

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

OCD - HOBBS
07/24/2020
RECEIVED

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

1a. Type of work: ☐ DRILL ☐ REENTER		5. Lease Serial No.
1b. Type of Well: ☐ Oil Well ☐ Gas Well ☐ Other		6. If Indian, Allottee or Tribe Name
1c. Type of Completion: ☐ Hydraulic Fracturing ☐ Single Zone ☐ Multiple Zone		7. If Unit or CA Agreement, Name and No.
2. Name of Operator		8. Lease Name and Well No. [328929]
3a. Address [373910]	3b. Phone No. (include area code)	9. API Well No. 30-025-47492
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At surface At proposed prod. zone		10. Field and Pool, or Exploratory [98185]
14. Distance in miles and direction from nearest town or post office*		11. Sec., T. R. M. or Blk. and Survey or Area
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)		12. County or Parish
16. No of acres in lease		13. State
17. Spacing Unit dedicated to this well		
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.		
19. Proposed Depth		
20. BLM/BIA Bond No. in file		
21. Elevations (Show whether DF, KDB, RT, GL, etc.)		
22. Approximate date work will start*		
23. Estimated duration		
24. Attachments		

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

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

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

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

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

GCP Rec 07/24/2020

NSL

(Continued on page 2)

APPROVED WITH CONDITIONS
Approval Date: 07/15/2020

Kz
08/06/2020

REQUIRES NSL

*(Instructions on page 2)



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.



Emergency Contact List:

Vladimir Roudakov, Drilling Engineer	Cell 720 933 9784
Rachael Overbey, Project and Regulatory Director	Cell 303 570 4057
Franklin Mountain Energy Afterhours Emergency Call Tree:	720-640-7517

EMERGENCY NUMBERS:

<u>Agency</u>	<u>Telephone Number</u>
BLM – Carlsbad Mainline	575-234-5972
BLM – Spill Emergency	575-234-6235
BLM – Engineering Emergency	575-361-2822
NMOCD District 1 – Hobbs Mainline	575-393-6161
NMOCD Emergency Line	575-370-3186
Wild Well Control	281-784-4700
H2S Emergency response:	
Air Ambulance New Mexico – Lea Co Reginal	575-391-2934
Lea County Sheriff's Department	575-396-3611
Fire Department:	
Carlsbad	575-885-3125
Artesia	575-746-5050
Lea County Regional Medical Center	575-492-5000
Jal Community Hospital	505-395-2511
Lea County Emergency Management	575-396-8602
Poison Control Center	800-222-1222



County Fair Fed Com 602H

1. Geologic name of surface location: Permian

2. Estimated tops of important geological markers:

Formations	PROG SS	PROG TVD	Picked TVD	delta	Potential/Issues
Cenozoic Alluvium (surface)	3,248'	21'	21'	0	Sand/Gravels/unconsolidated
Rustler	2,463'	806'			Carbonates
Salado	2,296'	973'			Salt, Carbonate & Clastics
Base Salt	679'	2,590'			Shaley Carbonate & Shale
Lamar	-1,826'	5,095'			Carbonate & Clastics
Bell Canyon	-1,862'	5,131'			Sandstone - oil/gas/water
Cherry Canyon	-2,809'	6,078'			Sandstone - oil/gas/water
Brushy Canyon	-4,059'	7,328'			Sand/carb/shales - oil/gas/water
Bone Spring Lime	-5,496'	8,765'			Shale/Carbonates - oil/gas
Avalon	-5,540'	8,809'			Shale/Carbonates - oil/gas
First Bone Spring Sand	-6,797'	10,066'			Sandstone - oil/gas/water
Second Bone Spring Carbonates	-6,889'	10,158'			Shale/Carbonates - oil/gas
Second Bone Spring Sand	-7,370'	10,639'			Sandstone - oil/gas/water
Third Bone Spring Carbonates	-7,819'	11,088'			Shale/Carbonates - oil/gas
Third Bone Spring Sand	-8,410'	11,679'			Sandstone - oil/gas/water
HZ Target at SHL	-8,673'	11,942'			Overpressure shale/sand- Oil/Gas
Wolfcamp	-8,764'	12,033'			Overpressure shale/sand- Oil/Gas
Wolfcamp A	-8,802'	12,071'			Overpressure Shale - Oil/Gas
Wolfcamp B	-9,000'	12,269'			Overpressure Shale - Oil/Gas

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

Upper Permian Sands	0- 400'	Fresh Water
Delaware Sands	5,131'	Oil
Bone Spring	10,066'	Oil
Wolfcamp	12,033'	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:

Casing string	Weight ppf	Grade	Burst psi	Collapse psi	Tension 1,000 lbs	Length ft	API design factor		
							Burst	Collapse	Tension
Surface 13 3/8"	54.5	J-55 BTC	2730	1130	853	1300	4.13	1.86	4.99
Intermediate 9 5/8"	40	HCL-80 BTC	7430	4230	916	5400	2.70	1.67	2.90
Intermediate 7 5/8"	29.7	HCP-110 Stinger	8280	7150	827	12276	1.10	1.26	1.80
Production 5 1/2"	20	P-110 Anaconda	12640	11080	641	22074	1.15	1.06	1.18



Cementing Program:

String Type	Hole Size	Casing Size	Setting Depth	Sacks	Lead Type of cmt	Yield ft3/sk	Water gal/sk	TOC ft	Sacks	Type of cmt	Tail Yield ft3/sk	Water gal/sk	TOC	Excess
Surf	17.5	13.375	1300	803	Extenda Cem, 13.5 ppg Class C, 4% Bentonite, 2%CaCl2, 0.25pps Cello-Flake	1.728	9.21	0	330	HalCem TM, 14.8 ppg, Class C, 2% CaCl2, 0.25pps Cello-Flake	1.364	6.61	1000	100%
Int1	12.25	9.625	5400	1523	Econocem TM, 12.9 ppg, Class C 50:50 Poz Gel, 0.25 pps Cello-Flake, 5% Salt, 2% Sodium	1.872	10.11	0	154	HalCem TM, 14.8 ppg, Class C, 0.25 pps Cello-Flake, 2% CaCl2	1.332	6.42	5100	100%
Int2	8.5	7.625	12276	284	NeoCem, 9 ppg, Class C 60:40 Poz Gel, 5% Salt, 5pps LCM, 0.25pps Cello-Flake	3.501	14.21	4400	153	NeoCem 15 ppg, Class C 0.25 pps Cello-Flake, 2% CaCl2	1.049	4.31	11276	50%
Prod	6.75	5.5	22074	412	SoluCem, 15 ppg, 0.25 D-Air, 0.85% HR 601	2.619	11.3	11276						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' – 12,276'	Brine	8.8-10.2	28-34	N/c
12,276' – 22,074' Lateral	Oil Base	10.0-11.0	58-68	3 - 6

The highest mud weight needed to balance formation is expected to be 11 ppg. In order to maintain hole stability, mud weights up to 12.0 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 12,038' TVD (deepest point of the well) is 195F with an estimated maximum bottom-hole pressure (BHP) at the same point of 7,511 psig (based on 12 ppg MW). Hydrogen sulfate may be present in the area. All necessary precautions will be taken before drilling operations commence. See Hydrogen Sulfide Plan below:

10. Hydrogen Sulfide Plan:

A. All personnel shall receive proper awareness H₂S training.

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

C. Required Emergency Equipment

a. Well Control Equipment

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

ii. Choke manifold with a remotely operated hydraulic choke.

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b. Protective equipment for essential personnel

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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. The 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 be 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.

Franklin Mountain Energy

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



Azimuths to Grid North
 True North: -0.53°
 Magnetic North: 6.08°

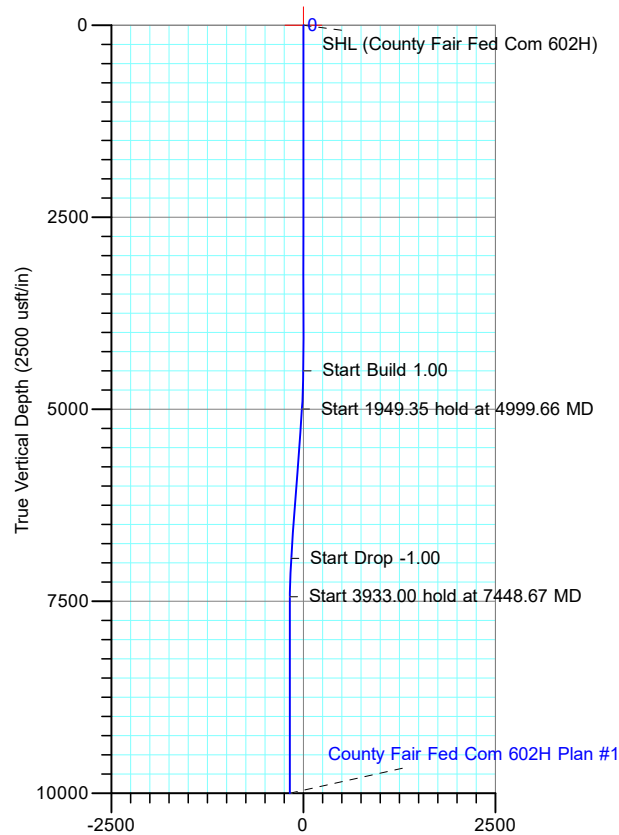
Magnetic Field
 Strength: 47708.4nT
 Dip Angle: 60.02°
 Date: 8/8/2019
 Model: IGRF2015

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



3248.1' GE + 21' KB @ 3269.10usft

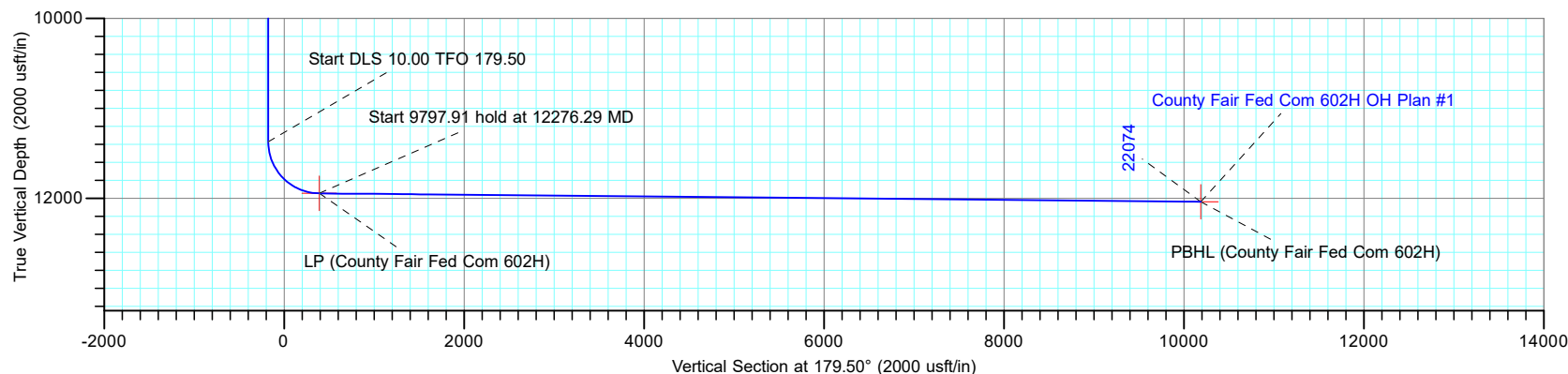
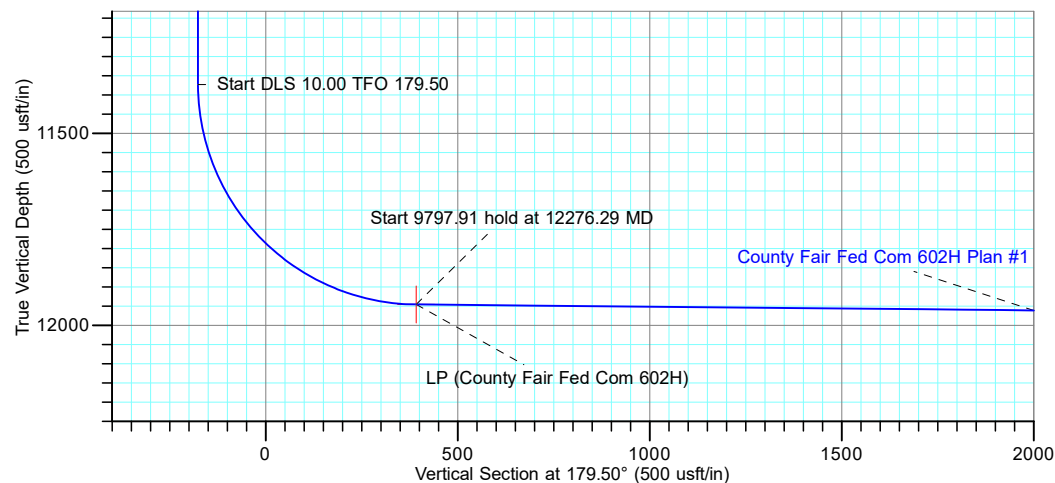


SECTION DETAILS

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	
4500.00	0.00	0.00	4500.00	0.00	0.00	0.00	0.00	0.00	Start Build 1.00
4999.66	5.00	325.12	4999.03	17.86	-12.45	1.00	325.12	-17.97	Start 1949.35 hold at 4999.66 MD
6949.01	5.00	325.12	6940.97	157.14	-109.55	0.00	0.00	-158.09	Start Drop -1.00
7448.67	0.00	0.00	7440.00	175.00	-122.00	1.00	180.00	-176.06	Start 3933.00 hold at 7448.67 MD
11381.67	0.00	0.00	11373.00	175.00	-122.00	0.00	0.00	-176.06	Start DLS 10.00 TFO 179.50
12276.29	89.46	179.50	11945.93	-392.55	-117.04	10.00	179.50	391.51	Start 9797.91 hold at 12276.29 MD
22074.19	89.46	179.50	12038.03	-10189.65	-31.47	0.00	0.00	10188.99	TD at 22074.19

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Latitude	Longitude
LP	11945.93	-392.55	-117.04	32.164960	-103.342971
PBHL	12038.03	-10189.65	-31.47	32.138030	-103.342986
SHL	0.00	0.00	0.00	32.166036	-103.342582



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

Plan: Plan #1 (County Fair Fed Com 602H/OH)
 County Fair/Blue Ribbon
 Created By: Dustin Ault Date: 15:09, August 09 2019
 Date: _____
 Approved: _____ Date: _____

