493.87	3,469.11	24.76	141.092		
5,300.00	5,238.25	4,969.24	4,965.84	19.76	17.45	-167.30	17.14	3,109.58	3,534.08	3,508.84	25.24	140.046		
5,400.00	5,332.10	5,060.60	5,056.98	20.29	17.78	-167.40	16.36	3,115.91	3,574.29	3,548.58	25.71	139.026		
5,500.00	5,425.95	5,151.97	5,148.13	20.84	18.10	-167.50	15.57	3,122.25	3,614.51	3,588.33	26.19	138.032		
5,600.00	5,519.80	5,243.33	5,239.27	21.39	18.43	-167.60	14.79	3,128.58	3,654.75	3,628.08	26.66	137.063		
5,700.00	5,613.65	5,334.70	5,330.41	21.95	18.76	-167.70	14.00	3,134.91	3,694.99	3,667.85	27.15	136.118		
5,800.00	5,707.50	5,426.06	5,421.55	22.52	19.09	-167.80	13.22	3,141.24	3,735.24	3,707.61	27.63	135.198		
5,900.00	5,801.36	5,517.43	5,512.69	23.10	19.42	-167.89	12.43	3,147.57	3,775.50	3,747.39	28.11	134.301		
6,000.00	5,895.21	5,608.79	5,603.83	23.68	19.75	-167.98	11.65	3,153.91	3,815.77	3,787.17	28.60	133.427		
6,100.00	5,989.06	5,700.16	5,694.98	24.27	20.08	-168.07	10.87	3,160.24	3,856.05	3,826.96	29.09	132.575		
6,200.00	6,082.91	5,791.52	5,786.12	24.86	20.41	-168.16	10.08	3,166.57	3,896.33	3,866.76	29.57	131.745		
6,300.00	6,176.76	5,882.89	5,877.26	25.46	20.74	-168.25	9.30	3,172.90	3,936.62	3,906.56	30.07	130.935		
6,403.84	6,274.22	5,977.76	5,971.91	26.09	21.09	-168.33	8.48	3,179.48	3,978.47	3,947.89	30.58	130.116		
6,500.00	6,364.87	6,066.10	6,060.02	26.66	21.41	-168.53	7.72	3,185.60	4,016.14	3,985.09	31.05	129.340		
6,600.00	6,459.97	6,158.95	6,152.64	27.24	21.75	-168.72	6.93	3,192.04	4,052.99	4,021.44	31.55	128.471		
6,700.00	6,555.85	6,252.73	6,246.20	27.79	22.09	-168.89	6.12	3,198.54	4,087.45	4,055.40	32.05	127.543		
6,800.00	6,652.43	6,347.39	6,340.63	28.32	22.43	-169.04	5.31	3,205.10	4,119.49	4,086.94	32.55	126.560		
6,900.00	6,749.66	6,442.86	6,435.86	28.83	22.78	-169.17	4.49	3,211.71	4,149.08	4,116.03	33.05	125.528		
7,000.00	6,847.47	6,539.07	6,531.84	29.31	23.13	-169.28	3.66	3,218.38	4,176.22	4,142.66	33.56	124.451		
7,100.00	6,945.80	6,635.96	6,628.49	29.77	23.49	-169.38	2.83	3,225.10	4,200.87	4,166.80	34.06	123.333		
7,200.00	7,044.56	7,023.70	7,015.96	30.20	24.87	-169.56	1.47	3,236.07	4,217.21	4,181.76	35.46	118.937		
7,300.00	7,143.70	7,122.85	7,115.10	30.61	25.22	-169.63	1.47	3,236.07	4,230.06	4,194.10	35.96	117.627		
7,400.00	7,243.15	7,222.29	7,214.55	30.99	25.56	-169.68	1.47	3,236.07	4,240.36	4,203.89	36.46	116.292		
7,500.00	7,342.84	7,321.98	7,314.24	31.35	25.91	-169.72	1.47	3,236.07	4,248.08	4,211.12	36.96	114.932		
7,600.00	7,442.70	7,421.84	7,414.10	31.69	26.26	-169.75	1.47	3,236.07	4,253.24	4,215.79	37.46	113.551		
7,700.00	7,542.66	7,521.80	7,514.06	32.01	26.61	-169.76	1.47	3,236.07	4,255.83	4,217.88	37.95	112.149		
7,750.34	7,593.00	7,572.14	7,564.40	32.16	26.79	86.69	1.47	3,236.07	4,256.15	4,217.96	38.19	111.438		
7,800.00	7,642.66	7,621.80	7,614.06	32.30	26.97	86.69	1.47	3,236.07	4,256.15	4,217.72	38.43	110.739		
7,900.00	7,742.66	7,721.80	7,714.06	32.60	27.32	86.69	1.47	3,236.07	4,256.15	4,217.24	38.92	109.358		
8,000.00	7,842.66	7,821.80	7,814.06	32.89	27.67	86.69	1.47	3,236.07	4,256.15	4,216.75	39.41	108.009		
8,100.00	7,942.66	7,921.80	7,914.06	33.19	28.02	86.69	1.47	3,236.07	4,256.15	4,216.26	39.89	106.692		
8,200.00	8,042.66	8,021.80	8,014.06	33.49	28.37	86.69	1.47	3,236.07	4,256.15	4,215.78	40.38	105.405		
8,300.00	8,142.66	8,121.80	8,114.06	33.79	28.72	86.69	1.47	3,236.07	4,256.15	4,215.29	40.87	104.147		
8,400.00	8,242.66	8,221.80	8,214.06	34.09	29.08	86.69	1.47	3,236.07	4,256.15	4,214.80	41.35	102.918		
8,500.00	8,342.66	8,321.80	8,314.06	34.39	29.43	86.69	1.47	3,236.07	4,256.15	4,214.31	41.84	101.717		
8,600.00	8,442.66	8,421.80	8,414.06	34.69	29.78	86.69	1.47	3,236.07	4,256.15	4,213.82	42.33	100.542		
8,700.00	8,542.66	8,521.80	8,514.06	35.00	30.13	86.69	1.47	3,236.07	4,256.15	4,213.33	42.82	99.393		
8,800.00	8,642.66	8,621.80	8,614.06	35.30	30.48	86.69	1.47	3,236.07	4,256.15	4,212.84	43.31	98.270		
8,900.00	8,742.66	8,721.80	8,714.06	35.61	30.84	86.69	1.47	3,236.07	4,256.15	4,212.35	43.80	97.170		
9,000.00	8,842.66	8,821.80	8,814.06	35.91	31.19	86.69	1.47	3,236.07	4,256.15	4,211.86	44.29	96.094		
9,100.00	8,942.66	8,921.80	8,914.06	36.22	31.54	86.69	1.47	3,236.07	4,256.15	4,211.37	44.78	95.041		
9,200.00	9,042.66	9,021.80	9,014.06	36.53	31.90	86.69	1.47	3,236.07	4,256.15	4,210.88	45.27	94.009		
9,300.00	9,142.66	9,121.80	9,114.06	36.84	32.25	86.69	1.47	3,236.07	4,256.15	4,210.39	45.77	93.000		
9,400.00	9,242.66	9,221.80	9,214.06	37.15	32.60	86.69	1.47	3,236.07	4,256.15	4,209.90	46.26	92.011		
9,500.00	9,342.66	9,321.80	9,314.06	37.46	32.96	86.69	1.47	3,236.07	4,256.15	4,209.41	46.75	91.042		
9,600.00	9,442.66	9,421.80	9,414.06	37.77	33.31	86.69	1.47	3,236.07	4,256.15	4,208.91	47.24	90.093		
9,700.00	9,542.66	9,521.80	9,514.06	38.09	33.66	86.69	1.47	3,236.07	4,256.15	4,208.42	47.73	89.163		
9,800.00	9,642.66	9,621.80	9,614.06	38.40	34.02	86.69	1.47	3,236.07	4,256.15	4,207.93	48.23	88.251		
9,900.00	9,742.66	9,721.80	9,714.06	38.71	34.37	86.69	1.47	3,236.07	4,256.15	4,207.43	48.72	87.357		
10,000.00	9,842.66	9,821.80	9,814.06	39.03	34.73	86.69	1.47	3,236.07	4,256.15	4,206.94	49.21	86.481		
10,100.00	9,942.66	9,921.80	9,914.06	39.35	35.08	86.69	1.47	3,236.07	4,256.15	4,206.45	49.71	85.622		

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 501H
Project:	Lea County, NM (NAD83)	TVD Reference:	3121.3' GE + 30' KB @ 3151.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3121.3' GE + 30' KB @ 3151.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 501H	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		
10,200.00	10,042.66	10,021.80	10,014.06	39.66	35.43	86.69	1.47	3,236.07	4,256.15	4,205.95	50.20	84.779		
10,300.00	10,142.66	10,121.80	10,114.06	39.98	35.79	86.69	1.47	3,236.07	4,256.15	4,205.46	50.70	83.952		
10,354.38	10,197.04	10,176.18	10,168.44	40.15	35.98	86.69	1.47	3,236.07	4,256.15	4,205.19	50.97	83.509		
10,400.00	10,242.61	10,221.75	10,214.01	40.30	36.14	-92.75	1.47	3,236.07	4,256.24	4,205.05	51.19	83.146		
10,450.00	10,292.22	10,271.36	10,263.62	40.45	36.32	-92.81	1.47	3,236.07	4,256.54	4,205.11	51.43	82.760		
10,500.00	10,341.10	10,320.24	10,312.50	40.61	36.49	-92.89	1.47	3,236.07	4,257.07	4,205.40	51.67	82.383		
10,550.00	10,388.88	10,368.02	10,360.28	40.77	36.66	-93.00	1.47	3,236.07	4,257.86	4,205.95	51.91	82.019		
10,600.00	10,435.20	10,414.35	10,406.60	40.93	36.83	-93.13	1.47	3,236.07	4,258.95	4,206.80	52.15	81.668		
10,650.00	10,479.72	10,458.86	10,451.12	41.09	36.98	-93.25	1.47	3,236.07	4,260.37	4,207.99	52.38	81.334		
10,700.00	10,522.08	10,501.22	10,493.48	41.25	37.13	-93.38	1.47	3,236.07	4,262.18	4,209.58	52.61	81.018		
10,750.00	10,561.96	10,541.11	10,533.36	41.40	37.27	-93.47	1.47	3,236.07	4,264.44	4,211.61	52.83	80.722		
10,800.00	10,599.07	10,578.22	10,570.47	41.55	37.41	-93.53	1.47	3,236.07	4,267.20	4,214.16	53.04	80.449		
10,850.00	10,633.12	10,612.27	10,604.52	41.71	37.53	-93.53	1.47	3,236.07	4,270.51	4,217.26	53.25	80.199		
10,900.00	10,663.85	10,643.00	10,635.25	41.86	37.64	-93.47	1.47	3,236.07	4,274.43	4,220.98	53.45	79.973		
10,950.00	10,691.03	10,670.18	10,662.43	42.01	37.73	-93.31	1.47	3,236.07	4,278.99	4,225.35	53.64	79.774		
11,000.00	10,714.45	10,693.59	10,685.85	42.17	37.82	-93.07	1.47	3,236.07	4,284.23	4,230.41	53.82	79.602		
11,050.00	10,733.93	10,713.07	10,705.33	42.33	37.88	-92.71	1.47	3,236.07	4,290.17	4,236.18	53.99	79.459		
11,100.00	10,749.32	10,728.47	10,720.72	42.50	37.94	-92.24	1.47	3,236.07	4,296.81	4,242.66	54.15	79.346		
11,150.00	10,760.52	10,739.66	10,731.92	42.68	37.98	-91.64	1.47	3,236.07	4,304.16	4,249.85	54.30	79.263		
11,200.00	10,767.42	10,746.56	10,738.82	42.87	38.00	-90.92	1.47	3,236.07	4,312.17	4,257.73	54.44	79.211		
11,254.38	10,770.00	10,749.14	10,741.40	43.09	38.01	-90.00	1.47	3,236.07	4,321.59	4,267.02	54.57	79.191		
11,300.00	10,770.00	10,749.14	10,741.40	43.29	38.01	-90.00	1.47	3,236.07	4,330.02	4,275.34	54.68	79.190		
11,400.00	10,770.00	10,749.14	10,741.40	43.76	38.01	-90.00	1.47	3,236.07	4,350.11	4,295.18	54.93	79.188		
11,500.00	10,770.00	10,749.14	10,741.40	44.29	38.01	-90.00	1.47	3,236.07	4,372.40	4,317.18	55.21	79.192		
11,600.00	10,770.00	10,749.14	10,741.40	44.88	38.01	-90.00	1.47	3,236.07	4,396.84	4,341.33	55.51	79.203		
11,700.00	10,770.00	12,909.26	11,925.00	45.53	46.61	-105.56	-1,220.90	3,248.04	4,412.84	4,350.64	62.20	70.944		
11,800.00	10,770.00	13,009.26	11,925.00	46.23	47.35	-105.56	-1,320.90	3,249.02	4,412.83	4,349.58	63.25	69.766		
11,900.00	10,770.00	13,109.26	11,925.00	46.99	48.13	-105.56	-1,420.89	3,250.00	4,412.82	4,348.45	64.37	68.559		
12,000.00	10,770.00	13,209.26	11,925.00	47.79	48.96	-105.56	-1,520.89	3,250.98	4,412.81	4,347.27	65.54	67.331		
12,100.00	10,770.00	13,309.26	11,925.00	48.64	49.83	-105.56	-1,620.88	3,251.96	4,412.80	4,346.03	66.77	66.091		
12,200.00	10,770.00	13,409.26	11,925.00	49.53	50.74	-105.56	-1,720.88	3,252.93	4,412.79	4,344.73	68.05	64.845		
12,300.00	10,770.00	13,509.26	11,925.00	50.46	51.68	-105.56	-1,820.87	3,253.91	4,412.77	4,343.39	69.38	63.599		
12,400.00	10,770.00	13,609.26	11,925.00	51.43	52.66	-105.56	-1,920.87	3,254.89	4,412.76	4,342.00	70.77	62.357		
12,500.00	10,770.00	13,709.26	11,925.00	52.44	53.67	-105.56	-2,020.86	3,255.87	4,412.75	4,340.56	72.19	61.125		
12,600.00	10,770.00	13,809.26	11,925.00	53.48	54.72	-105.56	-2,120.86	3,256.85	4,412.74	4,339.08	73.66	59.907		
12,700.00	10,770.00	13,909.26	11,925.00	54.55	55.79	-105.56	-2,220.85	3,257.83	4,412.73	4,337.56	75.17	58.705		
12,800.00	10,770.00	14,009.26	11,925.00	55.65	56.89	-105.56	-2,320.85	3,258.81	4,412.72	4,336.00	76.71	57.522		
12,900.00	10,770.00	14,109.26	11,925.00	56.78	58.02	-105.56	-2,420.85	3,259.79	4,412.71	4,334.41	78.29	56.361		
13,000.00	10,770.00	14,209.26	11,925.00	57.93	59.17	-105.56	-2,520.84	3,260.77	4,412.69	4,332.79	79.91	55.224		
13,100.00	10,770.00	14,309.26	11,925.00	59.11	60.34	-105.56	-2,620.84	3,261.75	4,412.68	4,331.13	81.55	54.110		
13,200.00	10,770.00	14,409.26	11,925.00	60.31	61.54	-105.56	-2,720.83	3,262.73	4,412.67	4,329.45	83.22	53.022		
13,300.00	10,770.00	14,509.26	11,925.00	61.54	62.75	-105.56	-2,820.83	3,263.70	4,412.66	4,327.74	84.92	51.960		
13,400.00	10,770.00	14,609.26	11,925.00	62.78	63.99	-105.56	-2,920.82	3,264.68	4,412.65	4,326.00	86.65	50.924		
13,500.00	10,770.00	14,709.26	11,925.00	64.04	65.25	-105.56	-3,020.82	3,265.66	4,412.64	4,324.23	88.40	49.915		
13,600.00	10,770.00	14,809.26	11,925.00	65.32	66.52	-105.56	-3,120.81	3,266.64	4,412.63	4,322.45	90.18	48.933		
13,700.00	10,770.00	14,909.26	11,925.00	66.62	67.81	-105.56	-3,220.81	3,267.62	4,412.62	4,320.64	91.97	47.977		
13,800.00	10,770.00	15,009.26	11,925.00	67.93	69.11	-105.56	-3,320.80	3,268.60	4,412.60	4,318.81	93.79	47.048		
13,900.00	10,770.00	15,109.26	11,925.00	69.25	70.43	-105.56	-3,420.80	3,269.58	4,412.59	4,316.97	95.63	46.144		
14,000.00	10,770.00	15,209.26	11,925.00	70.59	71.76	-105.56	-3,520.79	3,270.56	4,412.58	4,315.10	97.48	45.267		
14,100.00	10,770.00	15,309.26	11,925.00	71.95	73.11	-105.56	-3,620.79	3,271.54	4,412.57	4,313.22	99.35	44.414		
14,200.00	10,770.00	15,409.26	11,925.00	73.31	74.46	-105.56	-3,720.78	3,272.52	4,412.56	4,311.32	101.24	43.586		
14,300.00	10,770.00	15,509.26	11,925.00	74.69	75.83	-105.56	-3,820.78	3,273.50	4,412.55	4,309.41	103.14	42.782		

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 501H
Project:	Lea County, NM (NAD83)	TVD Reference:	3121.3' GE + 30' KB @ 3151.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3121.3' GE + 30' KB @ 3151.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 501H	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		
14,400.00	10,770.00	15,609.26	11,925.00	76.08	77.21	-105.56	-3,920.77	3,274.47	4,412.54	4,307.48	105.06	42.001		
14,500.00	10,770.00	15,709.26	11,925.00	77.48	78.60	-105.56	-4,020.77	3,275.45	4,412.52	4,305.54	106.99	41.243		
14,600.00	10,770.00	15,809.26	11,925.00	78.89	80.01	-105.56	-4,120.76	3,276.43	4,412.51	4,303.58	108.93	40.507		
14,700.00	10,770.00	15,909.26	11,925.00	80.31	81.42	-105.56	-4,220.76	3,277.41	4,412.50	4,301.61	110.89	39.792		
14,800.00	10,770.00	16,009.26	11,925.00	81.73	82.83	-105.56	-4,320.75	3,278.39	4,412.49	4,299.63	112.86	39.099		
14,900.00	10,770.00	16,109.26	11,925.00	83.17	84.26	-105.56	-4,420.75	3,279.37	4,412.48	4,297.64	114.83	38.425		
15,000.00	10,770.00	16,209.26	11,925.00	84.61	85.70	-105.56	-4,520.74	3,280.35	4,412.47	4,295.64	116.82	37.770		
15,100.00	10,770.00	16,309.26	11,925.00	86.06	87.14	-105.56	-4,620.74	3,281.33	4,412.46	4,293.63	118.82	37.135		
15,200.00	10,770.00	16,409.26	11,925.00	87.52	88.59	-105.56	-4,720.73	3,282.31	4,412.44	4,291.61	120.83	36.517		
15,300.00	10,770.00	16,509.26	11,925.00	88.99	89.05	-105.56	-4,820.73	3,283.29	4,412.43	4,289.58	122.85	35.918		
15,400.00	10,770.00	16,609.26	11,925.00	90.46	91.51	-105.56	-4,920.73	3,284.27	4,412.42	4,287.55	124.87	35.335		
15,500.00	10,770.00	16,709.26	11,925.00	91.94	92.98	-105.56	-5,020.72	3,285.25	4,412.41	4,285.50	126.91	34.768		
15,600.00	10,770.00	16,809.26	11,925.00	93.42	94.46	-105.56	-5,120.72	3,286.22	4,412.40	4,283.45	128.95	34.218		
15,700.00	10,770.00	16,909.26	11,925.00	94.91	95.94	-105.56	-5,220.71	3,287.20	4,412.39	4,281.39	131.00	33.683		
15,800.00	10,770.00	17,009.26	11,925.00	96.40	97.43	-105.56	-5,320.71	3,288.18	4,412.38	4,279.32	133.05	33.162		
15,900.00	10,770.00	17,109.26	11,925.00	97.90	98.92	-105.56	-5,420.70	3,289.16	4,412.36	4,277.25	135.12	32.656		
16,000.00	10,770.00	17,209.26	11,925.00	99.41	100.42	-105.56	-5,520.70	3,290.14	4,412.35	4,275.17	137.18	32.164		
16,100.00	10,770.00	17,309.26	11,925.00	100.92	101.92	-105.56	-5,620.69	3,291.12	4,412.34	4,273.08	139.26	31.684		
16,200.00	10,770.00	17,409.26	11,925.00	102.43	103.43	-105.56	-5,720.69	3,292.10	4,412.33	4,270.99	141.34	31.218		
16,300.00	10,770.00	17,509.26	11,925.00	103.95	104.94	-105.56	-5,820.68	3,293.08	4,412.32	4,268.89	143.43	30.764		
16,400.00	10,770.00	17,609.26	11,925.00	105.47	106.45	-105.56	-5,920.68	3,294.06	4,412.31	4,266.79	145.52	30.321		
16,500.00	10,770.00	17,709.26	11,925.00	107.00	107.97	-105.56	-6,020.67	3,295.04	4,412.30	4,264.68	147.62	29.891		
16,600.00	10,770.00	17,809.26	11,925.00	108.52	109.50	-105.56	-6,120.67	3,296.02	4,412.29	4,262.57	149.72	29.471		
16,700.00	10,770.00	17,909.26	11,925.00	110.06	111.02	-105.56	-6,220.66	3,296.99	4,412.27	4,260.45	151.82	29.062		
16,800.00	10,770.00	18,009.26	11,925.00	111.59	112.55	-105.56	-6,320.66	3,297.97	4,412.26	4,258.33	153.93	28.663		
16,900.00	10,770.00	18,109.26	11,925.00	113.13	114.09	-105.56	-6,420.65	3,298.95	4,412.25	4,256.20	156.05	28.275		
17,000.00	10,770.00	18,209.26	11,925.00	114.68	115.63	-105.56	-6,520.65	3,299.93	4,412.24	4,254.07	158.17	27.896		
17,100.00	10,770.00	18,309.26	11,925.00	116.22	117.17	-105.56	-6,620.64	3,300.91	4,412.23	4,251.93	160.29	27.526		
17,200.00	10,770.00	18,409.26	11,925.00	117.77	118.71	-105.56	-6,720.64	3,301.89	4,412.22	4,249.80	162.42	27.165		
17,300.00	10,770.00	18,509.26	11,925.00	119.32	120.26	-105.56	-6,820.63	3,302.87	4,412.21	4,247.65	164.55	26.813		
17,400.00	10,770.00	18,609.26	11,925.00	120.88	121.80	-105.56	-6,920.63	3,303.85	4,412.19	4,245.51	166.69	26.470		
17,500.00	10,770.00	18,709.26	11,925.00	122.43	123.36	-105.56	-7,020.62	3,304.83	4,412.18	4,243.36	168.82	26.135		
17,600.00	10,770.00	18,809.26	11,925.00	123.99	124.91	-105.56	-7,120.62	3,305.81	4,412.17	4,241.21	170.97	25.807		
17,700.00	10,770.00	18,909.26	11,925.00	125.55	126.47	-105.56	-7,220.62	3,306.79	4,412.16	4,239.05	173.11	25.488		
17,800.00	10,770.00	19,009.26	11,925.00	127.12	128.02	-105.56	-7,320.61	3,307.76	4,412.15	4,236.89	175.25	25.176		
17,900.00	10,770.00	19,109.26	11,925.00	128.68	129.59	-105.56	-7,420.61	3,308.74	4,412.14	4,234.73	177.40	24.871		
18,000.00	10,770.00	19,209.26	11,925.00	130.25	131.15	-105.56	-7,520.60	3,309.72	4,412.13	4,232.57	179.56	24.573		
18,100.00	10,770.00	19,309.26	11,925.00	131.82	132.71	-105.56	-7,620.60	3,310.70	4,412.11	4,230.40	181.71	24.281		
18,200.00	10,770.00	19,409.26	11,925.00	133.39	134.28	-105.56	-7,720.59	3,311.68	4,412.10	4,228.24	183.87	23.996		
18,300.00	10,770.00	19,509.26	11,925.00	134.97	135.85	-105.56	-7,820.59	3,312.66	4,412.09	4,226.06	186.03	23.718		
18,400.00	10,770.00	19,609.26	11,925.00	136.54	137.42	-105.56	-7,920.58	3,313.64	4,412.08	4,223.89	188.19	23.445		
18,500.00	10,770.00	19,709.26	11,925.00	138.12	139.00	-105.56	-8,020.58	3,314.62	4,412.07	4,221.71	190.35	23.178		
18,600.00	10,770.00	19,809.26	11,925.00	139.70	140.57	-105.56	-8,120.57	3,315.60	4,412.06	4,219.53	192.52	22.917		
18,700.00	10,770.00	19,909.26	11,925.00	141.28	142.15	-105.56	-8,220.57	3,316.58	4,412.05	4,217.35	194.69	22.662		
18,800.00	10,770.00	20,009.26	11,925.00	142.86	143.73	-105.56	-8,320.56	3,317.56	4,412.03	4,215.17	196.87	22.411		
18,900.00	10,770.00	20,109.26	11,925.00	144.45	145.31	-105.56	-8,420.56	3,318.53	4,412.02	4,212.98	199.04	22.167		
19,000.00	10,770.00	20,209.26	11,925.00	146.03	146.89	-105.56	-8,520.55	3,319.51	4,412.01	4,210.80	201.22	21.927		
19,100.00	10,770.00	20,309.26	11,925.00	147.62	148.47	-105.56	-8,620.55	3,320.49	4,412.00	4,208.61	203.39	21.692		
19,200.00	10,770.00	20,409.26	11,925.00	149.21	150.06	-105.56	-8,720.54	3,321.47	4,411.99	4,206.41	205.57	21.462		
19,300.00	10,770.00	20,509.26	11,925.00	150.80	151.64	-105.56	-8,820.54	3,322.45	4,411.98	4,204.22	207.76	21.236		
19,400.00	10,770.00	20,609.26	11,925.00	152.39	153.23	-105.56	-8,920.53	3,323.43	4,411.97	4,202.03	209.94	21.015		
19,500.00	10,770.00	20,709.26	11,925.00	153.98	154.82	-105.56	-9,020.53	3,324.41	4,411.95	4,199.83	212.12	20.799		

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 501H
Project:	Lea County, NM (NAD83)	TVD Reference:	3121.3' GE + 30' KB @ 3151.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3121.3' GE + 30' KB @ 3151.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 501H	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 604H - OH - Plan #2													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		
19,600.00	10,770.00	20,809.26	11,925.00	155.57	156.41	-105.56	-9,120.52	3,325.39	4,411.94	4,197.63	214.31	20.587		
19,700.00	10,770.00	20,909.26	11,925.00	157.17	158.00	-105.56	-9,220.52	3,326.37	4,411.93	4,195.44	216.50	20.379		
19,800.00	10,770.00	21,009.26	11,925.00	158.76	159.59	-105.56	-9,320.51	3,327.35	4,411.92	4,193.24	218.68	20.175		
19,900.00	10,770.00	21,109.26	11,925.00	160.36	161.19	-105.56	-9,420.51	3,328.33	4,411.91	4,191.03	220.88	19.975		
20,000.00	10,770.00	21,209.26	11,925.00	161.96	162.78	-105.56	-9,520.50	3,329.30	4,411.90	4,188.83	223.07	19.778		
20,100.00	10,770.00	21,309.26	11,925.00	163.56	164.38	-105.56	-9,620.50	3,330.28	4,411.89	4,186.63	225.26	19.586		
20,200.00	10,770.00	21,409.26	11,925.00	165.16	165.98	-105.56	-9,720.50	3,331.26	4,411.88	4,184.42	227.45	19.397		
20,300.00	10,770.00	21,509.26	11,925.00	166.76	167.57	-105.56	-9,820.49	3,332.24	4,411.86	4,182.21	229.65	19.211		
20,400.00	10,770.00	21,609.26	11,925.00	168.36	169.17	-105.56	-9,920.49	3,333.22	4,411.85	4,180.00	231.85	19.029		
20,500.00	10,770.00	21,709.26	11,925.00	169.97	170.77	-105.56	-10,020.48	3,334.20	4,411.84	4,177.79	234.05	18.850		
20,600.00	10,770.00	21,809.26	11,925.00	171.57	172.38	-105.56	-10,120.48	3,335.18	4,411.83	4,175.58	236.25	18.675		
20,700.00	10,770.00	21,909.26	11,925.00	173.18	173.98	-105.56	-10,220.47	3,336.16	4,411.82	4,173.37	238.45	18.502		
20,800.00	10,770.00	22,009.26	11,925.00	174.78	175.58	-105.56	-10,320.47	3,337.14	4,411.81	4,171.16	240.65	18.333		
20,841.66	10,770.00	22,050.92	11,925.00	175.40	176.25	-105.56	-10,362.13	3,337.55	4,411.80	4,170.29	241.51	18.267 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 501H
Project:	Lea County, NM (NAD83)	TVD Reference:	3121.3' GE + 30' KB @ 3151.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3121.3' GE + 30' KB @ 3151.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 501H	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 704H - 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	89.44	28.96	2,960.08	2,960.35							
100.00	100.00	72.50	72.50	0.13	0.09	89.44	28.96	2,960.08	2,960.22	2,960.07	0.15	N/A				
200.00	200.00	172.50	172.50	0.48	0.39	89.44	28.96	2,960.08	2,960.22	2,959.60	0.62	4,785.176				
300.00	300.00	272.50	272.50	0.84	0.74	89.44	28.96	2,960.08	2,960.22	2,959.10	1.12	2,634.111				
400.00	400.00	372.50	372.50	1.20	1.10	89.44	28.96	2,960.08	2,960.22	2,958.59	1.63	1,815.992				
500.00	500.00	472.50	472.50	1.56	1.46	89.44	28.96	2,960.08	2,960.22	2,958.09	2.14	1,385.426				
600.00	600.00	572.50	572.50	1.92	1.82	89.44	28.96	2,960.08	2,960.22	2,957.58	2.64	1,119.844				
700.00	700.00	672.50	672.50	2.28	2.18	89.44	28.96	2,960.08	2,960.22	2,957.07	3.15	939.684				
800.00	800.00	772.50	772.50	2.63	2.54	89.44	28.96	2,960.08	2,960.22	2,956.56	3.66	809.450				
900.00	900.00	872.50	872.50	2.99	2.89	89.44	28.96	2,960.08	2,960.22	2,956.06	4.16	710.916				
1,000.00	1,000.00	972.50	972.50	3.35	3.25	89.44	28.96	2,960.08	2,960.22	2,955.55	4.67	633.766				
1,100.00	1,100.00	1,072.50	1,072.50	3.71	3.61	89.44	28.96	2,960.08	2,960.22	2,955.04	5.18	571.720				
1,200.00	1,200.00	1,172.50	1,172.50	4.07	3.97	89.44	28.96	2,960.08	2,960.22	2,954.54	5.68	520.738				
1,300.00	1,300.00	1,272.50	1,272.50	4.43	4.33	89.44	28.96	2,960.08	2,960.22	2,954.03	6.19	478.104				
1,400.00	1,400.00	1,372.50	1,372.50	4.79	4.69	89.44	28.96	2,960.08	2,960.22	2,953.52	6.70	441.922				
1,500.00	1,500.00	1,472.50	1,472.50	5.14	5.05	89.44	28.96	2,960.08	2,960.22	2,953.02	7.21	410.832				
1,600.00	1,600.00	1,572.50	1,572.50	5.50	5.40	89.44	28.96	2,960.08	2,960.22	2,952.51	7.71	383.828				
1,700.00	1,700.00	1,672.50	1,672.50	5.86	5.76	89.44	28.96	2,960.08	2,960.22	2,952.00	8.22	360.155				
1,800.00	1,800.00	1,772.50	1,772.50	6.22	6.12	89.44	28.96	2,960.08	2,960.22	2,951.50	8.73	339.232				
1,900.00	1,900.00	1,872.50	1,872.50	6.58	6.48	89.44	28.96	2,960.08	2,960.22	2,950.99	9.23	320.607				
2,000.00	2,000.00	1,972.50	1,972.50	6.94	6.84	89.44	28.96	2,960.08	2,960.22	2,950.48	9.74	303.920				
2,100.00	2,100.00	2,072.50	2,072.50	7.29	7.20	89.44	28.96	2,960.08	2,960.22	2,949.97	10.25	288.885				
2,200.00	2,200.00	2,172.50	2,172.50	7.65	7.55	89.44	28.96	2,960.08	2,960.22	2,949.47	10.75	275.267				
2,300.00	2,300.00	2,272.50	2,272.50	8.01	7.91	89.44	28.96	2,960.08	2,960.22	2,948.96	11.26	262.875				
2,400.00	2,400.00	2,372.50	2,372.50	8.37	8.27	89.44	28.96	2,960.08	2,960.22	2,948.45	11.77	251.550				
2,500.00	2,500.00	2,472.50	2,472.50	8.73	8.63	89.44	28.96	2,960.08	2,960.22	2,947.95	12.27	241.161				
2,600.00	2,600.00	2,572.50	2,572.50	9.09	8.99	89.44	28.96	2,960.08	2,960.22	2,947.44	12.78	231.597				
2,700.00	2,700.00	2,672.50	2,672.50	9.45	9.35	89.44	28.96	2,960.08	2,960.22	2,946.93	13.29	222.762				
2,800.00	2,800.00	2,772.50	2,772.50	9.80	9.71	89.44	28.96	2,960.08	2,960.22	2,946.43	13.80	214.576				
2,900.00	2,900.00	2,872.50	2,872.50	10.16	10.06	89.44	28.96	2,960.08	2,960.22	2,945.92	14.30	206.970				
3,000.00	3,000.00	2,972.50	2,972.50	10.52	10.42	89.44	28.96	2,960.08	2,960.22	2,945.41	14.81	199.885				
3,100.00	3,100.00	3,072.50	3,072.50	10.88	10.78	89.44	28.96	2,960.08	2,960.22	2,944.91	15.32	193.270				
3,200.00	3,200.00	3,172.50	3,172.50	11.24	11.14	89.44	28.96	2,960.08	2,960.22	2,944.40	15.82	187.078				
3,300.00	3,300.00	3,520.44	3,520.06	11.60	12.34	89.45	28.26	2,946.67	2,957.18	2,940.30	16.88	175.163				
3,400.00	3,400.00	3,954.26	3,949.36	11.96	13.89	89.50	25.07	2,885.95	2,943.15	2,925.16	17.99	163.562				
3,500.00	3,499.99	4,058.66	4,051.70	12.30	14.28	-167.01	23.98	2,865.29	2,924.60	2,906.12	18.48	158.225				
3,600.00	3,599.91	4,157.36	4,148.44	12.64	14.65	-167.06	22.96	2,845.76	2,908.56	2,889.60	18.96	153.406				
3,700.00	3,699.69	4,256.44	4,245.55	12.98	15.04	-167.12	21.93	2,826.14	2,895.04	2,875.60	19.44	148.923				
3,800.00	3,799.27	4,355.83	4,342.97	13.32	15.43	-167.18	20.89	2,806.47	2,884.06	2,864.14	19.92	144.758				
3,900.00	3,898.57	4,455.45	4,440.61	13.67	15.82	-167.24	19.86	2,786.75	2,875.62	2,855.21	20.41	140.894				
4,000.00	3,997.54	4,555.25	4,538.43	14.02	16.22	-167.31	18.82	2,766.99	2,869.72	2,848.82	20.90	137.313				
4,100.00	4,096.09	4,655.14	4,636.34	14.38	16.63	-167.38	17.78	2,747.22	2,866.38	2,844.99	21.39	134.000				
4,180.59	4,175.16	4,735.67	4,715.28	14.68	16.96	-167.44	16.94	2,731.27	2,865.55	2,843.76	21.79	131.515 CC				
4,200.00	4,194.16	4,755.07	4,734.29	14.75	17.04	-167.46	16.74	2,727.43	2,865.60	2,843.71	21.88	130.940 ES				
4,300.00	4,291.70	4,854.97	4,832.21	15.12	17.45	-167.53	15.70	2,707.66	2,867.38	2,845.00	22.38	128.118				
4,400.00	4,388.62	4,954.77	4,930.02	15.51	17.87	-167.61	14.66	2,687.90	2,871.72	2,848.84	22.88	125.520				
4,500.00	4,484.86	5,054.39	5,027.67	15.92	18.29	-167.69	13.63	2,668.18	2,878.62	2,855.24	23.38	123.134				
4,600.00	4,480.36	5,153.77	5,125.08	16.34	18.71	-167.78	12.60	2,648.51	2,888.08	2,864.20	23.88	120.947				
4,700.00	4,675.05	5,252.85	5,222.19	16.78	19.13	-167.86	11.57	2,628.89	2,900.09	2,875.71	24.38	118.949				
4,746.50	4,718.78	5,298.79	5,267.22	16.99	19.33	-167.90	11.09	2,619.80	2,906.55	2,881.93	24.62	118.080				
4,800.00	4,769.00	5,351.61	5,318.99	17.24	19.56	-167.97	10.54	2,609.34	2,914.30	2,889.41	24.88	117.112				
4,900.00	4,862.85	5,450.32	5,415.74	17.72	19.98	-168.11	9.51	2,589.80	2,928.79	2,903.40	25.39	115.348				

