

Well Name: KASTON FED COM	Well Location: T25S / R35E / SEC 36 / SESW / 32.080431 / -103.321895	County or Parish/State: LEA / NM
Well Number: 703H	Type of Well: OIL WELL	Allottee or Tribe Name:
Lease Number: NMNM117126	Unit or CA Name:	Unit or CA Number:
US Well Number: 3002548105	Well Status: Drilling Well	Operator: FRANKLIN MOUNTAIN ENERGY LLC

Notice of Intent

Type of Submission: Notice of Intent	Type of Action Drilling Operations
Date Sundry Submitted: 05/15/2021	Time Sundry Submitted: 02:46
Date proposed operation will begin: 05/18/2021	

Procedure Description: Franklin Mountain Energy, LLC (FME), Operator, respectfully requests approval to make the following changes to the proposed drilling plan for the above referenced well: - Change 1st Intermediate set depth to 5,095'. - Change cement volumes based on updated Geoprog, casing and Directional plan. - Production Casing: FME would like approval to utilize 5.5 inch Eagle 606 23lb. P-110 in the drilling of this bore. Please see attached revised 14-point plan, Plan #4, geo prog and data sheet.

Surface Disturbance

Is any additional surface disturbance proposed?: No

NOI Attachments

Procedure Description

- FME_Federal_14_Point_Plan_Kaston_703_updated_dir_23_lbs_Eagle_14_5_ppg_slurry_20210515144604.pdf
- Data_Sheet_5.500_inch_23.00__P110_USS_EAGLE_SFH__USS_20210212151937_20210225100727_20210511161950.pdf
- Kasten_Fed_Com_703H_GEOPROG_prelim_20210511161755.pdf
- Franklin_Mountain__Kaston_Fed_Com_703H__Plan_4_20210511161747.pdf

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Lease Number: NMNM117126	Unit or CA Name:	Unit or CA Number:
US Well Number: 3002548105	Well Status: Drilling Well	Operator: FRANKLIN MOUNTAIN ENERGY LLC

Operator Certification

I certify that the foregoing is true and correct. Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction. Electronic submission of Sundry Notices through this system satisfies regulations requiring a submission of Form 3160-5 or a Sundry Notice.

Operator Electronic Signature: RACHAEL OVERBEY	Signed on: MAY 15, 2021 02:46 PM
Name: FRANKLIN MOUNTAIN ENERGY LLC	
Title: Director – Operations Planning and Regulatory	
Street Address: 2401 E 2nd Avenue, Suite 300	
City: Denver	State: CO
Phone: (720) 414-7868	
Email address: roverbey@fme LLC.com	

Field Representative

Representative Name:		
Street Address:		
City:	State:	Zip:
Phone:		
Email address:		

BLM Point of Contact

BLM POC Name: LONG VO	BLM POC Title: Petroleum Engineer
BLM POC Phone: 5752345972	BLM POC Email Address: lvo@blm.gov
Disposition: Approved	Disposition Date: 05/17/2021
Signature: Long Vo	



Kaston Fed Com 703H

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)	3,057'	30'	30'	0	Sand/Gravels/unconsolidated
Rustler	2,263'	824'			Carbonates
Salado	1,743'	1,344'			Salt, Carbonate & Clastics
Base Salt	498'	2,589'			Shaley Carbonate & Shale
Lamar	-1,995'	5,082'			Carbonate & Clastics
Bell Canyon	-2,030'	5,117'			Sandstone - oil/gas/water
Cherry Canyon	-2,879'	5,966'			Sandstone - oil/gas/water
Brushy Canyon	-4,264'	7,351'			Sand/carb/shales - oil/gas/water
Bone Spring Lime	-5,634'	8,721'			Shale/Carbonates - oil/gas
Avalon	-5,658'	8,745'			Shale/Carbonates - oil/gas
First Bone Spring Sand	-6,760'	9,847'			Sandstone - oil/gas/water
Second Bone Spring Carbonates	-6,899'	9,986'			Shale/Carbonates - oil/gas
Second Bone Spring Sand	-7,284'	10,371'			Sandstone - oil/gas/water
Third Bone Spring Carbonates	-7,984'	11,071'			Shale/Carbonates - oil/gas
Third Bone Spring Sand	-8,655'	11,742'			Sandstone - oil/gas/water
Wolfcamp	-8,897'	11,984'			Overpressure shale/sand- Oil/Gas
Wolfcamp A	-8,958'	12,045'			Overpressure Shale - Oil/Gas
HZ Target	-9,084'	12,171'			Overpressure Shale - Oil/Gas
Wolfcamp B	-9,178'	12,265'			Overpressure Shale - Oil/Gas

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

Upper Permian Sands	0- 400'	Fresh Water
Delaware Sands	5,117'	Oil
Bone Spring	9,847'	Oil
Wolfcamp	11,984	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	5095	1.79	1.77	3.02	3.43
Intermediate 7 5/8"	29.7	HCP-110	8280	7150	827	Stinger 564	12000	1.11	1.27	1.81	1.24
Long string 5 1/2"	23	P-110	14520	14520	729	Eagle 606 TVD	23679 12319	1.32	1.31	1.13	0.94 1.58

7 5/8" casing will be set at 12,000' MD/11,952' TVD at 38° Inc just above the Wolfcamp formation. Stress calculations on 5 1/2" casing performed assuming 23,679' depth. Stress calculations on 5 1/2" connections performed at 12,319' – maximum vertical depth of this well.



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	HalCem TM, 14.8 ppg, Class C, 1% CaCl ₂ , 0.125pps Celo-Flake	1.349	6.51	1000	100%
Int1	12.25	9.625	5095	1486	Lead, 12.8 ppg, Class C 5% Salt, 0.125 pps Poly-E-Flake, 3lb/sk Kol-Seal	1.79	9.72	0	154	HalCem TM, 14.8 ppg, Class C, 0.1% HR 800 .125 pps Poly-E-Flake	1.33	6.37	4795	100%
Int2	8.75	7.625	12000	241	Lite Fill, 9.5 ppg, Class C 3lb/sk Bridgemaker Gel, 5% Salt, 5pps LCM, 0.25pps Cello-Flake	3.28	14.74	4095	94	NeoCem 14.8 ppg, Class C 0.25 pps Cello-Flake, 2% CaCl ₂	1.33	6.26	11000	50%
Prod	6.75	5.5	23679	946	Tail 14.5 ppg ppg, Gas Migration Control	1.34	6.65	11000						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' – 12,000'	Brine	8.8-10.2	28-34	N/c
12,000' – 23,594' Lateral	Oil Base	10.0-11.0	58-68	3 - 6

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

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

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

7. Auxiliary well control and monitoring equipment:

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

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

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

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

8. Logging, testing and coring program:

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

Open-hole logs are not planned for this well.

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

The estimated bottom-hole temperature at 12,319' TVD (deepest point of the well) is 195F with an estimated maximum bottom-hole pressure (BHP) at the same point of 8,007 psig (based on 12.5 ppg MW). Hydrogen sulfate may be present in the area. All necessary precautions will be taken before drilling operations commence.

See Hydrogen Sulfide Plan below:

10. Hydrogen Sulfide Plan:

A. All personnel shall receive proper awareness H₂S training.

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

C. Required Emergency Equipment

a. Well Control Equipment

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

ii. Choke manifold with a remotely operated hydraulic choke.

iii. Mud/gas separator

b. Protective equipment for essential personnel

i. Breathing Apparatus

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

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



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

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

11. Anticipated starting date and duration of operations:

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

**12. Disposal/environmental concerns:**

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

13. Wellhead:

A multi-bowl wellhead system will be utilized.

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

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

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

The multi-bowl wellhead will be installed by vendor's representative(s). A copy of the installation instructions for the Cameron 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.

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Franklin Mountain Energy

Project: Lea County, NM (NAD83)
Site: Bus Driver/Kaston Fed Com
Well: Kaston Fed Com 703H
Wellbore: OH
Design: Plan #4



Azimuths to Grid North
True North: -0.54°
Magnetic North: 6.00°

Magnetic Field
Strength: 47604.7nT
Dip Angle: 59.93°
Date: 2/25/2020
Model: IGRF2015

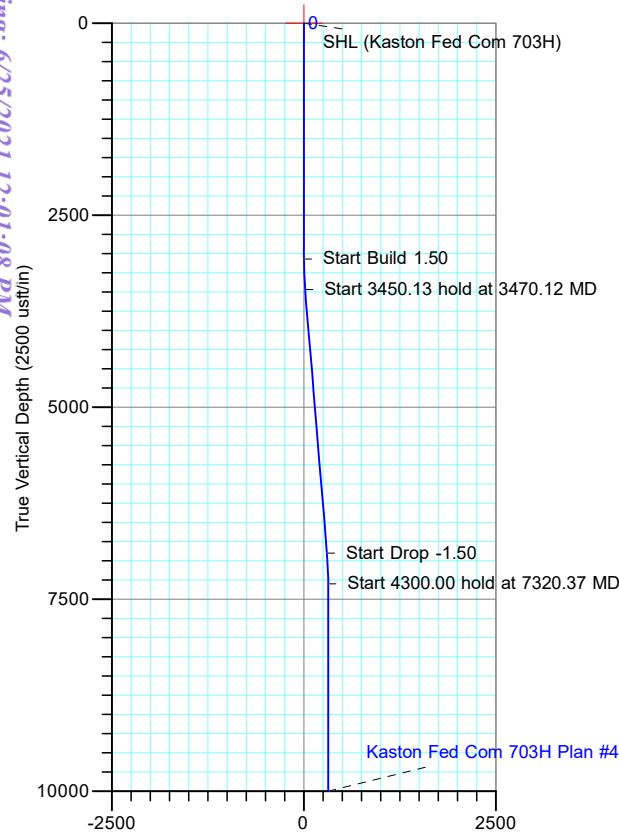
PROJECT DETAILS: Lea County, NM (NAD83)

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



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3057.5' GE + 30' KB @ 3087.50usft

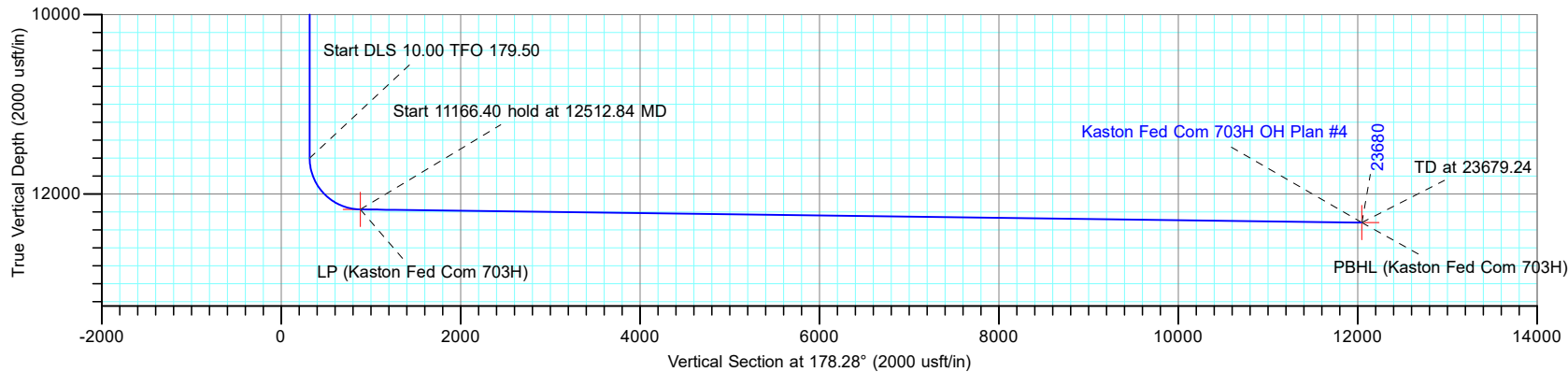
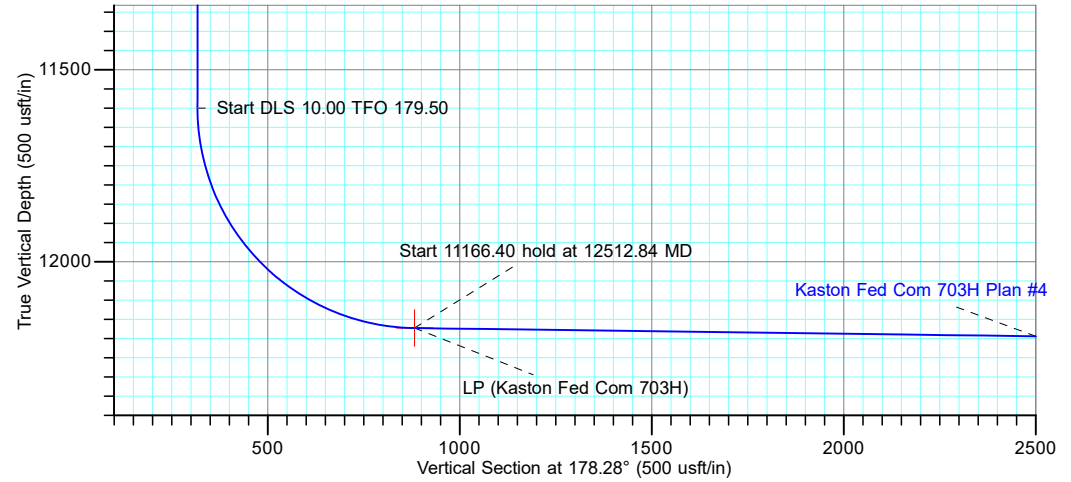


SECTION DETAILS

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	
3070.00	0.00	0.00	3070.00	0.00	0.00	0.00	0.00	0.00	Start Build 1.50
3470.12	6.00	140.24	3469.39	-16.10	13.39	1.50	140.24	16.49	Start 3450.13 hold at 3470.12 MD
6920.25	6.00	140.24	6900.61	-293.43	244.09	0.00	0.00	300.61	Start Drop -1.50
7320.37	0.00	0.00	7300.00	-309.53	257.48	1.50	180.00	317.10	Start 4300.00 hold at 7320.37 MD
11620.37	0.00	0.00	11600.00	-309.53	257.48	0.00	0.00	317.10	Start DLS 10.00 TFO 179.50
12512.84	89.25	179.50	12172.91	-874.93	262.45	10.00	179.50	882.40	Start 11166.40 hold at 12512.84 MD
23679.24	89.25	179.50	12319.68	-12039.94	360.55	0.00	0.00	12045.34	TD at 23679.24

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Latitude	Longitude
LP (Kaston Fed Com 703H)	12172.91	-874.93	262.45	32.078019	-103.321074
PBHL (Kaston Fed Com 703H)	12319.68	-12039.94	360.55	32.047329	-103.321096
SHL (Kaston Fed Com 703H)	0.00	0.00	0.00	32.080431	-103.321895



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

Plan: Plan #4 (Kaston Fed Com 703H/OH)
Bus Driver/Kaston Fed Com
Created By: Dustin Ault Date: 11:35, April 20 2021
Date: _____
Approved: _____ Date: _____

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Franklin Mountain Energy

Project: Lea County, NM (NAD83)
Site: Bus Driver/Kaston Fed Com
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M

Azimuths to Grid North

True North: -0.54°

Magnetic North: 6.00°

Magnetic Field

Strength: 47604.7nT

Dip Angle: 59.93°

Date: 2/25/2020

Model: IGRF2015

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

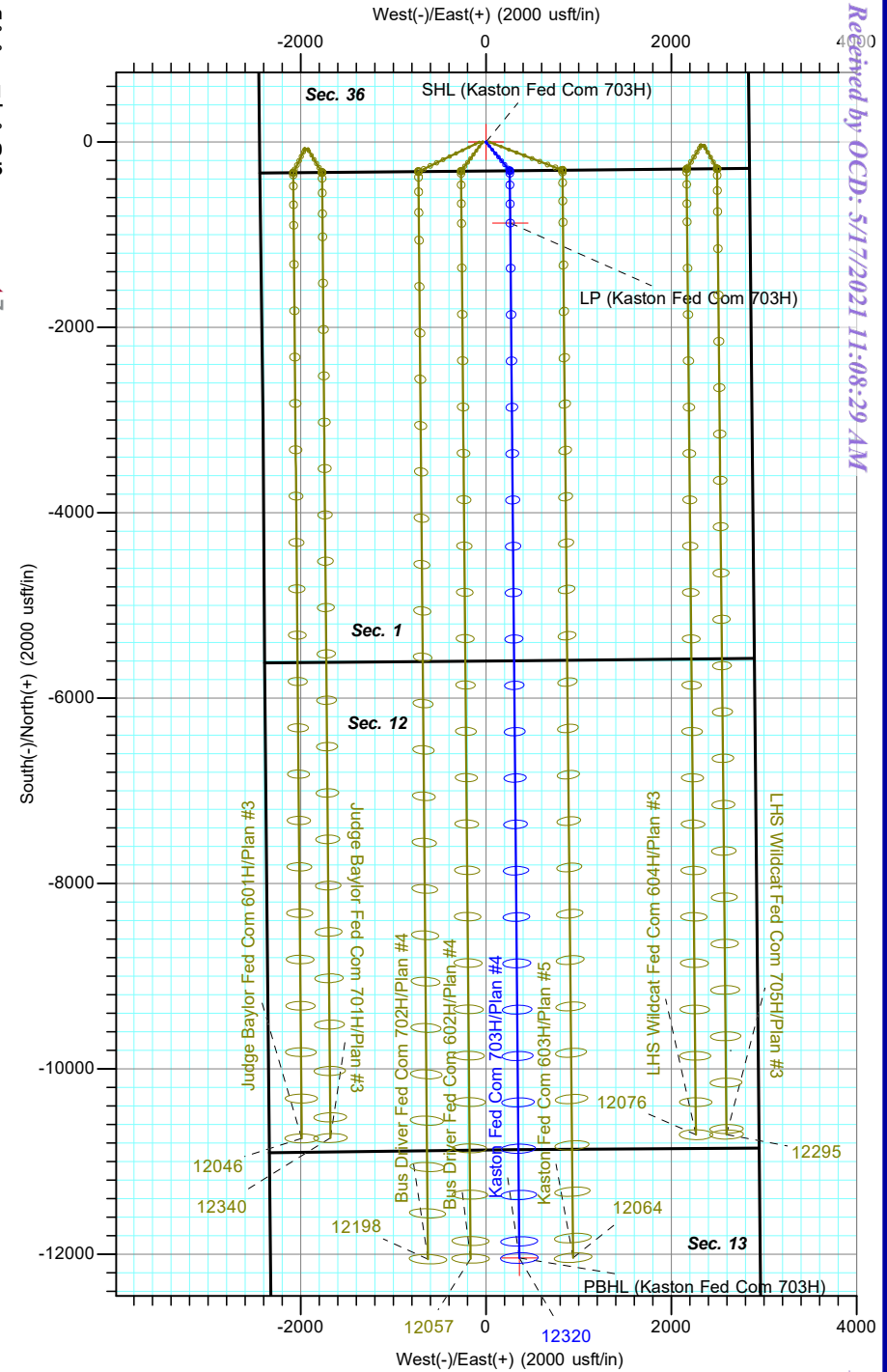
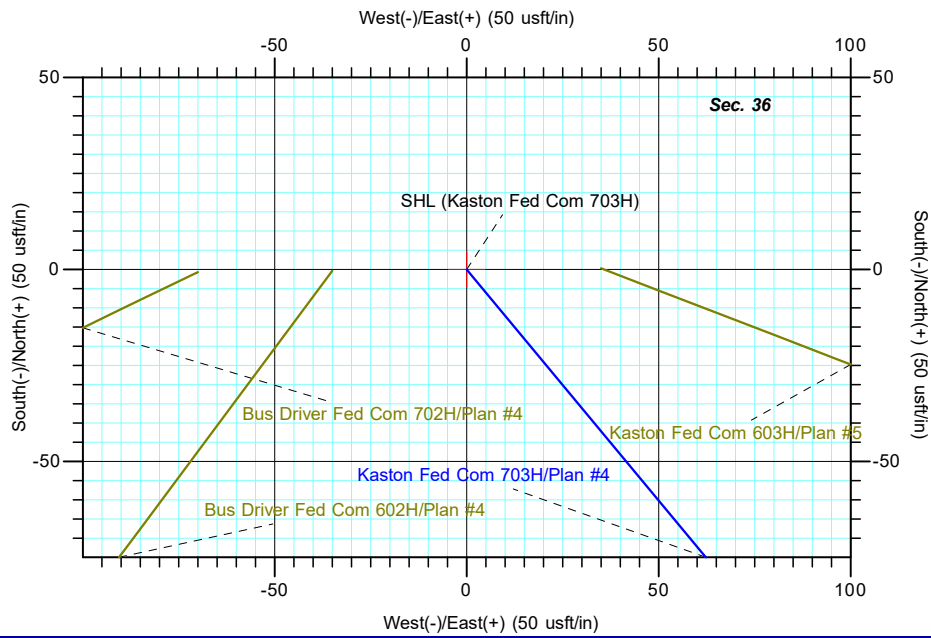


DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
LP (Kaston Fed Com 703H)	12172.91	-874.93	262.45	393591.48	854866.83	32.078019	-103.321074
PBHL (Kaston Fed Com 703H)	12319.68	-12039.94	360.55	382426.47	854964.93	32.047329	-103.321096
SHL (Kaston Fed Com 703H)	0.00	0.00	0.00	394466.41	854604.38	32.080431	-103.321895

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	
3070.00	0.00	0.00	3070.00	0.00	0.00	0.00	0.00	0.00	Start Build 1.50
3470.12	6.00	140.24	3469.39	-16.10	13.39	1.50	140.24	16.49	Start 3450.13 hold at 3470.12 MD
6920.25	6.00	140.24	6900.61	-293.43	244.09	0.00	0.00	300.61	Start Drop -1.50
7320.37	0.00	0.00	7300.00	-309.53	257.48	1.50	180.00	317.10	Start 4300.00 hold at 7320.37 MD
11620.37	0.00	0.00	11600.00	-309.53	257.48	0.00	0.00	317.10	Start DLS 10.00 TFO 179.50
12512.84	89.25	179.50	12172.91	-874.93	262.45	10.00	179.50	882.40	Start 11166.40 hold at 12512.84 MD
23679.24	89.25	179.50	12319.68	-12039.94	360.55	0.00	0.00	12045.34	TD at 23679.24



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

Plan: Plan #4 (Kaston Fed Com 703H/OH)
Bus Driver/Kaston Fed Com
Created By: Dustin Ault
Date: 11:36, April 20 2021
Approved: _____ Date: _____

Received by OCD: 5/17/2021 11:08:29 AM



Franklin Mountain Energy

Lea County, NM (NAD83)
Bus Driver/Kaston Fed Com
Kaston Fed Com 703H

OH

Plan: Plan #4

Standard Planning Report

20 April, 2021





Total Directional Services

Planning Report



Database:	EDM 5000.15 Single User Db	Local Co-ordinate Reference:	Well Kaston Fed Com 703H
Company:	Franklin Mountain Energy	TVD Reference:	3057.5' GE + 30' KB @ 3087.50usft
Project:	Lea County, NM (NAD83)	MD Reference:	3057.5' GE + 30' KB @ 3087.50usft
Site:	Bus Driver/Kaston Fed Com	North Reference:	Grid
Well:	Kaston Fed Com 703H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #4		

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	Bus Driver/Kaston Fed Com					
Site Position:		Northing:	394,466.08 usft	Latitude:	32.080431	
From:	Map	Easting:	854,569.39 usft	Longitude:	-103.322008	
Position Uncertainty:		0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.54 °

Well	Kaston Fed Com 703H					
Well Position	+N/-S	0.33 usft	Northing:	394,466.41 usft	Latitude:	32.080431
	+E/-W	34.99 usft	Easting:	854,604.38 usft	Longitude:	-103.321895
Position Uncertainty		0.00 usft	Wellhead Elevation:		Ground Level:	3,057.50 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	2/25/2020	6.53	59.93	47,604.68644941

Design	Plan #4			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	178.28

Plan Survey Tool Program	Date	4/20/2021			
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks	
1	0.00	23,679.24 Plan #4 (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	
3,070.00	0.00	0.00	3,070.00	0.00	0.00	0.00	0.00	0.00	0.00	
3,470.12	6.00	140.24	3,469.39	-16.10	13.39	1.50	1.50	0.00	140.24	
6,920.25	6.00	140.24	6,900.61	-293.43	244.09	0.00	0.00	0.00	0.00	
7,320.37	0.00	0.00	7,300.00	-309.53	257.48	1.50	-1.50	0.00	180.00	
11,620.37	0.00	0.00	11,600.00	-309.53	257.48	0.00	0.00	0.00	0.00	
12,512.84	89.25	179.50	12,172.91	-874.94	262.45	10.00	10.00	20.11	179.50	
23,679.24	89.25	179.50	12,319.68	-12,039.94	360.55	0.00	0.00	0.00	0.00	PBHL (Kaston Fed Cc



Total Directional Services

Planning Report



Database:	EDM 5000.15 Single User Db	Local Co-ordinate Reference:	Well Kaston Fed Com 703H
Company:	Franklin Mountain Energy	TVD Reference:	3057.5' GE + 30' KB @ 3087.50usft
Project:	Lea County, NM (NAD83)	MD Reference:	3057.5' GE + 30' KB @ 3087.50usft
Site:	Bus Driver/Kaston Fed Com	North Reference:	Grid
Well:	Kaston Fed Com 703H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #4		

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 (Kaston Fed Com 703H)									
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
3,070.00	0.00	0.00	3,070.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 1.50									
3,100.00	0.45	140.24	3,100.00	-0.09	0.08	0.09	1.50	1.50	0.00
3,200.00	1.95	140.24	3,199.97	-1.70	1.41	1.74	1.50	1.50	0.00
3,300.00	3.45	140.24	3,299.86	-5.32	4.43	5.45	1.50	1.50	0.00
3,400.00	4.95	140.24	3,399.59	-10.95	9.11	11.22	1.50	1.50	0.00
3,470.12	6.00	140.24	3,469.39	-16.10	13.39	16.49	1.50	1.50	0.00
Start 3450.13 hold at 3470.12 MD									
3,500.00	6.00	140.24	3,499.10	-18.50	15.39	18.95	0.00	0.00	0.00
3,600.00	6.00	140.24	3,598.56	-26.54	22.07	27.19	0.00	0.00	0.00
3,700.00	6.00	140.24	3,698.01	-34.58	28.76	35.42	0.00	0.00	0.00
3,800.00	6.00	140.24	3,797.46	-42.61	35.45	43.66	0.00	0.00	0.00
3,900.00	6.00	140.24	3,896.91	-50.65	42.13	51.89	0.00	0.00	0.00
4,000.00	6.00	140.24	3,996.36	-58.69	48.82	60.13	0.00	0.00	0.00
4,100.00	6.00	140.24	4,095.82	-66.73	55.51	68.36	0.00	0.00	0.00
4,200.00	6.00	140.24	4,195.27	-74.77	62.19	76.60	0.00	0.00	0.00
4,300.00	6.00	140.24	4,294.72	-82.81	68.88	84.83	0.00	0.00	0.00
4,400.00	6.00	140.24	4,394.17	-90.84	75.57	93.07	0.00	0.00	0.00
4,500.00	6.00	140.24	4,493.62	-98.88	82.25	101.30	0.00	0.00	0.00
4,600.00	6.00	140.24	4,593.08	-106.92	88.94	109.54	0.00	0.00	0.00
4,700.00	6.00	140.24	4,692.53	-114.96	95.63	117.77	0.00	0.00	0.00



Total Directional Services

Planning Report



Database:	EDM 5000.15 Single User Db	Local Co-ordinate Reference:	Well Kaston Fed Com 703H
Company:	Franklin Mountain Energy	TVD Reference:	3057.5' GE + 30' KB @ 3087.50usft
Project:	Lea County, NM (NAD83)	MD Reference:	3057.5' GE + 30' KB @ 3087.50usft
Site:	Bus Driver/Kaston Fed Com	North Reference:	Grid
Well:	Kaston Fed Com 703H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #4		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,800.00	6.00	140.24	4,791.98	-123.00	102.31	126.01	0.00	0.00	0.00
4,900.00	6.00	140.24	4,891.43	-131.04	109.00	134.24	0.00	0.00	0.00
5,000.00	6.00	140.24	4,990.88	-139.07	115.69	142.48	0.00	0.00	0.00
5,100.00	6.00	140.24	5,090.33	-147.11	122.38	150.71	0.00	0.00	0.00
5,200.00	6.00	140.24	5,189.79	-155.15	129.06	158.95	0.00	0.00	0.00
5,300.00	6.00	140.24	5,289.24	-163.19	135.75	167.18	0.00	0.00	0.00
5,400.00	6.00	140.24	5,388.69	-171.23	142.44	175.42	0.00	0.00	0.00
5,500.00	6.00	140.24	5,488.14	-179.27	149.12	183.65	0.00	0.00	0.00
5,600.00	6.00	140.24	5,587.59	-187.31	155.81	191.89	0.00	0.00	0.00
5,700.00	6.00	140.24	5,687.05	-195.34	162.50	200.12	0.00	0.00	0.00
5,800.00	6.00	140.24	5,786.50	-203.38	169.18	208.36	0.00	0.00	0.00
5,900.00	6.00	140.24	5,885.95	-211.42	175.87	216.59	0.00	0.00	0.00
6,000.00	6.00	140.24	5,985.40	-219.46	182.56	224.83	0.00	0.00	0.00
6,100.00	6.00	140.24	6,084.85	-227.50	189.24	233.06	0.00	0.00	0.00
6,200.00	6.00	140.24	6,184.31	-235.54	195.93	241.30	0.00	0.00	0.00
6,300.00	6.00	140.24	6,283.76	-243.57	202.62	249.53	0.00	0.00	0.00
6,400.00	6.00	140.24	6,383.21	-251.61	209.30	257.77	0.00	0.00	0.00
6,500.00	6.00	140.24	6,482.66	-259.65	215.99	266.00	0.00	0.00	0.00
6,600.00	6.00	140.24	6,582.11	-267.69	222.68	274.24	0.00	0.00	0.00
6,700.00	6.00	140.24	6,681.56	-275.73	229.36	282.47	0.00	0.00	0.00
6,800.00	6.00	140.24	6,781.02	-283.77	236.05	290.71	0.00	0.00	0.00
6,900.00	6.00	140.24	6,880.47	-291.81	242.74	298.94	0.00	0.00	0.00
6,920.25	6.00	140.24	6,900.61	-293.43	244.09	300.61	0.00	0.00	0.00
Start Drop -1.50									
7,000.00	4.81	140.24	6,980.00	-299.21	248.89	306.52	1.50	-1.50	0.00
7,100.00	3.31	140.24	7,079.75	-304.64	253.42	312.09	1.50	-1.50	0.00
7,200.00	1.81	140.24	7,179.65	-308.07	256.27	315.60	1.50	-1.50	0.00
7,300.00	0.31	140.24	7,279.63	-309.49	257.45	317.06	1.50	-1.50	0.00
7,320.37	0.00	0.00	7,300.00	-309.53	257.48	317.10	1.50	-1.50	0.00
Start 4300.00 hold at 7320.37 MD									
7,400.00	0.00	0.00	7,379.63	-309.53	257.48	317.10	0.00	0.00	0.00
7,500.00	0.00	0.00	7,479.63	-309.53	257.48	317.10	0.00	0.00	0.00
7,600.00	0.00	0.00	7,579.63	-309.53	257.48	317.10	0.00	0.00	0.00
7,700.00	0.00	0.00	7,679.63	-309.53	257.48	317.10	0.00	0.00	0.00
7,800.00	0.00	0.00	7,779.63	-309.53	257.48	317.10	0.00	0.00	0.00
7,900.00	0.00	0.00	7,879.63	-309.53	257.48	317.10	0.00	0.00	0.00
8,000.00	0.00	0.00	7,979.63	-309.53	257.48	317.10	0.00	0.00	0.00
8,100.00	0.00	0.00	8,079.63	-309.53	257.48	317.10	0.00	0.00	0.00
8,200.00	0.00	0.00	8,179.63	-309.53	257.48	317.10	0.00	0.00	0.00
8,300.00	0.00	0.00	8,279.63	-309.53	257.48	317.10	0.00	0.00	0.00
8,400.00	0.00	0.00	8,379.63	-309.53	257.48	317.10	0.00	0.00	0.00
8,500.00	0.00	0.00	8,479.63	-309.53	257.48	317.10	0.00	0.00	0.00
8,600.00	0.00	0.00	8,579.63	-309.53	257.48	317.10	0.00	0.00	0.00
8,700.00	0.00	0.00	8,679.63	-309.53	257.48	317.10	0.00	0.00	0.00
8,800.00	0.00	0.00	8,779.63	-309.53	257.48	317.10	0.00	0.00	0.00
8,900.00	0.00	0.00	8,879.63	-309.53	257.48	317.10	0.00	0.00	0.00
9,000.00	0.00	0.00	8,979.63	-309.53	257.48	317.10	0.00	0.00	0.00
9,100.00	0.00	0.00	9,079.63	-309.53	257.48	317.10	0.00	0.00	0.00
9,200.00	0.00	0.00	9,179.63	-309.53	257.48	317.10	0.00	0.00	0.00
9,300.00	0.00	0.00	9,279.63	-309.53	257.48	317.10	0.00	0.00	0.00
9,400.00	0.00	0.00	9,379.63	-309.53	257.48	317.10	0.00	0.00	0.00
9,500.00	0.00	0.00	9,479.63	-309.53	257.48	317.10	0.00	0.00	0.00
9,600.00	0.00	0.00	9,579.63	-309.53	257.48	317.10	0.00	0.00	0.00
9,700.00	0.00	0.00	9,679.63	-309.53	257.48	317.10	0.00	0.00	0.00



Total Directional Services

Planning Report



Database:	EDM 5000.15 Single User Db	Local Co-ordinate Reference:	Well Kaston Fed Com 703H
Company:	Franklin Mountain Energy	TVD Reference:	3057.5' GE + 30' KB @ 3087.50usft
Project:	Lea County, NM (NAD83)	MD Reference:	3057.5' GE + 30' KB @ 3087.50usft
Site:	Bus Driver/Kaston Fed Com	North Reference:	Grid
Well:	Kaston Fed Com 703H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #4		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
9,800.00	0.00	0.00	9,779.63	-309.53	257.48	317.10	0.00	0.00	0.00
9,900.00	0.00	0.00	9,879.63	-309.53	257.48	317.10	0.00	0.00	0.00
10,000.00	0.00	0.00	9,979.63	-309.53	257.48	317.10	0.00	0.00	0.00
10,100.00	0.00	0.00	10,079.63	-309.53	257.48	317.10	0.00	0.00	0.00
10,200.00	0.00	0.00	10,179.63	-309.53	257.48	317.10	0.00	0.00	0.00
10,300.00	0.00	0.00	10,279.63	-309.53	257.48	317.10	0.00	0.00	0.00
10,400.00	0.00	0.00	10,379.63	-309.53	257.48	317.10	0.00	0.00	0.00
10,500.00	0.00	0.00	10,479.63	-309.53	257.48	317.10	0.00	0.00	0.00
10,600.00	0.00	0.00	10,579.63	-309.53	257.48	317.10	0.00	0.00	0.00
10,700.00	0.00	0.00	10,679.63	-309.53	257.48	317.10	0.00	0.00	0.00
10,800.00	0.00	0.00	10,779.63	-309.53	257.48	317.10	0.00	0.00	0.00
10,900.00	0.00	0.00	10,879.63	-309.53	257.48	317.10	0.00	0.00	0.00
11,000.00	0.00	0.00	10,979.63	-309.53	257.48	317.10	0.00	0.00	0.00
11,100.00	0.00	0.00	11,079.63	-309.53	257.48	317.10	0.00	0.00	0.00
11,200.00	0.00	0.00	11,179.63	-309.53	257.48	317.10	0.00	0.00	0.00
11,300.00	0.00	0.00	11,279.63	-309.53	257.48	317.10	0.00	0.00	0.00
11,400.00	0.00	0.00	11,379.63	-309.53	257.48	317.10	0.00	0.00	0.00
11,500.00	0.00	0.00	11,479.63	-309.53	257.48	317.10	0.00	0.00	0.00
11,600.00	0.00	0.00	11,579.63	-309.53	257.48	317.10	0.00	0.00	0.00
11,620.37	0.00	0.00	11,600.00	-309.53	257.48	317.10	0.00	0.00	0.00
Start DLS 10.00 TFO 179.50									
11,650.00	2.96	179.50	11,629.61	-310.30	257.49	317.86	10.00	10.00	0.00
11,700.00	7.96	179.50	11,679.37	-315.05	257.53	322.62	10.00	10.00	0.00
11,750.00	12.96	179.50	11,728.52	-324.13	257.61	331.70	10.00	10.00	0.00
11,800.00	17.96	179.50	11,776.70	-337.46	257.73	345.02	10.00	10.00	0.00
11,850.00	22.96	179.50	11,823.53	-354.93	257.88	362.49	10.00	10.00	0.00
11,900.00	27.96	179.50	11,868.66	-376.42	258.07	383.97	10.00	10.00	0.00
11,950.00	32.96	179.50	11,911.74	-401.76	258.29	409.31	10.00	10.00	0.00
12,000.00	37.96	179.50	11,952.45	-430.76	258.55	438.30	10.00	10.00	0.00
12,050.00	42.96	179.50	11,990.48	-463.19	258.83	470.73	10.00	10.00	0.00
12,100.00	47.96	179.50	12,025.54	-498.82	259.14	506.35	10.00	10.00	0.00
12,150.00	52.96	179.50	12,057.36	-537.37	259.48	544.89	10.00	10.00	0.00
12,200.00	57.96	179.50	12,085.70	-578.54	259.84	586.06	10.00	10.00	0.00
12,250.00	62.96	179.50	12,110.34	-622.02	260.23	629.53	10.00	10.00	0.00
12,300.00	67.96	179.50	12,131.10	-667.49	260.63	674.99	10.00	10.00	0.00
12,350.00	72.96	179.50	12,147.81	-714.60	261.04	722.09	10.00	10.00	0.00
12,400.00	77.96	179.50	12,160.36	-762.98	261.46	770.46	10.00	10.00	0.00
12,450.00	82.96	179.50	12,168.64	-812.27	261.90	819.75	10.00	10.00	0.00
12,500.00	87.96	179.50	12,172.60	-862.10	262.34	869.56	10.00	10.00	0.00
12,512.84	89.25	179.50	12,172.91	-874.93	262.45	882.39	10.00	10.00	0.00
Start 11166.40 hold at 12512.84 MD - LP (Kaston Fed Com 703H)									
12,600.00	89.25	179.50	12,174.05	-962.08	263.21	969.53	0.00	0.00	0.00
12,700.00	89.25	179.50	12,175.37	-1,062.07	264.09	1,069.50	0.00	0.00	0.00
12,800.00	89.25	179.50	12,176.68	-1,162.06	264.97	1,169.47	0.00	0.00	0.00
12,900.00	89.25	179.50	12,178.00	-1,262.04	265.85	1,269.44	0.00	0.00	0.00
13,000.00	89.25	179.50	12,179.31	-1,362.03	266.73	1,369.40	0.00	0.00	0.00
13,100.00	89.25	179.50	12,180.63	-1,462.02	267.61	1,469.37	0.00	0.00	0.00
13,200.00	89.25	179.50	12,181.94	-1,562.01	268.48	1,569.34	0.00	0.00	0.00
13,300.00	89.25	179.50	12,183.25	-1,661.99	269.36	1,669.31	0.00	0.00	0.00
13,400.00	89.25	179.50	12,184.57	-1,761.98	270.24	1,769.28	0.00	0.00	0.00
13,500.00	89.25	179.50	12,185.88	-1,861.97	271.12	1,869.25	0.00	0.00	0.00
13,600.00	89.25	179.50	12,187.20	-1,961.96	272.00	1,969.22	0.00	0.00	0.00
13,700.00	89.25	179.50	12,188.51	-2,061.94	272.88	2,069.19	0.00	0.00	0.00
13,800.00	89.25	179.50	12,189.83	-2,161.93	273.76	2,169.16	0.00	0.00	0.00



Total Directional Services

Planning Report



Database:	EDM 5000.15 Single User Db	Local Co-ordinate Reference:	Well Kaston Fed Com 703H
Company:	Franklin Mountain Energy	TVD Reference:	3057.5' GE + 30' KB @ 3087.50usft
Project:	Lea County, NM (NAD83)	MD Reference:	3057.5' GE + 30' KB @ 3087.50usft
Site:	Bus Driver/Kaston Fed Com	North Reference:	Grid
Well:	Kaston Fed Com 703H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #4		

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)
13,900.00	89.25	179.50	12,191.14	-2,261.92	274.63	2,269.13	0.00	0.00	0.00
14,000.00	89.25	179.50	12,192.46	-2,361.91	275.51	2,369.09	0.00	0.00	0.00
14,100.00	89.25	179.50	12,193.77	-2,461.89	276.39	2,469.06	0.00	0.00	0.00
14,200.00	89.25	179.50	12,195.08	-2,561.88	277.27	2,569.03	0.00	0.00	0.00
14,300.00	89.25	179.50	12,196.40	-2,661.87	278.15	2,669.00	0.00	0.00	0.00
14,400.00	89.25	179.50	12,197.71	-2,761.86	279.03	2,768.97	0.00	0.00	0.00
14,500.00	89.25	179.50	12,199.03	-2,861.84	279.91	2,868.94	0.00	0.00	0.00
14,600.00	89.25	179.50	12,200.34	-2,961.83	280.78	2,968.91	0.00	0.00	0.00
14,700.00	89.25	179.50	12,201.66	-3,061.82	281.66	3,068.88	0.00	0.00	0.00
14,800.00	89.25	179.50	12,202.97	-3,161.81	282.54	3,168.85	0.00	0.00	0.00
14,900.00	89.25	179.50	12,204.29	-3,261.79	283.42	3,268.82	0.00	0.00	0.00
15,000.00	89.25	179.50	12,205.60	-3,361.78	284.30	3,368.78	0.00	0.00	0.00
15,100.00	89.25	179.50	12,206.91	-3,461.77	285.18	3,468.75	0.00	0.00	0.00
15,200.00	89.25	179.50	12,208.23	-3,561.76	286.06	3,568.72	0.00	0.00	0.00
15,300.00	89.25	179.50	12,209.54	-3,661.74	286.93	3,668.69	0.00	0.00	0.00
15,400.00	89.25	179.50	12,210.86	-3,761.73	287.81	3,768.66	0.00	0.00	0.00
15,500.00	89.25	179.50	12,212.17	-3,861.72	288.69	3,868.63	0.00	0.00	0.00
15,600.00	89.25	179.50	12,213.49	-3,961.71	289.57	3,968.60	0.00	0.00	0.00
15,700.00	89.25	179.50	12,214.80	-4,061.69	290.45	4,068.57	0.00	0.00	0.00
15,800.00	89.25	179.50	12,216.12	-4,161.68	291.33	4,168.54	0.00	0.00	0.00
15,900.00	89.25	179.50	12,217.43	-4,261.67	292.21	4,268.51	0.00	0.00	0.00
16,000.00	89.25	179.50	12,218.74	-4,361.66	293.08	4,368.47	0.00	0.00	0.00
16,100.00	89.25	179.50	12,220.06	-4,461.64	293.96	4,468.44	0.00	0.00	0.00
16,200.00	89.25	179.50	12,221.37	-4,561.63	294.84	4,568.41	0.00	0.00	0.00
16,300.00	89.25	179.50	12,222.69	-4,661.62	295.72	4,668.38	0.00	0.00	0.00
16,400.00	89.25	179.50	12,224.00	-4,761.61	296.60	4,768.35	0.00	0.00	0.00
16,500.00	89.25	179.50	12,225.32	-4,861.59	297.48	4,868.32	0.00	0.00	0.00
16,600.00	89.25	179.50	12,226.63	-4,961.58	298.36	4,968.29	0.00	0.00	0.00
16,700.00	89.25	179.50	12,227.94	-5,061.57	299.23	5,068.26	0.00	0.00	0.00
16,800.00	89.25	179.50	12,229.26	-5,161.56	300.11	5,168.23	0.00	0.00	0.00
16,900.00	89.25	179.50	12,230.57	-5,261.54	300.99	5,268.20	0.00	0.00	0.00
17,000.00	89.25	179.50	12,231.89	-5,361.53	301.87	5,368.16	0.00	0.00	0.00
17,100.00	89.25	179.50	12,233.20	-5,461.52	302.75	5,468.13	0.00	0.00	0.00
17,200.00	89.25	179.50	12,234.52	-5,561.51	303.63	5,568.10	0.00	0.00	0.00
17,300.00	89.25	179.50	12,235.83	-5,661.49	304.51	5,668.07	0.00	0.00	0.00
17,400.00	89.25	179.50	12,237.15	-5,761.48	305.38	5,768.04	0.00	0.00	0.00
17,500.00	89.25	179.50	12,238.46	-5,861.47	306.26	5,868.01	0.00	0.00	0.00
17,600.00	89.25	179.50	12,239.77	-5,961.46	307.14	5,967.98	0.00	0.00	0.00
17,700.00	89.25	179.50	12,241.09	-6,061.44	308.02	6,067.95	0.00	0.00	0.00
17,800.00	89.25	179.50	12,242.40	-6,161.43	308.90	6,167.92	0.00	0.00	0.00
17,900.00	89.25	179.50	12,243.72	-6,261.42	309.78	6,267.89	0.00	0.00	0.00
18,000.00	89.25	179.50	12,245.03	-6,361.41	310.66	6,367.85	0.00	0.00	0.00
18,100.00	89.25	179.50	12,246.35	-6,461.39	311.53	6,467.82	0.00	0.00	0.00
18,200.00	89.25	179.50	12,247.66	-6,561.38	312.41	6,567.79	0.00	0.00	0.00
18,300.00	89.25	179.50	12,248.98	-6,661.37	313.29	6,667.76	0.00	0.00	0.00
18,400.00	89.25	179.50	12,250.29	-6,761.36	314.17	6,767.73	0.00	0.00	0.00
18,500.00	89.25	179.50	12,251.60	-6,861.34	315.05	6,867.70	0.00	0.00	0.00
18,600.00	89.25	179.50	12,252.92	-6,961.33	315.93	6,967.67	0.00	0.00	0.00
18,700.00	89.25	179.50	12,254.23	-7,061.32	316.81	7,067.64	0.00	0.00	0.00
18,800.00	89.25	179.50	12,255.55	-7,161.31	317.68	7,167.61	0.00	0.00	0.00
18,900.00	89.25	179.50	12,256.86	-7,261.29	318.56	7,267.58	0.00	0.00	0.00
19,000.00	89.25	179.50	12,258.18	-7,361.28	319.44	7,367.54	0.00	0.00	0.00
19,100.00	89.25	179.50	12,259.49	-7,461.27	320.32	7,467.51	0.00	0.00	0.00
19,200.00	89.25	179.50	12,260.80	-7,561.26	321.20	7,567.48	0.00	0.00	0.00



Total Directional Services

Planning Report



Database:	EDM 5000.15 Single User Db	Local Co-ordinate Reference:	Well Kaston Fed Com 703H
Company:	Franklin Mountain Energy	TVD Reference:	3057.5' GE + 30' KB @ 3087.50usft
Project:	Lea County, NM (NAD83)	MD Reference:	3057.5' GE + 30' KB @ 3087.50usft
Site:	Bus Driver/Kaston Fed Com	North Reference:	Grid
Well:	Kaston Fed Com 703H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #4		