Franklin Mountain Energy

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



Azimuths to Grid North
 True North: -0.53°
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Magnetic Field
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 Dip Angle: 60.02°
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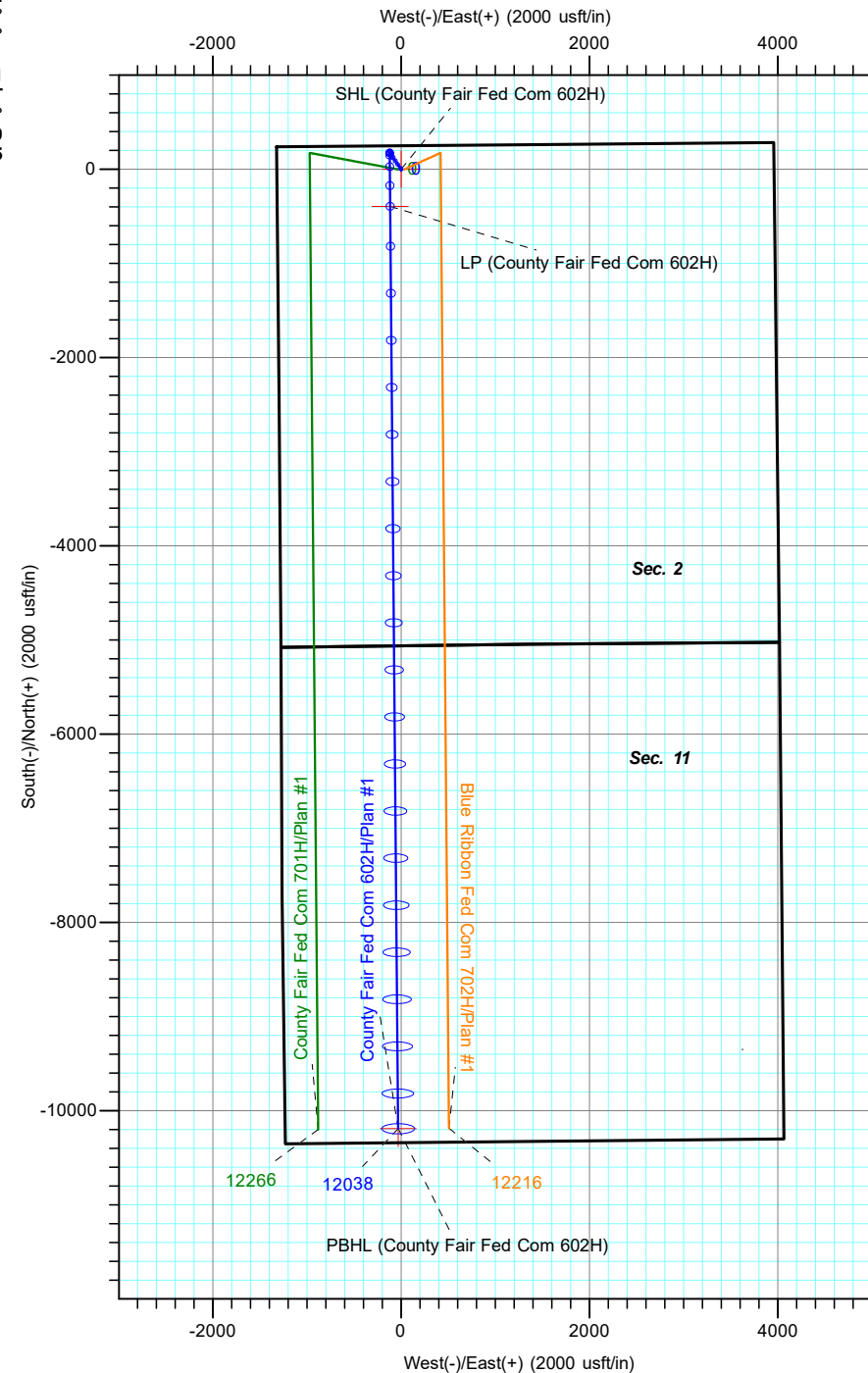
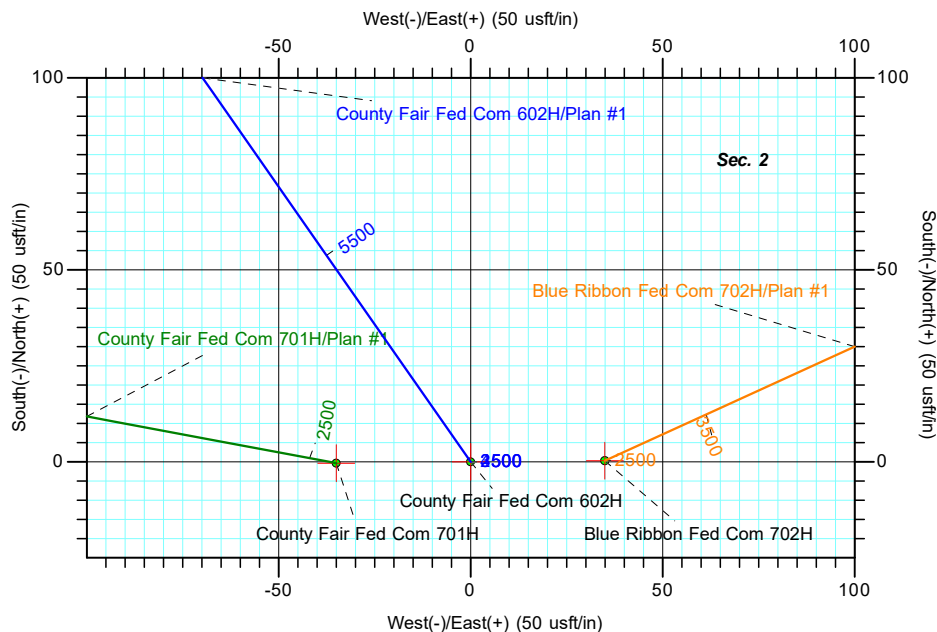


DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
LP	11945.93	-392.55	-117.04	425157.50	847793.62	32.164960	-103.342971
PBHL	12038.03	-10189.65	-31.47	415360.40	847879.19	32.138030	-103.342986
SHL	0.00	0.00	0.00	425550.05	847910.66	32.166036	-103.342582

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	
4500.00	0.00	0.00	4500.00	0.00	0.00	0.00	0.00	0.00	Start Build 1.00
4999.66	5.00	325.12	4999.03	17.86	-12.45	1.00	325.12	-17.97	Start 1949.35 hold at 4999.66 MD
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 Created By: Dustin Ault Date: 15:14, August 09 2019
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Franklin Mountain Energy

**Lea County, NM (NAD83)
County Fair/Blue Ribbon
County Fair Fed Com 602H**

OH

Plan: Plan #1

Standard Planning Report

09 August, 2019



Database:	EDM 5000.15 Single User Db	Local Co-ordinate Reference:	Well County Fair Fed Com 602H
Company:	Franklin Mountain Energy	TVD Reference:	3248.1' GE + 21' KB @ 3269.10usft
Project:	Lea County, NM (NAD83)	MD Reference:	3248.1' GE + 21' KB @ 3269.10usft
Site:	County Fair/Blue Ribbon	North Reference:	Grid
Well:	County Fair Fed Com 602H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

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

Site		County Fair/Blue Ribbon			
Site Position:		Northing:	425,549.73 usft	Latitude:	32.166036
From:	Map	Easting:	847,875.66 usft	Longitude:	-103.342695
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.53 °

Well	County Fair Fed Com 602H					
Well Position	+N/-S	0.32 usft	Northing:	425,550.05 usft	Latitude:	32.166036
	+E/-W	35.00 usft	Easting:	847,910.66 usft	Longitude:	-103.342582
Position Uncertainty		0.00 usft	Wellhead Elevation:		Ground Level:	3,248.10 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	8/8/2019	6.61	60.02	47,708.39349174

Design	Plan #1			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	179.50

Plan Survey Tool Program	Date	8/9/2019		
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	22,073.80	Plan #1 (OH)	

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	
4,500.00	0.00	0.00	4,500.00	0.00	0.00	0.00	0.00	0.00	0.00	
4,999.66	5.00	325.12	4,999.03	17.86	-12.45	1.00	1.00	0.00	325.12	
6,949.01	5.00	325.12	6,940.97	157.14	-109.55	0.00	0.00	0.00	0.00	
7,448.67	0.00	0.00	7,440.00	175.00	-122.00	1.00	-1.00	0.00	180.00	
11,381.67	0.00	0.00	11,373.00	175.00	-122.00	0.00	0.00	0.00	0.00	
12,276.29	89.46	179.50	11,945.93	-392.55	-117.04	10.00	10.00	20.06	179.50	
22,074.19	89.46	179.50	12,038.03	-10,189.65	-31.47	0.00	0.00	0.00	0.00	PBHL (County Fair Fe



Total Directional Services

Planning Report



Database:	EDM 5000.15 Single User Db	Local Co-ordinate Reference:	Well County Fair Fed Com 602H
Company:	Franklin Mountain Energy	TVD Reference:	3248.1' GE + 21' KB @ 3269.10usft
Project:	Lea County, NM (NAD83)	MD Reference:	3248.1' GE + 21' KB @ 3269.10usft
Site:	County Fair/Blue Ribbon	North Reference:	Grid
Well:	County Fair Fed Com 602H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SHL (County Fair Fed Com 602H)									
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	0.00	0.00
2,700.00	0.00	0.00	2,700.00	0.00	0.00	0.00	0.00	0.00	0.00
2,800.00	0.00	0.00	2,800.00	0.00	0.00	0.00	0.00	0.00	0.00
2,900.00	0.00	0.00	2,900.00	0.00	0.00	0.00	0.00	0.00	0.00
3,000.00	0.00	0.00	3,000.00	0.00	0.00	0.00	0.00	0.00	0.00
3,100.00	0.00	0.00	3,100.00	0.00	0.00	0.00	0.00	0.00	0.00
3,200.00	0.00	0.00	3,200.00	0.00	0.00	0.00	0.00	0.00	0.00
3,300.00	0.00	0.00	3,300.00	0.00	0.00	0.00	0.00	0.00	0.00
3,400.00	0.00	0.00	3,400.00	0.00	0.00	0.00	0.00	0.00	0.00
3,500.00	0.00	0.00	3,500.00	0.00	0.00	0.00	0.00	0.00	0.00
3,600.00	0.00	0.00	3,600.00	0.00	0.00	0.00	0.00	0.00	0.00
3,700.00	0.00	0.00	3,700.00	0.00	0.00	0.00	0.00	0.00	0.00
3,800.00	0.00	0.00	3,800.00	0.00	0.00	0.00	0.00	0.00	0.00
3,900.00	0.00	0.00	3,900.00	0.00	0.00	0.00	0.00	0.00	0.00
4,000.00	0.00	0.00	4,000.00	0.00	0.00	0.00	0.00	0.00	0.00
4,100.00	0.00	0.00	4,100.00	0.00	0.00	0.00	0.00	0.00	0.00
4,200.00	0.00	0.00	4,200.00	0.00	0.00	0.00	0.00	0.00	0.00
4,300.00	0.00	0.00	4,300.00	0.00	0.00	0.00	0.00	0.00	0.00
4,400.00	0.00	0.00	4,400.00	0.00	0.00	0.00	0.00	0.00	0.00
4,500.00	0.00	0.00	4,500.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 1.00									
4,600.00	1.00	325.12	4,600.00	0.72	-0.50	-0.72	1.00	1.00	0.00
4,700.00	2.00	325.12	4,699.96	2.86	-2.00	-2.88	1.00	1.00	0.00
4,800.00	3.00	325.12	4,799.86	6.44	-4.49	-6.48	1.00	1.00	0.00
4,900.00	4.00	325.12	4,899.68	11.45	-7.98	-11.52	1.00	1.00	0.00
4,999.66	5.00	325.12	4,999.03	17.86	-12.45	-17.97	1.00	1.00	0.00



Total Directional Services

Planning Report



Database:	EDM 5000.15 Single User Db	Local Co-ordinate Reference:	Well County Fair Fed Com 602H
Company:	Franklin Mountain Energy	TVD Reference:	3248.1' GE + 21' KB @ 3269.10usft
Project:	Lea County, NM (NAD83)	MD Reference:	3248.1' GE + 21' KB @ 3269.10usft
Site:	County Fair/Blue Ribbon	North Reference:	Grid
Well:	County Fair Fed Com 602H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
Start 1949.35 hold at 4999.66 MD									
5,100.00	5.00	325.12	5,098.99	25.03	-17.45	-25.18	0.00	0.00	0.00
5,200.00	5.00	325.12	5,198.61	32.18	-22.43	-32.37	0.00	0.00	0.00
5,300.00	5.00	325.12	5,298.23	39.32	-27.41	-39.56	0.00	0.00	0.00
5,400.00	5.00	325.12	5,397.85	46.46	-32.39	-46.75	0.00	0.00	0.00
5,500.00	5.00	325.12	5,497.47	53.61	-37.37	-53.93	0.00	0.00	0.00
5,600.00	5.00	325.12	5,597.09	60.75	-42.35	-61.12	0.00	0.00	0.00
5,700.00	5.00	325.12	5,696.71	67.90	-47.34	-68.31	0.00	0.00	0.00
5,800.00	5.00	325.12	5,796.33	75.04	-52.32	-75.50	0.00	0.00	0.00
5,900.00	5.00	325.12	5,895.95	82.19	-57.30	-82.69	0.00	0.00	0.00
6,000.00	5.00	325.12	5,995.57	89.33	-62.28	-89.87	0.00	0.00	0.00
6,100.00	5.00	325.12	6,095.19	96.48	-67.26	-97.06	0.00	0.00	0.00
6,200.00	5.00	325.12	6,194.81	103.62	-72.24	-104.25	0.00	0.00	0.00
6,300.00	5.00	325.12	6,294.43	110.77	-77.22	-111.44	0.00	0.00	0.00
6,400.00	5.00	325.12	6,394.05	117.91	-82.20	-118.63	0.00	0.00	0.00
6,500.00	5.00	325.12	6,493.67	125.06	-87.18	-125.81	0.00	0.00	0.00
6,600.00	5.00	325.12	6,593.29	132.20	-92.16	-133.00	0.00	0.00	0.00
6,700.00	5.00	325.12	6,692.91	139.35	-97.14	-140.19	0.00	0.00	0.00
6,800.00	5.00	325.12	6,792.53	146.49	-102.13	-147.38	0.00	0.00	0.00
6,900.00	5.00	325.12	6,892.15	153.64	-107.11	-154.57	0.00	0.00	0.00
6,949.01	5.00	325.12	6,940.97	157.14	-109.55	-158.09	0.00	0.00	0.00
Start Drop -1.00									
7,000.00	4.49	325.12	6,991.78	160.60	-111.96	-161.57	1.00	-1.00	0.00
7,100.00	3.49	325.12	7,091.54	166.30	-115.93	-167.30	1.00	-1.00	0.00
7,200.00	2.49	325.12	7,191.40	170.57	-118.91	-171.61	1.00	-1.00	0.00
7,300.00	1.49	325.12	7,291.34	173.42	-120.90	-174.47	1.00	-1.00	0.00
7,400.00	0.49	325.12	7,391.33	174.83	-121.88	-175.89	1.00	-1.00	0.00
7,448.67	0.00	0.00	7,440.00	175.00	-122.00	-176.06	1.00	-1.00	0.00
Start 3933.00 hold at 7448.67 MD									
7,500.00	0.00	0.00	7,491.33	175.00	-122.00	-176.06	0.00	0.00	0.00
7,600.00	0.00	0.00	7,591.33	175.00	-122.00	-176.06	0.00	0.00	0.00
7,700.00	0.00	0.00	7,691.33	175.00	-122.00	-176.06	0.00	0.00	0.00
7,800.00	0.00	0.00	7,791.33	175.00	-122.00	-176.06	0.00	0.00	0.00
7,900.00	0.00	0.00	7,891.33	175.00	-122.00	-176.06	0.00	0.00	0.00
8,000.00	0.00	0.00	7,991.33	175.00	-122.00	-176.06	0.00	0.00	0.00
8,100.00	0.00	0.00	8,091.33	175.00	-122.00	-176.06	0.00	0.00	0.00
8,200.00	0.00	0.00	8,191.33	175.00	-122.00	-176.06	0.00	0.00	0.00
8,300.00	0.00	0.00	8,291.33	175.00	-122.00	-176.06	0.00	0.00	0.00
8,400.00	0.00	0.00	8,391.33	175.00	-122.00	-176.06	0.00	0.00	0.00
8,500.00	0.00	0.00	8,491.33	175.00	-122.00	-176.06	0.00	0.00	0.00
8,600.00	0.00	0.00	8,591.33	175.00	-122.00	-176.06	0.00	0.00	0.00
8,700.00	0.00	0.00	8,691.33	175.00	-122.00	-176.06	0.00	0.00	0.00
8,800.00	0.00	0.00	8,791.33	175.00	-122.00	-176.06	0.00	0.00	0.00
8,900.00	0.00	0.00	8,891.33	175.00	-122.00	-176.06	0.00	0.00	0.00
9,000.00	0.00	0.00	8,991.33	175.00	-122.00	-176.06	0.00	0.00	0.00
9,100.00	0.00	0.00	9,091.33	175.00	-122.00	-176.06	0.00	0.00	0.00
9,200.00	0.00	0.00	9,191.33	175.00	-122.00	-176.06	0.00	0.00	0.00
9,300.00	0.00	0.00	9,291.33	175.00	-122.00	-176.06	0.00	0.00	0.00
9,400.00	0.00	0.00	9,391.33	175.00	-122.00	-176.06	0.00	0.00	0.00
9,500.00	0.00	0.00	9,491.33	175.00	-122.00	-176.06	0.00	0.00	0.00
9,600.00	0.00	0.00	9,591.33	175.00	-122.00	-176.06	0.00	0.00	0.00
9,700.00	0.00	0.00	9,691.33	175.00	-122.00	-176.06	0.00	0.00	0.00
9,800.00	0.00	0.00	9,791.33	175.00	-122.00	-176.06	0.00	0.00	0.00