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 501H
Project:	Lea County, NM (NAD83)	TVD Reference:	3121.3' GE + 30' KB @ 3151.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3121.3' GE + 30' KB @ 3151.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 501H	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 704H - 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	4,956.70	5,549.04	5,512.50	18.21	20.41	-168.24	8.49	2,570.26	2,943.30	2,917.40	25.90	113.640					
5,100.00	5,050.55	5,647.76	5,609.26	18.71	20.84	-168.37	7.46	2,550.72	2,957.83	2,931.41	26.41	111.985					
5,200.00	5,144.40	5,746.48	5,706.02	19.23	21.27	-168.50	6.43	2,531.18	2,972.37	2,945.44	26.93	110.383					
5,300.00	5,238.25	5,845.19	5,802.78	19.76	21.71	-168.62	5.41	2,511.63	2,986.92	2,959.47	27.45	108.831					
5,400.00	5,332.10	5,943.91	5,899.53	20.29	22.14	-168.75	4.38	2,492.09	3,001.49	2,973.52	27.97	107.328					
5,500.00	5,425.95	6,042.63	5,996.29	20.84	22.58	-168.87	3.35	2,472.55	3,016.07	2,987.58	28.49	105.872					
5,600.00	5,519.80	6,141.34	6,093.05	21.39	23.02	-169.00	2.33	2,453.01	3,030.67	3,001.65	29.01	104.461					
5,700.00	5,613.65	6,240.06	6,189.81	21.95	23.46	-169.12	1.30	2,433.47	3,045.28	3,015.74	29.54	103.093					
5,800.00	5,707.50	6,338.78	6,286.57	22.52	23.90	-169.24	0.28	2,413.92	3,059.90	3,029.83	30.07	101.768					
5,900.00	5,801.36	6,437.50	6,383.32	23.10	24.35	-169.36	-0.75	2,394.38	3,074.54	3,043.94	30.60	100.483					
6,000.00	5,895.21	6,536.21	6,480.08	23.68	24.79	-169.48	-1.78	2,374.84	3,089.19	3,058.06	31.13	99.237					
6,100.00	5,989.06	6,634.93	6,576.84	24.27	25.24	-169.60	-2.80	2,355.30	3,103.85	3,072.19	31.66	98.028					
6,200.00	6,082.91	6,733.65	6,673.60	24.86	25.68	-169.72	-3.83	2,335.76	3,118.53	3,086.33	32.20	96.855					
6,300.00	6,176.76	6,804.26	6,742.81	25.46	26.01	-169.80	-4.56	2,321.78	3,133.34	3,100.67	32.68	95.886					
6,403.84	6,274.22	6,875.85	6,813.11	26.09	26.32	-169.88	-5.27	2,308.26	3,149.71	3,116.54	33.17	94.955					
6,500.00	6,364.87	6,927.72	6,864.19	26.66	26.55	-169.98	-5.75	2,299.29	3,165.10	3,131.51	33.59	94.223					
6,600.00	6,459.97	7,000.00	6,935.58	27.24	26.86	-170.09	-6.34	2,287.95	3,180.08	3,146.02	34.06	93.354					
6,700.00	6,555.85	7,035.58	6,970.79	27.79	27.01	-170.16	-6.61	2,282.87	3,193.72	3,159.28	34.45	92.719					
6,800.00	6,652.43	7,100.00	7,034.66	28.32	27.27	-170.25	-7.05	2,274.49	3,206.34	3,171.45	34.89	91.906					
6,900.00	6,749.66	7,143.43	7,077.79	28.83	27.45	-170.31	-7.31	2,269.45	3,217.74	3,182.47	35.27	91.241					
7,000.00	6,847.47	7,200.00	7,134.06	29.31	27.67	-170.37	-7.62	2,263.62	3,228.01	3,192.34	35.67	90.493					
7,100.00	6,945.80	7,251.26	7,185.12	29.77	27.86	-170.42	-7.86	2,259.06	3,237.12	3,201.06	36.05	89.791					
7,200.00	7,044.56	7,300.00	7,233.72	30.20	28.05	-170.47	-8.05	2,255.36	3,245.07	3,208.65	36.41	89.114					
7,300.00	7,143.70	7,359.07	7,292.67	30.61	28.26	-170.51	-8.24	2,251.70	3,251.84	3,215.04	36.80	88.370					
7,400.00	7,243.15	7,400.00	7,333.56	30.99	28.41	-170.53	-8.35	2,249.70	3,257.50	3,220.38	37.11	87.769					
7,500.00	7,342.84	7,466.87	7,400.39	31.35	28.63	-170.56	-8.47	2,247.38	3,261.89	3,224.39	37.50	86.975					
7,600.00	7,442.70	7,520.77	7,454.28	31.69	28.82	-170.58	-8.53	2,246.35	3,265.16	3,227.32	37.84	86.287					
7,700.00	7,542.66	7,581.66	7,515.16	32.01	29.02	-170.59	-8.54	2,246.08	3,267.25	3,229.06	38.19	85.550					
7,750.34	7,593.00	7,632.00	7,565.50	32.16	29.18	85.87	-8.54	2,246.08	3,267.57	3,229.14	38.43	85.020					
7,800.00	7,642.66	7,681.66	7,615.16	32.30	29.34	85.87	-8.54	2,246.08	3,267.57	3,228.90	38.67	84.496					
7,900.00	7,742.66	7,781.66	7,715.16	32.60	29.66	85.87	-8.54	2,246.08	3,267.57	3,228.42	39.15	83.461					
8,000.00	7,842.66	7,881.66	7,815.16	32.89	29.99	85.87	-8.54	2,246.08	3,267.57	3,227.94	39.63	82.449					
8,100.00	7,942.66	7,981.66	7,915.16	33.19	30.31	85.87	-8.54	2,246.08	3,267.57	3,227.46	40.11	81.460					
8,200.00	8,042.66	8,081.66	8,015.16	33.49	30.64	85.87	-8.54	2,246.08	3,267.57	3,226.98	40.59	80.493					
8,300.00	8,142.66	8,181.66	8,115.16	33.79	30.96	85.87	-8.54	2,246.08	3,267.57	3,226.50	41.08	79.548					
8,400.00	8,242.66	8,281.66	8,215.16	34.09	31.29	85.87	-8.54	2,246.08	3,267.57	3,226.01	41.56	78.623					
8,500.00	8,342.66	8,381.66	8,315.16	34.39	31.62	85.87	-8.54	2,246.08	3,267.57	3,225.53	42.04	77.719					
8,600.00	8,442.66	8,481.66	8,415.16	34.69	31.95	85.87	-8.54	2,246.08	3,267.57	3,225.05	42.53	76.834					
8,700.00	8,542.66	8,581.66	8,515.16	35.00	32.28	85.87	-8.54	2,246.08	3,267.57	3,224.56	43.01	75.968					
8,800.00	8,642.66	8,681.66	8,615.16	35.30	32.61	85.87	-8.54	2,246.08	3,267.57	3,224.08	43.50	75.121					
8,900.00	8,742.66	8,781.66	8,715.16	35.61	32.94	85.87	-8.54	2,246.08	3,267.57	3,223.59	43.98	74.292					
9,000.00	8,842.66	8,881.66	8,815.16	35.91	33.27	85.87	-8.54	2,246.08	3,267.57	3,223.11	44.47	73.480					
9,100.00	8,942.66	8,981.66	8,915.16	36.22	33.60	85.87	-8.54	2,246.08	3,267.57	3,222.62	44.96	72.684					
9,200.00	9,042.66	9,081.66	9,015.16	36.53	33.93	85.87	-8.54	2,246.08	3,267.57	3,222.13	45.44	71.905					
9,300.00	9,142.66	9,181.66	9,115.16	36.84	34.27	85.87	-8.54	2,246.08	3,267.57	3,221.64	45.93	71.142					
9,400.00	9,242.66	9,281.66	9,215.16	37.15	34.60	85.87	-8.54	2,246.08	3,267.57	3,221.16	46.42	70.395					
9,500.00	9,342.66	9,381.66	9,315.16	37.46	34.93	85.87	-8.54	2,246.08	3,267.57	3,220.67	46.91	69.662					
9,600.00	9,442.66	9,481.66	9,415.16	37.77	35.27	85.87	-8.54	2,246.08	3,267.57	3,220.18	47.39	68.944					
9,700.00	9,542.66	9,581.66	9,515.16	38.09	35.60	85.87	-8.54	2,246.08	3,267.57	3,219.69	47.88	68.239					
9,800.00	9,642.66	9,681.66	9,615.16	38.40	35.94	85.87	-8.54	2,246.08	3,267.57	3,219.20	48.37	67.549					
9,900.00	9,742.66	9,781.66	9,715.16	38.71	36.27	85.87	-8.54	2,246.08	3,267.57	3,218.71	48.86	66.872					
10,000.00	9,842.66	9,881.66	9,815.16	39.03	36.61	85.87	-8.54	2,246.08	3,267.57	3,218.22	49.35	66.208					

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 501H
Project:	Lea County, NM (NAD83)	TVD Reference:	3121.3' GE + 30' KB @ 3151.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3121.3' GE + 30' KB @ 3151.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 501H	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	9,942.66	9,981.66	9,915.16	39.35	36.95	85.87	-8.54	2,246.08	3,267.57	3,217.73	49.84	65.556		
10,200.00	10,042.66	10,081.66	10,015.16	39.66	37.28	85.87	-8.54	2,246.08	3,267.57	3,217.24	50.33	64.917		
10,300.00	10,142.66	10,181.66	10,115.16	39.98	37.62	85.87	-8.54	2,246.08	3,267.57	3,216.75	50.83	64.290		
10,354.38	10,197.04	10,236.04	10,169.54	40.15	37.80	85.87	-8.54	2,246.08	3,267.57	3,216.48	51.09	63.954		
10,400.00	10,242.61	10,281.61	10,215.11	40.30	37.96	-93.58	-8.54	2,246.08	3,267.69	3,216.37	51.31	63.680		
10,450.00	10,292.22	10,331.21	10,264.72	40.45	38.13	-93.65	-8.54	2,246.08	3,268.08	3,216.52	51.55	63.391		
10,500.00	10,341.10	10,380.09	10,313.60	40.61	38.29	-93.76	-8.54	2,246.08	3,268.77	3,216.98	51.79	63.112		
10,550.00	10,388.88	10,427.88	10,361.38	40.77	38.45	-93.90	-8.54	2,246.08	3,269.80	3,217.77	52.03	62.845		
10,600.00	10,435.20	10,474.20	10,407.70	40.93	38.61	-94.07	-8.54	2,246.08	3,271.21	3,218.95	52.26	62.592		
10,650.00	10,479.72	10,518.71	10,452.22	41.09	38.76	-94.24	-8.54	2,246.08	3,273.06	3,220.57	52.49	62.356		
10,700.00	10,522.08	10,561.07	10,494.58	41.25	38.90	-94.39	-8.54	2,246.08	3,275.42	3,222.70	52.71	62.138		
10,750.00	10,561.96	10,600.96	10,534.46	41.40	39.04	-94.52	-8.54	2,246.08	3,278.35	3,225.42	52.93	61.940		
10,800.00	10,599.07	10,638.07	10,571.57	41.55	39.16	-94.60	-8.54	2,246.08	3,281.94	3,228.80	53.14	61.764		
10,850.00	10,633.12	10,672.12	10,605.62	41.71	39.28	-94.60	-8.54	2,246.08	3,286.24	3,232.90	53.34	61.612		
10,900.00	10,663.85	10,702.85	10,636.35	41.86	39.38	-94.51	-8.54	2,246.08	3,291.32	3,237.79	53.53	61.485		
10,950.00	10,691.03	10,730.03	10,663.53	42.01	39.48	-94.32	-8.54	2,246.08	3,297.24	3,243.53	53.71	61.385		
11,000.00	10,714.45	10,753.45	10,686.95	42.17	39.56	-93.99	-8.54	2,246.08	3,304.04	3,250.15	53.89	61.314		
11,050.00	10,733.93	10,772.93	10,706.43	42.33	39.62	-93.53	-8.54	2,246.08	3,311.74	3,257.68	54.05	61.271		
11,100.00	10,749.32	10,788.32	10,721.82	42.50	39.67	-92.91	-8.54	2,246.08	3,320.34	3,266.14	54.20	61.259		
11,150.00	10,760.52	10,799.51	10,733.02	42.68	39.71	-92.14	-8.54	2,246.08	3,329.83	3,275.49	54.34	61.277		
11,200.00	10,767.42	10,806.42	10,739.92	42.87	39.74	-91.20	-8.54	2,246.08	3,340.18	3,285.71	54.47	61.327		
11,254.38	10,770.00	10,809.00	10,742.50	43.09	39.74	-90.00	-8.54	2,246.08	3,352.33	3,297.75	54.58	61.416		
11,300.00	10,770.00	10,809.00	10,742.50	43.29	39.74	-90.00	-8.54	2,246.08	3,363.18	3,308.51	54.68	61.509		
11,400.00	10,770.00	10,809.00	10,742.50	43.76	39.74	-90.00	-8.54	2,246.08	3,389.01	3,334.10	54.90	61.729		
11,500.00	10,770.00	10,809.00	10,742.50	44.29	39.74	-90.00	-8.54	2,246.08	3,417.56	3,362.41	55.14	61.975		
11,600.00	10,770.00	10,809.00	10,742.50	44.88	39.74	-90.00	-8.54	2,246.08	3,448.78	3,393.37	55.40	62.249		
11,700.00	10,770.00	10,809.00	10,742.50	45.53	39.74	-90.00	-8.54	2,246.08	3,482.58	3,426.91	55.68	62.551		
11,800.00	10,770.00	10,809.00	10,742.50	46.23	39.74	-90.00	-8.54	2,246.08	3,518.91	3,462.95	55.96	62.881		
11,900.00	10,770.00	13,351.64	12,109.00	46.99	49.66	-112.74	-1,430.53	2,260.03	3,535.84	3,471.61	64.23	55.053		
12,000.00	10,770.00	13,451.64	12,109.00	47.79	50.46	-112.74	-1,530.53	2,261.01	3,535.83	3,470.47	65.36	54.094		
12,100.00	10,770.00	13,551.64	12,109.00	48.64	51.30	-112.74	-1,630.52	2,261.99	3,535.82	3,469.26	66.56	53.125		
12,200.00	10,770.00	13,651.64	12,109.00	49.53	52.18	-112.74	-1,730.52	2,262.97	3,535.81	3,468.01	67.80	52.152		
12,300.00	10,770.00	13,751.64	12,109.00	50.46	53.10	-112.74	-1,830.51	2,263.95	3,535.80	3,466.71	69.09	51.179		
12,400.00	10,770.00	13,851.64	12,109.00	51.43	54.05	-112.74	-1,930.51	2,264.93	3,535.79	3,465.37	70.42	50.209		
12,500.00	10,770.00	13,951.64	12,109.00	52.44	55.03	-112.74	-2,030.50	2,265.91	3,535.78	3,463.99	71.80	49.247		
12,600.00	10,770.00	14,051.64	12,109.00	53.48	56.05	-112.74	-2,130.50	2,266.89	3,535.77	3,462.56	73.21	48.294		
12,700.00	10,770.00	14,151.64	12,109.00	54.55	57.10	-112.74	-2,230.49	2,267.87	3,535.76	3,461.10	74.67	47.353		
12,800.00	10,770.00	14,251.64	12,109.00	55.65	58.17	-112.74	-2,330.49	2,268.86	3,535.76	3,459.60	76.16	46.427		
12,900.00	10,770.00	14,351.64	12,109.00	56.78	59.28	-112.74	-2,430.48	2,269.84	3,535.75	3,458.07	77.68	45.518		
13,000.00	10,770.00	14,451.64	12,109.00	57.93	60.40	-112.74	-2,530.48	2,270.82	3,535.74	3,456.51	79.23	44.625		
13,100.00	10,770.00	14,551.64	12,109.00	59.11	61.55	-112.74	-2,630.47	2,271.80	3,535.73	3,454.91	80.81	43.752		
13,200.00	10,770.00	14,651.64	12,109.00	60.31	62.73	-112.74	-2,730.47	2,272.78	3,535.72	3,453.29	82.42	42.897		
13,300.00	10,770.00	14,751.64	12,109.00	61.54	63.92	-112.74	-2,830.46	2,273.76	3,535.71	3,451.65	84.06	42.062		
13,400.00	10,770.00	14,851.64	12,109.00	62.78	65.14	-112.74	-2,930.46	2,274.74	3,535.70	3,449.98	85.72	41.246		
13,500.00	10,770.00	14,951.64	12,109.00	64.04	66.37	-112.74	-3,030.45	2,275.72	3,535.69	3,448.28	87.41	40.451		
13,600.00	10,770.00	15,051.64	12,109.00	65.32	67.62	-112.74	-3,130.45	2,276.70	3,535.68	3,446.57	89.11	39.677		
13,700.00	10,770.00	15,151.64	12,109.00	66.62	68.89	-112.74	-3,230.44	2,277.68	3,535.67	3,444.83	90.84	38.922		
13,800.00	10,770.00	15,251.64	12,109.00	67.93	70.17	-112.74	-3,330.44	2,278.66	3,535.66	3,443.08	92.59	38.187		
13,900.00	10,770.00	15,351.64	12,109.00	69.25	71.47	-112.74	-3,430.43	2,279.64	3,535.65	3,441.30	94.35	37.473		
14,000.00	10,770.00	15,451.64	12,109.00	70.59	72.78	-112.74	-3,530.43	2,280.63	3,535.64	3,439.51	96.14	36.777		
14,100.00	10,770.00	15,551.64	12,109.00	71.95	74.11	-112.74	-3,630.42	2,281.61	3,535.63	3,437.70	97.94	36.101		
14,200.00	10,770.00	15,651.64	12,109.00	73.31	75.45	-112.74	-3,730.42	2,282.59	3,535.63	3,435.87	99.75	35.444		

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 501H
Project:	Lea County, NM (NAD83)	TVD Reference:	3121.3' GE + 30' KB @ 3151.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3121.3' GE + 30' KB @ 3151.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 501H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.15 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 0-OWSG (Rev2) MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
14,300.00	10,770.00	15,751.64	12,109.00	74.69	76.80	-112.74	-3,830.41	2,283.57	3,535.62	3,434.03	101.58	34.805		
14,400.00	10,770.00	15,851.64	12,109.00	76.08	78.17	-112.74	-3,930.41	2,284.55	3,535.61	3,432.18	103.43	34.185		
14,500.00	10,770.00	15,951.64	12,109.00	77.48	79.54	-112.74	-4,030.40	2,285.53	3,535.60	3,430.31	105.28	33.581		
14,600.00	10,770.00	16,051.64	12,109.00	78.89	80.92	-112.74	-4,130.40	2,286.51	3,535.59	3,428.43	107.15	32.995		
14,700.00	10,770.00	16,151.64	12,109.00	80.31	82.32	-112.74	-4,230.40	2,287.49	3,535.58	3,426.54	109.04	32.425		
14,800.00	10,770.00	16,251.64	12,109.00	81.73	83.72	-112.74	-4,330.39	2,288.47	3,535.57	3,424.64	110.93	31.872		
14,900.00	10,770.00	16,351.64	12,109.00	83.17	85.13	-112.74	-4,430.39	2,289.45	3,535.56	3,422.72	112.84	31.334		
15,000.00	10,770.00	16,451.64	12,109.00	84.61	86.56	-112.74	-4,530.38	2,290.43	3,535.55	3,420.80	114.75	30.811		
15,100.00	10,770.00	16,551.64	12,109.00	86.06	87.99	-112.74	-4,630.38	2,291.41	3,535.54	3,418.87	116.67	30.303		
15,200.00	10,770.00	16,651.64	12,109.00	87.52	89.42	-112.74	-4,730.37	2,292.40	3,535.53	3,416.93	118.60	29.809		
15,300.00	10,770.00	16,751.64	12,109.00	88.99	90.87	-112.74	-4,830.37	2,293.38	3,535.52	3,414.98	120.55	29.329		
15,400.00	10,770.00	16,851.64	12,109.00	90.46	92.32	-112.74	-4,930.36	2,294.36	3,535.51	3,413.02	122.49	28.863		
15,500.00	10,770.00	16,951.64	12,109.00	91.94	93.78	-112.74	-5,030.36	2,295.34	3,535.50	3,411.05	124.45	28.409		
15,600.00	10,770.00	17,051.64	12,109.00	93.42	95.24	-112.74	-5,130.35	2,296.32	3,535.50	3,409.08	126.41	27.968		
15,700.00	10,770.00	17,151.64	12,109.00	94.91	96.71	-112.74	-5,230.35	2,297.30	3,535.49	3,407.10	128.39	27.538		
15,800.00	10,770.00	17,251.64	12,109.00	96.40	98.19	-112.74	-5,330.34	2,298.28	3,535.48	3,405.11	130.36	27.120		
15,900.00	10,770.00	17,351.64	12,109.00	97.90	99.67	-112.74	-5,430.34	2,299.26	3,535.47	3,403.12	132.35	26.713		
16,000.00	10,770.00	17,451.64	12,109.00	99.41	101.15	-112.74	-5,530.33	2,300.24	3,535.46	3,401.12	134.34	26.317		
16,100.00	10,770.00	17,551.64	12,109.00	100.92	102.64	-112.74	-5,630.33	2,301.22	3,535.45	3,399.11	136.34	25.932		
16,200.00	10,770.00	17,651.64	12,109.00	102.43	104.14	-112.74	-5,730.32	2,302.20	3,535.44	3,397.10	138.34	25.556		
16,300.00	10,770.00	17,751.64	12,109.00	103.95	105.64	-112.74	-5,830.32	2,303.18	3,535.43	3,395.08	140.35	25.191		
16,400.00	10,770.00	17,851.64	12,109.00	105.47	107.15	-112.74	-5,930.31	2,304.17	3,535.42	3,393.06	142.36	24.834		
16,500.00	10,770.00	17,951.64	12,109.00	107.00	108.66	-112.74	-6,030.31	2,305.15	3,535.41	3,391.03	144.38	24.487		
16,600.00	10,770.00	18,051.64	12,109.00	108.52	110.17	-112.74	-6,130.30	2,306.13	3,535.40	3,389.00	146.40	24.148		
16,700.00	10,770.00	18,151.64	12,109.00	110.06	111.69	-112.74	-6,230.30	2,307.11	3,535.39	3,386.96	148.43	23.818		
16,800.00	10,770.00	18,251.64	12,109.00	111.59	113.21	-112.74	-6,330.29	2,308.09	3,535.38	3,384.92	150.46	23.497		
16,900.00	10,770.00	18,351.64	12,109.00	113.13	114.74	-112.74	-6,430.29	2,309.07	3,535.37	3,382.87	152.50	23.183		
17,000.00	10,770.00	18,451.64	12,109.00	114.68	116.26	-112.74	-6,530.28	2,310.05	3,535.36	3,380.82	154.54	22.876		
17,100.00	10,770.00	18,551.64	12,109.00	116.22	117.80	-112.74	-6,630.28	2,311.03	3,535.36	3,378.77	156.59	22.577		
17,200.00	10,770.00	18,651.64	12,109.00	117.77	119.33	-112.74	-6,730.28	2,312.01	3,535.35	3,376.71	158.64	22.286		
17,300.00	10,770.00	18,751.64	12,109.00	119.32	120.87	-112.74	-6,830.27	2,312.99	3,535.34	3,374.65	160.69	22.001		
17,400.00	10,770.00	18,851.64	12,109.00	120.88	122.41	-112.74	-6,930.27	2,313.97	3,535.33	3,372.59	162.74	21.724		
17,500.00	10,770.00	18,951.64	12,109.00	122.43	123.95	-112.74	-7,030.26	2,314.95	3,535.32	3,370.52	164.80	21.452		
17,600.00	10,770.00	19,051.64	12,109.00	123.99	125.50	-112.74	-7,130.26	2,315.94	3,535.31	3,368.45	166.86	21.187		
17,700.00	10,770.00	19,151.64	12,109.00	125.55	127.05	-112.74	-7,230.25	2,316.92	3,535.30	3,366.37	168.93	20.928		
17,800.00	10,770.00	19,251.64	12,109.00	127.12	128.60	-112.74	-7,330.25	2,317.90	3,535.29	3,364.30	170.99	20.675		
17,900.00	10,770.00	19,351.64	12,109.00	128.68	130.16	-112.74	-7,430.24	2,318.88	3,535.28	3,362.22	173.06	20.428		
18,000.00	10,770.00	19,451.64	12,109.00	130.25	131.71	-112.74	-7,530.24	2,319.86	3,535.27	3,360.14	175.13	20.186		
18,100.00	10,770.00	19,551.64	12,109.00	131.82	133.27	-112.74	-7,630.23	2,320.84	3,535.26	3,358.06	177.21	19.950		
18,200.00	10,770.00	19,651.64	12,109.00	133.39	134.83	-112.74	-7,730.23	2,321.82	3,535.25	3,355.97	179.28	19.719		
18,300.00	10,770.00	19,751.64	12,109.00	134.97	136.40	-112.74	-7,830.22	2,322.80	3,535.24	3,353.88	181.36	19.493		
18,400.00	10,770.00	19,851.64	12,109.00	136.54	137.96	-112.74	-7,930.22	2,323.78	3,535.23	3,351.79	183.45	19.271		
18,500.00	10,770.00	19,951.64	12,109.00	138.12	139.53	-112.74	-8,030.21	2,324.76	3,535.23	3,349.69	185.53	19.055		
18,600.00	10,770.00	20,051.64	12,109.00	139.70	141.10	-112.74	-8,130.21	2,325.74	3,535.22	3,347.60	187.62	18.843		
18,700.00	10,770.00	20,151.64	12,109.00	141.28	142.67	-112.74	-8,230.20	2,326.72	3,535.21	3,345.50	189.71	18.635		
18,800.00	10,770.00	20,251.64	12,109.00	142.86	144.24	-112.74	-8,330.20	2,327.71	3,535.20	3,343.40	191.80	18.432		
18,900.00	10,770.00	20,351.64	12,109.00	144.45	145.82	-112.74	-8,430.19	2,328.69	3,535.19	3,341.30	193.89	18.233		
19,000.00	10,770.00	20,451.64	12,109.00	146.03	147.39	-112.74	-8,530.19	2,329.67	3,535.18	3,339.19	195.99	18.038		
19,100.00	10,770.00	20,551.64	12,109.00	147.62	148.97	-112.74	-8,630.18	2,330.65	3,535.17	3,337.09	198.08	17.847		
19,200.00	10,770.00	20,651.64	12,109.00	149.21	150.55	-112.74	-8,730.18	2,331.63	3,535.16	3,334.98	200.18	17.660		
19,300.00	10,770.00	20,751.64	12,109.00	150.80	152.13	-112.74	-8,830.17	2,332.61	3,535.15	3,332.87	202.28	17.476		
19,400.00	10,770.00	20,851.64	12,109.00	152.39	153.71	-112.74	-8,930.17	2,333.59	3,535.14	3,330.76	204.38	17.297		