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)	
19,300.00	89.25	179.50	12,262.12	-7,661.24	322.08	7,667.45	0.00	0.00	0.00	
19,400.00	89.25	179.50	12,263.43	-7,761.23	322.95	7,767.42	0.00	0.00	0.00	
19,500.00	89.25	179.50	12,264.75	-7,861.22	323.83	7,867.39	0.00	0.00	0.00	
19,600.00	89.25	179.50	12,266.06	-7,961.21	324.71	7,967.36	0.00	0.00	0.00	
19,700.00	89.25	179.50	12,267.38	-8,061.19	325.59	8,067.33	0.00	0.00	0.00	
19,800.00	89.25	179.50	12,268.69	-8,161.18	326.47	8,167.30	0.00	0.00	0.00	
19,900.00	89.25	179.50	12,270.01	-8,261.17	327.35	8,267.27	0.00	0.00	0.00	
20,000.00	89.25	179.50	12,271.32	-8,361.16	328.23	8,367.23	0.00	0.00	0.00	
20,100.00	89.25	179.50	12,272.63	-8,461.14	329.10	8,467.20	0.00	0.00	0.00	
20,200.00	89.25	179.50	12,273.95	-8,561.13	329.98	8,567.17	0.00	0.00	0.00	
20,300.00	89.25	179.50	12,275.26	-8,661.12	330.86	8,667.14	0.00	0.00	0.00	
20,400.00	89.25	179.50	12,276.58	-8,761.11	331.74	8,767.11	0.00	0.00	0.00	
20,500.00	89.25	179.50	12,277.89	-8,861.09	332.62	8,867.08	0.00	0.00	0.00	
20,600.00	89.25	179.50	12,279.21	-8,961.08	333.50	8,967.05	0.00	0.00	0.00	
20,700.00	89.25	179.50	12,280.52	-9,061.07	334.38	9,067.02	0.00	0.00	0.00	
20,800.00	89.25	179.50	12,281.84	-9,161.06	335.25	9,166.99	0.00	0.00	0.00	
20,900.00	89.25	179.50	12,283.15	-9,261.04	336.13	9,266.96	0.00	0.00	0.00	
21,000.00	89.25	179.50	12,284.46	-9,361.03	337.01	9,366.92	0.00	0.00	0.00	
21,100.00	89.25	179.50	12,285.78	-9,461.02	337.89	9,466.89	0.00	0.00	0.00	
21,200.00	89.25	179.50	12,287.09	-9,561.01	338.77	9,566.86	0.00	0.00	0.00	
21,300.00	89.25	179.50	12,288.41	-9,660.99	339.65	9,666.83	0.00	0.00	0.00	
21,400.00	89.25	179.50	12,289.72	-9,760.98	340.53	9,766.80	0.00	0.00	0.00	
21,500.00	89.25	179.50	12,291.04	-9,860.97	341.40	9,866.77	0.00	0.00	0.00	
21,600.00	89.25	179.50	12,292.35	-9,960.96	342.28	9,966.74	0.00	0.00	0.00	
21,700.00	89.25	179.50	12,293.66	-10,060.94	343.16	10,066.71	0.00	0.00	0.00	
21,800.00	89.25	179.50	12,294.98	-10,160.93	344.04	10,166.68	0.00	0.00	0.00	
21,900.00	89.25	179.50	12,296.29	-10,260.92	344.92	10,266.65	0.00	0.00	0.00	
22,000.00	89.25	179.50	12,297.61	-10,360.91	345.80	10,366.61	0.00	0.00	0.00	
22,100.00	89.25	179.50	12,298.92	-10,460.89	346.68	10,466.58	0.00	0.00	0.00	
22,200.00	89.25	179.50	12,300.24	-10,560.88	347.55	10,566.55	0.00	0.00	0.00	
22,300.00	89.25	179.50	12,301.55	-10,660.87	348.43	10,666.52	0.00	0.00	0.00	
22,400.00	89.25	179.50	12,302.87	-10,760.86	349.31	10,766.49	0.00	0.00	0.00	
22,500.00	89.25	179.50	12,304.18	-10,860.84	350.19	10,866.46	0.00	0.00	0.00	
22,600.00	89.25	179.50	12,305.49	-10,960.83	351.07	10,966.43	0.00	0.00	0.00	
22,700.00	89.25	179.50	12,306.81	-11,060.82	351.95	11,066.40	0.00	0.00	0.00	
22,800.00	89.25	179.50	12,308.12	-11,160.81	352.83	11,166.37	0.00	0.00	0.00	
22,900.00	89.25	179.50	12,309.44	-11,260.79	353.70	11,266.34	0.00	0.00	0.00	
23,000.00	89.25	179.50	12,310.75	-11,360.78	354.58	11,366.30	0.00	0.00	0.00	
23,100.00	89.25	179.50	12,312.07	-11,460.77	355.46	11,466.27	0.00	0.00	0.00	
23,200.00	89.25	179.50	12,313.38	-11,560.76	356.34	11,566.24	0.00	0.00	0.00	
23,300.00	89.25	179.50	12,314.70	-11,660.74	357.22	11,666.21	0.00	0.00	0.00	
23,400.00	89.25	179.50	12,316.01	-11,760.73	358.10	11,766.18	0.00	0.00	0.00	
23,500.00	89.25	179.50	12,317.32	-11,860.72	358.98	11,866.15	0.00	0.00	0.00	
23,600.00	89.25	179.50	12,318.64	-11,960.71	359.85	11,966.12	0.00	0.00	0.00	
23,679.24	89.25	179.50	12,319.68	-12,039.94	360.55	12,045.34	0.00	0.00	0.00	
TD at 23679.24 - PBHL (Kaston Fed Com 703H)										



Total Directional Services

Planning Report



Database:	EDM 5000.15 Single User Db	Local Co-ordinate Reference:	Well Kaston Fed Com 703H
Company:	Franklin Mountain Energy	TVD Reference:	3057.5' GE + 30' KB @ 3087.50usft
Project:	Lea County, NM (NAD83)	MD Reference:	3057.5' GE + 30' KB @ 3087.50usft
Site:	Bus Driver/Kaston Fed Com	North Reference:	Grid
Well:	Kaston Fed Com 703H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #4		

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 (Kaston Fed Com 7 - plan hits target center - Point	0.00	0.00	0.00	0.00	0.00	394,466.41	854,604.38	32.080431	-103.321895
LP (Kaston Fed Com 70 - plan hits target center - Point	0.00	0.00	12,172.91	-874.93	262.45	393,591.48	854,866.83	32.078019	-103.321075
PBHL (Kaston Fed Com - plan hits target center - Point	0.00	0.00	12,319.68	-12,039.94	360.55	382,426.47	854,964.93	32.047329	-103.321096

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
3,070.00	3,070.00	0.00	0.00	Start Build 1.50
3,470.12	3,469.39	-16.10	13.39	Start 3450.13 hold at 3470.12 MD
6,920.25	6,900.61	-293.43	244.09	Start Drop -1.50
7,320.37	7,300.00	-309.53	257.48	Start 4300.00 hold at 7320.37 MD
11,620.37	11,600.00	-309.53	257.48	Start DLS 10.00 TFO 179.50
12,512.84	12,172.91	-874.94	262.45	Start 11166.40 hold at 12512.84 MD
23,679.24	12,319.68	-12,039.94	360.55	TD at 23679.24



Franklin Mountain Energy

Lea County, NM (NAD83)
Bus Driver/Kaston Fed Com
Kaston Fed Com 703H

OH
Plan #4

Anticollision Report

20 April, 2021





Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well Kaston Fed Com 703H
Project:	Lea County, NM (NAD83)	TVD Reference:	3057.5' GE + 30' KB @ 3087.50usft
Reference Site:	Bus Driver/Kaston Fed Com	MD Reference:	3057.5' GE + 30' KB @ 3087.50usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Kaston Fed Com 703H	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 #4	Offset TVD Reference:	Offset Datum

Reference	Plan #4		
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	4/20/2021		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
0.00	23,679.24	Plan #4 (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						
Bus Driver/Kaston Fed Com						
Bus Driver Fed Com 602H - OH - Plan #4	3,070.00	3,070.00	34.99	19.76	2.297	CC
Bus Driver Fed Com 602H - OH - Plan #4	3,100.00	3,100.00	35.07	19.68	2.280	ES, SF
Bus Driver Fed Com 702H - OH - Plan #4	2,612.12	2,612.12	69.98	57.07	5.420	CC
Bus Driver Fed Com 702H - OH - Plan #4	2,700.00	2,699.80	70.00	56.64	5.241	ES
Bus Driver Fed Com 702H - OH - Plan #4	23,679.99	23,593.20	993.82	708.87	3.488	SF
Kaston Fed Com 603H - OH - Plan #5	2,612.55	2,612.55	35.00	22.09	2.710	CC
Kaston Fed Com 603H - OH - Plan #5	2,700.00	2,699.91	35.02	21.66	2.622	ES
Kaston Fed Com 603H - OH - Plan #5	23,679.99	23,411.94	633.87	372.80	2.428	SF
Judge Baylor Fed Com						
Judge Baylor Fed Com 601H - OH - Plan #3	3,070.00	3,073.50	1,957.41	1,942.16	128.319	CC
Judge Baylor Fed Com 601H - OH - Plan #3	3,100.00	3,103.50	1,957.48	1,942.08	127.085	ES
Judge Baylor Fed Com 601H - OH - Plan #3	22,500.00	22,130.50	2,355.37	2,099.26	9.197	SF
Judge Baylor Fed Com 701H - OH - Plan #3	3,070.00	3,073.20	1,922.44	1,907.19	126.032	CC
Judge Baylor Fed Com 701H - OH - Plan #3	22,400.00	22,424.01	2,028.13	1,771.29	7.897	ES, SF
LHS Wildcat Fed Com						
LHS Wildcat Fed Com 604H - OH - Plan #3	11,308.12	11,269.60	1,907.92	1,851.86	34.033	CC
LHS Wildcat Fed Com 604H - OH - Plan #3	22,400.00	22,051.09	1,932.17	1,676.85	7.568	ES, SF
LHS Wildcat Fed Com 705H - OH - Plan #3	6,962.50	6,791.52	2,235.32	2,201.04	65.203	CC
LHS Wildcat Fed Com 705H - OH - Plan #3	22,400.00	22,259.70	2,248.66	1,991.65	8.749	ES
LHS Wildcat Fed Com 705H - OH - Plan #3	22,500.00	22,259.70	2,252.38	1,994.44	8.732	SF

Offset Design												
Bus Driver/Kaston Fed Com - Bus Driver Fed Com 602H - OH - Plan #4												
Survey Program: 0-OWSG (Rev2) MWD												
Reference		Offset		Semi Major Axis		Distance		Minimum Separation		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)	Separation Factor	
0.00	0.00	0.00	0.00	0.00	0.00	-90.54	-0.33	-34.99	34.99			
100.00	100.00	100.00	100.00	0.13	0.13	-90.54	-0.33	-34.99	34.99	34.81	0.18	197.208
200.00	200.00	200.00	200.00	0.48	0.48	-90.54	-0.33	-34.99	34.99	34.31	0.68	51.128
300.00	300.00	300.00	300.00	0.84	0.84	-90.54	-0.33	-34.99	34.99	33.80	1.19	29.371
400.00	400.00	400.00	400.00	1.20	1.20	-90.54	-0.33	-34.99	34.99	33.29	1.70	20.604
500.00	500.00	500.00	500.00	1.56	1.56	-90.54	-0.33	-34.99	34.99	32.79	2.21	15.867

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



Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well Kaston Fed Com 703H
Project:	Lea County, NM (NAD83)	TVD Reference:	3057.5' GE + 30' KB @ 3087.50usft
Reference Site:	Bus Driver/Kaston Fed Com	MD Reference:	3057.5' GE + 30' KB @ 3087.50usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Kaston Fed Com 703H	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 #4	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	
600.00	600.00	600.00	600.00	1.92	1.92	-90.54	-0.33	-34.99	34.99	32.28	2.71	12.901	
700.00	700.00	700.00	700.00	2.28	2.28	-90.54	-0.33	-34.99	34.99	31.77	3.22	10.870	
800.00	800.00	800.00	800.00	2.63	2.63	-90.54	-0.33	-34.99	34.99	31.27	3.73	9.391	
900.00	900.00	900.00	900.00	2.99	2.99	-90.54	-0.33	-34.99	34.99	30.76	4.23	8.266	
1,000.00	1,000.00	1,000.00	1,000.00	3.35	3.35	-90.54	-0.33	-34.99	34.99	30.25	4.74	7.382	
1,100.00	1,100.00	1,100.00	1,100.00	3.71	3.71	-90.54	-0.33	-34.99	34.99	29.74	5.25	6.669	
1,200.00	1,200.00	1,200.00	1,200.00	4.07	4.07	-90.54	-0.33	-34.99	34.99	29.24	5.75	6.081	
1,300.00	1,300.00	1,300.00	1,300.00	4.43	4.43	-90.54	-0.33	-34.99	34.99	28.73	6.26	5.589	
1,400.00	1,400.00	1,400.00	1,400.00	4.79	4.79	-90.54	-0.33	-34.99	34.99	28.22	6.77	5.170	
1,500.00	1,500.00	1,500.00	1,500.00	5.14	5.14	-90.54	-0.33	-34.99	34.99	27.72	7.27	4.810	
1,600.00	1,600.00	1,600.00	1,600.00	5.50	5.50	-90.54	-0.33	-34.99	34.99	27.21	7.78	4.497	
1,700.00	1,700.00	1,700.00	1,700.00	5.86	5.86	-90.54	-0.33	-34.99	34.99	26.70	8.29	4.222	
1,800.00	1,800.00	1,800.00	1,800.00	6.22	6.22	-90.54	-0.33	-34.99	34.99	26.20	8.80	3.978	
1,900.00	1,900.00	1,900.00	1,900.00	6.58	6.58	-90.54	-0.33	-34.99	34.99	25.69	9.30	3.761	
2,000.00	2,000.00	2,000.00	2,000.00	6.94	6.94	-90.54	-0.33	-34.99	34.99	25.18	9.81	3.567	
2,100.00	2,100.00	2,100.00	2,100.00	7.29	7.29	-90.54	-0.33	-34.99	34.99	24.68	10.32	3.392	
2,200.00	2,200.00	2,200.00	2,200.00	7.65	7.65	-90.54	-0.33	-34.99	34.99	24.17	10.82	3.233	
2,300.00	2,300.00	2,300.00	2,300.00	8.01	8.01	-90.54	-0.33	-34.99	34.99	23.66	11.33	3.088	
2,400.00	2,400.00	2,400.00	2,400.00	8.37	8.37	-90.54	-0.33	-34.99	34.99	23.15	11.84	2.956	
2,500.00	2,500.00	2,500.00	2,500.00	8.73	8.73	-90.54	-0.33	-34.99	34.99	22.65	12.34	2.835	
2,600.00	2,600.00	2,600.00	2,600.00	9.09	9.09	-90.54	-0.33	-34.99	34.99	22.14	12.85	2.723	
2,700.00	2,700.00	2,700.00	2,700.00	9.45	9.45	-90.54	-0.33	-34.99	34.99	21.63	13.36	2.619	
2,800.00	2,800.00	2,800.00	2,800.00	9.80	9.80	-90.54	-0.33	-34.99	34.99	21.13	13.87	2.524	
2,900.00	2,900.00	2,900.00	2,900.00	10.16	10.16	-90.54	-0.33	-34.99	34.99	20.62	14.37	2.435	
3,000.00	3,000.00	3,000.00	3,000.00	10.52	10.52	-90.54	-0.33	-34.99	34.99	20.11	14.88	2.352	
3,070.00	3,070.00	3,070.00	3,070.00	10.77	10.77	-90.54	-0.33	-34.99	34.99	19.76	15.23	2.297 CC	
3,100.00	3,100.00	3,100.00	3,100.00	10.87	10.88	129.36	-0.33	-34.99	35.07	19.68	15.38	2.280 ES, SF	
3,200.00	3,199.97	3,199.97	3,199.97	11.20	11.24	131.89	-0.33	-34.99	36.43	20.56	15.87	2.296	
3,300.00	3,299.86	3,299.33	3,299.32	11.53	11.58	135.29	-1.37	-35.76	40.39	24.05	16.34	2.472	
3,400.00	3,399.59	3,398.49	3,398.40	11.86	11.90	137.39	-4.47	-38.07	47.63	30.84	16.79	2.836	
3,470.12	3,469.39	3,467.81	3,467.59	12.10	12.13	138.14	-7.86	-40.59	54.63	37.52	17.11	3.192	
3,500.00	3,499.10	3,497.30	3,497.00	12.20	12.23	138.27	-9.61	-41.89	58.00	40.75	17.25	3.362	
3,600.00	3,598.56	3,595.78	3,595.07	12.54	12.55	137.42	-16.77	-47.21	70.06	52.35	17.71	3.957	
3,700.00	3,698.01	3,694.91	3,693.66	12.88	12.89	135.97	-25.08	-53.39	82.81	64.64	18.17	4.557	
3,800.00	3,797.46	3,794.07	3,792.28	13.22	13.22	134.91	-33.40	-59.57	95.61	76.96	18.65	5.127	
3,900.00	3,896.91	3,893.24	3,890.90	13.57	13.56	134.09	-41.72	-65.76	108.43	89.30	19.12	5.670	
4,000.00	3,996.36	3,992.40	3,989.52	13.92	13.90	133.45	-50.03	-71.94	121.26	101.66	19.60	6.185	
4,100.00	4,095.82	4,091.57	4,088.15	14.27	14.25	132.93	-58.35	-78.12	134.11	114.02	20.09	6.676	
4,200.00	4,195.27	4,190.73	4,186.77	14.63	14.59	132.51	-66.67	-84.30	146.97	126.39	20.58	7.143	
4,300.00	4,294.72	4,289.90	4,285.39	14.99	14.94	132.15	-74.98	-90.49	159.83	138.77	21.06	7.588	
4,400.00	4,394.17	4,389.06	4,384.01	15.35	15.29	131.84	-83.30	-96.67	172.70	151.14	21.56	8.011	
4,500.00	4,493.62	4,488.23	4,482.63	15.71	15.65	131.58	-91.62	-102.85	185.57	163.52	22.05	8.415	
4,600.00	4,593.08	4,587.39	4,581.25	16.07	16.00	131.35	-99.93	-109.03	198.45	175.90	22.55	8.801	
4,700.00	4,692.53	4,686.56	4,679.88	16.43	16.36	131.15	-108.25	-115.22	211.33	188.28	23.05	9.169	
4,800.00	4,791.98	4,785.72	4,778.50	16.80	16.72	130.97	-116.57	-121.40	224.21	200.66	23.55	9.521	
4,900.00	4,891.43	4,884.88	4,877.12	17.17	17.08	130.81	-124.89	-127.58	237.09	213.04	24.05	9.858	
5,000.00	4,990.88	4,984.05	4,975.74	17.53	17.44	130.67	-133.20	-133.76	249.98	225.42	24.56	10.180	
5,100.00	5,090.33	5,083.21	5,074.36	17.90	17.80	130.54	-141.52	-139.95	262.87	237.80	25.06	10.488	
5,200.00	5,189.79	5,182.38	5,172.98	18.28	18.17	130.43	-149.84	-146.13	275.75	250.18	25.57	10.784	
5,300.00	5,289.24	5,281.54	5,271.60	18.65	18.53	130.32	-158.15	-152.31	288.64	262.56	26.08	11.068	
5,400.00	5,388.69	5,380.71	5,370.23	19.02	18.90	130.22	-166.47	-158.49	301.53	274.94	26.59	11.340	
5,500.00	5,488.14	5,479.87	5,468.85	19.39	19.27	130.14	-174.79	-164.68	314.42	287.32	27.10	11.602	

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 Kaston Fed Com 703H
Project:	Lea County, NM (NAD83)	TVD Reference:	3057.5' GE + 30' KB @ 3087.50usft
Reference Site:	Bus Driver/Kaston Fed Com	MD Reference:	3057.5' GE + 30' KB @ 3087.50usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Kaston Fed Com 703H	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 #4	Offset TVD Reference:	Offset Datum

Offset Design													Bus Driver/Kaston Fed Com - Bus Driver Fed Com 602H - OH - Plan #4		Offset Site Error:	0.00 usft
Survey Program: 0-OWSG (Rev2) MWD													Offset Well Error:		0.00 usft	
Reference		Offset		Semi Major Axis			Distance						Warning			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor				
				(usft)	(usft)	(°)										
5,600.00	5,587.59	5,579.04	5,567.47	19.77	19.64	130.05	-183.10	-170.86	327.31	299.70	27.61	11.853				
5,700.00	5,687.05	5,678.20	5,666.09	20.14	20.01	129.98	-191.42	-177.04	340.20	312.08	28.13	12.095				
5,800.00	5,786.50	5,777.37	5,764.71	20.52	20.38	129.91	-199.74	-183.22	353.10	324.45	28.64	12.327				
5,900.00	5,885.95	5,876.53	5,863.33	20.90	20.75	129.84	-208.05	-189.41	365.99	336.83	29.16	12.551				
6,000.00	5,985.40	5,975.70	5,961.96	21.28	21.12	129.78	-216.37	-195.59	378.88	349.21	29.68	12.767				
6,100.00	6,084.85	6,074.86	6,060.58	21.66	21.49	129.73	-224.69	-201.77	391.78	361.58	30.20	12.975				
6,200.00	6,184.31	6,174.02	6,159.20	22.04	21.87	129.67	-233.00	-207.95	404.67	373.96	30.71	13.175				
6,300.00	6,283.76	6,273.19	6,257.82	22.42	22.24	129.62	-241.32	-214.14	417.56	386.33	31.23	13.369				
6,400.00	6,383.21	6,372.35	6,356.44	22.80	22.62	129.58	-249.64	-220.32	430.46	398.70	31.75	13.556				
6,500.00	6,482.66	6,471.52	6,455.06	23.18	22.99	129.53	-257.96	-226.50	443.35	411.08	32.28	13.736				
6,600.00	6,582.11	6,570.68	6,553.69	23.56	23.37	129.49	-266.27	-232.68	456.25	423.45	32.80	13.911				
6,700.00	6,681.56	6,669.85	6,652.31	23.94	23.75	129.45	-274.59	-238.87	469.14	435.82	33.32	14.079				
6,800.00	6,781.02	6,769.01	6,750.93	24.32	24.13	129.41	-282.91	-245.05	482.04	448.19	33.84	14.243				
6,900.00	6,880.47	6,868.18	6,849.55	24.71	24.50	129.38	-291.22	-251.23	494.93	460.57	34.37	14.401				
6,920.25	6,900.61	6,888.26	6,869.52	24.78	24.58	129.37	-292.91	-252.48	497.55	463.07	34.47	14.432				
7,000.00	6,980.00	6,969.35	6,950.18	25.09	24.89	129.39	-299.65	-257.49	507.26	472.36	34.90	14.533				
7,100.00	7,079.75	7,077.59	7,058.04	25.46	25.30	129.35	-306.94	-262.92	516.79	481.32	35.47	14.570				
7,200.00	7,179.65	7,186.30	7,166.57	25.82	25.69	129.30	-311.80	-266.53	522.97	486.95	36.02	14.520				
7,300.00	7,279.63	7,295.29	7,275.51	26.17	26.08	129.24	-314.18	-268.30	525.78	489.23	36.55	14.386				
7,320.37	7,300.00	7,317.51	7,297.73	26.24	26.15	-90.53	-314.36	-268.43	525.94	489.29	36.65	14.350				
7,400.00	7,379.63	7,399.40	7,379.63	26.50	26.43	-90.53	-314.44	-268.49	525.99	488.95	37.04	14.201				
7,500.00	7,479.63	7,499.40	7,479.63	26.84	26.77	-90.53	-314.44	-268.49	525.99	488.47	37.52	14.019				
7,600.00	7,579.63	7,599.40	7,579.63	27.18	27.10	-90.53	-314.44	-268.49	525.99	487.99	38.00	13.842				
7,700.00	7,679.63	7,699.40	7,679.63	27.51	27.44	-90.53	-314.44	-268.49	525.99	487.51	38.48	13.669				
7,800.00	7,779.63	7,799.40	7,779.63	27.85	27.78	-90.53	-314.44	-268.49	525.99	487.03	38.96	13.500				
7,900.00	7,879.63	7,899.40	7,879.63	28.19	28.12	-90.53	-314.44	-268.49	525.99	486.55	39.44	13.335				
8,000.00	7,979.63	7,999.40	7,979.63	28.53	28.46	-90.53	-314.44	-268.49	525.99	486.07	39.93	13.174				
8,100.00	8,079.63	8,099.40	8,079.63	28.87	28.80	-90.53	-314.44	-268.49	525.99	485.58	40.41	13.017				
8,200.00	8,179.63	8,199.40	8,179.63	29.21	29.14	-90.53	-314.44	-268.49	525.99	485.10	40.89	12.863				
8,300.00	8,279.63	8,299.40	8,279.63	29.55	29.48	-90.53	-314.44	-268.49	525.99	484.62	41.38	12.712				
8,400.00	8,379.63	8,399.40	8,379.63	29.89	29.82	-90.53	-314.44	-268.49	525.99	484.13	41.86	12.565				
8,500.00	8,479.63	8,499.40	8,479.63	30.23	30.16	-90.53	-314.44	-268.49	525.99	483.64	42.35	12.421				
8,600.00	8,579.63	8,599.40	8,579.63	30.57	30.50	-90.53	-314.44	-268.49	525.99	483.16	42.83	12.280				
8,700.00	8,679.63	8,699.40	8,679.63	30.91	30.85	-90.53	-314.44	-268.49	525.99	482.67	43.32	12.142				
8,800.00	8,779.63	8,799.40	8,779.63	31.25	31.19	-90.53	-314.44	-268.49	525.99	482.19	43.81	12.007				
8,900.00	8,879.63	8,899.40	8,879.63	31.60	31.53	-90.53	-314.44	-268.49	525.99	481.70	44.29	11.875				
9,000.00	8,979.63	8,999.40	8,979.63	31.94	31.88	-90.53	-314.44	-268.49	525.99	481.21	44.78	11.745				
9,100.00	9,079.63	9,099.40	9,079.63	32.28	32.22	-90.53	-314.44	-268.49	525.99	480.72	45.27	11.619				
9,200.00	9,179.63	9,199.40	9,179.63	32.63	32.56	-90.53	-314.44	-268.49	525.99	480.23	45.76	11.495				
9,300.00	9,279.63	9,299.40	9,279.63	32.97	32.91	-90.53	-314.44	-268.49	525.99	479.74	46.25	11.373				
9,400.00	9,379.63	9,399.40	9,379.63	33.31	33.25	-90.53	-314.44	-268.49	525.99	479.25	46.74	11.254				
9,500.00	9,479.63	9,499.40	9,479.63	33.66	33.60	-90.53	-314.44	-268.49	525.99	478.77	47.23	11.137				
9,600.00	9,579.63	9,599.40	9,579.63	34.00	33.94	-90.53	-314.44	-268.49	525.99	478.27	47.72	11.023				
9,700.00	9,679.63	9,699.40	9,679.63	34.35	34.29	-90.53	-314.44	-268.49	525.99	477.78	48.21	10.911				
9,800.00	9,779.63	9,799.40	9,779.63	34.69	34.63	-90.53	-314.44	-268.49	525.99	477.29	48.70	10.801				
9,900.00	9,879.63	9,899.40	9,879.63	35.04	34.98	-90.53	-314.44	-268.49	525.99	476.80	49.19	10.693				
10,000.00	9,979.63	9,999.40	9,979.63	35.39	35.33	-90.53	-314.44	-268.49	525.99	476.31	49.68	10.587				
10,100.00	10,079.63	10,099.40	10,079.63	35.73	35.67	-90.53	-314.44	-268.49	525.99	475.82	50.17	10.483				
10,200.00	10,179.63	10,199.40	10,179.63	36.08	36.02	-90.53	-314.44	-268.49	525.99	475.33	50.67	10.382				
10,300.00	10,279.63	10,299.40	10,279.63	36.42	36.37	-90.53	-314.44	-268.49	525.99	474.83	51.16	10.282				
10,400.00	10,379.63	10,399.40	10,379.63	36.77	36.71	-90.53	-314.44	-268.49	525.99	474.34	51.65	10.184				
10,500.00	10,479.63	10,499.40	10,479.63	37.12	37.06	-90.53	-314.44	-268.49	525.99	473.85	52.14	10.087				

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 Kaston Fed Com 703H
Project:	Lea County, NM (NAD83)	TVD Reference:	3057.5' GE + 30' KB @ 3087.50usft
Reference Site:	Bus Driver/Kaston Fed Com	MD Reference:	3057.5' GE + 30' KB @ 3087.50usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Kaston Fed Com 703H	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 #4	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		
10,600.00	10,579.63	10,599.40	10,579.63	37.47	37.41	-90.53	-314.44	-268.49	525.99	473.36	52.64	9.993		
10,700.00	10,679.63	10,699.40	10,679.63	37.81	37.76	-90.53	-314.44	-268.49	525.99	472.86	53.13	9.900		
10,800.00	10,779.63	10,799.40	10,779.63	38.16	38.11	-90.53	-314.44	-268.49	525.99	472.37	53.62	9.809		
10,900.00	10,879.63	10,899.40	10,879.63	38.51	38.45	-90.53	-314.44	-268.49	525.99	471.87	54.12	9.719		
11,000.00	10,979.63	10,999.40	10,979.63	38.86	38.80	-90.53	-314.44	-268.49	525.99	471.38	54.61	9.631		
11,100.00	11,079.63	11,099.40	11,079.63	39.21	39.15	-90.53	-314.44	-268.49	525.99	470.89	55.11	9.545		
11,200.00	11,179.63	11,199.40	11,179.63	39.55	39.50	-90.53	-314.44	-268.49	525.99	470.39	55.60	9.460		
11,300.00	11,279.63	11,299.40	11,279.63	39.90	39.85	-90.53	-314.44	-268.49	525.99	469.90	56.10	9.377		
11,306.42	11,286.04	11,305.82	11,286.04	39.92	39.87	-90.53	-314.44	-268.49	525.99	469.86	56.13	9.371		
11,400.00	11,379.63	11,399.01	11,379.06	40.25	40.20	-91.00	-318.74	-268.45	526.01	469.42	56.59	9.295		
11,500.00	11,479.63	11,494.53	11,472.45	40.60	40.55	-93.13	-338.25	-268.28	526.59	469.51	57.09	9.225		
11,600.00	11,579.63	11,581.49	11,553.60	40.95	40.88	-96.49	-369.27	-268.01	529.52	471.99	57.53	9.204		
11,620.37	11,600.00	11,600.00	11,570.21	41.02	40.95	-97.36	-377.44	-267.94	530.63	473.01	57.62	9.209		
11,650.00	11,629.61	11,621.27	11,588.96	41.12	41.04	81.93	-387.49	-267.85	532.53	474.83	57.70	9.229		
11,700.00	11,679.37	11,659.96	11,622.05	41.30	41.19	79.77	-407.52	-267.68	536.35	478.52	57.83	9.275		
11,750.00	11,728.52	11,700.00	11,654.79	41.48	41.36	77.59	-430.55	-267.47	540.81	482.87	57.94	9.335		
11,800.00	11,776.70	11,734.95	11,682.00	41.67	41.50	75.68	-452.47	-267.28	545.74	487.79	57.95	9.418		
11,850.00	11,823.53	11,771.45	11,708.93	41.86	41.66	73.79	-477.10	-267.07	551.02	493.09	57.93	9.511		
11,900.00	11,868.66	11,807.39	11,733.86	42.05	41.82	72.00	-502.98	-266.84	556.52	498.65	57.88	9.616		
11,950.00	11,911.74	11,842.85	11,756.82	42.25	41.97	70.33	-529.99	-266.60	562.10	504.32	57.78	9.729		
12,000.00	11,952.45	11,877.89	11,777.83	42.45	42.13	68.79	-558.03	-266.36	567.64	509.99	57.65	9.846		
12,050.00	11,990.48	11,912.56	11,796.89	42.66	42.29	67.38	-586.99	-266.10	573.03	515.52	57.51	9.965		
12,100.00	12,025.54	11,950.00	11,815.47	42.88	42.47	66.04	-619.48	-265.82	578.17	520.77	57.40	10.073		
12,150.00	12,057.36	11,981.01	11,829.22	43.10	42.62	64.98	-647.27	-265.58	582.94	525.73	57.20	10.191		
12,200.00	12,085.70	12,014.86	11,842.49	43.32	42.79	63.99	-678.41	-265.30	587.29	530.22	57.07	10.291		
12,250.00	12,110.34	12,050.00	11,854.29	43.56	42.97	63.12	-711.49	-265.02	591.14	534.16	56.98	10.374		
12,300.00	12,131.10	12,082.03	11,863.27	43.80	43.13	62.44	-742.23	-264.75	594.42	537.53	56.89	10.448		
12,350.00	12,147.81	12,115.40	11,870.78	44.05	43.31	61.88	-774.74	-264.46	597.09	540.22	56.87	10.499		
12,400.00	12,160.36	12,150.00	11,876.55	44.30	43.49	61.45	-808.85	-264.16	599.11	542.19	56.92	10.525		
12,450.00	12,168.64	12,181.89	11,880.04	44.55	43.66	61.19	-840.54	-263.89	600.45	543.43	57.01	10.532		
12,500.00	12,172.60	12,215.06	11,881.79	44.81	43.83	61.06	-873.66	-263.60	601.09	543.90	57.18	10.511		
12,512.84	12,172.91	12,225.51	11,881.98	44.88	43.89	61.05	-884.11	-263.50	601.13	543.88	57.25	10.500		
12,600.00	12,174.05	12,312.66	11,883.35	45.35	44.38	61.07	-971.25	-262.74	601.02	543.19	57.83	10.392		
12,700.00	12,175.37	12,412.66	11,884.92	45.95	44.99	61.09	-1,071.23	-261.87	600.90	542.33	58.57	10.260		
12,800.00	12,176.68	12,512.66	11,886.49	46.59	45.65	61.11	-1,171.22	-260.99	600.78	541.42	59.36	10.120		
12,900.00	12,178.00	12,612.66	11,888.06	47.28	46.37	61.13	-1,271.20	-260.12	600.66	540.44	60.22	9.974		
13,000.00	12,179.31	12,712.66	11,889.63	48.02	47.12	61.16	-1,371.18	-259.24	600.54	539.40	61.14	9.822		
13,100.00	12,180.63	12,812.66	11,891.20	48.81	47.93	61.18	-1,471.17	-258.37	600.42	538.30	62.12	9.666		
13,200.00	12,181.94	12,912.66	11,892.77	49.63	48.77	61.20	-1,571.15	-257.49	600.30	537.15	63.15	9.507		
13,300.00	12,183.25	13,012.66	11,894.34	50.50	49.66	61.22	-1,671.13	-256.62	600.18	535.95	64.23	9.345		
13,400.00	12,184.57	13,112.66	11,895.91	51.40	50.59	61.24	-1,771.12	-255.74	600.06	534.70	65.36	9.181		
13,500.00	12,185.88	13,212.66	11,897.48	52.35	51.55	61.26	-1,871.10	-254.87	599.94	533.40	66.53	9.017		
13,600.00	12,187.20	13,312.66	11,899.05	53.32	52.54	61.28	-1,971.08	-253.99	599.82	532.06	67.75	8.853		
13,700.00	12,188.51	13,412.66	11,900.62	54.33	53.57	61.31	-2,071.07	-253.12	599.70	530.68	69.02	8.689		
13,800.00	12,189.83	13,512.66	11,902.19	55.37	54.63	61.33	-2,171.05	-252.24	599.58	529.26	70.32	8.527		
13,900.00	12,191.14	13,612.66	11,903.76	56.44	55.72	61.35	-2,271.03	-251.37	599.46	527.81	71.65	8.366		
14,000.00	12,192.46	13,712.66	11,905.33	57.54	56.83	61.37	-2,371.02	-250.49	599.34	526.31	73.03	8.207		
14,100.00	12,193.77	13,812.66	11,906.90	58.66	57.97	61.39	-2,471.00	-249.62	599.22	524.79	74.43	8.050		
14,200.00	12,195.08	13,912.66	11,908.47	59.81	59.14	61.41	-2,570.98	-248.74	599.10	523.23	75.87	7.896		
14,300.00	12,196.40	14,012.66	11,910.04	60.98	60.32	61.44	-2,670.97	-247.87	598.98	521.65	77.34	7.745		
14,400.00	12,197.71	14,112.66	11,911.61	62.17	61.53	61.46	-2,770.95	-246.99	598.86	520.03	78.83	7.597		
14,500.00	12,199.03	14,212.66	11,913.18	63.38	62.76	61.48	-2,870.94	-246.12	598.74	518.39	80.35	7.452		

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 Kaston Fed Com 703H
Project:	Lea County, NM (NAD83)	TVD Reference:	3057.5' GE + 30' KB @ 3087.50usft
Reference Site:	Bus Driver/Kaston Fed Com	MD Reference:	3057.5' GE + 30' KB @ 3087.50usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Kaston Fed Com 703H	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 #4	Offset TVD Reference:	Offset Datum

Offset Design													Bus Driver/Kaston Fed Com - Bus Driver Fed Com 602H - OH - Plan #4		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				
14,600.00	12,200.34	14,312.66	11,914.75	64.61	64.01	61.50	-2,970.92	-245.24	598.63	516.73	81.89	7.310				
14,700.00	12,201.66	14,412.66	11,916.31	65.86	65.28	61.52	-3,070.90	-244.37	598.51	515.05	83.46	7.171				
14,800.00	12,202.97	14,512.66	11,917.88	67.13	66.56	61.54	-3,170.89	-243.49	598.39	513.34	85.05	7.036				
14,900.00	12,204.29	14,612.66	11,919.45	68.42	67.86	61.57	-3,270.87	-242.62	598.27	511.61	86.66	6.904				
15,000.00	12,205.60	14,712.66	11,921.02	69.72	69.17	61.59	-3,370.85	-241.74	598.15	509.86	88.29	6.775				
15,100.00	12,206.91	14,812.65	11,922.59	71.03	70.50	61.61	-3,470.84	-240.87	598.03	508.10	89.94	6.649				
15,200.00	12,208.23	14,912.65	11,924.16	72.36	71.84	61.63	-3,570.82	-239.99	597.91	506.31	91.60	6.527				
15,300.00	12,209.54	15,012.65	11,925.73	73.70	73.20	61.65	-3,670.80	-239.12	597.80	504.51	93.28	6.409				
15,400.00	12,210.86	15,112.65	11,927.30	75.06	74.56	61.67	-3,770.79	-238.24	597.68	502.70	94.98	6.293				
15,500.00	12,212.17	15,212.65	11,928.87	76.42	75.94	61.70	-3,870.77	-237.37	597.56	500.87	96.69	6.180				
15,600.00	12,213.49	15,312.65	11,930.44	77.80	77.33	61.72	-3,970.75	-236.49	597.44	499.03	98.41	6.071				
15,700.00	12,214.80	15,412.65	11,932.01	79.19	78.73	61.74	-4,070.74	-235.62	597.32	497.18	100.15	5.964				
15,800.00	12,216.12	15,512.65	11,933.58	80.58	80.14	61.76	-4,170.72	-234.74	597.21	495.31	101.90	5.861				
15,900.00	12,217.43	15,612.65	11,935.15	81.99	81.55	61.78	-4,270.70	-233.87	597.09	493.43	103.66	5.760				
16,000.00	12,218.74	15,712.65	11,936.72	83.41	82.98	61.80	-4,370.69	-232.99	596.97	491.54	105.43	5.662				
16,100.00	12,220.06	15,812.65	11,938.29	84.83	84.41	61.83	-4,470.67	-232.12	596.85	489.64	107.21	5.567				
16,200.00	12,221.37	15,912.65	11,939.86	86.26	85.86	61.85	-4,570.66	-231.24	596.73	487.73	109.00	5.475				
16,300.00	12,222.69	16,012.65	11,941.43	87.70	87.31	61.87	-4,670.64	-230.37	596.62	485.82	110.80	5.385				
16,400.00	12,224.00	16,112.65	11,943.00	89.15	88.76	61.89	-4,770.62	-229.49	596.50	483.89	112.61	5.297				
16,500.00	12,225.32	16,212.65	11,944.57	90.61	90.23	61.91	-4,870.61	-228.62	596.38	481.96	114.43	5.212				
16,600.00	12,226.63	16,312.65	11,946.14	92.07	91.70	61.94	-4,970.59	-227.74	596.27	480.01	116.25	5.129				
16,700.00	12,227.94	16,412.65	11,947.71	93.53	93.17	61.96	-5,070.57	-226.87	596.15	478.07	118.08	5.049				
16,800.00	12,229.26	16,512.65	11,949.28	95.01	94.66	61.98	-5,170.56	-225.99	596.03	476.11	119.92	4.970				
16,900.00	12,230.57	16,612.65	11,950.85	96.49	96.14	62.00	-5,270.54	-225.12	595.91	474.15	121.77	4.894				
17,000.00	12,231.89	16,712.65	11,952.42	97.97	97.64	62.02	-5,370.52	-224.24	595.80	472.18	123.62	4.820				
17,100.00	12,233.20	16,812.65	11,953.99	99.46	99.13	62.05	-5,470.51	-223.37	595.68	470.20	125.48	4.747				
17,200.00	12,234.52	16,912.65	11,955.56	100.96	100.64	62.07	-5,570.49	-222.49	595.56	468.22	127.34	4.677				
17,300.00	12,235.83	17,012.65	11,957.13	102.46	102.14	62.09	-5,670.47	-221.62	595.45	466.24	129.21	4.608				
17,400.00	12,237.15	17,112.65	11,958.70	103.96	103.66	62.11	-5,770.46	-220.74	595.33	464.25	131.08	4.542				
17,500.00	12,238.46	17,212.65	11,960.27	105.47	105.17	62.13	-5,870.44	-219.87	595.21	462.25	132.96	4.477				
17,600.00	12,239.77	17,312.65	11,961.84	106.99	106.69	62.15	-5,970.42	-218.99	595.10	460.25	134.85	4.413				
17,700.00	12,241.09	17,412.65	11,963.41	108.50	108.22	62.18	-6,070.41	-218.12	594.98	458.25	136.73	4.351				
17,800.00	12,242.40	17,512.65	11,964.98	110.03	109.74	62.20	-6,170.39	-217.24	594.87	456.24	138.63	4.291				
17,900.00	12,243.72	17,612.65	11,966.55	111.55	111.27	62.22	-6,270.38	-216.37	594.75	454.23	140.52	4.232				
18,000.00	12,245.03	17,712.65	11,968.12	113.08	112.81	62.24	-6,370.36	-215.49	594.63	452.22	142.42	4.175				
18,100.00	12,246.35	17,812.65	11,969.69	114.61	114.35	62.26	-6,470.34	-214.62	594.52	450.20	144.32	4.119				
18,200.00	12,247.66	17,912.64	11,971.26	116.15	115.89	62.29	-6,570.33	-213.74	594.40	448.18	146.23	4.065				
18,300.00	12,248.98	18,012.64	11,972.83	117.69	117.43	62.31	-6,670.31	-212.87	594.29	446.15	148.14	4.012				
18,400.00	12,250.29	18,112.64	11,974.40	119.23	118.98	62.33	-6,770.29	-211.99	594.17	444.12	150.05	3.960				
18,500.00	12,251.60	18,212.64	11,975.97	120.77	120.53	62.35	-6,870.28	-211.12	594.06	442.09	151.96	3.909				
18,600.00	12,252.92	18,312.64	11,977.54	122.32	122.08	62.37	-6,970.26	-210.24	593.94	440.06	153.88	3.860				
18,700.00	12,254.23	18,412.64	11,979.11	123.87	123.64	62.40	-7,070.24	-209.37	593.82	438.03	155.80	3.812				
18,800.00	12,255.55	18,512.64	11,980.68	125.42	125.19	62.42	-7,170.23	-208.49	593.71	435.99	157.72	3.764				
18,900.00	12,256.86	18,612.64	11,982.25	126.98	126.75	62.44	-7,270.21	-207.62	593.59	433.95	159.64	3.718				
19,000.00	12,258.18	18,712.64	11,983.82	128.53	128.32	62.46	-7,370.19	-206.74	593.48	431.91	161.57	3.673				
19,100.00	12,259.49	18,812.64	11,985.39	130.09	129.88	62.48	-7,470.18	-205.87	593.36	429.87	163.50	3.629				
19,200.00	12,260.80	18,912.64	11,986.96	131.66	131.45	62.51	-7,570.16	-204.99	593.25	427.82	165.43	3.586				
19,300.00	12,262.12	19,012.64	11,988.53	133.22	133.02	62.53	-7,670.14	-204.12	593.13	425.78	167.36	3.544				
19,400.00	12,263.43	19,112.64	11,990.10	134.79	134.59	62.55	-7,770.13	-203.24	593.02	423.73	169.29	3.503				
19,500.00	12,264.75	19,212.64	11,991.67	136.36	136.16	62.57	-7,870.11	-202.37	592.91	421.68	171.23	3.463				
19,600.00	12,266.06	19,312.64	11,993.24	137.93	137.73	62.59	-7,970.09	-201.49	592.79	419.63	173.16	3.423				
19,700.00	12,267.38	19,412.64	11,994.81	139.50	139.31	62.62	-8,070.08	-200.62	592.68	417.58	175.10	3.385				

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 Kaston Fed Com 703H
Project:	Lea County, NM (NAD83)	TVD Reference:	3057.5' GE + 30' KB @ 3087.50usft
Reference Site:	Bus Driver/Kaston Fed Com	MD Reference:	3057.5' GE + 30' KB @ 3087.50usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Kaston Fed Com 703H	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 #4	Offset TVD Reference:	Offset Datum