Database:	EDM 5000.15 Single User Db	Local Co-ordinate Reference:	Well County Fair Fed Com 602H
Company:	Franklin Mountain Energy	TVD Reference:	3248.1' GE + 21' KB @ 3269.10usft
Project:	Lea County, NM (NAD83)	MD Reference:	3248.1' GE + 21' KB @ 3269.10usft
Site:	County Fair/Blue Ribbon	North Reference:	Grid
Well:	County Fair Fed Com 602H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
9,900.00	0.00	0.00	9,891.33	175.00	-122.00	-176.06	0.00	0.00	0.00
10,000.00	0.00	0.00	9,991.33	175.00	-122.00	-176.06	0.00	0.00	0.00
10,100.00	0.00	0.00	10,091.33	175.00	-122.00	-176.06	0.00	0.00	0.00
10,200.00	0.00	0.00	10,191.33	175.00	-122.00	-176.06	0.00	0.00	0.00
10,300.00	0.00	0.00	10,291.33	175.00	-122.00	-176.06	0.00	0.00	0.00
10,400.00	0.00	0.00	10,391.33	175.00	-122.00	-176.06	0.00	0.00	0.00
10,500.00	0.00	0.00	10,491.33	175.00	-122.00	-176.06	0.00	0.00	0.00
10,600.00	0.00	0.00	10,591.33	175.00	-122.00	-176.06	0.00	0.00	0.00
10,700.00	0.00	0.00	10,691.33	175.00	-122.00	-176.06	0.00	0.00	0.00
10,800.00	0.00	0.00	10,791.33	175.00	-122.00	-176.06	0.00	0.00	0.00
10,900.00	0.00	0.00	10,891.33	175.00	-122.00	-176.06	0.00	0.00	0.00
11,000.00	0.00	0.00	10,991.33	175.00	-122.00	-176.06	0.00	0.00	0.00
11,100.00	0.00	0.00	11,091.33	175.00	-122.00	-176.06	0.00	0.00	0.00
11,200.00	0.00	0.00	11,191.33	175.00	-122.00	-176.06	0.00	0.00	0.00
11,300.00	0.00	0.00	11,291.33	175.00	-122.00	-176.06	0.00	0.00	0.00
11,381.67	0.00	0.00	11,373.00	175.00	-122.00	-176.06	0.00	0.00	0.00
Start DLS 10.00 TFO 179.50									
11,400.00	1.83	179.50	11,391.32	174.71	-122.00	-175.76	10.00	10.00	0.00
11,450.00	6.83	179.50	11,441.16	170.93	-121.96	-171.99	10.00	10.00	0.00
11,500.00	11.83	179.50	11,490.49	162.83	-121.89	-163.88	10.00	10.00	0.00
11,550.00	16.83	179.50	11,538.92	150.45	-121.79	-151.51	10.00	10.00	0.00
11,600.00	21.83	179.50	11,586.08	133.91	-121.64	-134.96	10.00	10.00	0.00
11,650.00	26.83	179.50	11,631.62	113.31	-121.46	-114.37	10.00	10.00	0.00
11,700.00	31.83	179.50	11,675.20	88.83	-121.25	-89.88	10.00	10.00	0.00
11,750.00	36.83	179.50	11,716.48	60.64	-121.00	-61.69	10.00	10.00	0.00
11,800.00	41.83	179.50	11,755.14	28.96	-120.72	-30.01	10.00	10.00	0.00
11,850.00	46.83	179.50	11,790.89	-5.97	-120.42	4.92	10.00	10.00	0.00
11,900.00	51.83	179.50	11,823.46	-43.88	-120.09	42.83	10.00	10.00	0.00
11,950.00	56.83	179.50	11,852.61	-84.49	-119.73	83.44	10.00	10.00	0.00
12,000.00	61.83	179.50	11,878.10	-127.48	-119.36	126.44	10.00	10.00	0.00
12,050.00	66.83	179.50	11,899.75	-172.53	-118.96	171.49	10.00	10.00	0.00
12,100.00	71.83	179.50	11,917.40	-219.30	-118.56	218.25	10.00	10.00	0.00
12,150.00	76.83	179.50	11,930.89	-267.42	-118.14	266.38	10.00	10.00	0.00
12,200.00	81.83	179.50	11,940.15	-316.54	-117.71	315.50	10.00	10.00	0.00
12,250.00	86.83	179.50	11,945.08	-366.28	-117.27	365.24	10.00	10.00	0.00
12,276.29	89.46	179.50	11,945.93	-392.55	-117.04	391.51	10.00	10.00	0.00
Start 9797.91 hold at 12276.29 MD - LP (County Fair Fed Com 602H)									
12,300.00	89.46	179.50	11,946.16	-416.26	-116.84	415.22	0.00	0.00	0.00
12,400.00	89.46	179.50	11,947.10	-516.25	-115.96	515.22	0.00	0.00	0.00
12,500.00	89.46	179.50	11,948.04	-616.24	-115.09	615.22	0.00	0.00	0.00
12,600.00	89.46	179.50	11,948.98	-716.24	-114.22	715.21	0.00	0.00	0.00
12,700.00	89.46	179.50	11,949.92	-816.23	-113.34	815.21	0.00	0.00	0.00
12,800.00	89.46	179.50	11,950.86	-916.22	-112.47	915.20	0.00	0.00	0.00
12,900.00	89.46	179.50	11,951.80	-1,016.21	-111.60	1,015.20	0.00	0.00	0.00
13,000.00	89.46	179.50	11,952.74	-1,116.20	-110.72	1,115.19	0.00	0.00	0.00
13,100.00	89.46	179.50	11,953.68	-1,216.19	-109.85	1,215.19	0.00	0.00	0.00
13,200.00	89.46	179.50	11,954.62	-1,316.19	-108.98	1,315.19	0.00	0.00	0.00
13,300.00	89.46	179.50	11,955.56	-1,416.18	-108.10	1,415.18	0.00	0.00	0.00
13,400.00	89.46	179.50	11,956.50	-1,516.17	-107.23	1,515.18	0.00	0.00	0.00
13,500.00	89.46	179.50	11,957.44	-1,616.16	-106.36	1,615.17	0.00	0.00	0.00
13,600.00	89.46	179.50	11,958.38	-1,716.15	-105.48	1,715.17	0.00	0.00	0.00
13,700.00	89.46	179.50	11,959.32	-1,816.15	-104.61	1,815.16	0.00	0.00	0.00
13,800.00	89.46	179.50	11,960.26	-1,916.14	-103.73	1,915.16	0.00	0.00	0.00
13,900.00	89.46	179.50	11,961.20	-2,016.13	-102.86	2,015.15	0.00	0.00	0.00



Total Directional Services

Planning Report



Database:	EDM 5000.15 Single User Db	Local Co-ordinate Reference:	Well County Fair Fed Com 602H
Company:	Franklin Mountain Energy	TVD Reference:	3248.1' GE + 21' KB @ 3269.10usft
Project:	Lea County, NM (NAD83)	MD Reference:	3248.1' GE + 21' KB @ 3269.10usft
Site:	County Fair/Blue Ribbon	North Reference:	Grid
Well:	County Fair Fed Com 602H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
14,000.00	89.46	179.50	11,962.14	-2,116.12	-101.99	2,115.15	0.00	0.00	0.00	
14,100.00	89.46	179.50	11,963.08	-2,216.11	-101.11	2,215.15	0.00	0.00	0.00	
14,200.00	89.46	179.50	11,964.02	-2,316.10	-100.24	2,315.14	0.00	0.00	0.00	
14,300.00	89.46	179.50	11,964.96	-2,416.10	-99.37	2,415.14	0.00	0.00	0.00	
14,400.00	89.46	179.50	11,965.90	-2,516.09	-98.49	2,515.13	0.00	0.00	0.00	
14,500.00	89.46	179.50	11,966.84	-2,616.08	-97.62	2,615.13	0.00	0.00	0.00	
14,600.00	89.46	179.50	11,967.77	-2,716.07	-96.75	2,715.12	0.00	0.00	0.00	
14,700.00	89.46	179.50	11,968.71	-2,816.06	-95.87	2,815.12	0.00	0.00	0.00	
14,800.00	89.46	179.50	11,969.65	-2,916.05	-95.00	2,915.11	0.00	0.00	0.00	
14,900.00	89.46	179.50	11,970.59	-3,016.05	-94.13	3,015.11	0.00	0.00	0.00	
15,000.00	89.46	179.50	11,971.53	-3,116.04	-93.25	3,115.11	0.00	0.00	0.00	
15,100.00	89.46	179.50	11,972.47	-3,216.03	-92.38	3,215.10	0.00	0.00	0.00	
15,200.00	89.46	179.50	11,973.41	-3,316.02	-91.51	3,315.10	0.00	0.00	0.00	
15,300.00	89.46	179.50	11,974.35	-3,416.01	-90.63	3,415.09	0.00	0.00	0.00	
15,400.00	89.46	179.50	11,975.29	-3,516.01	-89.76	3,515.09	0.00	0.00	0.00	
15,500.00	89.46	179.50	11,976.23	-3,616.00	-88.89	3,615.08	0.00	0.00	0.00	
15,600.00	89.46	179.50	11,977.17	-3,715.99	-88.01	3,715.08	0.00	0.00	0.00	
15,700.00	89.46	179.50	11,978.11	-3,815.98	-87.14	3,815.07	0.00	0.00	0.00	
15,800.00	89.46	179.50	11,979.05	-3,915.97	-86.27	3,915.07	0.00	0.00	0.00	
15,900.00	89.46	179.50	11,979.99	-4,015.96	-85.39	4,015.07	0.00	0.00	0.00	
16,000.00	89.46	179.50	11,980.93	-4,115.96	-84.52	4,115.06	0.00	0.00	0.00	
16,100.00	89.46	179.50	11,981.87	-4,215.95	-83.65	4,215.06	0.00	0.00	0.00	
16,200.00	89.46	179.50	11,982.81	-4,315.94	-82.77	4,315.05	0.00	0.00	0.00	
16,300.00	89.46	179.50	11,983.75	-4,415.93	-81.90	4,415.05	0.00	0.00	0.00	
16,400.00	89.46	179.50	11,984.69	-4,515.92	-81.03	4,515.04	0.00	0.00	0.00	
16,500.00	89.46	179.50	11,985.63	-4,615.91	-80.15	4,615.04	0.00	0.00	0.00	
16,600.00	89.46	179.50	11,986.57	-4,715.91	-79.28	4,715.03	0.00	0.00	0.00	
16,700.00	89.46	179.50	11,987.51	-4,815.90	-78.41	4,815.03	0.00	0.00	0.00	
16,800.00	89.46	179.50	11,988.45	-4,915.89	-77.53	4,915.03	0.00	0.00	0.00	
16,900.00	89.46	179.50	11,989.39	-5,015.88	-76.66	5,015.02	0.00	0.00	0.00	
17,000.00	89.46	179.50	11,990.33	-5,115.87	-75.79	5,115.02	0.00	0.00	0.00	
17,100.00	89.46	179.50	11,991.27	-5,215.87	-74.91	5,215.01	0.00	0.00	0.00	
17,200.00	89.46	179.50	11,992.21	-5,315.86	-74.04	5,315.01	0.00	0.00	0.00	
17,300.00	89.46	179.50	11,993.15	-5,415.85	-73.17	5,415.00	0.00	0.00	0.00	
17,400.00	89.46	179.50	11,994.09	-5,515.84	-72.29	5,515.00	0.00	0.00	0.00	
17,500.00	89.46	179.50	11,995.03	-5,615.83	-71.42	5,615.00	0.00	0.00	0.00	
17,600.00	89.46	179.50	11,995.97	-5,715.82	-70.55	5,714.99	0.00	0.00	0.00	
17,700.00	89.46	179.50	11,996.91	-5,815.82	-69.67	5,814.99	0.00	0.00	0.00	
17,800.00	89.46	179.50	11,997.85	-5,915.81	-68.80	5,914.98	0.00	0.00	0.00	
17,900.00	89.46	179.50	11,998.79	-6,015.80	-67.93	6,014.98	0.00	0.00	0.00	
18,000.00	89.46	179.50	11,999.73	-6,115.79	-67.05	6,114.97	0.00	0.00	0.00	
18,100.00	89.46	179.50	12,000.67	-6,215.78	-66.18	6,214.97	0.00	0.00	0.00	
18,200.00	89.46	179.50	12,001.61	-6,315.77	-65.31	6,314.96	0.00	0.00	0.00	
18,300.00	89.46	179.50	12,002.55	-6,415.77	-64.43	6,414.96	0.00	0.00	0.00	
18,400.00	89.46	179.50	12,003.49	-6,515.76	-63.56	6,514.96	0.00	0.00	0.00	
18,500.00	89.46	179.50	12,004.43	-6,615.75	-62.69	6,614.95	0.00	0.00	0.00	
18,600.00	89.46	179.50	12,005.37	-6,715.74	-61.81	6,714.95	0.00	0.00	0.00	
18,700.00	89.46	179.50	12,006.31	-6,815.73	-60.94	6,814.94	0.00	0.00	0.00	
18,800.00	89.46	179.50	12,007.25	-6,915.73	-60.07	6,914.94	0.00	0.00	0.00	
18,900.00	89.46	179.50	12,008.19	-7,015.72	-59.19	7,014.93	0.00	0.00	0.00	
19,000.00	89.46	179.50	12,009.13	-7,115.71	-58.32	7,114.93	0.00	0.00	0.00	
19,100.00	89.46	179.50	12,010.07	-7,215.70	-57.45	7,214.92	0.00	0.00	0.00	
19,200.00	89.46	179.50	12,011.01	-7,315.69	-56.57	7,314.92	0.00	0.00	0.00	
19,300.00	89.46	179.50	12,011.95	-7,415.68	-55.70	7,414.92	0.00	0.00	0.00	