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 501H
Project:	Lea County, NM (NAD83)	TVD Reference:	3121.3' GE + 30' KB @ 3151.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3121.3' GE + 30' KB @ 3151.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 501H	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 704H - 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	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor				
(usft)	(usft)	(usft)	(usft)	(usft)	(usft)	(°)	+N/-S (usft)	+E/-W (usft)	(usft)	(usft)	(usft)					
19,500.00	10,770.00	20,951.64	12,109.00	153.98	155.30	-112.74	-9,030.16	2,334.57	3,535.13	3,328.65	206.49	17.120				
19,600.00	10,770.00	21,051.64	12,109.00	155.57	156.88	-112.74	-9,130.16	2,335.55	3,535.12	3,326.53	208.59	16.948				
19,700.00	10,770.00	21,151.64	12,109.00	157.17	158.47	-112.74	-9,230.15	2,336.53	3,535.11	3,324.42	210.70	16.778				
19,800.00	10,770.00	21,251.64	12,109.00	158.76	160.06	-112.74	-9,330.15	2,337.51	3,535.10	3,322.30	212.81	16.612				
19,900.00	10,770.00	21,351.64	12,109.00	160.36	161.65	-112.74	-9,430.15	2,338.49	3,535.10	3,320.18	214.91	16.449				
20,000.00	10,770.00	21,451.64	12,109.00	161.96	163.24	-112.74	-9,530.14	2,339.48	3,535.09	3,318.06	217.02	16.289				
20,100.00	10,770.00	21,551.64	12,109.00	163.56	164.83	-112.74	-9,630.14	2,340.46	3,535.08	3,315.94	219.13	16.132				
20,200.00	10,770.00	21,651.64	12,109.00	165.16	166.42	-112.74	-9,730.13	2,341.44	3,535.07	3,313.82	221.25	15.978				
20,300.00	10,770.00	21,751.64	12,109.00	166.76	168.02	-112.74	-9,830.13	2,342.42	3,535.06	3,311.70	223.36	15.827				
20,400.00	10,770.00	21,851.64	12,109.00	168.36	169.61	-112.74	-9,930.12	2,343.40	3,535.05	3,309.57	225.47	15.678				
20,500.00	10,770.00	21,951.64	12,109.00	169.97	171.21	-112.74	-10,030.12	2,344.38	3,535.04	3,307.45	227.59	15.532				
20,600.00	10,770.00	22,051.64	12,109.00	171.57	172.81	-112.74	-10,130.11	2,345.36	3,535.03	3,305.32	229.71	15.389				
20,700.00	10,770.00	22,151.64	12,109.00	173.18	174.40	-112.74	-10,230.11	2,346.34	3,535.02	3,303.19	231.83	15.249				
20,800.00	10,770.00	22,251.64	12,109.00	174.78	176.00	-112.74	-10,330.10	2,347.32	3,535.01	3,301.07	233.95	15.110				
20,841.66	10,770.00	22,293.30	12,109.00	175.40	176.67	-112.74	-10,371.76	2,347.73	3,535.01	3,300.23	234.77	15.057 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 501H
Project:	Lea County, NM (NAD83)	TVD Reference:	3121.3' GE + 30' KB @ 3151.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3121.3' GE + 30' KB @ 3151.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 501H	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	89.44	29.72	3,035.06	3,035.35					
100.00	100.00	70.70	70.70	0.13	0.09	89.44	29.72	3,035.06	3,035.21	3,035.05	0.15	N/A		
200.00	200.00	170.70	170.70	0.48	0.38	89.44	29.72	3,035.06	3,035.21	3,034.59	0.61	4,938.307		
300.00	300.00	270.70	270.70	0.84	0.74	89.44	29.72	3,035.06	3,035.21	3,034.09	1.12	2,711.112		
400.00	400.00	370.70	370.70	1.20	1.10	89.44	29.72	3,035.06	3,035.21	3,033.58	1.63	1,866.981		
500.00	500.00	470.70	470.70	1.56	1.45	89.44	29.72	3,035.06	3,035.21	3,033.07	2.13	1,423.455		
600.00	600.00	570.70	570.70	1.92	1.81	89.44	29.72	3,035.06	3,035.21	3,032.57	2.64	1,150.140		
700.00	700.00	670.70	670.70	2.28	2.17	89.44	29.72	3,035.06	3,035.21	3,032.06	3.15	964.852		
800.00	800.00	770.70	770.70	2.63	2.53	89.44	29.72	3,035.06	3,035.21	3,031.55	3.65	830.969		
900.00	900.00	870.70	870.70	2.99	2.89	89.44	29.72	3,035.06	3,035.21	3,031.05	4.16	729.709		
1,000.00	1,000.00	970.70	970.70	3.35	3.25	89.44	29.72	3,035.06	3,035.21	3,030.54	4.67	650.445		
1,100.00	1,100.00	1,070.70	1,070.70	3.71	3.61	89.44	29.72	3,035.06	3,035.21	3,030.03	5.17	586.711		
1,200.00	1,200.00	1,170.70	1,170.70	4.07	3.96	89.44	29.72	3,035.06	3,035.21	3,029.53	5.68	534.352		
1,300.00	1,300.00	1,270.70	1,270.70	4.43	4.32	89.44	29.72	3,035.06	3,035.21	3,029.02	6.19	490.572		
1,400.00	1,400.00	1,370.70	1,370.70	4.79	4.68	89.44	29.72	3,035.06	3,035.21	3,028.51	6.69	453.422		
1,500.00	1,500.00	1,470.70	1,470.70	5.14	5.04	89.44	29.72	3,035.06	3,035.21	3,028.00	7.20	421.502		
1,600.00	1,600.00	1,570.70	1,570.70	5.50	5.40	89.44	29.72	3,035.06	3,035.21	3,027.50	7.71	393.781		
1,700.00	1,700.00	1,670.70	1,670.70	5.86	5.76	89.44	29.72	3,035.06	3,035.21	3,026.99	8.21	369.481		
1,800.00	1,800.00	1,770.70	1,770.70	6.22	6.11	89.44	29.72	3,035.06	3,035.21	3,026.48	8.72	348.005		
1,900.00	1,900.00	1,870.70	1,870.70	6.58	6.47	89.44	29.72	3,035.06	3,035.21	3,025.98	9.23	328.889		
2,000.00	2,000.00	1,970.70	1,970.70	6.94	6.83	89.44	29.72	3,035.06	3,035.21	3,025.47	9.74	311.764		
2,100.00	2,100.00	2,070.70	2,070.70	7.29	7.19	89.44	29.72	3,035.06	3,035.21	3,024.96	10.24	296.333		
2,200.00	2,200.00	2,170.70	2,170.70	7.65	7.55	89.44	29.72	3,035.06	3,035.21	3,024.46	10.75	282.358		
2,300.00	2,300.00	2,270.70	2,270.70	8.01	7.91	89.44	29.72	3,035.06	3,035.21	3,023.95	11.26	269.642		
2,400.00	2,400.00	2,370.70	2,370.70	8.37	8.27	89.44	29.72	3,035.06	3,035.21	3,023.44	11.76	258.022		
2,500.00	2,500.00	2,470.70	2,470.70	8.73	8.62	89.44	29.72	3,035.06	3,035.21	3,022.94	12.27	247.362		
2,600.00	2,600.00	2,570.70	2,570.70	9.09	8.98	89.44	29.72	3,035.06	3,035.21	3,022.43	12.78	237.547		
2,700.00	2,700.00	2,670.70	2,670.70	9.45	9.34	89.44	29.72	3,035.06	3,035.21	3,021.92	13.28	228.482		
2,800.00	2,800.00	2,770.70	2,770.70	9.80	9.70	89.44	29.72	3,035.06	3,035.21	3,021.41	13.79	220.083		
2,900.00	2,900.00	2,870.70	2,870.70	10.16	10.06	89.44	29.72	3,035.06	3,035.21	3,020.91	14.30	212.280		
3,000.00	3,000.00	2,970.70	2,970.70	10.52	10.42	89.44	29.72	3,035.06	3,035.21	3,020.40	14.81	205.011		
3,100.00	3,100.00	3,070.70	3,070.70	10.88	10.77	89.44	29.72	3,035.06	3,035.21	3,019.89	15.31	198.224		
3,200.00	3,200.00	3,170.70	3,170.70	11.24	11.13	89.44	29.72	3,035.06	3,035.21	3,019.39	15.82	191.871		
3,300.00	3,300.00	3,270.70	3,270.70	11.60	11.49	89.44	29.72	3,035.06	3,035.21	3,018.88	16.33	185.913 CC		
3,400.00	3,400.00	3,340.21	3,340.21	11.96	11.74	89.44	29.66	3,035.26	3,035.56	3,018.81	16.75	181.205 ES		
3,500.00	3,499.99	3,400.00	3,399.99	12.30	11.94	-167.00	29.34	3,036.31	3,038.55	3,021.41	17.14	177.258		
3,600.00	3,599.91	3,453.73	3,453.68	12.64	12.12	-166.98	28.82	3,038.02	3,045.50	3,028.00	17.50	174.003		
3,700.00	3,699.69	3,500.00	3,499.91	12.98	12.28	-166.94	28.20	3,040.07	3,056.43	3,038.59	17.84	171.314		
3,800.00	3,799.27	3,566.15	3,565.94	13.32	12.51	-166.89	27.03	3,043.93	3,071.23	3,053.00	18.23	168.486		
3,900.00	3,898.57	3,600.00	3,599.69	13.67	12.62	-166.83	26.31	3,046.33	3,090.07	3,071.54	18.53	166.795		
4,000.00	3,997.54	3,676.56	3,675.95	14.02	12.88	-166.76	24.34	3,052.81	3,112.49	3,093.55	18.94	164.360		
4,100.00	4,096.09	3,730.73	3,729.82	14.38	13.07	-166.67	22.69	3,058.28	3,138.83	3,119.55	19.28	162.773		
4,200.00	4,194.16	3,800.00	3,798.57	14.75	13.31	-166.58	20.25	3,066.34	3,168.98	3,149.31	19.67	161.103		
4,300.00	4,291.70	3,850.04	3,848.15	15.12	13.48	-166.46	18.29	3,072.78	3,202.58	3,182.58	20.00	160.137		
4,400.00	4,388.62	3,943.18	3,940.44	15.51	13.81	-166.36	14.63	3,084.87	3,238.92	3,218.47	20.46	158.340		
4,500.00	4,484.86	4,035.36	4,031.77	15.92	14.14	-166.25	11.01	3,096.83	3,277.62	3,256.71	20.91	156.746		
4,600.00	4,580.36	4,126.51	4,122.07	16.34	14.47	-166.14	7.43	3,108.66	3,318.66	3,297.29	21.36	155.343		
4,700.00	4,675.05	4,216.56	4,211.30	16.78	14.79	-166.03	3.89	3,120.35	3,362.00	3,340.18	21.81	154.118		
4,746.50	4,718.78	4,258.05	4,252.40	16.99	14.94	-165.98	2.25	3,125.73	3,382.93	3,360.90	22.02	153.600		
4,800.00	4,769.00	4,305.64	4,299.55	17.24	15.12	-166.02	0.38	3,131.91	3,407.29	3,385.03	22.26	153.039		
4,900.00	4,862.85	4,394.58	4,387.67	17.72	15.44	-166.09	-3.11	3,143.45	3,452.84	3,430.13	22.71	152.010		
5,000.00	4,956.70	4,483.53	4,475.79	18.21	15.77	-166.16	-6.61	3,155.00	3,498.39	3,475.22	23.17	150.997		

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 501H
Project:	Lea County, NM (NAD83)	TVD Reference:	3121.3' GE + 30' KB @ 3151.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3121.3' GE + 30' KB @ 3151.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 501H	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	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		
5,100.00	5,050.55	4,572.47	4,563.92	18.71	16.10	-166.22	-10.11	3,166.54	3,543.95	3,520.32	23.63	150.004		
5,200.00	5,144.40	4,661.42	4,652.04	19.23	16.44	-166.29	-13.60	3,178.08	3,589.50	3,565.42	24.09	149.029		
5,300.00	5,238.25	4,750.37	4,740.17	19.76	16.77	-166.35	-17.10	3,189.63	3,635.07	3,610.52	24.55	148.073		
5,400.00	5,332.10	4,839.31	4,828.29	20.29	17.11	-166.41	-20.60	3,201.17	3,680.63	3,655.62	25.01	147.137		
5,500.00	5,425.95	4,928.26	4,916.41	20.84	17.44	-166.47	-24.09	3,212.71	3,726.20	3,700.72	25.48	146.221		
5,600.00	5,519.80	5,017.20	5,004.54	21.39	17.78	-166.53	-27.59	3,224.26	3,771.77	3,745.82	25.95	145.323		
5,700.00	5,613.65	5,106.15	5,092.66	21.95	18.12	-166.59	-31.09	3,235.80	3,817.35	3,790.92	26.43	144.445		
5,800.00	5,707.50	5,195.09	5,180.79	22.52	18.46	-166.65	-34.58	3,247.34	3,862.93	3,836.02	26.90	143.587		
5,900.00	5,801.36	5,284.04	5,268.91	23.10	18.81	-166.70	-38.08	3,258.89	3,908.51	3,881.13	27.38	142.747		
6,000.00	5,895.21	5,372.98	5,357.03	23.68	19.15	-166.76	-41.58	3,270.43	3,954.09	3,926.23	27.86	141.926		
6,100.00	5,989.06	5,461.93	5,445.16	24.27	19.50	-166.81	-45.07	3,281.98	3,999.68	3,971.33	28.34	141.123		
6,200.00	6,082.91	5,550.88	5,533.28	24.86	19.84	-166.86	-48.57	3,293.52	4,045.27	4,016.44	28.83	140.338		
6,300.00	6,176.76	5,639.82	5,621.41	25.46	20.19	-166.91	-52.06	3,305.06	4,090.86	4,061.55	29.31	139.571		
6,403.84	6,274.22	5,732.19	5,712.92	26.09	20.55	-166.96	-55.70	3,317.05	4,138.20	4,108.39	29.82	138.793		
6,500.00	6,364.87	5,818.25	5,798.19	26.66	20.89	-167.16	-59.08	3,328.22	4,180.99	4,150.71	30.29	138.051		
6,600.00	6,459.97	5,908.86	5,887.96	27.24	21.24	-167.35	-62.64	3,339.98	4,223.24	4,192.46	30.78	137.213		
6,700.00	6,555.85	6,000.52	5,978.78	27.79	21.61	-167.52	-66.24	3,351.88	4,263.16	4,231.88	31.28	136.311		
6,800.00	6,652.43	6,093.19	6,070.59	28.32	21.97	-167.67	-69.89	3,363.90	4,300.72	4,268.95	31.77	135.351		
6,900.00	6,749.66	6,186.79	6,163.33	28.83	22.34	-167.80	-73.57	3,376.05	4,335.90	4,303.62	32.28	134.337		
7,000.00	6,847.47	6,281.27	6,256.93	29.31	22.72	-167.91	-77.28	3,388.31	4,368.67	4,335.89	32.78	133.274		
7,100.00	6,945.80	6,376.55	6,351.33	29.77	23.10	-168.00	-81.03	3,400.68	4,399.02	4,365.74	33.28	132.168		
7,200.00	7,044.56	6,472.57	6,446.46	30.20	23.48	-168.07	-84.80	3,413.14	4,426.91	4,393.13	33.79	131.022		
7,300.00	7,143.70	6,569.27	6,542.27	30.61	23.86	-168.13	-88.60	3,425.69	4,452.34	4,418.05	34.29	129.839		
7,400.00	7,243.15	6,666.57	6,638.67	30.99	24.25	-168.18	-92.43	3,438.32	4,475.28	4,440.49	34.79	128.623		
7,500.00	7,342.84	6,764.42	6,735.62	31.35	24.64	-168.21	-96.27	3,451.01	4,495.73	4,460.43	35.29	127.377		
7,600.00	7,442.70	6,862.75	6,833.03	31.69	25.04	-168.22	-100.14	3,463.78	4,513.66	4,477.86	35.79	126.102		
7,700.00	7,542.66	6,961.48	6,930.85	32.01	25.43	-168.22	-104.02	3,476.59	4,529.06	4,492.77	36.29	124.802		
7,750.34	7,593.00	7,596.40	7,563.70	32.16	27.78	88.39	-116.28	3,517.06	4,531.86	4,493.47	38.39	118.036		
7,800.00	7,642.66	7,646.06	7,613.36	32.30	27.94	88.39	-116.28	3,517.06	4,531.86	4,493.23	38.63	117.309		
7,900.00	7,742.66	7,746.06	7,713.36	32.60	28.28	88.39	-116.28	3,517.06	4,531.86	4,492.75	39.11	115.870		
8,000.00	7,842.66	7,846.06	7,813.36	32.89	28.62	88.39	-116.28	3,517.06	4,531.86	4,492.27	39.59	114.464		
8,100.00	7,942.66	7,946.06	7,913.36	33.19	28.95	88.39	-116.28	3,517.06	4,531.86	4,491.79	40.07	113.089		
8,200.00	8,042.66	8,046.06	8,013.36	33.49	29.29	88.39	-116.28	3,517.06	4,531.86	4,491.31	40.56	111.746		
8,300.00	8,142.66	8,146.06	8,113.36	33.79	29.63	88.39	-116.28	3,517.06	4,531.86	4,490.82	41.04	110.432		
8,400.00	8,242.66	8,246.06	8,213.36	34.09	29.97	88.39	-116.28	3,517.06	4,531.86	4,490.34	41.52	109.148		
8,500.00	8,342.66	8,346.06	8,313.36	34.39	30.31	88.39	-116.28	3,517.06	4,531.86	4,489.86	42.00	107.891		
8,600.00	8,442.66	8,446.06	8,413.36	34.69	30.65	88.39	-116.28	3,517.06	4,531.86	4,489.37	42.49	106.662		
8,700.00	8,542.66	8,546.06	8,513.36	35.00	30.99	88.39	-116.28	3,517.06	4,531.86	4,488.89	42.97	105.459		
8,800.00	8,642.66	8,646.06	8,613.36	35.30	31.33	88.39	-116.28	3,517.06	4,531.86	4,488.40	43.46	104.282		
8,900.00	8,742.66	8,746.06	8,713.36	35.61	31.67	88.39	-116.28	3,517.06	4,531.86	4,487.92	43.94	103.130		
9,000.00	8,842.66	8,846.06	8,813.36	35.91	32.01	88.39	-116.28	3,517.06	4,531.86	4,487.43	44.43	102.001		
9,100.00	8,942.66	8,946.06	8,913.36	36.22	32.35	88.39	-116.28	3,517.06	4,531.86	4,486.94	44.92	100.896		
9,200.00	9,042.66	9,046.06	9,013.36	36.53	32.70	88.39	-116.28	3,517.06	4,531.86	4,486.46	45.40	99.814		
9,300.00	9,142.66	9,146.06	9,113.36	36.84	33.04	88.39	-116.28	3,517.06	4,531.86	4,485.97	45.89	98.754		
9,400.00	9,242.66	9,246.06	9,213.36	37.15	33.38	88.39	-116.28	3,517.06	4,531.86	4,485.48	46.38	97.715		
9,500.00	9,342.66	9,346.06	9,313.36	37.46	33.73	88.39	-116.28	3,517.06	4,531.86	4,484.99	46.87	96.697		
9,600.00	9,442.66	9,446.06	9,413.36	37.77	34.07	88.39	-116.28	3,517.06	4,531.86	4,484.51	47.36	95.699		
9,700.00	9,542.66	9,546.06	9,513.36	38.09	34.41	88.39	-116.28	3,517.06	4,531.86	4,484.02	47.84	94.721		
9,800.00	9,642.66	9,646.06	9,613.36	38.40	34.76	88.39	-116.28	3,517.06	4,531.86	4,483.53	48.33	93.762		
9,900.00	9,742.66	9,746.06	9,713.36	38.71	35.10	88.39	-116.28	3,517.06	4,531.86	4,483.04	48.82	92.822		
10,000.00	9,842.66	9,846.06	9,813.36	39.03	35.45	88.39	-116.28	3,517.06	4,531.86	4,482.55	49.31	91.899		
10,100.00	9,942.66	9,946.06	9,913.36	39.35	35.79	88.39	-116.28	3,517.06	4,531.86	4,482.06	49.80	90.994		

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 501H
Project:	Lea County, NM (NAD83)	TVD Reference:	3121.3' GE + 30' KB @ 3151.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3121.3' GE + 30' KB @ 3151.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 501H	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		
10,200.00	10,042.66	10,046.06	10,013.36	39.66	36.14	88.39	-116.28	3,517.06	4,531.86	4,481.57	50.29	90.106		
10,300.00	10,142.66	10,146.06	10,113.36	39.98	36.48	88.39	-116.28	3,517.06	4,531.86	4,481.07	50.79	89.235		
10,354.38	10,197.04	10,200.44	10,167.74	40.15	36.67	88.39	-116.28	3,517.06	4,531.86	4,480.81	51.05	88.768		
10,400.00	10,242.61	10,246.01	10,213.31	40.30	36.83	-91.07	-116.28	3,517.06	4,531.89	4,480.62	51.28	88.384		
10,450.00	10,292.22	10,295.62	10,262.92	40.45	37.00	-91.13	-116.28	3,517.06	4,532.01	4,480.50	51.52	87.972		
10,500.00	10,341.10	10,344.50	10,311.80	40.61	37.17	-91.24	-116.28	3,517.06	4,532.23	4,480.48	51.76	87.565		
10,550.00	10,388.88	10,392.28	10,359.58	40.77	37.33	-91.38	-116.28	3,517.06	4,532.59	4,480.59	52.00	87.167		
10,600.00	10,435.20	10,438.60	10,405.90	40.93	37.49	-91.55	-116.28	3,517.06	4,533.10	4,480.87	52.24	86.781		
10,650.00	10,479.72	10,483.12	10,450.42	41.09	37.65	-91.73	-116.28	3,517.06	4,533.84	4,481.37	52.47	86.408		
10,700.00	10,522.08	10,525.48	10,492.78	41.25	37.79	-91.91	-116.28	3,517.06	4,534.84	4,482.14	52.70	86.051		
10,750.00	10,561.96	10,565.36	10,532.66	41.40	37.93	-92.09	-116.28	3,517.06	4,536.16	4,483.23	52.92	85.711		
10,800.00	10,599.07	10,602.47	10,569.77	41.55	38.06	-92.23	-116.28	3,517.06	4,537.86	4,484.72	53.14	85.391		
10,850.00	10,633.12	10,636.52	10,603.82	41.71	38.18	-92.33	-116.28	3,517.06	4,540.00	4,486.65	53.35	85.092		
10,900.00	10,663.85	10,667.25	10,634.55	41.86	38.29	-92.37	-116.28	3,517.06	4,542.64	4,489.08	53.56	84.815		
10,950.00	10,691.03	10,694.43	10,661.73	42.01	38.38	-92.34	-116.28	3,517.06	4,545.82	4,492.07	53.76	84.562		
11,000.00	10,714.45	10,717.85	10,685.15	42.17	38.46	-92.22	-116.28	3,517.06	4,549.59	4,495.64	53.95	84.335		
11,050.00	10,733.93	10,737.33	10,704.63	42.33	38.53	-92.01	-116.28	3,517.06	4,553.96	4,499.83	54.13	84.134		
11,100.00	10,749.32	10,752.73	10,720.02	42.50	38.58	-91.69	-116.28	3,517.06	4,558.97	4,504.67	54.30	83.961		
11,150.00	10,760.52	10,763.92	10,731.22	42.68	38.62	-91.26	-116.28	3,517.06	4,564.60	4,510.14	54.46	83.818		
11,200.00	10,767.42	10,770.82	10,738.12	42.87	38.65	-90.72	-116.28	3,517.06	4,570.85	4,516.24	54.61	83.705		
11,254.38	10,770.00	10,773.40	10,740.70	43.09	38.65	-90.00	-116.28	3,517.06	4,578.31	4,523.56	54.75	83.617		
11,300.00	10,770.00	10,773.40	10,740.70	43.29	38.65	-90.00	-116.28	3,517.06	4,585.07	4,530.20	54.87	83.558		
11,400.00	10,770.00	10,773.40	10,740.70	43.76	38.65	-90.00	-116.28	3,517.06	4,601.43	4,546.27	55.16	83.427		
11,500.00	10,770.00	10,773.40	10,740.70	44.29	38.65	-90.00	-116.28	3,517.06	4,619.89	4,564.43	55.46	83.296		
11,600.00	10,770.00	10,773.40	10,740.70	44.88	38.65	-90.00	-116.28	3,517.06	4,640.44	4,584.65	55.80	83.167		
11,700.00	10,770.00	10,773.40	10,740.70	45.53	38.65	-90.00	-116.28	3,517.06	4,663.04	4,606.89	56.15	83.044		
11,800.00	10,770.00	10,773.40	10,740.70	46.23	38.65	-90.00	-116.28	3,517.06	4,687.67	4,631.14	56.53	82.929		
11,900.00	10,770.00	13,111.66	12,023.00	46.99	48.73	-105.80	-1,418.09	3,529.82	4,708.92	4,644.62	64.30	73.231		
12,000.00	10,770.00	13,211.66	12,023.00	47.79	49.54	-105.80	-1,518.09	3,530.80	4,708.91	4,643.45	65.46	71.931		
12,100.00	10,770.00	13,311.66	12,023.00	48.64	50.39	-105.80	-1,618.08	3,531.78	4,708.90	4,642.22	66.68	70.617		
12,200.00	10,770.00	13,411.66	12,023.00	49.53	51.29	-105.80	-1,718.08	3,532.77	4,708.89	4,640.94	67.95	69.295		
12,300.00	10,770.00	13,511.66	12,023.00	50.46	52.22	-105.80	-1,818.07	3,533.75	4,708.88	4,639.61	69.28	67.972		
12,400.00	10,770.00	13,611.66	12,023.00	51.43	53.18	-105.80	-1,918.07	3,534.73	4,708.87	4,638.23	70.65	66.654		
12,500.00	10,770.00	13,711.66	12,023.00	52.44	54.18	-105.80	-2,018.06	3,535.71	4,708.86	4,636.80	72.06	65.344		
12,600.00	10,770.00	13,811.66	12,023.00	53.48	55.20	-105.80	-2,118.06	3,536.69	4,708.85	4,635.33	73.52	64.048		
12,700.00	10,770.00	13,911.66	12,023.00	54.55	56.26	-105.80	-2,218.05	3,537.67	4,708.84	4,633.82	75.02	62.769		
12,800.00	10,770.00	14,011.66	12,023.00	55.65	57.35	-105.80	-2,318.05	3,538.65	4,708.83	4,632.28	76.55	61.510		
12,900.00	10,770.00	14,111.66	12,023.00	56.78	58.46	-105.80	-2,418.05	3,539.63	4,708.82	4,630.70	78.13	60.273		
13,000.00	10,770.00	14,211.66	12,023.00	57.93	59.60	-105.80	-2,518.04	3,540.61	4,708.81	4,629.08	79.73	59.060		
13,100.00	10,770.00	14,311.66	12,023.00	59.11	60.76	-105.80	-2,618.04	3,541.59	4,708.80	4,627.44	81.37	57.872		
13,200.00	10,770.00	14,411.66	12,023.00	60.31	61.94	-105.80	-2,718.03	3,542.57	4,708.79	4,625.76	83.03	56.711		
13,300.00	10,770.00	14,511.66	12,023.00	61.54	63.15	-105.80	-2,818.03	3,543.55	4,708.78	4,624.06	84.73	55.577		
13,400.00	10,770.00	14,611.66	12,023.00	62.78	64.37	-105.80	-2,918.02	3,544.53	4,708.77	4,622.33	86.44	54.471		
13,500.00	10,770.00	14,711.66	12,023.00	64.04	65.62	-105.80	-3,018.02	3,545.51	4,708.76	4,620.57	88.19	53.394		
13,600.00	10,770.00	14,811.66	12,023.00	65.32	66.88	-105.80	-3,118.01	3,546.49	4,708.75	4,618.79	89.96	52.345		
13,700.00	10,770.00	14,911.66	12,023.00	66.62	68.15	-105.80	-3,218.01	3,547.47	4,708.74	4,616.99	91.75	51.324		
13,800.00	10,770.00	15,011.66	12,023.00	67.93	69.45	-105.80	-3,318.00	3,548.45	4,708.73	4,615.17	93.56	50.331		
13,900.00	10,770.00	15,111.66	12,023.00	69.25	70.75	-105.80	-3,418.00	3,549.43	4,708.72	4,613.34	95.39	49.365		
14,000.00	10,770.00	15,211.66	12,023.00	70.59	72.08	-105.80	-3,517.99	3,550.41	4,708.71	4,611.48	97.23	48.427		
14,100.00	10,770.00	15,311.66	12,023.00	71.95	73.41	-105.80	-3,617.99	3,551.39	4,708.70	4,609.60	99.10	47.515		
14,200.00	10,770.00	15,411.66	12,023.00	73.31	74.76	-105.80	-3,717.98	3,552.37	4,708.69	4,607.71	100.98	46.630		
14,300.00	10,770.00	15,511.66	12,023.00	74.69	76.12	-105.80	-3,817.98	3,553.35	4,708.68	4,605.80	102.88	45.770		

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 501H
Project:	Lea County, NM (NAD83)	TVD Reference:	3121.3' GE + 30' KB @ 3151.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3121.3' GE + 30' KB @ 3151.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 501H	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		
14,400.00	10,770.00	15,611.66	12,023.00	76.08	77.49	-105.80	-3,917.97	3,554.33	4,708.67	4,603.88	104.79	44.935		
14,500.00	10,770.00	15,711.66	12,023.00	77.48	78.87	-105.80	-4,017.97	3,555.32	4,708.66	4,601.95	106.71	44.124		
14,600.00	10,770.00	15,811.66	12,023.00	78.89	80.27	-105.80	-4,117.96	3,556.30	4,708.65	4,600.00	108.65	43.337		
14,700.00	10,770.00	15,911.66	12,023.00	80.31	81.67	-105.80	-4,217.96	3,557.28	4,708.64	4,598.04	110.60	42.572		
14,800.00	10,770.00	16,011.66	12,023.00	81.73	83.08	-105.80	-4,317.95	3,558.26	4,708.63	4,596.06	112.57	41.830		
14,900.00	10,770.00	16,111.66	12,023.00	83.17	84.50	-105.80	-4,417.95	3,559.24	4,708.62	4,594.08	114.54	41.109		
15,000.00	10,770.00	16,211.66	12,023.00	84.61	85.93	-105.80	-4,517.94	3,560.22	4,708.61	4,592.08	116.53	40.408		
15,100.00	10,770.00	16,311.66	12,023.00	86.06	87.36	-105.80	-4,617.94	3,561.20	4,708.60	4,590.08	118.52	39.728		
15,200.00	10,770.00	16,411.66	12,023.00	87.52	88.81	-105.80	-4,717.93	3,562.18	4,708.59	4,588.07	120.52	39.068		
15,300.00	10,770.00	16,511.66	12,023.00	88.99	90.26	-105.80	-4,817.93	3,563.16	4,708.58	4,586.04	122.54	38.426		
15,400.00	10,770.00	16,611.66	12,023.00	90.46	91.71	-105.80	-4,917.93	3,564.14	4,708.57	4,584.01	124.56	37.802		
15,500.00	10,770.00	16,711.66	12,023.00	91.94	93.18	-105.80	-5,017.92	3,565.12	4,708.56	4,581.97	126.59	37.196		
15,600.00	10,770.00	16,811.66	12,023.00	93.42	94.65	-105.80	-5,117.92	3,566.10	4,708.55	4,579.92	128.63	36.606		
15,700.00	10,770.00	16,911.66	12,023.00	94.91	96.12	-105.80	-5,217.91	3,567.08	4,708.54	4,577.87	130.67	36.033		
15,800.00	10,770.00	17,011.66	12,023.00	96.40	97.61	-105.80	-5,317.91	3,568.06	4,708.53	4,575.80	132.73	35.476		
15,900.00	10,770.00	17,111.66	12,023.00	97.90	99.09	-105.80	-5,417.90	3,569.04	4,708.52	4,573.73	134.78	34.934		
16,000.00	10,770.00	17,211.66	12,023.00	99.41	100.59	-105.80	-5,517.90	3,570.02	4,708.51	4,571.66	136.85	34.406		
16,100.00	10,770.00	17,311.66	12,023.00	100.92	102.08	-105.80	-5,617.89	3,571.00	4,708.50	4,569.58	138.92	33.893		
16,200.00	10,770.00	17,411.66	12,023.00	102.43	103.58	-105.80	-5,717.89	3,571.98	4,708.49	4,567.49	141.00	33.394		
16,300.00	10,770.00	17,511.66	12,023.00	103.95	105.09	-105.80	-5,817.88	3,572.96	4,708.48	4,565.40	143.08	32.908		
16,400.00	10,770.00	17,611.66	12,023.00	105.47	106.60	-105.80	-5,917.88	3,573.94	4,708.47	4,563.30	145.17	32.435		
16,500.00	10,770.00	17,711.66	12,023.00	107.00	108.12	-105.80	-6,017.87	3,574.92	4,708.46	4,561.20	147.26	31.974		
16,600.00	10,770.00	17,811.66	12,023.00	108.52	109.63	-105.80	-6,117.87	3,575.90	4,708.45	4,559.09	149.36	31.524		
16,700.00	10,770.00	17,911.66	12,023.00	110.06	111.16	-105.80	-6,217.86	3,576.88	4,708.44	4,556.98	151.46	31.087		
16,800.00	10,770.00	18,011.66	12,023.00	111.59	112.68	-105.80	-6,317.86	3,577.86	4,708.43	4,554.86	153.57	30.660		
16,900.00	10,770.00	18,111.66	12,023.00	113.13	114.21	-105.80	-6,417.85	3,578.85	4,708.42	4,552.74	155.68	30.244		
17,000.00	10,770.00	18,211.66	12,023.00	114.68	115.74	-105.80	-6,517.85	3,579.83	4,708.41	4,550.61	157.80	29.839		
17,100.00	10,770.00	18,311.66	12,023.00	116.22	117.28	-105.80	-6,617.84	3,580.81	4,708.40	4,548.48	159.92	29.443		
17,200.00	10,770.00	18,411.66	12,023.00	117.77	118.82	-105.80	-6,717.84	3,581.79	4,708.39	4,546.35	162.04	29.057		
17,300.00	10,770.00	18,511.66	12,023.00	119.32	120.36	-105.80	-6,817.83	3,582.77	4,708.38	4,544.21	164.17	28.680		
17,400.00	10,770.00	18,611.66	12,023.00	120.88	121.91	-105.80	-6,917.83	3,583.75	4,708.37	4,542.07	166.30	28.313		
17,500.00	10,770.00	18,711.66	12,023.00	122.43	123.45	-105.80	-7,017.82	3,584.73	4,708.36	4,539.92	168.43	27.954		
17,600.00	10,770.00	18,811.66	12,023.00	123.99	125.00	-105.80	-7,117.82	3,585.71	4,708.35	4,537.77	170.57	27.603		
17,700.00	10,770.00	18,911.66	12,023.00	125.55	126.56	-105.80	-7,217.81	3,586.69	4,708.34	4,535.62	172.71	27.261		
17,800.00	10,770.00	19,011.66	12,023.00	127.12	128.11	-105.80	-7,317.81	3,587.67	4,708.33	4,533.47	174.86	26.926		
17,900.00	10,770.00	19,111.66	12,023.00	128.68	129.67	-105.80	-7,417.80	3,588.65	4,708.32	4,531.31	177.01	26.600		
18,000.00	10,770.00	19,211.66	12,023.00	130.25	131.23	-105.80	-7,517.80	3,589.63	4,708.31	4,529.15	179.16	26.280		
18,100.00	10,770.00	19,311.66	12,023.00	131.82	132.79	-105.80	-7,617.80	3,590.61	4,708.30	4,526.99	181.31	25.968		
18,200.00	10,770.00	19,411.66	12,023.00	133.39	134.36	-105.80	-7,717.79	3,591.59	4,708.29	4,524.82	183.46	25.663		
18,300.00	10,770.00	19,511.66	12,023.00	134.97	135.92	-105.80	-7,817.79	3,592.57	4,708.28	4,522.66	185.62	25.365		
18,400.00	10,770.00	19,611.66	12,023.00	136.54	137.49	-105.80	-7,917.78	3,593.55	4,708.27	4,520.49	187.78	25.073		
18,500.00	10,770.00	19,711.66	12,023.00	138.12	139.06	-105.80	-8,017.78	3,594.53	4,708.26	4,518.31	189.94	24.788		
18,600.00	10,770.00	19,811.66	12,023.00	139.70	140.64	-105.80	-8,117.77	3,595.51	4,708.25	4,516.14	192.11	24.509		
18,700.00	10,770.00	19,911.66	12,023.00	141.28	142.21	-105.80	-8,217.77	3,596.49	4,708.24	4,513.96	194.27	24.235		
18,800.00	10,770.00	20,011.66	12,023.00	142.86	143.79	-105.80	-8,317.76	3,597.47	4,708.23	4,511.78	196.44	23.967		
18,900.00	10,770.00	20,111.66	12,023.00	144.45	145.36	-105.80	-8,417.76	3,598.45	4,708.22	4,509.60	198.61	23.705		
19,000.00	10,770.00	20,211.66	12,023.00	146.03	146.94	-105.80	-8,517.75	3,599.43	4,708.21	4,507.42	200.79	23.449		
19,100.00	10,770.00	20,311.66	12,023.00	147.62	148.52	-105.80	-8,617.75	3,600.41	4,708.20	4,505.23	202.96	23.197		
19,200.00	10,770.00	20,411.66	12,023.00	149.21	150.10	-105.80	-8,717.74	3,601.40	4,708.19	4,503.04	205.14	22.951		
19,300.00	10,770.00	20,511.66	12,023.00	150.80	151.69	-105.80	-8,817.74	3,602.38	4,708.18	4,500.86	207.32	22.710		
19,400.00	10,770.00	20,611.66	12,023.00	152.39	153.27	-105.80	-8,917.73	3,603.36	4,708.17	4,498.67	209.50	22.473		
19,500.00	10,770.00	20,711.66	12,023.00	153.98	154.86	-105.80	-9,017.73	3,604.34	4,708.16	4,496.48	211.68	22.242		