Offset Design													Bus Driver/Kaston Fed Com - Bus Driver Fed Com 602H - OH - Plan #4		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					
19,800.00	12,268.69	19,512.64	11,996.38	141.07	140.89	62.64	-8,170.06	-199.74	592.56	415.52	177.04	3.347					
19,900.00	12,270.01	19,612.64	11,997.95	142.65	142.47	62.66	-8,270.05	-198.87	592.45	413.47	178.98	3.310					
20,000.00	12,271.32	19,712.64	11,999.52	144.23	144.05	62.68	-8,370.03	-197.99	592.33	411.42	180.92	3.274					
20,100.00	12,272.63	19,812.64	12,001.09	145.81	145.63	62.71	-8,470.01	-197.12	592.22	409.36	182.86	3.239					
20,200.00	12,273.95	19,912.64	12,002.66	147.39	147.22	62.73	-8,570.00	-196.24	592.11	407.30	184.80	3.204					
20,300.00	12,275.26	20,012.64	12,004.23	148.97	148.80	62.75	-8,669.98	-195.37	591.99	405.25	186.74	3.170					
20,400.00	12,276.58	20,112.64	12,005.80	150.55	150.39	62.77	-8,769.96	-194.49	591.88	403.19	188.69	3.137					
20,500.00	12,277.89	20,212.64	12,007.37	152.14	151.98	62.79	-8,869.95	-193.62	591.76	401.13	190.63	3.104					
20,600.00	12,279.21	20,312.64	12,008.94	153.73	153.57	62.82	-8,969.93	-192.74	591.65	399.07	192.58	3.072					
20,700.00	12,280.52	20,412.64	12,010.51	155.32	155.16	62.84	-9,069.91	-191.87	591.54	397.01	194.52	3.041					
20,800.00	12,281.84	20,512.64	12,012.08	156.90	156.75	62.86	-9,169.90	-190.99	591.42	394.95	196.47	3.010					
20,900.00	12,283.15	20,612.64	12,013.65	158.50	158.35	62.88	-9,269.88	-190.12	591.31	392.89	198.41	2.980					
21,000.00	12,284.46	20,712.64	12,015.22	160.09	159.94	62.90	-9,369.86	-189.24	591.20	390.83	200.36	2.951					
21,100.00	12,285.78	20,812.64	12,016.79	161.68	161.54	62.93	-9,469.85	-188.37	591.08	388.77	202.31	2.922					
21,200.00	12,287.09	20,912.63	12,018.36	163.28	163.14	62.95	-9,569.83	-187.49	590.97	386.71	204.26	2.893					
21,300.00	12,288.41	21,012.63	12,019.93	164.87	164.74	62.97	-9,669.81	-186.62	590.86	384.65	206.20	2.865					
21,400.00	12,289.72	21,112.63	12,021.50	166.47	166.34	62.99	-9,769.80	-185.74	590.74	382.59	208.15	2.838					
21,500.00	12,291.04	21,212.63	12,023.07	168.07	167.94	63.02	-9,869.78	-184.87	590.63	380.53	210.10	2.811					
21,600.00	12,292.35	21,312.63	12,024.64	169.66	169.54	63.04	-9,969.77	-183.99	590.52	378.47	212.05	2.785					
21,700.00	12,293.66	21,412.63	12,026.21	171.26	171.14	63.06	-10,069.75	-183.12	590.41	376.41	213.99	2.759					
21,800.00	12,294.98	21,512.63	12,027.78	172.87	172.74	63.08	-10,169.73	-182.24	590.29	374.35	215.94	2.734					
21,900.00	12,296.29	21,612.63	12,029.35	174.47	174.35	63.10	-10,269.72	-181.37	590.18	372.29	217.89	2.709					
22,000.00	12,297.61	21,712.63	12,030.92	176.07	175.95	63.13	-10,369.70	-180.49	590.07	370.23	219.83	2.684					
22,100.00	12,298.92	21,812.63	12,032.49	177.67	177.56	63.15	-10,469.68	-179.62	589.96	368.17	221.78	2.660					
22,200.00	12,300.24	21,912.63	12,034.06	179.28	179.17	63.17	-10,569.67	-178.74	589.84	366.12	223.73	2.636					
22,300.00	12,301.55	22,012.63	12,035.63	180.88	180.77	63.19	-10,669.65	-177.87	589.73	364.06	225.67	2.613					
22,400.00	12,302.87	22,112.63	12,037.20	182.49	182.38	63.22	-10,769.63	-176.99	589.62	362.00	227.62	2.590					
22,500.00	12,304.18	22,212.63	12,038.77	184.10	183.99	63.24	-10,869.62	-176.12	589.51	359.94	229.56	2.568					
22,600.00	12,305.49	22,312.63	12,040.34	185.71	185.60	63.26	-10,969.60	-175.24	589.40	357.89	231.51	2.546					
22,700.00	12,306.81	22,412.63	12,041.91	187.31	187.21	63.28	-11,069.58	-174.37	589.28	355.83	233.45	2.524					
22,800.00	12,308.12	22,512.63	12,043.48	188.92	188.82	63.31	-11,169.57	-173.49	589.17	353.77	235.40	2.503					
22,900.00	12,309.44	22,612.63	12,045.05	190.53	190.44	63.33	-11,269.55	-172.62	589.06	351.72	237.34	2.482					
23,000.00	12,310.75	22,712.63	12,046.62	192.14	192.05	63.35	-11,369.53	-171.74	588.95	349.66	239.28	2.461					
23,100.00	12,312.07	22,812.63	12,048.19	193.76	193.66	63.37	-11,469.52	-170.87	588.84	347.61	241.23	2.441					
23,200.00	12,313.38	22,912.63	12,049.76	195.37	195.28	63.40	-11,569.50	-169.99	588.73	345.56	243.17	2.421					
23,300.00	12,314.70	23,012.63	12,051.33	196.98	196.89	63.42	-11,669.49	-169.12	588.61	343.51	245.11	2.401					
23,400.00	12,316.01	23,112.63	12,052.90	198.59	198.51	63.44	-11,769.47	-168.24	588.50	341.45	247.05	2.382					
23,500.00	12,317.32	23,212.63	12,054.47	200.21	200.12	63.46	-11,869.45	-167.37	588.39	339.40	248.99	2.363					
23,600.00	12,318.64	23,312.63	12,056.04	201.82	201.74	63.48	-11,969.44	-166.49	588.28	337.35	250.93	2.344					
23,677.58	12,319.66	23,389.58	12,057.25	203.08	202.99	63.50	-12,046.38	-165.82	588.20	335.77	252.42	2.330					
23,679.24	12,319.68	23,389.58	12,057.25	203.10	202.99	63.50	-12,046.38	-165.82	588.20	335.76	252.44	2.330					
23,679.99	12,319.69	23,389.58	12,057.25	203.12	202.99	63.50	-12,046.38	-165.82	588.20	335.76	252.44	2.330					

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 Kaston Fed Com 703H
Project:	Lea County, NM (NAD83)	TVD Reference:	3057.5' GE + 30' KB @ 3087.50usft
Reference Site:	Bus Driver/Kaston Fed Com	MD Reference:	3057.5' GE + 30' KB @ 3087.50usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Kaston Fed Com 703H	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 #4	Offset TVD Reference:	Offset Datum

Offset Design													Bus Driver/Kaston Fed Com - Bus Driver Fed Com 702H - OH - Plan #4		Offset Site Error:	0.00 usft
Survey Program: 0-OWSG (Rev2) MWD													Offset Well Error:	0.00 usft		
Reference		Offset		Semi Major Axis			Distance									
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning			
0.00	0.00	0.00	0.00	0.00	0.00	-90.54	-0.66	-69.98	69.98							
100.00	100.00	100.00	100.00	0.13	0.13	-90.54	-0.66	-69.98	69.98	69.81	0.18	394.416				
200.00	200.00	200.00	200.00	0.48	0.48	-90.54	-0.66	-69.98	69.98	69.30	0.68	102.256				
300.00	300.00	300.00	300.00	0.84	0.84	-90.54	-0.66	-69.98	69.98	68.79	1.19	58.743				
400.00	400.00	400.00	400.00	1.20	1.20	-90.54	-0.66	-69.98	69.98	68.28	1.70	41.208				
500.00	500.00	500.00	500.00	1.56	1.56	-90.54	-0.66	-69.98	69.98	67.78	2.21	31.735				
600.00	600.00	600.00	600.00	1.92	1.92	-90.54	-0.66	-69.98	69.98	67.27	2.71	25.803				
700.00	700.00	700.00	700.00	2.28	2.28	-90.54	-0.66	-69.98	69.98	66.76	3.22	21.740				
800.00	800.00	800.00	800.00	2.63	2.63	-90.54	-0.66	-69.98	69.98	66.26	3.73	18.782				
900.00	900.00	900.00	900.00	2.99	2.99	-90.54	-0.66	-69.98	69.98	65.75	4.23	16.532				
1,000.00	1,000.00	1,000.00	1,000.00	3.35	3.35	-90.54	-0.66	-69.98	69.98	65.24	4.74	14.764				
1,100.00	1,100.00	1,100.00	1,100.00	3.71	3.71	-90.54	-0.66	-69.98	69.98	64.74	5.25	13.338				
1,200.00	1,200.00	1,200.00	1,200.00	4.07	4.07	-90.54	-0.66	-69.98	69.98	64.23	5.75	12.163				
1,300.00	1,300.00	1,300.00	1,300.00	4.43	4.43	-90.54	-0.66	-69.98	69.98	63.72	6.26	11.178				
1,400.00	1,400.00	1,400.00	1,400.00	4.79	4.79	-90.54	-0.66	-69.98	69.98	63.22	6.77	10.341				
1,500.00	1,500.00	1,500.00	1,500.00	5.14	5.14	-90.54	-0.66	-69.98	69.98	62.71	7.27	9.620				
1,600.00	1,600.00	1,600.00	1,600.00	5.50	5.50	-90.54	-0.66	-69.98	69.98	62.20	7.78	8.993				
1,700.00	1,700.00	1,700.00	1,700.00	5.86	5.86	-90.54	-0.66	-69.98	69.98	61.69	8.29	8.443				
1,800.00	1,800.00	1,800.00	1,800.00	6.22	6.22	-90.54	-0.66	-69.98	69.98	61.19	8.80	7.957				
1,900.00	1,900.00	1,900.00	1,900.00	6.58	6.58	-90.54	-0.66	-69.98	69.98	60.68	9.30	7.523				
2,000.00	2,000.00	2,000.00	2,000.00	6.94	6.94	-90.54	-0.66	-69.98	69.98	60.17	9.81	7.134				
2,100.00	2,100.00	2,100.00	2,100.00	7.29	7.29	-90.54	-0.66	-69.98	69.98	59.67	10.32	6.784				
2,200.00	2,200.00	2,200.00	2,200.00	7.65	7.65	-90.54	-0.66	-69.98	69.98	59.16	10.82	6.466				
2,300.00	2,300.00	2,300.00	2,300.00	8.01	8.01	-90.54	-0.66	-69.98	69.98	58.65	11.33	6.177				
2,400.00	2,400.00	2,400.00	2,400.00	8.37	8.37	-90.54	-0.66	-69.98	69.98	58.15	11.84	5.912				
2,500.00	2,500.00	2,500.00	2,500.00	8.73	8.73	-90.54	-0.66	-69.98	69.98	57.64	12.34	5.669				
2,600.00	2,600.00	2,600.00	2,600.00	9.09	9.09	-90.54	-0.66	-69.98	69.98	57.13	12.85	5.446				
2,612.12	2,612.12	2,612.12	2,612.12	9.13	9.13	-90.54	-0.66	-69.98	69.98	57.07	12.91	5.420 CC				
2,700.00	2,700.00	2,699.80	2,699.80	9.45	9.44	-90.55	-0.67	-70.00	70.00	56.64	13.36	5.241 ES				
2,800.00	2,800.00	2,798.14	2,798.13	9.80	9.77	-91.08	-1.35	-71.41	71.45	57.61	13.84	5.164				
2,900.00	2,900.00	2,896.34	2,896.23	10.16	10.10	-92.39	-3.13	-75.09	75.25	60.94	14.31	5.259				
3,000.00	3,000.00	2,994.26	2,993.93	10.52	10.43	-94.23	-6.00	-81.03	81.48	66.70	14.77	5.515				
3,070.00	3,070.00	3,062.57	3,061.97	10.77	10.67	-95.70	-8.64	-86.50	87.30	72.21	15.09	5.785				
3,100.00	3,100.00	3,091.77	3,091.02	10.87	10.77	123.42	-9.93	-89.18	90.24	75.02	15.22	5.928				
3,200.00	3,199.97	3,188.67	3,187.24	11.20	11.10	122.07	-14.91	-99.48	102.55	86.91	15.65	6.555				
3,300.00	3,299.86	3,284.82	3,282.39	11.53	11.44	121.64	-20.90	-111.88	118.64	102.57	16.06	7.386				
3,400.00	3,399.59	3,383.07	3,379.46	11.86	11.79	122.03	-27.51	-125.57	137.18	120.65	16.53	8.297				
3,470.12	3,469.39	3,451.78	3,447.34	12.10	12.04	122.70	-32.14	-135.15	151.02	134.15	16.87	8.954				
3,500.00	3,499.10	3,481.02	3,476.23	12.20	12.15	123.10	-34.11	-139.22	157.07	140.06	17.01	9.235				
3,600.00	3,598.56	3,578.88	3,572.91	12.54	12.51	124.26	-40.70	-152.86	177.37	159.89	17.49	10.144				
3,700.00	3,698.01	3,676.74	3,669.60	12.88	12.87	125.17	-47.28	-166.50	197.73	179.76	17.97	11.006				
3,800.00	3,797.46	3,774.61	3,766.28	13.22	13.24	125.91	-53.87	-180.14	218.13	199.68	18.45	11.823				
3,900.00	3,896.91	3,872.47	3,862.96	13.57	13.61	126.53	-60.46	-193.78	238.55	219.62	18.93	12.599				
4,000.00	3,996.36	3,970.33	3,959.64	13.92	13.99	127.05	-67.05	-207.42	259.00	239.57	19.42	13.335				
4,100.00	4,095.82	4,068.19	4,056.33	14.27	14.36	127.49	-73.64	-221.06	279.46	259.55	19.91	14.033				
4,200.00	4,195.27	4,166.06	4,153.01	14.63	14.75	127.87	-80.23	-234.70	299.94	279.53	20.41	14.698				
4,300.00	4,294.72	4,263.92	4,249.69	14.99	15.13	128.21	-86.81	-248.34	320.43	299.53	20.90	15.330				
4,400.00	4,394.17	4,361.78	4,346.38	15.35	15.51	128.50	-93.40	-261.98	340.93	319.53	21.40	15.931				
4,500.00	4,493.62	4,459.64	4,443.06	15.71	15.90	128.76	-99.99	-275.62	361.43	339.53	21.90	16.504				
4,600.00	4,593.08	4,557.51	4,539.74	16.07	16.29	128.99	-106.58	-289.26	381.95	359.54	22.40	17.051				
4,700.00	4,692.53	4,655.37	4,636.43	16.43	16.68	129.20	-113.17	-302.90	402.46	379.56	22.90	17.572				
4,800.00	4,791.98	4,753.23	4,733.11	16.80	17.08	129.39	-119.76	-316.54	422.99	399.58	23.41	18.070				

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 Kaston Fed Com 703H
Project:	Lea County, NM (NAD83)	TVD Reference:	3057.5' GE + 30' KB @ 3087.50usft
Reference Site:	Bus Driver/Kaston Fed Com	MD Reference:	3057.5' GE + 30' KB @ 3087.50usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Kaston Fed Com 703H	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 #4	Offset TVD Reference:	Offset Datum

Offset Design		Bus Driver/Kaston Fed Com - Bus Driver Fed Com 702H - OH - Plan #4											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	4,891.43	4,851.09	4,829.79	17.17	17.47	129.56	-126.34	-330.18	443.51	419.60	23.91	18.547		
5,000.00	4,990.88	4,948.96	4,926.47	17.53	17.87	129.72	-132.93	-343.82	464.04	439.62	24.42	19.002		
5,100.00	5,090.33	5,046.82	5,023.16	17.90	18.27	129.86	-139.52	-357.46	484.58	459.65	24.93	19.438		
5,200.00	5,189.79	5,144.68	5,119.84	18.28	18.67	129.99	-146.11	-371.10	505.11	479.67	25.44	19.856		
5,300.00	5,289.24	5,242.54	5,216.52	18.65	19.07	130.11	-152.70	-384.74	525.65	499.70	25.95	20.256		
5,400.00	5,388.69	5,340.41	5,313.21	19.02	19.47	130.22	-159.29	-398.38	546.19	519.73	26.46	20.640		
5,500.00	5,488.14	5,438.27	5,409.89	19.39	19.88	130.33	-165.88	-412.02	566.73	539.75	26.98	21.009		
5,600.00	5,587.59	5,536.13	5,506.57	19.77	20.28	130.42	-172.46	-425.66	587.27	559.78	27.49	21.363		
5,700.00	5,687.05	5,633.99	5,603.26	20.14	20.69	130.51	-179.05	-439.30	607.82	579.81	28.01	21.704		
5,800.00	5,786.50	5,731.86	5,699.94	20.52	21.09	130.60	-185.64	-452.94	628.37	599.84	28.52	22.031		
5,900.00	5,885.95	5,829.72	5,796.62	20.90	21.50	130.68	-192.23	-466.58	648.91	619.87	29.04	22.346		
6,000.00	5,985.40	5,927.58	5,893.30	21.28	21.91	130.75	-198.82	-480.22	669.46	639.91	29.56	22.650		
6,100.00	6,084.85	6,025.44	5,989.99	21.66	22.32	130.82	-205.41	-493.86	690.01	659.94	30.08	22.943		
6,200.00	6,184.31	6,123.31	6,086.67	22.04	22.73	130.89	-211.99	-507.50	710.56	679.97	30.59	23.225		
6,300.00	6,283.76	6,221.17	6,183.35	22.42	23.14	130.95	-218.58	-521.14	731.11	700.00	31.11	23.497		
6,400.00	6,383.21	6,319.03	6,280.04	22.80	23.55	131.01	-225.17	-534.78	751.67	720.03	31.64	23.760		
6,500.00	6,482.66	6,416.89	6,376.72	23.18	23.96	131.06	-231.76	-548.42	772.22	740.06	32.16	24.014		
6,600.00	6,582.11	6,514.76	6,473.40	23.56	24.37	131.11	-238.35	-562.06	792.77	760.09	32.68	24.259		
6,700.00	6,681.56	6,612.62	6,570.09	23.94	24.78	131.16	-244.94	-575.70	813.33	780.12	33.20	24.496		
6,800.00	6,781.02	6,710.48	6,666.77	24.32	25.20	131.21	-251.53	-589.34	833.88	800.16	33.73	24.726		
6,900.00	6,880.47	6,808.34	6,763.45	24.71	25.61	131.26	-258.11	-602.98	854.44	820.19	34.25	24.948		
6,920.25	6,900.61	6,828.16	6,783.03	24.78	25.69	131.26	-259.45	-605.74	858.60	824.24	34.36	24.992		
7,000.00	6,980.00	6,906.32	6,860.25	25.09	26.02	131.44	-264.71	-616.63	874.45	839.68	34.77	25.148		
7,100.00	7,079.75	7,004.60	6,957.34	25.46	26.44	131.52	-271.33	-630.33	892.81	857.52	35.29	25.299		
7,200.00	7,179.65	7,103.12	7,054.68	25.82	26.86	131.47	-277.96	-644.06	909.46	873.66	35.80	25.401		
7,300.00	7,279.63	7,201.83	7,152.20	26.17	27.28	131.28	-284.60	-657.82	924.43	888.12	36.31	25.458		
7,320.37	7,300.00	7,221.96	7,172.08	26.24	27.36	-88.53	-285.96	-660.63	927.28	890.86	36.41	25.465		
7,400.00	7,379.63	7,300.62	7,249.80	26.50	27.70	-88.87	-291.26	-671.59	938.28	901.46	36.81	25.488		
7,500.00	7,479.63	7,399.42	7,347.40	26.84	28.12	-89.29	-297.91	-685.36	952.14	914.83	37.31	25.519		
7,600.00	7,579.63	7,523.84	7,470.57	27.18	28.64	-89.76	-305.57	-701.22	964.89	926.93	37.96	25.417		
7,700.00	7,679.63	7,652.74	7,598.70	27.51	29.15	-90.13	-311.67	-713.85	974.70	936.10	38.60	25.248		
7,800.00	7,779.63	7,782.45	7,728.04	27.85	29.63	-90.37	-315.91	-722.63	981.48	942.27	39.21	25.028		
7,900.00	7,879.63	7,912.68	7,858.14	28.19	30.09	-90.51	-318.24	-727.45	985.20	945.41	39.79	24.760		
8,000.00	7,979.63	8,034.17	7,979.63	28.53	30.49	-90.53	-318.72	-728.45	985.97	945.66	40.31	24.458		
8,100.00	8,079.63	8,134.17	8,079.63	28.87	30.81	-90.53	-318.72	-728.45	985.97	945.18	40.79	24.171		
8,200.00	8,179.63	8,234.17	8,179.63	29.21	31.13	-90.53	-318.72	-728.45	985.97	944.70	41.27	23.891		
8,300.00	8,279.63	8,334.17	8,279.63	29.55	31.45	-90.53	-318.72	-728.45	985.97	944.22	41.75	23.617		
8,400.00	8,379.63	8,434.17	8,379.63	29.89	31.77	-90.53	-318.72	-728.45	985.97	943.74	42.23	23.349		
8,500.00	8,479.63	8,534.17	8,479.63	30.23	32.09	-90.53	-318.72	-728.45	985.97	943.26	42.71	23.086		
8,600.00	8,579.63	8,634.17	8,579.63	30.57	32.42	-90.53	-318.72	-728.45	985.97	942.78	43.19	22.829		
8,700.00	8,679.63	8,734.17	8,679.63	30.91	32.74	-90.53	-318.72	-728.45	985.97	942.30	43.67	22.577		
8,800.00	8,779.63	8,834.17	8,779.63	31.25	33.07	-90.53	-318.72	-728.45	985.97	941.82	44.15	22.331		
8,900.00	8,879.63	8,934.17	8,879.63	31.60	33.39	-90.53	-318.72	-728.45	985.97	941.34	44.64	22.089		
9,000.00	8,979.63	9,034.17	8,979.63	31.94	33.72	-90.53	-318.72	-728.45	985.97	940.85	45.12	21.853		
9,100.00	9,079.63	9,134.17	9,079.63	32.28	34.04	-90.53	-318.72	-728.45	985.97	940.37	45.60	21.621		
9,200.00	9,179.63	9,234.17	9,179.63	32.63	34.37	-90.53	-318.72	-728.45	985.97	939.89	46.09	21.394		
9,300.00	9,279.63	9,334.17	9,279.63	32.97	34.70	-90.53	-318.72	-728.45	985.97	939.40	46.57	21.171		
9,400.00	9,379.63	9,434.17	9,379.63	33.31	35.03	-90.53	-318.72	-728.45	985.97	938.92	47.06	20.953		
9,500.00	9,479.63	9,534.17	9,479.63	33.66	35.36	-90.53	-318.72	-728.45	985.97	938.43	47.54	20.739		
9,600.00	9,579.63	9,634.17	9,579.63	34.00	35.69	-90.53	-318.72	-728.45	985.97	937.94	48.03	20.529		
9,700.00	9,679.63	9,734.17	9,679.63	34.35	36.02	-90.53	-318.72	-728.45	985.97	937.46	48.51	20.323		
9,800.00	9,779.63	9,834.17	9,779.63	34.69	36.35	-90.53	-318.72	-728.45	985.97	936.97	49.00	20.121		

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 Kaston Fed Com 703H
Project:	Lea County, NM (NAD83)	TVD Reference:	3057.5' GE + 30' KB @ 3087.50usft
Reference Site:	Bus Driver/Kaston Fed Com	MD Reference:	3057.5' GE + 30' KB @ 3087.50usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Kaston Fed Com 703H	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 #4	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 0-OWSG (Rev2) MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
9,900.00	9,879.63	9,934.17	9,879.63	35.04	36.68	-90.53	-318.72	-728.45	985.97	936.48	49.49	19.923		
10,000.00	9,979.63	10,034.17	9,979.63	35.39	37.01	-90.53	-318.72	-728.45	985.97	936.00	49.98	19.729		
10,100.00	10,079.63	10,134.17	10,079.63	35.73	37.34	-90.53	-318.72	-728.45	985.97	935.51	50.46	19.538		
10,200.00	10,179.63	10,234.17	10,179.63	36.08	37.68	-90.53	-318.72	-728.45	985.97	935.02	50.95	19.351		
10,300.00	10,279.63	10,334.17	10,279.63	36.42	38.01	-90.53	-318.72	-728.45	985.97	934.53	51.44	19.167		
10,400.00	10,379.63	10,434.17	10,379.63	36.77	38.34	-90.53	-318.72	-728.45	985.97	934.04	51.93	18.986		
10,500.00	10,479.63	10,534.17	10,479.63	37.12	38.68	-90.53	-318.72	-728.45	985.97	933.55	52.42	18.809		
10,600.00	10,579.63	10,634.17	10,579.63	37.47	39.01	-90.53	-318.72	-728.45	985.97	933.06	52.91	18.635		
10,700.00	10,679.63	10,734.17	10,679.63	37.81	39.35	-90.53	-318.72	-728.45	985.97	932.57	53.40	18.464		
10,800.00	10,779.63	10,834.17	10,779.63	38.16	39.68	-90.53	-318.72	-728.45	985.97	932.08	53.89	18.296		
10,900.00	10,879.63	10,934.17	10,879.63	38.51	40.02	-90.53	-318.72	-728.45	985.97	931.59	54.38	18.131		
11,000.00	10,979.63	11,034.17	10,979.63	38.86	40.35	-90.53	-318.72	-728.45	985.97	931.10	54.87	17.969		
11,100.00	11,079.63	11,134.17	11,079.63	39.21	40.69	-90.53	-318.72	-728.45	985.97	930.61	55.36	17.809		
11,200.00	11,179.63	11,234.17	11,179.63	39.55	41.03	-90.53	-318.72	-728.45	985.97	930.12	55.86	17.652		
11,300.00	11,279.63	11,334.17	11,279.63	39.90	41.36	-90.53	-318.72	-728.45	985.97	929.63	56.35	17.498		
11,400.00	11,379.63	11,434.17	11,379.63	40.25	41.70	-90.53	-318.72	-728.45	985.97	929.13	56.84	17.347		
11,416.12	11,395.74	11,450.29	11,395.74	40.31	41.76	-90.53	-318.72	-728.45	985.97	929.05	56.92	17.323		
11,500.00	11,479.63	11,534.17	11,479.63	40.60	42.04	-90.53	-318.72	-728.45	985.97	928.64	57.33	17.198		
11,501.62	11,481.24	11,535.78	11,481.24	40.61	42.04	-90.53	-318.73	-728.45	985.97	928.63	57.34	17.195		
11,600.00	11,579.63	11,633.03	11,579.63	40.95	42.37	-91.04	-327.51	-728.37	986.02	928.20	57.82	17.053		
11,620.37	11,600.00	11,652.63	11,597.21	41.02	42.44	-91.26	-331.26	-728.34	986.06	928.15	57.92	17.025		
11,650.00	11,629.61	11,680.81	11,624.62	41.12	42.54	88.89	-337.80	-728.28	986.17	928.10	58.06	16.985		
11,700.00	11,679.37	11,727.75	11,669.45	41.30	42.71	88.31	-351.65	-728.16	986.42	928.11	58.31	16.917		
11,750.00	11,728.52	11,773.98	11,712.35	41.48	42.88	87.75	-368.84	-728.01	986.77	928.21	58.56	16.851		
11,800.00	11,776.70	11,819.54	11,753.15	41.67	43.04	87.20	-389.11	-727.83	987.19	928.38	58.81	16.785		
11,850.00	11,823.53	11,864.50	11,791.69	41.86	43.21	86.68	-412.22	-727.63	987.69	928.62	59.07	16.721		
11,900.00	11,868.66	11,908.90	11,827.87	42.05	43.37	86.18	-437.94	-727.41	988.23	928.91	59.33	16.657		
11,950.00	11,911.74	11,950.00	11,859.49	42.25	43.52	85.73	-464.18	-727.18	988.82	929.24	59.58	16.596		
12,000.00	11,952.45	11,996.25	11,892.72	42.45	43.69	85.27	-496.33	-726.89	989.42	929.57	59.85	16.531		
12,050.00	11,990.48	12,039.28	11,921.21	42.66	43.85	84.86	-528.57	-726.61	990.04	929.92	60.12	16.468		
12,100.00	12,025.54	12,081.96	11,947.01	42.88	44.02	84.48	-562.56	-726.31	990.64	930.25	60.39	16.405		
12,150.00	12,057.36	12,124.32	11,970.03	43.10	44.19	84.15	-598.10	-726.00	991.21	930.55	60.66	16.340		
12,200.00	12,085.70	12,166.40	11,990.25	43.32	44.36	83.85	-634.99	-725.68	991.74	930.80	60.94	16.273		
12,250.00	12,110.34	12,208.25	12,007.61	43.56	44.54	83.59	-673.06	-725.35	992.23	931.00	61.23	16.205		
12,300.00	12,131.10	12,250.00	12,022.12	43.80	44.72	83.37	-712.19	-725.00	992.64	931.12	61.53	16.134		
12,350.00	12,147.81	12,291.39	12,033.66	44.05	44.91	83.20	-751.93	-724.66	992.99	931.15	61.83	16.060		
12,400.00	12,160.36	12,332.76	12,042.29	44.30	45.10	83.07	-792.38	-724.30	993.25	931.10	62.15	15.982		
12,450.00	12,168.64	12,374.05	12,047.97	44.55	45.30	82.99	-833.27	-723.94	993.42	930.95	62.47	15.902		
12,500.00	12,172.60	12,415.29	12,050.70	44.81	45.50	82.95	-874.40	-723.58	993.50	930.70	62.80	15.819		
12,512.84	12,172.91	12,426.06	12,050.92	44.88	45.55	82.95	-885.17	-723.49	993.51	930.62	62.89	15.798		
12,600.00	12,174.05	12,513.22	12,052.07	45.35	46.01	82.95	-972.32	-722.73	993.51	929.96	63.55	15.633		
12,700.00	12,175.37	12,613.22	12,053.39	45.95	46.58	82.95	-1,072.31	-721.85	993.51	929.13	64.38	15.432		
12,800.00	12,176.68	12,713.22	12,054.70	46.59	47.21	82.95	-1,172.29	-720.98	993.52	928.23	65.28	15.219		
12,900.00	12,178.00	12,813.22	12,056.02	47.28	47.88	82.95	-1,272.28	-720.10	993.52	927.27	66.25	14.996		
13,000.00	12,179.31	12,913.22	12,057.33	48.02	48.60	82.95	-1,372.27	-719.23	993.52	926.23	67.29	14.765		
13,100.00	12,180.63	13,013.22	12,058.65	48.81	49.36	82.95	-1,472.26	-718.35	993.53	925.13	68.39	14.527		
13,200.00	12,181.94	13,113.22	12,059.97	49.63	50.17	82.95	-1,572.24	-717.47	993.53	923.98	69.55	14.285		
13,300.00	12,183.25	13,213.22	12,061.28	50.50	51.02	82.95	-1,672.23	-716.60	993.53	922.76	70.77	14.040		
13,400.00	12,184.57	13,313.22	12,062.60	51.40	51.90	82.95	-1,772.22	-715.72	993.53	921.50	72.04	13.792		
13,500.00	12,185.88	13,413.22	12,063.92	52.35	52.83	82.95	-1,872.21	-714.85	993.54	920.18	73.36	13.543		
13,600.00	12,187.20	13,513.22	12,065.23	53.32	53.78	82.95	-1,972.19	-713.97	993.54	918.81	74.73	13.295		
13,700.00	12,188.51	13,613.22	12,066.55	54.33	54.78	82.95	-2,072.18	-713.10	993.54	917.39	76.15	13.047		

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 Kaston Fed Com 703H
Project:	Lea County, NM (NAD83)	TVD Reference:	3057.5' GE + 30' KB @ 3087.50usft
Reference Site:	Bus Driver/Kaston Fed Com	MD Reference:	3057.5' GE + 30' KB @ 3087.50usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Kaston Fed Com 703H	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 #4	Offset TVD Reference:	Offset Datum

Offset Design													Bus Driver/Kaston Fed Com - Bus Driver Fed Com 702H - OH - Plan #4		Offset Site Error:	0.00 usft
Survey Program: 0-OWSG (Rev2) MWD															Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor				
13,800.00	12,189.83	13,713.22	12,067.86	55.37	55.80	82.95	-2,172.17	-712.22	993.54	915.94	77.61	12.802				
13,900.00	12,191.14	13,813.22	12,069.18	56.44	56.85	82.95	-2,272.16	-711.35	993.55	914.44	79.11	12.559				
14,000.00	12,192.46	13,913.22	12,070.50	57.54	57.93	82.95	-2,372.14	-710.47	993.55	912.90	80.65	12.319				
14,100.00	12,193.77	14,013.22	12,071.81	58.66	59.04	82.95	-2,472.13	-709.59	993.55	911.32	82.23	12.083				
14,200.00	12,195.08	14,113.22	12,073.13	59.81	60.17	82.95	-2,572.12	-708.72	993.56	909.71	83.84	11.850				
14,300.00	12,196.40	14,213.22	12,074.45	60.98	61.32	82.95	-2,672.11	-707.84	993.56	908.07	85.49	11.622				
14,400.00	12,197.71	14,313.22	12,075.76	62.17	62.50	82.95	-2,772.09	-706.97	993.56	906.40	87.16	11.399				
14,500.00	12,199.03	14,413.22	12,077.08	63.38	63.70	82.95	-2,872.08	-706.09	993.56	904.70	88.87	11.180				
14,600.00	12,200.34	14,513.22	12,078.40	64.61	64.92	82.95	-2,972.07	-705.22	993.57	902.97	90.60	10.967				
14,700.00	12,201.66	14,613.22	12,079.71	65.86	66.16	82.95	-3,072.06	-704.34	993.57	901.21	92.36	10.758				
14,800.00	12,202.97	14,713.22	12,081.03	67.13	67.41	82.95	-3,172.04	-703.47	993.57	899.43	94.14	10.554				
14,900.00	12,204.29	14,813.22	12,082.34	68.42	68.69	82.95	-3,272.03	-702.59	993.58	897.63	95.94	10.356				
15,000.00	12,205.60	14,913.22	12,083.66	69.72	69.97	82.95	-3,372.02	-701.72	993.58	895.81	97.77	10.162				
15,100.00	12,206.91	15,013.22	12,084.98	71.03	71.28	82.95	-3,472.01	-700.84	993.58	893.96	99.62	9.974				
15,200.00	12,208.23	15,113.22	12,086.29	72.36	72.59	82.95	-3,571.99	-699.96	993.58	892.10	101.49	9.790				
15,300.00	12,209.54	15,213.22	12,087.61	73.70	73.92	82.95	-3,671.98	-699.09	993.59	890.22	103.37	9.612				
15,400.00	12,210.86	15,313.22	12,088.93	75.06	75.27	82.95	-3,771.97	-698.21	993.59	888.32	105.27	9.438				
15,500.00	12,212.17	15,413.22	12,090.24	76.42	76.62	82.95	-3,871.96	-697.34	993.59	886.40	107.19	9.269				
15,600.00	12,213.49	15,513.22	12,091.56	77.80	77.99	82.95	-3,971.94	-696.46	993.59	884.47	109.13	9.105				
15,700.00	12,214.80	15,613.22	12,092.87	79.19	79.37	82.95	-4,071.93	-695.59	993.60	882.52	111.08	8.945				
15,800.00	12,216.12	15,713.22	12,094.19	80.58	80.76	82.95	-4,171.92	-694.71	993.60	880.56	113.04	8.790				
15,900.00	12,217.43	15,813.22	12,095.51	81.99	82.15	82.95	-4,271.91	-693.84	993.60	878.59	115.02	8.639				
16,000.00	12,218.74	15,913.22	12,096.82	83.41	83.56	82.95	-4,371.89	-692.96	993.61	876.60	117.00	8.492				
16,100.00	12,220.06	16,013.22	12,098.14	84.83	84.98	82.95	-4,471.88	-692.08	993.61	874.60	119.01	8.349				
16,200.00	12,221.37	16,113.22	12,099.46	86.26	86.40	82.95	-4,571.87	-691.21	993.61	872.59	121.02	8.210				
16,300.00	12,222.69	16,213.22	12,100.77	87.70	87.84	82.95	-4,671.86	-690.33	993.61	870.57	123.04	8.075				
16,400.00	12,224.00	16,313.22	12,102.09	89.15	89.28	82.95	-4,771.84	-689.46	993.62	868.54	125.08	7.944				
16,500.00	12,225.32	16,413.22	12,103.40	90.61	90.72	82.95	-4,871.83	-688.58	993.62	866.50	127.12	7.816				
16,600.00	12,226.63	16,513.22	12,104.72	92.07	92.18	82.95	-4,971.82	-687.71	993.62	864.45	129.17	7.692				
16,700.00	12,227.94	16,613.22	12,106.04	93.53	93.64	82.95	-5,071.81	-686.83	993.63	862.39	131.23	7.571				
16,800.00	12,229.26	16,713.22	12,107.35	95.01	95.10	82.95	-5,171.79	-685.96	993.63	860.32	133.30	7.454				
16,900.00	12,230.57	16,813.22	12,108.67	96.49	96.58	82.95	-5,271.78	-685.08	993.63	858.25	135.38	7.339				
17,000.00	12,231.89	16,913.22	12,109.99	97.97	98.06	82.95	-5,371.77	-684.21	993.63	856.17	137.47	7.228				
17,100.00	12,233.20	17,013.22	12,111.30	99.46	99.54	82.95	-5,471.76	-683.33	993.64	854.08	139.56	7.120				
17,200.00	12,234.52	17,113.22	12,112.62	100.96	101.03	82.95	-5,571.74	-682.45	993.64	851.98	141.66	7.014				
17,300.00	12,235.83	17,213.22	12,113.93	102.46	102.52	82.95	-5,671.73	-681.58	993.64	849.87	143.77	6.911				
17,400.00	12,237.15	17,313.22	12,115.25	103.96	104.02	82.95	-5,771.72	-680.70	993.65	847.76	145.88	6.811				
17,500.00	12,238.46	17,413.22	12,116.57	105.47	105.53	82.95	-5,871.71	-679.83	993.65	845.65	148.00	6.714				
17,600.00	12,239.77	17,513.22	12,117.88	106.99	107.04	82.95	-5,971.69	-678.95	993.65	843.53	150.13	6.619				
17,700.00	12,241.09	17,613.22	12,119.20	108.50	108.55	82.95	-6,071.68	-678.08	993.65	841.40	152.26	6.526				
17,800.00	12,242.40	17,713.22	12,120.52	110.03	110.06	82.95	-6,171.67	-677.20	993.66	839.26	154.39	6.436				
17,900.00	12,243.72	17,813.22	12,121.83	111.55	111.58	82.95	-6,271.66	-676.33	993.66	837.13	156.53	6.348				
18,000.00	12,245.03	17,913.22	12,123.15	113.08	113.11	82.95	-6,371.64	-675.45	993.66	834.98	158.68	6.262				
18,100.00	12,246.35	18,013.22	12,124.46	114.61	114.64	82.95	-6,471.63	-674.57	993.66	832.83	160.83	6.178				
18,200.00	12,247.66	18,113.22	12,125.78	116.15	116.17	82.95	-6,571.62	-673.70	993.67	830.68	162.99	6.097				
18,300.00	12,248.98	18,213.22	12,127.10	117.69	117.70	82.95	-6,671.61	-672.82	993.67	828.52	165.15	6.017				
18,400.00	12,250.29	18,313.22	12,128.41	119.23	119.24	82.95	-6,771.59	-671.95	993.67	826.36	167.31	5.939				
18,500.00	12,251.60	18,413.22	12,129.73	120.77	120.78	82.95	-6,871.58	-671.07	993.68	824.20	169.48	5.863				
18,600.00	12,252.92	18,513.22	12,131.05	122.32	122.32	82.95	-6,971.57	-670.20	993.68	822.03	171.65	5.789				
18,700.00	12,254.23	18,613.22	12,132.36	123.87	123.87	82.95	-7,071.56	-669.32	993.68	819.85	173.83	5.716				
18,800.00	12,255.55	18,713.22	12,133.68	125.42	125.42	82.95	-7,171.54	-668.45	993.68	817.68	176.01	5.646				
18,900.00	12,256.86	18,813.22	12,134.99	126.98	126.97	82.95	-7,271.53	-667.57	993.69	815.50	178.19	5.577				

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



Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well Kaston Fed Com 703H
Project:	Lea County, NM (NAD83)	TVD Reference:	3057.5' GE + 30' KB @ 3087.50usft
Reference Site:	Bus Driver/Kaston Fed Com	MD Reference:	3057.5' GE + 30' KB @ 3087.50usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Kaston Fed Com 703H	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 #4	Offset TVD Reference:	Offset Datum

Offset Design													Bus Driver/Kaston Fed Com - Bus Driver Fed Com 702H - OH - Plan #4		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				
19,000.00	12,258.18	18,913.22	12,136.31	128.53	128.52	82.95	-7,371.52	-666.70	993.69	813.31	180.38	5.509				
19,100.00	12,259.49	19,013.22	12,137.63	130.09	130.08	82.96	-7,471.51	-665.82	993.69	811.13	182.56	5.443				
19,200.00	12,260.80	19,113.22	12,138.94	131.66	131.64	82.96	-7,571.50	-664.94	993.70	808.94	184.76	5.378				
19,300.00	12,262.12	19,213.22	12,140.26	133.22	133.20	82.96	-7,671.48	-664.07	993.70	806.75	186.95	5.315				
19,400.00	12,263.43	19,313.22	12,141.58	134.79	134.76	82.96	-7,771.47	-663.19	993.70	804.55	189.15	5.253				
19,500.00	12,264.75	19,413.22	12,142.89	136.36	136.33	82.96	-7,871.46	-662.32	993.70	802.35	191.35	5.193				
19,600.00	12,266.06	19,513.22	12,144.21	137.93	137.90	82.96	-7,971.45	-661.44	993.71	800.15	193.56	5.134				
19,700.00	12,267.38	19,613.22	12,145.52	139.50	139.46	82.96	-8,071.43	-660.57	993.71	797.95	195.76	5.076				
19,800.00	12,268.69	19,713.22	12,146.84	141.07	141.04	82.96	-8,171.42	-659.69	993.71	795.74	197.97	5.019				
19,900.00	12,270.01	19,813.22	12,148.16	142.65	142.61	82.96	-8,271.41	-658.82	993.72	793.53	200.18	4.964				
20,000.00	12,271.32	19,913.22	12,149.47	144.23	144.18	82.96	-8,371.40	-657.94	993.72	791.32	202.40	4.910				
20,100.00	12,272.63	20,013.22	12,150.79	145.81	145.76	82.96	-8,471.38	-657.06	993.72	789.11	204.61	4.857				
20,200.00	12,273.95	20,113.22	12,152.11	147.39	147.34	82.96	-8,571.37	-656.19	993.72	786.89	206.83	4.805				
20,300.00	12,275.26	20,213.22	12,153.42	148.97	148.92	82.96	-8,671.36	-655.31	993.73	784.68	209.05	4.754				
20,400.00	12,276.58	20,313.22	12,154.74	150.55	150.50	82.96	-8,771.35	-654.44	993.73	782.46	211.27	4.704				
20,500.00	12,277.89	20,413.22	12,156.06	152.14	152.08	82.96	-8,871.33	-653.56	993.73	780.24	213.50	4.655				
20,600.00	12,279.21	20,513.22	12,157.37	153.73	153.67	82.96	-8,971.32	-652.69	993.73	778.01	215.72	4.607				
20,700.00	12,280.52	20,613.22	12,158.69	155.32	155.25	82.96	-9,071.31	-651.81	993.74	775.79	217.95	4.560				
20,800.00	12,281.84	20,713.22	12,160.00	156.90	156.84	82.96	-9,171.30	-650.94	993.74	773.56	220.18	4.513				
20,900.00	12,283.15	20,813.22	12,161.32	158.50	158.43	82.96	-9,271.28	-650.06	993.74	771.33	222.41	4.468				
21,000.00	12,284.46	20,913.22	12,162.64	160.09	160.02	82.96	-9,371.27	-649.19	993.75	769.10	224.64	4.424				
21,100.00	12,285.78	21,013.22	12,163.95	161.68	161.61	82.96	-9,471.26	-648.31	993.75	766.87	226.88	4.380				
21,200.00	12,287.09	21,113.22	12,165.27	163.28	163.20	82.96	-9,571.25	-647.43	993.75	764.64	229.11	4.337				
21,300.00	12,288.41	21,213.22	12,166.59	164.87	164.80	82.96	-9,671.23	-646.56	993.75	762.40	231.35	4.295				
21,400.00	12,289.72	21,313.22	12,167.90	166.47	166.39	82.96	-9,771.22	-645.68	993.76	760.17	233.59	4.254				
21,500.00	12,291.04	21,413.22	12,169.22	168.07	167.99	82.96	-9,871.21	-644.81	993.76	757.93	235.83	4.214				
21,600.00	12,292.35	21,513.22	12,170.53	169.66	169.58	82.96	-9,971.20	-643.93	993.76	755.69	238.07	4.174				
21,700.00	12,293.66	21,613.22	12,171.85	171.26	171.18	82.96	-10,071.18	-643.06	993.77	753.45	240.31	4.135				
21,800.00	12,294.98	21,713.22	12,173.17	172.87	172.78	82.96	-10,171.17	-642.18	993.77	751.21	242.56	4.097				
21,900.00	12,296.29	21,813.22	12,174.48	174.47	174.38	82.96	-10,271.16	-641.31	993.77	748.97	244.80	4.059				
22,000.00	12,297.61	21,913.22	12,175.80	176.07	175.98	82.96	-10,371.15	-640.43	993.77	746.72	247.05	4.023				
22,100.00	12,298.92	22,013.22	12,177.12	177.67	177.58	82.96	-10,471.13	-639.55	993.78	744.48	249.30	3.986				
22,200.00	12,300.24	22,113.22	12,178.43	179.28	179.18	82.96	-10,571.12	-638.68	993.78	742.23	251.55	3.951				
22,300.00	12,301.55	22,213.22	12,179.75	180.88	180.79	82.96	-10,671.11	-637.80	993.78	739.98	253.80	3.916				
22,400.00	12,302.87	22,313.22	12,181.06	182.49	182.39	82.96	-10,771.10	-636.93	993.79	737.73	256.05	3.881				
22,500.00	12,304.18	22,413.22	12,182.38	184.10	184.00	82.96	-10,871.08	-636.05	993.79	735.49	258.30	3.847				
22,600.00	12,305.49	22,513.22	12,183.70	185.71	185.60	82.96	-10,971.07	-635.18	993.79	733.23	260.56	3.814				
22,700.00	12,306.81	22,613.22	12,185.01	187.31	187.21	82.96	-11,071.06	-634.30	993.79	730.98	262.81	3.781				
22,800.00	12,308.12	22,713.22	12,186.33	188.92	188.82	82.96	-11,171.05	-633.43	993.80	728.73	265.07	3.749				
22,900.00	12,309.44	22,813.22	12,187.65	190.53	190.43	82.96	-11,271.03	-632.55	993.80	726.48	267.32	3.718				
23,000.00	12,310.75	22,913.22	12,188.96	192.14	192.04	82.96	-11,371.02	-631.68	993.80	724.22	269.58	3.686				
23,100.00	12,312.07	23,013.22	12,190.28	193.76	193.65	82.96	-11,471.01	-630.80	993.80	721.97	271.84	3.656				
23,200.00	12,313.38	23,113.22	12,191.59	195.37	195.26	82.96	-11,571.00	-629.92	993.81	719.71	274.10	3.626				
23,300.00	12,314.70	23,213.22	12,192.91	196.98	196.87	82.96	-11,670.98	-629.05	993.81	717.45	276.36	3.596				
23,400.00	12,316.01	23,313.22	12,194.23	198.59	198.48	82.96	-11,770.97	-628.17	993.81	715.20	278.62	3.567				
23,500.00	12,317.32	23,413.22	12,195.54	200.21	200.09	82.96	-11,870.96	-627.30	993.82	712.94	280.88	3.538				
23,600.00	12,318.64	23,513.22	12,196.86	201.82	201.71	82.96	-11,970.95	-626.42	993.82	710.68	283.14	3.510				
23,679.24	12,319.68	23,592.46	12,197.90	203.10	202.99	82.96	-12,050.18	-625.73	993.82	708.89	284.93	3.488				
23,679.99	12,319.69	23,593.20	12,197.91	203.12	203.00	82.96	-12,050.92	-625.72	993.82	708.87	284.95	3.488 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 Kaston Fed Com 703H
Project:	Lea County, NM (NAD83)	TVD Reference:	3057.5' GE + 30' KB @ 3087.50usft
Reference Site:	Bus Driver/Kaston Fed Com	MD Reference:	3057.5' GE + 30' KB @ 3087.50usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Kaston Fed Com 703H	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 #4	Offset TVD Reference:	Offset Datum