Total Directional Services

Planning Report



Database:	EDM 5000.15 Single User Db	Local Co-ordinate Reference:	Well County Fair Fed Com 602H
Company:	Franklin Mountain Energy	TVD Reference:	3248.1' GE + 21' KB @ 3269.10usft
Project:	Lea County, NM (NAD83)	MD Reference:	3248.1' GE + 21' KB @ 3269.10usft
Site:	County Fair/Blue Ribbon	North Reference:	Grid
Well:	County Fair Fed Com 602H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
19,400.00	89.46	179.50	12,012.89	-7,515.68	-54.83	7,514.91	0.00	0.00	0.00	
19,500.00	89.46	179.50	12,013.83	-7,615.67	-53.95	7,614.91	0.00	0.00	0.00	
19,600.00	89.46	179.50	12,014.77	-7,715.66	-53.08	7,714.90	0.00	0.00	0.00	
19,700.00	89.46	179.50	12,015.71	-7,815.65	-52.21	7,814.90	0.00	0.00	0.00	
19,800.00	89.46	179.50	12,016.65	-7,915.64	-51.33	7,914.89	0.00	0.00	0.00	
19,900.00	89.46	179.50	12,017.59	-8,015.63	-50.46	8,014.89	0.00	0.00	0.00	
20,000.00	89.46	179.50	12,018.53	-8,115.63	-49.59	8,114.88	0.00	0.00	0.00	
20,100.00	89.46	179.50	12,019.47	-8,215.62	-48.71	8,214.88	0.00	0.00	0.00	
20,200.00	89.46	179.50	12,020.41	-8,315.61	-47.84	8,314.88	0.00	0.00	0.00	
20,300.00	89.46	179.50	12,021.35	-8,415.60	-46.97	8,414.87	0.00	0.00	0.00	
20,400.00	89.46	179.50	12,022.29	-8,515.59	-46.09	8,514.87	0.00	0.00	0.00	
20,500.00	89.46	179.50	12,023.23	-8,615.59	-45.22	8,614.86	0.00	0.00	0.00	
20,600.00	89.46	179.50	12,024.17	-8,715.58	-44.35	8,714.86	0.00	0.00	0.00	
20,700.00	89.46	179.50	12,025.11	-8,815.57	-43.47	8,814.85	0.00	0.00	0.00	
20,800.00	89.46	179.50	12,026.05	-8,915.56	-42.60	8,914.85	0.00	0.00	0.00	
20,900.00	89.46	179.50	12,026.99	-9,015.55	-41.73	9,014.85	0.00	0.00	0.00	
21,000.00	89.46	179.50	12,027.93	-9,115.54	-40.85	9,114.84	0.00	0.00	0.00	
21,100.00	89.46	179.50	12,028.87	-9,215.54	-39.98	9,214.84	0.00	0.00	0.00	
21,200.00	89.46	179.50	12,029.81	-9,315.53	-39.11	9,314.83	0.00	0.00	0.00	
21,300.00	89.46	179.50	12,030.75	-9,415.52	-38.23	9,414.83	0.00	0.00	0.00	
21,400.00	89.46	179.50	12,031.69	-9,515.51	-37.36	9,514.82	0.00	0.00	0.00	
21,500.00	89.46	179.50	12,032.63	-9,615.50	-36.48	9,614.82	0.00	0.00	0.00	
21,600.00	89.46	179.50	12,033.57	-9,715.49	-35.61	9,714.81	0.00	0.00	0.00	
21,700.00	89.46	179.50	12,034.51	-9,815.49	-34.74	9,814.81	0.00	0.00	0.00	
21,800.00	89.46	179.50	12,035.45	-9,915.48	-33.86	9,914.81	0.00	0.00	0.00	
21,900.00	89.46	179.50	12,036.39	-10,015.47	-32.99	10,014.80	0.00	0.00	0.00	
22,000.00	89.46	179.50	12,037.33	-10,115.46	-32.12	10,114.80	0.00	0.00	0.00	
22,074.19	89.46	179.50	12,038.03	-10,189.65	-31.47	10,188.99	0.00	0.00	0.00	
TD at 22074.19 - PBHL (County Fair Fed Com 602H)										

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 (County Fair Fed C - plan hits target center - Point	0.00	0.00	0.00	0.00	0.00	425,550.05	847,910.66	32.166036 -103.342582		
LP (County Fair Fed Cor - plan hits target center - Point	0.00	0.00	11,945.93	-392.55	-117.04	425,157.50	847,793.62	32.164960 -103.342972		
PBHL (County Fair Fed - plan hits target center - Point	0.00	0.00	12,038.03	-10,189.65	-31.47	415,360.40	847,879.19	32.138030 -103.342986		



Total Directional Services

Planning Report



Database:	EDM 5000.15 Single User Db	Local Co-ordinate Reference:	Well County Fair Fed Com 602H
Company:	Franklin Mountain Energy	TVD Reference:	3248.1' GE + 21' KB @ 3269.10usft
Project:	Lea County, NM (NAD83)	MD Reference:	3248.1' GE + 21' KB @ 3269.10usft
Site:	County Fair/Blue Ribbon	North Reference:	Grid
Well:	County Fair Fed Com 602H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
4,500.00	4,500.00	0.00	0.00	Start Build 1.00
4,999.66	4,999.03	17.86	-12.45	Start 1949.35 hold at 4999.66 MD
6,949.01	6,940.97	157.14	-109.55	Start Drop -1.00
7,448.67	7,440.00	175.00	-122.00	Start 3933.00 hold at 7448.67 MD
11,381.67	11,373.00	175.00	-122.00	Start DLS 10.00 TFO 179.50
12,276.29	11,945.93	-392.55	-117.04	Start 9797.91 hold at 12276.29 MD
22,074.19	12,038.03	-10,189.65	-31.47	TD at 22074.19



Franklin Mountain Energy

**Lea County, NM (NAD83)
County Fair/Blue Ribbon
County Fair Fed Com 602H**

**OH
Plan #1**

Anticollision Report

09 August, 2019





Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well County Fair Fed Com 602H
Project:	Lea County, NM (NAD83)	TVD Reference:	3248.1' GE + 21' KB @ 3269.10usft
Reference Site:	County Fair/Blue Ribbon	MD Reference:	3248.1' GE + 21' KB @ 3269.10usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	County Fair Fed Com 602H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.15 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Reference	Plan #1		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD + Stations Interval 100.00usft	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum ellipse separation of 1,000.00 usft	Error Surface:	Pedal Curve
Warning Levels Evaluated at:	2.00 Sigma	Casing Method:	Not applied

Survey Tool Program	Date	8/9/2019		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.00	22,073.80	Plan #1 (OH)		

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						
County Fair/Blue Ribbon						
Blue Ribbon Fed Com 702H - OH - Plan #1	3,000.00	2,998.30	34.99	24.45	3.321	CC, ES
Blue Ribbon Fed Com 702H - OH - Plan #1	3,100.00	3,097.46	36.14	25.25	3.318	SF
County Fair Fed Com 701H - OH - Plan #1	2,216.33	2,217.33	35.00	27.27	4.529	CC
County Fair Fed Com 701H - OH - Plan #1	2,300.00	2,300.99	35.00	26.97	4.360	ES, SF

Offset Design		County Fair/Blue Ribbon - Blue Ribbon Fed Com 702H - OH - Plan #1											Offset Site Error:		0.00 usft	
Survey Program:		0-												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	89.49	0.31	34.99	35.03							
100.00	100.00	98.30	98.30	0.14	0.00	89.49	0.31	34.99	34.99	34.85	0.14	246.778				
200.00	200.00	198.30	198.30	0.50	0.00	89.49	0.31	34.99	34.99	34.49	0.50	69.945				
300.00	300.00	298.30	298.30	0.86	0.00	89.49	0.31	34.99	34.99	34.13	0.86	40.747				
400.00	400.00	398.30	398.30	1.22	0.00	89.49	0.31	34.99	34.99	33.77	1.22	28.747				
500.00	500.00	498.30	498.30	1.58	0.00	89.49	0.31	34.99	34.99	33.42	1.58	22.207				
600.00	600.00	598.30	598.30	1.93	0.00	89.49	0.31	34.99	34.99	33.06	1.93	18.091				
700.00	700.00	698.30	698.30	2.29	0.00	89.49	0.31	34.99	34.99	32.70	2.29	15.263				
800.00	800.00	798.30	798.30	2.65	0.00	89.49	0.31	34.99	34.99	32.34	2.65	13.199				
900.00	900.00	898.30	898.30	3.01	0.00	89.49	0.31	34.99	34.99	31.98	3.01	11.627				
1,000.00	1,000.00	998.30	998.30	3.37	0.00	89.49	0.31	34.99	34.99	31.62	3.37	10.389				
1,100.00	1,100.00	1,098.30	1,098.30	3.73	0.00	89.49	0.31	34.99	34.99	31.26	3.73	9.390				
1,200.00	1,200.00	1,198.30	1,198.30	4.08	0.00	89.49	0.31	34.99	34.99	30.91	4.08	8.566				
1,300.00	1,300.00	1,298.30	1,298.30	4.44	0.00	89.49	0.31	34.99	34.99	30.55	4.44	7.875				
1,400.00	1,400.00	1,398.30	1,398.30	4.80	0.00	89.49	0.31	34.99	34.99	30.19	4.80	7.287				
1,500.00	1,500.00	1,498.30	1,498.30	5.16	0.00	89.49	0.31	34.99	34.99	29.83	5.16	6.781				
1,600.00	1,600.00	1,598.30	1,598.30	5.52	0.00	89.49	0.31	34.99	34.99	29.47	5.52	6.340				
1,700.00	1,700.00	1,698.30	1,698.30	5.88	0.00	89.49	0.31	34.99	34.99	29.11	5.88	5.954				
1,800.00	1,800.00	1,798.30	1,798.30	6.24	0.00	89.49	0.31	34.99	34.99	28.76	6.24	5.611				
1,900.00	1,900.00	1,898.30	1,898.30	6.59	0.00	89.49	0.31	34.99	34.99	28.40	6.59	5.306				
2,000.00	2,000.00	1,998.30	1,998.30	6.95	0.00	89.49	0.31	34.99	34.99	28.04	6.95	5.033				
2,100.00	2,100.00	2,098.30	2,098.30	7.31	0.00	89.49	0.31	34.99	34.99	27.68	7.31	4.786				
2,200.00	2,200.00	2,198.30	2,198.30	7.67	0.00	89.49	0.31	34.99	34.99	27.32	7.67	4.562				