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 501H
Project:	Lea County, NM (NAD83)	TVD Reference:	3121.3' GE + 30' KB @ 3151.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3121.3' GE + 30' KB @ 3151.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 501H	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							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	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
19,600.00	10,770.00	20,811.66	12,023.00	155.57	156.45	-105.80	-9,117.72	3,605.32	4,708.15	4,494.28	213.86	22.015	
19,700.00	10,770.00	20,911.66	12,023.00	157.17	158.04	-105.80	-9,217.72	3,606.30	4,708.13	4,492.09	216.05	21.792	
19,800.00	10,770.00	21,011.66	12,023.00	158.76	159.63	-105.80	-9,317.71	3,607.28	4,708.12	4,489.89	218.23	21.574	
19,900.00	10,770.00	21,111.66	12,023.00	160.36	161.22	-105.80	-9,417.71	3,608.26	4,708.11	4,487.69	220.42	21.360	
20,000.00	10,770.00	21,211.66	12,023.00	161.96	162.81	-105.80	-9,517.70	3,609.24	4,708.10	4,485.49	222.61	21.150	
20,100.00	10,770.00	21,311.66	12,023.00	163.56	164.41	-105.80	-9,617.70	3,610.22	4,708.09	4,483.29	224.80	20.943	
20,200.00	10,770.00	21,411.66	12,023.00	165.16	166.00	-105.80	-9,717.69	3,611.20	4,708.08	4,481.09	226.99	20.741	
20,300.00	10,770.00	21,511.66	12,023.00	166.76	167.60	-105.80	-9,817.69	3,612.18	4,708.07	4,478.89	229.19	20.543	
20,400.00	10,770.00	21,611.66	12,023.00	168.36	169.19	-105.80	-9,917.68	3,613.16	4,708.06	4,476.68	231.38	20.348	
20,500.00	10,770.00	21,711.66	12,023.00	169.97	170.79	-105.80	-10,017.68	3,614.14	4,708.05	4,474.48	233.58	20.156	
20,600.00	10,770.00	21,811.66	12,023.00	171.57	172.39	-105.80	-10,117.68	3,615.12	4,708.04	4,472.27	235.77	19.968	
20,700.00	10,770.00	21,911.66	12,023.00	173.18	173.99	-105.81	-10,217.67	3,616.10	4,708.03	4,470.06	237.97	19.784	
20,800.00	10,770.00	22,011.66	12,023.00	174.78	175.57	-105.81	-10,317.67	3,617.08	4,708.02	4,467.86	240.16	19.604	
20,841.66	10,770.00	22,053.32	12,023.00	175.40	176.17	-105.81	-10,359.33	3,617.49	4,708.02	4,467.05	240.97	19.538 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 501H
Project:	Lea County, NM (NAD83)	TVD Reference:	3121.3' GE + 30' KB @ 3151.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3121.3' GE + 30' KB @ 3151.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 501H	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	13.00	13.00	0.00	0.02	-89.85	2.23	-826.90	826.90					
100.00	100.00	113.00	113.00	0.13	0.17	-89.85	2.23	-826.90	826.90	826.69	0.21	3,883.055		
200.00	200.00	213.00	213.00	0.48	0.53	-89.85	2.23	-826.90	826.90	826.18	0.72	1,151.518		
300.00	300.00	313.00	313.00	0.84	0.89	-89.85	2.23	-826.90	826.90	825.68	1.22	675.166		
400.00	400.00	413.00	413.00	1.20	1.25	-89.85	2.23	-826.90	826.90	825.17	1.73	477.546		
500.00	500.00	513.00	513.00	1.56	1.61	-89.85	2.23	-826.90	826.90	824.66	2.24	369.409		
600.00	600.00	613.00	613.00	1.92	1.96	-89.85	2.23	-826.90	826.90	824.16	2.75	301.200		
700.00	700.00	713.00	713.00	2.28	2.32	-89.85	2.23	-826.90	826.90	823.65	3.25	254.253		
800.00	800.00	813.00	813.00	2.63	2.68	-89.85	2.23	-826.90	826.90	823.14	3.76	219.967		
900.00	900.00	913.00	913.00	2.99	3.04	-89.85	2.23	-826.90	826.90	822.64	4.27	193.829		
1,000.00	1,000.00	1,013.00	1,013.00	3.35	3.40	-89.85	2.23	-826.90	826.90	822.13	4.77	173.242		
1,100.00	1,100.00	1,113.00	1,113.00	3.71	3.76	-89.85	2.23	-826.90	826.90	821.62	5.28	156.609		
1,200.00	1,200.00	1,213.00	1,213.00	4.07	4.12	-89.85	2.23	-826.90	826.90	821.12	5.79	142.890		
1,300.00	1,300.00	1,313.00	1,313.00	4.43	4.47	-89.85	2.23	-826.90	826.90	820.61	6.29	131.381		
1,400.00	1,400.00	1,413.00	1,413.00	4.79	4.83	-89.85	2.23	-826.90	826.90	820.10	6.80	121.588		
1,500.00	1,500.00	1,513.00	1,513.00	5.14	5.19	-89.85	2.23	-826.90	826.90	819.60	7.31	113.153		
1,600.00	1,600.00	1,613.00	1,613.00	5.50	5.55	-89.85	2.23	-826.90	826.90	819.09	7.81	105.813		
1,700.00	1,700.00	1,713.00	1,713.00	5.86	5.91	-89.85	2.23	-826.90	826.90	818.58	8.32	99.367		
1,800.00	1,800.00	1,813.00	1,813.00	6.22	6.27	-89.85	2.23	-826.90	826.90	818.07	8.83	93.661		
1,900.00	1,900.00	1,913.00	1,913.00	6.58	6.62	-89.85	2.23	-826.90	826.90	817.57	9.34	88.575		
2,000.00	2,000.00	2,013.00	2,013.00	6.94	6.98	-89.85	2.23	-826.90	826.90	817.06	9.84	84.013		
2,100.00	2,100.00	2,113.00	2,113.00	7.29	7.34	-89.85	2.23	-826.90	826.90	816.55	10.35	79.898		
2,200.00	2,200.00	2,213.00	2,213.00	7.65	7.70	-89.85	2.23	-826.90	826.90	816.05	10.86	76.167		
2,300.00	2,300.00	2,313.00	2,313.00	8.01	8.06	-89.85	2.23	-826.90	826.90	815.54	11.36	72.769		
2,400.00	2,400.00	2,413.00	2,413.00	8.37	8.42	-89.85	2.23	-826.90	826.90	815.03	11.87	69.661		
2,500.00	2,500.00	2,513.00	2,513.00	8.73	8.78	-89.85	2.23	-826.90	826.90	814.53	12.38	66.808		
2,600.00	2,600.00	2,613.00	2,613.00	9.09	9.13	-89.85	2.23	-826.90	826.90	814.02	12.88	64.179		
2,700.00	2,700.00	2,713.00	2,713.00	9.45	9.49	-89.85	2.23	-826.90	826.90	813.51	13.39	61.749		
2,800.00	2,800.00	2,813.00	2,813.00	9.80	9.85	-89.85	2.23	-826.90	826.90	813.00	13.90	59.497		
2,900.00	2,900.00	2,913.00	2,913.00	10.16	10.21	-89.85	2.23	-826.90	826.90	812.50	14.41	57.403		
3,000.00	3,000.00	3,013.00	3,013.00	10.52	10.57	-89.85	2.23	-826.90	826.90	811.99	14.91	55.452		
3,100.00	3,100.00	3,113.00	3,113.00	10.88	10.93	-89.85	2.23	-826.90	826.90	811.48	15.42	53.629		
3,200.00	3,200.00	3,213.00	3,213.00	11.24	11.28	-89.85	2.23	-826.90	826.90	810.98	15.93	51.921		
3,211.69	3,211.69	3,224.69	3,224.69	11.28	11.33	-89.85	2.23	-826.90	826.90	810.92	15.99	51.729		
3,300.00	3,300.00	3,310.73	3,310.73	11.60	11.63	-89.85	2.23	-826.91	826.92	810.49	16.43	50.341		
3,400.00	3,400.00	3,400.00	3,399.99	11.96	11.94	-89.87	1.94	-828.18	828.28	811.38	16.90	49.019		
3,500.00	3,499.99	3,475.78	3,475.72	12.30	12.20	13.65	1.35	-830.85	830.41	813.10	17.31	47.972		
3,600.00	3,599.91	3,558.26	3,558.06	12.64	12.48	13.62	0.33	-835.42	832.14	814.41	17.73	46.940		
3,700.00	3,699.69	3,656.43	3,655.99	12.98	12.82	13.62	-1.16	-842.10	832.58	814.38	18.20	45.749		
3,800.00	3,799.27	3,756.40	3,755.72	13.32	13.16	13.67	-2.69	-848.91	830.49	811.81	18.68	44.462		
3,900.00	3,898.57	3,856.28	3,855.36	13.67	13.50	13.77	-4.21	-855.71	825.86	806.70	19.16	43.106		
4,000.00	3,997.54	3,956.01	3,954.84	14.02	13.85	13.93	-5.72	-862.50	818.70	799.06	19.64	41.684		
4,100.00	4,096.09	4,055.50	4,054.09	14.38	14.20	14.15	-7.24	-869.28	809.01	788.88	20.12	40.203		
4,200.00	4,194.16	4,154.70	4,153.05	14.75	14.54	14.42	-8.75	-876.04	796.80	776.20	20.61	38.669		
4,300.00	4,291.70	4,253.53	4,251.64	15.12	14.89	14.76	-10.25	-882.77	782.10	761.01	21.09	37.086		
4,400.00	4,388.62	4,351.93	4,349.80	15.51	15.24	15.18	-11.75	-889.47	764.93	743.35	21.57	35.458		
4,500.00	4,484.86	4,449.84	4,447.47	15.92	15.58	15.68	-13.24	-896.14	745.30	723.24	22.06	33.789		
4,600.00	4,480.36	4,547.17	4,544.56	16.34	15.93	16.27	-14.72	-902.77	723.25	700.71	22.54	32.084		
4,700.00	4,675.05	4,643.88	4,641.03	16.78	16.27	16.97	-16.19	-909.36	698.83	675.80	23.03	30.346		
4,746.50	4,718.78	4,688.60	4,685.65	16.99	16.43	17.34	-16.87	-912.41	686.67	663.42	23.26	29.527		
4,800.00	4,769.00	4,739.98	4,736.91	17.24	16.61	17.72	-17.65	-915.91	672.41	648.89	23.52	28.592		
4,900.00	4,862.85	4,836.02	4,832.70	17.72	16.96	18.48	-19.12	-922.45	645.83	621.82	24.01	26.898		

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 501H
Project:	Lea County, NM (NAD83)	TVD Reference:	3121.3' GE + 30' KB @ 3151.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3121.3' GE + 30' KB @ 3151.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 501H	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		Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor				
							+N/-S (usft)	+E/-W (usft)								
5,000.00	4,956.70	4,932.05	4,928.50	18.21	17.30	19.31	-20.58	-928.99	619.37	594.86	24.51	25.272				
5,100.00	5,050.55	5,028.08	5,024.30	18.71	17.64	20.21	-22.04	-935.53	593.04	568.02	25.01	23.709				
5,200.00	5,144.40	5,124.11	5,120.10	19.23	17.99	21.19	-23.50	-942.08	566.86	541.33	25.53	22.208				
5,300.00	5,238.25	5,220.14	5,215.89	19.76	18.33	22.26	-24.96	-948.62	540.84	514.80	26.04	20.766				
5,400.00	5,332.10	5,316.17	5,311.69	20.29	18.68	23.44	-26.42	-955.16	515.03	488.46	26.57	19.382				
5,500.00	5,425.95	5,412.20	5,407.49	20.84	19.03	24.74	-27.89	-961.70	489.44	462.33	27.11	18.053				
5,600.00	5,519.80	5,508.24	5,503.28	21.39	19.37	26.18	-29.35	-968.24	464.12	436.46	27.66	16.779				
5,700.00	5,613.65	5,604.27	5,599.08	21.95	19.72	27.79	-30.81	-974.78	439.12	410.89	28.22	15.559				
5,800.00	5,707.50	5,700.30	5,694.88	22.52	20.07	29.58	-32.27	-981.33	414.48	385.67	28.80	14.390				
5,900.00	5,801.36	5,796.33	5,790.68	23.10	20.42	31.60	-33.73	-987.87	390.27	360.87	29.40	13.274				
6,000.00	5,895.21	5,892.36	5,886.47	23.68	20.77	33.87	-35.19	-994.41	366.60	336.57	30.02	12.210				
6,100.00	5,989.06	5,988.39	5,982.27	24.27	21.12	36.44	-36.65	-1,000.95	343.55	312.87	30.68	11.199				
6,200.00	6,082.91	6,086.20	6,079.84	24.86	21.47	39.44	-38.12	-1,007.52	321.21	289.84	31.36	10.241				
6,300.00	6,176.76	6,188.06	6,181.58	25.46	21.84	43.26	-39.22	-1,012.45	298.40	266.30	32.10	9.295				
6,403.84	6,274.22	6,292.00	6,285.48	26.09	22.21	48.23	-39.74	-1,014.75	274.28	241.35	32.93	8.329				
6,500.00	6,364.87	6,384.38	6,377.87	26.66	22.53	53.27	-39.77	-1,014.90	253.38	219.61	33.76	7.504				
6,600.00	6,459.97	6,479.48	6,472.97	27.24	22.86	58.85	-39.77	-1,014.90	235.50	200.83	34.67	6.793				
6,700.00	6,555.85	6,575.36	6,568.85	27.79	23.20	64.75	-39.77	-1,014.90	221.61	186.03	35.58	6.229				
6,800.00	6,652.43	6,671.95	6,665.43	28.32	23.54	70.77	-39.77	-1,014.90	211.50	175.05	36.45	5.803				
6,900.00	6,749.66	6,769.18	6,762.66	28.83	23.88	76.69	-39.77	-1,014.90	204.77	167.52	37.25	5.498				
7,000.00	6,847.47	6,866.99	6,860.47	29.31	24.22	82.29	-39.77	-1,014.90	200.89	162.92	37.96	5.292				
7,100.00	6,945.80	6,965.31	6,958.80	29.77	24.57	87.38	-39.77	-1,014.90	199.21	160.62	38.59	5.162				
7,157.09	7,002.13	7,021.65	7,015.13	30.01	24.77	90.00	-39.77	-1,014.90	199.00	160.08	38.91	5.114 CC				
7,200.00	7,044.56	7,064.07	7,057.56	30.20	24.92	91.82	-39.77	-1,014.90	199.10	159.95	39.14	5.086				
7,300.00	7,143.70	7,163.22	7,156.70	30.61	25.26	95.55	-39.77	-1,014.90	199.95	160.30	39.65	5.043				
7,400.00	7,243.15	7,262.66	7,256.15	30.99	25.61	98.52	-39.77	-1,014.90	201.23	161.12	40.11	5.017				
7,500.00	7,342.84	7,362.35	7,355.84	31.35	25.97	100.73	-39.77	-1,014.90	202.55	161.99	40.57	4.993				
7,600.00	7,442.70	7,462.21	7,455.70	31.69	26.32	102.19	-39.77	-1,014.90	203.59	162.58	41.01	4.964				
7,700.00	7,542.66	7,562.17	7,555.66	32.01	26.67	102.92	-39.77	-1,014.90	204.16	162.71	41.46	4.925				
7,750.34	7,593.00	7,612.51	7,606.00	32.16	26.85	-0.53	-39.77	-1,014.90	204.24	162.55	41.69	4.899				
7,800.00	7,642.66	7,662.17	7,655.66	32.30	27.02	-0.53	-39.77	-1,014.90	204.24	162.33	41.91	4.873				
7,900.00	7,742.66	7,762.17	7,755.66	32.60	27.38	-0.53	-39.77	-1,014.90	204.24	161.87	42.37	4.821				
8,000.00	7,842.66	7,862.17	7,855.66	32.89	27.73	-0.53	-39.77	-1,014.90	204.24	161.42	42.82	4.770				
8,100.00	7,942.66	7,962.17	7,955.66	33.19	28.08	-0.53	-39.77	-1,014.90	204.24	160.96	43.28	4.719				
8,200.00	8,042.66	8,062.17	8,055.66	33.49	28.43	-0.53	-39.77	-1,014.90	204.24	160.50	43.74	4.670				
8,300.00	8,142.66	8,162.17	8,155.66	33.79	28.79	-0.53	-39.77	-1,014.90	204.24	160.04	44.20	4.621				
8,400.00	8,242.66	8,262.17	8,255.66	34.09	29.14	-0.53	-39.77	-1,014.90	204.24	159.58	44.66	4.574				
8,500.00	8,342.66	8,362.17	8,355.66	34.39	29.50	-0.53	-39.77	-1,014.90	204.24	159.12	45.12	4.527				
8,600.00	8,442.66	8,462.17	8,455.66	34.69	29.85	-0.53	-39.77	-1,014.90	204.24	158.66	45.58	4.481				
8,700.00	8,542.66	8,562.17	8,555.66	35.00	30.20	-0.53	-39.77	-1,014.90	204.24	158.20	46.04	4.436				
8,800.00	8,642.66	8,662.17	8,655.66	35.30	30.56	-0.53	-39.77	-1,014.90	204.24	157.73	46.51	4.392				
8,900.00	8,742.66	8,762.17	8,755.66	35.61	30.91	-0.53	-39.77	-1,014.90	204.24	157.27	46.97	4.348				
9,000.00	8,842.66	8,862.17	8,855.66	35.91	31.27	-0.53	-39.77	-1,014.90	204.24	156.80	47.44	4.305				
9,100.00	8,942.66	8,962.17	8,955.66	36.22	31.62	-0.53	-39.77	-1,014.90	204.24	156.33	47.90	4.263				
9,200.00	9,042.66	9,062.17	9,055.66	36.53	31.97	-0.53	-39.77	-1,014.90	204.24	155.87	48.37	4.222				
9,300.00	9,142.66	9,162.17	9,155.66	36.84	32.33	-0.53	-39.77	-1,014.90	204.24	155.40	48.84	4.182				
9,400.00	9,242.66	9,262.17	9,255.66	37.15	32.68	-0.53	-39.77	-1,014.90	204.24	154.93	49.31	4.142				
9,500.00	9,342.66	9,362.17	9,355.66	37.46	33.04	-0.53	-39.77	-1,014.90	204.24	154.46	49.78	4.103				
9,600.00	9,442.66	9,462.17	9,455.66	37.77	33.39	-0.53	-39.77	-1,014.90	204.24	153.99	50.25	4.065				
9,700.00	9,542.66	9,562.17	9,555.66	38.09	33.75	-0.53	-39.77	-1,014.90	204.24	153.52	50.72	4.027				
9,800.00	9,642.66	9,662.17	9,655.66	38.40	34.10	-0.53	-39.77	-1,014.90	204.24	153.05	51.19	3.990				
9,900.00	9,742.66	9,762.17	9,755.66	38.71	34.46	-0.53	-39.77	-1,014.90	204.24	152.57	51.66	3.953				

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 501H
Project:	Lea County, NM (NAD83)	TVD Reference:	3121.3' GE + 30' KB @ 3151.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3121.3' GE + 30' KB @ 3151.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 501H	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	9,842.66	9,862.17	9,855.66	39.03	34.81	-0.53	-39.77	-1,014.90	204.24	152.10	52.14	3.917		
10,100.00	9,942.66	9,962.17	9,955.66	39.35	35.17	-0.53	-39.77	-1,014.90	204.24	151.63	52.61	3.882		
10,200.00	10,042.66	10,062.17	10,055.66	39.66	35.52	-0.53	-39.77	-1,014.90	204.24	151.15	53.09	3.847		
10,300.00	10,142.66	10,162.17	10,155.66	39.98	35.88	-0.53	-39.77	-1,014.90	204.24	150.68	53.56	3.813		
10,354.38	10,197.04	10,216.55	10,210.04	40.15	36.07	-0.53	-39.77	-1,014.90	204.24	150.42	53.82	3.795 ES, SF		
10,400.00	10,242.61	10,262.12	10,255.61	40.30	36.23	-179.97	-39.77	-1,014.90	206.05	152.02	54.03	3.813		
10,450.00	10,292.22	10,311.73	10,305.22	40.45	36.41	-179.97	-39.77	-1,014.90	212.20	157.94	54.26	3.911		
10,500.00	10,341.10	10,360.61	10,354.10	40.61	36.58	-179.97	-39.77	-1,014.90	222.64	168.15	54.49	4.086		
10,550.00	10,388.88	10,408.39	10,401.88	40.77	36.75	-179.97	-39.77	-1,014.90	237.31	182.60	54.71	4.337		
10,600.00	10,435.20	10,454.72	10,448.20	40.93	36.92	-179.97	-39.77	-1,014.90	256.08	201.16	54.93	4.662		
10,650.00	10,479.72	10,499.23	10,492.72	41.09	37.08	-179.97	-39.77	-1,014.90	278.82	223.69	55.13	5.057		
10,700.00	10,522.08	10,541.59	10,535.08	41.25	37.23	-179.97	-39.77	-1,014.90	305.36	250.03	55.32	5.519		
10,750.00	10,561.96	10,581.48	10,574.96	41.40	37.37	-179.97	-39.77	-1,014.90	335.48	279.98	55.50	6.044		
10,800.00	10,599.07	10,618.59	10,612.07	41.55	37.50	-179.97	-39.77	-1,014.90	368.97	313.30	55.67	6.628		
10,850.00	10,633.12	10,652.64	10,646.12	41.71	37.62	-179.97	-39.77	-1,014.90	405.56	349.74	55.82	7.266		
10,900.00	10,663.85	10,683.37	10,676.85	41.86	37.73	-179.97	-39.77	-1,014.90	444.98	389.03	55.95	7.953		
10,950.00	10,691.03	10,710.55	10,704.03	42.01	37.83	-179.97	-39.77	-1,014.90	486.93	430.87	56.07	8.685		
11,000.00	10,714.45	10,733.96	10,727.45	42.17	37.91	-179.97	-39.77	-1,014.90	531.09	474.93	56.16	9.456		
11,050.00	10,733.93	10,753.44	10,746.93	42.33	37.98	-179.96	-39.77	-1,014.90	577.12	520.88	56.24	10.261		
11,100.00	10,749.32	10,768.84	10,762.32	42.50	38.03	-179.96	-39.77	-1,014.90	624.68	568.37	56.30	11.095		
11,150.00	10,760.52	10,780.03	10,773.52	42.68	38.07	-179.94	-39.77	-1,014.90	673.39	617.04	56.35	11.951		
11,200.00	10,767.42	10,786.93	10,780.42	42.87	38.10	-179.90	-39.77	-1,014.90	722.90	666.52	56.37	12.823		
11,254.38	10,770.00	10,789.51	10,783.00	43.09	38.11	-90.08	-39.77	-1,014.90	777.20	720.81	56.39	13.783		
11,300.00	10,770.00	10,789.51	10,783.00	43.29	38.11	-90.09	-39.77	-1,014.90	822.81	766.43	56.39	14.592		
11,400.00	10,770.00	10,789.51	10,783.00	43.76	38.11	-90.10	-39.77	-1,014.90	922.81	866.42	56.40	16.363		
11,500.00	10,770.00	10,789.51	10,783.00	44.29	38.11	-90.11	-39.77	-1,014.90	1,022.81	966.41	56.40	18.134		
11,600.00	10,770.00	10,789.51	10,783.00	44.88	38.11	-90.12	-39.77	-1,014.90	1,122.81	1,066.40	56.41	19.903		
11,700.00	10,770.00	10,789.51	10,783.00	45.53	38.11	-90.13	-39.77	-1,014.90	1,222.81	1,166.39	56.42	21.673		
11,800.00	10,770.00	10,789.51	10,783.00	46.23	38.11	-90.14	-39.77	-1,014.90	1,322.81	1,266.38	56.43	23.441		
11,900.00	10,770.00	10,789.51	10,783.00	46.99	38.11	-90.15	-39.77	-1,014.90	1,422.81	1,366.37	56.44	25.208		
12,000.00	10,770.00	10,789.51	10,783.00	47.79	38.11	-90.16	-39.77	-1,014.90	1,522.81	1,466.36	56.45	26.974		
12,100.00	10,770.00	10,789.51	10,783.00	48.64	38.11	-90.17	-39.77	-1,014.90	1,622.81	1,566.35	56.47	28.740		
12,200.00	10,770.00	10,789.51	10,783.00	49.53	38.11	-90.18	-39.77	-1,014.90	1,722.81	1,666.34	56.48	30.504		
12,300.00	10,770.00	10,789.51	10,783.00	50.46	38.11	-90.19	-39.77	-1,014.90	1,822.81	1,766.32	56.49	32.267		
12,400.00	10,770.00	10,789.51	10,783.00	51.43	38.11	-90.20	-39.77	-1,014.90	1,922.81	1,866.31	56.51	34.028		
12,500.00	10,770.00	14,523.41	12,740.00	52.44	55.98	-180.00	-2,062.49	-994.88	1,957.00	1,915.22	41.78	46.842		
12,600.00	10,770.00	14,623.41	12,740.00	53.48	56.98	-180.00	-2,162.48	-993.89	1,957.00	1,914.63	42.37	46.192		
12,700.00	10,770.00	14,723.41	12,740.00	54.55	58.01	-180.00	-2,262.48	-992.90	1,957.00	1,914.03	42.97	45.539		
12,800.00	10,770.00	14,823.41	12,740.00	55.65	59.07	-180.00	-2,362.47	-991.91	1,957.00	1,913.40	43.60	44.884		
12,900.00	10,770.00	14,923.41	12,740.00	56.78	60.16	-180.00	-2,462.47	-990.92	1,957.00	1,912.75	44.25	44.228		
13,000.00	10,770.00	15,023.41	12,740.00	57.93	61.28	-180.00	-2,562.46	-989.93	1,957.00	1,912.09	44.91	43.573		
13,100.00	10,770.00	15,123.41	12,740.00	59.11	62.41	-180.00	-2,662.46	-988.94	1,957.00	1,911.41	45.59	42.922		
13,200.00	10,770.00	15,223.41	12,740.00	60.31	63.57	-180.00	-2,762.45	-987.95	1,957.00	1,910.71	46.29	42.274		
13,300.00	10,770.00	15,323.41	12,740.00	61.54	64.75	-180.00	-2,862.45	-986.96	1,957.00	1,909.99	47.01	41.631		
13,400.00	10,770.00	15,423.41	12,740.00	62.78	65.95	-180.00	-2,962.44	-985.97	1,957.00	1,909.26	47.74	40.995		
13,500.00	10,770.00	15,523.41	12,740.00	64.04	67.17	-180.00	-3,062.44	-984.98	1,957.00	1,908.52	48.48	40.366		
13,600.00	10,770.00	15,623.41	12,740.00	65.32	68.41	-180.00	-3,162.43	-983.99	1,957.00	1,907.76	49.24	39.745		
13,700.00	10,770.00	15,723.41	12,740.00	66.62	69.67	-180.00	-3,262.43	-983.00	1,957.00	1,906.99	50.01	39.132		
13,800.00	10,770.00	15,823.41	12,740.00	67.93	70.94	-180.00	-3,362.42	-982.01	1,957.00	1,906.21	50.79	38.529		
13,900.00	10,770.00	15,923.41	12,740.00	69.25	72.22	-180.00	-3,462.42	-981.02	1,957.00	1,905.41	51.59	37.935		
14,000.00	10,770.00	16,023.41	12,740.00	70.59	73.53	-180.00	-3,562.41	-980.03	1,957.00	1,904.60	52.40	37.350		
14,100.00	10,770.00	16,123.41	12,740.00	71.95	74.84	-180.00	-3,662.41	-979.04	1,957.00	1,903.79	53.21	36.776		

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 501H
Project:	Lea County, NM (NAD83)	TVD Reference:	3121.3' GE + 30' KB @ 3151.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3121.3' GE + 30' KB @ 3151.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 501H	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)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning			
14,200.00	10,770.00	16,223.41	12,740.00	73.31	76.17	-180.00	-3,762.40	-978.05	1,957.00	1,902.96	54.04	36.213				
14,300.00	10,770.00	16,323.41	12,740.00	74.69	77.51	-180.00	-3,862.40	-977.06	1,957.00	1,902.12	54.88	35.660				
14,400.00	10,770.00	16,423.41	12,740.00	76.08	78.86	-180.00	-3,962.39	-976.07	1,957.00	1,901.27	55.73	35.117				
14,500.00	10,770.00	16,523.41	12,740.00	77.48	80.23	-180.00	-4,062.39	-975.09	1,957.00	1,900.42	56.58	34.586				
14,600.00	10,770.00	16,623.41	12,740.00	78.89	81.60	-180.00	-4,162.38	-974.10	1,957.00	1,899.55	57.45	34.065				
14,700.00	10,770.00	16,723.41	12,740.00	80.31	82.99	-180.00	-4,262.38	-973.11	1,957.00	1,898.68	58.32	33.554				
14,800.00	10,770.00	16,823.41	12,740.00	81.73	84.38	-180.00	-4,362.37	-972.12	1,957.00	1,897.79	59.21	33.055				
14,900.00	10,770.00	16,923.41	12,740.00	83.17	85.78	-180.00	-4,462.37	-971.13	1,957.00	1,896.91	60.09	32.565				
15,000.00	10,770.00	17,023.41	12,740.00	84.61	87.20	-180.00	-4,562.36	-970.14	1,957.00	1,896.01	60.99	32.087				
15,100.00	10,770.00	17,123.41	12,740.00	86.06	88.62	-180.00	-4,662.36	-969.15	1,957.00	1,895.11	61.89	31.619				
15,200.00	10,770.00	17,223.41	12,740.00	87.52	90.04	-180.00	-4,762.35	-968.16	1,957.00	1,894.20	62.80	31.160				
15,300.00	10,770.00	17,323.41	12,740.00	88.99	91.48	-180.00	-4,862.35	-967.17	1,957.00	1,893.28	63.72	30.712				
15,400.00	10,770.00	17,423.41	12,740.00	90.46	92.92	-180.00	-4,962.34	-966.18	1,957.00	1,892.36	64.64	30.274				
15,500.00	10,770.00	17,523.41	12,740.00	91.94	94.37	-180.00	-5,062.34	-965.19	1,957.00	1,891.43	65.57	29.846				
15,600.00	10,770.00	17,623.41	12,740.00	93.42	95.83	-180.00	-5,162.33	-964.20	1,957.00	1,890.50	66.50	29.426				
15,700.00	10,770.00	17,723.41	12,740.00	94.91	97.29	-180.00	-5,262.33	-963.21	1,957.00	1,889.56	67.44	29.017				
15,800.00	10,770.00	17,823.41	12,740.00	96.40	98.76	-180.00	-5,362.32	-962.22	1,957.00	1,888.61	68.39	28.616				
15,900.00	10,770.00	17,923.41	12,740.00	97.90	100.23	-180.00	-5,462.32	-961.23	1,957.00	1,887.66	69.34	28.224				
16,000.00	10,770.00	18,023.41	12,740.00	99.41	101.71	-180.00	-5,562.31	-960.24	1,957.00	1,886.71	70.29	27.841				
16,100.00	10,770.00	18,123.41	12,740.00	100.92	103.20	-180.00	-5,662.31	-959.25	1,957.00	1,885.75	71.25	27.467				
16,200.00	10,770.00	18,223.41	12,740.00	102.43	104.69	-180.00	-5,762.30	-958.26	1,957.00	1,884.79	72.21	27.101				
16,300.00	10,770.00	18,323.41	12,740.00	103.95	106.18	-180.00	-5,862.30	-957.27	1,957.00	1,883.82	73.18	26.743				
16,400.00	10,770.00	18,423.41	12,740.00	105.47	107.68	-180.00	-5,962.29	-956.28	1,957.00	1,882.85	74.15	26.393				
16,500.00	10,770.00	18,523.41	12,740.00	107.00	109.18	-180.00	-6,062.29	-955.29	1,957.00	1,881.88	75.12	26.050				
16,600.00	10,770.00	18,623.41	12,740.00	108.52	110.69	-180.00	-6,162.28	-954.30	1,957.00	1,880.90	76.10	25.715				
16,700.00	10,770.00	18,723.41	12,740.00	110.06	112.20	-180.00	-6,262.28	-953.31	1,957.00	1,879.92	77.08	25.388				
16,800.00	10,770.00	18,823.41	12,740.00	111.59	113.72	-180.00	-6,362.27	-952.32	1,957.00	1,878.93	78.07	25.067				
16,900.00	10,770.00	18,923.41	12,740.00	113.13	115.24	-180.00	-6,462.27	-951.33	1,957.00	1,877.94	79.06	24.754				
17,000.00	10,770.00	19,023.41	12,740.00	114.68	116.76	-180.00	-6,562.27	-950.34	1,957.00	1,876.95	80.05	24.447				
17,100.00	10,770.00	19,123.41	12,740.00	116.22	118.29	-180.00	-6,662.26	-949.35	1,957.00	1,875.95	81.05	24.147				
17,200.00	10,770.00	19,223.41	12,740.00	117.77	119.82	-180.00	-6,762.26	-948.36	1,957.00	1,874.96	82.04	23.853				
17,300.00	10,770.00	19,323.41	12,740.00	119.32	121.35	-180.00	-6,862.25	-947.37	1,957.00	1,873.96	83.04	23.566				
17,400.00	10,770.00	19,423.41	12,740.00	120.88	122.89	-180.00	-6,962.25	-946.38	1,957.00	1,872.95	84.05	23.284				
17,500.00	10,770.00	19,523.41	12,740.00	122.43	124.43	-180.00	-7,062.24	-945.39	1,957.00	1,871.95	85.05	23.009				
17,600.00	10,770.00	19,623.41	12,740.00	123.99	125.97	-180.00	-7,162.24	-944.40	1,957.00	1,870.94	86.06	22.739				
17,700.00	10,770.00	19,723.41	12,740.00	125.55	127.51	-180.00	-7,262.23	-943.41	1,957.00	1,869.93	87.07	22.475				
17,800.00	10,770.00	19,823.41	12,740.00	127.12	129.06	-180.00	-7,362.23	-942.42	1,957.00	1,868.91	88.09	22.217				
17,900.00	10,770.00	19,923.41	12,740.00	128.68	130.61	-180.00	-7,462.22	-941.43	1,957.00	1,867.90	89.10	21.963				
18,000.00	10,770.00	20,023.41	12,740.00	130.25	132.16	-180.00	-7,562.22	-940.44	1,957.00	1,866.88	90.12	21.715				
18,100.00	10,770.00	20,123.41	12,740.00	131.82	133.72	-180.00	-7,662.21	-939.45	1,957.00	1,865.86	91.14	21.472				
18,200.00	10,770.00	20,223.41	12,740.00	133.39	135.27	-180.00	-7,762.21	-938.47	1,957.00	1,864.84	92.16	21.234				
18,300.00	10,770.00	20,323.41	12,740.00	134.97	136.83	-180.00	-7,862.20	-937.48	1,957.00	1,863.81	93.19	21.001				
18,400.00	10,770.00	20,423.41	12,740.00	136.54	138.39	-180.00	-7,962.20	-936.49	1,957.00	1,862.79	94.21	20.772				
18,500.00	10,770.00	20,523.41	12,740.00	138.12	139.96	-180.00	-8,062.19	-935.50	1,957.00	1,861.76	95.24	20.548				
18,600.00	10,770.00	20,623.41	12,740.00	139.70	141.52	-180.00	-8,162.19	-934.51	1,957.00	1,860.73	96.27	20.328				
18,700.00	10,770.00	20,723.41	12,740.00	141.28	143.09	-180.00	-8,262.18	-933.52	1,957.00	1,859.70	97.30	20.112				
18,800.00	10,770.00	20,823.41	12,740.00	142.86	144.66	-180.00	-8,362.18	-932.53	1,957.00	1,858.66	98.34	19.901				
18,900.00	10,770.00	20,923.41	12,740.00	144.45	146.23	-180.00	-8,462.17	-931.54	1,957.00	1,857.63	99.37	19.694				
19,000.00	10,770.00	21,023.41	12,740.00	146.03	147.80	-180.00	-8,562.17	-930.55	1,957.00	1,856.59	100.41	19.490				
19,100.00	10,770.00	21,123.41	12,740.00	147.62	149.38	-180.00	-8,662.16	-929.56	1,957.00	1,855.55	101.45	19.291				
19,200.00	10,770.00	21,223.41	12,740.00	149.21	150.95	-180.00	-8,762.16	-928.57	1,957.00	1,854.51	102.49	19.095				
19,300.00	10,770.00	21,323.41	12,740.00	150.80	152.53	-180.00	-8,862.15	-927.58	1,957.00	1,853.47	103.53	18.903				