Offset Design													Bus Driver/Kaston Fed Com - Kaston Fed Com 603H - OH - Plan #5		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	89.46	0.33	35.00	35.00							
100.00	100.00	100.00	100.00	0.13	0.13	89.46	0.33	35.00	35.00	34.82	0.18	197.265				
200.00	200.00	200.00	200.00	0.48	0.48	89.46	0.33	35.00	35.00	34.32	0.68	51.143				
300.00	300.00	300.00	300.00	0.84	0.84	89.46	0.33	35.00	35.00	33.81	1.19	29.380				
400.00	400.00	400.00	400.00	1.20	1.20	89.46	0.33	35.00	35.00	33.30	1.70	20.610				
500.00	500.00	500.00	500.00	1.56	1.56	89.46	0.33	35.00	35.00	32.80	2.21	15.872				
600.00	600.00	600.00	600.00	1.92	1.92	89.46	0.33	35.00	35.00	32.29	2.71	12.905				
700.00	700.00	700.00	700.00	2.28	2.28	89.46	0.33	35.00	35.00	31.78	3.22	10.873				
800.00	800.00	800.00	800.00	2.63	2.63	89.46	0.33	35.00	35.00	31.28	3.73	9.394				
900.00	900.00	900.00	900.00	2.99	2.99	89.46	0.33	35.00	35.00	30.77	4.23	8.269				
1,000.00	1,000.00	1,000.00	1,000.00	3.35	3.35	89.46	0.33	35.00	35.00	30.26	4.74	7.384				
1,100.00	1,100.00	1,100.00	1,100.00	3.71	3.71	89.46	0.33	35.00	35.00	29.75	5.25	6.671				
1,200.00	1,200.00	1,200.00	1,200.00	4.07	4.07	89.46	0.33	35.00	35.00	29.25	5.75	6.083				
1,300.00	1,300.00	1,300.00	1,300.00	4.43	4.43	89.46	0.33	35.00	35.00	28.74	6.26	5.591				
1,400.00	1,400.00	1,400.00	1,400.00	4.79	4.79	89.46	0.33	35.00	35.00	28.23	6.77	5.172				
1,500.00	1,500.00	1,500.00	1,500.00	5.14	5.14	89.46	0.33	35.00	35.00	27.73	7.27	4.811				
1,600.00	1,600.00	1,600.00	1,600.00	5.50	5.50	89.46	0.33	35.00	35.00	27.22	7.78	4.498				
1,700.00	1,700.00	1,700.00	1,700.00	5.86	5.86	89.46	0.33	35.00	35.00	26.71	8.29	4.223				
1,800.00	1,800.00	1,800.00	1,800.00	6.22	6.22	89.46	0.33	35.00	35.00	26.21	8.80	3.979				
1,900.00	1,900.00	1,900.00	1,900.00	6.58	6.58	89.46	0.33	35.00	35.00	25.70	9.30	3.763				
2,000.00	2,000.00	2,000.00	2,000.00	6.94	6.94	89.46	0.33	35.00	35.00	25.19	9.81	3.568				
2,100.00	2,100.00	2,100.00	2,100.00	7.29	7.29	89.46	0.33	35.00	35.00	24.69	10.32	3.393				
2,200.00	2,200.00	2,200.00	2,200.00	7.65	7.65	89.46	0.33	35.00	35.00	24.18	10.82	3.234				
2,300.00	2,300.00	2,300.00	2,300.00	8.01	8.01	89.46	0.33	35.00	35.00	23.67	11.33	3.089				
2,400.00	2,400.00	2,400.00	2,400.00	8.37	8.37	89.46	0.33	35.00	35.00	23.16	11.84	2.957				
2,500.00	2,500.00	2,500.00	2,500.00	8.73	8.73	89.46	0.33	35.00	35.00	22.66	12.34	2.835				
2,600.00	2,600.00	2,600.00	2,600.00	9.09	9.09	89.46	0.33	35.00	35.00	22.15	12.85	2.724				
2,612.55	2,612.55	2,612.55	2,612.55	9.13	9.13	89.46	0.33	35.00	35.00	22.09	12.91	2.710 CC				
2,700.00	2,700.00	2,699.91	2,699.91	9.45	9.44	89.47	0.32	35.01	35.02	21.66	13.36	2.622 ES				
2,800.00	2,800.00	2,799.03	2,799.02	9.80	9.78	90.38	-0.24	36.48	36.49	22.65	13.84	2.637				
2,900.00	2,900.00	2,898.01	2,897.90	10.16	10.11	92.45	-1.72	40.34	40.43	26.12	14.31	2.825				
3,000.00	3,000.00	2,996.71	2,996.37	10.52	10.44	95.06	-4.12	46.56	46.88	32.11	14.77	3.174				
3,070.00	3,070.00	3,065.56	3,064.95	10.77	10.68	96.90	-6.33	52.31	52.93	37.84	15.09	3.508				
3,100.00	3,100.00	3,095.00	3,094.24	10.87	10.78	-42.63	-7.42	55.12	55.83	40.60	15.22	3.668				
3,200.00	3,199.97	3,192.97	3,191.51	11.20	11.12	-41.38	-11.60	65.98	65.87	50.23	15.64	4.211				
3,300.00	3,299.86	3,290.63	3,288.14	11.53	11.47	-41.31	-16.66	79.12	76.46	60.40	16.05	4.763				
3,400.00	3,399.59	3,388.20	3,384.31	11.86	11.82	-42.00	-22.60	94.54	87.56	71.09	16.47	5.317				
3,470.12	3,469.39	3,457.92	3,452.90	12.10	12.08	-42.93	-27.09	106.20	94.90	78.09	16.81	5.647				
3,500.00	3,499.10	3,487.64	3,482.14	12.20	12.19	-43.42	-29.00	111.17	97.84	80.89	16.95	5.772				
3,600.00	3,598.56	3,587.12	3,580.00	12.54	12.56	-44.87	-35.41	127.80	107.71	90.27	17.44	6.177				
3,700.00	3,698.01	3,686.60	3,677.87	12.88	12.94	-46.07	-41.81	144.44	117.64	99.71	17.93	6.561				
3,800.00	3,797.46	3,786.07	3,775.74	13.22	13.33	-47.09	-48.22	161.08	127.62	109.19	18.42	6.927				
3,900.00	3,896.91	3,885.55	3,873.61	13.57	13.71	-47.96	-54.62	177.71	137.62	118.70	18.92	7.274				
4,000.00	3,996.36	3,985.03	3,971.47	13.92	14.11	-48.71	-61.03	194.35	147.66	128.24	19.42	7.603				
4,100.00	4,095.82	4,084.51	4,069.34	14.27	14.50	-49.36	-67.44	210.98	157.72	137.79	19.92	7.916				
4,200.00	4,195.27	4,183.99	4,167.21	14.63	14.90	-49.94	-73.84	227.62	167.79	147.36	20.43	8.214				
4,300.00	4,294.72	4,283.46	4,265.08	14.99	15.31	-50.45	-80.25	244.26	177.88	156.94	20.94	8.496				
4,400.00	4,394.17	4,382.94	4,362.94	15.35	15.72	-50.91	-86.65	260.89	187.98	166.54	21.45	8.765				
4,500.00	4,493.62	4,482.42	4,460.81	15.71	16.12	-51.32	-93.06	277.53	198.10	176.14	21.96	9.021				
4,600.00	4,593.08	4,581.90	4,558.68	16.07	16.54	-51.69	-99.47	294.16	208.22	185.74	22.47	9.265				
4,700.00	4,692.53	4,681.38	4,656.55	16.43	16.95	-52.02	-105.87	310.80	218.35	195.36	22.99	9.497				
4,800.00	4,791.98	4,780.85	4,754.41	16.80	17.37	-52.33	-112.28	327.44	228.48	204.98	23.51	9.719				

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 Kaston Fed Com 703H
Project:	Lea County, NM (NAD83)	TVD Reference:	3057.5' GE + 30' KB @ 3087.50usft
Reference Site:	Bus Driver/Kaston Fed Com	MD Reference:	3057.5' GE + 30' KB @ 3087.50usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Kaston Fed Com 703H	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 #4	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 0-OWSG (Rev2) MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
4,900.00	4,891.43	4,880.33	4,852.28	17.17	17.79	-52.61	-118.68	344.07	238.63	214.60	24.03	9.931		
5,000.00	4,990.88	4,979.81	4,950.15	17.53	18.21	-52.87	-125.09	360.71	248.77	224.22	24.55	10.133		
5,100.00	5,090.33	5,079.29	5,048.02	17.90	18.63	-53.10	-131.50	377.34	258.93	233.85	25.07	10.327		
5,200.00	5,189.79	5,178.76	5,145.88	18.28	19.06	-53.32	-137.90	393.98	269.08	243.48	25.60	10.512		
5,300.00	5,289.24	5,278.24	5,243.75	18.65	19.48	-53.53	-144.31	410.61	279.24	253.12	26.13	10.689		
5,400.00	5,388.69	5,377.72	5,341.62	19.02	19.91	-53.72	-150.71	427.25	289.41	262.75	26.65	10.858		
5,500.00	5,488.14	5,477.20	5,439.49	19.39	20.34	-53.89	-157.12	443.89	299.57	272.39	27.18	11.021		
5,600.00	5,587.59	5,576.68	5,537.35	19.77	20.77	-54.06	-163.53	460.52	309.74	282.03	27.71	11.177		
5,700.00	5,687.05	5,676.15	5,635.22	20.14	21.20	-54.21	-169.93	477.16	319.91	291.67	28.24	11.327		
5,800.00	5,786.50	5,775.63	5,733.09	20.52	21.64	-54.36	-176.34	493.79	330.09	301.31	28.78	11.471		
5,900.00	5,885.95	5,875.11	5,830.96	20.90	22.07	-54.49	-182.74	510.43	340.26	310.95	29.31	11.610		
6,000.00	5,985.40	5,974.59	5,928.82	21.28	22.51	-54.62	-189.15	527.07	350.44	320.60	29.84	11.743		
6,100.00	6,084.85	6,074.07	6,026.69	21.66	22.94	-54.74	-195.56	543.70	360.62	330.24	30.38	11.871		
6,200.00	6,184.31	6,173.54	6,124.56	22.04	23.38	-54.85	-201.96	560.34	370.80	339.88	30.91	11.995		
6,300.00	6,283.76	6,273.02	6,222.43	22.42	23.82	-54.96	-208.37	576.97	380.98	349.53	31.45	12.114		
6,400.00	6,383.21	6,372.50	6,320.29	22.80	24.26	-55.07	-214.77	593.61	391.16	359.17	31.99	12.229		
6,500.00	6,482.66	6,471.98	6,418.16	23.18	24.70	-55.16	-221.18	610.25	401.35	368.82	32.53	12.339		
6,600.00	6,582.11	6,571.45	6,516.03	23.56	25.14	-55.25	-227.59	626.88	411.53	378.47	33.06	12.446		
6,700.00	6,681.56	6,670.93	6,613.90	23.94	25.58	-55.34	-233.99	643.52	421.72	388.11	33.60	12.550		
6,800.00	6,781.02	6,770.41	6,711.76	24.32	26.02	-55.43	-240.40	660.15	431.90	397.76	34.14	12.649		
6,900.00	6,880.47	6,869.89	6,809.63	24.71	26.46	-55.51	-246.80	676.79	442.09	407.41	34.69	12.746		
6,920.25	6,900.61	6,890.03	6,829.45	24.78	26.55	-55.52	-248.10	680.16	444.15	409.36	34.79	12.765		
7,000.00	6,980.00	6,969.32	6,907.45	25.09	26.90	-55.60	-253.21	693.42	452.75	417.53	35.22	12.854		
7,100.00	7,079.75	7,068.55	7,005.08	25.46	27.35	-55.68	-259.60	710.01	464.85	429.11	35.74	13.005		
7,200.00	7,179.65	7,167.53	7,102.46	25.82	27.79	-55.13	-265.97	726.56	478.45	442.19	36.25	13.198		
7,300.00	7,279.63	7,266.18	7,199.51	26.17	28.23	-54.58	-272.32	743.06	493.58	456.84	36.74	13.433		
7,320.37	7,300.00	7,286.24	7,219.24	26.24	28.32	85.80	-273.62	746.42	496.86	460.02	36.84	13.486		
7,400.00	7,379.63	7,364.57	7,296.31	26.50	28.67	86.48	-278.66	759.52	509.84	472.62	37.22	13.697		
7,500.00	7,479.63	7,469.66	7,399.76	26.84	29.13	87.33	-285.30	776.75	525.94	488.18	37.76	13.929		
7,600.00	7,579.63	7,563.07	7,511.86	27.18	29.62	88.06	-291.44	792.72	539.81	501.47	38.34	14.079		
7,700.00	7,679.63	7,667.41	7,625.36	27.51	30.08	88.63	-296.43	805.66	551.02	512.11	38.91	14.163		
7,800.00	7,779.63	7,762.49	7,739.95	27.85	30.52	89.04	-300.21	815.49	559.49	520.05	39.45	14.183		
7,900.00	7,879.63	7,862.10	7,855.34	28.19	30.94	89.31	-302.76	822.11	565.19	525.23	39.96	14.143		
8,000.00	7,979.63	7,964.04	7,971.22	28.53	31.33	89.45	-304.06	825.47	568.08	527.63	40.45	14.044		
8,100.00	8,079.63	8,062.45	8,079.63	28.87	31.68	89.47	-304.23	825.92	568.46	527.54	40.92	13.892		
8,200.00	8,179.63	8,162.45	8,179.63	29.21	31.99	89.47	-304.23	825.92	568.46	527.07	41.40	13.732		
8,300.00	8,279.63	8,262.45	8,279.63	29.55	32.31	89.47	-304.23	825.92	568.46	526.59	41.88	13.575		
8,400.00	8,379.63	8,362.45	8,379.63	29.89	32.62	89.47	-304.23	825.92	568.46	526.11	42.35	13.422		
8,500.00	8,479.63	8,462.45	8,479.63	30.23	32.94	89.47	-304.23	825.92	568.46	525.63	42.83	13.272		
8,600.00	8,579.63	8,562.45	8,579.63	30.57	33.25	89.47	-304.23	825.92	568.46	525.15	43.31	13.125		
8,700.00	8,679.63	8,662.45	8,679.63	30.91	33.57	89.47	-304.23	825.92	568.46	524.67	43.79	12.981		
8,800.00	8,779.63	8,762.45	8,779.63	31.25	33.89	89.47	-304.23	825.92	568.46	524.19	44.27	12.840		
8,900.00	8,879.63	8,862.45	8,879.63	31.60	34.21	89.47	-304.23	825.92	568.46	523.71	44.76	12.701		
9,000.00	8,979.63	8,962.45	8,979.63	31.94	34.53	89.47	-304.23	825.92	568.46	523.23	45.24	12.566		
9,100.00	9,079.63	9,062.45	9,079.63	32.28	34.85	89.47	-304.23	825.92	568.46	522.74	45.72	12.434		
9,200.00	9,179.63	9,162.45	9,179.63	32.63	35.17	89.47	-304.23	825.92	568.46	522.26	46.20	12.304		
9,300.00	9,279.63	9,262.45	9,279.63	32.97	35.49	89.47	-304.23	825.92	568.46	521.78	46.69	12.176		
9,400.00	9,379.63	9,362.45	9,379.63	33.31	35.81	89.47	-304.23	825.92	568.46	521.29	47.17	12.051		
9,500.00	9,479.63	9,462.45	9,479.63	33.66	36.14	89.47	-304.23	825.92	568.46	520.81	47.66	11.929		
9,600.00	9,579.63	9,562.45	9,579.63	34.00	36.46	89.47	-304.23	825.92	568.46	520.32	48.14	11.808		
9,700.00	9,679.63	9,662.45	9,679.63	34.35	36.78	89.47	-304.23	825.92	568.46	519.84	48.63	11.690		
9,800.00	9,779.63	9,762.45	9,779.63	34.69	37.11	89.47	-304.23	825.92	568.46	519.35	49.11	11.575		

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 Kaston Fed Com 703H
Project:	Lea County, NM (NAD83)	TVD Reference:	3057.5' GE + 30' KB @ 3087.50usft
Reference Site:	Bus Driver/Kaston Fed Com	MD Reference:	3057.5' GE + 30' KB @ 3087.50usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Kaston Fed Com 703H	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 #4	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 0-OWSG (Rev2) MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance							Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
9,900.00	9,879.63	9,952.45	9,879.63	35.04	37.44	89.47	-304.23	825.92	568.46	518.87	49.60	11.461		
10,000.00	9,979.63	10,052.45	9,979.63	35.39	37.76	89.47	-304.23	825.92	568.46	518.38	50.09	11.350		
10,100.00	10,079.63	10,152.45	10,079.63	35.73	38.09	89.47	-304.23	825.92	568.46	517.89	50.57	11.241		
10,200.00	10,179.63	10,252.45	10,179.63	36.08	38.42	89.47	-304.23	825.92	568.46	517.40	51.06	11.133		
10,300.00	10,279.63	10,352.45	10,279.63	36.42	38.75	89.47	-304.23	825.92	568.46	516.92	51.55	11.028		
10,400.00	10,379.63	10,452.45	10,379.63	36.77	39.07	89.47	-304.23	825.92	568.46	516.43	52.04	10.924		
10,500.00	10,479.63	10,552.45	10,479.63	37.12	39.40	89.47	-304.23	825.92	568.46	515.94	52.52	10.823		
10,600.00	10,579.63	10,652.45	10,579.63	37.47	39.73	89.47	-304.23	825.92	568.46	515.45	53.01	10.723		
10,700.00	10,679.63	10,752.45	10,679.63	37.81	40.06	89.47	-304.23	825.92	568.46	514.96	53.50	10.625		
10,800.00	10,779.63	10,852.45	10,779.63	38.16	40.39	89.47	-304.23	825.92	568.46	514.47	53.99	10.529		
10,900.00	10,879.63	10,952.45	10,879.63	38.51	40.72	89.47	-304.23	825.92	568.46	513.98	54.48	10.434		
11,000.00	10,979.63	11,052.45	10,979.63	38.86	41.06	89.47	-304.23	825.92	568.46	513.49	54.97	10.341		
11,100.00	11,079.63	11,152.45	11,079.63	39.21	41.39	89.47	-304.23	825.92	568.46	513.00	55.46	10.249		
11,200.00	11,179.63	11,252.45	11,179.63	39.55	41.72	89.47	-304.23	825.92	568.46	512.51	55.95	10.159		
11,215.78	11,195.40	11,268.23	11,195.40	39.61	41.77	89.47	-304.23	825.92	568.46	512.43	56.03	10.145		
11,300.00	11,279.63	11,352.45	11,279.63	39.90	42.05	89.47	-304.24	825.92	568.46	512.02	56.45	10.071		
11,303.37	11,282.99	11,355.81	11,282.99	39.91	42.06	89.47	-304.26	825.92	568.46	512.00	56.46	10.068		
11,400.00	11,379.63	11,451.33	11,377.98	40.25	42.39	90.37	-313.20	826.01	568.54	511.62	56.92	9.989		
11,500.00	11,479.63	11,544.51	11,467.96	40.60	42.71	92.76	-336.99	826.24	569.54	512.17	57.38	9.927		
11,600.00	11,579.63	11,628.14	11,544.50	40.95	43.01	96.12	-370.51	826.57	573.42	515.64	57.79	9.923		
11,620.37	11,600.00	11,643.83	11,558.28	41.02	43.07	96.86	-378.02	826.64	574.78	516.93	57.85	9.935		
11,650.00	11,629.61	11,666.15	11,577.50	41.12	43.15	-81.34	-389.35	826.75	577.09	519.14	57.94	9.959		
11,700.00	11,679.37	11,700.00	11,605.78	41.30	43.27	-79.33	-407.94	826.93	581.61	523.56	58.05	10.019		
11,750.00	11,728.52	11,739.31	11,637.18	41.48	43.41	-77.11	-431.59	827.16	586.76	528.61	58.15	10.090		
11,800.00	11,776.70	11,774.85	11,664.10	41.67	43.54	-75.12	-454.77	827.39	592.42	534.22	58.19	10.180		
11,850.00	11,823.53	11,809.81	11,689.14	41.86	43.67	-73.22	-479.16	827.63	598.42	540.23	58.19	10.284		
11,900.00	11,868.66	11,850.00	11,716.02	42.05	43.82	-71.24	-509.02	827.92	604.66	546.45	58.21	10.388		
11,950.00	11,911.74	11,878.29	11,733.66	42.25	43.93	-69.76	-531.14	828.14	610.88	552.80	58.08	10.518		
12,000.00	11,952.45	11,911.94	11,753.18	42.45	44.06	-68.22	-558.54	828.40	617.07	559.08	57.98	10.642		
12,050.00	11,990.48	11,950.00	11,773.28	42.66	44.21	-66.69	-590.85	828.72	623.09	565.16	57.93	10.756		
12,100.00	12,025.54	11,978.30	11,786.82	42.88	44.32	-65.52	-615.70	828.96	628.76	570.99	57.77	10.884		
12,150.00	12,057.36	12,011.10	11,800.94	43.10	44.46	-64.38	-645.29	829.25	634.06	576.39	57.67	10.994		
12,200.00	12,085.70	12,050.00	11,815.46	43.32	44.63	-63.28	-681.37	829.60	638.92	581.27	57.66	11.081		
12,250.00	12,110.34	12,076.11	11,823.82	43.56	44.74	-62.53	-706.10	829.84	643.14	585.57	57.56	11.173		
12,300.00	12,131.10	12,100.00	11,830.48	43.80	44.85	-61.91	-729.05	830.07	646.86	589.34	57.51	11.247		
12,350.00	12,147.81	12,140.55	11,839.57	44.05	45.03	-61.26	-768.55	830.45	649.74	592.10	57.64	11.273		
12,400.00	12,160.36	12,172.63	11,844.77	44.30	45.18	-60.84	-800.20	830.76	651.99	594.22	57.76	11.288		
12,450.00	12,168.64	12,200.00	11,847.79	44.55	45.31	-60.58	-827.40	831.03	653.52	595.57	57.94	11.279		
12,500.00	12,172.60	12,238.85	11,849.85	44.81	45.50	-60.43	-866.19	831.41	654.23	596.01	58.22	11.237		
12,512.84	12,172.91	12,248.23	11,850.03	44.88	45.55	-60.42	-875.56	831.50	654.27	595.97	58.30	11.222		
12,600.00	12,174.05	12,335.38	11,851.70	45.35	46.01	-60.47	-962.70	832.35	654.08	595.17	58.92	11.102		
12,700.00	12,175.37	12,435.38	11,853.62	45.95	46.58	-60.52	-1,062.67	833.32	653.87	594.19	59.68	10.956		
12,800.00	12,176.68	12,535.38	11,855.53	46.59	47.21	-60.57	-1,162.65	834.30	653.66	593.15	60.51	10.803		
12,900.00	12,178.00	12,635.38	11,857.45	47.28	47.88	-60.62	-1,262.62	835.28	653.45	592.06	61.40	10.643		
13,000.00	12,179.31	12,735.38	11,859.36	48.02	48.61	-60.67	-1,362.60	836.25	653.24	590.90	62.34	10.478		
13,100.00	12,180.63	12,835.37	11,861.27	48.81	49.37	-60.72	-1,462.57	837.23	653.04	589.69	63.34	10.310		
13,200.00	12,181.94	12,935.37	11,863.19	49.63	50.18	-60.77	-1,562.55	838.20	652.83	588.43	64.40	10.137		
13,300.00	12,183.25	13,035.37	11,865.10	50.50	51.03	-60.82	-1,662.52	839.18	652.62	587.12	65.50	9.963		
13,400.00	12,184.57	13,135.37	11,867.02	51.40	51.92	-60.87	-1,762.50	840.16	652.41	585.76	66.65	9.788		
13,500.00	12,185.88	13,235.37	11,868.93	52.35	52.85	-60.92	-1,862.47	841.13	652.21	584.35	67.85	9.612		
13,600.00	12,187.20	13,335.36	11,870.85	53.32	53.81	-60.97	-1,962.45	842.11	652.00	582.91	69.09	9.436		
13,700.00	12,188.51	13,435.36	11,872.76	54.33	54.81	-61.02	-2,062.42	843.08	651.79	581.42	70.38	9.262		

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



Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well Kaston Fed Com 703H
Project:	Lea County, NM (NAD83)	TVD Reference:	3057.5' GE + 30' KB @ 3087.50usft
Reference Site:	Bus Driver/Kaston Fed Com	MD Reference:	3057.5' GE + 30' KB @ 3087.50usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Kaston Fed Com 703H	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 #4	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 0-OWSG (Rev2) MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
13,800.00	12,189.83	13,535.36	11,874.68	55.37	55.83	-61.07	-2,162.40	844.06	651.59	579.89	71.70	9.088		
13,900.00	12,191.14	13,635.36	11,876.59	56.44	56.89	-61.12	-2,262.37	845.04	651.38	578.33	73.06	8.916		
14,000.00	12,192.46	13,735.36	11,878.51	57.54	57.97	-61.17	-2,362.35	846.01	651.18	576.73	74.45	8.747		
14,100.00	12,193.77	13,835.35	11,880.42	58.66	59.08	-61.22	-2,462.32	846.99	650.98	575.10	75.87	8.580		
14,200.00	12,195.08	13,935.35	11,882.34	59.81	60.21	-61.27	-2,562.30	847.96	650.77	573.44	77.33	8.415		
14,300.00	12,196.40	14,035.35	11,884.25	60.98	61.37	-61.32	-2,662.27	848.94	650.57	571.75	78.82	8.254		
14,400.00	12,197.71	14,135.35	11,886.16	62.17	62.55	-61.37	-2,762.25	849.92	650.37	570.03	80.33	8.096		
14,500.00	12,199.03	14,235.35	11,888.08	63.38	63.76	-61.42	-2,862.22	850.89	650.17	568.29	81.88	7.941		
14,600.00	12,200.34	14,335.35	11,889.99	64.61	64.98	-61.47	-2,962.20	851.87	649.96	566.52	83.44	7.789		
14,700.00	12,201.66	14,435.34	11,891.91	65.86	66.22	-61.52	-3,062.17	852.84	649.76	564.73	85.03	7.641		
14,800.00	12,202.97	14,535.34	11,893.82	67.13	67.47	-61.58	-3,162.15	853.82	649.56	562.92	86.64	7.497		
14,900.00	12,204.29	14,635.34	11,895.74	68.42	68.75	-61.63	-3,262.12	854.80	649.36	561.09	88.28	7.356		
15,000.00	12,205.60	14,735.34	11,897.65	69.72	70.04	-61.68	-3,362.10	855.77	649.16	559.23	89.93	7.219		
15,100.00	12,206.91	14,835.34	11,899.57	71.03	71.35	-61.73	-3,462.07	856.75	648.97	557.36	91.60	7.085		
15,200.00	12,208.23	14,935.33	11,901.48	72.36	72.66	-61.78	-3,562.05	857.72	648.77	555.48	93.29	6.954		
15,300.00	12,209.54	15,035.33	11,903.40	73.70	74.00	-61.83	-3,662.02	858.70	648.57	553.57	95.00	6.827		
15,400.00	12,210.86	15,135.33	11,905.31	75.06	75.34	-61.88	-3,762.00	859.68	648.37	551.65	96.72	6.703		
15,500.00	12,212.17	15,235.33	11,907.23	76.42	76.70	-61.93	-3,861.97	860.65	648.18	549.71	98.46	6.583		
15,600.00	12,213.49	15,335.33	11,909.14	77.80	78.07	-61.98	-3,961.95	861.63	647.98	547.77	100.21	6.466		
15,700.00	12,214.80	15,435.33	11,911.05	79.19	79.45	-62.03	-4,061.92	862.61	647.78	545.80	101.98	6.352		
15,800.00	12,216.12	15,535.32	11,912.97	80.58	80.84	-62.08	-4,161.90	863.58	647.59	543.83	103.76	6.241		
15,900.00	12,217.43	15,635.32	11,914.88	81.99	82.24	-62.13	-4,261.87	864.56	647.39	541.84	105.56	6.133		
16,000.00	12,218.74	15,735.32	11,916.80	83.41	83.65	-62.19	-4,361.85	865.53	647.20	539.84	107.36	6.028		
16,100.00	12,220.06	15,835.32	11,918.71	84.83	85.07	-62.24	-4,461.82	866.51	647.01	537.83	109.18	5.926		
16,200.00	12,221.37	15,935.32	11,920.63	86.26	86.49	-62.29	-4,561.80	867.49	646.81	535.81	111.00	5.827		
16,300.00	12,222.69	16,035.31	11,922.54	87.70	87.93	-62.34	-4,661.78	868.46	646.62	533.78	112.84	5.730		
16,400.00	12,224.00	16,135.31	11,924.46	89.15	89.37	-62.39	-4,761.75	869.44	646.43	531.74	114.69	5.636		
16,500.00	12,225.32	16,235.31	11,926.37	90.61	90.82	-62.44	-4,861.73	870.41	646.24	529.70	116.54	5.545		
16,600.00	12,226.63	16,335.31	11,928.29	92.07	92.27	-62.49	-4,961.70	871.39	646.05	527.64	118.41	5.456		
16,700.00	12,227.94	16,435.31	11,930.20	93.53	93.74	-62.54	-5,061.68	872.37	645.86	525.58	120.28	5.370		
16,800.00	12,229.26	16,535.31	11,932.12	95.01	95.20	-62.59	-5,161.65	873.34	645.67	523.50	122.16	5.285		
16,900.00	12,230.57	16,635.30	11,934.03	96.49	96.68	-62.65	-5,261.63	874.32	645.48	521.42	124.05	5.203		
17,000.00	12,231.89	16,735.30	11,935.94	97.97	98.16	-62.70	-5,361.60	875.29	645.29	519.34	125.95	5.123		
17,100.00	12,233.20	16,835.30	11,937.86	99.46	99.64	-62.75	-5,461.58	876.27	645.10	517.25	127.85	5.046		
17,200.00	12,234.52	16,935.30	11,939.77	100.96	101.13	-62.80	-5,561.55	877.25	644.91	515.15	129.76	4.970		
17,300.00	12,235.83	17,035.30	11,941.69	102.46	102.63	-62.85	-5,661.53	878.22	644.72	513.04	131.68	4.896		
17,400.00	12,237.15	17,135.29	11,943.60	103.96	104.13	-62.90	-5,761.50	879.20	644.54	510.93	133.61	4.824		
17,500.00	12,238.46	17,235.29	11,945.52	105.47	105.64	-62.95	-5,861.48	880.17	644.35	508.82	135.54	4.754		
17,600.00	12,239.77	17,335.29	11,947.43	106.99	107.15	-63.01	-5,961.45	881.15	644.17	506.69	137.47	4.686		
17,700.00	12,241.09	17,435.29	11,949.35	108.50	108.66	-63.06	-6,061.43	882.13	643.98	504.57	139.41	4.619		
17,800.00	12,242.40	17,535.29	11,951.26	110.03	110.18	-63.11	-6,161.40	883.10	643.80	502.44	141.36	4.554		
17,900.00	12,243.72	17,635.28	11,953.18	111.55	111.70	-63.16	-6,261.38	884.08	643.61	500.30	143.31	4.491		
18,000.00	12,245.03	17,735.28	11,955.09	113.08	113.22	-63.21	-6,361.35	885.05	643.43	498.16	145.27	4.429		
18,100.00	12,246.35	17,835.28	11,957.01	114.61	114.75	-63.26	-6,461.33	886.03	643.24	496.02	147.23	4.369		
18,200.00	12,247.66	17,935.28	11,958.92	116.15	116.28	-63.32	-6,561.30	887.01	643.06	493.87	149.20	4.310		
18,300.00	12,248.98	18,035.28	11,960.84	117.69	117.82	-63.37	-6,661.28	887.98	642.88	491.71	151.17	4.253		
18,400.00	12,250.29	18,135.28	11,962.75	119.23	119.36	-63.42	-6,761.25	888.96	642.70	489.56	153.14	4.197		
18,500.00	12,251.60	18,235.27	11,964.66	120.77	120.90	-63.47	-6,861.23	889.93	642.52	487.40	155.12	4.142		
18,600.00	12,252.92	18,335.27	11,966.58	122.32	122.44	-63.52	-6,961.20	890.91	642.34	485.24	157.10	4.089		
18,700.00	12,254.23	18,435.27	11,968.49	123.87	123.99	-63.57	-7,061.18	891.89	642.16	483.07	159.09	4.037		
18,800.00	12,255.55	18,535.27	11,970.41	125.42	125.54	-63.63	-7,161.15	892.86	641.98	480.90	161.08	3.986		
18,900.00	12,256.86	18,635.27	11,972.32	126.98	127.09	-63.68	-7,261.13	893.84	641.80	478.73	163.07	3.936		

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 Kaston Fed Com 703H
Project:	Lea County, NM (NAD83)	TVD Reference:	3057.5' GE + 30' KB @ 3087.50usft
Reference Site:	Bus Driver/Kaston Fed Com	MD Reference:	3057.5' GE + 30' KB @ 3087.50usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Kaston Fed Com 703H	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 #4	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		
19,000.00	12,258.18	18,735.26	11,974.24	128.53	128.65	-63.73	-7,361.10	894.81	641.62	476.55	165.07	3.887		
19,100.00	12,259.49	18,835.26	11,976.15	130.09	130.20	-63.78	-7,461.08	895.79	641.44	474.37	167.07	3.839		
19,200.00	12,260.80	18,935.26	11,978.07	131.66	131.76	-63.83	-7,561.05	896.77	641.26	472.19	169.07	3.793		
19,300.00	12,262.12	19,035.26	11,979.98	133.22	133.33	-63.89	-7,661.03	897.74	641.09	470.01	171.08	3.747		
19,400.00	12,263.43	19,135.26	11,981.90	134.79	134.89	-63.94	-7,761.00	898.72	640.91	467.82	173.09	3.703		
19,500.00	12,264.75	19,235.26	11,983.81	136.36	136.46	-63.99	-7,860.98	899.69	640.73	465.63	175.10	3.659		
19,600.00	12,266.06	19,335.25	11,985.73	137.93	138.02	-64.04	-7,960.95	900.67	640.56	463.44	177.12	3.617		
19,700.00	12,267.38	19,435.25	11,987.64	139.50	139.59	-64.09	-8,060.93	901.65	640.38	461.25	179.14	3.575		
19,800.00	12,268.69	19,535.25	11,989.55	141.07	141.17	-64.15	-8,160.90	902.62	640.21	459.05	181.16	3.534		
19,900.00	12,270.01	19,635.25	11,991.47	142.65	142.74	-64.20	-8,260.88	903.60	640.04	456.86	183.18	3.494		
20,000.00	12,271.32	19,735.25	11,993.38	144.23	144.32	-64.25	-8,360.85	904.57	639.86	454.66	185.21	3.455		
20,100.00	12,272.63	19,835.24	11,995.30	145.81	145.89	-64.30	-8,460.83	905.55	639.69	452.46	187.24	3.417		
20,200.00	12,273.95	19,935.24	11,997.21	147.39	147.47	-64.36	-8,560.80	906.53	639.52	450.25	189.27	3.379		
20,300.00	12,275.26	20,035.24	11,999.13	148.97	149.05	-64.41	-8,660.78	907.50	639.35	448.05	191.30	3.342		
20,400.00	12,276.58	20,135.24	12,001.04	150.55	150.63	-64.46	-8,760.75	908.48	639.18	445.84	193.33	3.306		
20,500.00	12,277.89	20,235.24	12,002.96	152.14	152.22	-64.51	-8,860.73	909.45	639.01	443.63	195.37	3.271		
20,600.00	12,279.21	20,335.23	12,004.87	153.73	153.80	-64.56	-8,960.70	910.43	638.84	441.42	197.41	3.236		
20,700.00	12,280.52	20,435.23	12,006.79	155.32	155.39	-64.62	-9,060.68	911.41	638.67	439.21	199.45	3.202		
20,800.00	12,281.84	20,535.23	12,008.70	156.90	156.98	-64.67	-9,160.65	912.38	638.50	437.00	201.50	3.169		
20,900.00	12,283.15	20,635.23	12,010.62	158.50	158.57	-64.72	-9,260.63	913.36	638.33	434.79	203.54	3.136		
21,000.00	12,284.46	20,735.23	12,012.53	160.09	160.16	-64.77	-9,360.60	914.33	638.16	432.57	205.59	3.104		
21,100.00	12,285.78	20,835.23	12,014.44	161.68	161.75	-64.83	-9,460.58	915.31	637.99	430.36	207.64	3.073		
21,200.00	12,287.09	20,935.22	12,016.36	163.28	163.34	-64.88	-9,560.55	916.29	637.83	428.14	209.69	3.042		
21,300.00	12,288.41	21,035.22	12,018.27	164.87	164.93	-64.93	-9,660.53	917.26	637.66	425.92	211.74	3.012		
21,400.00	12,289.72	21,135.22	12,020.19	166.47	166.53	-64.98	-9,760.50	918.24	637.50	423.70	213.80	2.982		
21,500.00	12,291.04	21,235.22	12,022.10	168.07	168.13	-65.04	-9,860.48	919.21	637.33	421.48	215.85	2.953		
21,600.00	12,292.35	21,335.22	12,024.02	169.66	169.72	-65.09	-9,960.45	920.19	637.17	419.26	217.91	2.924		
21,700.00	12,293.66	21,435.21	12,025.93	171.26	171.32	-65.14	-10,060.43	921.17	637.00	417.03	219.97	2.896		
21,800.00	12,294.98	21,535.21	12,027.85	172.87	172.92	-65.20	-10,160.40	922.14	636.84	414.81	222.03	2.868		
21,900.00	12,296.29	21,635.21	12,029.76	174.47	174.52	-65.25	-10,260.38	923.12	636.67	412.58	224.09	2.841		
22,000.00	12,297.61	21,735.21	12,031.68	176.07	176.12	-65.30	-10,360.35	924.09	636.51	410.36	226.15	2.815		
22,100.00	12,298.92	21,835.21	12,033.59	177.67	177.73	-65.35	-10,460.33	925.07	636.35	408.13	228.22	2.788		
22,200.00	12,300.24	21,935.21	12,035.51	179.28	179.33	-65.41	-10,560.30	926.05	636.19	405.90	230.29	2.763		
22,300.00	12,301.55	22,035.20	12,037.42	180.88	180.93	-65.46	-10,660.28	927.02	636.03	403.68	232.35	2.737		
22,400.00	12,302.87	22,135.20	12,039.33	182.49	182.54	-65.51	-10,760.25	928.00	635.87	401.45	234.42	2.712		
22,500.00	12,304.18	22,235.20	12,041.25	184.10	184.14	-65.57	-10,860.23	928.97	635.71	399.22	236.49	2.688		
22,600.00	12,305.49	22,335.20	12,043.16	185.71	185.75	-65.62	-10,960.20	929.95	635.55	396.99	238.56	2.664		
22,700.00	12,306.81	22,435.20	12,045.08	187.31	187.36	-65.67	-11,060.18	930.93	635.39	394.75	240.64	2.640		
22,800.00	12,308.12	22,535.19	12,046.99	188.92	188.97	-65.72	-11,160.15	931.90	635.23	392.52	242.71	2.617		
22,900.00	12,309.44	22,635.19	12,048.91	190.53	190.58	-65.78	-11,260.13	932.88	635.07	390.29	244.78	2.594		
23,000.00	12,310.75	22,735.19	12,050.82	192.14	192.19	-65.83	-11,360.10	933.85	634.92	388.06	246.86	2.572		
23,100.00	12,312.07	22,835.19	12,052.74	193.76	193.80	-65.88	-11,460.08	934.83	634.76	385.82	248.94	2.550		
23,200.00	12,313.38	22,935.19	12,054.65	195.37	195.41	-65.94	-11,560.05	935.81	634.60	383.59	251.02	2.528		
23,300.00	12,314.70	23,035.18	12,056.57	196.98	197.02	-65.99	-11,660.03	936.78	634.45	381.35	253.09	2.507		
23,400.00	12,316.01	23,135.18	12,058.48	198.59	198.63	-66.04	-11,760.00	937.76	634.29	379.12	255.18	2.486		
23,500.00	12,317.32	23,235.18	12,060.40	200.21	200.24	-66.10	-11,859.98	938.73	634.14	376.88	257.26	2.465		
23,600.00	12,318.64	23,335.18	12,062.31	201.82	201.86	-66.15	-11,959.95	939.71	633.99	374.65	259.34	2.445		
23,665.00	12,319.49	23,400.18	12,063.55	202.87	202.91	-66.18	-12,024.93	940.35	633.89	373.19	260.69	2.432		
23,679.24	12,319.68	23,411.94	12,063.78	203.10	203.10	-66.19	-12,036.70	940.46	633.87	372.84	261.03	2.428		
23,679.99	12,319.69	23,411.94	12,063.78	203.12	203.10	-66.19	-12,036.70	940.46	633.87	372.80	261.07	2.428 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 Kaston Fed Com 703H
Project:	Lea County, NM (NAD83)	TVD Reference:	3057.5' GE + 30' KB @ 3087.50usft
Reference Site:	Bus Driver/Kaston Fed Com	MD Reference:	3057.5' GE + 30' KB @ 3087.50usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Kaston Fed Com 703H	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 #4	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	3.50	3.50	0.00	0.00	-92.35	-80.18	-1,955.77	1,957.41					
100.00	100.00	103.50	103.50	0.13	0.15	-92.35	-80.18	-1,955.77	1,957.41	1,957.21	0.20	9,848.616		
200.00	200.00	203.50	203.50	0.48	0.51	-92.35	-80.18	-1,955.77	1,957.41	1,956.71	0.70	2,776.630		
300.00	300.00	303.50	303.50	0.84	0.87	-92.35	-80.18	-1,955.77	1,957.41	1,956.20	1.21	1,615.303		
400.00	400.00	403.50	403.50	1.20	1.23	-92.35	-80.18	-1,955.77	1,957.41	1,955.69	1.72	1,138.893		
500.00	500.00	503.50	503.50	1.56	1.59	-92.35	-80.18	-1,955.77	1,957.41	1,955.19	2.23	879.489		
600.00	600.00	603.50	603.50	1.92	1.95	-92.35	-80.18	-1,955.77	1,957.41	1,954.68	2.73	716.328		
700.00	700.00	703.50	703.50	2.28	2.30	-92.35	-80.18	-1,955.77	1,957.41	1,954.17	3.24	604.232		
800.00	800.00	803.50	803.50	2.63	2.66	-92.35	-80.18	-1,955.77	1,957.41	1,953.67	3.75	522.471		
900.00	900.00	903.50	903.50	2.99	3.02	-92.35	-80.18	-1,955.77	1,957.41	1,953.16	4.25	460.199		
1,000.00	1,000.00	1,003.50	1,003.50	3.35	3.38	-92.35	-80.18	-1,955.77	1,957.41	1,952.65	4.76	411.191		
1,100.00	1,100.00	1,103.50	1,103.50	3.71	3.74	-92.35	-80.18	-1,955.77	1,957.41	1,952.15	5.27	371.616		
1,200.00	1,200.00	1,203.50	1,203.50	4.07	4.10	-92.35	-80.18	-1,955.77	1,957.41	1,951.64	5.77	338.990		
1,300.00	1,300.00	1,303.50	1,303.50	4.43	4.46	-92.35	-80.18	-1,955.77	1,957.41	1,951.13	6.28	311.630		
1,400.00	1,400.00	1,403.50	1,403.50	4.79	4.81	-92.35	-80.18	-1,955.77	1,957.41	1,950.62	6.79	288.357		
1,500.00	1,500.00	1,503.50	1,503.50	5.14	5.17	-92.35	-80.18	-1,955.77	1,957.41	1,950.12	7.30	268.318		
1,600.00	1,600.00	1,603.50	1,603.50	5.50	5.53	-92.35	-80.18	-1,955.77	1,957.41	1,949.61	7.80	250.884		
1,700.00	1,700.00	1,703.50	1,703.50	5.86	5.89	-92.35	-80.18	-1,955.77	1,957.41	1,949.10	8.31	235.577		
1,800.00	1,800.00	1,803.50	1,803.50	6.22	6.25	-92.35	-80.18	-1,955.77	1,957.41	1,948.60	8.82	222.030		
1,900.00	1,900.00	1,903.50	1,903.50	6.58	6.61	-92.35	-80.18	-1,955.77	1,957.41	1,948.09	9.32	209.957		
2,000.00	2,000.00	2,003.50	2,003.50	6.94	6.97	-92.35	-80.18	-1,955.77	1,957.41	1,947.58	9.83	199.129		
2,100.00	2,100.00	2,103.50	2,103.50	7.29	7.32	-92.35	-80.18	-1,955.77	1,957.41	1,947.08	10.34	189.363		
2,200.00	2,200.00	2,203.50	2,203.50	7.65	7.68	-92.35	-80.18	-1,955.77	1,957.41	1,946.57	10.84	180.510		
2,300.00	2,300.00	2,303.50	2,303.50	8.01	8.04	-92.35	-80.18	-1,955.77	1,957.41	1,946.06	11.35	172.448		
2,400.00	2,400.00	2,403.50	2,403.50	8.37	8.40	-92.35	-80.18	-1,955.77	1,957.41	1,945.56	11.86	165.075		
2,500.00	2,500.00	2,503.50	2,503.50	8.73	8.76	-92.35	-80.18	-1,955.77	1,957.41	1,945.05	12.36	158.307		
2,600.00	2,600.00	2,603.50	2,603.50	9.09	9.12	-92.35	-80.18	-1,955.77	1,957.41	1,944.54	12.87	152.072		
2,700.00	2,700.00	2,703.50	2,703.50	9.45	9.47	-92.35	-80.18	-1,955.77	1,957.41	1,944.03	13.38	146.310		
2,800.00	2,800.00	2,803.50	2,803.50	9.80	9.83	-92.35	-80.18	-1,955.77	1,957.41	1,943.53	13.89	140.968		
2,900.00	2,900.00	2,903.50	2,903.50	10.16	10.19	-92.35	-80.18	-1,955.77	1,957.41	1,943.02	14.39	136.003		
3,000.00	3,000.00	3,003.50	3,003.50	10.52	10.55	-92.35	-80.18	-1,955.77	1,957.41	1,942.51	14.90	131.375		
3,070.00	3,070.00	3,073.50	3,073.50	10.77	10.80	-92.35	-80.18	-1,955.77	1,957.41	1,942.16	15.25	128.319 CC		
3,100.00	3,100.00	3,103.50	3,103.50	10.87	10.91	127.41	-80.18	-1,955.77	1,957.48	1,942.08	15.40	127.085 ES		
3,200.00	3,199.97	3,203.47	3,203.47	11.20	11.27	127.44	-80.18	-1,955.77	1,958.76	1,942.87	15.89	123.291		
3,300.00	3,299.86	3,303.36	3,303.36	11.53	11.62	127.52	-80.18	-1,955.77	1,961.63	1,945.25	16.37	119.811		
3,400.00	3,399.59	3,403.09	3,403.09	11.86	11.98	127.63	-80.18	-1,955.77	1,966.10	1,949.24	16.86	116.621		
3,470.12	3,469.39	3,472.89	3,472.89	12.10	12.23	127.74	-80.18	-1,955.77	1,970.20	1,953.00	17.20	114.544		
3,500.00	3,499.10	3,502.60	3,502.60	12.20	12.34	127.81	-80.18	-1,955.77	1,972.12	1,954.78	17.35	113.693		
3,600.00	3,598.56	3,602.06	3,602.06	12.54	12.70	128.05	-80.18	-1,955.77	1,978.57	1,960.74	17.83	110.939		
3,700.00	3,698.01	3,701.51	3,701.51	12.88	13.05	128.29	-80.18	-1,955.77	1,985.06	1,966.73	18.33	108.321		
3,800.00	3,797.46	3,800.96	3,800.96	13.22	13.41	128.52	-80.18	-1,955.77	1,991.57	1,972.75	18.82	105.832		
3,900.00	3,896.91	3,900.41	3,900.41	13.57	13.76	128.75	-80.18	-1,955.77	1,998.12	1,978.81	19.31	103.463		
4,000.00	3,996.36	3,999.86	3,999.86	13.92	14.12	128.99	-80.18	-1,955.77	2,004.71	1,984.90	19.81	101.206		
4,100.00	4,095.82	4,099.32	4,099.32	14.27	14.48	129.22	-80.18	-1,955.77	2,011.32	1,991.02	20.31	99.054		
4,200.00	4,195.27	4,198.77	4,198.77	14.63	14.83	129.45	-80.18	-1,955.77	2,017.97	1,997.17	20.80	97.000		
4,300.00	4,294.72	4,298.22	4,298.22	14.99	15.19	129.67	-80.18	-1,955.77	2,024.65	2,003.35	21.30	95.039		
4,400.00	4,394.17	4,397.67	4,397.67	15.35	15.55	129.90	-80.18	-1,955.77	2,031.37	2,009.56	21.80	93.164		
4,500.00	4,493.62	4,497.12	4,497.12	15.71	15.90	130.13	-80.18	-1,955.77	2,038.11	2,015.80	22.31	91.371		
4,600.00	4,593.08	4,596.58	4,596.58	16.07	16.26	130.35	-80.18	-1,955.77	2,044.89	2,022.08	22.81	89.654		
4,700.00	4,692.53	4,696.03	4,696.03	16.43	16.62	130.57	-80.18	-1,955.77	2,051.69	2,028.38	23.31	88.010		
4,800.00	4,791.98	4,795.48	4,795.48	16.80	16.97	130.79	-80.18	-1,955.77	2,058.53	2,034.71	23.82	86.433		
4,900.00	4,891.43	4,894.93	4,894.93	17.17	17.33	131.01	-80.18	-1,955.77	2,065.40	2,041.08	24.32	84.921		