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



Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well County Fair Fed Com 602H
Project:	Lea County, NM (NAD83)	TVD Reference:	3248.1' GE + 21' KB @ 3269.10usft
Reference Site:	County Fair/Blue Ribbon	MD Reference:	3248.1' GE + 21' KB @ 3269.10usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	County Fair Fed Com 602H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.15 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													County Fair/Blue Ribbon - Blue Ribbon Fed Com 702H - OH - Plan #1		Offset Site Error: 0.00 usft	
Survey Program: 0-														Offset Well Error: 0.00 usft		
Reference		Offset		Semi Major Axis			Distance							Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor				
2,300.00	2,300.00	2,298.30	2,298.30	8.03	0.00	89.49	0.31	34.99	34.99	26.96	8.03	4.359				
2,400.00	2,400.00	2,398.30	2,398.30	8.39	0.00	89.49	0.31	34.99	34.99	26.60	8.39	4.172				
2,500.00	2,500.00	2,498.30	2,498.30	8.74	0.00	89.49	0.31	34.99	34.99	26.25	8.75	4.001				
2,600.00	2,600.00	2,598.30	2,598.30	9.10	0.00	89.49	0.31	34.99	34.99	25.89	9.10	3.844				
2,700.00	2,700.00	2,698.30	2,698.30	9.46	0.00	89.49	0.31	34.99	34.99	25.53	9.46	3.698				
2,800.00	2,800.00	2,798.30	2,798.30	9.82	0.00	89.49	0.31	34.99	34.99	25.17	9.82	3.563				
2,900.00	2,900.00	2,898.30	2,898.30	10.18	0.00	89.49	0.31	34.99	34.99	24.81	10.18	3.438				
3,000.00	3,000.00	2,998.30	2,998.30	10.54	0.00	89.49	0.31	34.99	34.99	24.45	10.54	3.321 CC, ES				
3,100.00	3,100.00	3,097.46	3,097.45	10.90	0.00	88.69	0.83	36.12	36.14	25.25	10.89	3.318 SF				
3,200.00	3,200.00	3,196.48	3,196.39	11.25	0.00	86.52	2.41	39.59	39.70	28.46	11.24	3.531				
3,300.00	3,300.00	3,295.24	3,294.94	11.61	0.00	83.65	5.05	45.36	45.77	34.18	11.59	3.950				
3,400.00	3,400.00	3,394.43	3,393.77	11.97	0.00	80.83	8.56	53.05	53.93	41.99	11.94	4.518				
3,500.00	3,500.00	3,494.05	3,493.01	12.33	0.00	78.71	12.17	60.94	62.37	50.08	12.29	5.074				
3,600.00	3,600.00	3,593.67	3,592.25	12.69	0.00	77.09	15.77	68.83	70.87	58.23	12.65	5.603				
3,700.00	3,700.00	3,693.29	3,691.50	13.05	0.00	75.82	19.38	76.72	79.42	66.42	13.01	6.107				
3,800.00	3,800.00	3,792.91	3,790.74	13.41	0.00	74.80	22.98	84.61	88.01	74.64	13.36	6.586				
3,900.00	3,900.00	3,892.53	3,889.98	13.76	0.00	73.96	26.59	92.51	96.61	82.89	13.72	7.041				
4,000.00	4,000.00	3,992.15	3,989.22	14.12	0.00	73.26	30.20	100.40	105.23	91.15	14.08	7.475				
4,100.00	4,100.00	4,091.77	4,088.46	14.48	0.00	72.66	33.80	108.29	113.87	99.43	14.44	7.888				
4,200.00	4,200.00	4,191.39	4,187.70	14.84	0.00	72.15	37.41	116.18	122.51	107.72	14.79	8.282				
4,300.00	4,300.00	4,291.01	4,286.94	15.20	0.00	71.71	41.01	124.07	131.17	116.02	15.15	8.658				
4,400.00	4,400.00	4,390.63	4,386.19	15.56	0.00	71.32	44.62	131.96	139.83	124.32	15.51	9.017				
4,500.00	4,500.00	4,490.25	4,485.43	15.91	0.00	70.97	48.22	139.85	148.49	132.63	15.86	9.360				
4,600.00	4,600.00	4,589.85	4,584.65	16.27	0.00	105.77	51.83	147.74	157.40	141.18	16.22	9.704				
4,700.00	4,699.96	4,689.39	4,683.82	16.63	0.00	106.26	55.43	155.63	166.79	150.21	16.57	10.063				
4,800.00	4,799.86	4,788.85	4,782.89	16.98	0.00	107.23	59.03	163.51	176.70	159.77	16.93	10.439				
4,900.00	4,899.68	4,888.19	4,881.85	17.34	0.00	108.59	62.63	171.37	187.21	169.93	17.28	10.833				
4,999.66	4,999.03	4,987.04	4,980.33	17.69	0.00	110.25	66.20	179.20	198.39	180.76	17.63	11.251				
4,999.99	4,999.36	4,987.36	4,980.66	17.69	0.00	110.26	66.22	179.23	198.43	180.79	17.63	11.252				
5,100.00	5,098.99	5,086.48	5,079.40	18.05	0.00	112.06	69.80	187.08	210.14	192.15	17.99	11.682				
5,200.00	5,198.61	5,185.59	5,178.12	18.41	0.00	113.68	73.39	194.93	222.03	203.69	18.34	12.104				
5,300.00	5,298.23	5,284.69	5,276.85	18.77	0.00	115.13	76.98	202.78	234.08	215.38	18.70	12.518				
5,400.00	5,397.85	5,383.80	5,375.58	19.13	0.00	116.43	80.56	210.63	246.27	227.21	19.06	12.924				
5,500.00	5,497.47	5,482.90	5,474.31	19.49	0.00	117.62	84.15	218.48	258.57	239.15	19.41	13.320				
5,600.00	5,597.09	5,582.01	5,573.04	19.85	0.00	118.69	87.74	226.33	270.96	251.19	19.77	13.707				
5,700.00	5,696.71	5,681.11	5,671.77	20.21	0.00	119.67	91.33	234.18	283.45	263.32	20.13	14.083				
5,800.00	5,796.33	5,780.22	5,770.50	20.58	0.00	120.57	94.91	242.04	296.01	275.52	20.48	14.451				
5,900.00	5,895.95	5,879.32	5,869.23	20.94	0.00	121.40	98.50	249.89	308.63	287.79	20.84	14.808				
6,000.00	5,995.57	5,978.43	5,967.96	21.30	0.00	122.16	102.09	257.74	321.31	300.11	21.20	15.156				
6,100.00	6,095.19	6,077.53	6,066.69	21.67	0.00	122.86	105.67	265.59	334.05	312.49	21.56	15.494				
6,200.00	6,194.81	6,176.64	6,165.41	22.03	0.00	123.51	109.26	273.44	346.83	324.91	21.92	15.823				
6,300.00	6,294.43	6,275.75	6,264.14	22.40	0.00	124.12	112.85	281.29	359.65	337.37	22.28	16.143				
6,400.00	6,394.05	6,374.85	6,362.87	22.77	0.00	124.68	116.43	289.14	372.51	349.87	22.64	16.454				
6,500.00	6,493.67	6,473.96	6,461.60	23.13	0.00	125.21	120.02	296.99	385.40	362.40	23.00	16.757				
6,600.00	6,593.29	6,573.06	6,560.33	23.50	0.00	125.70	123.61	304.84	398.32	374.96	23.36	17.051				
6,700.00	6,692.91	6,672.17	6,659.06	23.87	0.00	126.16	127.20	312.69	411.27	387.55	23.72	17.338				
6,800.00	6,792.53	6,771.27	6,757.79	24.24	0.00	126.59	130.78	320.54	424.25	400.16	24.08	17.617				
6,900.00	6,892.15	6,870.38	6,856.52	24.61	0.00	127.00	134.37	328.39	437.24	412.80	24.44	17.888				
6,949.01	6,940.97	6,918.95	6,904.91	24.79	0.00	127.19	136.13	332.24	443.62	419.00	24.62	18.018				
7,000.00	6,991.78	6,969.51	6,955.27	24.98	0.00	127.41	137.96	336.24	450.12	425.32	24.80	18.147				
7,100.00	7,091.54	7,068.78	7,054.16	25.34	0.00	127.70	141.55	344.11	462.08	436.92	25.17	18.362				
7,200.00	7,191.40	7,168.18	7,153.18	25.71	0.00	127.79	145.15	351.98	472.99	447.47	25.52	18.531				

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



Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well County Fair Fed Com 602H
Project:	Lea County, NM (NAD83)	TVD Reference:	3248.1' GE + 21' KB @ 3269.10usft
Reference Site:	County Fair/Blue Ribbon	MD Reference:	3248.1' GE + 21' KB @ 3269.10usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	County Fair Fed Com 602H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.15 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 0-													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		
7,300.00	7,291.34	7,267.68	7,252.31	26.07	0.00	127.72	148.75	359.86	482.84	456.95	25.88	18.655		
7,400.00	7,391.33	7,367.26	7,351.51	26.42	0.00	127.48	152.35	367.75	491.63	465.39	26.24	18.736		
7,448.67	7,440.00	7,415.75	7,399.81	26.60	0.00	92.42	154.11	371.59	495.53	469.12	26.41	18.761		
7,500.00	7,491.33	7,466.88	7,450.75	26.78	0.00	92.19	155.96	375.64	499.52	472.92	26.60	18.782		
7,600.00	7,591.33	7,566.50	7,549.99	27.13	0.00	91.75	159.57	383.53	507.32	480.37	26.95	18.823		
7,700.00	7,691.33	7,666.12	7,649.23	27.49	0.00	91.32	163.17	391.42	515.14	487.84	27.31	18.864		
7,800.00	7,791.33	7,765.74	7,748.47	27.84	0.00	90.90	166.78	399.31	523.00	495.34	27.66	18.905		
7,900.00	7,891.33	7,869.75	7,852.11	28.20	0.00	90.49	170.48	407.41	530.76	502.72	28.04	18.930		
8,000.00	7,991.33	7,964.05	7,966.17	28.56	0.00	90.16	173.47	413.96	536.48	508.04	28.44	18.866		
8,100.00	8,091.33	8,098.67	8,080.73	28.91	0.00	89.99	175.05	417.42	539.49	510.67	28.82	18.719		
8,200.00	8,191.33	8,207.57	8,189.63	29.27	0.00	89.97	175.31	417.99	539.99	510.81	29.18	18.503		
8,300.00	8,291.33	8,307.57	8,289.63	29.62	0.00	89.97	175.31	417.99	539.99	510.45	29.54	18.280		
8,400.00	8,391.33	8,407.57	8,389.63	29.98	0.00	89.97	175.31	417.99	539.99	510.09	29.90	18.062		
8,500.00	8,491.33	8,507.57	8,489.63	30.33	0.00	89.97	175.31	417.99	539.99	509.74	30.25	17.849		
8,600.00	8,591.33	8,607.57	8,589.63	30.69	0.00	89.97	175.31	417.99	539.99	509.38	30.61	17.641		
8,700.00	8,691.33	8,707.57	8,689.63	31.05	0.00	89.97	175.31	417.99	539.99	509.02	30.97	17.438		
8,800.00	8,791.33	8,807.57	8,789.63	31.40	0.00	89.97	175.31	417.99	539.99	508.67	31.32	17.240		
8,900.00	8,891.33	8,907.57	8,889.63	31.76	0.00	89.97	175.31	417.99	539.99	508.31	31.68	17.046		
9,000.00	8,991.33	9,007.57	8,989.63	32.12	0.00	89.97	175.31	417.99	539.99	507.95	32.04	16.856		
9,100.00	9,091.33	9,107.57	9,089.63	32.47	0.00	89.97	175.31	417.99	539.99	507.60	32.39	16.670		
9,200.00	9,191.33	9,207.57	9,189.63	32.83	0.00	89.97	175.31	417.99	539.99	507.24	32.75	16.489		
9,300.00	9,291.33	9,307.57	9,289.63	33.18	0.00	89.97	175.31	417.99	539.99	506.88	33.11	16.311		
9,400.00	9,391.33	9,407.57	9,389.63	33.54	0.00	89.97	175.31	417.99	539.99	506.53	33.46	16.137		
9,500.00	9,491.33	9,507.57	9,489.63	33.90	0.00	89.97	175.31	417.99	539.99	506.17	33.82	15.967		
9,600.00	9,591.33	9,607.57	9,589.63	34.25	0.00	89.97	175.31	417.99	539.99	505.81	34.18	15.800		
9,700.00	9,691.33	9,707.57	9,689.63	34.61	0.00	89.97	175.31	417.99	539.99	505.46	34.53	15.637		
9,800.00	9,791.33	9,807.57	9,789.63	34.97	0.00	89.97	175.31	417.99	539.99	505.10	34.89	15.477		
9,900.00	9,891.33	9,907.57	9,889.63	35.32	0.00	89.97	175.31	417.99	539.99	504.74	35.25	15.321		
10,000.00	9,991.33	10,007.57	9,989.63	35.68	0.00	89.97	175.31	417.99	539.99	504.39	35.60	15.167		
10,100.00	10,091.33	10,107.57	10,089.63	36.04	0.00	89.97	175.31	417.99	539.99	504.03	35.96	15.016		
10,200.00	10,191.33	10,207.57	10,189.63	36.39	0.00	89.97	175.31	417.99	539.99	503.67	36.32	14.869		
10,300.00	10,291.33	10,307.57	10,289.63	36.75	0.00	89.97	175.31	417.99	539.99	503.32	36.67	14.724		
10,400.00	10,391.33	10,407.57	10,389.63	37.11	0.00	89.97	175.31	417.99	539.99	502.96	37.03	14.582		
10,500.00	10,491.33	10,507.57	10,489.63	37.46	0.00	89.97	175.31	417.99	539.99	502.60	37.39	14.443		
10,600.00	10,591.33	10,607.57	10,589.63	37.82	0.00	89.97	175.31	417.99	539.99	502.24	37.75	14.306		
10,700.00	10,691.33	10,707.57	10,689.63	38.18	0.00	89.97	175.31	417.99	539.99	501.89	38.10	14.172		
10,800.00	10,791.33	10,807.57	10,789.63	38.53	0.00	89.97	175.31	417.99	539.99	501.53	38.46	14.040		
10,900.00	10,891.33	10,907.57	10,889.63	38.89	0.00	89.97	175.31	417.99	539.99	501.17	38.82	13.911		
11,000.00	10,991.33	11,007.57	10,989.63	39.25	0.00	89.97	175.31	417.99	539.99	500.82	39.17	13.784		
11,100.00	11,091.33	11,107.57	11,089.63	39.61	0.00	89.97	175.31	417.99	539.99	500.46	39.53	13.660		
11,200.00	11,191.33	11,207.57	11,189.63	39.96	0.00	89.97	175.31	417.99	539.99	500.10	39.89	13.538		
11,300.00	11,291.33	11,307.57	11,289.63	40.32	0.00	89.97	175.31	417.99	539.99	499.74	40.25	13.417		
11,381.67	11,373.00	11,389.25	11,371.30	40.61	0.00	89.97	175.31	417.99	539.99	499.45	40.54	13.321		
11,400.00	11,391.32	11,407.57	11,389.62	40.67	0.00	-89.56	175.31	417.99	539.99	499.39	40.60	13.300		
11,450.00	11,441.16	11,457.41	11,439.46	40.83	0.00	-89.96	175.31	417.99	539.97	499.22	40.76	13.249		
11,452.77	11,443.92	11,460.16	11,442.22	40.84	0.00	-90.00	175.31	417.99	539.97	499.21	40.77	13.246		
11,500.00	11,490.49	11,506.74	11,488.79	40.98	0.00	-90.81	175.31	417.99	540.03	499.12	40.91	13.201		
11,550.00	11,538.92	11,555.16	11,537.22	41.13	0.00	-92.04	175.31	417.99	540.35	499.29	41.06	13.161		
11,600.00	11,586.08	11,604.24	11,586.28	41.27	0.00	-93.61	174.51	418.00	541.17	499.97	41.20	13.136		
11,650.00	11,631.62	11,655.53	11,637.31	41.39	0.00	-95.21	169.51	418.04	542.47	501.14	41.33	13.125		
11,700.00	11,675.20	11,708.48	11,689.30	41.51	0.00	-96.81	159.59	418.13	544.23	502.77	41.45	13.129		
11,750.00	11,716.48	11,763.23	11,741.86	41.62	0.00	-98.37	144.33	418.26	546.39	504.83	41.56	13.148		