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 501H
Project:	Lea County, NM (NAD83)	TVD Reference:	3121.3' GE + 30' KB @ 3151.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3121.3' GE + 30' KB @ 3151.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 501H	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	10,770.00	21,423.41	12,740.00	152.39	154.11	-180.00	-8,962.15	-926.59	1,957.00	1,852.43	104.57	18.715		
19,500.00	10,770.00	21,523.41	12,740.00	153.98	155.69	-180.00	-9,062.14	-925.60	1,957.00	1,851.39	105.61	18.530		
19,600.00	10,770.00	21,623.41	12,740.00	155.57	157.27	-180.00	-9,162.14	-924.61	1,957.00	1,850.34	106.66	18.348		
19,700.00	10,770.00	21,723.41	12,740.00	157.17	158.86	-180.00	-9,262.13	-923.62	1,957.00	1,849.29	107.71	18.170		
19,800.00	10,770.00	21,823.41	12,740.00	158.76	160.44	-180.00	-9,362.13	-922.63	1,957.00	1,848.25	108.75	17.995		
19,900.00	10,770.00	21,923.41	12,740.00	160.36	162.03	-180.00	-9,462.12	-921.64	1,957.00	1,847.20	109.80	17.823		
20,000.00	10,770.00	22,023.41	12,740.00	161.96	163.62	-180.00	-9,562.12	-920.65	1,957.00	1,846.15	110.85	17.654		
20,100.00	10,770.00	22,123.41	12,740.00	163.56	165.20	-180.00	-9,662.11	-919.66	1,957.00	1,845.10	111.90	17.488		
20,200.00	10,770.00	22,223.41	12,740.00	165.16	166.79	-180.00	-9,762.11	-918.67	1,957.00	1,844.04	112.96	17.325		
20,300.00	10,770.00	22,323.41	12,740.00	166.76	168.39	-180.00	-9,862.10	-917.68	1,957.00	1,842.99	114.01	17.165		
20,400.00	10,770.00	22,423.41	12,740.00	168.36	169.98	-180.00	-9,962.10	-916.69	1,957.00	1,841.93	115.07	17.008		
20,500.00	10,770.00	22,523.41	12,740.00	169.97	171.57	-180.00	-10,062.09	-915.70	1,957.00	1,840.88	116.12	16.853		
20,600.00	10,770.00	22,623.41	12,740.00	171.57	173.17	-180.00	-10,162.09	-914.71	1,957.00	1,839.82	117.18	16.701		
20,700.00	10,770.00	22,723.41	12,740.00	173.18	174.76	-180.00	-10,262.08	-913.72	1,957.00	1,838.76	118.24	16.552		
20,800.00	10,770.00	22,823.41	12,740.00	174.78	176.32	-180.00	-10,362.08	-912.73	1,957.00	1,837.76	119.24	16.413		
20,841.66	10,770.00	22,865.07	12,740.00	175.40	176.91	-180.00	-10,403.74	-912.32	1,957.00	1,837.54	119.46	16.382		

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 501H
Project:	Lea County, NM (NAD83)	TVD Reference:	3121.3' GE + 30' KB @ 3151.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3121.3' GE + 30' KB @ 3151.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 501H	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	13.00	13.00	0.00	0.02	-89.82	2.47	-801.91	801.91					
100.00	100.00	113.00	113.00	0.13	0.17	-89.82	2.47	-801.91	801.91	801.70	0.21	3,765.708		
200.00	200.00	213.00	213.00	0.48	0.53	-89.82	2.47	-801.91	801.91	801.20	0.72	1,116.718		
300.00	300.00	313.00	313.00	0.84	0.89	-89.82	2.47	-801.91	801.91	800.69	1.22	654.762		
400.00	400.00	413.00	413.00	1.20	1.25	-89.82	2.47	-801.91	801.91	800.18	1.73	463.115		
500.00	500.00	513.00	513.00	1.56	1.61	-89.82	2.47	-801.91	801.91	799.68	2.24	358.245		
600.00	600.00	613.00	613.00	1.92	1.96	-89.82	2.47	-801.91	801.91	799.17	2.75	292.098		
700.00	700.00	713.00	713.00	2.28	2.32	-89.82	2.47	-801.91	801.91	798.66	3.25	246.569		
800.00	800.00	813.00	813.00	2.63	2.68	-89.82	2.47	-801.91	801.91	798.15	3.76	213.319		
900.00	900.00	913.00	913.00	2.99	3.04	-89.82	2.47	-801.91	801.91	797.65	4.27	187.971		
1,000.00	1,000.00	1,013.00	1,013.00	3.35	3.40	-89.82	2.47	-801.91	801.91	797.14	4.77	168.007		
1,100.00	1,100.00	1,113.00	1,113.00	3.71	3.76	-89.82	2.47	-801.91	801.91	796.63	5.28	151.876		
1,200.00	1,200.00	1,213.00	1,213.00	4.07	4.12	-89.82	2.47	-801.91	801.91	796.13	5.79	138.572		
1,300.00	1,300.00	1,313.00	1,313.00	4.43	4.47	-89.82	2.47	-801.91	801.91	795.62	6.29	127.411		
1,400.00	1,400.00	1,413.00	1,413.00	4.79	4.83	-89.82	2.47	-801.91	801.91	795.11	6.80	117.913		
1,500.00	1,500.00	1,513.00	1,513.00	5.14	5.19	-89.82	2.47	-801.91	801.91	794.61	7.31	109.733		
1,600.00	1,600.00	1,613.00	1,613.00	5.50	5.55	-89.82	2.47	-801.91	801.91	794.10	7.81	102.615		
1,700.00	1,700.00	1,713.00	1,713.00	5.86	5.91	-89.82	2.47	-801.91	801.91	793.59	8.32	96.364		
1,800.00	1,800.00	1,813.00	1,813.00	6.22	6.27	-89.82	2.47	-801.91	801.91	793.09	8.83	90.830		
1,900.00	1,900.00	1,913.00	1,913.00	6.58	6.62	-89.82	2.47	-801.91	801.91	792.58	9.34	85.898		
2,000.00	2,000.00	2,013.00	2,013.00	6.94	6.98	-89.82	2.47	-801.91	801.91	792.07	9.84	81.474		
2,100.00	2,100.00	2,113.00	2,113.00	7.29	7.34	-89.82	2.47	-801.91	801.91	791.56	10.35	77.483		
2,200.00	2,200.00	2,213.00	2,213.00	7.65	7.70	-89.82	2.47	-801.91	801.91	791.06	10.86	73.865		
2,300.00	2,300.00	2,313.00	2,313.00	8.01	8.06	-89.82	2.47	-801.91	801.91	790.55	11.36	70.570		
2,400.00	2,400.00	2,413.00	2,413.00	8.37	8.42	-89.82	2.47	-801.91	801.91	790.04	11.87	67.556		
2,500.00	2,500.00	2,513.00	2,513.00	8.73	8.78	-89.82	2.47	-801.91	801.91	789.54	12.38	64.789		
2,600.00	2,600.00	2,613.00	2,613.00	9.09	9.13	-89.82	2.47	-801.91	801.91	789.03	12.88	62.240		
2,700.00	2,700.00	2,713.00	2,713.00	9.45	9.49	-89.82	2.47	-801.91	801.91	788.52	13.39	59.883		
2,800.00	2,800.00	2,813.00	2,813.00	9.80	9.85	-89.82	2.47	-801.91	801.91	788.02	13.90	57.699		
2,900.00	2,900.00	2,913.00	2,913.00	10.16	10.21	-89.82	2.47	-801.91	801.91	787.51	14.41	55.668		
3,000.00	3,000.00	3,013.00	3,013.00	10.52	10.57	-89.82	2.47	-801.91	801.91	787.00	14.91	53.776		
3,100.00	3,100.00	3,113.00	3,113.00	10.88	10.93	-89.82	2.47	-801.91	801.91	786.49	15.42	52.008		
3,200.00	3,200.00	3,216.45	3,216.45	11.24	11.30	-89.82	2.47	-801.87	801.89	785.95	15.93	50.327		
3,300.00	3,300.00	3,342.91	3,342.88	11.60	11.73	-89.83	2.33	-799.24	799.80	783.32	16.49	48.511		
3,400.00	3,400.00	3,469.06	3,468.84	11.96	12.17	-89.86	1.96	-792.45	794.42	777.40	17.02	46.679		
3,500.00	3,499.99	3,594.45	3,593.75	12.30	12.60	13.71	1.38	-781.59	784.49	766.96	17.53	44.763		
3,600.00	3,599.91	3,718.38	3,716.79	12.64	13.03	13.79	0.59	-766.84	768.80	750.80	18.00	42.703		
3,700.00	3,699.69	3,840.23	3,837.23	12.98	13.47	13.95	-0.40	-748.46	747.46	729.00	18.46	40.491		
3,800.00	3,799.27	3,940.43	3,935.95	13.32	13.83	14.16	-1.32	-731.33	721.68	702.75	18.92	38.135		
3,900.00	3,898.57	4,036.33	4,030.43	13.67	14.19	14.44	-2.20	-714.90	693.42	674.03	19.39	35.759		
4,000.00	3,997.54	4,131.46	4,124.16	14.02	14.54	14.81	-3.08	-698.60	662.74	642.89	19.86	33.376		
4,100.00	4,096.09	4,225.77	4,217.06	14.38	14.90	15.29	-3.95	-682.44	629.69	609.37	20.32	30.988		
4,200.00	4,194.16	4,319.18	4,309.09	14.75	15.26	15.88	-4.81	-666.44	594.28	573.50	20.78	28.596		
4,300.00	4,291.70	4,411.64	4,400.18	15.12	15.61	16.64	-5.66	-650.60	556.58	535.34	21.24	26.203		
4,400.00	4,388.62	4,503.07	4,490.26	15.51	15.97	17.59	-6.50	-634.93	516.62	494.93	21.70	23.809		
4,500.00	4,484.86	4,593.43	4,579.27	15.92	16.32	18.80	-7.33	-619.45	474.50	452.34	22.15	21.418		
4,600.00	4,580.36	4,682.63	4,667.16	16.34	16.67	20.36	-8.15	-604.17	430.29	407.68	22.61	19.032		
4,700.00	4,675.05	4,770.64	4,753.85	16.78	17.02	22.41	-8.96	-589.09	384.14	361.08	23.07	16.655		
4,746.50	4,718.78	4,811.13	4,793.74	16.99	17.18	23.59	-9.33	-582.15	362.08	338.80	23.28	15.554		
4,800.00	4,769.00	4,857.56	4,839.48	17.24	17.37	24.97	-9.76	-574.20	336.56	313.03	23.53	14.305		
4,900.00	4,862.85	4,944.34	4,924.98	17.72	17.72	28.16	-10.56	-559.33	289.38	265.37	24.00	12.055		
5,000.00	4,956.70	5,031.12	5,010.47	18.21	18.07	32.53	-11.36	-544.46	243.20	218.69	24.51	9.921		

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 501H
Project:	Lea County, NM (NAD83)	TVD Reference:	3121.3' GE + 30' KB @ 3151.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3121.3' GE + 30' KB @ 3151.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 501H	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	5,050.55	5,117.90	5,095.97	18.71	18.42	38.77	-12.16	-529.59	198.72	173.63	25.09	7.922				
5,200.00	5,144.40	5,204.69	5,181.47	19.23	18.77	48.12	-12.96	-514.72	157.39	131.60	25.79	6.104				
5,300.00	5,238.25	5,291.47	5,266.96	19.76	19.13	62.54	-13.75	-499.85	122.43	95.69	26.74	4.579				
5,400.00	5,332.10	5,378.25	5,352.46	20.29	19.49	83.70	-14.55	-484.98	100.73	72.79	27.94	3.605				
5,448.05	5,377.20	5,419.95	5,393.54	20.55	19.66	95.66	-14.94	-477.84	97.85	69.46	28.40	3.446	CC, ES, SF			
5,500.00	5,425.95	5,465.03	5,437.95	20.84	19.85	108.55	-15.35	-470.11	101.19	72.57	28.63	3.535				
5,600.00	5,519.80	5,551.82	5,523.45	21.39	20.20	129.47	-16.15	-455.25	123.58	95.00	28.58	4.324				
5,700.00	5,613.65	5,638.60	5,608.94	21.95	20.57	143.65	-16.95	-440.38	158.87	130.33	28.55	5.565				
5,800.00	5,707.50	5,725.38	5,694.44	22.52	20.93	152.85	-17.75	-425.51	200.37	171.67	28.70	6.981				
5,900.00	5,801.36	5,812.16	5,779.93	23.10	21.29	159.00	-18.55	-410.64	244.93	215.95	28.98	8.450				
6,000.00	5,895.21	5,898.95	5,865.43	23.68	21.65	163.32	-19.34	-395.77	291.16	261.82	29.34	9.925				
6,100.00	5,989.06	5,985.73	5,950.92	24.27	22.02	166.47	-20.14	-380.90	338.37	308.64	29.73	11.382				
6,200.00	6,082.91	6,072.51	6,036.42	24.86	22.39	168.87	-20.94	-366.03	386.20	356.05	30.15	12.811				
6,300.00	6,176.76	6,159.29	6,121.91	25.46	22.75	170.75	-21.74	-351.16	434.45	403.87	30.58	14.207				
6,403.84	6,274.22	6,249.41	6,210.70	26.09	23.13	172.31	-22.57	-335.72	484.86	453.82	31.04	15.619				
6,500.00	6,364.87	6,333.45	6,293.49	26.66	23.49	173.57	-23.34	-321.32	530.69	499.21	31.48	16.858				
6,600.00	6,459.97	6,422.05	6,380.78	27.24	23.87	174.64	-24.16	-306.14	576.24	544.30	31.94	18.039				
6,700.00	6,555.85	6,511.84	6,469.23	27.79	24.25	175.53	-24.99	-290.76	619.57	587.16	32.42	19.113				
6,800.00	6,652.43	6,602.74	6,558.78	28.32	24.64	176.28	-25.82	-275.18	660.63	627.74	32.90	20.082				
6,900.00	6,749.66	6,694.69	6,649.37	28.83	25.03	176.92	-26.67	-259.43	699.37	665.98	33.38	20.951				
7,000.00	6,847.47	6,787.63	6,740.93	29.31	25.43	177.48	-27.52	-243.51	735.74	701.87	33.87	21.722				
7,100.00	6,945.80	6,881.49	6,833.40	29.77	25.84	177.98	-28.39	-227.42	769.71	735.35	34.36	22.399				
7,200.00	7,044.56	6,996.98	6,947.41	30.20	26.32	178.48	-29.37	-209.03	800.17	765.12	35.05	22.828				
7,300.00	7,143.70	7,118.26	7,067.67	30.61	26.82	178.87	-30.21	-193.42	825.31	789.55	35.76	23.082				
7,400.00	7,243.15	7,242.09	7,190.91	30.99	27.29	179.14	-30.86	-181.42	844.93	808.49	36.44	23.187				
7,500.00	7,342.84	7,367.87	7,316.42	31.35	27.75	179.32	-31.29	-173.32	858.91	821.81	37.10	23.153				
7,600.00	7,442.70	7,494.94	7,443.43	31.69	28.20	179.40	-31.51	-169.33	867.15	829.43	37.72	22.988				
7,700.00	7,542.66	7,607.18	7,555.66	32.01	28.57	179.41	-31.53	-168.91	870.09	831.83	38.26	22.744				
7,750.34	7,593.00	7,657.52	7,606.00	32.16	28.73	179.41	-31.53	-168.91	870.42	831.92	38.50	22.609				
7,800.00	7,642.66	7,707.18	7,655.66	32.30	28.90	179.41	-31.53	-168.91	870.42	831.68	38.74	22.470				
7,900.00	7,742.66	7,807.18	7,755.66	32.60	29.23	179.41	-31.53	-168.91	870.42	831.20	39.22	22.194				
8,000.00	7,842.66	7,907.18	7,855.66	32.89	29.56	179.41	-31.53	-168.91	870.42	830.72	39.70	21.925				
8,100.00	7,942.66	8,007.18	7,955.66	33.19	29.89	179.41	-31.53	-168.91	870.42	830.24	40.18	21.662				
8,200.00	8,042.66	8,107.18	8,055.66	33.49	30.22	179.41	-31.53	-168.91	870.42	829.75	40.67	21.404				
8,300.00	8,142.66	8,207.18	8,155.66	33.79	30.55	179.41	-31.53	-168.91	870.42	829.27	41.15	21.153				
8,400.00	8,242.66	8,307.18	8,255.66	34.09	30.89	179.41	-31.53	-168.91	870.42	828.79	41.63	20.907				
8,500.00	8,342.66	8,407.18	8,355.66	34.39	31.22	179.41	-31.53	-168.91	870.42	828.30	42.12	20.666				
8,600.00	8,442.66	8,507.18	8,455.66	34.69	31.56	179.41	-31.53	-168.91	870.42	827.82	42.60	20.431				
8,700.00	8,542.66	8,607.18	8,555.66	35.00	31.89	179.41	-31.53	-168.91	870.42	827.33	43.09	20.200				
8,800.00	8,642.66	8,707.18	8,655.66	35.30	32.23	179.41	-31.53	-168.91	870.42	826.84	43.58	19.975				
8,900.00	8,742.66	8,807.18	8,755.66	35.61	32.56	179.41	-31.53	-168.91	870.42	826.36	44.06	19.754				
9,000.00	8,842.66	8,907.18	8,855.66	35.91	32.90	179.41	-31.53	-168.91	870.42	825.87	44.55	19.538				
9,100.00	8,942.66	9,007.18	8,955.66	36.22	33.23	179.41	-31.53	-168.91	870.42	825.38	45.04	19.327				
9,200.00	9,042.66	9,107.18	9,055.66	36.53	33.57	179.41	-31.53	-168.91	870.42	824.90	45.52	19.120				
9,300.00	9,142.66	9,207.18	9,155.66	36.84	33.91	179.41	-31.53	-168.91	870.42	824.41	46.01	18.917				
9,400.00	9,242.66	9,307.18	9,255.66	37.15	34.25	179.41	-31.53	-168.91	870.42	823.92	46.50	18.718				
9,500.00	9,342.66	9,407.18	9,355.66	37.46	34.59	179.41	-31.53	-168.91	870.42	823.43	46.99	18.523				
9,600.00	9,442.66	9,507.18	9,455.66	37.77	34.93	179.41	-31.53	-168.91	870.42	822.94	47.48	18.332				
9,700.00	9,542.66	9,607.18	9,555.66	38.09	35.26	179.41	-31.53	-168.91	870.42	822.45	47.97	18.145				
9,800.00	9,642.66	9,707.18	9,655.66	38.40	35.60	179.41	-31.53	-168.91	870.42	821.96	48.46	17.961				
9,900.00	9,742.66	9,807.18	9,755.66	38.71	35.94	179.41	-31.53	-168.91	870.42	821.47	48.95	17.781				
10,000.00	9,842.66	9,907.18	9,855.66	39.03	36.28	179.41	-31.53	-168.91	870.42	820.98	49.44	17.605				

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 501H
Project:	Lea County, NM (NAD83)	TVD Reference:	3121.3' GE + 30' KB @ 3151.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3121.3' GE + 30' KB @ 3151.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 501H	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				
10,100.00	9,942.66	10,007.18	9,955.66	39.35	36.62	75.87	-31.53	-168.91	870.42	820.49	49.93	17.432				
10,200.00	10,042.66	10,107.18	10,055.66	39.66	36.97	75.87	-31.53	-168.91	870.42	820.00	50.43	17.262				
10,300.00	10,142.66	10,207.18	10,155.66	39.98	37.31	75.87	-31.53	-168.91	870.42	819.50	50.92	17.095				
10,354.38	10,197.04	10,261.56	10,210.04	40.15	37.49	75.87	-31.53	-168.91	870.42	819.24	51.18	17.005				
10,400.00	10,242.61	10,307.13	10,255.61	40.30	37.65	-103.64	-31.53	-168.91	870.85	819.44	51.41	16.940				
10,450.00	10,292.22	10,356.73	10,305.22	40.45	37.82	-103.88	-31.53	-168.91	872.32	820.67	51.65	16.889				
10,500.00	10,341.10	10,405.61	10,354.10	40.61	37.99	-104.28	-31.53	-168.91	874.92	823.02	51.89	16.859				
10,550.00	10,388.88	10,453.40	10,401.88	40.77	38.15	-104.79	-31.53	-168.91	878.76	826.62	52.14	16.854				
10,600.00	10,435.20	10,499.72	10,448.20	40.93	38.31	-105.38	-31.53	-168.91	884.01	831.63	52.38	16.876				
10,650.00	10,479.72	10,544.23	10,492.72	41.09	38.46	-105.99	-31.53	-168.91	890.86	838.24	52.62	16.929				
10,700.00	10,522.08	10,586.59	10,535.08	41.25	38.61	-106.54	-31.53	-168.91	899.52	846.66	52.86	17.017				
10,750.00	10,561.96	10,626.48	10,574.96	41.40	38.74	-106.99	-31.53	-168.91	910.18	857.09	53.09	17.144				
10,800.00	10,599.07	10,663.59	10,612.07	41.55	38.87	-107.25	-31.53	-168.91	923.04	869.72	53.32	17.312				
10,850.00	10,633.12	10,697.64	10,646.12	41.71	38.99	-107.26	-31.53	-168.91	938.26	884.73	53.54	17.526				
10,900.00	10,663.85	10,728.37	10,676.85	41.86	39.09	-106.95	-31.53	-168.91	955.96	902.22	53.74	17.787				
10,950.00	10,691.03	10,755.55	10,704.03	42.01	39.18	-106.25	-31.53	-168.91	976.19	922.25	53.94	18.098				
11,000.00	10,714.45	10,778.97	10,727.45	42.17	39.27	-105.08	-31.53	-168.91	998.94	944.82	54.12	18.459				
11,050.00	10,733.93	10,798.45	10,746.93	42.33	39.33	-103.39	-31.53	-168.91	1,024.15	969.87	54.28	18.869				
11,100.00	10,749.32	10,813.84	10,762.32	42.50	39.38	-101.12	-31.53	-168.91	1,051.67	997.26	54.42	19.326				
11,150.00	10,760.52	10,825.03	10,773.52	42.68	39.42	-98.20	-31.53	-168.91	1,081.31	1,026.78	54.53	19.828				
11,200.00	10,767.42	10,831.94	10,780.42	42.87	39.45	-94.63	-31.53	-168.91	1,112.81	1,058.18	54.63	20.370				
11,254.38	10,770.00	10,834.51	10,783.00	43.09	39.46	-90.00	-31.53	-168.91	1,148.82	1,094.12	54.71	21.000				
11,300.00	10,770.00	10,834.51	10,783.00	43.29	39.46	-90.00	-31.53	-168.91	1,180.15	1,125.40	54.76	21.553				
11,400.00	10,770.00	10,834.51	10,783.00	43.76	39.46	-90.00	-31.53	-168.91	1,251.92	1,197.06	54.86	22.820				
11,500.00	10,770.00	10,834.51	10,783.00	44.29	39.46	-90.00	-31.53	-168.91	1,327.34	1,272.39	54.95	24.154				
11,600.00	10,770.00	10,834.51	10,783.00	44.88	39.46	-90.00	-31.53	-168.91	1,405.83	1,350.80	55.04	25.543				
11,700.00	10,770.00	10,834.51	10,783.00	45.53	39.46	-90.00	-31.53	-168.91	1,486.91	1,431.80	55.11	26.980				
11,800.00	10,770.00	10,834.51	10,783.00	46.23	39.46	-90.00	-31.53	-168.91	1,570.17	1,514.99	55.18	28.456				
11,900.00	10,770.00	10,834.51	10,783.00	46.99	39.46	-90.00	-31.53	-168.91	1,655.29	1,600.05	55.24	29.965				
12,000.00	10,770.00	10,834.52	10,783.00	47.79	39.46	-90.00	-31.53	-168.91	1,741.98	1,686.69	55.29	31.504				
12,100.00	10,770.00	10,834.52	10,783.00	48.64	39.46	-90.00	-31.53	-168.91	1,830.04	1,774.69	55.34	33.066				
12,200.00	10,770.00	10,834.52	10,783.00	49.53	39.46	-90.00	-31.53	-168.91	1,919.26	1,863.87	55.39	34.649				
12,300.00	10,770.00	10,834.52	10,783.00	50.46	39.46	-90.00	-31.53	-168.91	2,009.50	1,954.07	55.43	36.250				
12,400.00	10,770.00	14,345.29	12,617.00	51.43	55.40	-155.23	-1,954.13	-149.91	2,019.76	1,971.00	48.76	41.420				
12,500.00	10,770.00	14,445.29	12,617.00	52.44	56.37	-155.23	-2,054.13	-148.92	2,019.76	1,970.21	49.55	40.762				
12,600.00	10,770.00	14,545.29	12,617.00	53.48	57.37	-155.23	-2,154.12	-147.93	2,019.76	1,969.40	50.36	40.106				
12,700.00	10,770.00	14,645.29	12,617.00	54.55	58.40	-155.23	-2,254.12	-146.94	2,019.76	1,968.56	51.20	39.452				
12,800.00	10,770.00	14,745.29	12,617.00	55.65	59.45	-155.23	-2,354.11	-145.96	2,019.76	1,967.70	52.06	38.800				
12,900.00	10,770.00	14,845.29	12,617.00	56.78	60.53	-155.23	-2,454.11	-144.97	2,019.76	1,966.82	52.94	38.155				
13,000.00	10,770.00	14,945.29	12,617.00	57.93	61.64	-155.23	-2,554.10	-143.98	2,019.76	1,965.92	53.84	37.516				
13,100.00	10,770.00	15,045.29	12,617.00	59.11	62.77	-155.23	-2,654.10	-142.99	2,019.76	1,965.00	54.76	36.885				
13,200.00	10,770.00	15,145.29	12,617.00	60.31	63.93	-155.23	-2,754.09	-142.00	2,019.75	1,964.06	55.70	36.262				
13,300.00	10,770.00	15,245.29	12,617.00	61.54	65.10	-155.23	-2,854.09	-141.02	2,019.75	1,963.10	56.66	35.648				
13,400.00	10,770.00	15,345.29	12,617.00	62.78	66.30	-155.23	-2,954.08	-140.03	2,019.75	1,962.12	57.63	35.044				
13,500.00	10,770.00	15,445.29	12,617.00	64.04	67.52	-155.23	-3,054.08	-139.04	2,019.75	1,961.12	58.63	34.451				
13,600.00	10,770.00	15,545.29	12,617.00	65.32	68.75	-155.23	-3,154.07	-138.05	2,019.75	1,960.12	59.63	33.870				
13,700.00	10,770.00	15,645.29	12,617.00	66.62	70.00	-155.24	-3,254.07	-137.06	2,019.75	1,959.10	60.65	33.300				
13,800.00	10,770.00	15,745.29	12,617.00	67.93	71.27	-155.24	-3,354.06	-136.07	2,019.75	1,958.06	61.69	32.741				
13,900.00	10,770.00	15,845.29	12,617.00	69.25	72.55	-155.24	-3,454.06	-135.09	2,019.75	1,957.01	62.74	32.194				
14,000.00	10,770.00	15,945.29	12,617.00	70.59	73.85	-155.24	-3,554.05	-134.10	2,019.75	1,955.95	63.80	31.659				
14,100.00	10,770.00	16,045.29	12,617.00	71.95	75.16	-155.24	-3,654.05	-133.11	2,019.74	1,954.88	64.87	31.136				
14,200.00	10,770.00	16,145.29	12,617.00	73.31	76.48	-155.24	-3,754.04	-132.12	2,019.74	1,953.79	65.95	30.625				

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 501H
Project:	Lea County, NM (NAD83)	TVD Reference:	3121.3' GE + 30' KB @ 3151.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3121.3' GE + 30' KB @ 3151.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 501H	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		Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor				
							+N/-S (usft)	+E/-W (usft)								
14,300.00	10,770.00	16,245.29	12,617.00	74.69	77.82	-155.24	-3,854.04	-131.13	2,019.74	1,952.70	67.04	30.125				
14,400.00	10,770.00	16,345.29	12,617.00	76.08	79.17	-155.24	-3,954.03	-130.14	2,019.74	1,951.59	68.15	29.638				
14,500.00	10,770.00	16,445.29	12,617.00	77.48	80.53	-155.24	-4,054.03	-129.16	2,019.74	1,950.48	69.26	29.162				
14,600.00	10,770.00	16,545.29	12,617.00	78.89	81.90	-155.24	-4,154.02	-128.17	2,019.74	1,949.36	70.38	28.698				
14,700.00	10,770.00	16,645.29	12,617.00	80.31	83.28	-155.24	-4,254.02	-127.18	2,019.74	1,948.23	71.51	28.244				
14,800.00	10,770.00	16,745.29	12,617.00	81.73	84.67	-155.24	-4,354.01	-126.19	2,019.74	1,947.09	72.65	27.801				
14,900.00	10,770.00	16,845.29	12,617.00	83.17	86.07	-155.24	-4,454.01	-125.20	2,019.74	1,945.94	73.79	27.371				
15,000.00	10,770.00	16,945.29	12,617.00	84.61	87.48	-155.24	-4,554.00	-124.21	2,019.73	1,944.79	74.94	26.950				
15,100.00	10,770.00	17,045.29	12,617.00	86.06	88.90	-155.24	-4,654.00	-123.23	2,019.73	1,943.63	76.10	26.539				
15,200.00	10,770.00	17,145.29	12,617.00	87.52	90.32	-155.24	-4,753.99	-122.24	2,019.73	1,942.46	77.27	26.138				
15,300.00	10,770.00	17,245.29	12,617.00	88.99	91.75	-155.24	-4,853.99	-121.25	2,019.73	1,941.29	78.44	25.748				
15,400.00	10,770.00	17,345.29	12,617.00	90.46	93.19	-155.24	-4,953.98	-120.26	2,019.73	1,940.11	79.62	25.367				
15,500.00	10,770.00	17,445.29	12,617.00	91.94	94.64	-155.24	-5,053.98	-119.27	2,019.73	1,938.92	80.80	24.995				
15,600.00	10,770.00	17,545.29	12,617.00	93.42	96.09	-155.24	-5,153.97	-118.29	2,019.73	1,937.73	81.99	24.632				
15,700.00	10,770.00	17,645.29	12,617.00	94.91	97.55	-155.24	-5,253.97	-117.30	2,019.73	1,936.54	83.19	24.279				
15,800.00	10,770.00	17,745.29	12,617.00	96.40	99.02	-155.24	-5,353.96	-116.31	2,019.73	1,935.34	84.39	23.934				
15,900.00	10,770.00	17,845.29	12,617.00	97.90	100.49	-155.24	-5,453.96	-115.32	2,019.72	1,934.13	85.59	23.597				
16,000.00	10,770.00	17,945.29	12,617.00	99.41	101.97	-155.24	-5,553.95	-114.33	2,019.72	1,932.92	86.80	23.269				
16,100.00	10,770.00	18,045.29	12,617.00	100.92	103.45	-155.24	-5,653.95	-113.34	2,019.72	1,931.71	88.01	22.948				
16,200.00	10,770.00	18,145.29	12,617.00	102.43	104.94	-155.24	-5,753.94	-112.36	2,019.72	1,930.49	89.23	22.635				
16,300.00	10,770.00	18,245.29	12,617.00	103.95	106.43	-155.24	-5,853.94	-111.37	2,019.72	1,929.27	90.45	22.330				
16,400.00	10,770.00	18,345.29	12,617.00	105.47	107.92	-155.24	-5,953.93	-110.38	2,019.72	1,928.05	91.67	22.032				
16,500.00	10,770.00	18,445.29	12,617.00	107.00	109.43	-155.24	-6,053.93	-109.39	2,019.72	1,926.82	92.90	21.741				
16,600.00	10,770.00	18,545.29	12,617.00	108.52	110.93	-155.24	-6,153.92	-108.40	2,019.72	1,925.59	94.13	21.456				
16,700.00	10,770.00	18,645.29	12,617.00	110.06	112.44	-155.24	-6,253.92	-107.41	2,019.72	1,924.35	95.36	21.179				
16,800.00	10,770.00	18,745.29	12,617.00	111.59	113.95	-155.24	-6,353.92	-106.43	2,019.71	1,923.11	96.60	20.908				
16,900.00	10,770.00	18,845.29	12,617.00	113.13	115.47	-155.24	-6,453.91	-105.44	2,019.71	1,921.87	97.84	20.643				
17,000.00	10,770.00	18,945.29	12,617.00	114.68	116.99	-155.24	-6,553.91	-104.45	2,019.71	1,920.63	99.08	20.384				
17,100.00	10,770.00	19,045.29	12,617.00	116.22	118.52	-155.24	-6,653.90	-103.46	2,019.71	1,919.38	100.33	20.131				
17,200.00	10,770.00	19,145.29	12,617.00	117.77	120.04	-155.24	-6,753.90	-102.47	2,019.71	1,918.13	101.58	19.884				
17,300.00	10,770.00	19,245.29	12,617.00	119.32	121.58	-155.24	-6,853.89	-101.49	2,019.71	1,916.88	102.83	19.642				
17,400.00	10,770.00	19,345.29	12,617.00	120.88	123.11	-155.24	-6,953.89	-100.50	2,019.71	1,915.63	104.08	19.406				
17,500.00	10,770.00	19,445.29	12,617.00	122.43	124.65	-155.24	-7,053.88	-99.51	2,019.71	1,914.37	105.33	19.174				
17,600.00	10,770.00	19,545.29	12,617.00	123.99	126.19	-155.24	-7,153.88	-98.52	2,019.71	1,913.12	106.59	18.949				
17,700.00	10,770.00	19,645.29	12,617.00	125.55	127.73	-155.24	-7,253.87	-97.53	2,019.70	1,911.86	107.85	18.727				
17,800.00	10,770.00	19,745.29	12,617.00	127.12	129.28	-155.24	-7,353.87	-96.54	2,019.70	1,910.59	109.11	18.511				
17,900.00	10,770.00	19,845.29	12,617.00	128.68	130.82	-155.24	-7,453.86	-95.56	2,019.70	1,909.33	110.37	18.299				
18,000.00	10,770.00	19,945.29	12,617.00	130.25	132.37	-155.24	-7,553.86	-94.57	2,019.70	1,908.07	111.63	18.092				
18,100.00	10,770.00	20,045.29	12,617.00	131.82	133.93	-155.24	-7,653.85	-93.58	2,019.70	1,906.80	112.90	17.889				
18,200.00	10,770.00	20,145.29	12,617.00	133.39	135.48	-155.24	-7,753.85	-92.59	2,019.70	1,905.53	114.17	17.691				
18,300.00	10,770.00	20,245.29	12,617.00	134.97	137.04	-155.24	-7,853.84	-91.60	2,019.70	1,904.26	115.44	17.496				
18,400.00	10,770.00	20,345.29	12,617.00	136.54	138.60	-155.24	-7,953.84	-90.61	2,019.70	1,902.99	116.71	17.306				
18,500.00	10,770.00	20,445.29	12,617.00	138.12	140.16	-155.24	-8,053.83	-89.63	2,019.70	1,901.72	117.98	17.119				
18,600.00	10,770.00	20,545.29	12,617.00	139.70	141.73	-155.24	-8,153.83	-88.64	2,019.69	1,900.44	119.25	16.936				
18,700.00	10,770.00	20,645.29	12,617.00	141.28	143.29	-155.24	-8,253.82	-87.65	2,019.69	1,899.17	120.52	16.758				
18,800.00	10,770.00	20,745.29	12,617.00	142.86	144.86	-155.24	-8,353.82	-86.66	2,019.69	1,897.89	121.80	16.582				
18,900.00	10,770.00	20,845.29	12,617.00	144.45	146.43	-155.24	-8,453.81	-85.67	2,019.69	1,896.62	123.07	16.410				
19,000.00	10,770.00	20,945.29	12,617.00	146.03	148.00	-155.24	-8,553.81	-84.69	2,019.69	1,895.34	124.35	16.242				
19,100.00	10,770.00	21,045.29	12,617.00	147.62	149.57	-155.24	-8,653.80	-83.70	2,019.69	1,894.06	125.63	16.076				
19,200.00	10,770.00	21,145.29	12,617.00	149.21	151.15	-155.24	-8,753.80	-82.71	2,019.69	1,892.78	126.91	15.914				
19,300.00	10,770.00	21,245.29	12,617.00	150.80	152.72	-155.24	-8,853.79	-81.72	2,019.69	1,891.49	128.19	15.755				
19,400.00	10,770.00	21,345.29	12,617.00	152.39	154.30	-155.24	-8,953.79	-80.73	2,019.69	1,890.21	129.47	15.599				