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



Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well Kaston Fed Com 703H
Project:	Lea County, NM (NAD83)	TVD Reference:	3057.5' GE + 30' KB @ 3087.50usft
Reference Site:	Bus Driver/Kaston Fed Com	MD Reference:	3057.5' GE + 30' KB @ 3087.50usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Kaston Fed Com 703H	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 #4	Offset TVD Reference:	Offset Datum

Offset Design													Judge Baylor Fed Com - Judge Baylor Fed Com 601H - OH - Plan #3		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	4,990.88	4,994.38	4,994.38	17.53	17.69	131.23	-80.18	-1,955.77	2,072.30	2,047.47	24.83	83.469				
5,100.00	5,090.33	5,093.83	5,093.83	17.90	18.04	131.44	-80.18	-1,955.77	2,079.22	2,053.89	25.33	82.074				
5,200.00	5,189.79	5,193.29	5,193.29	18.28	18.40	131.66	-80.18	-1,955.77	2,086.18	2,060.34	25.84	80.733				
5,300.00	5,289.24	5,292.74	5,292.74	18.65	18.76	131.87	-80.18	-1,955.77	2,093.17	2,066.82	26.35	79.443				
5,400.00	5,388.69	5,392.19	5,392.19	19.02	19.11	132.08	-80.18	-1,955.77	2,100.18	2,073.32	26.86	78.201				
5,500.00	5,488.14	5,491.64	5,491.64	19.39	19.47	132.29	-80.18	-1,955.77	2,107.22	2,079.86	27.36	77.006				
5,600.00	5,587.59	5,574.68	5,574.67	19.77	19.75	132.45	-80.83	-1,956.09	2,114.65	2,086.83	27.82	76.015				
5,700.00	5,687.05	5,656.28	5,656.24	20.14	20.02	132.56	-83.05	-1,957.19	2,122.93	2,094.67	28.26	75.120				
5,800.00	5,786.50	5,737.90	5,737.74	20.52	20.29	132.62	-86.82	-1,959.05	2,132.06	2,103.36	28.70	74.292				
5,900.00	5,885.95	5,819.44	5,819.07	20.90	20.55	132.65	-92.15	-1,961.68	2,142.03	2,112.90	29.13	73.521				
6,000.00	5,985.40	5,901.01	5,900.28	21.28	20.82	132.63	-99.04	-1,965.08	2,152.84	2,123.27	29.57	72.803				
6,100.00	6,084.85	6,000.36	5,999.08	21.66	21.14	132.57	-108.35	-1,969.68	2,164.05	2,133.99	30.06	71.991				
6,200.00	6,184.31	6,099.71	6,097.89	22.04	21.47	132.52	-117.66	-1,974.28	2,175.27	2,144.72	30.55	71.201				
6,300.00	6,283.76	6,199.06	6,196.69	22.42	21.80	132.47	-126.97	-1,978.88	2,186.49	2,155.44	31.04	70.432				
6,400.00	6,383.21	6,298.41	6,295.50	22.80	22.13	132.42	-136.29	-1,983.48	2,197.71	2,166.17	31.54	69.682				
6,500.00	6,482.66	6,397.77	6,394.31	23.18	22.47	132.38	-145.60	-1,988.08	2,208.93	2,176.89	32.04	68.953				
6,600.00	6,582.11	6,497.12	6,493.11	23.56	22.80	132.33	-154.91	-1,992.68	2,220.15	2,187.62	32.53	68.242				
6,700.00	6,681.56	6,596.47	6,591.92	23.94	23.14	132.28	-164.22	-1,997.28	2,231.38	2,198.34	33.03	67.549				
6,800.00	6,781.02	6,695.82	6,690.73	24.32	23.48	132.23	-173.54	-2,001.88	2,242.60	2,209.07	33.53	66.874				
6,900.00	6,880.47	6,795.17	6,789.53	24.71	23.82	132.18	-182.85	-2,006.48	2,253.83	2,219.79	34.04	66.216				
6,920.25	6,900.61	6,815.29	6,809.54	24.78	23.89	132.18	-184.74	-2,007.41	2,256.11	2,221.97	34.14	66.085				
7,000.00	6,980.00	6,894.57	6,888.38	25.09	24.17	132.22	-192.17	-2,011.08	2,264.51	2,229.97	34.54	65.561				
7,100.00	7,079.75	6,994.07	6,987.34	25.46	24.51	132.21	-201.49	-2,015.69	2,273.47	2,238.43	35.04	64.881				
7,200.00	7,179.65	7,093.61	7,086.33	25.82	24.86	132.13	-210.82	-2,020.30	2,280.70	2,245.16	35.54	64.176				
7,300.00	7,279.63	7,193.12	7,185.30	26.17	25.21	131.99	-220.15	-2,024.90	2,286.19	2,250.16	36.03	63.449				
7,320.37	7,300.00	7,213.38	7,205.45	26.24	25.28	-87.81	-222.05	-2,025.84	2,287.10	2,250.97	36.13	63.300				
7,400.00	7,379.63	7,292.57	7,284.21	26.50	25.56	-88.00	-229.47	-2,029.51	2,290.53	2,254.01	36.52	62.723				
7,500.00	7,479.63	7,392.02	7,383.12	26.84	25.91	-88.23	-238.80	-2,034.11	2,294.86	2,257.86	37.01	62.014				
7,600.00	7,579.63	7,491.47	7,482.02	27.18	26.26	-88.47	-248.12	-2,038.72	2,299.24	2,261.75	37.49	61.324				
7,700.00	7,679.63	7,590.93	7,580.93	27.51	26.61	-88.70	-257.44	-2,043.32	2,303.66	2,265.67	37.98	60.650				
7,800.00	7,779.63	7,690.38	7,679.84	27.85	26.97	-88.94	-266.76	-2,047.92	2,308.11	2,269.64	38.47	59.993				
7,900.00	7,879.63	7,789.83	7,778.74	28.19	27.32	-89.17	-276.08	-2,052.53	2,312.61	2,273.64	38.96	59.352				
8,000.00	7,979.63	7,889.28	7,877.65	28.53	27.68	-89.40	-285.41	-2,057.13	2,317.14	2,277.68	39.46	58.727				
8,100.00	8,079.63	7,988.73	7,976.56	28.87	28.04	-89.63	-294.73	-2,061.74	2,321.71	2,281.76	39.95	58.116				
8,200.00	8,179.63	8,088.19	8,075.46	29.21	28.40	-89.86	-304.05	-2,066.34	2,326.32	2,285.88	40.44	57.521				
8,300.00	8,279.63	8,190.91	8,177.63	29.55	28.77	-90.10	-313.66	-2,071.09	2,330.96	2,290.01	40.95	56.924				
8,400.00	8,379.63	8,328.07	8,314.30	29.89	29.26	-90.35	-323.94	-2,076.16	2,334.70	2,293.14	41.56	56.178				
8,500.00	8,479.63	8,465.88	8,451.95	30.23	29.74	-90.50	-329.82	-2,079.07	2,336.85	2,294.69	42.16	55.431				
8,600.00	8,579.63	8,597.08	8,583.13	30.57	30.20	-90.53	-331.32	-2,079.81	2,337.39	2,294.66	42.73	54.702				
8,700.00	8,679.63	8,697.08	8,683.13	30.91	30.55	-90.53	-331.32	-2,079.81	2,337.39	2,294.17	43.22	54.081				
8,800.00	8,779.63	8,797.08	8,783.13	31.25	30.90	-90.53	-331.32	-2,079.81	2,337.39	2,293.68	43.71	53.473				
8,900.00	8,879.63	8,897.08	8,883.13	31.60	31.25	-90.53	-331.32	-2,079.81	2,337.39	2,293.19	44.20	52.879				
9,000.00	8,979.63	8,997.08	8,983.13	31.94	31.60	-90.53	-331.32	-2,079.81	2,337.39	2,292.70	44.69	52.297				
9,100.00	9,079.63	9,097.08	9,083.13	32.28	31.95	-90.53	-331.32	-2,079.81	2,337.39	2,292.20	45.19	51.727				
9,200.00	9,179.63	9,197.08	9,183.13	32.63	32.30	-90.53	-331.32	-2,079.81	2,337.39	2,291.71	45.68	51.170				
9,300.00	9,279.63	9,297.08	9,283.13	32.97	32.65	-90.53	-331.32	-2,079.81	2,337.39	2,291.22	46.17	50.624				
9,400.00	9,379.63	9,397.08	9,383.13	33.31	33.00	-90.53	-331.32	-2,079.81	2,337.39	2,290.73	46.66	50.089				
9,500.00	9,479.63	9,497.08	9,483.13	33.66	33.35	-90.53	-331.32	-2,079.81	2,337.39	2,290.23	47.16	49.565				
9,600.00	9,579.63	9,597.08	9,583.13	34.00	33.70	-90.53	-331.32	-2,079.81	2,337.39	2,289.74	47.65	49.052				
9,700.00	9,679.63	9,697.08	9,683.13	34.35	34.05	-90.53	-331.32	-2,079.81	2,337.39	2,289.25	48.15	48.548				
9,800.00	9,779.63	9,797.08	9,783.13	34.69	34.41	-90.53	-331.32	-2,079.81	2,337.39	2,288.75	48.64	48.055				
9,900.00	9,879.63	9,897.08	9,883.13	35.04	34.76	-90.53	-331.32	-2,079.81	2,337.39	2,288.26	49.13	47.572				

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 Kaston Fed Com 703H
Project:	Lea County, NM (NAD83)	TVD Reference:	3057.5' GE + 30' KB @ 3087.50usft
Reference Site:	Bus Driver/Kaston Fed Com	MD Reference:	3057.5' GE + 30' KB @ 3087.50usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Kaston Fed Com 703H	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 #4	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	9,979.63	9,997.08	9,983.13	35.39	35.11	-90.53	-331.32	-2,079.81	2,337.39	2,287.76	49.63	47.097		
10,100.00	10,079.63	10,097.08	10,083.13	35.73	35.46	-90.53	-331.32	-2,079.81	2,337.39	2,287.27	50.12	46.632		
10,200.00	10,179.63	10,197.08	10,183.13	36.08	35.81	-90.53	-331.32	-2,079.81	2,337.39	2,286.77	50.62	46.176		
10,300.00	10,279.63	10,297.08	10,283.13	36.42	36.17	-90.53	-331.32	-2,079.81	2,337.39	2,286.28	51.11	45.729		
10,400.00	10,379.63	10,397.08	10,383.13	36.77	36.52	-90.53	-331.32	-2,079.81	2,337.39	2,285.78	51.61	45.290		
10,500.00	10,479.63	10,497.08	10,483.13	37.12	36.87	-90.53	-331.32	-2,079.81	2,337.39	2,285.29	52.11	44.859		
10,600.00	10,579.63	10,597.08	10,583.13	37.47	37.22	-90.53	-331.32	-2,079.81	2,337.39	2,284.79	52.60	44.436		
10,700.00	10,679.63	10,697.08	10,683.13	37.81	37.58	-90.53	-331.32	-2,079.81	2,337.39	2,284.29	53.10	44.020		
10,800.00	10,779.63	10,797.08	10,783.13	38.16	37.93	-90.53	-331.32	-2,079.81	2,337.39	2,283.80	53.59	43.613		
10,900.00	10,879.63	10,897.08	10,883.13	38.51	38.28	-90.53	-331.32	-2,079.81	2,337.39	2,283.30	54.09	43.212		
11,000.00	10,979.63	10,997.08	10,983.13	38.86	38.63	-90.53	-331.32	-2,079.81	2,337.39	2,282.80	54.59	42.819		
11,100.00	11,079.63	11,097.08	11,083.13	39.21	38.99	-90.53	-331.32	-2,079.81	2,337.39	2,282.31	55.08	42.433		
11,200.00	11,179.63	11,197.08	11,183.13	39.55	39.34	-90.53	-331.32	-2,079.81	2,337.39	2,281.81	55.58	42.053		
11,300.00	11,279.63	11,297.08	11,283.13	39.90	39.69	-90.53	-331.32	-2,079.81	2,337.39	2,281.31	56.08	41.680		
11,311.93	11,291.56	11,309.01	11,295.06	39.94	39.74	-90.53	-331.32	-2,079.81	2,337.39	2,281.25	56.14	41.636		
11,400.00	11,379.63	11,397.08	11,383.09	40.25	40.05	-90.54	-331.47	-2,079.81	2,337.39	2,280.82	56.58	41.314		
11,500.00	11,479.63	11,495.40	11,480.75	40.60	40.39	-90.80	-342.12	-2,079.72	2,337.42	2,280.36	57.07	40.959		
11,600.00	11,579.63	11,587.57	11,569.37	40.95	40.73	-91.41	-367.12	-2,079.50	2,337.73	2,280.17	57.55	40.617		
11,620.37	11,600.00	11,605.23	11,585.82	41.02	40.79	-91.57	-373.52	-2,079.44	2,337.86	2,280.21	57.65	40.551		
11,650.00	11,629.61	11,630.41	11,608.93	41.12	40.88	88.68	-383.51	-2,079.35	2,338.11	2,280.32	57.79	40.458		
11,700.00	11,679.37	11,672.12	11,646.17	41.30	41.04	88.26	-402.27	-2,079.19	2,338.63	2,280.60	58.03	40.303		
11,750.00	11,728.52	11,712.94	11,681.21	41.48	41.20	87.85	-423.20	-2,079.00	2,339.26	2,281.00	58.26	40.149		
11,800.00	11,776.70	11,750.00	11,711.65	41.67	41.34	87.47	-444.32	-2,078.82	2,339.99	2,281.50	58.49	40.005		
11,850.00	11,823.53	11,792.29	11,744.64	41.86	41.51	87.06	-470.77	-2,078.59	2,340.78	2,282.04	58.74	39.848		
11,900.00	11,868.66	11,831.01	11,773.06	42.05	41.67	86.70	-497.05	-2,078.36	2,341.63	2,282.65	58.99	39.698		
11,950.00	11,911.74	11,869.18	11,799.27	42.25	41.83	86.35	-524.79	-2,078.11	2,342.51	2,283.28	59.23	39.550		
12,000.00	11,952.45	11,906.87	11,823.29	42.45	41.99	86.02	-553.83	-2,077.86	2,343.40	2,283.92	59.48	39.401		
12,050.00	11,990.48	11,950.00	11,848.36	42.66	42.17	85.69	-588.91	-2,077.55	2,344.29	2,284.54	59.75	39.237		
12,100.00	12,025.54	11,981.07	11,864.75	42.88	42.31	85.44	-615.29	-2,077.32	2,345.12	2,285.15	59.98	39.100		
12,150.00	12,057.36	12,017.67	11,882.19	43.10	42.47	85.19	-647.46	-2,077.03	2,345.92	2,285.69	60.24	38.946		
12,200.00	12,085.70	12,050.00	11,895.85	43.32	42.62	84.99	-676.76	-2,076.78	2,346.66	2,286.18	60.48	38.799		
12,250.00	12,110.34	12,090.10	11,910.48	43.56	42.81	84.78	-714.09	-2,076.45	2,347.31	2,286.55	60.77	38.627		
12,300.00	12,131.10	12,126.02	11,921.33	43.80	42.98	84.62	-748.33	-2,076.15	2,347.88	2,286.83	61.04	38.462		
12,350.00	12,147.81	12,161.80	11,929.99	44.05	43.15	84.49	-783.03	-2,075.84	2,348.34	2,287.01	61.33	38.293		
12,400.00	12,160.36	12,200.00	11,936.82	44.30	43.34	84.39	-820.61	-2,075.51	2,348.69	2,287.07	61.62	38.114		
12,450.00	12,168.64	12,233.03	11,940.70	44.55	43.50	84.33	-853.41	-2,075.23	2,348.92	2,287.01	61.91	37.942		
12,500.00	12,172.60	12,268.57	11,942.75	44.81	43.68	84.30	-888.88	-2,074.92	2,349.02	2,286.82	62.21	37.762		
12,512.84	12,172.91	12,277.75	11,942.92	44.88	43.72	84.30	-898.06	-2,074.83	2,349.03	2,286.75	62.28	37.715		
12,600.00	12,174.05	12,364.83	11,943.87	45.35	44.18	84.29	-985.13	-2,074.07	2,349.05	2,286.11	62.94	37.323		
12,700.00	12,175.37	12,464.83	11,944.95	45.95	44.75	84.28	-1,085.12	-2,073.19	2,349.07	2,285.32	63.76	36.845		
12,800.00	12,176.68	12,564.83	11,946.03	46.59	45.38	84.28	-1,185.11	-2,072.32	2,349.10	2,284.45	64.65	36.337		
12,900.00	12,178.00	12,664.83	11,947.11	47.28	46.05	84.27	-1,285.10	-2,071.44	2,349.12	2,283.51	65.61	35.805		
13,000.00	12,179.31	12,764.83	11,948.19	48.02	46.78	84.27	-1,385.09	-2,070.56	2,349.15	2,282.51	66.64	35.252		
13,100.00	12,180.63	12,864.83	11,949.27	48.81	47.55	84.26	-1,485.08	-2,069.68	2,349.17	2,281.44	67.73	34.683		
13,200.00	12,181.94	12,964.83	11,950.35	49.63	48.36	84.26	-1,585.07	-2,068.80	2,349.19	2,280.31	68.89	34.102		
13,300.00	12,183.25	13,064.83	11,951.44	50.50	49.22	84.25	-1,685.06	-2,067.93	2,349.22	2,279.12	70.10	33.512		
13,400.00	12,184.57	13,164.83	11,952.52	51.40	50.12	84.25	-1,785.05	-2,067.05	2,349.24	2,277.87	71.37	32.917		
13,500.00	12,185.88	13,264.83	11,953.60	52.35	51.05	84.24	-1,885.04	-2,066.17	2,349.27	2,276.58	72.69	32.319		
13,600.00	12,187.20	13,364.83	11,954.68	53.32	52.02	84.23	-1,985.03	-2,065.29	2,349.29	2,275.23	74.06	31.722		
13,700.00	12,188.51	13,464.83	11,955.76	54.33	53.02	84.23	-2,085.02	-2,064.42	2,349.32	2,273.84	75.48	31.127		
13,800.00	12,189.83	13,564.82	11,956.84	55.37	54.06	84.22	-2,185.01	-2,063.54	2,349.34	2,272.40	76.94	30.536		
13,900.00	12,191.14	13,664.82	11,957.92	56.44	55.13	84.22	-2,285.00	-2,062.66	2,349.36	2,270.92	78.44	29.951		

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 Kaston Fed Com 703H
Project:	Lea County, NM (NAD83)	TVD Reference:	3057.5' GE + 30' KB @ 3087.50usft
Reference Site:	Bus Driver/Kaston Fed Com	MD Reference:	3057.5' GE + 30' KB @ 3087.50usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Kaston Fed Com 703H	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 #4	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:		0.00 usft
Survey Program: 0-OWSG (Rev2) MWD													Offset Well Error:		0.00 usft
Reference		Offset		Semi Major Axis			Distance							Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor			
14,000.00	12,192.46	13,764.82	11,959.00	57.54	56.22	84.21	-2,384.99	-2,061.78	2,349.39	2,269.41	79.98	29.374			
14,100.00	12,193.77	13,864.82	11,960.09	58.66	57.34	84.21	-2,484.98	-2,060.90	2,349.41	2,267.85	81.56	28.805			
14,200.00	12,195.08	13,964.82	11,961.17	59.81	58.49	84.20	-2,584.97	-2,060.03	2,349.44	2,266.26	83.18	28.246			
14,300.00	12,196.40	14,064.82	11,962.25	60.98	59.66	84.19	-2,684.96	-2,059.15	2,349.46	2,264.64	84.82	27.698			
14,400.00	12,197.71	14,164.82	11,963.33	62.17	60.85	84.19	-2,784.95	-2,058.27	2,349.49	2,262.98	86.50	27.161			
14,500.00	12,199.03	14,264.82	11,964.41	63.38	62.06	84.18	-2,884.94	-2,057.39	2,349.51	2,261.30	88.21	26.635			
14,600.00	12,200.34	14,364.82	11,965.49	64.61	63.29	84.18	-2,984.93	-2,056.52	2,349.53	2,259.59	89.95	26.121			
14,700.00	12,201.66	14,464.82	11,966.57	65.86	64.55	84.17	-3,084.92	-2,055.64	2,349.56	2,257.85	91.71	25.620			
14,800.00	12,202.97	14,564.82	11,967.65	67.13	65.82	84.17	-3,184.91	-2,054.76	2,349.58	2,256.09	93.50	25.131			
14,900.00	12,204.29	14,664.82	11,968.74	68.42	67.10	84.16	-3,284.90	-2,053.88	2,349.61	2,254.30	95.31	24.654			
15,000.00	12,205.60	14,764.82	11,969.82	69.72	68.40	84.15	-3,384.89	-2,053.00	2,349.63	2,252.50	97.14	24.189			
15,100.00	12,206.91	14,864.82	11,970.90	71.03	69.72	84.15	-3,484.88	-2,052.13	2,349.66	2,250.67	98.99	23.736			
15,200.00	12,208.23	14,964.82	11,971.98	72.36	71.05	84.14	-3,584.87	-2,051.25	2,349.68	2,248.82	100.86	23.296			
15,300.00	12,209.54	15,064.82	11,973.06	73.70	72.40	84.14	-3,684.86	-2,050.37	2,349.71	2,246.95	102.75	22.868			
15,400.00	12,210.86	15,164.82	11,974.14	75.06	73.75	84.13	-3,784.85	-2,049.49	2,349.73	2,245.07	104.66	22.451			
15,500.00	12,212.17	15,264.82	11,975.22	76.42	75.12	84.13	-3,884.84	-2,048.62	2,349.76	2,243.17	106.58	22.046			
15,600.00	12,213.49	15,364.82	11,976.30	77.80	76.50	84.12	-3,984.83	-2,047.74	2,349.78	2,241.26	108.53	21.652			
15,700.00	12,214.80	15,464.82	11,977.39	79.19	77.89	84.12	-4,084.82	-2,046.86	2,349.81	2,239.32	110.48	21.269			
15,800.00	12,216.12	15,564.82	11,978.47	80.58	79.29	84.11	-4,184.81	-2,045.98	2,349.83	2,237.38	112.45	20.897			
15,900.00	12,217.43	15,664.82	11,979.55	81.99	80.70	84.10	-4,284.80	-2,045.10	2,349.85	2,235.42	114.43	20.535			
16,000.00	12,218.74	15,764.82	11,980.63	83.41	82.12	84.10	-4,384.79	-2,044.23	2,349.88	2,233.45	116.43	20.183			
16,100.00	12,220.06	15,864.82	11,981.71	84.83	83.55	84.09	-4,484.78	-2,043.35	2,349.90	2,231.47	118.43	19.841			
16,200.00	12,221.37	15,964.82	11,982.79	86.26	84.98	84.09	-4,584.77	-2,042.47	2,349.93	2,229.48	120.45	19.509			
16,300.00	12,222.69	16,064.82	11,983.87	87.70	86.43	84.08	-4,684.76	-2,041.59	2,349.95	2,227.47	122.48	19.186			
16,400.00	12,224.00	16,164.82	11,984.95	89.15	87.88	84.08	-4,784.75	-2,040.72	2,349.98	2,225.46	124.52	18.872			
16,500.00	12,225.32	16,264.82	11,986.04	90.61	89.33	84.07	-4,884.74	-2,039.84	2,350.00	2,223.43	126.57	18.566			
16,600.00	12,226.63	16,364.82	11,987.12	92.07	90.80	84.06	-4,984.73	-2,038.96	2,350.03	2,221.40	128.63	18.269			
16,700.00	12,227.94	16,464.82	11,988.20	93.53	92.27	84.06	-5,084.72	-2,038.08	2,350.05	2,219.35	130.70	17.981			
16,800.00	12,229.26	16,564.82	11,989.28	95.01	93.75	84.05	-5,184.71	-2,037.20	2,350.08	2,217.30	132.78	17.700			
16,900.00	12,230.57	16,664.82	11,990.36	96.49	95.23	84.05	-5,284.70	-2,036.33	2,350.10	2,215.24	134.86	17.426			
17,000.00	12,231.89	16,764.82	11,991.44	97.97	96.72	84.04	-5,384.69	-2,035.45	2,350.13	2,213.18	136.95	17.160			
17,100.00	12,233.20	16,864.82	11,992.52	99.46	98.21	84.04	-5,484.68	-2,034.57	2,350.15	2,211.10	139.05	16.901			
17,200.00	12,234.52	16,964.82	11,993.60	100.96	99.71	84.03	-5,584.67	-2,033.69	2,350.18	2,209.02	141.16	16.649			
17,300.00	12,235.83	17,064.82	11,994.69	102.46	101.21	84.02	-5,684.66	-2,032.82	2,350.20	2,206.93	143.27	16.404			
17,400.00	12,237.15	17,164.82	11,995.77	103.96	102.72	84.02	-5,784.65	-2,031.94	2,350.23	2,204.84	145.39	16.165			
17,500.00	12,238.46	17,264.82	11,996.85	105.47	104.23	84.01	-5,884.64	-2,031.06	2,350.25	2,202.74	147.52	15.932			
17,600.00	12,239.77	17,364.81	11,997.93	106.99	105.75	84.01	-5,984.63	-2,030.18	2,350.28	2,200.63	149.65	15.705			
17,700.00	12,241.09	17,464.81	11,999.01	108.50	107.27	84.00	-6,084.62	-2,029.30	2,350.30	2,198.52	151.79	15.484			
17,800.00	12,242.40	17,564.81	12,000.09	110.03	108.79	84.00	-6,184.61	-2,028.43	2,350.33	2,196.40	153.93	15.269			
17,900.00	12,243.72	17,664.81	12,001.17	111.55	110.32	83.99	-6,284.60	-2,027.55	2,350.35	2,194.28	156.08	15.059			
18,000.00	12,245.03	17,764.81	12,002.26	113.08	111.85	83.99	-6,384.59	-2,026.67	2,350.38	2,192.15	158.23	14.854			
18,100.00	12,246.35	17,864.81	12,003.34	114.61	113.39	83.98	-6,484.58	-2,025.79	2,350.40	2,190.02	160.39	14.654			
18,200.00	12,247.66	17,964.81	12,004.42	116.15	114.93	83.97	-6,584.57	-2,024.92	2,350.43	2,187.88	162.55	14.460			
18,300.00	12,248.98	18,064.81	12,005.50	117.69	116.47	83.97	-6,684.56	-2,024.04	2,350.46	2,185.74	164.72	14.270			
18,400.00	12,250.29	18,164.81	12,006.58	119.23	118.01	83.96	-6,784.55	-2,023.16	2,350.48	2,183.59	166.89	14.084			
18,500.00	12,251.60	18,264.81	12,007.66	120.77	119.56	83.96	-6,884.54	-2,022.28	2,350.51	2,181.44	169.06	13.903			
18,600.00	12,252.92	18,364.81	12,008.74	122.32	121.11	83.95	-6,984.53	-2,021.40	2,350.53	2,179.29	171.24	13.727			
18,700.00	12,254.23	18,464.81	12,009.82	123.87	122.66	83.95	-7,084.52	-2,020.53	2,350.56	2,177.13	173.42	13.554			
18,800.00	12,255.55	18,564.81	12,010.91	125.42	124.22	83.94	-7,184.51	-2,019.65	2,350.58	2,174.97	175.61	13.385			
18,900.00	12,256.86	18,664.81	12,011.99	126.98	125.77	83.93	-7,284.50	-2,018.77	2,350.61	2,172.81	177.80	13.221			
19,000.00	12,258.18	18,764.81	12,013.07	128.53	127.33	83.93	-7,384.49	-2,017.89	2,350.63	2,170.64	179.99	13.060			
19,100.00	12,259.49	18,864.81	12,014.15	130.09	128.90	83.92	-7,484.48	-2,017.02	2,350.66	2,168.47	182.18	12.903			

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 Kaston Fed Com 703H
Project:	Lea County, NM (NAD83)	TVD Reference:	3057.5' GE + 30' KB @ 3087.50usft
Reference Site:	Bus Driver/Kaston Fed Com	MD Reference:	3057.5' GE + 30' KB @ 3087.50usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Kaston Fed Com 703H	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 #4	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 0-OWSG (Rev2) MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance								Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
19,200.00	12,260.80	18,964.81	12,015.23	131.66	130.46	83.92	-7,584.47	-2,016.14	2,350.68	2,166.30	184.38	12.749		
19,300.00	12,262.12	19,064.81	12,016.31	133.22	132.03	83.91	-7,684.46	-2,015.26	2,350.71	2,164.13	186.58	12.599		
19,400.00	12,263.43	19,164.81	12,017.39	134.79	133.60	83.91	-7,784.45	-2,014.38	2,350.73	2,161.95	188.79	12.452		
19,500.00	12,264.75	19,264.81	12,018.47	136.36	135.17	83.90	-7,884.44	-2,013.50	2,350.76	2,159.76	191.00	12.308		
19,600.00	12,266.06	19,364.81	12,019.56	137.93	136.74	83.89	-7,984.43	-2,012.63	2,350.79	2,157.58	193.21	12.167		
19,700.00	12,267.38	19,464.81	12,020.64	139.50	138.31	83.89	-8,084.42	-2,011.75	2,350.81	2,155.39	195.42	12.030		
19,800.00	12,268.69	19,564.81	12,021.72	141.07	139.89	83.88	-8,184.41	-2,010.87	2,350.84	2,153.20	197.63	11.895		
19,900.00	12,270.01	19,664.81	12,022.80	142.65	141.47	83.88	-8,284.40	-2,009.99	2,350.86	2,151.01	199.85	11.763		
20,000.00	12,271.32	19,764.81	12,023.88	144.23	143.05	83.87	-8,384.39	-2,009.12	2,350.89	2,148.82	202.07	11.634		
20,100.00	12,272.63	19,864.81	12,024.96	145.81	144.63	83.87	-8,484.38	-2,008.24	2,350.91	2,146.62	204.29	11.508		
20,200.00	12,273.95	19,964.81	12,026.04	147.39	146.21	83.86	-8,584.37	-2,007.36	2,350.94	2,144.42	206.52	11.384		
20,300.00	12,275.26	20,064.81	12,027.12	148.97	147.80	83.86	-8,684.36	-2,006.48	2,350.97	2,142.22	208.74	11.262		
20,400.00	12,276.58	20,164.81	12,028.21	150.55	149.38	83.85	-8,784.35	-2,005.60	2,350.99	2,140.02	210.97	11.144		
20,500.00	12,277.89	20,264.81	12,029.29	152.14	150.97	83.84	-8,884.34	-2,004.73	2,351.02	2,137.81	213.20	11.027		
20,600.00	12,279.21	20,364.81	12,030.37	153.73	152.56	83.84	-8,984.33	-2,003.85	2,351.04	2,135.61	215.43	10.913		
20,700.00	12,280.52	20,464.81	12,031.45	155.32	154.15	83.83	-9,084.32	-2,002.97	2,351.07	2,133.40	217.67	10.801		
20,800.00	12,281.84	20,564.81	12,032.53	156.90	155.74	83.83	-9,184.31	-2,002.09	2,351.09	2,131.19	219.90	10.691		
20,900.00	12,283.15	20,664.81	12,033.61	158.50	157.33	83.82	-9,284.30	-2,001.22	2,351.12	2,128.98	222.14	10.584		
21,000.00	12,284.46	20,764.81	12,034.69	160.09	158.93	83.82	-9,384.29	-2,000.34	2,351.15	2,126.77	224.38	10.478		
21,100.00	12,285.78	20,864.81	12,035.77	161.68	160.52	83.81	-9,484.28	-1,999.46	2,351.17	2,124.55	226.62	10.375		
21,200.00	12,287.09	20,964.81	12,036.86	163.28	162.12	83.80	-9,584.27	-1,998.58	2,351.20	2,122.33	228.86	10.273		
21,300.00	12,288.41	21,064.80	12,037.94	164.87	163.72	83.80	-9,684.26	-1,997.70	2,351.22	2,120.12	231.11	10.174		
21,400.00	12,289.72	21,164.80	12,039.02	166.47	165.31	83.79	-9,784.25	-1,996.83	2,351.25	2,117.90	233.35	10.076		
21,500.00	12,291.04	21,264.80	12,040.10	168.07	166.91	83.79	-9,884.24	-1,995.95	2,351.28	2,115.68	235.60	9.980		
21,600.00	12,292.35	21,364.80	12,041.18	169.66	168.51	83.78	-9,984.23	-1,995.07	2,351.30	2,113.46	237.85	9.886		
21,700.00	12,293.66	21,464.80	12,042.26	171.26	170.12	83.78	-10,084.22	-1,994.19	2,351.33	2,111.23	240.10	9.793		
21,800.00	12,294.98	21,564.80	12,043.34	172.87	171.72	83.77	-10,184.21	-1,993.32	2,351.35	2,109.01	242.35	9.702		
21,900.00	12,296.29	21,664.80	12,044.42	174.47	173.32	83.76	-10,284.20	-1,992.44	2,351.38	2,106.78	244.60	9.613		
22,000.00	12,297.61	21,764.80	12,045.51	176.07	174.93	83.76	-10,384.19	-1,991.56	2,351.41	2,104.56	246.85	9.526		
22,100.00	12,298.92	21,864.80	12,046.59	177.67	176.53	83.75	-10,484.18	-1,990.68	2,351.43	2,102.33	249.11	9.440		
22,200.00	12,300.24	21,964.80	12,047.67	179.28	178.14	83.75	-10,584.17	-1,989.80	2,351.46	2,100.10	251.36	9.355		
22,300.00	12,301.55	22,064.80	12,048.75	180.88	179.74	83.74	-10,684.16	-1,988.93	2,351.49	2,097.87	253.62	9.272		
22,301.79	12,301.57	22,066.59	12,048.77	180.91	179.77	83.74	-10,685.94	-1,988.91	2,351.49	2,097.83	253.66	9.270		
22,400.00	12,302.87	22,130.50	12,049.46	182.49	180.80	83.74	-10,749.85	-1,988.35	2,351.76	2,096.32	255.44	9.207		
22,500.00	12,304.18	22,130.50	12,049.46	184.10	180.80	83.74	-10,749.85	-1,988.35	2,355.37	2,099.26	256.11	9.197 SF		
22,600.00	12,305.49	22,130.50	12,049.46	185.71	180.80	83.74	-10,749.85	-1,988.35	2,363.21	2,106.90	256.31	9.220		
22,700.00	12,306.81	22,130.50	12,049.46	187.31	180.80	83.74	-10,749.85	-1,988.35	2,375.23	2,119.19	256.05	9.277		
22,800.00	12,308.12	22,130.50	12,049.46	188.92	180.80	83.74	-10,749.85	-1,988.35	2,391.38	2,136.05	255.33	9.366		
22,900.00	12,309.44	22,130.50	12,049.46	190.53	180.80	83.74	-10,749.85	-1,988.35	2,411.58	2,157.38	254.19	9.487		
23,000.00	12,310.75	22,130.50	12,049.46	192.14	180.80	83.74	-10,749.85	-1,988.35	2,435.71	2,183.05	252.66	9.640		
23,100.00	12,312.07	22,130.50	12,049.46	193.76	180.80	83.74	-10,749.85	-1,988.35	2,463.67	2,212.90	250.77	9.824		
23,200.00	12,313.38	22,130.50	12,049.46	195.37	180.80	83.74	-10,749.85	-1,988.35	2,495.33	2,246.77	248.56	10.039		
23,300.00	12,314.70	22,130.50	12,049.46	196.98	180.80	83.74	-10,749.85	-1,988.35	2,530.54	2,284.48	246.06	10.284		
23,400.00	12,316.01	22,130.50	12,049.46	198.59	180.80	83.74	-10,749.85	-1,988.35	2,569.17	2,325.84	243.33	10.558		
23,500.00	12,317.32	22,130.50	12,049.46	200.21	180.80	83.74	-10,749.85	-1,988.35	2,611.05	2,370.66	240.39	10.862		
23,600.00	12,318.64	22,130.50	12,049.46	201.82	180.80	83.74	-10,749.85	-1,988.35	2,656.05	2,418.76	237.29	11.193		
23,679.24	12,319.68	22,130.50	12,049.46	203.10	180.80	83.74	-10,749.85	-1,988.35	2,693.81	2,459.07	234.74	11.476		
23,679.99	12,319.69	22,130.50	12,049.46	203.12	180.80	83.74	-10,749.85	-1,988.35	2,694.17	2,459.14	235.03	11.463		

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 Kaston Fed Com 703H
Project:	Lea County, NM (NAD83)	TVD Reference:	3057.5' GE + 30' KB @ 3087.50usft
Reference Site:	Bus Driver/Kaston Fed Com	MD Reference:	3057.5' GE + 30' KB @ 3087.50usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Kaston Fed Com 703H	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 #4	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	3.20	3.20	0.00	0.00	-92.38	-79.86	-1,920.78	1,922.44					
100.00	100.00	103.20	103.20	0.13	0.15	-92.38	-79.86	-1,920.78	1,922.44	1,922.24	0.20	9,713.354		
200.00	200.00	203.20	203.20	0.48	0.51	-92.38	-79.86	-1,920.78	1,922.44	1,921.74	0.70	2,730.047		
300.00	300.00	303.20	303.20	0.84	0.87	-92.38	-79.86	-1,920.78	1,922.44	1,921.23	1.21	1,587.454		
400.00	400.00	403.20	403.20	1.20	1.23	-92.38	-79.86	-1,920.78	1,922.44	1,920.72	1.72	1,119.045		
500.00	500.00	503.20	503.20	1.56	1.59	-92.38	-79.86	-1,920.78	1,922.44	1,920.21	2.22	864.072		
600.00	600.00	603.20	603.20	1.92	1.95	-92.38	-79.86	-1,920.78	1,922.44	1,919.71	2.73	703.727		
700.00	700.00	703.20	703.20	2.28	2.30	-92.38	-79.86	-1,920.78	1,922.44	1,919.20	3.24	593.576		
800.00	800.00	803.20	803.20	2.63	2.66	-92.38	-79.86	-1,920.78	1,922.44	1,918.69	3.75	513.240		
900.00	900.00	903.20	903.20	2.99	3.02	-92.38	-79.86	-1,920.78	1,922.44	1,918.19	4.25	452.058		
1,000.00	1,000.00	1,003.20	1,003.20	3.35	3.38	-92.38	-79.86	-1,920.78	1,922.44	1,917.68	4.76	403.909		
1,100.00	1,100.00	1,103.20	1,103.20	3.71	3.74	-92.38	-79.86	-1,920.78	1,922.44	1,917.17	5.27	365.029		
1,200.00	1,200.00	1,203.20	1,203.20	4.07	4.10	-92.38	-79.86	-1,920.78	1,922.44	1,916.67	5.77	332.977		
1,300.00	1,300.00	1,303.20	1,303.20	4.43	4.45	-92.38	-79.86	-1,920.78	1,922.44	1,916.16	6.28	306.099		
1,400.00	1,400.00	1,403.20	1,403.20	4.79	4.81	-92.38	-79.86	-1,920.78	1,922.44	1,915.65	6.79	283.237		
1,500.00	1,500.00	1,503.20	1,503.20	5.14	5.17	-92.38	-79.86	-1,920.78	1,922.44	1,915.15	7.29	263.552		
1,600.00	1,600.00	1,603.20	1,603.20	5.50	5.53	-92.38	-79.86	-1,920.78	1,922.44	1,914.64	7.80	246.425		
1,700.00	1,700.00	1,703.20	1,703.20	5.86	5.89	-92.38	-79.86	-1,920.78	1,922.44	1,914.13	8.31	231.389		
1,800.00	1,800.00	1,803.20	1,803.20	6.22	6.25	-92.38	-79.86	-1,920.78	1,922.44	1,913.62	8.82	218.082		
1,900.00	1,900.00	1,903.20	1,903.20	6.58	6.61	-92.38	-79.86	-1,920.78	1,922.44	1,913.12	9.32	206.222		
2,000.00	2,000.00	2,003.20	2,003.20	6.94	6.96	-92.38	-79.86	-1,920.78	1,922.44	1,912.61	9.83	195.586		
2,100.00	2,100.00	2,103.20	2,103.20	7.29	7.32	-92.38	-79.86	-1,920.78	1,922.44	1,912.10	10.34	185.993		
2,200.00	2,200.00	2,203.20	2,203.20	7.65	7.68	-92.38	-79.86	-1,920.78	1,922.44	1,911.60	10.84	177.297		
2,300.00	2,300.00	2,303.20	2,303.20	8.01	8.04	-92.38	-79.86	-1,920.78	1,922.44	1,911.09	11.35	169.378		
2,400.00	2,400.00	2,403.20	2,403.20	8.37	8.40	-92.38	-79.86	-1,920.78	1,922.44	1,910.58	11.86	162.136		
2,500.00	2,500.00	2,503.20	2,503.20	8.73	8.76	-92.38	-79.86	-1,920.78	1,922.44	1,910.08	12.36	155.488		
2,600.00	2,600.00	2,603.20	2,603.20	9.09	9.11	-92.38	-79.86	-1,920.78	1,922.44	1,909.57	12.87	149.364		
2,700.00	2,700.00	2,703.20	2,703.20	9.45	9.47	-92.38	-79.86	-1,920.78	1,922.44	1,909.06	13.38	143.704		
2,800.00	2,800.00	2,803.20	2,803.20	9.80	9.83	-92.38	-79.86	-1,920.78	1,922.44	1,908.55	13.88	138.457		
2,900.00	2,900.00	2,903.20	2,903.20	10.16	10.19	-92.38	-79.86	-1,920.78	1,922.44	1,908.05	14.39	133.580		
3,000.00	3,000.00	3,003.20	3,003.20	10.52	10.55	-92.38	-79.86	-1,920.78	1,922.44	1,907.54	14.90	129.034		
3,070.00	3,070.00	3,073.20	3,073.20	10.77	10.80	-92.38	-79.86	-1,920.78	1,922.44	1,907.19	15.25	126.032 CC		
3,100.00	3,100.00	3,103.20	3,103.20	10.87	10.91	127.38	-79.86	-1,920.78	1,922.51	1,907.11	15.40	124.821		
3,200.00	3,199.97	3,203.17	3,203.17	11.20	11.27	127.41	-79.86	-1,920.78	1,923.78	1,907.90	15.89	121.095		
3,300.00	3,299.86	3,303.06	3,303.06	11.53	11.62	127.49	-79.86	-1,920.78	1,926.65	1,910.28	16.37	117.680		
3,400.00	3,399.59	3,402.79	3,402.79	11.86	11.98	127.61	-79.86	-1,920.78	1,931.12	1,914.26	16.86	114.552		
3,470.12	3,469.39	3,472.59	3,472.59	12.10	12.23	127.71	-79.86	-1,920.78	1,935.22	1,918.02	17.20	112.516		
3,500.00	3,499.10	3,502.30	3,502.30	12.20	12.34	127.79	-79.86	-1,920.78	1,937.14	1,919.79	17.35	111.681		
3,600.00	3,598.56	3,601.76	3,601.76	12.54	12.69	128.03	-79.86	-1,920.78	1,943.59	1,925.75	17.83	108.982		
3,700.00	3,698.01	3,701.21	3,701.21	12.88	13.05	128.27	-79.86	-1,920.78	1,950.07	1,931.74	18.32	106.417		
3,800.00	3,797.46	3,800.66	3,800.66	13.22	13.41	128.51	-79.86	-1,920.78	1,956.58	1,937.76	18.82	103.977		
3,900.00	3,896.91	3,900.11	3,900.11	13.57	13.76	128.75	-79.86	-1,920.78	1,963.13	1,943.82	19.31	101.655		
4,000.00	3,996.36	3,999.56	3,999.56	13.92	14.12	128.99	-79.86	-1,920.78	1,969.71	1,949.91	19.81	99.443		
4,100.00	4,095.82	4,099.02	4,099.02	14.27	14.48	129.22	-79.86	-1,920.78	1,976.33	1,956.03	20.30	97.334		
4,200.00	4,195.27	4,198.47	4,198.47	14.63	14.83	129.45	-79.86	-1,920.78	1,982.98	1,962.18	20.80	95.322		
4,300.00	4,294.72	4,297.92	4,297.92	14.99	15.19	129.69	-79.86	-1,920.78	1,989.66	1,968.36	21.30	93.400		
4,400.00	4,394.17	4,397.37	4,397.37	15.35	15.55	129.92	-79.86	-1,920.78	1,996.38	1,974.57	21.80	91.563		
4,500.00	4,493.62	4,496.82	4,496.82	15.71	15.90	130.14	-79.86	-1,920.78	2,003.13	1,980.82	22.31	89.805		
4,600.00	4,593.08	4,596.28	4,596.28	16.07	16.26	130.37	-79.86	-1,920.78	2,009.90	1,987.10	22.81	88.123		
4,700.00	4,692.53	4,733.48	4,733.45	16.43	16.72	130.63	-81.85	-1,919.56	2,015.82	1,992.43	23.39	86.192		
4,800.00	4,791.98	4,872.83	4,872.60	16.80	17.18	130.76	-88.17	-1,915.70	2,019.80	1,995.85	23.95	84.319		
4,900.00	4,891.43	5,012.51	5,011.70	17.17	17.64	130.78	-98.85	-1,909.18	2,021.83	1,997.31	24.52	82.466		