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Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well County Fair Fed Com 602H
Project:	Lea County, NM (NAD83)	TVD Reference:	3248.1' GE + 21' KB @ 3269.10usft
Reference Site:	County Fair/Blue Ribbon	MD Reference:	3248.1' GE + 21' KB @ 3269.10usft
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Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													County Fair/Blue Ribbon - Blue Ribbon Fed Com 702H - OH - Plan #1		Offset Site Error:		0.00 usft	
Survey Program: 0-													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						
11,800.00	11,755.14	11,819.91	11,794.48	41.72	0.00	-99.89	123.32	418.44	548.90	507.26	41.64	13.183						
11,850.00	11,790.89	11,878.63	11,846.52	41.82	0.00	-101.36	96.19	418.68	551.68	510.00	41.69	13.234						
11,900.00	11,823.46	11,939.48	11,897.23	41.92	0.00	-102.76	62.62	418.97	554.64	512.94	41.70	13.301						
11,950.00	11,852.61	12,002.50	11,945.69	42.03	0.00	-104.06	22.38	419.33	557.66	515.99	41.68	13.381						
12,000.00	11,878.10	12,067.69	11,990.86	42.14	0.00	-105.25	-24.58	419.74	560.63	519.01	41.62	13.470						
12,050.00	11,899.75	12,134.99	12,031.58	42.26	0.00	-106.32	-78.11	420.20	563.42	521.88	41.54	13.563						
12,100.00	11,917.40	12,204.23	12,066.64	42.38	0.00	-107.22	-137.77	420.72	565.91	524.45	41.46	13.649						
12,150.00	11,930.89	12,275.18	12,094.83	42.50	0.00	-107.95	-202.83	421.29	567.97	526.57	41.40	13.720						
12,200.00	11,940.15	12,347.50	12,115.06	42.63	0.00	-108.48	-272.21	421.90	569.50	528.13	41.37	13.764						
12,250.00	11,945.08	12,420.76	12,126.49	42.76	0.00	-108.80	-344.52	422.53	570.43	529.01	41.41	13.774						
12,276.29	11,945.93	12,459.50	12,128.78	42.83	0.00	-108.87	-383.18	422.87	570.65	529.19	41.47	13.762						
12,300.00	11,946.16	12,486.27	12,129.09	42.89	0.00	-108.88	-409.94	423.10	570.66	529.14	41.53	13.742						
12,400.00	11,947.10	12,586.27	12,129.96	43.20	0.00	-108.87	-509.94	423.97	570.64	528.82	41.82	13.644						
12,500.00	11,948.04	12,686.27	12,130.82	43.57	0.00	-108.86	-609.93	424.85	570.62	528.44	42.18	13.529						
12,600.00	11,948.98	12,786.27	12,131.69	44.00	0.00	-108.86	-709.92	425.72	570.59	528.01	42.59	13.398						
12,700.00	11,949.92	12,886.27	12,132.56	44.48	0.00	-108.85	-809.91	426.59	570.57	527.52	43.05	13.252						
12,800.00	11,950.86	12,986.27	12,133.43	45.02	0.00	-108.84	-909.91	427.46	570.55	526.98	43.57	13.094						
12,900.00	11,951.80	13,086.27	12,134.30	45.61	0.00	-108.84	-1,009.90	428.34	570.52	526.38	44.14	12.925						
13,000.00	11,952.74	13,186.27	12,135.17	46.26	0.00	-108.83	-1,109.89	429.21	570.50	525.74	44.76	12.746						
13,100.00	11,953.68	13,286.27	12,136.03	46.95	0.00	-108.82	-1,209.88	430.08	570.48	525.05	45.42	12.559						
13,200.00	11,954.62	13,386.27	12,136.90	47.69	0.00	-108.82	-1,309.87	430.96	570.45	524.32	46.13	12.365						
13,300.00	11,955.56	13,486.27	12,137.77	48.47	0.00	-108.81	-1,409.87	431.83	570.43	523.54	46.89	12.166						
13,400.00	11,956.50	13,586.27	12,138.64	49.30	0.00	-108.80	-1,509.86	432.70	570.41	522.73	47.68	11.963						
13,500.00	11,957.44	13,686.27	12,139.51	50.17	0.00	-108.80	-1,609.85	433.57	570.38	521.87	48.51	11.758						
13,600.00	11,958.38	13,786.27	12,140.38	51.08	0.00	-108.79	-1,709.84	434.45	570.36	520.98	49.38	11.550						
13,700.00	11,959.32	13,886.27	12,141.24	52.02	0.00	-108.78	-1,809.84	435.32	570.34	520.05	50.29	11.342						
13,800.00	11,960.26	13,986.27	12,142.11	53.00	0.00	-108.78	-1,909.83	436.19	570.31	519.09	51.22	11.134						
13,900.00	11,961.20	14,086.27	12,142.98	54.02	0.00	-108.77	-2,009.82	437.07	570.29	518.10	52.19	10.927						
14,000.00	11,962.14	14,186.27	12,143.85	55.06	0.00	-108.76	-2,109.81	437.94	570.27	517.07	53.19	10.721						
14,100.00	11,963.08	14,286.27	12,144.72	56.13	0.00	-108.76	-2,209.81	438.81	570.24	516.02	54.22	10.517						
14,200.00	11,964.02	14,386.27	12,145.59	57.23	0.00	-108.75	-2,309.80	439.69	570.22	514.95	55.27	10.317						
14,300.00	11,964.96	14,486.27	12,146.45	58.36	0.00	-108.74	-2,409.79	440.56	570.19	513.84	56.35	10.119						
14,400.00	11,965.90	14,586.27	12,147.32	59.51	0.00	-108.74	-2,509.78	441.43	570.17	512.72	57.45	9.924						
14,500.00	11,966.84	14,686.27	12,148.19	60.68	0.00	-108.73	-2,609.78	442.30	570.15	511.57	58.58	9.733						
14,600.00	11,967.77	14,786.27	12,149.06	61.88	0.00	-108.72	-2,709.77	443.18	570.12	510.40	59.72	9.546						
14,700.00	11,968.71	14,886.27	12,149.93	63.10	0.00	-108.71	-2,809.76	444.05	570.10	509.21	60.89	9.363						
14,800.00	11,969.65	14,986.27	12,150.80	64.33	0.00	-108.71	-2,909.75	444.92	570.08	508.01	62.07	9.184						
14,900.00	11,970.59	15,086.27	12,151.66	65.59	0.00	-108.70	-3,009.75	445.80	570.05	506.78	63.27	9.009						
15,000.00	11,971.53	15,186.27	12,152.53	66.86	0.00	-108.69	-3,109.74	446.67	570.03	505.54	64.49	8.839						
15,100.00	11,972.47	15,286.27	12,153.40	68.15	0.00	-108.69	-3,209.73	447.54	570.01	504.28	65.73	8.672						
15,200.00	11,973.41	15,386.27	12,154.27	69.45	0.00	-108.68	-3,309.72	448.41	569.98	503.01	66.98	8.510						
15,300.00	11,974.35	15,486.27	12,155.14	70.77	0.00	-108.67	-3,409.72	449.29	569.96	501.72	68.24	8.352						
15,400.00	11,975.29	15,586.27	12,156.01	72.10	0.00	-108.67	-3,509.71	450.16	569.94	500.42	69.52	8.199						
15,500.00	11,976.23	15,686.27	12,156.87	73.44	0.00	-108.66	-3,609.70	451.03	569.91	499.11	70.81	8.049						
15,600.00	11,977.17	15,786.27	12,157.74	74.80	0.00	-108.65	-3,709.69	451.91	569.89	497.78	72.11	7.903						
15,700.00	11,978.11	15,886.27	12,158.61	76.17	0.00	-108.65	-3,809.68	452.78	569.87	496.45	73.42	7.762						
15,800.00	11,979.05	15,986.27	12,159.48	77.55	0.00	-108.64	-3,909.68	453.65	569.84	495.10	74.74	7.624						
15,900.00	11,979.99	16,086.27	12,160.35	78.94	0.00	-108.63	-4,009.67	454.53	569.82	493.74	76.08	7.490						
16,000.00	11,980.93	16,186.27	12,161.22	80.34	0.00	-108.63	-4,109.66	455.40	569.80	492.38	77.42	7.360						
16,100.00	11,981.87	16,286.27	12,162.08	81.75	0.00	-108.62	-4,209.65	456.27	569.77	491.00	78.77	7.233						
16,200.00	11,982.81	16,386.27	12,162.95	83.17	0.00	-108.61	-4,309.65	457.14	569.75	489.62	80.13	7.110						
16,300.00	11,983.75	16,486.27	12,163.82	84.60	0.00	-108.61	-4,409.64	458.02	569.73	488.22	81.50	6.990						

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



Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well County Fair Fed Com 602H
Project:	Lea County, NM (NAD83)	TVD Reference:	3248.1' GE + 21' KB @ 3269.10usft
Reference Site:	County Fair/Blue Ribbon	MD Reference:	3248.1' GE + 21' KB @ 3269.10usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	County Fair Fed Com 602H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.15 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													County Fair/Blue Ribbon - Blue Ribbon Fed Com 702H - OH - Plan #1		Offset Site Error: 0.00 usft	
Survey Program: 0-													Offset Well Error: 0.00 usft			
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance				Minimum Separation (usft)	Separation Factor	Warning			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)						
16,400.00	11,984.69	16,586.27	12,164.69	86.03	0.00	-108.60	-4,509.63	458.89	569.70	486.82	82.88	6.874				
16,500.00	11,985.63	16,686.27	12,165.56	87.48	0.00	-108.59	-4,609.62	459.76	569.68	485.42	84.27	6.761				
16,600.00	11,986.57	16,786.27	12,166.43	88.93	0.00	-108.59	-4,709.62	460.64	569.66	484.00	85.66	6.650				
16,700.00	11,987.51	16,886.27	12,167.30	90.38	0.00	-108.58	-4,809.61	461.51	569.64	482.58	87.06	6.543				
16,800.00	11,988.45	16,986.27	12,168.16	91.85	0.00	-108.57	-4,909.60	462.38	569.61	481.15	88.46	6.439				
16,900.00	11,989.39	17,086.27	12,169.03	93.32	0.00	-108.56	-5,009.59	463.26	569.59	479.71	89.87	6.338				
17,000.00	11,990.33	17,186.27	12,169.90	94.79	0.00	-108.56	-5,109.59	464.13	569.57	478.27	91.29	6.239				
17,100.00	11,991.27	17,286.27	12,170.77	96.28	0.00	-108.55	-5,209.58	465.00	569.54	476.83	92.72	6.143				
17,200.00	11,992.21	17,386.27	12,171.64	97.76	0.00	-108.54	-5,309.57	465.87	569.52	475.38	94.14	6.049				
17,300.00	11,993.15	17,486.27	12,172.51	99.26	0.00	-108.54	-5,409.56	466.75	569.50	473.92	95.58	5.958				
17,400.00	11,994.09	17,586.27	12,173.37	100.76	0.00	-108.53	-5,509.56	467.62	569.47	472.46	97.02	5.870				
17,500.00	11,995.03	17,686.27	12,174.24	102.26	0.00	-108.52	-5,609.55	468.49	569.45	470.99	98.46	5.784				
17,600.00	11,995.97	17,786.27	12,175.11	103.77	0.00	-108.52	-5,709.54	469.37	569.43	469.52	99.91	5.700				
17,700.00	11,996.91	17,886.27	12,175.98	105.28	0.00	-108.51	-5,809.53	470.24	569.40	468.04	101.36	5.618				
17,800.00	11,997.85	17,986.27	12,176.85	106.79	0.00	-108.50	-5,909.52	471.11	569.38	466.56	102.82	5.538				
17,900.00	11,998.79	18,086.27	12,177.72	108.31	0.00	-108.50	-6,009.52	471.98	569.36	465.08	104.28	5.460				
18,000.00	11,999.73	18,186.27	12,178.58	109.84	0.00	-108.49	-6,109.51	472.86	569.33	463.59	105.74	5.384				
18,100.00	12,000.67	18,286.27	12,179.45	111.36	0.00	-108.48	-6,209.50	473.73	569.31	462.10	107.21	5.310				
18,200.00	12,001.61	18,386.27	12,180.32	112.89	0.00	-108.48	-6,309.49	474.60	569.29	460.61	108.68	5.238				
18,300.00	12,002.55	18,486.27	12,181.19	114.43	0.00	-108.47	-6,409.49	475.48	569.26	459.11	110.16	5.168				
18,400.00	12,003.49	18,586.27	12,182.06	115.97	0.00	-108.46	-6,509.48	476.35	569.24	457.61	111.63	5.099				
18,500.00	12,004.43	18,686.27	12,182.93	117.51	0.00	-108.46	-6,609.47	477.22	569.22	456.10	113.11	5.032				
18,600.00	12,005.37	18,786.27	12,183.79	119.05	0.00	-108.45	-6,709.46	478.10	569.20	454.60	114.60	4.967				
18,700.00	12,006.31	18,886.27	12,184.66	120.60	0.00	-108.44	-6,809.46	478.97	569.17	453.09	116.09	4.903				
18,800.00	12,007.25	18,986.27	12,185.53	122.15	0.00	-108.44	-6,909.45	479.84	569.15	451.57	117.58	4.841				
18,900.00	12,008.19	19,086.27	12,186.40	123.70	0.00	-108.43	-7,009.44	480.71	569.13	450.06	119.07	4.780				
19,000.00	12,009.13	19,186.27	12,187.27	125.25	0.00	-108.42	-7,109.43	481.59	569.10	448.54	120.56	4.720				
19,100.00	12,010.07	19,286.27	12,188.14	126.81	0.00	-108.41	-7,209.43	482.46	569.08	447.02	122.06	4.662				
19,200.00	12,011.01	19,386.27	12,189.00	128.37	0.00	-108.41	-7,309.42	483.33	569.06	445.50	123.56	4.605				
19,300.00	12,011.95	19,486.27	12,189.87	129.93	0.00	-108.40	-7,409.41	484.21	569.03	443.97	125.06	4.550				
19,400.00	12,012.89	19,586.27	12,190.74	131.50	0.00	-108.39	-7,509.40	485.08	569.01	442.44	126.57	4.496				
19,500.00	12,013.83	19,686.27	12,191.61	133.06	0.00	-108.39	-7,609.40	485.95	568.99	440.91	128.08	4.443				
19,600.00	12,014.77	19,786.27	12,192.48	134.63	0.00	-108.38	-7,709.39	486.82	568.97	439.38	129.58	4.391				
19,700.00	12,015.71	19,886.27	12,193.35	136.20	0.00	-108.37	-7,809.38	487.70	568.94	437.85	131.10	4.340				
19,800.00	12,016.65	19,986.27	12,194.21	137.77	0.00	-108.37	-7,909.37	488.57	568.92	436.31	132.61	4.290				
19,900.00	12,017.59	20,086.27	12,195.08	139.35	0.00	-108.36	-8,009.37	489.44	568.90	434.77	134.12	4.242				
20,000.00	12,018.53	20,186.27	12,195.95	140.92	0.00	-108.35	-8,109.36	490.32	568.87	433.23	135.64	4.194				
20,100.00	12,019.47	20,286.27	12,196.82	142.50	0.00	-108.35	-8,209.35	491.19	568.85	431.69	137.16	4.147				
20,200.00	12,020.41	20,386.27	12,197.69	144.08	0.00	-108.34	-8,309.34	492.06	568.83	430.15	138.68	4.102				
20,300.00	12,021.35	20,486.27	12,198.56	145.66	0.00	-108.33	-8,409.33	492.94	568.80	428.60	140.20	4.057				
20,400.00	12,022.29	20,586.27	12,199.43	147.24	0.00	-108.33	-8,509.33	493.81	568.78	427.06	141.73	4.013				
20,500.00	12,023.23	20,686.27	12,200.29	148.83	0.00	-108.32	-8,609.32	494.68	568.76	425.51	143.25	3.970				
20,600.00	12,024.17	20,786.27	12,201.16	150.41	0.00	-108.31	-8,709.31	495.55	568.74	423.96	144.78	3.928				
20,700.00	12,025.11	20,886.27	12,202.03	152.00	0.00	-108.31	-8,809.30	496.43	568.71	422.41	146.31	3.887				
20,800.00	12,026.05	20,986.27	12,202.90	153.59	0.00	-108.30	-8,909.30	497.30	568.69	420.85	147.84	3.847				
20,900.00	12,026.99	21,086.27	12,203.77	155.18	0.00	-108.29	-9,009.29	498.17	568.67	419.30	149.37	3.807				
21,000.00	12,027.93	21,186.27	12,204.64	156.77	0.00	-108.29	-9,109.28	499.05	568.64	417.75	150.90	3.768				
21,100.00	12,028.87	21,286.27	12,205.50	158.36	0.00	-108.28	-9,209.27	499.92	568.62	416.19	152.43	3.730				
21,200.00	12,029.81	21,386.27	12,206.37	159.96	0.00	-108.27	-9,309.27	500.79	568.60	414.63	153.97	3.693				
21,300.00	12,030.75	21,486.27	12,207.24	161.55	0.00	-108.26	-9,409.26	501.66	568.58	413.07	155.50	3.656				
21,400.00	12,031.69	21,586.27	12,208.11	163.15	0.00	-108.26	-9,509.25	502.54	568.55	411.51	157.04	3.620				
21,500.00	12,032.63	21,686.27	12,208.98	164.74	0.00	-108.25	-9,609.24	503.41	568.53	409.95	158.58	3.585				