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 501H
Project:	Lea County, NM (NAD83)	TVD Reference:	3121.3' GE + 30' KB @ 3151.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3121.3' GE + 30' KB @ 3151.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 501H	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	
19,500.00	10,770.00	21,445.29	12,617.00	153.98	155.88	-155.24	-9,053.78	-79.74	2,019.68	1,888.93	130.76	15.446	
19,600.00	10,770.00	21,545.29	12,617.00	155.57	157.46	-155.24	-9,153.78	-78.76	2,019.68	1,887.65	132.04	15.296	
19,700.00	10,770.00	21,645.29	12,617.00	157.17	159.04	-155.24	-9,253.77	-77.77	2,019.68	1,886.36	133.32	15.149	
19,800.00	10,770.00	21,745.29	12,617.00	158.76	160.63	-155.24	-9,353.77	-76.78	2,019.68	1,885.08	134.61	15.004	
19,900.00	10,770.00	21,845.29	12,617.00	160.36	162.21	-155.24	-9,453.76	-75.79	2,019.68	1,883.79	135.89	14.863	
20,000.00	10,770.00	21,945.29	12,617.00	161.96	163.80	-155.24	-9,553.76	-74.80	2,019.68	1,882.50	137.18	14.723	
20,100.00	10,770.00	22,045.29	12,617.00	163.56	165.39	-155.24	-9,653.75	-73.81	2,019.68	1,881.21	138.47	14.586	
20,200.00	10,770.00	22,145.29	12,617.00	165.16	166.98	-155.24	-9,753.75	-72.83	2,019.68	1,879.92	139.75	14.452	
20,300.00	10,770.00	22,245.29	12,617.00	166.76	168.57	-155.24	-9,853.74	-71.84	2,019.67	1,878.64	141.04	14.320	
20,400.00	10,770.00	22,345.29	12,617.00	168.36	170.16	-155.24	-9,953.74	-70.85	2,019.67	1,877.35	142.33	14.190	
20,500.00	10,770.00	22,445.29	12,617.00	169.97	171.75	-155.24	-10,053.73	-69.86	2,019.67	1,876.06	143.62	14.063	
20,600.00	10,770.00	22,545.29	12,617.00	171.57	173.34	-155.24	-10,153.73	-68.87	2,019.67	1,874.77	144.90	13.938	
20,700.00	10,770.00	22,645.29	12,617.00	173.18	174.94	-155.24	-10,253.72	-67.89	2,019.67	1,873.48	146.19	13.815	
20,800.00	10,770.00	22,745.29	12,617.00	174.78	176.46	-155.24	-10,353.72	-66.90	2,019.67	1,872.28	147.39	13.703	
20,841.66	10,770.00	22,786.96	12,617.00	175.40	177.06	-155.24	-10,395.38	-66.49	2,019.67	1,871.92	147.75	13.670	

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



Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well Tatanka Fed Com 501H
Project:	Lea County, NM (NAD83)	TVD Reference:	3121.3' GE + 30' KB @ 3151.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3121.3' GE + 30' KB @ 3151.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 501H	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	89.44	29.22	2,985.07	2,985.35					
100.00	100.00	71.70	71.70	0.13	0.09	89.44	29.22	2,985.07	2,985.21	2,985.06	0.15	N/A		
200.00	200.00	171.70	171.70	0.48	0.38	89.44	29.22	2,985.07	2,985.21	2,984.60	0.62	4,839.517		
300.00	300.00	271.70	271.70	0.84	0.74	89.44	29.22	2,985.07	2,985.21	2,984.09	1.12	2,660.839		
400.00	400.00	371.70	371.70	1.20	1.10	89.44	29.22	2,985.07	2,985.21	2,983.58	1.63	1,833.503		
500.00	500.00	471.70	471.70	1.56	1.46	89.44	29.22	2,985.07	2,985.21	2,983.08	2.13	1,398.405		
600.00	600.00	571.70	571.70	1.92	1.82	89.44	29.22	2,985.07	2,985.21	2,982.57	2.64	1,130.141		
700.00	700.00	671.70	671.70	2.28	2.17	89.44	29.22	2,985.07	2,985.21	2,982.06	3.15	948.214		
800.00	800.00	771.70	771.70	2.63	2.53	89.44	29.22	2,985.07	2,985.21	2,981.56	3.66	816.727		
900.00	900.00	871.70	871.70	2.99	2.89	89.44	29.22	2,985.07	2,985.21	2,981.05	4.16	717.261		
1,000.00	1,000.00	971.70	971.70	3.35	3.25	89.44	29.22	2,985.07	2,985.21	2,980.54	4.67	639.389		
1,100.00	1,100.00	1,071.70	1,071.70	3.71	3.61	89.44	29.22	2,985.07	2,985.21	2,980.04	5.18	576.769		
1,200.00	1,200.00	1,171.70	1,171.70	4.07	3.97	89.44	29.22	2,985.07	2,985.21	2,979.53	5.68	525.320		
1,300.00	1,300.00	1,271.70	1,271.70	4.43	4.33	89.44	29.22	2,985.07	2,985.21	2,979.02	6.19	482.297		
1,400.00	1,400.00	1,371.70	1,371.70	4.79	4.68	89.44	29.22	2,985.07	2,985.21	2,978.52	6.70	445.787		
1,500.00	1,500.00	1,471.70	1,471.70	5.14	5.04	89.44	29.22	2,985.07	2,985.21	2,978.01	7.20	414.415		
1,600.00	1,600.00	1,571.70	1,571.70	5.50	5.40	89.44	29.22	2,985.07	2,985.21	2,977.50	7.71	387.169		
1,700.00	1,700.00	1,671.70	1,671.70	5.86	5.76	89.44	29.22	2,985.07	2,985.21	2,977.00	8.22	363.284		
1,800.00	1,800.00	1,771.70	1,771.70	6.22	6.12	89.44	29.22	2,985.07	2,985.21	2,976.49	8.72	342.175		
1,900.00	1,900.00	1,871.70	1,871.70	6.58	6.48	89.44	29.22	2,985.07	2,985.21	2,975.98	9.23	323.384		
2,000.00	2,000.00	1,971.70	1,971.70	6.94	6.83	89.44	29.22	2,985.07	2,985.21	2,975.47	9.74	306.549		
2,100.00	2,100.00	2,071.70	2,071.70	7.29	7.19	89.44	29.22	2,985.07	2,985.21	2,974.97	10.25	291.381		
2,200.00	2,200.00	2,171.70	2,171.70	7.65	7.55	89.44	29.22	2,985.07	2,985.21	2,974.46	10.75	277.643		
2,300.00	2,300.00	2,271.70	2,271.70	8.01	7.91	89.44	29.22	2,985.07	2,985.21	2,973.95	11.26	265.141		
2,400.00	2,400.00	2,371.70	2,371.70	8.37	8.27	89.44	29.22	2,985.07	2,985.21	2,973.45	11.77	253.718		
2,500.00	2,500.00	2,471.70	2,471.70	8.73	8.63	89.44	29.22	2,985.07	2,985.21	2,972.94	12.27	243.237		
2,600.00	2,600.00	2,571.70	2,571.70	9.09	8.99	89.44	29.22	2,985.07	2,985.21	2,972.43	12.78	233.589		
2,700.00	2,700.00	2,671.70	2,671.70	9.45	9.34	89.44	29.22	2,985.07	2,985.21	2,971.93	13.29	224.676		
2,800.00	2,800.00	2,771.70	2,771.70	9.80	9.70	89.44	29.22	2,985.07	2,985.21	2,971.42	13.79	216.419		
2,900.00	2,900.00	2,871.70	2,871.70	10.16	10.06	89.44	29.22	2,985.07	2,985.21	2,970.91	14.30	208.747		
3,000.00	3,000.00	2,971.70	2,971.70	10.52	10.42	89.44	29.22	2,985.07	2,985.21	2,970.41	14.81	201.600		
3,100.00	3,100.00	3,071.70	3,071.70	10.88	10.78	89.44	29.22	2,985.07	2,985.21	2,969.90	15.31	194.927		
3,200.00	3,200.00	3,171.70	3,171.70	11.24	11.14	89.44	29.22	2,985.07	2,985.21	2,969.39	15.82	188.681		
3,300.00	3,300.00	3,271.70	3,271.70	11.60	11.50	89.44	29.22	2,985.07	2,985.21	2,968.88	16.33	182.823		
3,400.00	3,400.00	3,566.38	3,566.15	11.96	12.51	89.45	28.39	2,975.53	2,982.01	2,964.74	17.27	172.640		
3,500.00	3,499.99	3,780.26	3,779.10	12.30	13.25	-167.01	26.68	2,955.93	2,973.26	2,955.27	17.99	165.243		
3,600.00	3,599.91	3,880.05	3,878.35	12.64	13.60	-167.03	25.77	2,945.63	2,966.74	2,948.27	18.47	160.608		
3,700.00	3,699.69	3,979.96	3,977.72	12.98	13.96	-167.06	24.87	2,935.30	2,962.76	2,943.81	18.95	156.322		
3,800.00	3,799.27	4,079.94	4,077.16	13.32	14.31	-167.09	23.97	2,924.97	2,961.33	2,941.90	19.44	152.366		
3,805.95	3,805.19	4,085.90	4,083.08	13.34	14.33	-167.09	23.92	2,924.36	2,961.33	2,941.86	19.46	152.141 CC, ES		
3,900.00	3,898.57	4,179.92	4,176.60	13.67	14.67	-167.12	23.07	2,914.65	2,962.46	2,942.54	19.92	148.719		
4,000.00	3,997.54	4,279.82	4,275.96	14.02	15.03	-167.16	22.17	2,904.32	2,966.13	2,945.73	20.41	145.362		
4,100.00	4,096.09	4,379.57	4,375.18	14.38	15.39	-167.19	21.27	2,894.02	2,972.36	2,951.47	20.89	142.276		
4,200.00	4,194.16	4,479.12	4,474.19	14.75	15.75	-167.23	20.37	2,883.73	2,981.14	2,959.76	21.38	139.446		
4,300.00	4,291.70	4,578.39	4,572.92	15.12	16.11	-167.27	19.47	2,873.48	2,992.46	2,970.60	21.87	136.854		
4,400.00	4,388.62	4,677.31	4,671.31	15.51	16.47	-167.32	18.58	2,863.26	3,006.33	2,983.97	22.35	134.488		
4,500.00	4,484.86	4,775.82	4,769.29	15.92	16.83	-167.36	17.69	2,853.08	3,022.72	2,999.88	22.84	132.332		
4,600.00	4,480.36	4,873.85	4,866.79	16.34	17.20	-167.41	16.81	2,842.96	3,041.64	3,018.31	23.33	130.373		
4,700.00	4,475.05	4,971.32	4,963.74	16.78	17.56	-167.46	15.93	2,832.89	3,063.07	3,039.26	23.82	128.601		
4,746.50	4,718.78	5,016.44	5,008.61	16.99	17.72	-167.48	15.52	2,828.22	3,073.89	3,049.85	24.05	127.835		
4,800.00	4,769.00	5,068.28	5,060.17	17.24	17.91	-167.55	15.05	2,822.87	3,086.66	3,062.35	24.31	126.987		
4,900.00	4,862.85	5,165.16	5,156.53	17.72	18.27	-167.67	14.18	2,812.86	3,110.52	3,085.72	24.80	125.439		

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 501H
Project:	Lea County, NM (NAD83)	TVD Reference:	3121.3' GE + 30' KB @ 3151.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3121.3' GE + 30' KB @ 3151.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 501H	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	4,956.70	5,262.05	5,252.89	18.21	18.63	-167.80	13.30	2,802.85	3,134.40	3,109.11	25.29	123.938		
5,100.00	5,050.55	5,358.93	5,349.26	18.71	19.00	-167.92	12.43	2,792.84	3,158.29	3,132.50	25.79	122.482		
5,200.00	5,144.40	5,455.82	5,445.62	19.23	19.36	-168.04	11.56	2,782.83	3,182.19	3,155.91	26.28	121.069		
5,300.00	5,238.25	5,552.70	5,541.98	19.76	19.72	-168.16	10.68	2,772.82	3,206.11	3,179.33	26.78	119.698		
5,400.00	5,332.10	5,649.59	5,638.35	20.29	20.09	-168.27	9.81	2,762.81	3,230.04	3,202.75	27.29	118.368		
5,500.00	5,425.95	5,746.47	5,734.71	20.84	20.45	-168.39	8.93	2,752.80	3,253.99	3,226.19	27.79	117.078		
5,600.00	5,519.80	5,843.36	5,831.07	21.39	20.82	-168.50	8.06	2,742.79	3,277.94	3,249.64	28.30	115.826		
5,700.00	5,613.65	5,940.24	5,927.44	21.95	21.18	-168.61	7.18	2,732.79	3,301.91	3,273.10	28.81	114.611		
5,800.00	5,707.50	6,037.13	6,023.80	22.52	21.55	-168.72	6.31	2,722.78	3,325.89	3,296.57	29.32	113.432		
5,900.00	5,801.36	6,134.02	6,120.16	23.10	21.92	-168.83	5.44	2,712.77	3,349.88	3,320.04	29.83	112.287		
6,000.00	5,895.21	6,230.90	6,216.52	23.68	22.28	-168.94	4.56	2,702.76	3,373.88	3,343.53	30.35	111.176		
6,100.00	5,989.06	6,327.79	6,312.89	24.27	22.65	-169.04	3.69	2,692.75	3,397.89	3,367.03	30.86	110.097		
6,200.00	6,082.91	6,424.67	6,409.25	24.86	23.02	-169.15	2.81	2,682.74	3,421.91	3,390.53	31.38	109.048		
6,300.00	6,176.76	6,521.56	6,505.61	25.46	23.39	-169.25	1.94	2,672.73	3,445.95	3,414.05	31.90	108.030		
6,403.84	6,274.22	6,622.17	6,605.68	26.09	23.77	-169.35	1.03	2,662.74	3,470.91	3,438.48	32.44	107.002		
6,500.00	6,364.87	6,715.62	6,698.63	26.66	24.13	-169.51	0.19	2,652.68	3,492.89	3,459.95	32.94	106.042		
6,600.00	6,459.97	6,813.37	6,795.86	27.24	24.50	-169.65	-0.69	2,642.58	3,513.28	3,479.82	33.46	104.998		
6,700.00	6,555.85	6,911.65	6,893.60	27.79	24.88	-169.78	-1.58	2,632.43	3,531.15	3,497.17	33.98	103.908		
6,800.00	6,652.43	7,010.37	6,991.79	28.32	25.26	-169.89	-2.47	2,622.23	3,546.49	3,511.99	34.51	102.778		
6,900.00	6,749.66	7,109.47	7,090.36	28.83	25.64	-169.98	-3.37	2,611.99	3,559.28	3,524.26	35.03	101.611		
7,000.00	6,847.47	7,167.44	7,148.03	29.31	25.86	-170.04	-3.87	2,606.26	3,570.02	3,534.57	35.44	100.725		
7,100.00	6,945.80	7,200.00	7,180.47	29.77	25.98	-170.08	-4.12	2,603.41	3,579.61	3,543.83	35.78	100.040		
7,200.00	7,044.56	7,270.25	7,250.53	30.20	26.24	-170.14	-4.57	2,598.19	3,587.78	3,551.57	36.21	99.071		
7,300.00	7,143.70	7,300.00	7,280.22	30.61	26.35	-170.16	-4.73	2,596.37	3,594.95	3,558.42	36.52	98.429		
7,400.00	7,243.15	7,373.06	7,353.20	30.99	26.62	-170.20	-5.03	2,592.88	3,600.63	3,563.68	36.95	97.449		
7,500.00	7,342.84	7,424.47	7,404.58	31.35	26.80	-170.22	-5.18	2,591.26	3,605.20	3,567.90	37.30	96.649		
7,600.00	7,442.70	7,500.00	7,480.10	31.69	27.07	-170.24	-5.28	2,590.12	3,608.70	3,570.98	37.72	95.666		
7,700.00	7,542.66	7,534.26	7,514.36	32.01	27.18	-170.25	-5.28	2,590.07	3,610.64	3,572.64	38.00	95.012		
7,750.34	7,593.00	7,584.60	7,564.70	32.16	27.36	86.21	-5.28	2,590.07	3,610.97	3,572.72	38.25	94.414		
7,800.00	7,642.66	7,634.26	7,614.36	32.30	27.53	86.21	-5.28	2,590.07	3,610.97	3,572.48	38.49	93.826		
7,900.00	7,742.66	7,734.26	7,714.36	32.60	27.87	86.21	-5.28	2,590.07	3,610.97	3,572.00	38.97	92.662		
8,000.00	7,842.66	7,834.26	7,814.36	32.89	28.21	86.21	-5.28	2,590.07	3,610.97	3,571.52	39.45	91.525		
8,100.00	7,942.66	7,934.26	7,914.36	33.19	28.56	86.21	-5.28	2,590.07	3,610.97	3,571.03	39.94	90.415		
8,200.00	8,042.66	8,034.26	8,014.36	33.49	28.90	86.21	-5.28	2,590.07	3,610.97	3,570.55	40.42	89.330		
8,300.00	8,142.66	8,134.26	8,114.36	33.79	29.25	86.21	-5.28	2,590.07	3,610.97	3,570.06	40.91	88.269		
8,400.00	8,242.66	8,234.26	8,214.36	34.09	29.59	86.21	-5.28	2,590.07	3,610.97	3,569.57	41.39	87.233		
8,500.00	8,342.66	8,334.26	8,314.36	34.39	29.94	86.21	-5.28	2,590.07	3,610.97	3,569.09	41.88	86.219		
8,600.00	8,442.66	8,434.26	8,414.36	34.69	30.28	86.21	-5.28	2,590.07	3,610.97	3,568.60	42.37	85.228		
8,700.00	8,542.66	8,534.26	8,514.36	35.00	30.63	86.21	-5.28	2,590.07	3,610.97	3,568.11	42.86	84.258		
8,800.00	8,642.66	8,634.26	8,614.36	35.30	30.98	86.21	-5.28	2,590.07	3,610.97	3,567.63	43.34	83.309		
8,900.00	8,742.66	8,734.26	8,714.36	35.61	31.32	86.21	-5.28	2,590.07	3,610.97	3,567.14	43.83	82.381		
9,000.00	8,842.66	8,834.26	8,814.36	35.91	31.67	86.21	-5.28	2,590.07	3,610.97	3,566.65	44.32	81.472		
9,100.00	8,942.66	8,934.26	8,914.36	36.22	32.02	86.21	-5.28	2,590.07	3,610.97	3,566.16	44.81	80.583		
9,200.00	9,042.66	9,034.26	9,014.36	36.53	32.36	86.21	-5.28	2,590.07	3,610.97	3,565.67	45.30	79.712		
9,300.00	9,142.66	9,134.26	9,114.36	36.84	32.71	86.21	-5.28	2,590.07	3,610.97	3,565.18	45.79	78.859		
9,400.00	9,242.66	9,234.26	9,214.36	37.15	33.06	86.21	-5.28	2,590.07	3,610.97	3,564.69	46.28	78.023		
9,500.00	9,342.66	9,334.26	9,314.36	37.46	33.41	86.21	-5.28	2,590.07	3,610.97	3,564.20	46.77	77.204		
9,600.00	9,442.66	9,434.26	9,414.36	37.77	33.75	86.21	-5.28	2,590.07	3,610.97	3,563.71	47.26	76.402		
9,700.00	9,542.66	9,534.26	9,514.36	38.09	34.10	86.21	-5.28	2,590.07	3,610.97	3,563.22	47.75	75.616		
9,800.00	9,642.66	9,634.26	9,614.36	38.40	34.45	86.21	-5.28	2,590.07	3,610.97	3,562.72	48.25	74.845		
9,900.00	9,742.66	9,734.26	9,714.36	38.71	34.80	86.21	-5.28	2,590.07	3,610.97	3,562.23	48.74	74.090		
10,000.00	9,842.66	9,834.26	9,814.36	39.03	35.15	86.21	-5.28	2,590.07	3,610.97	3,561.74	49.23	73.349		

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 501H
Project:	Lea County, NM (NAD83)	TVD Reference:	3121.3' GE + 30' KB @ 3151.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3121.3' GE + 30' KB @ 3151.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 501H	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	9,942.66	9,934.26	9,914.36	39.35	35.50	86.21	-5.28	2,590.07	3,610.97	3,561.25	49.72	72.622		
10,200.00	10,042.66	10,034.26	10,014.36	39.66	35.85	86.21	-5.28	2,590.07	3,610.97	3,560.75	50.22	71.909		
10,300.00	10,142.66	10,134.26	10,114.36	39.98	36.20	86.21	-5.28	2,590.07	3,610.97	3,560.26	50.71	71.210		
10,354.38	10,197.04	10,188.64	10,168.74	40.15	36.39	86.21	-5.28	2,590.07	3,610.97	3,559.99	50.98	70.835		
10,400.00	10,242.61	10,234.21	10,214.31	40.30	36.55	-93.24	-5.28	2,590.07	3,611.07	3,559.87	51.20	70.529		
10,450.00	10,292.22	10,283.82	10,263.92	40.45	36.72	-93.30	-5.28	2,590.07	3,611.43	3,559.98	51.44	70.205		
10,500.00	10,341.10	10,332.70	10,312.80	40.61	36.89	-93.40	-5.28	2,590.07	3,612.05	3,560.37	51.68	69.891		
10,550.00	10,388.88	10,380.48	10,360.58	40.77	37.06	-93.53	-5.28	2,590.07	3,612.98	3,561.06	51.92	69.589		
10,600.00	10,435.20	10,426.80	10,406.90	40.93	37.22	-93.68	-5.28	2,590.07	3,614.25	3,562.10	52.15	69.301		
10,650.00	10,479.72	10,471.32	10,451.42	41.09	37.38	-93.83	-5.28	2,590.07	3,615.93	3,563.55	52.38	69.030		
10,700.00	10,522.08	10,513.68	10,493.78	41.25	37.53	-93.97	-5.28	2,590.07	3,618.06	3,565.46	52.61	68.777		
10,750.00	10,561.96	10,553.56	10,533.66	41.40	37.67	-94.09	-5.28	2,590.07	3,620.72	3,567.90	52.82	68.544		
10,800.00	10,599.07	10,590.67	10,570.77	41.55	37.80	-94.16	-5.28	2,590.07	3,623.96	3,570.93	53.03	68.334		
10,850.00	10,633.12	10,624.72	10,604.82	41.71	37.91	-94.16	-5.28	2,590.07	3,627.86	3,574.62	53.24	68.147		
10,900.00	10,663.85	10,655.45	10,635.55	41.86	38.02	-94.08	-5.28	2,590.07	3,632.47	3,579.04	53.43	67.986		
10,950.00	10,691.03	10,682.63	10,662.73	42.01	38.12	-93.90	-5.28	2,590.07	3,637.83	3,584.21	53.61	67.852		
11,000.00	10,714.45	10,706.05	10,686.15	42.17	38.20	-93.61	-5.28	2,590.07	3,643.99	3,590.20	53.79	67.745		
11,050.00	10,733.93	10,725.53	10,705.63	42.33	38.27	-93.19	-5.28	2,590.07	3,650.96	3,597.01	53.95	67.668		
11,100.00	10,749.32	10,740.93	10,721.02	42.50	38.32	-92.64	-5.28	2,590.07	3,658.77	3,604.66	54.11	67.621		
11,150.00	10,760.52	10,752.12	10,732.22	42.68	38.36	-91.93	-5.28	2,590.07	3,667.38	3,613.13	54.25	67.604		
11,200.00	10,767.42	10,759.02	10,739.12	42.87	38.39	-91.09	-5.28	2,590.07	3,676.78	3,622.40	54.37	67.619		
11,254.38	10,770.00	10,761.60	10,741.70	43.09	38.39	-90.00	-5.28	2,590.07	3,687.82	3,633.32	54.50	67.671		
11,300.00	10,770.00	10,761.60	10,741.70	43.29	38.39	-90.00	-5.28	2,590.07	3,697.69	3,643.09	54.59	67.732		
11,400.00	10,770.00	10,761.60	10,741.70	43.76	38.39	-90.00	-5.28	2,590.07	3,721.18	3,666.36	54.82	67.877		
11,500.00	10,770.00	10,761.60	10,741.70	44.29	38.39	-90.00	-5.28	2,590.07	3,747.20	3,692.13	55.07	68.042		
11,600.00	10,770.00	10,761.60	10,741.70	44.88	38.39	-90.00	-5.28	2,590.07	3,775.69	3,720.35	55.34	68.226		
11,700.00	10,770.00	10,761.60	10,741.70	45.53	38.39	-90.00	-5.28	2,590.07	3,806.59	3,750.97	55.63	68.432		
11,800.00	10,770.00	10,761.60	10,741.70	46.23	38.39	-90.00	-5.28	2,590.07	3,839.85	3,783.93	55.92	68.661		
11,900.00	10,770.00	10,761.60	10,741.70	46.99	38.39	-90.00	-5.28	2,590.07	3,875.41	3,819.17	56.24	68.913		
12,000.00	10,770.00	10,761.60	10,741.70	47.79	38.39	-90.00	-5.28	2,590.07	3,913.20	3,856.64	56.56	69.190		
12,100.00	10,770.00	10,761.60	10,741.70	48.64	38.39	-90.00	-5.28	2,590.07	3,953.15	3,896.27	56.89	69.492		
12,200.00	10,770.00	10,761.60	10,741.70	49.53	38.39	-90.00	-5.28	2,590.07	3,995.21	3,937.99	57.22	69.820		
12,300.00	10,770.00	14,097.95	12,502.00	50.46	53.53	-116.03	-1,827.16	2,607.93	4,011.88	3,943.37	68.51	58.559		
12,400.00	10,770.00	14,197.95	12,502.00	51.43	54.48	-116.03	-1,927.15	2,608.91	4,011.87	3,942.07	69.80	57.477		
12,500.00	10,770.00	14,297.95	12,502.00	52.44	55.46	-116.03	-2,027.15	2,609.89	4,011.86	3,940.73	71.13	56.402		
12,600.00	10,770.00	14,397.95	12,502.00	53.48	56.47	-116.03	-2,127.14	2,610.87	4,011.85	3,939.35	72.50	55.336		
12,700.00	10,770.00	14,497.95	12,502.00	54.55	57.51	-116.03	-2,227.14	2,611.85	4,011.84	3,937.93	73.91	54.281		
12,800.00	10,770.00	14,597.95	12,502.00	55.65	58.58	-116.03	-2,327.13	2,612.83	4,011.83	3,936.48	75.35	53.241		
12,900.00	10,770.00	14,697.95	12,502.00	56.78	59.67	-116.03	-2,427.13	2,613.81	4,011.82	3,934.99	76.83	52.218		
13,000.00	10,770.00	14,797.95	12,502.00	57.93	60.79	-116.03	-2,527.12	2,614.79	4,011.81	3,933.48	78.33	51.215		
13,100.00	10,770.00	14,897.95	12,502.00	59.11	61.93	-116.03	-2,627.12	2,615.77	4,011.80	3,931.93	79.87	50.230		
13,200.00	10,770.00	14,997.95	12,502.00	60.31	63.10	-116.03	-2,727.11	2,616.75	4,011.79	3,930.36	81.43	49.266		
13,300.00	10,770.00	15,097.95	12,502.00	61.54	64.29	-116.03	-2,827.11	2,617.73	4,011.78	3,928.76	83.02	48.322		
13,400.00	10,770.00	15,197.95	12,502.00	62.78	65.50	-116.03	-2,927.10	2,618.71	4,011.77	3,927.14	84.64	47.401		
13,500.00	10,770.00	15,297.95	12,502.00	64.04	66.72	-116.03	-3,027.10	2,619.69	4,011.76	3,925.49	86.27	46.501		
13,600.00	10,770.00	15,397.95	12,502.00	65.32	67.97	-116.03	-3,127.09	2,620.67	4,011.75	3,923.82	87.93	45.623		
13,700.00	10,770.00	15,497.95	12,502.00	66.62	69.23	-116.03	-3,227.09	2,621.66	4,011.74	3,922.13	89.61	44.768		
13,800.00	10,770.00	15,597.95	12,502.00	67.93	70.51	-116.03	-3,327.08	2,622.64	4,011.73	3,920.42	91.31	43.934		
13,900.00	10,770.00	15,697.95	12,502.00	69.25	71.80	-116.03	-3,427.08	2,623.62	4,011.72	3,918.69	93.03	43.123		
14,000.00	10,770.00	15,797.95	12,502.00	70.59	73.11	-116.03	-3,527.07	2,624.60	4,011.71	3,916.95	94.77	42.332		
14,100.00	10,770.00	15,897.95	12,502.00	71.95	74.43	-116.03	-3,627.07	2,625.58	4,011.70	3,915.19	96.52	41.564		
14,200.00	10,770.00	15,997.95	12,502.00	73.31	75.76	-116.03	-3,727.06	2,626.56	4,011.70	3,913.41	98.29	40.816		