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



Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well Kaston Fed Com 703H
Project:	Lea County, NM (NAD83)	TVD Reference:	3057.5' GE + 30' KB @ 3087.50usft
Reference Site:	Bus Driver/Kaston Fed Com	MD Reference:	3057.5' GE + 30' KB @ 3087.50usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Kaston Fed Com 703H	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 #4	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	4,990.88	5,109.03	5,107.70	17.53	17.96	130.75	-107.45	-1,903.92	2,023.05	1,998.05	25.00	80.929		
5,100.00	5,090.33	5,209.02	5,207.14	17.90	18.29	130.73	-116.37	-1,898.47	2,024.27	1,998.78	25.49	79.421		
5,200.00	5,189.79	5,309.01	5,306.58	18.28	18.63	130.70	-125.30	-1,893.01	2,025.48	1,999.50	25.98	77.964		
5,300.00	5,289.24	5,408.99	5,406.02	18.65	18.96	130.68	-134.22	-1,887.56	2,026.70	2,000.22	26.47	76.554		
5,400.00	5,388.69	5,508.98	5,505.46	19.02	19.30	130.65	-143.15	-1,882.10	2,027.92	2,000.95	26.97	75.190		
5,500.00	5,488.14	5,608.97	5,604.90	19.39	19.65	130.62	-152.07	-1,876.65	2,029.13	2,001.66	27.47	73.870		
5,600.00	5,587.59	5,708.96	5,704.34	19.77	19.99	130.60	-161.00	-1,871.19	2,030.35	2,002.38	27.97	72.593		
5,700.00	5,687.05	5,808.95	5,803.78	20.14	20.34	130.57	-169.92	-1,865.74	2,031.57	2,003.10	28.47	71.355		
5,800.00	5,786.50	5,908.94	5,903.22	20.52	20.69	130.55	-178.85	-1,860.29	2,032.79	2,003.81	28.97	70.157		
5,900.00	5,885.95	6,008.92	6,002.66	20.90	21.04	130.52	-187.77	-1,854.83	2,034.01	2,004.53	29.48	68.995		
6,000.00	5,985.40	6,108.91	6,102.10	21.28	21.39	130.50	-196.70	-1,849.38	2,035.23	2,005.24	29.99	67.870		
6,100.00	6,084.85	6,208.90	6,201.54	21.66	21.74	130.47	-205.62	-1,843.92	2,036.45	2,005.95	30.50	66.778		
6,200.00	6,184.31	6,308.89	6,300.98	22.04	22.10	130.45	-214.55	-1,838.47	2,037.67	2,006.66	31.01	65.720		
6,300.00	6,283.76	6,408.88	6,400.42	22.42	22.45	130.42	-223.47	-1,833.01	2,038.89	2,007.37	31.52	64.693		
6,400.00	6,383.21	6,508.87	6,499.86	22.80	22.81	130.39	-232.40	-1,827.56	2,040.11	2,008.08	32.03	63.696		
6,500.00	6,482.66	6,608.86	6,599.30	23.18	23.17	130.37	-241.33	-1,822.11	2,041.33	2,008.79	32.54	62.729		
6,600.00	6,582.11	6,708.84	6,698.74	23.56	23.53	130.34	-250.25	-1,816.65	2,042.55	2,009.50	33.06	61.789		
6,700.00	6,681.56	6,808.83	6,798.18	23.94	23.89	130.32	-259.18	-1,811.20	2,043.78	2,010.20	33.57	60.876		
6,800.00	6,781.02	6,908.82	6,897.62	24.32	24.26	130.29	-268.10	-1,805.74	2,045.00	2,010.91	34.09	59.989		
6,900.00	6,880.47	7,008.81	7,007.06	24.71	24.62	130.27	-277.03	-1,800.29	2,046.22	2,011.61	34.61	59.127		
6,920.25	6,900.61	7,029.06	7,017.19	24.78	24.69	130.26	-278.83	-1,799.18	2,046.47	2,011.76	34.71	58.955		
7,000.00	6,980.00	7,108.79	7,096.49	25.09	24.98	130.23	-285.95	-1,794.83	2,046.91	2,011.78	35.12	58.275		
7,100.00	7,079.75	7,208.72	7,195.87	25.46	25.35	130.12	-294.87	-1,789.38	2,045.94	2,010.30	35.64	57.408		
7,200.00	7,179.65	7,308.54	7,295.14	25.82	25.72	129.94	-303.78	-1,783.94	2,043.30	2,007.15	36.15	56.524		
7,300.00	7,279.63	7,400.00	7,386.10	26.17	26.05	129.70	-311.92	-1,778.97	2,039.03	2,002.39	36.64	55.655		
7,320.37	7,300.00	7,418.80	7,404.82	26.24	26.12	-90.11	-313.49	-1,778.00	2,038.02	2,001.29	36.74	55.479		
7,400.00	7,379.63	7,480.90	7,466.68	26.50	26.35	-90.24	-318.13	-1,775.17	2,034.40	1,997.31	37.09	54.850		
7,500.00	7,479.63	7,559.11	7,544.70	26.84	26.63	-90.37	-322.75	-1,772.35	2,030.81	1,993.28	37.53	54.110		
7,600.00	7,579.63	7,637.52	7,623.01	27.18	26.90	-90.47	-326.01	-1,770.36	2,028.30	1,990.33	37.97	53.422		
7,700.00	7,679.63	7,716.04	7,701.50	27.51	27.18	-90.52	-327.90	-1,769.20	2,026.85	1,988.45	38.40	52.783		
7,800.00	7,779.63	7,797.37	7,782.83	27.85	27.46	-90.53	-328.42	-1,768.88	2,026.45	1,987.61	38.83	52.182		
7,900.00	7,879.63	7,897.37	7,882.83	28.19	27.81	-90.53	-328.42	-1,768.88	2,026.45	1,987.13	39.32	51.536		
8,000.00	7,979.63	7,997.37	7,982.83	28.53	28.16	-90.53	-328.42	-1,768.88	2,026.45	1,986.64	39.81	50.905		
8,100.00	8,079.63	8,097.37	8,082.83	28.87	28.50	-90.53	-328.42	-1,768.88	2,026.45	1,986.15	40.30	50.288		
8,200.00	8,179.63	8,197.37	8,182.83	29.21	28.85	-90.53	-328.42	-1,768.88	2,026.45	1,985.66	40.79	49.686		
8,300.00	8,279.63	8,297.37	8,282.83	29.55	29.20	-90.53	-328.42	-1,768.88	2,026.45	1,985.17	41.27	49.098		
8,400.00	8,379.63	8,397.37	8,382.83	29.89	29.55	-90.53	-328.42	-1,768.88	2,026.45	1,984.68	41.76	48.522		
8,500.00	8,479.63	8,497.37	8,482.83	30.23	29.90	-90.53	-328.42	-1,768.88	2,026.45	1,984.20	42.25	47.960		
8,600.00	8,579.63	8,597.37	8,582.83	30.57	30.25	-90.53	-328.42	-1,768.88	2,026.45	1,983.71	42.74	47.410		
8,700.00	8,679.63	8,697.37	8,682.83	30.91	30.60	-90.53	-328.42	-1,768.88	2,026.45	1,983.21	43.23	46.872		
8,800.00	8,779.63	8,797.37	8,782.83	31.25	30.95	-90.53	-328.42	-1,768.88	2,026.45	1,982.72	43.72	46.346		
8,900.00	8,879.63	8,897.37	8,882.83	31.60	31.30	-90.53	-328.42	-1,768.88	2,026.45	1,982.23	44.22	45.831		
9,000.00	8,979.63	8,997.37	8,982.83	31.94	31.65	-90.53	-328.42	-1,768.88	2,026.45	1,981.74	44.71	45.327		
9,100.00	9,079.63	9,097.37	9,082.83	32.28	32.00	-90.53	-328.42	-1,768.88	2,026.45	1,981.25	45.20	44.834		
9,200.00	9,179.63	9,197.37	9,182.83	32.63	32.35	-90.53	-328.42	-1,768.88	2,026.45	1,980.76	45.69	44.351		
9,300.00	9,279.63	9,297.37	9,282.83	32.97	32.70	-90.53	-328.42	-1,768.88	2,026.45	1,980.26	46.18	43.878		
9,400.00	9,379.63	9,397.37	9,382.83	33.31	33.05	-90.53	-328.42	-1,768.88	2,026.45	1,979.77	46.68	43.415		
9,500.00	9,479.63	9,497.37	9,482.83	33.66	33.40	-90.53	-328.42	-1,768.88	2,026.45	1,979.28	47.17	42.961		
9,600.00	9,579.63	9,597.37	9,582.83	34.00	33.75	-90.53	-328.42	-1,768.88	2,026.45	1,978.78	47.66	42.516		
9,700.00	9,679.63	9,697.37	9,682.83	34.35	34.10	-90.53	-328.42	-1,768.88	2,026.45	1,978.29	48.16	42.080		
9,800.00	9,779.63	9,797.37	9,782.83	34.69	34.45	-90.53	-328.42	-1,768.88	2,026.45	1,977.80	48.65	41.653		
9,900.00	9,879.63	9,897.37	9,882.83	35.04	34.80	-90.53	-328.42	-1,768.88	2,026.45	1,977.30	49.15	41.234		

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 Kaston Fed Com 703H
Project:	Lea County, NM (NAD83)	TVD Reference:	3057.5' GE + 30' KB @ 3087.50usft
Reference Site:	Bus Driver/Kaston Fed Com	MD Reference:	3057.5' GE + 30' KB @ 3087.50usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Kaston Fed Com 703H	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 #4	Offset TVD Reference:	Offset Datum

Offset Design													Judge Baylor Fed Com - Judge Baylor Fed Com 701H - OH - Plan #3		Offset Site Error: 0.00 usft	
Survey Program: 0-OWSG (Rev2) MWD													Offset Well Error: 0.00 usft			
Reference		Offset		Semi Major Axis			Distance									
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning			
10,000.00	9,979.63	9,997.37	9,982.83	35.39	35.15	-90.53	-328.42	-1,768.88	2,026.45	1,976.81	49.64	40.823				
10,100.00	10,079.63	10,097.37	10,082.83	35.73	35.51	-90.53	-328.42	-1,768.88	2,026.45	1,976.31	50.13	40.420				
10,200.00	10,179.63	10,197.37	10,182.83	36.08	35.86	-90.53	-328.42	-1,768.88	2,026.45	1,975.82	50.63	40.025				
10,300.00	10,279.63	10,297.37	10,282.83	36.42	36.21	-90.53	-328.42	-1,768.88	2,026.45	1,975.32	51.12	39.637				
10,400.00	10,379.63	10,397.37	10,382.83	36.77	36.56	-90.53	-328.42	-1,768.88	2,026.45	1,974.83	51.62	39.257				
10,500.00	10,479.63	10,497.37	10,482.83	37.12	36.91	-90.53	-328.42	-1,768.88	2,026.45	1,974.33	52.12	38.883				
10,600.00	10,579.63	10,597.37	10,582.83	37.47	37.27	-90.53	-328.42	-1,768.88	2,026.45	1,973.84	52.61	38.517				
10,700.00	10,679.63	10,697.37	10,682.83	37.81	37.62	-90.53	-328.42	-1,768.88	2,026.45	1,973.34	53.11	38.157				
10,800.00	10,779.63	10,797.37	10,782.83	38.16	37.97	-90.53	-328.42	-1,768.88	2,026.45	1,972.84	53.60	37.804				
10,900.00	10,879.63	10,897.37	10,882.83	38.51	38.32	-90.53	-328.42	-1,768.88	2,026.45	1,972.35	54.10	37.457				
11,000.00	10,979.63	10,997.37	10,982.83	38.86	38.68	-90.53	-328.42	-1,768.88	2,026.45	1,971.85	54.60	37.116				
11,100.00	11,079.63	11,097.37	11,082.83	39.21	39.03	-90.53	-328.42	-1,768.88	2,026.45	1,971.35	55.09	36.781				
11,200.00	11,179.63	11,197.37	11,182.83	39.55	39.38	-90.53	-328.42	-1,768.88	2,026.45	1,970.86	55.59	36.452				
11,300.00	11,279.63	11,297.37	11,282.83	39.90	39.74	-90.53	-328.42	-1,768.88	2,026.45	1,970.36	56.09	36.129				
11,400.00	11,379.63	11,397.37	11,382.83	40.25	40.09	-90.53	-328.42	-1,768.88	2,026.45	1,969.86	56.59	35.812				
11,500.00	11,479.63	11,497.37	11,482.83	40.60	40.44	-90.53	-328.42	-1,768.88	2,026.45	1,969.36	57.08	35.500				
11,600.00	11,579.63	11,597.37	11,582.83	40.95	40.80	-90.53	-328.42	-1,768.88	2,026.45	1,968.87	57.58	35.193				
11,620.37	11,600.00	11,617.75	11,603.20	41.02	40.87	-90.53	-328.42	-1,768.88	2,026.45	1,968.77	57.68	35.131				
11,650.00	11,629.61	11,647.36	11,632.81	41.12	40.97	89.99	-328.42	-1,768.88	2,026.45	1,968.62	57.83	35.042				
11,655.72	11,635.33	11,653.07	11,638.53	41.14	40.99	90.00	-328.42	-1,768.88	2,026.45	1,968.59	57.86	35.024				
11,700.00	11,679.37	11,697.25	11,682.70	41.30	41.15	90.12	-328.73	-1,768.88	2,026.45	1,968.37	58.08	34.892				
11,750.00	11,728.52	11,747.54	11,732.83	41.48	41.32	90.27	-332.57	-1,768.84	2,026.47	1,968.14	58.33	34.742				
11,800.00	11,776.70	11,798.32	11,782.90	41.67	41.50	90.41	-340.89	-1,768.77	2,026.50	1,967.91	58.59	34.588				
11,850.00	11,823.53	11,849.58	11,832.50	41.86	41.69	90.56	-353.76	-1,768.66	2,026.55	1,967.69	58.86	34.431				
11,900.00	11,868.66	11,901.33	11,881.21	42.05	41.87	90.70	-371.19	-1,768.51	2,026.60	1,967.47	59.13	34.271				
11,950.00	11,911.74	11,953.56	11,928.58	42.25	42.07	90.84	-393.16	-1,768.32	2,026.67	1,967.25	59.42	34.109				
12,000.00	11,952.45	12,006.28	11,974.15	42.45	42.27	90.97	-419.62	-1,768.09	2,026.75	1,967.04	59.71	33.944				
12,050.00	11,990.48	12,059.46	12,017.47	42.66	42.47	91.09	-450.44	-1,767.82	2,026.83	1,966.82	60.01	33.775				
12,100.00	12,025.54	12,113.10	12,058.07	42.88	42.69	91.21	-485.46	-1,767.52	2,026.92	1,966.60	60.32	33.604				
12,150.00	12,057.36	12,167.16	12,095.51	43.10	42.90	91.31	-524.43	-1,767.18	2,027.00	1,966.37	60.63	33.430				
12,200.00	12,085.70	12,221.62	12,129.33	43.32	43.13	91.41	-567.09	-1,766.81	2,027.09	1,966.12	60.96	33.251				
12,250.00	12,110.34	12,276.44	12,159.14	43.56	43.37	91.49	-613.07	-1,766.41	2,027.17	1,965.87	61.30	33.070				
12,300.00	12,131.10	12,331.58	12,184.55	43.80	43.61	91.56	-661.98	-1,765.98	2,027.24	1,965.59	61.65	32.885				
12,350.00	12,147.81	12,386.99	12,205.24	44.05	43.86	91.62	-713.36	-1,765.54	2,027.30	1,965.30	62.00	32.696				
12,400.00	12,160.36	12,442.62	12,220.91	44.30	44.12	91.67	-766.71	-1,765.07	2,027.35	1,964.98	62.37	32.506				
12,450.00	12,168.64	12,498.41	12,231.36	44.55	44.39	91.70	-821.49	-1,764.60	2,027.39	1,964.65	62.74	32.314				
12,500.00	12,172.60	12,554.31	12,236.45	44.81	44.66	91.72	-877.13	-1,764.12	2,027.41	1,964.30	63.12	32.122				
12,512.84	12,172.91	12,568.67	12,236.87	44.88	44.73	91.72	-891.48	-1,763.99	2,027.42	1,964.20	63.21	32.073				
12,600.00	12,174.05	12,656.22	12,237.83	45.35	45.17	91.71	-979.02	-1,763.23	2,027.42	1,963.56	63.86	31.746				
12,700.00	12,175.37	12,756.22	12,238.91	45.95	45.73	91.71	-1,079.01	-1,762.36	2,027.42	1,962.75	64.68	31.347				
12,800.00	12,176.68	12,856.22	12,239.99	46.59	46.34	91.70	-1,179.00	-1,761.49	2,027.43	1,961.86	65.56	30.923				
12,900.00	12,178.00	12,956.22	12,241.08	47.28	47.00	91.69	-1,278.99	-1,760.63	2,027.43	1,960.91	66.52	30.479				
13,000.00	12,179.31	13,056.22	12,242.16	48.02	47.70	91.69	-1,378.98	-1,759.76	2,027.43	1,959.89	67.54	30.017				
13,100.00	12,180.63	13,156.22	12,243.24	48.81	48.45	91.68	-1,478.97	-1,758.89	2,027.44	1,958.81	68.63	29.541				
13,200.00	12,181.94	13,256.22	12,244.32	49.63	49.25	91.67	-1,578.96	-1,758.02	2,027.44	1,957.66	69.78	29.055				
13,300.00	12,183.25	13,356.22	12,245.40	50.50	50.09	91.67	-1,678.95	-1,757.15	2,027.44	1,956.46	70.99	28.561				
13,400.00	12,184.57	13,456.22	12,246.48	51.40	50.96	91.66	-1,778.94	-1,756.28	2,027.45	1,955.20	72.25	28.062				
13,500.00	12,185.88	13,556.22	12,247.56	52.35	51.88	91.65	-1,878.93	-1,755.42	2,027.45	1,953.89	73.56	27.560				
13,600.00	12,187.20	13,656.22	12,248.65	53.32	52.83	91.65	-1,978.92	-1,754.55	2,027.45	1,952.53	74.93	27.058				
13,700.00	12,188.51	13,756.22	12,249.73	54.33	53.82	91.64	-2,078.91	-1,753.68	2,027.46	1,951.12	76.34	26.558				
13,800.00	12,189.83	13,856.22	12,250.81	55.37	54.83	91.63	-2,178.90	-1,752.81	2,027.46	1,949.66	77.80	26.061				
13,900.00	12,191.14	13,956.22	12,251.89	56.44	55.88	91.63	-2,278.89	-1,751.94	2,027.47	1,948.17	79.30	25.568				

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 Kaston Fed Com 703H
Project:	Lea County, NM (NAD83)	TVD Reference:	3057.5' GE + 30' KB @ 3087.50usft
Reference Site:	Bus Driver/Kaston Fed Com	MD Reference:	3057.5' GE + 30' KB @ 3087.50usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Kaston Fed Com 703H	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 #4	Offset TVD Reference:	Offset Datum

Offset Design													Judge Baylor Fed Com - Judge Baylor Fed Com 701H - OH - Plan #3		Offset Site Error: 0.00 usft	
Survey Program: 0-OWSG (Rev2) MWD													Offset Well Error: 0.00 usft			
Reference		Offset		Semi Major Axis			Distance						Warning			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor				
14,000.00	12,192.46	14,056.22	12,252.97	57.54	56.96	91.62	-2,378.88	-1,751.07	2,027.47	1,946.63	80.84	25.082				
14,100.00	12,193.77	14,156.21	12,254.05	58.66	58.06	91.61	-2,478.87	-1,750.21	2,027.47	1,945.06	82.41	24.602				
14,200.00	12,195.08	14,256.21	12,255.13	59.81	59.19	91.61	-2,578.86	-1,749.34	2,027.48	1,943.45	84.02	24.130				
14,300.00	12,196.40	14,356.21	12,256.22	60.98	60.34	91.60	-2,678.85	-1,748.47	2,027.48	1,941.81	85.67	23.667				
14,400.00	12,197.71	14,456.21	12,257.30	62.17	61.52	91.59	-2,778.84	-1,747.60	2,027.48	1,940.14	87.34	23.213				
14,500.00	12,199.03	14,556.21	12,258.38	63.38	62.71	91.59	-2,878.83	-1,746.73	2,027.49	1,938.44	89.05	22.768				
14,600.00	12,200.34	14,656.21	12,259.46	64.61	63.93	91.58	-2,978.82	-1,745.87	2,027.49	1,936.71	90.78	22.333				
14,700.00	12,201.66	14,756.21	12,260.54	65.86	65.17	91.57	-3,078.81	-1,745.00	2,027.50	1,934.95	92.54	21.908				
14,800.00	12,202.97	14,856.21	12,261.62	67.13	66.42	91.57	-3,178.80	-1,744.13	2,027.50	1,933.17	94.33	21.494				
14,900.00	12,204.29	14,956.21	12,262.70	68.42	67.70	91.56	-3,278.79	-1,743.26	2,027.50	1,931.36	96.14	21.089				
15,000.00	12,205.60	15,056.21	12,263.79	69.72	68.98	91.55	-3,378.79	-1,742.39	2,027.51	1,929.54	97.97	20.695				
15,100.00	12,206.91	15,156.21	12,264.87	71.03	70.29	91.55	-3,478.78	-1,741.52	2,027.51	1,927.69	99.82	20.311				
15,200.00	12,208.23	15,256.21	12,265.95	72.36	71.60	91.54	-3,578.77	-1,740.66	2,027.52	1,925.82	101.70	19.937				
15,300.00	12,209.54	15,356.21	12,267.03	73.70	72.94	91.53	-3,678.76	-1,739.79	2,027.52	1,923.93	103.59	19.573				
15,400.00	12,210.86	15,456.21	12,268.11	75.06	74.28	91.53	-3,778.75	-1,738.92	2,027.52	1,922.03	105.50	19.219				
15,500.00	12,212.17	15,556.21	12,269.19	76.42	75.64	91.52	-3,878.74	-1,738.05	2,027.53	1,920.10	107.42	18.874				
15,600.00	12,213.49	15,656.21	12,270.27	77.80	77.00	91.51	-3,978.73	-1,737.18	2,027.53	1,918.17	109.37	18.539				
15,700.00	12,214.80	15,756.21	12,271.35	79.19	78.38	91.51	-4,078.72	-1,736.31	2,027.54	1,916.21	111.32	18.213				
15,800.00	12,216.12	15,856.21	12,272.44	80.58	79.77	91.50	-4,178.71	-1,735.45	2,027.54	1,914.25	113.29	17.896				
15,900.00	12,217.43	15,956.21	12,273.52	81.99	81.17	91.49	-4,278.70	-1,734.58	2,027.54	1,912.27	115.28	17.588				
16,000.00	12,218.74	16,056.21	12,274.60	83.41	82.58	91.49	-4,378.69	-1,733.71	2,027.55	1,910.27	117.28	17.288				
16,100.00	12,220.06	16,156.21	12,275.68	84.83	84.00	91.48	-4,478.68	-1,732.84	2,027.55	1,908.27	119.29	16.997				
16,200.00	12,221.37	16,256.21	12,276.76	86.26	85.42	91.48	-4,578.67	-1,731.97	2,027.56	1,906.25	121.31	16.714				
16,300.00	12,222.69	16,356.21	12,277.84	87.70	86.86	91.47	-4,678.66	-1,731.10	2,027.56	1,904.22	123.34	16.438				
16,400.00	12,224.00	16,456.21	12,278.92	89.15	88.30	91.46	-4,778.65	-1,730.24	2,027.57	1,902.18	125.39	16.170				
16,500.00	12,225.32	16,556.21	12,280.01	90.61	89.75	91.46	-4,878.64	-1,729.37	2,027.57	1,900.13	127.44	15.910				
16,600.00	12,226.63	16,656.21	12,281.09	92.07	91.20	91.45	-4,978.63	-1,728.50	2,027.58	1,898.07	129.51	15.656				
16,700.00	12,227.94	16,756.21	12,282.17	93.53	92.67	91.44	-5,078.62	-1,727.63	2,027.58	1,896.00	131.58	15.410				
16,800.00	12,229.26	16,856.21	12,283.25	95.01	94.13	91.44	-5,178.61	-1,726.76	2,027.58	1,893.92	133.66	15.170				
16,900.00	12,230.57	16,956.21	12,284.33	96.49	95.61	91.43	-5,278.60	-1,725.90	2,027.59	1,891.84	135.75	14.936				
17,000.00	12,231.89	17,056.21	12,285.41	97.97	97.09	91.42	-5,378.59	-1,725.03	2,027.59	1,889.75	137.85	14.709				
17,100.00	12,233.20	17,156.21	12,286.49	99.46	98.57	91.42	-5,478.58	-1,724.16	2,027.60	1,887.65	139.95	14.488				
17,200.00	12,234.52	17,256.21	12,287.58	100.96	100.07	91.41	-5,578.57	-1,723.29	2,027.60	1,885.54	142.06	14.272				
17,300.00	12,235.83	17,356.21	12,288.66	102.46	101.56	91.40	-5,678.56	-1,722.42	2,027.61	1,883.42	144.18	14.063				
17,400.00	12,237.15	17,456.21	12,289.74	103.96	103.06	91.40	-5,778.55	-1,721.55	2,027.61	1,881.30	146.31	13.858				
17,500.00	12,238.46	17,556.21	12,290.82	105.47	104.57	91.39	-5,878.54	-1,720.69	2,027.62	1,879.17	148.44	13.659				
17,600.00	12,239.77	17,656.21	12,291.90	106.99	106.08	91.38	-5,978.53	-1,719.82	2,027.62	1,877.04	150.58	13.465				
17,700.00	12,241.09	17,756.21	12,292.98	108.50	107.59	91.38	-6,078.52	-1,718.95	2,027.63	1,874.90	152.73	13.276				
17,800.00	12,242.40	17,856.21	12,294.06	110.03	109.11	91.37	-6,178.51	-1,718.08	2,027.63	1,872.76	154.87	13.092				
17,900.00	12,243.72	17,956.20	12,295.15	111.55	110.63	91.36	-6,278.50	-1,717.21	2,027.63	1,870.60	157.03	12.912				
18,000.00	12,245.03	18,056.20	12,296.23	113.08	112.16	91.36	-6,378.49	-1,716.34	2,027.64	1,868.45	159.19	12.737				
18,100.00	12,246.35	18,156.20	12,297.31	114.61	113.69	91.35	-6,478.48	-1,715.48	2,027.64	1,866.29	161.36	12.566				
18,200.00	12,247.66	18,256.20	12,298.39	116.15	115.22	91.34	-6,578.47	-1,714.61	2,027.65	1,864.12	163.53	12.400				
18,300.00	12,248.98	18,356.20	12,299.47	117.69	116.75	91.34	-6,678.46	-1,713.74	2,027.65	1,861.95	165.70	12.237				
18,400.00	12,250.29	18,456.20	12,300.55	119.23	118.29	91.33	-6,778.45	-1,712.87	2,027.66	1,859.78	167.88	12.078				
18,500.00	12,251.60	18,556.20	12,301.63	120.77	119.84	91.32	-6,878.44	-1,712.00	2,027.66	1,857.60	170.06	11.923				
18,600.00	12,252.92	18,656.20	12,302.72	122.32	121.38	91.32	-6,978.43	-1,711.13	2,027.67	1,855.42	172.25	11.772				
18,700.00	12,254.23	18,756.20	12,303.80	123.87	122.93	91.31	-7,078.42	-1,710.27	2,027.67	1,853.23	174.44	11.624				
18,800.00	12,255.55	18,856.20	12,304.88	125.42	124.48	91.30	-7,178.41	-1,709.40	2,027.68	1,851.04	176.63	11.480				
18,900.00	12,256.86	18,956.20	12,305.96	126.98	126.03	91.30	-7,278.40	-1,708.53	2,027.68	1,848.85	178.83	11.338				
19,000.00	12,258.18	19,056.20	12,307.04	128.53	127.59	91.29	-7,378.39	-1,707.66	2,027.69	1,846.65	181.03	11.201				
19,100.00	12,259.49	19,156.20	12,308.12	130.09	129.14	91.28	-7,478.38	-1,706.79	2,027.69	1,844.45	183.24	11.066				

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 Kaston Fed Com 703H
Project:	Lea County, NM (NAD83)	TVD Reference:	3057.5' GE + 30' KB @ 3087.50usft
Reference Site:	Bus Driver/Kaston Fed Com	MD Reference:	3057.5' GE + 30' KB @ 3087.50usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Kaston Fed Com 703H	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 #4	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		
19,200.00	12,260.80	19,256.20	12,309.20	131.66	130.70	91.28	-7,578.37	-1,705.93	2,027.70	1,842.25	185.45	10.934			
19,300.00	12,262.12	19,356.20	12,310.29	133.22	132.27	91.27	-7,678.36	-1,705.06	2,027.70	1,840.05	187.66	10.805			
19,400.00	12,263.43	19,456.20	12,311.37	134.79	133.83	91.26	-7,778.35	-1,704.19	2,027.71	1,837.84	189.87	10.679			
19,500.00	12,264.75	19,556.20	12,312.45	136.36	135.40	91.26	-7,878.34	-1,703.32	2,027.71	1,835.62	192.09	10.556			
19,600.00	12,266.06	19,656.20	12,313.53	137.93	136.97	91.25	-7,978.33	-1,702.45	2,027.72	1,833.41	194.31	10.435			
19,700.00	12,267.38	19,756.20	12,314.61	139.50	138.54	91.24	-8,078.32	-1,701.58	2,027.72	1,831.19	196.53	10.317			
19,800.00	12,268.69	19,856.20	12,315.69	141.07	140.11	91.24	-8,178.31	-1,700.72	2,027.73	1,828.97	198.76	10.202			
19,900.00	12,270.01	19,956.20	12,316.77	142.65	141.68	91.23	-8,278.30	-1,699.85	2,027.74	1,826.75	200.99	10.089			
20,000.00	12,271.32	20,056.20	12,317.85	144.23	143.26	91.22	-8,378.29	-1,698.98	2,027.74	1,824.52	203.22	9.978			
20,100.00	12,272.63	20,156.20	12,318.94	145.81	144.84	91.22	-8,478.28	-1,698.11	2,027.75	1,822.30	205.45	9.870			
20,200.00	12,273.95	20,256.20	12,320.02	147.39	146.42	91.21	-8,578.27	-1,697.24	2,027.75	1,820.07	207.69	9.764			
20,300.00	12,275.26	20,356.20	12,321.10	148.97	148.00	91.20	-8,678.26	-1,696.37	2,027.76	1,817.83	209.92	9.660			
20,400.00	12,276.58	20,456.20	12,322.18	150.55	149.58	91.20	-8,778.25	-1,695.51	2,027.76	1,815.60	212.16	9.558			
20,500.00	12,277.89	20,556.20	12,323.26	152.14	151.16	91.19	-8,878.24	-1,694.64	2,027.77	1,813.36	214.40	9.458			
20,600.00	12,279.21	20,656.20	12,324.34	153.73	152.75	91.19	-8,978.23	-1,693.77	2,027.77	1,811.13	216.65	9.360			
20,700.00	12,280.52	20,756.20	12,325.42	155.32	154.34	91.18	-9,078.22	-1,692.90	2,027.78	1,808.89	218.89	9.264			
20,800.00	12,281.84	20,856.20	12,326.51	156.90	155.92	91.17	-9,178.21	-1,692.03	2,027.78	1,806.64	221.14	9.170			
20,900.00	12,283.15	20,956.20	12,327.59	158.50	157.51	91.17	-9,278.20	-1,691.16	2,027.79	1,804.40	223.39	9.077			
21,000.00	12,284.46	21,056.20	12,328.67	160.09	159.11	91.16	-9,378.19	-1,690.30	2,027.80	1,802.16	225.64	8.987			
21,100.00	12,285.78	21,156.20	12,329.75	161.68	160.70	91.15	-9,478.18	-1,689.43	2,027.80	1,799.91	227.89	8.898			
21,200.00	12,287.09	21,256.20	12,330.83	163.28	162.29	91.15	-9,578.17	-1,688.56	2,027.81	1,797.66	230.15	8.811			
21,300.00	12,288.41	21,356.20	12,331.91	164.87	163.89	91.14	-9,678.16	-1,687.69	2,027.81	1,795.41	232.40	8.725			
21,400.00	12,289.72	21,456.20	12,332.99	166.47	165.48	91.13	-9,778.15	-1,686.82	2,027.82	1,793.16	234.66	8.641			
21,500.00	12,291.04	21,556.20	12,334.08	168.07	167.08	91.13	-9,878.14	-1,685.95	2,027.82	1,790.90	236.92	8.559			
21,600.00	12,292.35	21,656.19	12,335.16	169.66	168.68	91.12	-9,978.13	-1,685.09	2,027.83	1,788.65	239.18	8.478			
21,700.00	12,293.66	21,756.19	12,336.24	171.26	170.27	91.11	-10,078.12	-1,684.22	2,027.83	1,786.39	241.44	8.399			
21,800.00	12,294.98	21,856.19	12,337.32	172.87	171.87	91.11	-10,178.11	-1,683.35	2,027.84	1,784.13	243.71	8.321			
21,900.00	12,296.29	21,956.19	12,338.40	174.47	173.47	91.10	-10,278.10	-1,682.48	2,027.85	1,781.88	245.97	8.244			
22,000.00	12,297.61	22,056.19	12,339.48	176.07	175.08	91.09	-10,378.09	-1,681.61	2,027.85	1,779.61	248.24	8.169			
22,100.00	12,298.92	22,156.19	12,340.56	177.67	176.68	91.09	-10,478.08	-1,680.75	2,027.86	1,777.35	250.51	8.095			
22,200.00	12,300.24	22,256.19	12,341.65	179.28	178.28	91.08	-10,578.07	-1,679.88	2,027.86	1,775.09	252.77	8.022			
22,300.00	12,301.55	22,356.19	12,342.73	180.88	179.89	91.07	-10,678.06	-1,679.01	2,027.87	1,772.83	255.04	7.951			
22,300.03	12,301.55	22,356.22	12,342.73	180.88	179.89	91.07	-10,678.09	-1,679.01	2,027.87	1,772.83	255.04	7.951			
22,400.00	12,302.87	22,424.01	12,343.46	182.49	180.98	91.07	-10,745.87	-1,678.42	2,028.13	1,771.29	256.84	7.897 ES, SF			
22,500.00	12,304.18	22,424.01	12,343.46	184.10	180.98	91.07	-10,745.87	-1,678.42	2,032.19	1,774.99	257.19	7.901			
22,600.00	12,305.49	22,424.01	12,343.46	185.71	180.98	91.07	-10,745.87	-1,678.42	2,041.14	1,784.24	256.90	7.945			
22,700.00	12,306.81	22,424.01	12,343.46	187.31	180.98	91.07	-10,745.87	-1,678.42	2,054.92	1,798.94	255.99	8.027			
22,800.00	12,308.12	22,424.01	12,343.46	188.92	180.98	91.07	-10,745.87	-1,678.42	2,073.44	1,818.96	254.48	8.148			
22,900.00	12,309.44	22,424.01	12,343.46	190.53	180.98	91.07	-10,745.87	-1,678.42	2,096.57	1,844.14	252.43	8.305			
23,000.00	12,310.75	22,424.01	12,343.46	192.14	180.98	91.07	-10,745.87	-1,678.42	2,124.17	1,874.27	249.90	8.500			
23,100.00	12,312.07	22,424.01	12,343.46	193.76	180.98	91.07	-10,745.87	-1,678.42	2,156.05	1,909.10	246.95	8.731			
23,200.00	12,313.38	22,424.01	12,343.46	195.37	180.98	91.07	-10,745.87	-1,678.42	2,192.03	1,948.40	243.64	8.997			
23,300.00	12,314.70	22,424.01	12,343.46	196.98	180.98	91.07	-10,745.87	-1,678.42	2,231.92	1,991.89	240.03	9.299			
23,400.00	12,316.01	22,424.01	12,343.46	198.59	180.98	91.07	-10,745.87	-1,678.42	2,275.51	2,039.31	236.20	9.634			
23,500.00	12,317.32	22,424.01	12,343.46	200.21	180.98	91.07	-10,745.87	-1,678.42	2,322.58	2,090.39	232.19	10.003			
23,600.00	12,318.64	22,424.01	12,343.46	201.82	180.98	91.07	-10,745.87	-1,678.42	2,372.94	2,144.87	228.07	10.404			
23,679.24	12,319.68	22,424.01	12,343.46	203.10	180.98	91.07	-10,745.87	-1,678.42	2,415.04	2,190.29	224.75	10.745			
23,679.99	12,319.69	22,424.01	12,343.46	203.12	180.98	91.07	-10,745.87	-1,678.42	2,415.45	2,190.18	225.27	10.723			

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 Kaston Fed Com 703H
Project:	Lea County, NM (NAD83)	TVD Reference:	3057.5' GE + 30' KB @ 3087.50usft
Reference Site:	Bus Driver/Kaston Fed Com	MD Reference:	3057.5' GE + 30' KB @ 3087.50usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Kaston Fed Com 703H	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 #4	Offset TVD Reference:	Offset Datum

Offset Design													LHS Wildcat Fed Com - LHS Wildcat Fed Com 604H - OH - Plan #3		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	91.00	-40.31	2,318.90	2,319.51							
100.00	100.00	65.00	65.00	0.13	0.09	91.00	-40.31	2,318.90	2,319.25	2,319.09	0.16	N/A				
200.00	200.00	165.00	165.00	0.48	0.37	91.00	-40.31	2,318.90	2,319.25	2,318.64	0.61	3,789.735				
300.00	300.00	265.00	265.00	0.84	0.73	91.00	-40.31	2,318.90	2,319.25	2,318.13	1.12	2,076.853				
400.00	400.00	365.00	365.00	1.20	1.09	91.00	-40.31	2,318.90	2,319.25	2,317.63	1.62	1,429.137				
500.00	500.00	465.00	465.00	1.56	1.45	91.00	-40.31	2,318.90	2,319.25	2,317.12	2.13	1,089.183				
600.00	600.00	565.00	565.00	1.92	1.81	91.00	-40.31	2,318.90	2,319.25	2,316.61	2.64	879.826				
700.00	700.00	665.00	665.00	2.28	2.17	91.00	-40.31	2,318.90	2,319.25	2,316.11	3.14	737.955				
800.00	800.00	765.00	765.00	2.63	2.53	91.00	-40.31	2,318.90	2,319.25	2,315.60	3.65	635.475				
900.00	900.00	865.00	865.00	2.99	2.88	91.00	-40.31	2,318.90	2,319.25	2,315.09	4.16	557.984				
1,000.00	1,000.00	965.00	965.00	3.35	3.24	91.00	-40.31	2,318.90	2,319.25	2,314.59	4.66	497.334				
1,100.00	1,100.00	1,065.00	1,065.00	3.71	3.60	91.00	-40.31	2,318.90	2,319.25	2,314.08	5.17	448.576				
1,200.00	1,200.00	1,165.00	1,165.00	4.07	3.96	91.00	-40.31	2,318.90	2,319.25	2,313.57	5.68	408.523				
1,300.00	1,300.00	1,265.00	1,265.00	4.43	4.32	91.00	-40.31	2,318.90	2,319.25	2,313.07	6.18	375.036				
1,400.00	1,400.00	1,365.00	1,365.00	4.79	4.68	91.00	-40.31	2,318.90	2,319.25	2,312.56	6.69	346.623				
1,500.00	1,500.00	1,465.00	1,465.00	5.14	5.03	91.00	-40.31	2,318.90	2,319.25	2,312.05	7.20	322.211				
1,600.00	1,600.00	1,565.00	1,565.00	5.50	5.39	91.00	-40.31	2,318.90	2,319.25	2,311.55	7.70	301.012				
1,700.00	1,700.00	1,665.00	1,665.00	5.86	5.75	91.00	-40.31	2,318.90	2,319.25	2,311.04	8.21	282.430				
1,800.00	1,800.00	1,765.00	1,765.00	6.22	6.11	91.00	-40.31	2,318.90	2,319.25	2,310.53	8.72	266.009				
1,900.00	1,900.00	1,865.00	1,865.00	6.58	6.47	91.00	-40.31	2,318.90	2,319.25	2,310.02	9.23	251.392				
2,000.00	2,000.00	1,965.00	1,965.00	6.94	6.83	91.00	-40.31	2,318.90	2,319.25	2,309.52	9.73	238.298				
2,100.00	2,100.00	2,065.00	2,065.00	7.29	7.19	91.00	-40.31	2,318.90	2,319.25	2,309.01	10.24	226.500				
2,200.00	2,200.00	2,165.00	2,165.00	7.65	7.54	91.00	-40.31	2,318.90	2,319.25	2,308.50	10.75	215.815				
2,300.00	2,300.00	2,265.00	2,265.00	8.01	7.90	91.00	-40.31	2,318.90	2,319.25	2,308.00	11.25	206.093				
2,400.00	2,400.00	2,365.00	2,365.00	8.37	8.26	91.00	-40.31	2,318.90	2,319.25	2,307.49	11.76	197.209				
2,500.00	2,500.00	2,465.00	2,465.00	8.73	8.62	91.00	-40.31	2,318.90	2,319.25	2,306.98	12.27	189.060				
2,600.00	2,600.00	2,565.00	2,565.00	9.09	8.98	91.00	-40.31	2,318.90	2,319.25	2,306.48	12.77	181.557				
2,700.00	2,700.00	2,665.00	2,665.00	9.45	9.34	91.00	-40.31	2,318.90	2,319.25	2,305.97	13.28	174.627				
2,800.00	2,800.00	2,765.00	2,765.00	9.80	9.69	91.00	-40.31	2,318.90	2,319.25	2,305.46	13.79	168.206				
2,900.00	2,900.00	2,865.00	2,865.00	10.16	10.05	91.00	-40.31	2,318.90	2,319.25	2,304.96	14.30	162.241				
3,000.00	3,000.00	2,965.00	2,965.00	10.52	10.41	91.00	-40.31	2,318.90	2,319.25	2,304.45	14.80	156.685				
3,070.00	3,070.00	3,035.00	3,035.00	10.77	10.66	91.00	-40.31	2,318.90	2,319.25	2,304.09	15.16	153.016				
3,100.00	3,100.00	3,065.00	3,065.00	10.87	10.77	-49.25	-40.31	2,318.90	2,319.17	2,303.87	15.31	151.526				
3,200.00	3,199.97	3,164.97	3,164.97	11.20	11.13	-49.31	-40.31	2,318.90	2,317.81	2,302.02	15.79	146.792				
3,300.00	3,299.86	3,264.86	3,264.86	11.53	11.49	-49.43	-40.31	2,318.90	2,314.74	2,298.46	16.27	142.227				
3,400.00	3,399.59	3,364.59	3,364.59	11.86	11.84	-49.62	-40.31	2,318.90	2,309.98	2,293.22	16.76	137.819				
3,470.12	3,469.39	3,434.39	3,434.39	12.10	12.09	-49.80	-40.31	2,318.90	2,305.64	2,288.54	17.10	134.814				
3,500.00	3,499.10	3,464.10	3,464.10	12.20	12.20	-49.86	-40.31	2,318.90	2,303.62	2,286.37	17.25	133.559				
3,600.00	3,598.56	3,563.56	3,563.56	12.54	12.56	-50.06	-40.31	2,318.90	2,296.87	2,279.13	17.74	129.499				
3,700.00	3,698.01	3,663.01	3,663.01	12.88	12.91	-50.26	-40.31	2,318.90	2,290.15	2,271.92	18.23	125.645				
3,800.00	3,797.46	3,762.46	3,762.46	13.22	13.27	-50.46	-40.31	2,318.90	2,283.45	2,264.73	18.72	121.981				
3,900.00	3,896.91	3,861.91	3,861.91	13.57	13.63	-50.66	-40.31	2,318.90	2,276.79	2,257.58	19.21	118.496				
4,000.00	3,996.36	3,961.36	3,961.36	13.92	13.98	-50.86	-40.31	2,318.90	2,270.15	2,250.44	19.71	115.178				
4,100.00	4,095.82	4,060.82	4,060.82	14.27	14.34	-51.07	-40.31	2,318.90	2,263.55	2,243.34	20.21	112.015				
4,200.00	4,195.27	4,160.27	4,160.27	14.63	14.70	-51.27	-40.31	2,318.90	2,256.97	2,236.26	20.71	108.998				
4,300.00	4,294.72	4,259.72	4,259.72	14.99	15.05	-51.48	-40.31	2,318.90	2,250.42	2,229.21	21.21	106.118				
4,400.00	4,394.17	4,359.17	4,359.17	15.35	15.41	-51.69	-40.31	2,318.90	2,243.90	2,222.19	21.71	103.366				
4,500.00	4,493.62	4,458.62	4,458.62	15.71	15.77	-51.90	-40.31	2,318.90	2,237.41	2,215.20	22.21	100.734				
4,600.00	4,593.08	4,558.08	4,558.08	16.07	16.12	-52.11	-40.31	2,318.90	2,230.95	2,208.24	22.72	98.215				
4,700.00	4,692.53	4,657.53	4,657.53	16.43	16.48	-52.32	-40.31	2,318.90	2,224.52	2,201.30	23.22	95.802				
4,800.00	4,791.98	4,756.98	4,756.98	16.80	16.84	-52.53	-40.31	2,318.90	2,218.13	2,194.40	23.73	93.489				
4,900.00	4,891.43	4,856.43	4,856.43	17.17	17.19	-52.75	-40.31	2,318.90	2,211.76	2,187.53	24.23	91.270				