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

Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well County Fair Fed Com 602H
Project:	Lea County, NM (NAD83)	TVD Reference:	3248.1' GE + 21' KB @ 3269.10usft
Reference Site:	County Fair/Blue Ribbon	MD Reference:	3248.1' GE + 21' KB @ 3269.10usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	County Fair Fed Com 602H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.15 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 0- County Fair/Blue Ribbon - Blue Ribbon Fed Com 702H - OH - Plan #1													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance				Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
21,600.00	12,033.57	21,786.27	12,209.85	166.34	0.00	-108.24	-9,709.24	504.28	568.51	408.39	160.12	3.550		
21,700.00	12,034.51	21,886.27	12,210.71	167.94	0.00	-108.24	-9,809.23	505.16	568.48	406.82	161.66	3.517		
21,800.00	12,035.45	21,986.26	12,211.58	169.54	0.00	-108.23	-9,909.22	506.03	568.46	405.26	163.20	3.483		
21,900.00	12,036.39	22,086.26	12,212.45	171.14	0.00	-108.22	-10,009.21	506.90	568.44	403.69	164.75	3.450		
22,000.00	12,037.33	22,186.26	12,213.32	172.75	0.00	-108.22	-10,109.21	507.78	568.42	402.12	166.29	3.418		
22,074.19	12,038.03	22,260.46	12,213.96	173.80	0.00	-108.21	-10,183.39	508.42	568.40	401.10	167.30	3.398		



Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well County Fair Fed Com 602H
Project:	Lea County, NM (NAD83)	TVD Reference:	3248.1' GE + 21' KB @ 3269.10usft
Reference Site:	County Fair/Blue Ribbon	MD Reference:	3248.1' GE + 21' KB @ 3269.10usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	County Fair Fed Com 602H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.15 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													County Fair/Blue Ribbon - County Fair Fed Com 701H - OH - Plan #1		Offset Site Error: 0.00 usft	
Survey Program: 0-															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	1.00	1.00	0.00	0.00	-90.52	-0.32	-35.00	35.00							
100.00	100.00	101.00	101.00	0.14	0.00	-90.52	-0.32	-35.00	35.00	34.86	0.14	246.843				
200.00	200.00	201.00	201.00	0.50	0.00	-90.52	-0.32	-35.00	35.00	34.50	0.50	69.965				
300.00	300.00	301.00	301.00	0.86	0.00	-90.52	-0.32	-35.00	35.00	34.14	0.86	40.759				
400.00	400.00	401.00	401.00	1.22	0.00	-90.52	-0.32	-35.00	35.00	33.78	1.22	28.755				
500.00	500.00	501.00	501.00	1.58	0.00	-90.52	-0.32	-35.00	35.00	33.43	1.58	22.214				
600.00	600.00	601.00	601.00	1.93	0.00	-90.52	-0.32	-35.00	35.00	33.07	1.93	18.097				
700.00	700.00	701.00	701.00	2.29	0.00	-90.52	-0.32	-35.00	35.00	32.71	2.29	15.267				
800.00	800.00	801.00	801.00	2.65	0.00	-90.52	-0.32	-35.00	35.00	32.35	2.65	13.203				
900.00	900.00	901.00	901.00	3.01	0.00	-90.52	-0.32	-35.00	35.00	31.99	3.01	11.630				
1,000.00	1,000.00	1,001.00	1,001.00	3.37	0.00	-90.52	-0.32	-35.00	35.00	31.63	3.37	10.392				
1,100.00	1,100.00	1,101.00	1,101.00	3.73	0.00	-90.52	-0.32	-35.00	35.00	31.27	3.73	9.393				
1,200.00	1,200.00	1,201.00	1,201.00	4.08	0.00	-90.52	-0.32	-35.00	35.00	30.92	4.08	8.568				
1,300.00	1,300.00	1,301.00	1,301.00	4.44	0.00	-90.52	-0.32	-35.00	35.00	30.56	4.44	7.877				
1,400.00	1,400.00	1,401.00	1,401.00	4.80	0.00	-90.52	-0.32	-35.00	35.00	30.20	4.80	7.289				
1,500.00	1,500.00	1,501.00	1,501.00	5.16	0.00	-90.52	-0.32	-35.00	35.00	29.84	5.16	6.783				
1,600.00	1,600.00	1,601.00	1,601.00	5.52	0.00	-90.52	-0.32	-35.00	35.00	29.48	5.52	6.342				
1,700.00	1,700.00	1,701.00	1,701.00	5.88	0.00	-90.52	-0.32	-35.00	35.00	29.12	5.88	5.955				
1,800.00	1,800.00	1,801.00	1,801.00	6.24	0.00	-90.52	-0.32	-35.00	35.00	28.77	6.24	5.613				
1,900.00	1,900.00	1,901.00	1,901.00	6.59	0.00	-90.52	-0.32	-35.00	35.00	28.41	6.59	5.308				
2,000.00	2,000.00	2,001.00	2,001.00	6.95	0.00	-90.52	-0.32	-35.00	35.00	28.05	6.95	5.034				
2,100.00	2,100.00	2,101.00	2,101.00	7.31	0.00	-90.52	-0.32	-35.00	35.00	27.69	7.31	4.787				
2,200.00	2,200.00	2,201.00	2,201.00	7.67	0.00	-90.52	-0.32	-35.00	35.00	27.33	7.67	4.564				
2,216.33	2,216.33	2,217.33	2,217.33	7.73	0.00	-90.52	-0.32	-35.00	35.00	27.27	7.73	4.529 CC				
2,300.00	2,300.00	2,300.99	2,300.99	8.03	0.00	-90.52	-0.32	-35.00	35.00	26.97	8.03	4.360 ES, SF				
2,400.00	2,400.00	2,400.00	2,399.98	8.39	0.00	-90.00	0.00	-36.72	36.73	28.35	8.38	4.381				
2,500.00	2,500.00	2,498.30	2,498.14	8.74	0.00	-88.71	0.94	-41.74	41.85	33.12	8.73	4.795				
2,600.00	2,600.00	2,596.37	2,595.84	9.10	0.00	-87.15	2.49	-50.06	50.38	41.32	9.06	5.558				
2,700.00	2,700.00	2,695.50	2,694.39	9.46	0.00	-85.78	4.47	-60.62	61.14	51.72	9.42	6.493				
2,800.00	2,800.00	2,794.90	2,793.20	9.82	0.00	-84.82	6.46	-71.25	71.97	62.19	9.77	7.364				
2,900.00	2,900.00	2,894.31	2,892.02	10.18	0.00	-84.11	8.45	-81.89	82.81	72.68	10.13	8.175				
3,000.00	3,000.00	2,993.72	2,990.83	10.54	0.00	-83.57	10.43	-92.52	93.66	83.17	10.49	8.932				
3,100.00	3,100.00	3,093.12	3,089.65	10.90	0.00	-83.13	12.42	-103.15	104.52	93.68	10.84	9.640				
3,200.00	3,200.00	3,192.53	3,188.46	11.25	0.00	-82.78	14.41	-113.79	115.38	104.18	11.20	10.303				
3,300.00	3,300.00	3,291.93	3,287.28	11.61	0.00	-82.49	16.40	-124.42	126.25	114.69	11.56	10.926				
3,400.00	3,400.00	3,391.34	3,386.10	11.97	0.00	-82.25	18.39	-135.06	137.12	125.20	11.91	11.511				
3,500.00	3,500.00	3,490.75	3,484.91	12.33	0.00	-82.04	20.38	-145.69	147.99	135.72	12.27	12.063				
3,600.00	3,600.00	3,590.15	3,583.73	12.69	0.00	-81.86	22.36	-156.33	158.86	146.24	12.62	12.583				
3,700.00	3,700.00	3,689.56	3,682.54	13.05	0.00	-81.70	24.35	-166.96	169.73	156.75	12.98	13.075				
3,800.00	3,800.00	3,788.96	3,781.36	13.41	0.00	-81.56	26.34	-177.60	180.61	167.27	13.34	13.541				
3,900.00	3,900.00	3,888.37	3,880.17	13.76	0.00	-81.44	28.33	-188.23	191.49	177.79	13.69	13.982				
4,000.00	4,000.00	3,987.78	3,978.99	14.12	0.00	-81.33	30.32	-198.87	202.36	188.31	14.05	14.401				
4,100.00	4,100.00	4,087.18	4,077.80	14.48	0.00	-81.23	32.31	-209.50	213.24	198.83	14.41	14.800				
4,200.00	4,200.00	4,186.59	4,176.62	14.84	0.00	-81.15	34.29	-220.13	224.12	209.35	14.76	15.179				
4,300.00	4,300.00	4,285.99	4,275.43	15.20	0.00	-81.06	36.28	-230.77	235.00	219.88	15.12	15.541				
4,400.00	4,400.00	4,385.40	4,374.25	15.56	0.00	-80.99	38.27	-241.40	245.88	230.40	15.48	15.885				
4,500.00	4,500.00	4,484.81	4,473.07	15.91	0.00	-80.92	40.26	-252.04	256.76	240.92	15.84	16.214				
4,600.00	4,600.00	4,584.28	4,571.94	16.27	0.00	-80.84	42.25	-262.68	267.03	250.84	16.19	16.494				
4,700.00	4,699.96	4,683.85	4,670.93	16.63	0.00	-80.76	44.24	-273.33	276.11	259.57	16.54	16.690				
4,800.00	4,799.86	4,783.50	4,769.98	16.98	0.00	-80.68	46.23	-283.99	284.00	267.11	16.90	16.808				
4,900.00	4,899.68	4,883.19	4,869.08	17.34	0.00	-80.60	48.23	-294.66	290.75	273.50	17.25	16.855				
4,999.66	4,999.03	4,982.56	4,967.86	17.69	0.00	-80.51	50.21	-305.29	296.37	278.77	17.60	16.837				

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:	3248.1' GE + 21' KB @ 3269.10usft
Reference Site:	County Fair/Blue Ribbon	MD Reference:	3248.1' GE + 21' KB @ 3269.10usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	County Fair Fed Com 602H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.15 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 0-													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		
4,999.99	4,999.36	4,982.89	4,968.19	17.69	0.00	-48.52	50.22	-305.32	296.39	278.78	17.60	16.836		
5,100.00	5,098.99	5,082.60	5,067.31	18.05	0.00	-49.61	52.22	-315.99	301.55	283.59	17.96	16.792		
5,200.00	5,198.61	5,182.31	5,166.42	18.41	0.00	-50.66	54.21	-326.66	306.82	288.51	18.31	16.754		
5,300.00	5,298.23	5,282.01	5,265.53	18.77	0.00	-51.68	56.20	-337.32	312.19	293.52	18.67	16.721		
5,400.00	5,397.85	5,381.71	5,364.65	19.13	0.00	-52.66	58.20	-347.99	317.66	298.63	19.03	16.695		
5,500.00	5,497.47	5,481.42	5,463.76	19.49	0.00	-53.61	60.19	-358.66	323.22	303.83	19.39	16.673		
5,600.00	5,597.09	5,581.12	5,562.87	19.85	0.00	-54.53	62.19	-369.32	328.86	309.12	19.74	16.656		
5,700.00	5,696.71	5,680.83	5,661.98	20.21	0.00	-55.42	64.18	-379.99	334.59	314.48	20.10	16.643		
5,800.00	5,796.33	5,780.53	5,761.09	20.58	0.00	-56.27	66.18	-390.65	340.39	319.92	20.46	16.633		
5,900.00	5,895.95	5,880.23	5,860.20	20.94	0.00	-57.10	68.17	-401.32	346.26	325.44	20.83	16.627		
6,000.00	5,995.57	5,979.94	5,959.32	21.30	0.00	-57.90	70.16	-411.99	352.21	331.02	21.19	16.623		
6,100.00	6,095.19	6,079.64	6,058.43	21.67	0.00	-58.68	72.16	-422.65	358.22	336.67	21.55	16.623		
6,200.00	6,194.81	6,179.35	6,157.54	22.03	0.00	-59.42	74.15	-433.32	364.30	342.38	21.91	16.624		
6,300.00	6,294.43	6,279.05	6,256.65	22.40	0.00	-60.15	76.15	-443.99	370.43	348.15	22.28	16.628		
6,400.00	6,394.05	6,378.75	6,355.76	22.77	0.00	-60.85	78.14	-454.65	376.62	353.98	22.64	16.634		
6,500.00	6,493.67	6,478.46	6,454.87	23.13	0.00	-61.52	80.14	-465.32	382.87	359.86	23.01	16.642		
6,600.00	6,593.29	6,578.16	6,553.99	23.50	0.00	-62.18	82.13	-475.99	389.17	365.79	23.37	16.651		
6,700.00	6,692.91	6,677.87	6,653.10	23.87	0.00	-62.81	84.12	-486.65	395.51	371.78	23.74	16.661		
6,800.00	6,792.53	6,777.57	6,752.21	24.24	0.00	-63.43	86.12	-497.32	401.91	377.80	24.11	16.673		
6,900.00	6,892.15	6,877.27	6,851.32	24.61	0.00	-64.02	88.11	-507.99	408.35	383.87	24.47	16.686		
6,949.01	6,940.97	6,926.14	6,899.90	24.79	0.00	-64.31	89.09	-513.21	411.52	386.86	24.65	16.693		
7,000.00	6,991.78	6,976.98	6,950.43	24.98	0.00	-64.60	90.11	-518.65	414.92	390.08	24.84	16.704		
7,100.00	7,091.54	7,076.68	7,049.55	25.34	0.00	-65.01	92.10	-529.32	422.18	396.98	25.20	16.750		
7,200.00	7,191.40	7,176.36	7,148.63	25.71	0.00	-65.20	94.09	-539.98	430.19	404.62	25.57	16.826		
7,300.00	7,291.34	7,275.97	7,247.65	26.07	0.00	-65.19	96.09	-550.64	438.92	413.00	25.93	16.930		
7,400.00	7,391.33	7,375.49	7,346.58	26.42	0.00	-64.98	98.08	-561.29	448.40	422.12	26.28	17.062		
7,448.67	7,440.00	7,423.89	7,394.70	26.60	0.00	-99.70	99.05	-566.46	453.28	426.83	26.45	17.136		
7,500.00	7,491.33	7,474.92	7,445.41	26.78	0.00	-99.46	100.07	-571.92	458.52	431.89	26.63	17.216		
7,600.00	7,591.33	7,574.32	7,544.23	27.13	0.00	-99.00	102.05	-582.56	468.77	441.78	26.99	17.371		
7,700.00	7,691.33	7,673.73	7,643.04	27.49	0.00	-98.56	104.04	-593.19	479.04	451.71	27.34	17.522		
7,800.00	7,791.33	7,773.13	7,741.86	27.84	0.00	-98.15	106.03	-603.82	489.35	461.65	27.69	17.671		
7,900.00	7,891.33	7,872.54	7,840.68	28.20	0.00	-97.75	108.02	-614.46	499.67	471.62	28.05	17.816		
8,000.00	7,991.33	7,971.95	7,939.49	28.56	0.00	-97.36	110.01	-625.09	510.02	481.62	28.40	17.959		
8,100.00	8,091.33	8,071.35	8,038.31	28.91	0.00	-96.99	112.00	-635.73	520.39	491.64	28.75	18.099		
8,200.00	8,191.33	8,170.76	8,137.12	29.27	0.00	-96.64	113.98	-646.36	530.78	501.67	29.11	18.236		
8,300.00	8,291.33	8,270.16	8,235.94	29.62	0.00	-96.30	115.97	-657.00	541.19	511.73	29.46	18.370		
8,400.00	8,391.33	8,369.57	8,334.75	29.98	0.00	-95.97	117.96	-667.63	551.62	521.80	29.81	18.502		
8,500.00	8,491.33	8,468.98	8,433.57	30.33	0.00	-95.65	119.95	-678.27	562.06	531.89	30.17	18.631		
8,600.00	8,591.33	8,568.38	8,532.38	30.69	0.00	-95.35	121.94	-688.90	572.53	542.00	30.52	18.757		
8,700.00	8,691.33	8,667.79	8,631.20	31.05	0.00	-95.05	123.93	-699.54	583.00	552.13	30.88	18.881		
8,800.00	8,791.33	8,767.19	8,730.02	31.40	0.00	-94.77	125.91	-710.17	593.49	562.26	31.23	19.003		
8,900.00	8,891.33	8,866.60	8,828.83	31.76	0.00	-94.50	127.90	-720.80	604.00	572.41	31.59	19.122		
9,000.00	8,991.33	8,966.01	8,927.65	32.12	0.00	-94.23	129.89	-731.44	614.52	582.58	31.94	19.239		
9,100.00	9,091.33	9,065.41	9,026.46	32.47	0.00	-93.98	131.88	-742.07	625.05	592.75	32.30	19.354		
9,200.00	9,191.33	9,164.82	9,125.28	32.83	0.00	-93.73	133.87	-752.71	635.59	602.94	32.65	19.466		
9,300.00	9,291.33	9,264.22	9,224.09	33.18	0.00	-93.49	135.86	-763.34	646.15	613.14	33.01	19.577		
9,400.00	9,391.33	9,363.63	9,322.91	33.54	0.00	-93.26	137.84	-773.98	656.71	623.35	33.36	19.685		
9,500.00	9,491.33	9,463.04	9,421.72	33.90	0.00	-93.04	139.83	-784.61	667.29	633.57	33.72	19.792		
9,600.00	9,591.33	9,562.44	9,520.54	34.25	0.00	-92.82	141.82	-795.25	677.87	643.80	34.07	19.896		
9,700.00	9,691.33	9,661.85	9,619.35	34.61	0.00	-92.61	143.81	-805.88	688.47	654.04	34.43	19.998		
9,800.00	9,791.33	9,761.25	9,718.17	34.97	0.00	-92.41	145.80	-816.51	699.07	664.29	34.78	20.099		
9,900.00	9,891.33	9,860.66	9,816.99	35.32	0.00	-92.21	147.78	-827.15	709.68	674.55	35.14	20.198		