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 501H
Project:	Lea County, NM (NAD83)	TVD Reference:	3121.3' GE + 30' KB @ 3151.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3121.3' GE + 30' KB @ 3151.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 501H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.15 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 0-OWSG (Rev2) MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
14,300.00	10,770.00	16,097.95	12,502.00	74.69	77.11	-116.03	-3,827.06	2,627.54	4,011.69	3,911.61	100.07	40.088		
14,400.00	10,770.00	16,197.95	12,502.00	76.08	78.47	-116.03	-3,927.05	2,628.52	4,011.68	3,909.81	101.87	39.381		
14,500.00	10,770.00	16,297.95	12,502.00	77.48	79.83	-116.03	-4,027.05	2,629.50	4,011.67	3,907.99	103.68	38.693		
14,600.00	10,770.00	16,397.95	12,502.00	78.89	81.21	-116.03	-4,127.05	2,630.48	4,011.66	3,906.15	105.50	38.024		
14,700.00	10,770.00	16,497.95	12,502.00	80.31	82.60	-116.03	-4,227.04	2,631.46	4,011.65	3,904.31	107.34	37.374		
14,800.00	10,770.00	16,597.95	12,502.00	81.73	84.00	-116.03	-4,327.04	2,632.44	4,011.64	3,902.45	109.18	36.742		
14,900.00	10,770.00	16,697.95	12,502.00	83.17	85.41	-116.03	-4,427.03	2,633.42	4,011.63	3,900.59	111.04	36.128		
15,000.00	10,770.00	16,797.95	12,502.00	84.61	86.83	-116.03	-4,527.03	2,634.40	4,011.62	3,898.71	112.91	35.530		
15,100.00	10,770.00	16,897.95	12,502.00	86.06	88.25	-116.03	-4,627.02	2,635.38	4,011.61	3,896.83	114.78	34.949		
15,200.00	10,770.00	16,997.95	12,502.00	87.52	89.68	-116.03	-4,727.02	2,636.36	4,011.60	3,894.93	116.67	34.384		
15,300.00	10,770.00	17,097.95	12,502.00	88.99	91.12	-116.03	-4,827.01	2,637.34	4,011.59	3,893.03	118.56	33.835		
15,400.00	10,770.00	17,197.95	12,502.00	90.46	92.57	-116.03	-4,927.01	2,638.32	4,011.58	3,891.12	120.47	33.301		
15,500.00	10,770.00	17,297.95	12,502.00	91.94	94.02	-116.03	-5,027.00	2,639.30	4,011.57	3,889.20	122.38	32.781		
15,600.00	10,770.00	17,397.95	12,502.00	93.42	95.48	-116.03	-5,127.00	2,640.28	4,011.56	3,887.27	124.29	32.275		
15,700.00	10,770.00	17,497.95	12,502.00	94.91	96.95	-116.03	-5,226.99	2,641.26	4,011.55	3,885.33	126.22	31.783		
15,800.00	10,770.00	17,597.95	12,502.00	96.40	98.42	-116.03	-5,326.99	2,642.24	4,011.54	3,883.39	128.15	31.304		
15,900.00	10,770.00	17,697.95	12,502.00	97.90	99.90	-116.03	-5,426.98	2,643.22	4,011.53	3,881.45	130.09	30.837		
16,000.00	10,770.00	17,797.95	12,502.00	99.41	101.38	-116.03	-5,526.98	2,644.20	4,011.52	3,879.49	132.03	30.383		
16,100.00	10,770.00	17,897.95	12,502.00	100.92	102.87	-116.03	-5,626.97	2,645.18	4,011.51	3,877.53	133.98	29.940		
16,200.00	10,770.00	17,997.95	12,502.00	102.43	104.36	-116.03	-5,726.97	2,646.16	4,011.50	3,875.56	135.94	29.509		
16,300.00	10,770.00	18,097.95	12,502.00	103.95	105.86	-116.03	-5,826.96	2,647.14	4,011.49	3,873.59	137.90	29.089		
16,400.00	10,770.00	18,197.95	12,502.00	105.47	107.36	-116.03	-5,926.96	2,648.12	4,011.49	3,871.61	139.87	28.680		
16,500.00	10,770.00	18,297.95	12,502.00	107.00	108.87	-116.03	-6,026.95	2,649.10	4,011.48	3,869.63	141.84	28.281		
16,600.00	10,770.00	18,397.95	12,502.00	108.52	110.38	-116.03	-6,126.95	2,650.08	4,011.47	3,867.64	143.82	27.892		
16,700.00	10,770.00	18,497.95	12,502.00	110.06	111.90	-116.03	-6,226.94	2,651.06	4,011.46	3,865.65	145.80	27.513		
16,800.00	10,770.00	18,597.95	12,502.00	111.59	113.42	-116.03	-6,326.94	2,652.04	4,011.45	3,863.66	147.79	27.142		
16,900.00	10,770.00	18,697.95	12,502.00	113.13	114.94	-116.03	-6,426.93	2,653.03	4,011.44	3,861.65	149.78	26.782		
17,000.00	10,770.00	18,797.95	12,502.00	114.68	116.46	-116.03	-6,526.93	2,654.01	4,011.43	3,859.65	151.78	26.429		
17,100.00	10,770.00	18,897.95	12,502.00	116.22	117.99	-116.03	-6,626.92	2,654.99	4,011.42	3,857.64	153.78	26.086		
17,200.00	10,770.00	18,997.95	12,502.00	117.77	119.53	-116.03	-6,726.92	2,655.97	4,011.41	3,855.63	155.78	25.750		
17,300.00	10,770.00	19,097.95	12,502.00	119.32	121.06	-116.03	-6,826.92	2,656.95	4,011.40	3,853.61	157.79	25.423		
17,400.00	10,770.00	19,197.95	12,502.00	120.88	122.60	-116.03	-6,926.91	2,657.93	4,011.39	3,851.59	159.80	25.103		
17,500.00	10,770.00	19,297.95	12,502.00	122.43	124.14	-116.03	-7,026.91	2,658.91	4,011.38	3,849.57	161.81	24.791		
17,600.00	10,770.00	19,397.95	12,502.00	123.99	125.69	-116.03	-7,126.90	2,659.89	4,011.37	3,847.55	163.82	24.486		
17,700.00	10,770.00	19,497.95	12,502.00	125.55	127.23	-116.03	-7,226.90	2,660.87	4,011.36	3,845.52	165.84	24.188		
17,800.00	10,770.00	19,597.95	12,502.00	127.12	128.78	-116.03	-7,326.89	2,661.85	4,011.35	3,843.49	167.86	23.897		
17,900.00	10,770.00	19,697.95	12,502.00	128.68	130.33	-116.03	-7,426.89	2,662.83	4,011.34	3,841.46	169.88	23.612		
18,000.00	10,770.00	19,797.95	12,502.00	130.25	131.89	-116.03	-7,526.88	2,663.81	4,011.33	3,839.42	171.91	23.334		
18,100.00	10,770.00	19,897.95	12,502.00	131.82	133.44	-116.03	-7,626.88	2,664.79	4,011.32	3,837.38	173.94	23.061		
18,200.00	10,770.00	19,997.95	12,502.00	133.39	135.00	-116.03	-7,726.87	2,665.77	4,011.31	3,835.34	175.97	22.795		
18,300.00	10,770.00	20,097.95	12,502.00	134.97	136.57	-116.03	-7,826.87	2,666.75	4,011.30	3,833.30	178.01	22.534		
18,400.00	10,770.00	20,197.95	12,502.00	136.54	138.13	-116.03	-7,926.86	2,667.73	4,011.29	3,831.25	180.04	22.279		
18,500.00	10,770.00	20,297.95	12,502.00	138.12	139.69	-116.03	-8,026.86	2,668.71	4,011.29	3,829.20	182.08	22.030		
18,600.00	10,770.00	20,397.95	12,502.00	139.70	141.26	-116.03	-8,126.85	2,669.69	4,011.28	3,827.15	184.13	21.785		
18,700.00	10,770.00	20,497.95	12,502.00	141.28	142.83	-116.03	-8,226.85	2,670.67	4,011.27	3,825.10	186.17	21.546		
18,800.00	10,770.00	20,597.95	12,502.00	142.86	144.40	-116.03	-8,326.84	2,671.65	4,011.26	3,823.04	188.22	21.312		
18,900.00	10,770.00	20,697.95	12,502.00	144.45	145.97	-116.03	-8,426.84	2,672.63	4,011.25	3,820.98	190.27	21.082		
19,000.00	10,770.00	20,797.95	12,502.00	146.03	147.55	-116.03	-8,526.83	2,673.61	4,011.24	3,818.92	192.32	20.858		
19,100.00	10,770.00	20,897.95	12,502.00	147.62	149.12	-116.03	-8,626.83	2,674.59	4,011.23	3,816.86	194.37	20.637		
19,200.00	10,770.00	20,997.95	12,502.00	149.21	150.70	-116.03	-8,726.82	2,675.57	4,011.22	3,814.80	196.42	20.421		
19,300.00	10,770.00	21,097.95	12,502.00	150.80	152.28	-116.03	-8,826.82	2,676.55	4,011.21	3,812.73	198.48	20.210		
19,400.00	10,770.00	21,197.95	12,502.00	152.39	153.86	-116.03	-8,926.81	2,677.53	4,011.20	3,810.66	200.54	20.002		

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 501H
Project:	Lea County, NM (NAD83)	TVD Reference:	3121.3' GE + 30' KB @ 3151.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3121.3' GE + 30' KB @ 3151.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 501H	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		
19,500.00	10,770.00	21,297.95	12,502.00	153.98	155.45	-116.03	-9,026.81	2,678.51	4,011.19	3,808.60	202.59	19.799		
19,600.00	10,770.00	21,397.95	12,502.00	155.57	157.03	-116.03	-9,126.80	2,679.49	4,011.18	3,806.53	204.65	19.600		
19,700.00	10,770.00	21,497.95	12,502.00	157.17	158.61	-116.03	-9,226.80	2,680.47	4,011.17	3,804.46	206.71	19.405		
19,800.00	10,770.00	21,597.95	12,502.00	158.76	160.20	-116.03	-9,326.80	2,681.45	4,011.16	3,802.39	208.77	19.213		
19,900.00	10,770.00	21,697.95	12,502.00	160.36	161.79	-116.03	-9,426.79	2,682.43	4,011.15	3,800.32	210.84	19.025		
20,000.00	10,770.00	21,797.95	12,502.00	161.96	163.38	-116.03	-9,526.79	2,683.41	4,011.14	3,798.24	212.90	18.840		
20,100.00	10,770.00	21,897.95	12,502.00	163.56	164.97	-116.03	-9,626.78	2,684.40	4,011.13	3,796.17	214.97	18.659		
20,200.00	10,770.00	21,997.95	12,502.00	165.16	166.56	-116.03	-9,726.78	2,685.38	4,011.12	3,794.09	217.03	18.482		
20,300.00	10,770.00	22,097.95	12,502.00	166.76	168.15	-116.03	-9,826.77	2,686.36	4,011.11	3,792.01	219.10	18.307		
20,400.00	10,770.00	22,197.95	12,502.00	168.36	169.75	-116.03	-9,926.77	2,687.34	4,011.10	3,789.93	221.17	18.136		
20,500.00	10,770.00	22,297.95	12,502.00	169.97	171.34	-116.03	-10,026.76	2,688.32	4,011.09	3,787.85	223.24	17.967		
20,600.00	10,770.00	22,397.95	12,502.00	171.57	172.94	-116.03	-10,126.76	2,689.30	4,011.08	3,785.77	225.31	17.802		
20,700.00	10,770.00	22,497.95	12,502.00	173.18	174.53	-116.03	-10,226.75	2,690.28	4,011.08	3,783.69	227.39	17.640		
20,800.00	10,770.00	22,597.95	12,502.00	174.78	176.13	-116.03	-10,326.75	2,691.26	4,011.07	3,781.60	229.46	17.480		
20,841.66	10,770.00	22,639.61	12,502.00	175.40	176.73	-116.03	-10,368.41	2,691.67	4,011.06	3,780.84	230.22	17.423 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 501H
Project:	Lea County, NM (NAD83)	TVD Reference:	3121.3' GE + 30' KB @ 3151.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3121.3' GE + 30' KB @ 3151.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 501H	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	89.44	29.97	3,060.06	3,060.36					
100.00	100.00	68.90	68.90	0.13	0.09	89.44	29.97	3,060.06	3,060.21	3,060.05	0.15	N/A		
200.00	200.00	168.90	168.90	0.48	0.37	89.44	29.97	3,060.06	3,060.21	3,059.60	0.61	5,011.245		
300.00	300.00	268.90	268.90	0.84	0.73	89.44	29.97	3,060.06	3,060.21	3,059.09	1.12	2,743.834		
400.00	400.00	368.90	368.90	1.20	1.09	89.44	29.97	3,060.06	3,060.21	3,058.59	1.62	1,887.401		
500.00	500.00	468.90	468.90	1.56	1.45	89.44	29.97	3,060.06	3,060.21	3,058.08	2.13	1,438.145		
600.00	600.00	568.90	568.90	1.92	1.81	89.44	29.97	3,060.06	3,060.21	3,057.57	2.63	1,161.563		
700.00	700.00	668.90	668.90	2.28	2.16	89.44	29.97	3,060.06	3,060.21	3,057.07	3.14	974.177		
800.00	800.00	768.90	768.90	2.63	2.52	89.44	29.97	3,060.06	3,060.21	3,056.56	3.65	838.840		
900.00	900.00	868.90	868.90	2.99	2.88	89.44	29.97	3,060.06	3,060.21	3,056.05	4.15	736.513		
1,000.00	1,000.00	968.90	968.90	3.35	3.24	89.44	29.97	3,060.06	3,060.21	3,055.54	4.66	656.434		
1,100.00	1,100.00	1,068.90	1,068.90	3.71	3.60	89.44	29.97	3,060.06	3,060.21	3,055.04	5.17	592.059		
1,200.00	1,200.00	1,168.90	1,168.90	4.07	3.96	89.44	29.97	3,060.06	3,060.21	3,054.53	5.68	539.181		
1,300.00	1,300.00	1,268.90	1,268.90	4.43	4.32	89.44	29.97	3,060.06	3,060.21	3,054.02	6.18	494.973		
1,400.00	1,400.00	1,368.90	1,368.90	4.79	4.67	89.44	29.97	3,060.06	3,060.21	3,053.52	6.69	457.465		
1,500.00	1,500.00	1,468.90	1,468.90	5.14	5.03	89.44	29.97	3,060.06	3,060.21	3,053.01	7.20	425.241		
1,600.00	1,600.00	1,568.90	1,568.90	5.50	5.39	89.44	29.97	3,060.06	3,060.21	3,052.50	7.70	397.257		
1,700.00	1,700.00	1,668.90	1,668.90	5.86	5.75	89.44	29.97	3,060.06	3,060.21	3,052.00	8.21	372.729		
1,800.00	1,800.00	1,768.90	1,768.90	6.22	6.11	89.44	29.97	3,060.06	3,060.21	3,051.49	8.72	351.054		
1,900.00	1,900.00	1,868.90	1,868.90	6.58	6.47	89.44	29.97	3,060.06	3,060.21	3,050.98	9.22	331.761		
2,000.00	2,000.00	1,968.90	1,968.90	6.94	6.82	89.44	29.97	3,060.06	3,060.21	3,050.48	9.73	314.478		
2,100.00	2,100.00	2,068.90	2,068.90	7.29	7.18	89.44	29.97	3,060.06	3,060.21	3,049.97	10.24	298.906		
2,200.00	2,200.00	2,168.90	2,168.90	7.65	7.54	89.44	29.97	3,060.06	3,060.21	3,049.46	10.74	284.804		
2,300.00	2,300.00	2,268.90	2,268.90	8.01	7.90	89.44	29.97	3,060.06	3,060.21	3,048.95	11.25	271.973		
2,400.00	2,400.00	2,368.90	2,368.90	8.37	8.26	89.44	29.97	3,060.06	3,060.21	3,048.45	11.76	260.247		
2,500.00	2,500.00	2,468.90	2,468.90	8.73	8.62	89.44	29.97	3,060.06	3,060.21	3,047.94	12.27	249.491		
2,600.00	2,600.00	2,568.90	2,568.90	9.09	8.98	89.44	29.97	3,060.06	3,060.21	3,047.43	12.77	239.589		
2,700.00	2,700.00	2,668.90	2,668.90	9.45	9.33	89.44	29.97	3,060.06	3,060.21	3,046.93	13.28	230.443		
2,800.00	2,800.00	2,768.90	2,768.90	9.80	9.69	89.44	29.97	3,060.06	3,060.21	3,046.42	13.79	221.969		
2,900.00	2,900.00	2,868.90	2,868.90	10.16	10.05	89.44	29.97	3,060.06	3,060.21	3,045.91	14.29	214.097		
3,000.00	3,000.00	2,968.90	2,968.90	10.52	10.41	89.44	29.97	3,060.06	3,060.21	3,045.41	14.80	206.764		
3,100.00	3,100.00	3,068.90	3,068.90	10.88	10.77	89.44	29.97	3,060.06	3,060.21	3,044.90	15.31	199.916		
3,200.00	3,200.00	3,168.90	3,168.90	11.24	11.13	89.44	29.97	3,060.06	3,060.21	3,044.39	15.81	193.507 CC		
3,300.00	3,300.00	3,238.29	3,238.29	11.60	11.37	89.44	29.96	3,060.25	3,060.55	3,044.31	16.24	188.445 ES		
3,400.00	3,400.00	3,300.00	3,299.99	11.96	11.59	89.44	29.90	3,061.37	3,062.29	3,045.64	16.65	183.975		
3,500.00	3,499.99	3,349.33	3,349.29	12.30	11.76	-167.00	29.80	3,062.97	3,066.73	3,049.72	17.00	180.351		
3,600.00	3,599.91	3,400.00	3,399.91	12.64	11.93	-166.98	29.67	3,065.29	3,075.17	3,057.82	17.36	177.185		
3,700.00	3,699.69	3,459.59	3,459.39	12.98	12.13	-166.95	29.47	3,068.86	3,087.57	3,069.85	17.73	174.164		
3,800.00	3,799.27	3,500.00	3,499.69	13.32	12.27	-166.90	29.30	3,071.82	3,103.98	3,085.94	18.05	172.007		
3,900.00	3,898.57	3,568.12	3,567.55	13.67	12.51	-166.86	28.96	3,077.76	3,124.17	3,105.74	18.44	169.463		
4,000.00	3,997.54	3,621.45	3,620.60	14.02	12.69	-166.80	28.65	3,083.25	3,148.27	3,129.49	18.78	167.624		
4,100.00	4,096.09	3,692.92	3,691.58	14.38	12.94	-166.74	28.17	3,091.54	3,176.05	3,156.87	19.18	165.616		
4,200.00	4,194.16	3,788.11	3,786.10	14.75	13.28	-166.70	27.54	3,102.74	3,206.48	3,186.84	19.64	163.249		
4,300.00	4,291.70	3,882.47	3,879.81	15.12	13.61	-166.65	26.90	3,113.85	3,239.33	3,219.22	20.10	161.125		
4,400.00	4,388.62	3,975.94	3,972.62	15.51	13.95	-166.61	26.28	3,124.85	3,274.58	3,254.01	20.57	159.228		
4,500.00	4,484.86	4,068.44	4,064.49	15.92	14.28	-166.56	25.66	3,135.73	3,312.20	3,291.18	21.02	157.543		
4,600.00	4,580.36	4,159.93	4,155.34	16.34	14.61	-166.51	25.04	3,146.50	3,352.19	3,330.71	21.48	156.054		
4,700.00	4,675.05	4,250.34	4,245.11	16.78	14.94	-166.46	24.44	3,157.14	3,394.50	3,372.56	21.94	154.751		
4,746.50	4,718.78	4,291.99	4,286.47	16.99	15.10	-166.44	24.16	3,162.04	3,414.96	3,392.81	22.15	154.200		
4,800.00	4,769.00	4,339.76	4,333.92	17.24	15.27	-166.50	23.84	3,167.66	3,438.79	3,416.40	22.39	153.600		
4,900.00	4,862.85	4,429.07	4,422.59	17.72	15.60	-166.62	23.24	3,178.17	3,483.34	3,460.50	22.84	152.504		
5,000.00	4,956.70	4,518.37	4,511.27	18.21	15.93	-166.73	22.64	3,188.67	3,527.90	3,504.61	23.30	151.431		

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 501H
Project:	Lea County, NM (NAD83)	TVD Reference:	3121.3' GE + 30' KB @ 3151.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3121.3' GE + 30' KB @ 3151.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 501H	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	5,050.55	4,607.67	4,599.95	18.71	16.26	-166.85	22.04	3,199.18	3,572.48	3,548.72	23.76	150.381		
5,200.00	5,144.40	4,696.97	4,688.63	19.23	16.60	-166.96	21.44	3,209.69	3,617.06	3,592.84	24.22	149.355		
5,300.00	5,238.25	4,786.27	4,777.31	19.76	16.93	-167.06	20.84	3,220.20	3,661.65	3,636.97	24.68	148.351		
5,400.00	5,332.10	4,875.57	4,865.99	20.29	17.26	-167.17	20.24	3,230.71	3,706.26	3,681.11	25.15	147.371		
5,500.00	5,425.95	4,964.87	4,954.67	20.84	17.60	-167.27	19.64	3,241.21	3,750.87	3,725.25	25.62	146.414		
5,600.00	5,519.80	5,054.17	5,043.35	21.39	17.94	-167.37	19.04	3,251.72	3,795.49	3,769.40	26.09	145.480		
5,700.00	5,613.65	5,143.48	5,132.03	21.95	18.28	-167.46	18.44	3,262.23	3,840.12	3,813.56	26.56	144.568		
5,800.00	5,707.50	5,232.78	5,220.70	22.52	18.61	-167.56	17.84	3,272.74	3,884.76	3,857.72	27.04	143.677		
5,900.00	5,801.36	5,322.08	5,309.38	23.10	18.95	-167.65	17.24	3,283.25	3,929.41	3,901.90	27.52	142.809		
6,000.00	5,895.21	5,411.38	5,398.06	23.68	19.29	-167.74	16.65	3,293.76	3,974.07	3,946.07	27.99	141.961		
6,100.00	5,989.06	5,500.68	5,486.74	24.27	19.64	-167.83	16.05	3,304.26	4,018.73	3,990.26	28.47	141.134		
6,200.00	6,082.91	5,589.98	5,575.42	24.86	19.98	-167.91	15.45	3,314.77	4,063.40	4,034.45	28.96	140.327		
6,300.00	6,176.76	5,679.28	5,664.10	25.46	20.32	-168.00	14.85	3,325.28	4,108.08	4,078.64	29.44	139.539		
6,403.84	6,274.22	5,772.02	5,756.19	26.09	20.68	-168.08	14.23	3,336.19	4,154.48	4,124.54	29.94	138.742		
6,500.00	6,364.87	5,858.42	5,841.99	26.66	21.01	-168.30	13.65	3,346.36	4,196.39	4,165.98	30.41	137.982		
6,600.00	6,459.97	5,949.37	5,932.30	27.24	21.36	-168.51	13.04	3,357.06	4,237.71	4,206.81	30.90	137.128		
6,700.00	6,555.85	6,041.37	6,023.66	27.79	21.72	-168.69	12.42	3,367.89	4,276.68	4,245.28	31.40	136.210		
6,800.00	6,652.43	6,134.37	6,116.01	28.32	22.08	-168.85	11.79	3,378.83	4,313.27	4,281.38	31.90	135.234		
6,900.00	6,749.66	6,228.29	6,209.27	28.83	22.44	-169.00	11.16	3,389.88	4,347.47	4,315.08	32.39	134.205		
7,000.00	6,847.47	6,323.07	6,303.40	29.31	22.81	-169.13	10.53	3,401.03	4,379.24	4,346.35	32.90	133.128		
7,100.00	6,945.80	6,418.65	6,398.31	29.77	23.18	-169.25	9.89	3,412.28	4,408.57	4,375.17	33.40	132.007		
7,200.00	7,044.56	6,514.96	6,493.95	30.20	23.55	-169.34	9.24	3,423.61	4,435.43	4,401.53	33.90	130.847		
7,300.00	7,143.70	6,611.93	6,590.25	30.61	23.93	-169.43	8.59	3,435.02	4,459.80	4,425.40	34.40	129.650		
7,400.00	7,243.15	6,709.51	6,687.14	30.99	24.31	-169.50	7.94	3,446.51	4,481.67	4,446.77	34.90	128.419		
7,500.00	7,342.84	6,807.61	6,784.57	31.35	24.70	-169.55	7.28	3,458.05	4,501.02	4,465.62	35.40	127.158		
7,600.00	7,442.70	6,906.19	6,882.45	31.69	25.08	-169.59	6.62	3,469.65	4,517.83	4,481.94	35.89	125.869		
7,700.00	7,542.66	7,005.16	6,980.73	32.01	25.47	-169.62	5.95	3,481.30	4,532.11	4,495.72	36.39	124.554		
7,750.34	7,593.00	7,587.86	7,561.90	32.16	27.61	86.87	3.97	3,516.06	4,535.84	4,497.54	38.31	118.409		
7,800.00	7,642.66	7,637.52	7,611.56	32.30	27.78	86.87	3.97	3,516.06	4,535.84	4,497.30	38.55	117.673		
7,900.00	7,742.66	7,737.52	7,711.56	32.60	28.12	86.87	3.97	3,516.06	4,535.84	4,496.81	39.03	116.219		
8,000.00	7,842.66	7,837.52	7,811.56	32.89	28.46	86.87	3.97	3,516.06	4,535.84	4,496.33	39.51	114.798		
8,100.00	7,942.66	7,937.52	7,911.56	33.19	28.80	86.87	3.97	3,516.06	4,535.84	4,495.85	40.00	113.410		
8,200.00	8,042.66	8,037.52	8,011.56	33.49	29.14	86.87	3.97	3,516.06	4,535.84	4,495.36	40.48	112.053		
8,300.00	8,142.66	8,137.52	8,111.56	33.79	29.48	86.87	3.97	3,516.06	4,535.84	4,494.88	40.96	110.727		
8,400.00	8,242.66	8,237.52	8,211.56	34.09	29.82	86.87	3.97	3,516.06	4,535.84	4,494.39	41.45	109.431		
8,500.00	8,342.66	8,337.52	8,311.56	34.39	30.17	86.87	3.97	3,516.06	4,535.84	4,493.91	41.94	108.163		
8,600.00	8,442.66	8,437.52	8,411.56	34.69	30.51	86.87	3.97	3,516.06	4,535.84	4,493.42	42.42	106.923		
8,700.00	8,542.66	8,537.52	8,511.56	35.00	30.85	86.87	3.97	3,516.06	4,535.84	4,492.93	42.91	105.710		
8,800.00	8,642.66	8,637.52	8,611.56	35.30	31.20	86.87	3.97	3,516.06	4,535.84	4,492.45	43.40	104.523		
8,900.00	8,742.66	8,737.52	8,711.56	35.61	31.54	86.87	3.97	3,516.06	4,535.84	4,491.96	43.88	103.361		
9,000.00	8,842.66	8,837.52	8,811.56	35.91	31.89	86.87	3.97	3,516.06	4,535.84	4,491.47	44.37	102.224		
9,100.00	8,942.66	8,937.52	8,911.56	36.22	32.23	86.87	3.97	3,516.06	4,535.84	4,490.98	44.86	101.111		
9,200.00	9,042.66	9,037.52	9,011.56	36.53	32.58	86.87	3.97	3,516.06	4,535.84	4,490.49	45.35	100.021		
9,300.00	9,142.66	9,137.52	9,111.56	36.84	32.92	86.87	3.97	3,516.06	4,535.84	4,490.00	45.84	98.953		
9,400.00	9,242.66	9,237.52	9,211.56	37.15	33.27	86.87	3.97	3,516.06	4,535.84	4,489.52	46.33	97.907		
9,500.00	9,342.66	9,337.52	9,311.56	37.46	33.61	86.87	3.97	3,516.06	4,535.84	4,489.03	46.82	96.882		
9,600.00	9,442.66	9,437.52	9,411.56	37.77	33.96	86.87	3.97	3,516.06	4,535.84	4,488.53	47.31	95.878		
9,700.00	9,542.66	9,537.52	9,511.56	38.09	34.31	86.87	3.97	3,516.06	4,535.84	4,488.04	47.80	94.893		
9,800.00	9,642.66	9,637.52	9,611.56	38.40	34.65	86.87	3.97	3,516.06	4,535.84	4,487.55	48.29	93.928		
9,900.00	9,742.66	9,737.52	9,711.56	38.71	35.00	86.87	3.97	3,516.06	4,535.84	4,487.06	48.78	92.982		
10,000.00	9,842.66	9,837.52	9,811.56	39.03	35.35	86.87	3.97	3,516.06	4,535.84	4,486.57	49.27	92.054		
10,100.00	9,942.66	9,937.52	9,911.56	39.35	35.70	86.87	3.97	3,516.06	4,535.84	4,486.08	49.77	91.144		

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 501H
Project:	Lea County, NM (NAD83)	TVD Reference:	3121.3' GE + 30' KB @ 3151.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3121.3' GE + 30' KB @ 3151.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 501H	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		
10,200.00	10,042.66	10,037.52	10,011.56	39.66	36.04	86.87	3.97	3,516.06	4,535.84	4,485.59	50.26	90.251		
10,300.00	10,142.66	10,137.52	10,111.56	39.98	36.39	86.87	3.97	3,516.06	4,535.84	4,485.09	50.75	89.375		
10,354.38	10,197.04	10,191.90	10,165.94	40.15	36.58	86.87	3.97	3,516.06	4,535.84	4,484.82	51.02	88.905		
10,400.00	10,242.61	10,237.47	10,211.51	40.30	36.74	-92.58	3.97	3,516.06	4,535.92	4,484.68	51.24	88.520		
10,450.00	10,292.22	10,287.07	10,261.12	40.45	36.91	-92.63	3.97	3,516.06	4,536.21	4,484.72	51.48	88.110		
10,500.00	10,341.10	10,335.96	10,310.00	40.61	37.08	-92.71	3.97	3,516.06	4,536.70	4,484.98	51.72	87.709		
10,550.00	10,388.88	10,383.74	10,357.78	40.77	37.25	-92.81	3.97	3,516.06	4,537.44	4,485.48	51.96	87.319		
10,600.00	10,435.20	10,430.06	10,404.10	40.93	37.41	-92.93	3.97	3,516.06	4,538.46	4,486.26	52.20	86.944		
10,650.00	10,479.72	10,474.58	10,448.62	41.09	37.57	-93.05	3.97	3,516.06	4,539.79	4,487.36	52.43	86.584		
10,700.00	10,522.08	10,516.94	10,490.98	41.25	37.71	-93.16	3.97	3,516.06	4,541.49	4,488.84	52.66	86.243		
10,750.00	10,561.96	10,556.82	10,530.86	41.40	37.85	-93.26	3.97	3,516.06	4,543.61	4,490.73	52.88	85.922		
10,800.00	10,599.07	10,593.93	10,567.97	41.55	37.98	-93.31	3.97	3,516.06	4,546.20	4,493.10	53.10	85.623		
10,850.00	10,633.12	10,627.98	10,602.02	41.71	38.10	-93.31	3.97	3,516.06	4,549.30	4,496.00	53.30	85.346		
10,900.00	10,663.85	10,658.71	10,632.75	41.86	38.21	-93.25	3.97	3,516.06	4,552.98	4,499.47	53.51	85.094		
10,950.00	10,691.03	10,685.89	10,659.93	42.01	38.30	-93.11	3.97	3,516.06	4,557.26	4,503.56	53.70	84.868		
11,000.00	10,714.45	10,709.31	10,683.35	42.17	38.38	-92.88	3.97	3,516.06	4,562.18	4,508.29	53.88	84.669		
11,050.00	10,733.93	10,728.79	10,702.83	42.33	38.45	-92.54	3.97	3,516.06	4,567.75	4,513.70	54.06	84.498		
11,100.00	10,749.32	10,744.18	10,718.22	42.50	38.51	-92.10	3.97	3,516.06	4,573.99	4,519.77	54.22	84.356		
11,150.00	10,760.52	10,755.38	10,729.42	42.68	38.54	-91.54	3.97	3,516.06	4,580.89	4,526.51	54.38	84.245		
11,200.00	10,767.42	10,762.28	10,736.32	42.87	38.57	-90.86	3.97	3,516.06	4,588.41	4,533.90	54.52	84.164		
11,254.38	10,770.00	10,764.86	10,738.90	43.09	38.58	-90.00	3.97	3,516.06	4,597.27	4,542.61	54.66	84.113		
11,300.00	10,770.00	10,764.86	10,738.90	43.29	38.58	-90.00	3.97	3,516.06	4,605.19	4,550.42	54.77	84.085		
11,400.00	10,770.00	10,764.86	10,738.90	43.76	38.58	-90.00	3.97	3,516.06	4,624.08	4,569.04	55.04	84.019		
11,500.00	10,770.00	10,764.86	10,738.90	44.29	38.58	-90.00	3.97	3,516.06	4,645.04	4,589.71	55.33	83.953		
11,600.00	10,770.00	10,764.86	10,738.90	44.88	38.58	-90.00	3.97	3,516.06	4,668.06	4,612.41	55.65	83.888		
11,700.00	10,770.00	10,764.86	10,738.90	45.53	38.58	-90.00	3.97	3,516.06	4,693.09	4,637.10	55.99	83.827		
11,800.00	10,770.00	10,764.86	10,738.90	46.23	38.58	-90.00	3.97	3,516.06	4,720.11	4,663.76	56.34	83.773		
11,900.00	10,770.00	10,764.86	10,738.90	46.99	38.58	-90.00	3.97	3,516.06	4,749.08	4,692.36	56.72	83.728		
12,000.00	10,770.00	10,764.86	10,738.90	47.79	38.58	-90.00	3.97	3,516.06	4,779.97	4,722.85	57.11	83.693		
12,100.00	10,770.00	10,764.86	10,738.90	48.64	38.58	-90.00	3.97	3,516.06	4,812.73	4,755.21	57.52	83.672		
12,200.00	10,770.00	13,877.25	12,375.00	49.53	52.39	-109.85	-1,718.16	3,532.92	4,817.42	4,749.54	67.88	70.972		
12,300.00	10,770.00	13,977.25	12,375.00	50.46	53.30	-109.85	-1,818.15	3,533.89	4,817.41	4,748.25	69.16	69.651		
12,400.00	10,770.00	14,077.25	12,375.00	51.43	54.25	-109.85	-1,918.15	3,534.87	4,817.40	4,746.90	70.50	68.333		
12,500.00	10,770.00	14,177.25	12,375.00	52.44	55.24	-109.85	-2,018.14	3,535.85	4,817.39	4,745.51	71.88	67.023		
12,600.00	10,770.00	14,277.25	12,375.00	53.48	56.25	-109.85	-2,118.14	3,536.83	4,817.38	4,744.08	73.30	65.725		
12,700.00	10,770.00	14,377.25	12,375.00	54.55	57.30	-109.85	-2,218.13	3,537.81	4,817.36	4,742.61	74.75	64.442		
12,800.00	10,770.00	14,477.25	12,375.00	55.65	58.37	-109.85	-2,318.13	3,538.79	4,817.35	4,741.10	76.25	63.178		
12,900.00	10,770.00	14,577.25	12,375.00	56.78	59.47	-109.85	-2,418.12	3,539.77	4,817.34	4,739.56	77.78	61.934		
13,000.00	10,770.00	14,677.25	12,375.00	57.93	60.59	-109.85	-2,518.12	3,540.74	4,817.33	4,737.98	79.35	60.713		
13,100.00	10,770.00	14,777.25	12,375.00	59.11	61.74	-109.85	-2,618.11	3,541.72	4,817.32	4,736.38	80.94	59.517		
13,200.00	10,770.00	14,877.25	12,375.00	60.31	62.91	-109.85	-2,718.11	3,542.70	4,817.31	4,734.74	82.56	58.346		
13,300.00	10,770.00	14,977.25	12,375.00	61.54	64.10	-109.85	-2,818.10	3,543.68	4,817.30	4,733.08	84.22	57.202		
13,400.00	10,770.00	15,077.25	12,375.00	62.78	65.31	-109.85	-2,918.10	3,544.66	4,817.28	4,731.39	85.89	56.084		
13,500.00	10,770.00	15,177.25	12,375.00	64.04	66.54	-109.85	-3,018.09	3,545.64	4,817.27	4,729.68	87.60	54.994		
13,600.00	10,770.00	15,277.25	12,375.00	65.32	67.79	-109.85	-3,118.09	3,546.62	4,817.26	4,727.94	89.32	53.932		
13,700.00	10,770.00	15,377.25	12,375.00	66.62	69.06	-109.85	-3,218.08	3,547.60	4,817.25	4,726.18	91.07	52.898		
13,800.00	10,770.00	15,477.25	12,375.00	67.93	70.34	-109.85	-3,318.08	3,548.57	4,817.24	4,724.40	92.83	51.890		
13,900.00	10,770.00	15,577.25	12,375.00	69.25	71.63	-109.85	-3,418.07	3,549.55	4,817.23	4,722.60	94.62	50.910		
14,000.00	10,770.00	15,677.25	12,375.00	70.59	72.94	-109.85	-3,518.07	3,550.53	4,817.21	4,720.79	96.43	49.957		
14,100.00	10,770.00	15,777.25	12,375.00	71.95	74.27	-109.85	-3,618.06	3,551.51	4,817.20	4,718.95	98.25	49.031		
14,200.00	10,770.00	15,877.25	12,375.00	73.31	75.61	-109.85	-3,718.06	3,552.49	4,817.19	4,717.10	100.09	48.130		
14,300.00	10,770.00	15,977.25	12,375.00	74.69	76.96	-109.85	-3,818.05	3,553.47	4,817.18	4,715.24	101.94	47.254		