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 Kaston Fed Com 703H
Project:	Lea County, NM (NAD83)	TVD Reference:	3057.5' GE + 30' KB @ 3087.50usft
Reference Site:	Bus Driver/Kaston Fed Com	MD Reference:	3057.5' GE + 30' KB @ 3087.50usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Kaston Fed Com 703H	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 #4	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	4,990.88	4,955.88	4,955.88	17.53	17.55	-52.96	-40.31	2,318.90	2,205.42	2,180.68	24.74	89.140		
5,100.00	5,090.33	5,055.33	5,055.33	17.90	17.91	-53.18	-40.31	2,318.90	2,199.12	2,173.87	25.25	87.094		
5,200.00	5,189.79	5,154.79	5,154.79	18.28	18.26	-53.40	-40.31	2,318.90	2,192.85	2,167.09	25.76	85.128		
5,300.00	5,289.24	5,254.24	5,254.24	18.65	18.62	-53.62	-40.31	2,318.90	2,186.61	2,160.34	26.27	83.236		
5,400.00	5,388.69	5,353.69	5,353.69	19.02	18.97	-53.84	-40.31	2,318.90	2,180.40	2,153.62	26.78	81.416		
5,500.00	5,488.14	5,453.14	5,453.14	19.39	19.33	-54.06	-40.31	2,318.90	2,174.22	2,146.93	27.29	79.662		
5,600.00	5,587.59	5,578.26	5,578.25	19.77	19.77	-54.32	-40.99	2,318.48	2,167.77	2,139.91	27.86	77.820		
5,700.00	5,687.05	5,726.30	5,726.17	20.14	20.25	-54.53	-46.03	2,315.41	2,159.36	2,130.92	28.44	75.926		
5,800.00	5,786.50	5,874.06	5,873.46	20.52	20.73	-54.61	-55.93	2,309.36	2,148.72	2,119.71	29.01	74.069		
5,900.00	5,885.95	6,003.41	6,001.98	20.90	21.16	-54.59	-68.43	2,301.72	2,136.01	2,106.46	29.54	72.302		
6,000.00	5,985.40	6,102.53	6,100.36	21.28	21.49	-54.55	-78.74	2,295.43	2,122.86	2,092.82	30.03	70.684		
6,100.00	6,084.85	6,201.66	6,198.75	21.66	21.82	-54.51	-89.04	2,289.13	2,109.71	2,079.18	30.53	69.112		
6,200.00	6,184.31	6,300.78	6,297.13	22.04	22.15	-54.47	-99.35	2,282.84	2,096.56	2,065.54	31.02	67.587		
6,300.00	6,283.76	6,399.90	6,395.51	22.42	22.49	-54.43	-109.66	2,276.54	2,083.42	2,051.90	31.52	66.105		
6,400.00	6,383.21	6,499.02	6,493.90	22.80	22.83	-54.39	-119.97	2,270.24	2,070.27	2,038.26	32.02	64.666		
6,500.00	6,482.66	6,598.14	6,592.28	23.18	23.17	-54.35	-130.27	2,263.95	2,057.13	2,024.62	32.51	63.267		
6,600.00	6,582.11	6,697.27	6,690.66	23.56	23.51	-54.31	-140.58	2,257.65	2,043.99	2,010.97	33.02	61.908		
6,700.00	6,681.56	6,796.39	6,789.04	23.94	23.85	-54.27	-150.89	2,251.35	2,030.85	1,997.33	33.52	60.587		
6,800.00	6,781.02	6,895.51	6,887.43	24.32	24.20	-54.23	-161.20	2,245.06	2,017.71	1,983.68	34.02	59.302		
6,900.00	6,880.47	6,994.63	6,985.81	24.71	24.55	-54.19	-171.51	2,238.76	2,004.57	1,970.04	34.53	58.052		
6,920.25	6,900.61	7,014.71	7,005.74	24.78	24.62	-54.18	-173.59	2,237.49	2,001.91	1,967.27	34.63	57.803		
7,000.00	6,980.00	7,093.80	7,084.24	25.09	24.90	-54.00	-181.82	2,232.46	1,991.91	1,956.88	35.04	56.853		
7,100.00	7,079.75	7,193.08	7,182.78	25.46	25.25	-53.74	-192.14	2,226.16	1,980.76	1,945.22	35.54	55.736		
7,200.00	7,179.65	7,292.41	7,281.37	25.82	25.61	-53.44	-202.47	2,219.85	1,971.17	1,935.13	36.04	54.699		
7,300.00	7,279.63	7,391.72	7,379.94	26.17	25.96	-53.09	-212.80	2,213.54	1,963.15	1,926.62	36.53	53.740		
7,320.37	7,300.00	7,411.94	7,400.01	26.24	26.03	87.23	-214.90	2,212.25	1,961.72	1,925.09	36.63	53.555		
7,400.00	7,379.63	7,490.98	7,478.46	26.50	26.32	87.46	-223.12	2,207.23	1,956.25	1,919.23	37.02	52.848		
7,500.00	7,479.63	7,590.23	7,576.97	26.84	26.68	87.76	-233.44	2,200.93	1,949.44	1,911.93	37.50	51.979		
7,600.00	7,579.63	7,689.49	7,675.49	27.18	27.04	88.06	-243.76	2,194.63	1,942.67	1,904.68	37.99	51.133		
7,700.00	7,679.63	7,788.74	7,774.00	27.51	27.40	88.36	-254.09	2,188.32	1,935.96	1,897.48	38.48	50.307		
7,800.00	7,779.63	7,888.00	7,872.52	27.85	27.76	88.66	-264.41	2,182.02	1,929.31	1,890.33	38.97	49.502		
7,900.00	7,879.63	7,972.29	7,956.23	28.19	28.07	88.90	-272.84	2,176.87	1,922.98	1,883.53	39.44	48.751		
8,000.00	7,979.63	8,050.64	8,034.20	28.53	28.35	89.10	-279.34	2,172.89	1,917.74	1,877.84	39.90	48.060		
8,100.00	8,079.63	8,129.26	8,112.59	28.87	28.63	89.25	-284.50	2,169.74	1,913.63	1,873.28	40.36	47.417		
8,200.00	8,179.63	8,200.00	8,183.22	29.21	28.88	89.35	-287.96	2,167.63	1,910.66	1,869.87	40.79	46.840		
8,300.00	8,279.63	8,287.09	8,270.24	29.55	29.19	89.43	-290.69	2,165.96	1,908.74	1,867.49	41.25	46.271		
8,400.00	8,379.63	8,366.16	8,349.30	29.89	29.46	89.46	-291.71	2,165.34	1,907.95	1,866.26	41.69	45.761		
8,442.94	8,422.57	8,404.42	8,387.57	30.03	29.59	89.47	-291.74	2,165.32	1,907.92	1,866.03	41.89	45.543		
8,500.00	8,479.63	8,461.48	8,444.63	30.23	29.79	89.47	-291.74	2,165.32	1,907.92	1,865.75	42.17	45.241		
8,600.00	8,579.63	8,561.48	8,544.63	30.57	30.14	89.47	-291.74	2,165.32	1,907.92	1,865.26	42.66	44.721		
8,700.00	8,679.63	8,661.48	8,644.63	30.91	30.49	89.47	-291.74	2,165.32	1,907.92	1,864.77	43.15	44.212		
8,800.00	8,779.63	8,761.48	8,744.63	31.25	30.84	89.47	-291.74	2,165.32	1,907.92	1,864.28	43.65	43.714		
8,900.00	8,879.63	8,861.48	8,844.63	31.60	31.19	89.47	-291.74	2,165.32	1,907.92	1,863.79	44.14	43.227		
9,000.00	8,979.63	8,961.48	8,944.63	31.94	31.54	89.47	-291.74	2,165.32	1,907.92	1,863.29	44.63	42.750		
9,100.00	9,079.63	9,061.48	9,044.63	32.28	31.89	89.47	-291.74	2,165.32	1,907.92	1,862.80	45.12	42.284		
9,200.00	9,179.63	9,161.48	9,144.63	32.63	32.25	89.47	-291.74	2,165.32	1,907.92	1,862.31	45.61	41.827		
9,300.00	9,279.63	9,261.48	9,244.63	32.97	32.60	89.47	-291.74	2,165.32	1,907.92	1,861.82	46.11	41.380		
9,400.00	9,379.63	9,361.48	9,344.63	33.31	32.95	89.47	-291.74	2,165.32	1,907.92	1,861.32	46.60	40.942		
9,500.00	9,479.63	9,461.48	9,444.63	33.66	33.30	89.47	-291.74	2,165.32	1,907.92	1,860.83	47.09	40.513		
9,600.00	9,579.63	9,561.48	9,544.63	34.00	33.65	89.47	-291.74	2,165.32	1,907.92	1,860.33	47.59	40.092		
9,700.00	9,679.63	9,661.48	9,644.63	34.35	34.00	89.47	-291.74	2,165.32	1,907.92	1,859.84	48.08	39.680		
9,800.00	9,779.63	9,761.48	9,744.63	34.69	34.35	89.47	-291.74	2,165.32	1,907.92	1,859.35	48.58	39.276		

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 Kaston Fed Com 703H
Project:	Lea County, NM (NAD83)	TVD Reference:	3057.5' GE + 30' KB @ 3087.50usft
Reference Site:	Bus Driver/Kaston Fed Com	MD Reference:	3057.5' GE + 30' KB @ 3087.50usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Kaston Fed Com 703H	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 #4	Offset TVD Reference:	Offset Datum

Offset Design													LHS Wildcat Fed Com - LHS Wildcat Fed Com 604H - OH - Plan #3		Offset Site Error:	0.00 usft
Survey Program: 0-OWSG (Rev2) MWD													Offset Well Error:	0.00 usft		
Reference		Offset		Semi Major Axis			Distance							Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor				
9,900.00	9,879.63	9,861.48	9,844.63	35.04	34.71	89.47	-291.74	2,165.32	1,907.92	1,858.85	49.07	38.880				
10,000.00	9,979.63	9,961.48	9,944.63	35.39	35.06	89.47	-291.74	2,165.32	1,907.92	1,858.36	49.57	38.492				
10,100.00	10,079.63	10,061.48	10,044.63	35.73	35.41	89.47	-291.74	2,165.32	1,907.92	1,857.86	50.06	38.111				
10,200.00	10,179.63	10,161.48	10,144.63	36.08	35.76	89.47	-291.74	2,165.32	1,907.92	1,857.37	50.56	37.738				
10,300.00	10,279.63	10,261.48	10,244.63	36.42	36.11	89.47	-291.74	2,165.32	1,907.92	1,856.87	51.05	37.372				
10,400.00	10,379.63	10,361.48	10,344.63	36.77	36.47	89.47	-291.74	2,165.32	1,907.92	1,856.37	51.55	37.012				
10,500.00	10,479.63	10,461.48	10,444.63	37.12	36.82	89.47	-291.74	2,165.32	1,907.92	1,855.88	52.04	36.659				
10,600.00	10,579.63	10,561.48	10,544.63	37.47	37.17	89.47	-291.74	2,165.32	1,907.92	1,855.38	52.54	36.313				
10,700.00	10,679.63	10,661.48	10,644.63	37.81	37.52	89.47	-291.74	2,165.32	1,907.92	1,854.89	53.04	35.973				
10,800.00	10,779.63	10,761.48	10,744.63	38.16	37.88	89.47	-291.74	2,165.32	1,907.92	1,854.39	53.53	35.639				
10,900.00	10,879.63	10,861.48	10,844.63	38.51	38.23	89.47	-291.74	2,165.32	1,907.92	1,853.89	54.03	35.312				
11,000.00	10,979.63	10,961.48	10,944.63	38.86	38.58	89.47	-291.74	2,165.32	1,907.92	1,853.40	54.53	34.990				
11,100.00	11,079.63	11,061.48	11,044.63	39.21	38.94	89.47	-291.74	2,165.32	1,907.92	1,852.90	55.03	34.674				
11,200.00	11,179.63	11,161.48	11,144.63	39.55	39.29	89.47	-291.74	2,165.32	1,907.92	1,852.40	55.52	34.363				
11,300.00	11,279.63	11,261.48	11,244.63	39.90	39.64	89.47	-291.74	2,165.32	1,907.92	1,851.90	56.02	34.058				
11,308.12	11,287.74	11,269.60	11,252.74	39.93	39.67	89.47	-291.74	2,165.32	1,907.92	1,851.86	56.06	34.033 CC				
11,400.00	11,379.63	11,361.20	11,344.25	40.25	39.99	89.55	-294.61	2,165.35	1,907.93	1,851.41	56.52	33.759				
11,500.00	11,479.63	11,457.45	11,438.76	40.60	40.33	90.08	-312.20	2,165.52	1,908.05	1,851.05	57.00	33.472				
11,600.00	11,579.63	11,545.63	11,521.66	40.95	40.66	90.97	-341.99	2,165.81	1,908.75	1,851.27	57.48	33.207				
11,620.37	11,600.00	11,562.33	11,536.80	41.02	40.72	91.19	-349.06	2,165.88	1,909.02	1,851.44	57.57	33.157				
11,650.00	11,629.61	11,586.11	11,557.97	41.12	40.81	-87.95	-359.86	2,165.99	1,909.50	1,851.79	57.71	33.088				
11,700.00	11,679.37	11,625.47	11,591.99	41.30	40.96	-87.36	-379.66	2,166.18	1,910.46	1,852.53	57.94	32.975				
11,750.00	11,728.52	11,663.99	11,623.88	41.48	41.10	-86.79	-401.24	2,166.39	1,911.61	1,853.45	58.16	32.866				
11,800.00	11,776.70	11,700.00	11,652.33	41.67	41.25	-86.25	-423.31	2,166.61	1,912.90	1,854.52	58.38	32.764				
11,850.00	11,823.53	11,738.88	11,681.42	41.86	41.40	-85.69	-449.10	2,166.86	1,914.30	1,855.69	58.62	32.658				
11,900.00	11,868.66	11,775.43	11,707.11	42.05	41.55	-85.17	-475.08	2,167.12	1,915.78	1,856.94	58.84	32.557				
11,950.00	11,911.74	11,811.48	11,730.77	42.25	41.70	-84.68	-502.27	2,167.38	1,917.30	1,858.23	59.07	32.458				
12,000.00	11,952.45	11,850.00	11,754.12	42.45	41.86	-84.19	-532.90	2,167.68	1,918.83	1,859.52	59.31	32.353				
12,050.00	11,990.48	11,882.33	11,772.09	42.66	42.00	-83.78	-559.77	2,167.95	1,920.33	1,860.81	59.53	32.260				
12,100.00	12,025.54	11,917.24	11,789.75	42.88	42.16	-83.38	-589.87	2,168.24	1,921.79	1,862.03	59.76	32.159				
12,150.00	12,057.36	11,950.00	11,804.64	43.10	42.30	-83.04	-619.05	2,168.53	1,923.16	1,863.17	59.99	32.058				
12,200.00	12,085.70	11,986.26	11,819.13	43.32	42.47	-82.70	-652.27	2,168.85	1,924.41	1,864.18	60.24	31.946				
12,250.00	12,110.34	12,020.44	11,830.85	43.56	42.63	-82.43	-684.38	2,169.17	1,925.54	1,865.05	60.49	31.833				
12,300.00	12,131.10	12,050.00	11,839.42	43.80	42.77	-82.21	-712.66	2,169.44	1,926.53	1,865.80	60.73	31.723				
12,350.00	12,147.81	12,088.35	11,848.35	44.05	42.96	-82.00	-749.95	2,169.81	1,927.33	1,866.31	61.01	31.588				
12,400.00	12,160.36	12,122.14	11,854.14	44.30	43.12	-81.86	-783.23	2,170.14	1,927.95	1,866.66	61.29	31.456				
12,450.00	12,168.64	12,150.00	11,857.43	44.55	43.26	-81.77	-810.90	2,170.41	1,928.39	1,866.84	61.56	31.328				
12,500.00	12,172.60	12,193.35	11,859.86	44.81	43.47	-81.72	-854.17	2,170.83	1,928.61	1,866.73	61.88	31.166				
12,512.84	12,172.91	12,200.52	11,859.99	44.88	43.51	-81.71	-861.33	2,170.90	1,928.63	1,866.68	61.95	31.130				
12,600.00	12,174.05	12,287.68	11,861.59	45.35	43.97	-81.73	-948.47	2,171.75	1,928.65	1,866.04	62.61	30.805				
12,700.00	12,175.37	12,387.67	11,863.42	45.95	44.54	-81.74	-1,048.45	2,172.73	1,928.68	1,865.25	63.43	30.407				
12,800.00	12,176.68	12,487.67	11,865.26	46.59	45.17	-81.76	-1,148.42	2,173.71	1,928.70	1,864.38	64.32	29.985				
12,900.00	12,178.00	12,587.67	11,867.09	47.28	45.85	-81.78	-1,248.40	2,174.69	1,928.73	1,863.44	65.29	29.543				
13,000.00	12,179.31	12,687.67	11,868.92	48.02	46.58	-81.79	-1,348.38	2,175.67	1,928.75	1,862.44	66.32	29.084				
13,100.00	12,180.63	12,787.67	11,870.76	48.81	47.36	-81.81	-1,448.36	2,176.65	1,928.78	1,861.37	67.41	28.612				
13,200.00	12,181.94	12,887.67	11,872.59	49.63	48.18	-81.82	-1,548.33	2,177.63	1,928.81	1,860.24	68.57	28.130				
13,300.00	12,183.25	12,987.67	11,874.42	50.50	49.04	-81.84	-1,648.31	2,178.61	1,928.83	1,859.05	69.78	27.641				
13,400.00	12,184.57	13,087.66	11,876.25	51.40	49.94	-81.85	-1,748.29	2,179.59	1,928.86	1,857.81	71.05	27.148				
13,500.00	12,185.88	13,187.66	11,878.09	52.35	50.88	-81.87	-1,848.26	2,180.57	1,928.89	1,856.51	72.37	26.652				
13,600.00	12,187.20	13,287.66	11,879.92	53.32	51.86	-81.88	-1,948.24	2,181.55	1,928.91	1,855.17	73.74	26.157				
13,700.00	12,188.51	13,387.66	11,881.75	54.33	52.86	-81.90	-2,048.22	2,182.53	1,928.94	1,853.78	75.16	25.665				
13,800.00	12,189.83	13,487.66	11,883.59	55.37	53.90	-81.92	-2,148.19	2,183.51	1,928.97	1,852.34	76.62	25.175				

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 Kaston Fed Com 703H
Project:	Lea County, NM (NAD83)	TVD Reference:	3057.5' GE + 30' KB @ 3087.50usft
Reference Site:	Bus Driver/Kaston Fed Com	MD Reference:	3057.5' GE + 30' KB @ 3087.50usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Kaston Fed Com 703H	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 #4	Offset TVD Reference:	Offset Datum

Offset Design LHS Wildcat Fed Com - LHS Wildcat Fed Com 604H - OH - Plan #3													Offset Site Error:	0.00 usft
Survey Program: 0-OWSG (Rev2) MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
13,900.00	12,191.14	13,587.66	11,885.42	56.44	54.98	-81.93	-2,248.17	2,184.49	1,928.99	1,850.87	78.12	24.691		
14,000.00	12,192.46	13,687.66	11,887.25	57.54	56.07	-81.95	-2,348.15	2,185.47	1,929.02	1,849.35	79.67	24.214		
14,100.00	12,193.77	13,787.65	11,889.09	58.66	57.20	-81.96	-2,448.13	2,186.45	1,929.05	1,847.80	81.25	23.743		
14,200.00	12,195.08	13,887.65	11,890.92	59.81	58.35	-81.98	-2,548.10	2,187.43	1,929.08	1,846.22	82.86	23.281		
14,300.00	12,196.40	13,987.65	11,892.75	60.98	59.52	-81.99	-2,648.08	2,188.40	1,929.10	1,844.60	84.51	22.828		
14,400.00	12,197.71	14,087.65	11,894.58	62.17	60.72	-82.01	-2,748.06	2,189.38	1,929.13	1,842.95	86.19	22.383		
14,500.00	12,199.03	14,187.65	11,896.42	63.38	61.94	-82.03	-2,848.03	2,190.36	1,929.16	1,841.27	87.89	21.949		
14,600.00	12,200.34	14,287.65	11,898.25	64.61	63.17	-82.04	-2,948.01	2,191.34	1,929.19	1,839.56	89.63	21.524		
14,700.00	12,201.66	14,387.65	11,900.08	65.86	64.43	-82.06	-3,047.99	2,192.32	1,929.22	1,837.82	91.39	21.110		
14,800.00	12,202.97	14,487.64	11,901.92	67.13	65.70	-82.07	-3,147.96	2,193.30	1,929.24	1,836.07	93.18	20.705		
14,900.00	12,204.29	14,587.64	11,903.75	68.42	66.99	-82.09	-3,247.94	2,194.28	1,929.27	1,834.29	94.99	20.311		
15,000.00	12,205.60	14,687.64	11,905.58	69.72	68.30	-82.10	-3,347.92	2,195.26	1,929.30	1,832.48	96.82	19.927		
15,100.00	12,206.91	14,787.64	11,907.42	71.03	69.62	-82.12	-3,447.90	2,196.24	1,929.33	1,830.66	98.67	19.554		
15,200.00	12,208.23	14,887.64	11,909.25	72.36	70.95	-82.14	-3,547.87	2,197.22	1,929.36	1,828.82	100.54	19.190		
15,300.00	12,209.54	14,987.64	11,911.08	73.70	72.30	-82.15	-3,647.85	2,198.20	1,929.39	1,826.96	102.43	18.836		
15,400.00	12,210.86	15,087.64	11,912.91	75.06	73.66	-82.17	-3,747.83	2,199.18	1,929.42	1,825.08	104.34	18.492		
15,500.00	12,212.17	15,187.63	11,914.75	76.42	75.03	-82.18	-3,847.80	2,200.16	1,929.45	1,823.18	106.26	18.157		
15,600.00	12,213.49	15,287.63	11,916.58	77.80	76.41	-82.20	-3,947.78	2,201.14	1,929.48	1,821.27	108.20	17.832		
15,700.00	12,214.80	15,387.63	11,918.41	79.19	77.81	-82.21	-4,047.76	2,202.12	1,929.51	1,819.35	110.16	17.516		
15,800.00	12,216.12	15,487.63	11,920.25	80.58	79.21	-82.23	-4,147.73	2,203.10	1,929.54	1,817.41	112.13	17.208		
15,900.00	12,217.43	15,587.63	11,922.08	81.99	80.62	-82.25	-4,247.71	2,204.08	1,929.57	1,815.46	114.11	16.910		
16,000.00	12,218.74	15,687.63	11,923.91	83.41	82.04	-82.26	-4,347.69	2,205.06	1,929.60	1,813.49	116.10	16.620		
16,100.00	12,220.06	15,787.63	11,925.75	84.83	83.47	-82.28	-4,447.67	2,206.03	1,929.63	1,811.52	118.11	16.337		
16,200.00	12,221.37	15,887.63	11,927.58	86.26	84.91	-82.29	-4,547.64	2,207.01	1,929.66	1,809.53	120.13	16.063		
16,300.00	12,222.69	15,987.62	11,929.41	87.70	86.36	-82.31	-4,647.62	2,207.99	1,929.69	1,807.53	122.16	15.797		
16,400.00	12,224.00	16,087.62	11,931.24	89.15	87.81	-82.32	-4,747.60	2,208.97	1,929.72	1,805.52	124.20	15.538		
16,500.00	12,225.32	16,187.62	11,933.08	90.61	89.27	-82.34	-4,847.57	2,209.95	1,929.75	1,803.50	126.25	15.286		
16,600.00	12,226.63	16,287.62	11,934.91	92.07	90.74	-82.35	-4,947.55	2,210.93	1,929.78	1,801.48	128.30	15.041		
16,700.00	12,227.94	16,387.62	11,936.74	93.53	92.21	-82.37	-5,047.53	2,211.91	1,929.81	1,799.44	130.37	14.802		
16,800.00	12,229.26	16,487.62	11,938.58	95.01	93.69	-82.39	-5,147.50	2,212.89	1,929.84	1,797.39	132.45	14.570		
16,900.00	12,230.57	16,587.62	11,940.41	96.49	95.17	-82.40	-5,247.48	2,213.87	1,929.87	1,795.34	134.53	14.345		
17,000.00	12,231.89	16,687.61	11,942.24	97.97	96.66	-82.42	-5,347.46	2,214.85	1,929.91	1,793.28	136.63	14.126		
17,100.00	12,233.20	16,787.61	11,944.08	99.46	98.16	-82.43	-5,447.44	2,215.83	1,929.94	1,791.21	138.73	13.912		
17,200.00	12,234.52	16,887.61	11,945.91	100.96	99.66	-82.45	-5,547.41	2,216.81	1,929.97	1,789.14	140.83	13.704		
17,300.00	12,235.83	16,987.61	11,947.74	102.46	101.16	-82.46	-5,647.39	2,217.79	1,930.00	1,787.05	142.95	13.502		
17,400.00	12,237.15	17,087.61	11,949.57	103.96	102.67	-82.48	-5,747.37	2,218.77	1,930.03	1,784.97	145.07	13.304		
17,500.00	12,238.46	17,187.61	11,951.41	105.47	104.19	-82.50	-5,847.34	2,219.75	1,930.07	1,782.87	147.19	13.112		
17,600.00	12,239.77	17,287.61	11,953.24	106.99	105.71	-82.51	-5,947.32	2,220.73	1,930.10	1,780.77	149.33	12.925		
17,700.00	12,241.09	17,387.60	11,955.07	108.50	107.23	-82.53	-6,047.30	2,221.71	1,930.13	1,778.67	151.46	12.743		
17,800.00	12,242.40	17,487.60	11,956.91	110.03	108.75	-82.54	-6,147.27	2,222.69	1,930.16	1,776.55	153.61	12.565		
17,900.00	12,243.72	17,587.60	11,958.74	111.55	110.28	-82.56	-6,247.25	2,223.66	1,930.20	1,774.44	155.76	12.392		
18,000.00	12,245.03	17,687.60	11,960.57	113.08	111.82	-82.57	-6,347.23	2,224.64	1,930.23	1,772.32	157.91	12.224		
18,100.00	12,246.35	17,787.60	11,962.41	114.61	113.35	-82.59	-6,447.21	2,225.62	1,930.26	1,770.19	160.07	12.059		
18,200.00	12,247.66	17,887.60	11,964.24	116.15	114.89	-82.61	-6,547.18	2,226.60	1,930.30	1,768.06	162.23	11.898		
18,300.00	12,248.98	17,987.60	11,966.07	117.69	116.44	-82.62	-6,647.16	2,227.58	1,930.33	1,765.93	164.40	11.742		
18,400.00	12,250.29	18,087.59	11,967.90	119.23	117.98	-82.64	-6,747.14	2,228.56	1,930.36	1,763.79	166.57	11.589		
18,500.00	12,251.60	18,187.59	11,969.74	120.77	119.53	-82.65	-6,847.11	2,229.54	1,930.40	1,761.65	168.75	11.439		
18,600.00	12,252.92	18,287.59	11,971.57	122.32	121.08	-82.67	-6,947.09	2,230.52	1,930.43	1,759.50	170.93	11.294		
18,700.00	12,254.23	18,387.59	11,973.40	123.87	122.64	-82.68	-7,047.07	2,231.50	1,930.46	1,757.35	173.11	11.151		
18,800.00	12,255.55	18,487.59	11,975.24	125.42	124.19	-82.70	-7,147.04	2,232.48	1,930.50	1,755.20	175.30	11.012		
18,900.00	12,256.86	18,587.59	11,977.07	126.98	125.75	-82.71	-7,247.02	2,233.46	1,930.53	1,753.04	177.49	10.877		
19,000.00	12,258.18	18,687.59	11,978.90	128.53	127.31	-82.73	-7,347.00	2,234.44	1,930.57	1,750.88	179.69	10.744		

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 Kaston Fed Com 703H
Project:	Lea County, NM (NAD83)	TVD Reference:	3057.5' GE + 30' KB @ 3087.50usft
Reference Site:	Bus Driver/Kaston Fed Com	MD Reference:	3057.5' GE + 30' KB @ 3087.50usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Kaston Fed Com 703H	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 #4	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 0-OWSG (Rev2) MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance								Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
19,100.00	12,259.49	18,787.58	11,980.74	130.09	128.88	-82.75	-7,446.98	2,235.42	1,930.60	1,748.72	181.89	10.614		
19,200.00	12,260.80	18,887.58	11,982.57	131.66	130.44	-82.76	-7,546.95	2,236.40	1,930.64	1,746.55	184.09	10.488		
19,300.00	12,262.12	18,987.58	11,984.40	133.22	132.01	-82.78	-7,646.93	2,237.38	1,930.67	1,744.38	186.29	10.364		
19,400.00	12,263.43	19,087.58	11,986.23	134.79	133.58	-82.79	-7,746.91	2,238.36	1,930.71	1,742.21	188.50	10.242		
19,500.00	12,264.75	19,187.58	11,988.07	136.36	135.15	-82.81	-7,846.88	2,239.34	1,930.74	1,740.03	190.71	10.124		
19,600.00	12,266.06	19,287.58	11,989.90	137.93	136.73	-82.82	-7,946.86	2,240.32	1,930.78	1,737.85	192.92	10.008		
19,700.00	12,267.38	19,387.58	11,991.73	139.50	138.30	-82.84	-8,046.84	2,241.29	1,930.81	1,735.67	195.14	9.894		
19,800.00	12,268.69	19,487.57	11,993.57	141.07	139.88	-82.86	-8,146.81	2,242.27	1,930.85	1,733.49	197.36	9.783		
19,900.00	12,270.01	19,587.57	11,995.40	142.65	141.46	-82.87	-8,246.79	2,243.25	1,930.88	1,731.30	199.58	9.675		
20,000.00	12,271.32	19,687.57	11,997.23	144.23	143.04	-82.89	-8,346.77	2,244.23	1,930.92	1,729.12	201.81	9.568		
20,100.00	12,272.63	19,787.57	11,999.07	145.81	144.62	-82.90	-8,446.75	2,245.21	1,930.96	1,726.92	204.03	9.464		
20,200.00	12,273.95	19,887.57	12,000.90	147.39	146.20	-82.92	-8,546.72	2,246.19	1,930.99	1,724.73	206.26	9.362		
20,300.00	12,275.26	19,987.57	12,002.73	148.97	147.79	-82.93	-8,646.70	2,247.17	1,931.03	1,722.54	208.49	9.262		
20,400.00	12,276.58	20,087.57	12,004.56	150.55	149.38	-82.95	-8,746.68	2,248.15	1,931.07	1,720.34	210.72	9.164		
20,500.00	12,277.89	20,187.57	12,006.40	152.14	150.97	-82.97	-8,846.65	2,249.13	1,931.10	1,718.14	212.96	9.068		
20,600.00	12,279.21	20,287.56	12,008.23	153.73	152.56	-82.98	-8,946.63	2,250.11	1,931.14	1,715.94	215.20	8.974		
20,700.00	12,280.52	20,387.56	12,010.06	155.32	154.15	-83.00	-9,046.61	2,251.09	1,931.18	1,713.74	217.44	8.882		
20,800.00	12,281.84	20,487.56	12,011.90	156.90	155.74	-83.01	-9,146.58	2,252.07	1,931.21	1,711.54	219.68	8.791		
20,900.00	12,283.15	20,587.56	12,013.73	158.50	157.33	-83.03	-9,246.56	2,253.05	1,931.25	1,709.33	221.92	8.703		
21,000.00	12,284.46	20,687.56	12,015.56	160.09	158.93	-83.04	-9,346.54	2,254.03	1,931.29	1,707.12	224.16	8.616		
21,100.00	12,285.78	20,787.56	12,017.40	161.68	160.52	-83.06	-9,446.52	2,255.01	1,931.32	1,704.92	226.41	8.530		
21,200.00	12,287.09	20,887.56	12,019.23	163.28	162.12	-83.07	-9,546.49	2,255.99	1,931.36	1,702.71	228.66	8.447		
21,300.00	12,288.41	20,987.55	12,021.06	164.87	163.72	-83.09	-9,646.47	2,256.97	1,931.40	1,700.49	230.91	8.364		
21,400.00	12,289.72	21,087.55	12,022.89	166.47	165.32	-83.11	-9,746.45	2,257.95	1,931.44	1,698.28	233.16	8.284		
21,500.00	12,291.04	21,187.55	12,024.73	168.07	166.92	-83.12	-9,846.42	2,258.93	1,931.48	1,696.07	235.41	8.205		
21,600.00	12,292.35	21,287.55	12,026.56	169.66	168.52	-83.14	-9,946.40	2,259.90	1,931.51	1,693.85	237.66	8.127		
21,700.00	12,293.66	21,387.55	12,028.39	171.26	170.12	-83.15	-10,046.38	2,260.88	1,931.55	1,691.63	239.92	8.051		
21,800.00	12,294.98	21,487.55	12,030.23	172.87	171.72	-83.17	-10,146.36	2,261.86	1,931.59	1,689.41	242.18	7.976		
21,900.00	12,296.29	21,587.55	12,032.06	174.47	173.33	-83.18	-10,246.33	2,262.84	1,931.63	1,687.19	244.44	7.902		
22,000.00	12,297.61	21,687.54	12,033.89	176.07	174.93	-83.20	-10,346.31	2,263.82	1,931.67	1,684.97	246.70	7.830		
22,100.00	12,298.92	21,787.54	12,035.73	177.67	176.54	-83.22	-10,446.29	2,264.80	1,931.71	1,682.75	248.96	7.759		
22,200.00	12,300.24	21,887.54	12,037.56	179.28	178.15	-83.23	-10,546.26	2,265.78	1,931.75	1,680.53	251.22	7.689		
22,300.00	12,301.55	21,987.54	12,039.39	180.88	179.75	-83.25	-10,646.24	2,266.76	1,931.79	1,678.30	253.49	7.621		
22,300.01	12,301.55	21,987.55	12,039.39	180.88	179.75	-83.25	-10,646.25	2,266.76	1,931.79	1,678.30	253.49	7.621		
22,400.00	12,302.87	22,051.09	12,040.56	182.49	180.78	-83.26	-10,709.78	2,267.38	1,932.17	1,676.85	255.31	7.568 ES, SF		
22,500.00	12,304.18	22,051.09	12,040.56	184.10	180.78	-83.26	-10,709.78	2,267.38	1,936.68	1,680.78	255.89	7.568		
22,600.00	12,305.49	22,051.09	12,040.56	185.71	180.78	-83.26	-10,709.78	2,267.38	1,946.32	1,690.55	255.77	7.610		
22,700.00	12,306.81	22,051.09	12,040.56	187.31	180.78	-83.26	-10,709.78	2,267.38	1,961.02	1,706.05	254.97	7.691		
22,800.00	12,308.12	22,051.09	12,040.56	188.92	180.78	-83.26	-10,709.78	2,267.38	1,980.67	1,727.14	253.53	7.812		
22,900.00	12,309.44	22,051.09	12,040.56	190.53	180.78	-83.26	-10,709.78	2,267.38	2,005.11	1,753.60	251.51	7.972		
23,000.00	12,310.75	22,051.09	12,040.56	192.14	180.78	-83.26	-10,709.78	2,267.38	2,034.19	1,785.22	248.97	8.170		
23,100.00	12,312.07	22,051.09	12,040.56	193.76	180.78	-83.26	-10,709.78	2,267.38	2,067.70	1,821.71	245.99	8.406		
23,200.00	12,313.38	22,051.09	12,040.56	195.37	180.78	-83.26	-10,709.78	2,267.38	2,105.42	1,862.79	242.63	8.677		
23,300.00	12,314.70	22,051.09	12,040.56	196.98	180.78	-83.26	-10,709.78	2,267.38	2,147.15	1,908.17	238.98	8.985		
23,400.00	12,316.01	22,051.09	12,040.56	198.59	180.78	-83.26	-10,709.78	2,267.38	2,192.64	1,957.54	235.10	9.326		
23,500.00	12,317.32	22,051.09	12,040.56	200.21	180.78	-83.26	-10,709.78	2,267.38	2,241.68	2,010.62	231.06	9.702		
23,600.00	12,318.64	22,051.09	12,040.56	201.82	180.78	-83.26	-10,709.78	2,267.38	2,294.03	2,067.12	226.91	10.110		
23,679.24	12,319.68	22,051.09	12,040.56	203.10	180.78	-83.26	-10,709.78	2,267.38	2,337.72	2,114.15	223.57	10.456		
23,679.99	12,319.69	22,051.09	12,040.56	203.12	180.78	-83.26	-10,709.78	2,267.38	2,338.14	2,114.10	224.04	10.436		

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 Kaston Fed Com 703H
Project:	Lea County, NM (NAD83)	TVD Reference:	3057.5' GE + 30' KB @ 3087.50usft
Reference Site:	Bus Driver/Kaston Fed Com	MD Reference:	3057.5' GE + 30' KB @ 3087.50usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Kaston Fed Com 703H	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 #4	Offset TVD Reference:	Offset Datum

Offset Design													LHS Wildcat Fed Com - LHS Wildcat Fed Com 705H - OH - Plan #3		Offset Site Error:	0.00 usft
Survey Program: 0-OWSG (Rev2) MWD													Offset Well Error:	0.00 usft		
Reference		Offset		Semi Major Axis			Distance							Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor				
0.00	0.00	0.00	0.00	0.00	0.00	90.97	-40.00	2,353.90	2,354.49							
100.00	100.00	65.40	65.40	0.13	0.09	90.97	-40.00	2,353.90	2,354.24	2,354.08	0.16	N/A				
200.00	200.00	165.40	165.40	0.48	0.38	90.97	-40.00	2,353.90	2,354.24	2,353.63	0.61	3,841.393				
300.00	300.00	265.40	265.40	0.84	0.73	90.97	-40.00	2,353.90	2,354.24	2,353.12	1.12	2,106.409				
400.00	400.00	365.40	365.40	1.20	1.09	90.97	-40.00	2,353.90	2,354.24	2,352.62	1.62	1,449.836				
500.00	500.00	465.40	465.40	1.56	1.45	90.97	-40.00	2,353.90	2,354.24	2,352.11	2.13	1,105.108				
600.00	600.00	565.40	565.40	1.92	1.81	90.97	-40.00	2,353.90	2,354.24	2,351.60	2.64	892.766				
700.00	700.00	665.40	665.40	2.28	2.17	90.97	-40.00	2,353.90	2,354.24	2,351.10	3.14	748.853				
800.00	800.00	765.40	765.40	2.63	2.53	90.97	-40.00	2,353.90	2,354.24	2,350.59	3.65	644.887				
900.00	900.00	865.40	865.40	2.99	2.89	90.97	-40.00	2,353.90	2,354.24	2,350.08	4.16	566.266				
1,000.00	1,000.00	965.40	965.40	3.35	3.24	90.97	-40.00	2,353.90	2,354.24	2,349.58	4.66	504.729				
1,100.00	1,100.00	1,065.40	1,065.40	3.71	3.60	90.97	-40.00	2,353.90	2,354.24	2,349.07	5.17	455.255				
1,200.00	1,200.00	1,165.40	1,165.40	4.07	3.96	90.97	-40.00	2,353.90	2,354.24	2,348.56	5.68	414.613				
1,300.00	1,300.00	1,265.40	1,265.40	4.43	4.32	90.97	-40.00	2,353.90	2,354.24	2,348.05	6.19	380.633				
1,400.00	1,400.00	1,365.40	1,365.40	4.79	4.68	90.97	-40.00	2,353.90	2,354.24	2,347.55	6.69	351.800				
1,500.00	1,500.00	1,465.40	1,465.40	5.14	5.04	90.97	-40.00	2,353.90	2,354.24	2,347.04	7.20	327.027				
1,600.00	1,600.00	1,565.40	1,565.40	5.50	5.39	90.97	-40.00	2,353.90	2,354.24	2,346.53	7.71	305.514				
1,700.00	1,700.00	1,665.40	1,665.40	5.86	5.75	90.97	-40.00	2,353.90	2,354.24	2,346.03	8.21	286.656				
1,800.00	1,800.00	1,765.40	1,765.40	6.22	6.11	90.97	-40.00	2,353.90	2,354.24	2,345.52	8.72	269.991				
1,900.00	1,900.00	1,865.40	1,865.40	6.58	6.47	90.97	-40.00	2,353.90	2,354.24	2,345.01	9.23	255.157				
2,000.00	2,000.00	1,965.40	1,965.40	6.94	6.83	90.97	-40.00	2,353.90	2,354.24	2,344.51	9.73	241.868				
2,100.00	2,100.00	2,065.40	2,065.40	7.29	7.19	90.97	-40.00	2,353.90	2,354.24	2,344.00	10.24	229.894				
2,200.00	2,200.00	2,165.40	2,165.40	7.65	7.55	90.97	-40.00	2,353.90	2,354.24	2,343.49	10.75	219.051				
2,300.00	2,300.00	2,265.40	2,265.40	8.01	7.90	90.97	-40.00	2,353.90	2,354.24	2,342.99	11.25	209.184				
2,400.00	2,400.00	2,365.40	2,365.40	8.37	8.26	90.97	-40.00	2,353.90	2,354.24	2,342.48	11.76	200.167				
2,500.00	2,500.00	2,465.40	2,465.40	8.73	8.62	90.97	-40.00	2,353.90	2,354.24	2,341.97	12.27	191.896				
2,600.00	2,600.00	2,565.40	2,565.40	9.09	8.98	90.97	-40.00	2,353.90	2,354.24	2,341.46	12.78	184.281				
2,700.00	2,700.00	2,665.40	2,665.40	9.45	9.34	90.97	-40.00	2,353.90	2,354.24	2,340.96	13.28	177.248				
2,800.00	2,800.00	2,765.40	2,765.40	9.80	9.70	90.97	-40.00	2,353.90	2,354.24	2,340.45	13.79	170.731				
2,900.00	2,900.00	2,865.40	2,865.40	10.16	10.05	90.97	-40.00	2,353.90	2,354.24	2,339.94	14.30	164.677				
3,000.00	3,000.00	2,965.40	2,965.40	10.52	10.41	90.97	-40.00	2,353.90	2,354.24	2,339.44	14.80	159.038				
3,070.00	3,070.00	3,035.40	3,035.40	10.77	10.66	90.97	-40.00	2,353.90	2,354.24	2,339.08	15.16	155.314				
3,100.00	3,100.00	3,065.40	3,065.40	10.87	10.77	-49.27	-40.00	2,353.90	2,354.16	2,338.86	15.31	153.802				
3,200.00	3,199.97	3,165.37	3,165.37	11.20	11.13	-49.33	-40.00	2,353.90	2,352.80	2,337.01	15.79	148.999				
3,300.00	3,299.86	3,265.26	3,265.26	11.53	11.49	-49.45	-40.00	2,353.90	2,349.73	2,333.45	16.28	144.368				
3,400.00	3,399.59	3,364.99	3,364.99	11.86	11.85	-49.64	-40.00	2,353.90	2,344.97	2,328.21	16.76	139.898				
3,470.12	3,469.39	3,434.79	3,434.79	12.10	12.10	-49.82	-40.00	2,353.90	2,340.63	2,323.53	17.10	136.852				
3,500.00	3,499.10	3,464.50	3,464.50	12.20	12.20	-49.87	-40.00	2,353.90	2,338.61	2,321.36	17.25	135.580				
3,600.00	3,598.56	3,563.96	3,563.96	12.54	12.56	-50.07	-40.00	2,353.90	2,331.86	2,314.13	17.74	131.465				
3,700.00	3,698.01	3,663.41	3,663.41	12.88	12.92	-50.27	-40.00	2,353.90	2,325.15	2,306.92	18.23	127.558				
3,800.00	3,797.46	3,762.86	3,762.86	13.22	13.27	-50.46	-40.00	2,353.90	2,318.45	2,299.73	18.72	123.844				
3,900.00	3,896.91	3,862.31	3,862.31	13.57	13.63	-50.66	-40.00	2,353.90	2,311.79	2,292.58	19.22	120.312				
4,000.00	3,996.36	3,961.76	3,961.76	13.92	13.98	-50.86	-40.00	2,353.90	2,305.15	2,285.44	19.71	116.948				
4,100.00	4,095.82	4,061.22	4,061.22	14.27	14.34	-51.07	-40.00	2,353.90	2,298.55	2,278.34	20.21	113.742				
4,200.00	4,195.27	4,160.67	4,160.67	14.63	14.70	-51.27	-40.00	2,353.90	2,291.97	2,271.26	20.71	110.683				
4,300.00	4,294.72	4,260.12	4,260.12	14.99	15.05	-51.47	-40.00	2,353.90	2,285.42	2,264.21	21.21	107.763				
4,400.00	4,394.17	4,359.57	4,359.57	15.35	15.41	-51.68	-40.00	2,353.90	2,278.90	2,257.19	21.71	104.973				
4,500.00	4,493.62	4,459.02	4,459.02	15.71	15.77	-51.88	-40.00	2,353.90	2,272.41	2,250.20	22.21	102.305				
4,600.00	4,593.08	4,545.76	4,545.76	16.07	16.07	-52.06	-40.24	2,354.04	2,266.11	2,243.43	22.68	99.923				
4,700.00	4,692.53	4,623.81	4,623.78	16.43	16.33	-52.18	-41.74	2,354.89	2,260.71	2,237.59	23.12	97.796				
4,800.00	4,791.98	4,700.00	4,699.91	16.80	16.58	-52.27	-44.55	2,356.49	2,256.27	2,232.73	23.54	95.835				
4,900.00	4,891.43	4,780.51	4,780.26	17.17	16.84	-52.32	-48.95	2,358.99	2,252.79	2,228.81	23.98	93.942				

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 Kaston Fed Com 703H
Project:	Lea County, NM (NAD83)	TVD Reference:	3057.5' GE + 30' KB @ 3087.50usft
Reference Site:	Bus Driver/Kaston Fed Com	MD Reference:	3057.5' GE + 30' KB @ 3087.50usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Kaston Fed Com 703H	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 #4	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	4,990.88	4,859.05	4,858.52	17.53	17.10	-52.34	-54.66	2,362.23	2,250.26	2,225.84	24.41	92.176		
5,100.00	5,090.33	4,937.61	4,936.65	17.90	17.36	-52.32	-61.77	2,366.28	2,248.68	2,223.83	24.84	90.509		
5,200.00	5,189.79	5,029.65	5,028.02	18.28	17.67	-52.27	-71.42	2,371.77	2,247.87	2,222.55	25.31	88.801		
5,300.00	5,289.24	5,129.61	5,127.24	18.65	18.00	-52.20	-82.01	2,377.79	2,247.12	2,221.32	25.81	87.076		
5,400.00	5,388.69	5,229.58	5,226.46	19.02	18.34	-52.14	-92.60	2,383.81	2,246.38	2,220.08	26.30	85.408		
5,500.00	5,488.14	5,329.54	5,325.68	19.39	18.68	-52.07	-103.19	2,389.83	2,245.64	2,218.84	26.80	83.795		
5,600.00	5,587.59	5,429.51	5,424.90	19.77	19.02	-52.01	-113.78	2,395.85	2,244.91	2,217.61	27.30	82.233		
5,700.00	5,687.05	5,529.47	5,524.12	20.14	19.37	-51.94	-124.37	2,401.87	2,244.18	2,216.37	27.80	80.721		
5,800.00	5,786.50	5,629.44	5,623.34	20.52	19.71	-51.88	-134.96	2,407.90	2,243.45	2,215.14	28.31	79.258		
5,900.00	5,885.95	5,729.40	5,722.56	20.90	20.07	-51.81	-145.56	2,413.92	2,242.72	2,213.91	28.81	77.841		
6,000.00	5,985.40	5,829.37	5,821.78	21.28	20.42	-51.75	-156.15	2,419.94	2,241.99	2,212.67	29.32	76.467		
6,100.00	6,084.85	5,929.33	5,921.00	21.66	20.77	-51.68	-166.74	2,425.96	2,241.27	2,211.44	29.83	75.137		
6,200.00	6,184.31	6,029.30	6,020.21	22.04	21.13	-51.62	-177.33	2,431.98	2,240.56	2,210.21	30.34	73.847		
6,300.00	6,283.76	6,129.26	6,119.43	22.42	21.49	-51.55	-187.92	2,438.00	2,239.84	2,208.99	30.85	72.597		
6,400.00	6,383.21	6,229.23	6,218.65	22.80	21.85	-51.49	-198.51	2,444.02	2,239.13	2,207.76	31.37	71.384		
6,500.00	6,482.66	6,329.19	6,317.87	23.18	22.21	-51.42	-209.10	2,450.05	2,238.42	2,206.54	31.88	70.207		
6,600.00	6,582.11	6,429.16	6,417.09	23.56	22.58	-51.36	-219.69	2,456.07	2,237.71	2,205.31	32.40	69.065		
6,700.00	6,681.56	6,529.12	6,516.31	23.94	22.94	-51.29	-230.28	2,462.09	2,237.01	2,204.09	32.92	67.957		
6,800.00	6,781.02	6,629.09	6,615.53	24.32	23.31	-51.23	-240.87	2,468.11	2,236.31	2,202.87	33.44	66.881		
6,900.00	6,880.47	6,729.05	6,714.75	24.71	23.68	-51.16	-251.46	2,474.13	2,235.61	2,201.65	33.96	65.835		
6,920.25	6,900.61	6,749.29	6,734.85	24.78	23.75	-51.15	-253.60	2,475.35	2,235.47	2,201.41	34.06	65.627		
6,962.50	6,942.65	6,791.52	6,776.76	24.94	23.91	-51.11	-258.08	2,477.90	2,235.32	2,201.04	34.28	65.203 CC		
7,000.00	6,980.00	6,829.00	6,813.95	25.09	24.05	-51.08	-262.05	2,480.15	2,235.44	2,200.96	34.48	64.838		
7,100.00	7,079.75	6,961.37	6,945.53	25.46	24.53	-50.95	-274.58	2,487.28	2,236.29	2,201.21	35.08	63.745		
7,200.00	7,179.65	7,100.93	7,084.71	25.82	25.04	-50.85	-283.54	2,492.37	2,237.05	2,201.36	35.69	62.681		
7,300.00	7,279.63	7,240.67	7,224.34	26.17	25.52	-50.79	-288.07	2,494.95	2,237.70	2,201.43	36.28	61.685		
7,320.37	7,300.00	7,269.15	7,252.82	26.24	25.62	89.46	-288.45	2,495.16	2,237.82	2,201.43	36.39	61.491		
7,400.00	7,379.63	7,361.36	7,345.03	26.50	25.94	89.47	-288.67	2,495.29	2,237.91	2,201.10	36.81	60.804		
7,500.00	7,479.63	7,461.36	7,445.03	26.84	26.29	89.47	-288.67	2,495.29	2,237.91	2,200.62	37.29	60.013		
7,600.00	7,579.63	7,561.36	7,545.03	27.18	26.64	89.47	-288.67	2,495.29	2,237.91	2,200.13	37.78	59.240		
7,700.00	7,679.63	7,661.36	7,645.03	27.51	26.98	89.47	-288.67	2,495.29	2,237.91	2,199.64	38.26	58.487		
7,800.00	7,779.63	7,761.36	7,745.03	27.85	27.33	89.47	-288.67	2,495.29	2,237.91	2,199.16	38.75	57.751		
7,900.00	7,879.63	7,861.36	7,845.03	28.19	27.68	89.47	-288.67	2,495.29	2,237.91	2,198.67	39.24	57.034		
8,000.00	7,979.63	7,961.36	7,945.03	28.53	28.03	89.47	-288.67	2,495.29	2,237.91	2,198.18	39.73	56.333		
8,100.00	8,079.63	8,061.36	8,045.03	28.87	28.38	89.47	-288.67	2,495.29	2,237.91	2,197.69	40.22	55.648		
8,200.00	8,179.63	8,161.36	8,145.03	29.21	28.73	89.47	-288.67	2,495.29	2,237.91	2,197.20	40.70	54.979		
8,300.00	8,279.63	8,261.36	8,245.03	29.55	29.08	89.47	-288.67	2,495.29	2,237.91	2,196.71	41.19	54.326		
8,400.00	8,379.63	8,361.36	8,345.03	29.89	29.43	89.47	-288.67	2,495.29	2,237.91	2,196.22	41.68	53.688		
8,500.00	8,479.63	8,461.36	8,445.03	30.23	29.78	89.47	-288.67	2,495.29	2,237.91	2,195.73	42.17	53.063		
8,600.00	8,579.63	8,561.36	8,545.03	30.57	30.13	89.47	-288.67	2,495.29	2,237.91	2,195.24	42.66	52.453		
8,700.00	8,679.63	8,661.36	8,645.03	30.91	30.48	89.47	-288.67	2,495.29	2,237.91	2,194.75	43.16	51.856		
8,800.00	8,779.63	8,761.36	8,745.03	31.25	30.83	89.47	-288.67	2,495.29	2,237.91	2,194.26	43.65	51.272		
8,900.00	8,879.63	8,861.36	8,845.03	31.60	31.18	89.47	-288.67	2,495.29	2,237.91	2,193.77	44.14	50.701		
9,000.00	8,979.63	8,961.36	8,945.03	31.94	31.53	89.47	-288.67	2,495.29	2,237.91	2,193.28	44.63	50.142		
9,100.00	9,079.63	9,061.36	9,045.03	32.28	31.88	89.47	-288.67	2,495.29	2,237.91	2,192.78	45.12	49.595		
9,200.00	9,179.63	9,161.36	9,145.03	32.63	32.23	89.47	-288.67	2,495.29	2,237.91	2,192.29	45.62	49.059		
9,300.00	9,279.63	9,261.36	9,245.03	32.97	32.58	89.47	-288.67	2,495.29	2,237.91	2,191.80	46.11	48.534		
9,400.00	9,379.63	9,361.36	9,345.03	33.31	32.93	89.47	-288.67	2,495.29	2,237.91	2,191.30	46.60	48.020		
9,500.00	9,479.63	9,461.36	9,445.03	33.66	33.29	89.47	-288.67	2,495.29	2,237.91	2,190.81	47.10	47.517		
9,600.00	9,579.63	9,561.36	9,545.03	34.00	33.64	89.47	-288.67	2,495.29	2,237.91	2,190.32	47.59	47.024		
9,700.00	9,679.63	9,661.36	9,645.03	34.35	33.99	89.47	-288.67	2,495.29	2,237.91	2,189.82	48.09	46.540		
9,800.00	9,779.63	9,761.36	9,745.03	34.69	34.34	89.47	-288.67	2,495.29	2,237.91	2,189.33	48.58	46.067		

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 Kaston Fed Com 703H
Project:	Lea County, NM (NAD83)	TVD Reference:	3057.5' GE + 30' KB @ 3087.50usft
Reference Site:	Bus Driver/Kaston Fed Com	MD Reference:	3057.5' GE + 30' KB @ 3087.50usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Kaston Fed Com 703H	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 #4	Offset TVD Reference:	Offset Datum

Offset Design													LHS Wildcat Fed Com - LHS Wildcat Fed Com 705H - OH - Plan #3		Offset Site Error:	0.00 usft
Survey Program: 0-OWSG (Rev2) MWD													Offset Well Error:	0.00 usft		
Reference		Offset		Semi Major Axis			Distance							Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor				
9,900.00	9,879.63	9,861.36	9,845.03	35.04	34.69	89.47	-288.67	2,495.29	2,237.91	2,188.83	49.07	45.602				
10,000.00	9,979.63	9,961.36	9,945.03	35.39	35.05	89.47	-288.67	2,495.29	2,237.91	2,188.34	49.57	45.147				
10,100.00	10,079.63	10,061.36	10,045.03	35.73	35.40	89.47	-288.67	2,495.29	2,237.91	2,187.84	50.06	44.700				
10,200.00	10,179.63	10,161.36	10,145.03	36.08	35.75	89.47	-288.67	2,495.29	2,237.91	2,187.35	50.56	44.262				
10,300.00	10,279.63	10,261.36	10,245.03	36.42	36.10	89.47	-288.67	2,495.29	2,237.91	2,186.85	51.06	43.832				
10,400.00	10,379.63	10,361.36	10,345.03	36.77	36.46	89.47	-288.67	2,495.29	2,237.91	2,186.36	51.55	43.411				
10,500.00	10,479.63	10,461.36	10,445.03	37.12	36.81	89.47	-288.67	2,495.29	2,237.91	2,185.86	52.05	42.997				
10,600.00	10,579.63	10,561.36	10,545.03	37.47	37.16	89.47	-288.67	2,495.29	2,237.91	2,185.36	52.54	42.591				
10,700.00	10,679.63	10,661.36	10,645.03	37.81	37.52	89.47	-288.67	2,495.29	2,237.91	2,184.87	53.04	42.192				
10,800.00	10,779.63	10,761.36	10,745.03	38.16	37.87	89.47	-288.67	2,495.29	2,237.91	2,184.37	53.54	41.800				
10,900.00	10,879.63	10,861.36	10,845.03	38.51	38.22	89.47	-288.67	2,495.29	2,237.91	2,183.87	54.03	41.416				
11,000.00	10,979.63	10,961.36	10,945.03	38.86	38.58	89.47	-288.67	2,495.29	2,237.91	2,183.38	54.53	41.038				
11,100.00	11,079.63	11,061.36	11,045.03	39.21	38.93	89.47	-288.67	2,495.29	2,237.91	2,182.88	55.03	40.668				
11,200.00	11,179.63	11,161.36	11,145.03	39.55	39.28	89.47	-288.67	2,495.29	2,237.91	2,182.38	55.53	40.303				
11,300.00	11,279.63	11,261.36	11,245.03	39.90	39.64	89.47	-288.67	2,495.29	2,237.91	2,181.88	56.02	39.945				
11,400.00	11,379.63	11,361.36	11,345.03	40.25	39.99	89.47	-288.67	2,495.29	2,237.91	2,181.39	56.52	39.593				
11,500.00	11,479.63	11,461.36	11,445.03	40.60	40.34	89.47	-288.67	2,495.29	2,237.91	2,180.89	57.02	39.248				
11,500.06	11,479.69	11,461.42	11,445.09	40.60	40.34	89.47	-288.67	2,495.29	2,237.91	2,180.89	57.02	39.247				
11,600.00	11,579.63	11,561.14	11,544.75	40.95	40.69	89.52	-290.83	2,495.31	2,237.91	2,180.39	57.52	38.910				
11,620.37	11,600.00	11,581.25	11,564.75	41.02	40.76	89.58	-292.93	2,495.33	2,237.91	2,180.30	57.61	38.843				
11,650.00	11,629.61	11,610.30	11,593.47	41.12	40.87	-89.83	-297.20	2,495.37	2,237.93	2,180.17	57.76	38.745				
11,700.00	11,679.37	11,658.93	11,640.97	41.30	41.04	-89.68	-307.57	2,495.48	2,237.96	2,179.95	58.01	38.581				
11,750.00	11,728.52	11,707.08	11,686.96	41.48	41.21	-89.53	-321.78	2,495.61	2,238.02	2,179.76	58.26	38.413				
11,800.00	11,776.70	11,754.79	11,731.20	41.67	41.39	-89.38	-339.62	2,495.79	2,238.09	2,179.57	58.52	38.244				
11,850.00	11,823.53	11,802.09	11,773.44	41.86	41.57	-89.24	-360.87	2,496.00	2,238.18	2,179.39	58.78	38.074				
11,900.00	11,868.66	11,850.00	11,814.29	42.05	41.75	-89.10	-385.88	2,496.24	2,238.28	2,179.23	59.06	37.901				
11,950.00	11,911.74	11,895.54	11,851.05	42.25	41.93	-88.98	-412.73	2,496.51	2,238.39	2,179.07	59.33	37.729				
12,000.00	11,952.45	11,941.76	11,886.07	42.45	42.11	-88.86	-442.87	2,496.80	2,238.51	2,178.91	59.61	37.554				
12,050.00	11,990.48	11,987.67	11,918.33	42.66	42.30	-88.75	-475.52	2,497.12	2,238.64	2,178.75	59.89	37.377				
12,100.00	12,025.54	12,033.31	11,947.71	42.88	42.49	-88.64	-510.43	2,497.46	2,238.77	2,178.58	60.19	37.198				
12,150.00	12,057.36	12,078.71	11,974.09	43.10	42.68	-88.55	-547.37	2,497.82	2,238.89	2,178.41	60.48	37.017				
12,200.00	12,085.70	12,123.90	11,997.36	43.32	42.88	-88.46	-586.09	2,498.20	2,239.02	2,178.23	60.79	36.833				
12,250.00	12,110.34	12,168.91	12,017.43	43.56	43.08	-88.39	-626.36	2,498.60	2,239.13	2,178.03	61.10	36.646				
12,300.00	12,131.10	12,213.77	12,034.23	43.80	43.28	-88.33	-667.94	2,499.00	2,239.25	2,177.82	61.42	36.457				
12,350.00	12,147.81	12,258.50	12,047.69	44.05	43.49	-88.28	-710.58	2,499.42	2,239.35	2,177.60	61.75	36.266				
12,400.00	12,160.36	12,303.14	12,057.77	44.30	43.71	-88.24	-754.05	2,499.85	2,239.43	2,177.35	62.08	36.074				
12,450.00	12,168.64	12,350.00	12,064.68	44.55	43.93	-88.21	-800.39	2,500.30	2,239.51	2,177.09	62.42	35.877				
12,500.00	12,172.60	12,392.25	12,067.64	44.81	44.14	-88.20	-842.52	2,500.71	2,239.57	2,176.82	62.75	35.688				
12,512.84	12,172.91	12,404.12	12,067.93	44.88	44.20	-88.20	-854.39	2,500.83	2,239.58	2,176.74	62.84	35.637				
12,600.00	12,174.05	12,491.28	12,069.63	45.35	44.65	-88.21	-941.52	2,501.68	2,239.65	2,176.16	63.50	35.272				
12,700.00	12,175.37	12,591.27	12,071.59	45.95	45.21	-88.23	-1,041.50	2,502.66	2,239.73	2,175.42	64.32	34.823				
12,800.00	12,176.68	12,691.27	12,073.54	46.59	45.83	-88.25	-1,141.47	2,503.64	2,239.82	2,174.60	65.21	34.347				
12,900.00	12,178.00	12,791.27	12,075.50	47.28	46.50	-88.26	-1,241.45	2,504.62	2,239.90	2,173.72	66.17	33.848				
13,000.00	12,179.31	12,891.27	12,077.45	48.02	47.22	-88.28	-1,341.42	2,505.60	2,239.98	2,172.77	67.21	33.330				
13,100.00	12,180.63	12,991.27	12,079.41	48.81	47.98	-88.30	-1,441.39	2,506.58	2,240.06	2,171.76	68.30	32.796				
13,200.00	12,181.94	13,091.26	12,081.36	49.63	48.79	-88.31	-1,541.37	2,507.56	2,240.14	2,170.68	69.46	32.251				
13,300.00	12,183.25	13,191.26	12,083.32	50.50	49.64	-88.33	-1,641.34	2,508.54	2,240.22	2,169.55	70.67	31.698				
13,400.00	12,184.57	13,291.26	12,085.27	51.40	50.53	-88.35	-1,741.32	2,509.52	2,240.30	2,168.36	71.95	31.139				
13,500.00	12,185.88	13,391.26	12,087.23	52.35	51.45	-88.36	-1,841.29	2,510.50	2,240.39	2,167.12	73.27	30.578				
13,600.00	12,187.20	13,491.26	12,089.18	53.32	52.42	-88.38	-1,941.26	2,511.48	2,240.47	2,165.83	74.64	30.016				
13,700.00	12,188.51	13,591.25	12,091.14	54.33	53.41	-88.39	-2,041.24	2,512.45	2,240.55	2,164.49	76.06	29.457				
13,800.00	12,189.83	13,691.25	12,093.09	55.37	54.44	-88.41	-2,141.21	2,513.43	2,240.63	2,163.11	77.53	28.901				

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



Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well Kaston Fed Com 703H
Project:	Lea County, NM (NAD83)	TVD Reference:	3057.5' GE + 30' KB @ 3087.50usft
Reference Site:	Bus Driver/Kaston Fed Com	MD Reference:	3057.5' GE + 30' KB @ 3087.50usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Kaston Fed Com 703H	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 #4	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 0-OWSG (Rev2) MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
13,900.00	12,191.14	13,791.25	12,095.05	56.44	55.50	-88.43	-2,241.19	2,514.41	2,240.72	2,161.68	79.03	28.352		
14,000.00	12,192.46	13,891.25	12,097.00	57.54	56.58	-88.44	-2,341.16	2,515.39	2,240.80	2,160.22	80.58	27.809		
14,100.00	12,193.77	13,991.25	12,098.96	58.66	57.70	-88.46	-2,441.13	2,516.37	2,240.88	2,158.72	82.16	27.274		
14,200.00	12,195.08	14,091.24	12,100.91	59.81	58.84	-88.48	-2,541.11	2,517.35	2,240.97	2,157.19	83.78	26.748		
14,300.00	12,196.40	14,191.24	12,102.87	60.98	60.00	-88.49	-2,641.08	2,518.33	2,241.05	2,155.62	85.43	26.232		
14,400.00	12,197.71	14,291.24	12,104.82	62.17	61.19	-88.51	-2,741.06	2,519.31	2,241.14	2,154.02	87.12	25.726		
14,500.00	12,199.03	14,391.24	12,106.78	63.38	62.39	-88.53	-2,841.03	2,520.29	2,241.22	2,152.39	88.83	25.231		
14,600.00	12,200.34	14,491.23	12,108.73	64.61	63.62	-88.54	-2,941.00	2,521.27	2,241.30	2,150.73	90.57	24.747		
14,700.00	12,201.66	14,591.23	12,110.69	65.86	64.87	-88.56	-3,040.98	2,522.25	2,241.39	2,149.05	92.34	24.274		
14,800.00	12,202.97	14,691.23	12,112.64	67.13	66.13	-88.58	-3,140.95	2,523.22	2,241.47	2,147.34	94.13	23.813		
14,900.00	12,204.29	14,791.23	12,114.60	68.42	67.41	-88.59	-3,240.93	2,524.20	2,241.56	2,145.61	95.94	23.363		
15,000.00	12,205.60	14,891.23	12,116.55	69.72	68.71	-88.61	-3,340.90	2,525.18	2,241.64	2,143.86	97.78	22.925		
15,100.00	12,206.91	14,991.22	12,118.51	71.03	70.02	-88.63	-3,440.87	2,526.16	2,241.73	2,142.09	99.64	22.498		
15,200.00	12,208.23	15,091.22	12,120.46	72.36	71.34	-88.64	-3,540.85	2,527.14	2,241.81	2,140.29	101.52	22.083		
15,300.00	12,209.54	15,191.22	12,122.42	73.70	72.68	-88.66	-3,640.82	2,528.12	2,241.90	2,138.48	103.42	21.678		
15,400.00	12,210.86	15,291.22	12,124.37	75.06	74.03	-88.67	-3,740.80	2,529.10	2,241.98	2,136.65	105.33	21.285		
15,500.00	12,212.17	15,391.22	12,126.33	76.42	75.40	-88.69	-3,840.77	2,530.08	2,242.07	2,134.81	107.26	20.903		
15,600.00	12,213.49	15,491.21	12,128.28	77.80	76.77	-88.71	-3,940.74	2,531.06	2,242.16	2,132.95	109.21	20.531		
15,700.00	12,214.80	15,591.21	12,130.24	79.19	78.16	-88.72	-4,040.72	2,532.04	2,242.24	2,131.07	111.17	20.169		
15,800.00	12,216.12	15,691.21	12,132.19	80.58	79.55	-88.74	-4,140.69	2,533.02	2,242.33	2,129.18	113.15	19.818		
15,900.00	12,217.43	15,791.21	12,134.15	81.99	80.96	-88.76	-4,240.67	2,533.99	2,242.42	2,127.28	115.14	19.476		
16,000.00	12,218.74	15,891.21	12,136.10	83.41	82.37	-88.77	-4,340.64	2,534.97	2,242.50	2,125.36	117.14	19.144		
16,100.00	12,220.06	15,991.20	12,138.06	84.83	83.80	-88.79	-4,440.61	2,535.95	2,242.59	2,123.43	119.16	18.821		
16,200.00	12,221.37	16,091.20	12,140.01	86.26	85.23	-88.81	-4,540.59	2,536.93	2,242.68	2,121.49	121.18	18.506		
16,300.00	12,222.69	16,191.20	12,141.97	87.70	86.67	-88.82	-4,640.56	2,537.91	2,242.76	2,119.54	123.22	18.201		
16,400.00	12,224.00	16,291.20	12,143.92	89.15	88.11	-88.84	-4,740.53	2,538.89	2,242.85	2,117.58	125.27	17.904		
16,500.00	12,225.32	16,391.20	12,145.88	90.61	89.57	-88.86	-4,840.51	2,539.87	2,242.94	2,115.61	127.33	17.616		
16,600.00	12,226.63	16,491.19	12,147.83	92.07	91.03	-88.87	-4,940.48	2,540.85	2,243.03	2,113.63	129.39	17.335		
16,700.00	12,227.94	16,591.19	12,149.79	93.53	92.50	-88.89	-5,040.46	2,541.83	2,243.12	2,111.64	131.47	17.062		
16,800.00	12,229.26	16,691.19	12,151.74	95.01	93.97	-88.90	-5,140.43	2,542.81	2,243.20	2,109.65	133.56	16.796		
16,900.00	12,230.57	16,791.19	12,153.70	96.49	95.45	-88.92	-5,240.40	2,543.79	2,243.29	2,107.64	135.65	16.537		
17,000.00	12,231.89	16,891.18	12,155.65	97.97	96.93	-88.94	-5,340.38	2,544.76	2,243.38	2,105.63	137.75	16.286		
17,100.00	12,233.20	16,991.18	12,157.61	99.46	98.43	-88.95	-5,440.35	2,545.74	2,243.47	2,103.61	139.86	16.041		
17,200.00	12,234.52	17,091.18	12,159.56	100.96	99.92	-88.97	-5,540.33	2,546.72	2,243.56	2,101.58	141.98	15.802		
17,300.00	12,235.83	17,191.18	12,161.52	102.46	101.42	-88.99	-5,640.30	2,547.70	2,243.65	2,099.55	144.10	15.570		
17,400.00	12,237.15	17,291.18	12,163.47	103.96	102.93	-89.00	-5,740.27	2,548.68	2,243.74	2,097.51	146.23	15.344		
17,500.00	12,238.46	17,391.17	12,165.43	105.47	104.44	-89.02	-5,840.25	2,549.66	2,243.83	2,095.46	148.36	15.124		
17,600.00	12,239.77	17,491.17	12,167.38	106.99	105.95	-89.04	-5,940.22	2,550.64	2,243.92	2,093.41	150.50	14.909		
17,700.00	12,241.09	17,591.17	12,169.34	108.50	107.47	-89.05	-6,040.20	2,551.62	2,244.01	2,091.36	152.65	14.700		
17,800.00	12,242.40	17,691.17	12,171.29	110.03	108.99	-89.07	-6,140.17	2,552.60	2,244.10	2,089.29	154.80	14.496		
17,900.00	12,243.72	17,791.17	12,173.25	111.55	110.51	-89.08	-6,240.14	2,553.58	2,244.19	2,087.23	156.96	14.298		
18,000.00	12,245.03	17,891.16	12,175.20	113.08	112.04	-89.10	-6,340.12	2,554.56	2,244.28	2,085.15	159.13	14.104		
18,100.00	12,246.35	17,991.16	12,177.16	114.61	113.58	-89.12	-6,440.09	2,555.54	2,244.37	2,083.08	161.29	13.915		
18,200.00	12,247.66	18,091.16	12,179.11	116.15	115.11	-89.13	-6,540.07	2,556.51	2,244.46	2,080.99	163.47	13.730		
18,300.00	12,248.98	18,191.16	12,181.07	117.69	116.65	-89.15	-6,640.04	2,557.49	2,244.55	2,078.91	165.64	13.550		
18,400.00	12,250.29	18,291.16	12,183.02	119.23	118.19	-89.17	-6,740.01	2,558.47	2,244.64	2,076.82	167.82	13.375		
18,500.00	12,251.60	18,391.15	12,184.98	120.77	119.74	-89.18	-6,839.99	2,559.45	2,244.73	2,074.72	170.01	13.203		
18,600.00	12,252.92	18,491.15	12,186.93	122.32	121.29	-89.20	-6,939.96	2,560.43	2,244.83	2,072.63	172.20	13.036		
18,700.00	12,254.23	18,591.15	12,188.89	123.87	122.84	-89.22	-7,039.94	2,561.41	2,244.92	2,070.52	174.39	12.873		
18,800.00	12,255.55	18,691.15	12,190.84	125.42	124.39	-89.23	-7,139.91	2,562.39	2,245.01	2,068.42	176.59	12.713		
18,900.00	12,256.86	18,791.14	12,192.80	126.98	125.95	-89.25	-7,239.88	2,563.37	2,245.10	2,066.31	178.79	12.557		
19,000.00	12,258.18	18,891.14	12,194.75	128.53	127.50	-89.27	-7,339.86	2,564.35	2,245.19	2,064.20	181.00	12.405		

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 Kaston Fed Com 703H
Project:	Lea County, NM (NAD83)	TVD Reference:	3057.5' GE + 30' KB @ 3087.50usft
Reference Site:	Bus Driver/Kaston Fed Com	MD Reference:	3057.5' GE + 30' KB @ 3087.50usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Kaston Fed Com 703H	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 #4	Offset TVD Reference:	Offset Datum

Offset Design LHS Wildcat Fed Com - LHS Wildcat Fed Com 705H - OH - Plan #3													Offset Site Error:	0.00 usft
Survey Program: 0-OWSG (Rev2) MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
19,100.00	12,259.49	18,991.14	12,196.71	130.09	129.06	-89.28	-7,439.83	2,565.33	2,245.29	2,062.08	183.20	12.256		
19,200.00	12,260.80	19,091.14	12,198.66	131.66	130.63	-89.30	-7,539.81	2,566.31	2,245.38	2,059.97	185.41	12.110		
19,300.00	12,262.12	19,191.14	12,200.62	133.22	132.19	-89.31	-7,639.78	2,567.28	2,245.47	2,057.85	187.63	11.968		
19,400.00	12,263.43	19,291.13	12,202.57	134.79	133.76	-89.33	-7,739.75	2,568.26	2,245.57	2,055.72	189.84	11.829		
19,500.00	12,264.75	19,391.13	12,204.53	136.36	135.33	-89.35	-7,839.73	2,569.24	2,245.66	2,053.60	192.06	11.692		
19,600.00	12,266.06	19,491.13	12,206.48	137.93	136.90	-89.36	-7,939.70	2,570.22	2,245.75	2,051.47	194.28	11.559		
19,700.00	12,267.38	19,591.13	12,208.44	139.50	138.47	-89.38	-8,039.68	2,571.20	2,245.85	2,049.34	196.51	11.429		
19,800.00	12,268.69	19,691.13	12,210.39	141.07	140.05	-89.40	-8,139.65	2,572.18	2,245.94	2,047.20	198.74	11.301		
19,900.00	12,270.01	19,791.12	12,212.35	142.65	141.63	-89.41	-8,239.62	2,573.16	2,246.03	2,045.07	200.97	11.176		
20,000.00	12,271.32	19,891.12	12,214.30	144.23	143.20	-89.43	-8,339.60	2,574.14	2,246.13	2,042.93	203.20	11.054		
20,100.00	12,272.63	19,991.12	12,216.26	145.81	144.78	-89.45	-8,439.57	2,575.12	2,246.22	2,040.79	205.43	10.934		
20,200.00	12,273.95	20,091.12	12,218.21	147.39	146.37	-89.46	-8,539.55	2,576.10	2,246.32	2,038.65	207.67	10.817		
20,300.00	12,275.26	20,191.12	12,220.17	148.97	147.95	-89.48	-8,639.52	2,577.08	2,246.41	2,036.50	209.91	10.702		
20,400.00	12,276.58	20,291.11	12,222.12	150.55	149.53	-89.49	-8,739.49	2,578.05	2,246.51	2,034.36	212.15	10.589		
20,500.00	12,277.89	20,391.11	12,224.08	152.14	151.12	-89.51	-8,839.47	2,579.03	2,246.60	2,032.21	214.39	10.479		
20,600.00	12,279.21	20,491.11	12,226.03	153.73	152.71	-89.53	-8,939.44	2,580.01	2,246.70	2,030.06	216.64	10.371		
20,700.00	12,280.52	20,591.11	12,227.99	155.32	154.30	-89.54	-9,039.42	2,580.99	2,246.79	2,027.91	218.89	10.265		
20,800.00	12,281.84	20,691.10	12,229.94	156.90	155.89	-89.56	-9,139.39	2,581.97	2,246.89	2,025.75	221.14	10.161		
20,900.00	12,283.15	20,791.10	12,231.90	158.50	157.48	-89.58	-9,239.36	2,582.95	2,246.98	2,023.60	223.39	10.059		
21,000.00	12,284.46	20,891.10	12,233.85	160.09	159.07	-89.59	-9,339.34	2,583.93	2,247.08	2,021.44	225.64	9.959		
21,100.00	12,285.78	20,991.10	12,235.81	161.68	160.66	-89.61	-9,439.31	2,584.91	2,247.18	2,019.28	227.89	9.861		
21,200.00	12,287.09	21,091.10	12,237.76	163.28	162.26	-89.63	-9,539.29	2,585.89	2,247.27	2,017.12	230.15	9.764		
21,300.00	12,288.41	21,191.09	12,239.72	164.87	163.86	-89.64	-9,639.26	2,586.87	2,247.37	2,014.96	232.41	9.670		
21,400.00	12,289.72	21,291.09	12,241.67	166.47	165.45	-89.66	-9,739.23	2,587.85	2,247.47	2,012.80	234.66	9.577		
21,500.00	12,291.04	21,391.09	12,243.63	168.07	167.05	-89.67	-9,839.21	2,588.83	2,247.56	2,010.64	236.93	9.486		
21,600.00	12,292.35	21,491.09	12,245.58	169.66	168.65	-89.69	-9,939.18	2,589.80	2,247.66	2,008.47	239.19	9.397		
21,700.00	12,293.66	21,591.09	12,247.54	171.26	170.25	-89.71	-10,039.16	2,590.78	2,247.76	2,006.31	241.45	9.309		
21,800.00	12,294.98	21,691.08	12,249.49	172.87	171.85	-89.72	-10,139.13	2,591.76	2,247.85	2,004.14	243.72	9.223		
21,900.00	12,296.29	21,791.08	12,251.45	174.47	173.46	-89.74	-10,239.10	2,592.74	2,247.95	2,001.97	245.98	9.139		
22,000.00	12,297.61	21,891.08	12,253.40	176.07	175.06	-89.76	-10,339.08	2,593.72	2,248.05	1,999.80	248.25	9.056		
22,100.00	12,298.92	21,991.08	12,255.36	177.67	176.66	-89.77	-10,439.05	2,594.70	2,248.15	1,997.63	250.52	8.974		
22,200.00	12,300.24	22,091.08	12,257.31	179.28	178.27	-89.79	-10,539.03	2,595.68	2,248.25	1,995.46	252.79	8.894		
22,300.00	12,301.55	22,191.07	12,259.27	180.88	179.88	-89.80	-10,639.00	2,596.66	2,248.34	1,993.29	255.06	8.815		
22,300.01	12,301.55	22,191.08	12,259.27	180.88	179.88	-89.80	-10,639.01	2,596.66	2,248.34	1,993.29	255.06	8.815		
22,400.00	12,302.87	22,259.70	12,260.61	182.49	180.98	-89.82	-10,707.61	2,597.33	2,248.66	1,991.65	257.01	8.749 ES		
22,500.00	12,304.18	22,259.70	12,260.61	184.10	180.98	-89.82	-10,707.61	2,597.33	2,252.38	1,994.44	257.93	8.732 SF		
22,600.00	12,305.49	22,259.70	12,260.61	185.71	180.98	-89.82	-10,707.61	2,597.33	2,260.51	2,002.18	258.33	8.750		
22,700.00	12,306.81	22,259.70	12,260.61	187.31	180.98	-89.82	-10,707.61	2,597.33	2,273.02	2,014.81	258.22	8.803		
22,800.00	12,308.12	22,259.70	12,260.61	188.92	180.98	-89.82	-10,707.61	2,597.33	2,289.84	2,032.24	257.60	8.889		
22,900.00	12,309.44	22,259.70	12,260.61	190.53	180.98	-89.82	-10,707.61	2,597.33	2,310.86	2,054.34	256.52	9.009		
23,000.00	12,310.75	22,259.70	12,260.61	192.14	180.98	-89.82	-10,707.61	2,597.33	2,335.98	2,080.98	255.00	9.161		
23,100.00	12,312.07	22,259.70	12,260.61	193.76	180.98	-89.82	-10,707.61	2,597.33	2,365.06	2,111.96	253.10	9.344		
23,200.00	12,313.38	22,259.70	12,260.61	195.37	180.98	-89.82	-10,707.61	2,597.33	2,397.96	2,147.13	250.84	9.560		
23,300.00	12,314.70	22,259.70	12,260.61	196.98	180.98	-89.82	-10,707.61	2,597.33	2,434.53	2,186.25	248.28	9.806		
23,400.00	12,316.01	22,259.70	12,260.61	198.59	180.98	-89.82	-10,707.61	2,597.33	2,474.60	2,229.14	245.46	10.081		
23,500.00	12,317.32	22,259.70	12,260.61	200.21	180.98	-89.82	-10,707.61	2,597.33	2,518.01	2,275.58	242.43	10.387		
23,600.00	12,318.64	22,259.70	12,260.61	201.82	180.98	-89.82	-10,707.61	2,597.33	2,564.59	2,325.35	239.23	10.720		
23,679.24	12,319.68	22,259.70	12,260.61	203.10	180.98	-89.82	-10,707.61	2,597.33	2,603.63	2,367.03	236.60	11.004		
23,679.99	12,319.69	22,259.70	12,260.61	203.12	180.98	-89.82	-10,707.61	2,597.33	2,604.00	2,366.98	237.03	10.986		

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



Total Directional Services

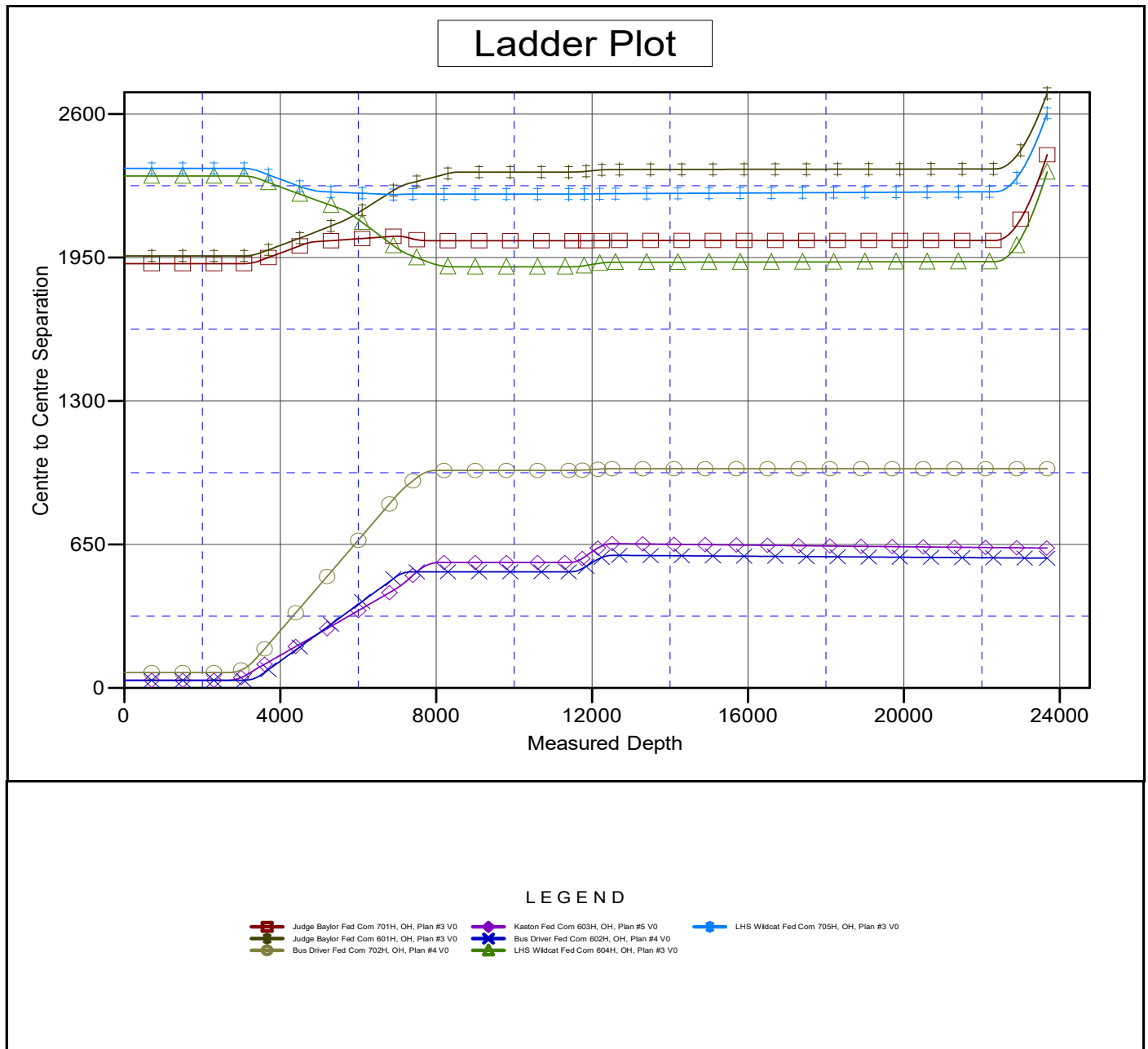
Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well Kaston Fed Com 703H
Project:	Lea County, NM (NAD83)	TVD Reference:	3057.5' GE + 30' KB @ 3087.50usft
Reference Site:	Bus Driver/Kaston Fed Com	MD Reference:	3057.5' GE + 30' KB @ 3087.50usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Kaston Fed Com 703H	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 #4	Offset TVD Reference:	Offset Datum

Reference Depths are relative to 3057.5' GE + 30' KB @ 3087.50usft
 Offset Depths are relative to Offset Datum
 Central Meridian is -104.333334

Coordinates are relative to: Kaston Fed Com 703H
 Coordinate System is US State Plane 1983, New Mexico Eastern Zone
 Grid Convergence at Surface is: 0.54°



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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Project:	Lea County, NM (NAD83)	TVD Reference:	3057.5' GE + 30' KB @ 3087.50usft
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Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Kaston Fed Com 703H	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 #4	Offset TVD Reference:	Offset Datum

Reference Depths are relative to 3057.5' GE + 30' KB @ 3087.50usft

Offset Depths are relative to Offset Datum

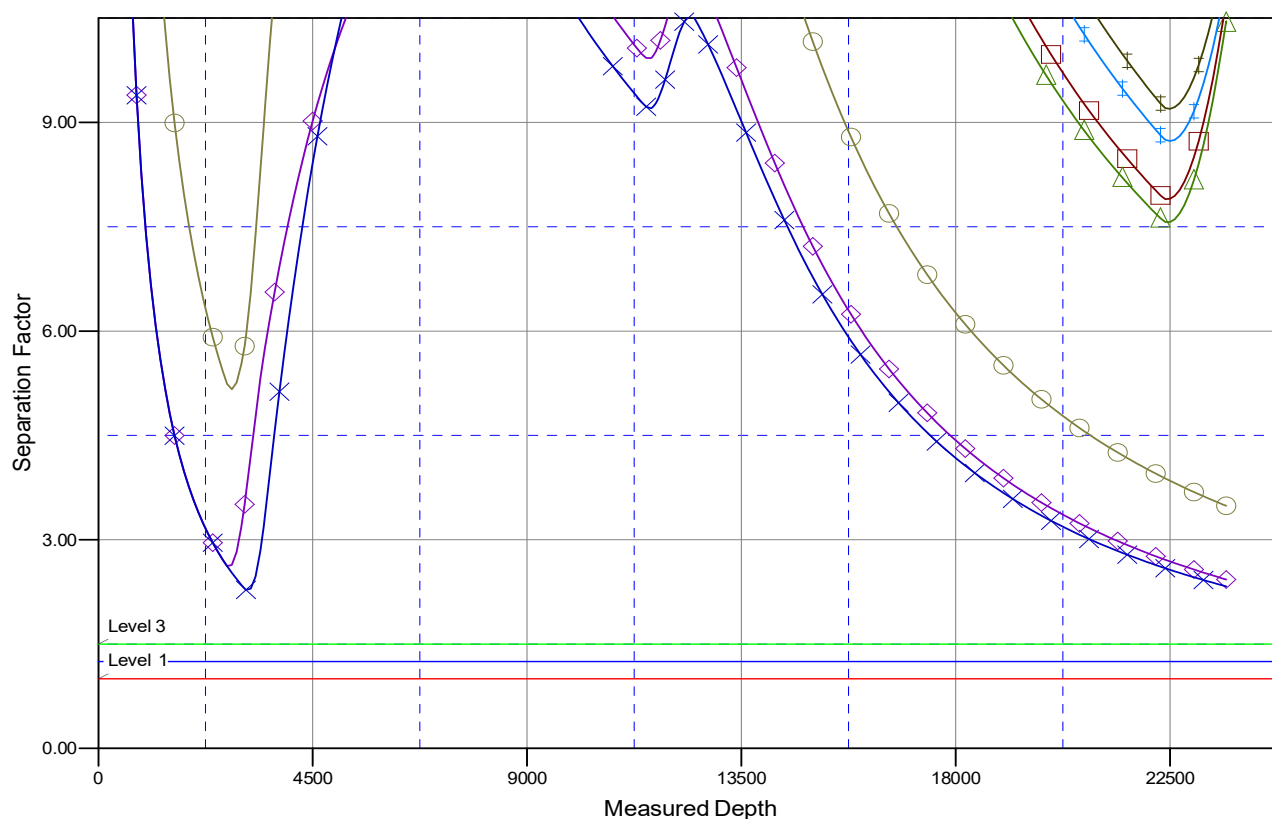
Central Meridian is -104.333334

Coordinates are relative to: Kaston Fed Com 703H

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

Grid Convergence at Surface is: 0.54°

Separation Factor Plot



LEGEND

Judge Baylor Fed Com 701H, OH, Plan #3 V0	Kaston Fed Com 603H, OH, Plan #5 V0	LHS Wildcat Fed Com 705H, OH, Plan #3 V0
Judge Baylor Fed Com 601H, OH, Plan #3 V0	Bus Driver Fed Com 602H, OH, Plan #4 V0	
Bus Driver Fed Com 702H, OH, Plan #4 V0	LHS Wildcat Fed Com 604H, OH, Plan #3 V0	

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



U. S. Steel Tubular Products

7/14/2020 11:41:19 AM

5.500" 23.00lbs/ft (0.415" Wall) P110 USS-EAGLE SFH®



MECHANICAL PROPERTIES	Pipe	USS-EAGLE SFH™	
Minimum Yield Strength	110,000	--	psi
Maximum Yield Strength	140,000	--	psi
Minimum Tensile Strength	125,000	--	psi
DIMENSIONS	Pipe	USS-EAGLE SFH™	
Outside Diameter	5.500	5.830	in.
Wall Thickness	0.415	--	in.
Inside Diameter	4.670	4.585	in.
Standard Drift	4.545	4.545	in.
Alternate Drift	--	4.545	in.
Nominal Linear Weight, T&C	23.00	--	lbs/ft
Plain End Weight	22.56	--	lbs/ft
SECTION AREA	Pipe	USS-EAGLE SFH™	
Critical Area	6.630	5.507	sq. in.
Joint Efficiency	--	83.1	%
PERFORMANCE	Pipe	USS-EAGLE SFH™	
Minimum Collapse Pressure	14,540	14,540	psi
External Pressure Leak Resistance	--	9,130	psi
Minimum Internal Yield Pressure	14,520	14,520	psi
Minimum Pipe Body Yield Strength	729,000	--	lbs
Joint Strength	--	606,000	lbs
Compression Rating	--	606,000	lbs
Reference Length	--	17,900	ft
Maximum Uniaxial Bend Rating	--	76.2	deg/100 ft
MAKE-UP DATA	Pipe	USS-EAGLE SFH™	
Make-Up Loss	--	6.65	in.
Minimum Make-Up Torque	--	16,600	ft-lbs
Maximum Make-Up Torque	--	19,800	ft-lbs
Maximum Operating Torque	--	28,000	ft-lbs

Legal Notice

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www.usstubular.com

FRANKLIN MOUNTAIN ENERGY



Geologic Prognosis

Well Name	Kasten Fed Com 703H
Operator	Franklin Mountain Energy, LLC
Project Area	PF Unit
Well Type	11,000' Upper Wolfcamp Lateral
API	
Permit Number	
Rig	

State	NM	County	Lea						
SHL	Township	25S/35E	Section	36	2,445'	FWL	312'	FSL	
BHL	Township	26S/35E	Section	13	2,600'	FEL	1,170'	FNL	
Surface Latitude	NAD 83	32.080431							
Surface Longitude	NAD 83	103.321895							
Bottom Hole Latitude	NAD 83	32.047329							
Bottom Hole Longitude	NAD 83	103.321096							
Ground Level	3,057'	Rig KB	30'	KB	3,087'				

Formations	PROG SS	PROG TVD	Picked TVD	delta	Potential/Issues
Cenozoic Alluvium (surface)	3,057'	30'	30'	0	Sand/Gravels/unconsolidated
Rustler	2,263'	824'			Carbonates
Salado	1,743'	1,344'			Salt, Carbonate & Clastics
Base Salt	498'	2,589'			Shaley Carbonate & Shale
Lamar	-1,995'	5,082'			Carbonate & Clastics
Bell Canyon	-2,030'	5,117'			Sandstone - oil/gas/water
Cherry Canyon	-2,879'	5,966'			Sandstone - oil/gas/water
Brushy Canyon	-4,264'	7,351'			Sand/carb/shales - oil/gas/water
Bone Spring Lime	-5,634'	8,721'			Shale/Carbonates - oil/gas
Avalon	-5,658'	8,745'			Shale/Carbonates - oil/gas
First Bone Spring Sand	-6,760'	9,847'			Sandstone - oil/gas/water
Second Bone Spring Carbonates	-6,899'	9,986'			Shale/Carbonates - oil/gas
Second Bone Spring Sand	-7,284'	10,371'			Sandstone - oil/gas/water
Third Bone Spring Carbonates	-7,984'	11,071'			Shale/Carbonates - oil/gas
Third Bone Spring Sand	-8,655'	11,742'			Sandstone - oil/gas/water
Wolfcamp	-8,897'	11,984'			Overpressure shale/sand- Oil/Gas
Wolfcamp A	-8,958'	12,045'			Overpressure Shale - Oil/Gas
HZ Target	-9,084'	12,171'			Overpressure Shale - Oil/Gas
Wolfcamp B	-9,178'	12,265'			Overpressure Shale - Oil/Gas

Target interval is expected to have an average apparent dip of 0.75 degrees down along the lateral based on the Wolfcamp A structure

Target window tolerance is set at +/- 10'

Target Line: 12162' KBTVD @ 0' VS w/ 89.25° inc.
Offset Log: Talco Unit 001 (300252674700)
Updated 4/16/21

FME Geologist	Ben Kessel		bkessel@fmellc.com	
	Office	720-414-7868	Cell	303.868.9946
FME Engineer				
Electric Logs				
			From	To
Open-Hole				
	n/a			
MWD/LWD				
	MWD GR		Int. 1 Csg. Point	TD
Mud Log:				
Start logging at drill out of surface casing				
Sampling:	10' samples in vertical and through curve, 30' samples in lateral			
Samples:	1 set dry samples at footage frequency noted above			
Mud Gas:	Continuous			
Daily Contact:	Email distribution of mud log/daily report at 7:30am and 4:30 pm CST			
Daily Mud Log Email Distribution List				
Final Mud Log Distribution				
	Ben Kessel (bkessel@fmellc.com)			email
Cuttings/Samples Shipment Information				

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

COMMENTS

Action 28425

COMMENTS

Operator: Franklin Mountain Energy LLC 44 Cook Street Denver, CO 80206	OGRID: 373910
	Action Number: 28425
	Action Type: [C-103] NOI Change of Plans (C-103A)

COMMENTS

Created By	Comment	Comment Date
jagarcia	Accepted for record	6/25/2021

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CONDITIONS

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jagarcia	Adhere to previous COA.	6/25/2021