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 501H
Project:	Lea County, NM (NAD83)	TVD Reference:	3121.3' GE + 30' KB @ 3151.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3121.3' GE + 30' KB @ 3151.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 501H	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		
14,400.00	10,770.00	16,077.25	12,375.00	76.08	78.32	-109.85	-3,918.05	3,554.45	4,817.17	4,713.36	103.81	46.404		
14,500.00	10,770.00	16,177.25	12,375.00	77.48	79.69	-109.85	-4,018.05	3,555.43	4,817.16	4,711.46	105.69	45.577		
14,600.00	10,770.00	16,277.25	12,375.00	78.89	81.07	-109.86	-4,118.04	3,556.40	4,817.15	4,709.56	107.59	44.774		
14,700.00	10,770.00	16,377.25	12,375.00	80.31	82.46	-109.86	-4,218.04	3,557.38	4,817.13	4,707.64	109.50	43.994		
14,800.00	10,770.00	16,477.25	12,375.00	81.73	83.86	-109.86	-4,318.03	3,558.36	4,817.12	4,705.71	111.42	43.236		
14,900.00	10,770.00	16,577.25	12,375.00	83.17	85.27	-109.86	-4,418.03	3,559.34	4,817.11	4,703.76	113.35	42.499		
15,000.00	10,770.00	16,677.25	12,375.00	84.61	86.69	-109.86	-4,518.02	3,560.32	4,817.10	4,701.81	115.29	41.783		
15,100.00	10,770.00	16,777.25	12,375.00	86.06	88.12	-109.86	-4,618.02	3,561.30	4,817.09	4,699.85	117.24	41.088		
15,200.00	10,770.00	16,877.25	12,375.00	87.52	89.56	-109.86	-4,718.01	3,562.28	4,817.08	4,697.88	119.20	40.413		
15,300.00	10,770.00	16,977.25	12,375.00	88.99	91.00	-109.86	-4,818.01	3,563.26	4,817.07	4,695.90	121.17	39.756		
15,400.00	10,770.00	17,077.25	12,375.00	90.46	92.45	-109.86	-4,918.00	3,564.23	4,817.05	4,693.91	123.14	39.118		
15,500.00	10,770.00	17,177.25	12,375.00	91.94	93.90	-109.86	-5,018.00	3,565.21	4,817.04	4,691.91	125.13	38.497		
15,600.00	10,770.00	17,277.25	12,375.00	93.42	95.37	-109.86	-5,117.99	3,566.19	4,817.03	4,689.91	127.12	37.893		
15,700.00	10,770.00	17,377.25	12,375.00	94.91	96.83	-109.86	-5,217.99	3,567.17	4,817.02	4,687.90	129.12	37.306		
15,800.00	10,770.00	17,477.25	12,375.00	96.40	98.31	-109.86	-5,317.98	3,568.15	4,817.01	4,685.88	131.13	36.734		
15,900.00	10,770.00	17,577.25	12,375.00	97.90	99.79	-109.86	-5,417.98	3,569.13	4,817.00	4,683.85	133.15	36.178		
16,000.00	10,770.00	17,677.25	12,375.00	99.41	101.27	-109.86	-5,517.97	3,570.11	4,816.98	4,681.82	135.17	35.637		
16,100.00	10,770.00	17,777.25	12,375.00	100.92	102.76	-109.86	-5,617.97	3,571.08	4,816.97	4,679.78	137.20	35.110		
16,200.00	10,770.00	17,877.25	12,375.00	102.43	104.26	-109.86	-5,717.96	3,572.06	4,816.96	4,677.73	139.23	34.597		
16,300.00	10,770.00	17,977.25	12,375.00	103.95	105.76	-109.86	-5,817.96	3,573.04	4,816.95	4,675.68	141.27	34.097		
16,400.00	10,770.00	18,077.25	12,375.00	105.47	107.26	-109.86	-5,917.95	3,574.02	4,816.94	4,673.62	143.32	33.610		
16,500.00	10,770.00	18,177.25	12,375.00	107.00	108.77	-109.86	-6,017.95	3,575.00	4,816.93	4,671.56	145.37	33.136		
16,600.00	10,770.00	18,277.25	12,375.00	108.52	110.28	-109.86	-6,117.94	3,575.98	4,816.92	4,669.49	147.42	32.674		
16,700.00	10,770.00	18,377.25	12,375.00	110.06	111.80	-109.86	-6,217.94	3,576.96	4,816.90	4,667.42	149.49	32.223		
16,800.00	10,770.00	18,477.25	12,375.00	111.59	113.32	-109.86	-6,317.94	3,577.94	4,816.89	4,665.34	151.55	31.784		
16,900.00	10,770.00	18,577.25	12,375.00	113.13	114.84	-109.86	-6,417.93	3,578.91	4,816.88	4,663.26	153.62	31.356		
17,000.00	10,770.00	18,677.25	12,375.00	114.68	116.37	-109.86	-6,517.93	3,579.89	4,816.87	4,661.18	155.69	30.939		
17,100.00	10,770.00	18,777.25	12,375.00	116.22	117.90	-109.86	-6,617.92	3,580.87	4,816.86	4,659.09	157.77	30.532		
17,200.00	10,770.00	18,877.25	12,375.00	117.77	119.43	-109.86	-6,717.92	3,581.85	4,816.85	4,657.00	159.85	30.134		
17,300.00	10,770.00	18,977.25	12,375.00	119.32	120.97	-109.86	-6,817.91	3,582.83	4,816.84	4,654.90	161.93	29.746		
17,400.00	10,770.00	19,077.25	12,375.00	120.88	122.51	-109.86	-6,917.91	3,583.81	4,816.82	4,652.80	164.02	29.367		
17,500.00	10,770.00	19,177.25	12,375.00	122.43	124.05	-109.86	-7,017.90	3,584.79	4,816.81	4,650.70	166.11	28.997		
17,600.00	10,770.00	19,277.25	12,375.00	123.99	125.60	-109.86	-7,117.90	3,585.77	4,816.80	4,648.59	168.21	28.636		
17,700.00	10,770.00	19,377.25	12,375.00	125.55	127.15	-109.86	-7,217.89	3,586.74	4,816.79	4,646.48	170.31	28.283		
17,800.00	10,770.00	19,477.25	12,375.00	127.12	128.70	-109.86	-7,317.89	3,587.72	4,816.78	4,644.37	172.41	27.938		
17,900.00	10,770.00	19,577.25	12,375.00	128.68	130.25	-109.86	-7,417.88	3,588.70	4,816.77	4,642.26	174.51	27.601		
18,000.00	10,770.00	19,677.25	12,375.00	130.25	131.81	-109.86	-7,517.88	3,589.68	4,816.75	4,640.14	176.62	27.272		
18,100.00	10,770.00	19,777.25	12,375.00	131.82	133.37	-109.86	-7,617.87	3,590.66	4,816.74	4,638.02	178.73	26.950		
18,200.00	10,770.00	19,877.25	12,375.00	133.39	134.93	-109.86	-7,717.87	3,591.64	4,816.73	4,635.89	180.84	26.636		
18,300.00	10,770.00	19,977.25	12,375.00	134.97	136.49	-109.86	-7,817.86	3,592.62	4,816.72	4,633.77	182.95	26.328		
18,400.00	10,770.00	20,077.25	12,375.00	136.54	138.05	-109.86	-7,917.86	3,593.59	4,816.71	4,631.64	185.07	26.027		
18,500.00	10,770.00	20,177.25	12,375.00	138.12	139.62	-109.86	-8,017.85	3,594.57	4,816.70	4,629.51	187.19	25.732		
18,600.00	10,770.00	20,277.25	12,375.00	139.70	141.19	-109.86	-8,117.85	3,595.55	4,816.69	4,627.38	189.31	25.443		
18,700.00	10,770.00	20,377.25	12,375.00	141.28	142.76	-109.86	-8,217.84	3,596.53	4,816.67	4,625.24	191.43	25.161		
18,800.00	10,770.00	20,477.25	12,375.00	142.86	144.33	-109.86	-8,317.84	3,597.51	4,816.66	4,623.10	193.56	24.885		
18,900.00	10,770.00	20,577.25	12,375.00	144.45	145.90	-109.86	-8,417.83	3,598.49	4,816.65	4,620.96	195.69	24.614		
19,000.00	10,770.00	20,677.25	12,375.00	146.03	147.48	-109.86	-8,517.83	3,599.47	4,816.64	4,618.82	197.82	24.349		
19,100.00	10,770.00	20,777.25	12,375.00	147.62	149.06	-109.86	-8,617.83	3,600.45	4,816.63	4,616.68	199.95	24.089		
19,200.00	10,770.00	20,877.25	12,375.00	149.21	150.63	-109.86	-8,717.82	3,601.42	4,816.62	4,614.53	202.09	23.834		
19,300.00	10,770.00	20,977.25	12,375.00	150.80	152.21	-109.86	-8,817.82	3,602.40	4,816.61	4,612.38	204.22	23.585		
19,400.00	10,770.00	21,077.25	12,375.00	152.39	153.80	-109.86	-8,917.81	3,603.38	4,816.59	4,610.23	206.36	23.341		
19,500.00	10,770.00	21,177.25	12,375.00	153.98	155.38	-109.86	-9,017.81	3,604.36	4,816.58	4,608.08	208.50	23.101		

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 501H
Project:	Lea County, NM (NAD83)	TVD Reference:	3121.3' GE + 30' KB @ 3151.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3121.3' GE + 30' KB @ 3151.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 501H	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		
19,600.00	10,770.00	21,277.25	12,375.00	155.57	156.96	-109.86	-9,117.80	3,605.34	4,816.57	4,605.93	210.64	22.866		
19,700.00	10,770.00	21,377.25	12,375.00	157.17	158.55	-109.86	-9,217.80	3,606.32	4,816.56	4,603.78	212.78	22.636		
19,800.00	10,770.00	21,477.25	12,375.00	158.76	160.14	-109.86	-9,317.79	3,607.30	4,816.55	4,601.62	214.93	22.410		
19,900.00	10,770.00	21,577.25	12,375.00	160.36	161.73	-109.86	-9,417.79	3,608.28	4,816.54	4,599.47	217.07	22.189		
20,000.00	10,770.00	21,677.25	12,375.00	161.96	163.32	-109.86	-9,517.78	3,609.25	4,816.52	4,597.31	219.22	21.972		
20,100.00	10,770.00	21,777.25	12,375.00	163.56	164.91	-109.86	-9,617.78	3,610.23	4,816.51	4,595.15	221.36	21.758		
20,200.00	10,770.00	21,877.25	12,375.00	165.16	166.50	-109.86	-9,717.77	3,611.21	4,816.50	4,592.99	223.51	21.549		
20,300.00	10,770.00	21,977.25	12,375.00	166.76	168.09	-109.86	-9,817.77	3,612.19	4,816.49	4,590.83	225.66	21.344		
20,400.00	10,770.00	22,077.25	12,375.00	168.36	169.69	-109.86	-9,917.76	3,613.17	4,816.48	4,588.66	227.82	21.142		
20,500.00	10,770.00	22,177.25	12,375.00	169.97	171.28	-109.86	-10,017.76	3,614.15	4,816.47	4,586.50	229.97	20.944		
20,600.00	10,770.00	22,277.25	12,375.00	171.57	172.88	-109.86	-10,117.75	3,615.13	4,816.46	4,584.33	232.12	20.750		
20,700.00	10,770.00	22,377.25	12,375.00	173.18	174.48	-109.86	-10,217.75	3,616.10	4,816.44	4,582.17	234.28	20.559		
20,800.00	10,770.00	22,477.25	12,375.00	174.78	176.08	-109.86	-10,317.74	3,617.08	4,816.43	4,580.00	236.44	20.371		
20,841.66	10,770.00	22,518.91	12,375.00	175.40	176.71	-109.86	-10,359.40	3,617.49	4,816.43	4,579.17	237.25	20.301 SF		

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



Total Directional Services

Anticollision Report

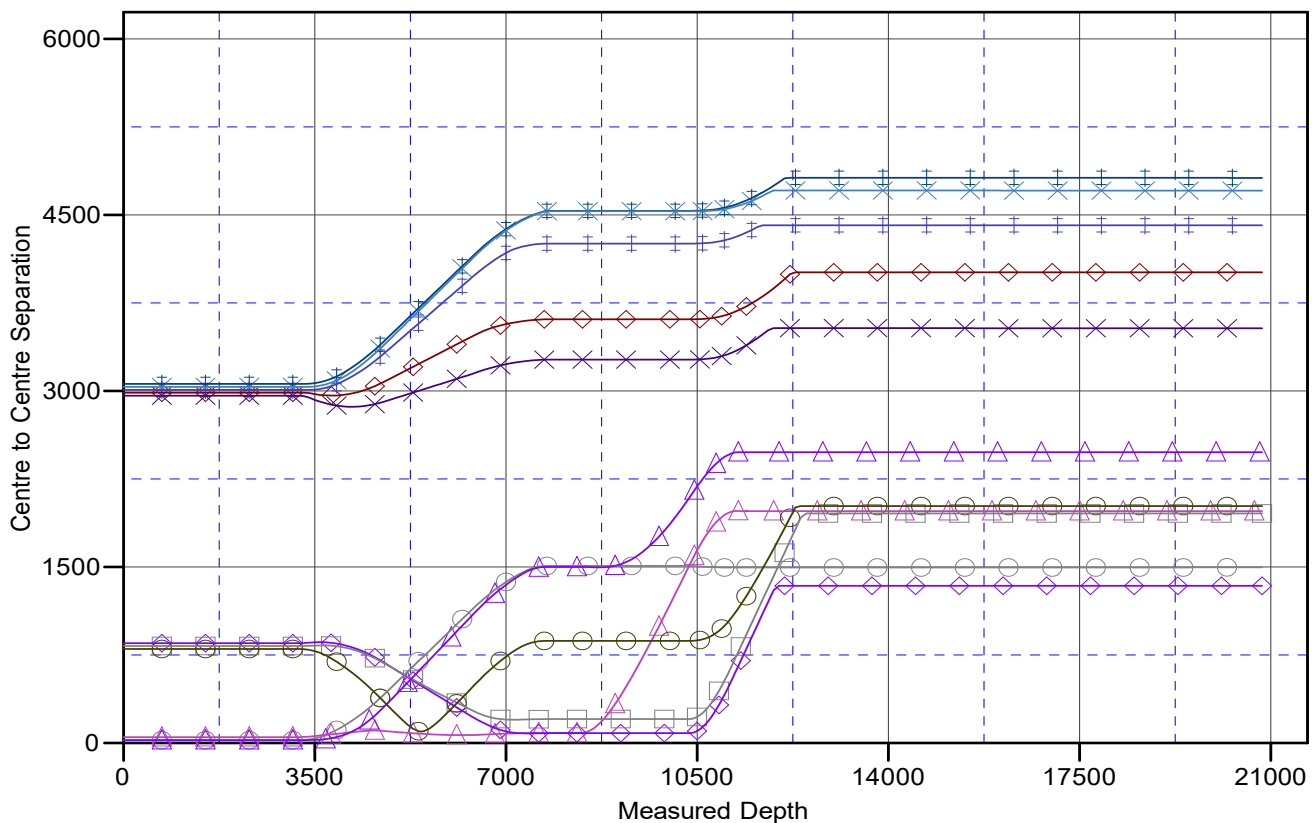


Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well Tatanka Fed Com 501H
Project:	Lea County, NM (NAD83)	TVD Reference:	3121.3' GE + 30' KB @ 3151.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3121.3' GE + 30' KB @ 3151.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 501H	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 3121.3' GE + 30' KB @ 3151.30usft
 Offset Depths are relative to Offset Datum
 Central Meridian is -104.333334

Coordinates are relative to: Tatanka Fed Com 501H
 Coordinate System is US State Plane 1983, New Mexico Eastern Zone
 Grid Convergence at Surface is: 0.53°

Ladder Plot



LEGEND

Tatanka Fed Com 502H, OH, Plan #1 V0	Tatanka Fed Com 601H, OH, Plan #2 V0	Tatanka Fed Com 102H, OH, Plan #1 V0
Tatanka Fed Com 805H, OH, Plan #2 V0	Tatanka Fed Com 806H, OH, Plan #2 V0	Tatanka Fed Com 802H, OH, Plan #2 V0
Tatanka Fed Com 704H, OH, Plan #2 V0	Tatanka Fed Com 705H, OH, Plan #2 V0	Tatanka Fed Com 604H, OH, Plan #2 V0
Tatanka Fed Com 101H, OH, Plan #1 V0	Tatanka Fed Com 801H, OH, Plan #2 V0	

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



Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well Tatanka Fed Com 501H
Project:	Lea County, NM (NAD83)	TVD Reference:	3121.3' GE + 30' KB @ 3151.30usft
Reference Site:	Tatanka Fed Com	MD Reference:	3121.3' GE + 30' KB @ 3151.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tatanka Fed Com 501H	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 3121.3' GE + 30' KB @ 3151.30usft

Offset Depths are relative to Offset Datum

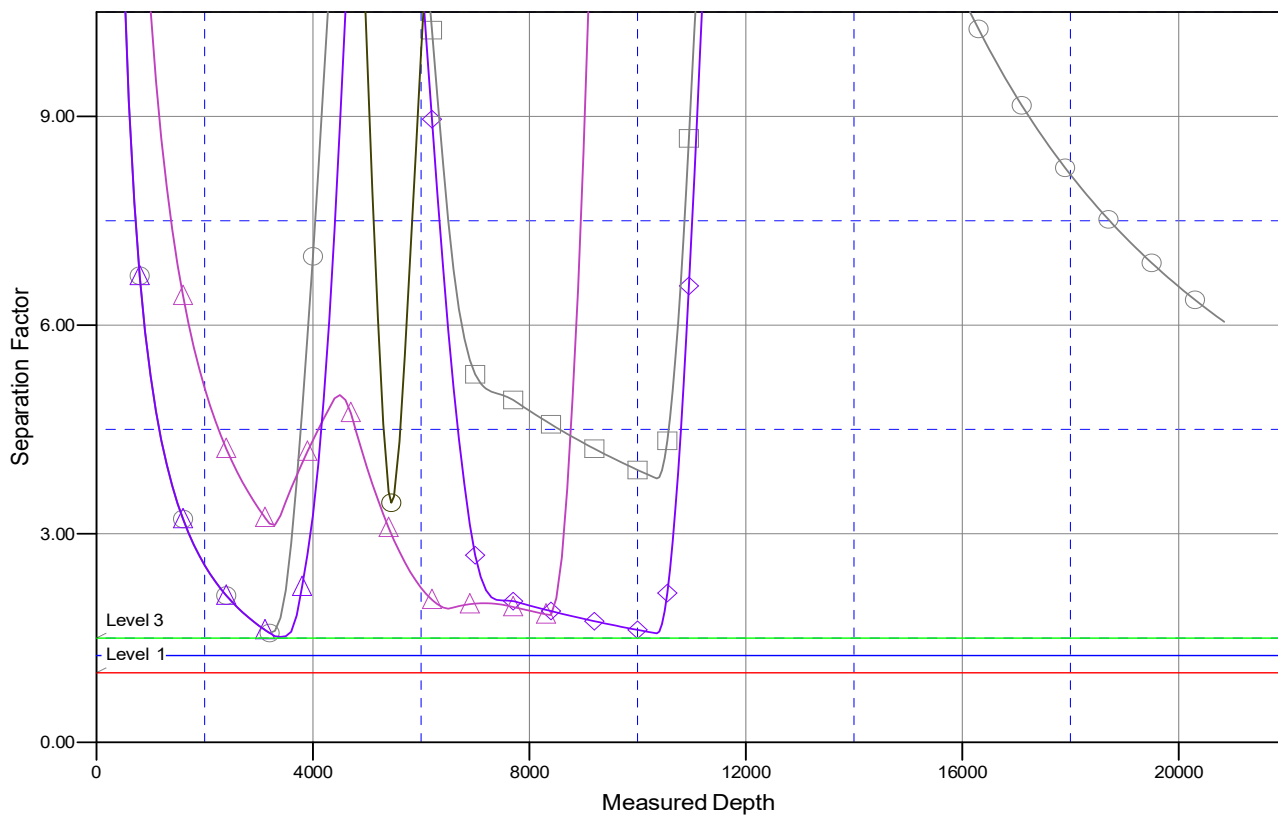
Central Meridian is -104.333334

Coordinates are relative to: Tatanka Fed Com 501H

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 502H, OH, Plan #1 V0	Tatanka Fed Com 601H, OH, Plan #2 V0	Tatanka Fed Com 102H, OH, Plan #1 V0
Tatanka Fed Com 805H, OH, Plan #2 V0	Tatanka Fed Com 806H, OH, Plan #2 V0	Tatanka Fed Com 802H, OH, Plan #2 V0
Tatanka Fed Com 704H, OH, Plan #2 V0	Tatanka Fed Com 705H, OH, Plan #2 V0	Tatanka Fed Com 604H, OH, Plan #2 V0
Tatanka Fed Com 101H, OH, Plan #1 V0	Tatanka Fed Com 801H, 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.

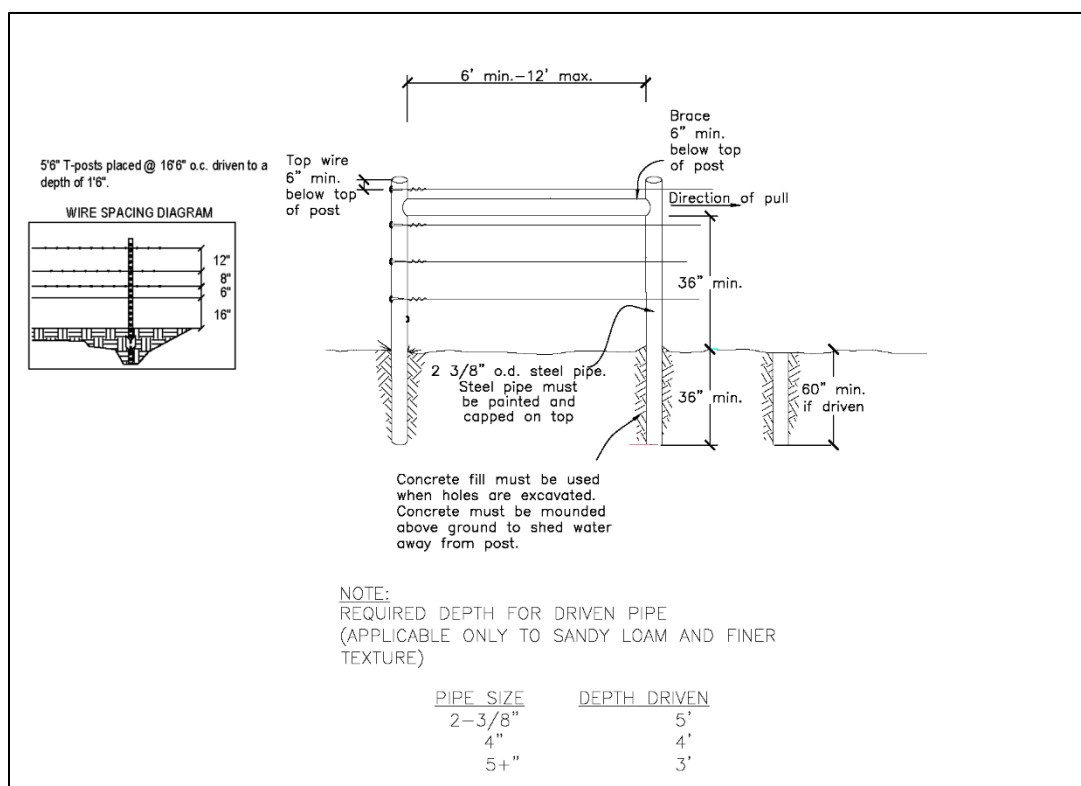
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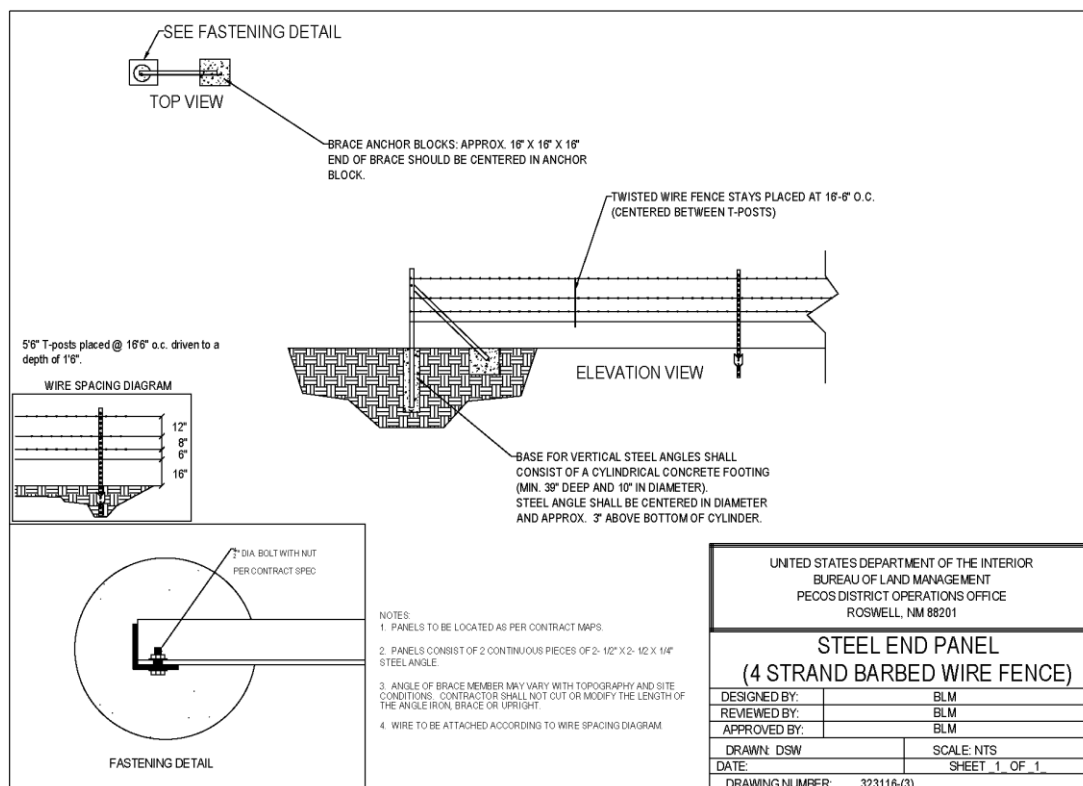
Cattleguards

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

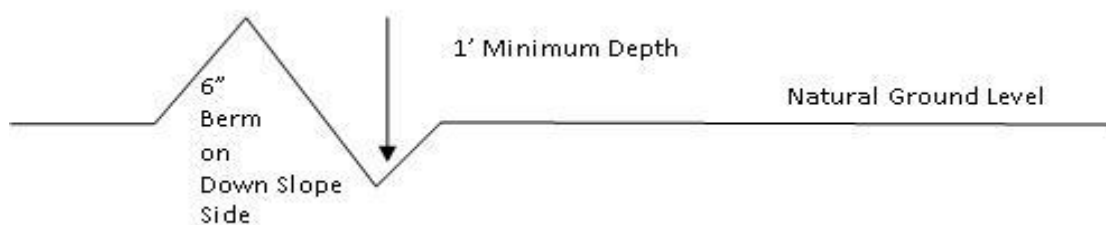
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall conform to Figure 1; cross section and plans for typical road construction.

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

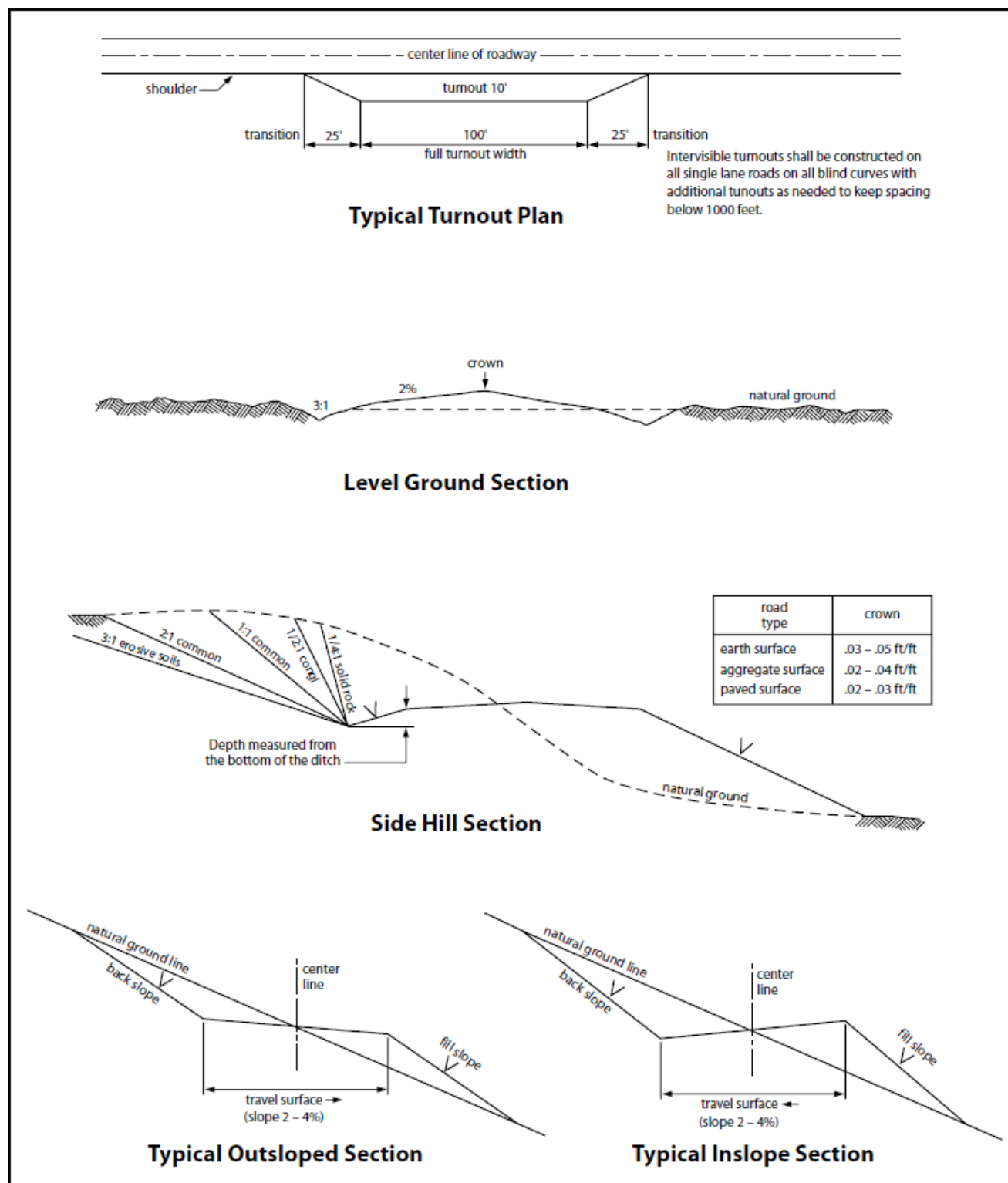


Figure 1. Cross-sections and plans for typical road sections representative of BLM resource or FS local and higher-class roads.

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 2, T.26 S., R.35 E., NMPM
COUNTY:	Lea County, New Mexico

WELL NAME & NO.:	Tatanka Fed Com 102H
SURFACE HOLE FOOTAGE:	20'/N & 1372'/W
BOTTOM HOLE FOOTAGE:	150'/S & 1877'/W

WELL NAME & NO.:	Tatanka Fed Com 501H
SURFACE HOLE FOOTAGE:	20'/N & 1397'/W
BOTTOM HOLE FOOTAGE:	150'/S & 380'/W

WELL NAME & NO.:	Tatanka Fed Com 502H
SURFACE HOLE FOOTAGE:	20'/N & 1422'/W
BOTTOM HOLE FOOTAGE:	150'/S & 1877'/W

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
Other	☒ 4 String Area	☐ Capitan Reef	☐ WIPP
Other	☒ Fluid Filled	☐ Cement Squeeze	☐ Pilot Hole
Special Requirements	☐ Water Disposal	☒ COM	☐ Unit

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:

Option 1 (Single Stage):

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

Option 2:

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

- a. First stage to DV tool: Cement to circulate. If cement does not circulate off the DV tool, contact the appropriate BLM office before proceeding with second stage cement job.
- b. Second stage above DV tool:
 - Cement to surface. If cement does not circulate, contact the appropriate BLM office.

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 **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:

1. Operator has proposed a multi-bowl wellhead assembly. This assembly will only be tested when installed on the 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.**
 - a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
 - b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
 - c. Manufacturer representative shall install the test plug for the initial BOP test.

- d. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
- e. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.

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 88301

CONDITIONS

Operator: Franklin Mountain Energy LLC 44 Cook Street Denver, CO 80206	OGRID: 373910
	Action Number: 88301
	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