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



Total Directional Services

Anticollision Report



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Reference Well:	County Fair Fed Com 602H	Survey Calculation Method:	Minimum Curvature
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Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													County Fair/Blue Ribbon - County Fair Fed Com 701H - OH - Plan #1		Offset Site Error:		0.00 usft	
Survey Program: 0-													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	9,991.33	9,960.07	9,915.80	35.68	0.00	-92.02	149.77	-837.78	720.30	684.81	35.49	20.294						
10,100.00	10,091.33	10,059.47	10,014.62	36.04	0.00	-91.83	151.76	-848.42	730.93	695.08	35.85	20.390						
10,200.00	10,191.33	10,158.88	10,113.43	36.39	0.00	-91.65	153.75	-859.05	741.57	705.36	36.20	20.483						
10,300.00	10,291.33	10,258.28	10,212.25	36.75	0.00	-91.48	155.74	-869.69	752.21	715.65	36.56	20.575						
10,400.00	10,391.33	10,357.69	10,311.06	37.11	0.00	-91.30	157.73	-880.32	762.86	725.94	36.92	20.665						
10,500.00	10,491.33	10,457.10	10,409.88	37.46	0.00	-91.14	159.71	-890.96	773.51	736.24	37.27	20.753						
10,600.00	10,591.33	10,556.50	10,508.69	37.82	0.00	-90.98	161.70	-901.59	784.18	746.55	37.63	20.840						
10,700.00	10,691.33	10,655.91	10,607.51	38.18	0.00	-90.82	163.69	-912.23	794.84	756.86	37.98	20.926						
10,800.00	10,791.33	10,755.31	10,706.33	38.53	0.00	-90.67	165.68	-922.86	805.52	767.18	38.34	21.010						
10,900.00	10,891.33	10,854.72	10,805.14	38.89	0.00	-90.52	167.67	-933.49	816.20	777.50	38.70	21.093						
11,000.00	10,991.33	10,954.13	10,903.96	39.25	0.00	-90.37	169.66	-944.13	826.88	787.83	39.05	21.174						
11,100.00	11,091.33	11,055.38	11,004.61	39.61	0.00	-90.23	171.68	-954.95	837.57	798.15	39.41	21.251						
11,200.00	11,191.33	11,195.50	11,144.24	39.96	0.00	-90.08	173.80	-966.28	845.65	805.79	39.86	21.215						
11,300.00	11,291.33	11,336.41	11,285.06	40.32	0.00	-90.02	174.66	-970.89	848.92	808.68	40.25	21.093						
11,381.67	11,373.00	11,425.35	11,374.00	40.61	0.00	-90.02	174.68	-971.00	849.00	808.46	40.54	20.944						
11,400.00	11,391.32	11,443.67	11,392.32	40.67	0.00	90.50	174.68	-971.00	849.00	808.40	40.60	20.912						
11,450.00	11,441.16	11,493.52	11,442.16	40.83	0.00	90.75	174.68	-971.00	849.04	808.29	40.76	20.833						
11,500.00	11,490.49	11,542.84	11,491.49	40.98	0.00	91.27	174.68	-971.00	849.19	808.28	40.90	20.760						
11,550.00	11,538.92	11,591.27	11,539.92	41.13	0.00	92.04	174.68	-971.00	849.56	808.51	41.05	20.697						
11,600.00	11,586.08	11,638.43	11,587.08	41.27	0.00	93.02	174.68	-971.00	850.34	809.15	41.18	20.648						
11,650.00	11,631.62	11,689.41	11,638.01	41.39	0.00	94.19	172.83	-970.98	851.62	810.31	41.31	20.615						
11,700.00	11,675.20	11,742.90	11,691.04	41.51	0.00	95.37	166.05	-970.93	853.31	811.88	41.43	20.597						
11,750.00	11,716.48	11,798.64	11,745.39	41.62	0.00	96.53	153.77	-970.82	855.36	813.83	41.53	20.594						
11,800.00	11,755.14	11,856.86	11,800.60	41.72	0.00	97.68	135.36	-970.66	857.72	816.10	41.62	20.607						
11,850.00	11,790.89	11,917.76	11,856.04	41.82	0.00	98.79	110.22	-970.44	860.32	818.63	41.69	20.634						
11,900.00	11,823.46	11,981.51	11,910.87	41.92	0.00	99.87	77.76	-970.16	863.07	821.33	41.74	20.677						
11,950.00	11,852.61	12,048.23	11,964.01	42.03	0.00	100.88	37.49	-969.81	865.85	824.09	41.76	20.734						
12,000.00	11,878.10	12,117.96	12,014.16	42.14	0.00	101.82	-10.90	-969.40	868.56	826.80	41.76	20.799						
12,050.00	11,899.75	12,190.62	12,059.77	42.26	0.00	102.64	-67.40	-968.91	871.06	829.31	41.74	20.867						
12,100.00	11,917.40	12,265.99	12,099.13	42.38	0.00	103.34	-131.61	-968.35	873.21	831.49	41.72	20.929						
12,150.00	11,930.89	12,343.67	12,130.51	42.50	0.00	103.88	-202.60	-967.74	874.91	833.20	41.72	20.972						
12,200.00	11,940.15	12,423.10	12,152.38	42.63	0.00	104.24	-278.89	-967.08	876.05	834.31	41.74	20.986						
12,250.00	11,945.08	12,503.55	12,163.58	42.76	0.00	104.40	-358.49	-966.39	876.56	834.75	41.82	20.961						
12,276.29	11,945.93	12,542.71	12,164.98	42.83	0.00	104.40	-397.62	-966.05	876.58	834.70	41.88	20.932						
12,300.00	11,946.16	12,566.43	12,165.23	42.89	0.00	104.41	-421.33	-965.85	876.58	834.65	41.94	20.902						
12,400.00	11,947.10	12,666.43	12,166.27	43.20	0.00	104.41	-521.32	-964.98	876.62	834.39	42.23	20.758						
12,500.00	11,948.04	12,766.43	12,167.31	43.57	0.00	104.42	-621.31	-964.12	876.65	834.07	42.58	20.587						
12,600.00	11,948.98	12,866.43	12,168.36	44.00	0.00	104.43	-721.30	-963.25	876.69	833.69	42.99	20.391						
12,700.00	11,949.92	12,966.43	12,169.40	44.48	0.00	104.43	-821.29	-962.39	876.72	833.26	43.46	20.173						
12,800.00	11,950.86	13,066.43	12,170.44	45.02	0.00	104.44	-921.28	-961.52	876.75	832.77	43.98	19.935						
12,900.00	11,951.80	13,166.43	12,171.48	45.61	0.00	104.44	-1,021.27	-960.66	876.79	832.24	44.55	19.680						
13,000.00	11,952.74	13,266.43	12,172.53	46.26	0.00	104.45	-1,121.26	-959.79	876.82	831.65	45.18	19.409						
13,100.00	11,953.68	13,366.43	12,173.57	46.95	0.00	104.46	-1,221.25	-958.93	876.86	831.01	45.85	19.126						
13,200.00	11,954.62	13,466.43	12,174.61	47.69	0.00	104.46	-1,321.25	-958.06	876.89	830.33	46.56	18.832						
13,300.00	11,955.56	13,566.43	12,175.65	48.47	0.00	104.47	-1,421.24	-957.20	876.92	829.60	47.33	18.530						
13,400.00	11,956.50	13,666.43	12,176.70	49.30	0.00	104.48	-1,521.23	-956.33	876.96	828.83	48.13	18.221						
13,500.00	11,957.44	13,766.43	12,177.74	50.17	0.00	104.48	-1,621.22	-955.47	876.99	828.02	48.97	17.908						
13,600.00	11,958.38	13,866.43	12,178.78	51.08	0.00	104.49	-1,721.21	-954.61	877.03	827.17	49.85	17.592						
13,700.00	11,959.32	13,966.43	12,179.82	52.02	0.00	104.49	-1,821.20	-953.74	877.06	826.29	50.77	17.275						
13,800.00	11,960.26	14,066.43	12,180.87	53.00	0.00	104.50	-1,921.19	-952.88	877.09	825.37	51.72	16.958						
13,900.00	11,961.20	14,166.43	12,181.91	54.02	0.00	104.51	-2,021.18	-952.01	877.13	824.43	52.70	16.643						
14,000.00	11,962.14	14,266.43	12,182.95	55.06	0.00	104.51	-2,121.17	-951.15	877.16	823.45	53.72	16.329						

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



Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well County Fair Fed Com 602H
Project:	Lea County, NM (NAD83)	TVD Reference:	3248.1' GE + 21' KB @ 3269.10usft
Reference Site:	County Fair/Blue Ribbon	MD Reference:	3248.1' GE + 21' KB @ 3269.10usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	County Fair Fed Com 602H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.15 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													County Fair/Blue Ribbon - County Fair Fed Com 701H - OH - Plan #1		Offset Site Error: 0.00 usft	
Survey Program: 0-													Offset Well Error: 0.00 usft			
Reference		Offset		Semi Major Axis		Distance							Warning			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor				
14,100.00	11,963.08	14,366.43	12,183.99	56.13	0.00	104.52	-2,221.16	-950.28	877.20	822.44	54.76	16.019				
14,200.00	11,964.02	14,466.43	12,185.04	57.23	0.00	104.53	-2,321.15	-949.42	877.23	821.40	55.83	15.713				
14,300.00	11,964.96	14,566.43	12,186.08	58.36	0.00	104.53	-2,421.14	-948.55	877.27	820.34	56.92	15.412				
14,400.00	11,965.90	14,666.43	12,187.12	59.51	0.00	104.54	-2,521.13	-947.69	877.30	819.26	58.04	15.115				
14,500.00	11,966.84	14,766.43	12,188.16	60.68	0.00	104.55	-2,621.13	-946.82	877.33	818.15	59.18	14.824				
14,600.00	11,967.77	14,866.43	12,189.21	61.88	0.00	104.55	-2,721.12	-945.96	877.37	817.02	60.34	14.539				
14,700.00	11,968.71	14,966.43	12,190.25	63.10	0.00	104.56	-2,821.11	-945.09	877.40	815.87	61.53	14.260				
14,800.00	11,969.65	15,066.42	12,191.29	64.33	0.00	104.56	-2,921.10	-944.23	877.44	814.71	62.73	13.988				
14,900.00	11,970.59	15,166.42	12,192.33	65.59	0.00	104.57	-3,021.09	-943.36	877.47	813.52	63.95	13.721				
15,000.00	11,971.53	15,266.42	12,193.38	66.86	0.00	104.58	-3,121.08	-942.50	877.50	812.32	65.19	13.462				
15,100.00	11,972.47	15,366.42	12,194.42	68.15	0.00	104.58	-3,221.07	-941.64	877.54	811.10	66.44	13.208				
15,200.00	11,973.41	15,466.42	12,195.46	69.45	0.00	104.59	-3,321.06	-940.77	877.57	809.87	67.71	12.961				
15,300.00	11,974.35	15,566.42	12,196.50	70.77	0.00	104.60	-3,421.05	-939.91	877.61	808.62	68.99	12.721				
15,400.00	11,975.29	15,666.42	12,197.55	72.10	0.00	104.60	-3,521.04	-939.04	877.64	807.36	70.28	12.487				
15,500.00	11,976.23	15,766.42	12,198.59	73.44	0.00	104.61	-3,621.03	-938.18	877.68	806.08	71.59	12.259				
15,600.00	11,977.17	15,866.42	12,199.63	74.80	0.00	104.62	-3,721.02	-937.31	877.71	804.80	72.91	12.038				
15,700.00	11,978.11	15,966.42	12,200.67	76.17	0.00	104.62	-3,821.01	-936.45	877.74	803.50	74.25	11.822				
15,800.00	11,979.05	16,066.42	12,201.72	77.55	0.00	104.63	-3,921.01	-935.58	877.78	802.19	75.59	11.613				
15,900.00	11,979.99	16,166.42	12,202.76	78.94	0.00	104.63	-4,021.00	-934.72	877.81	800.87	76.94	11.409				
16,000.00	11,980.93	16,266.42	12,203.80	80.34	0.00	104.64	-4,120.99	-933.85	877.85	799.54	78.30	11.211				
16,100.00	11,981.87	16,366.42	12,204.84	81.75	0.00	104.65	-4,220.98	-932.99	877.88	798.21	79.68	11.018				
16,200.00	11,982.81	16,466.42	12,205.89	83.17	0.00	104.65	-4,320.97	-932.12	877.92	796.86	81.06	10.831				
16,300.00	11,983.75	16,566.42	12,206.93	84.60	0.00	104.66	-4,420.96	-931.26	877.95	795.51	82.44	10.649				
16,400.00	11,984.69	16,666.42	12,207.97	86.03	0.00	104.67	-4,520.95	-930.39	877.98	794.14	83.84	10.472				
16,500.00	11,985.63	16,766.42	12,209.01	87.48	0.00	104.67	-4,620.94	-929.53	878.02	792.77	85.24	10.300				
16,600.00	11,986.57	16,866.42	12,210.06	88.93	0.00	104.68	-4,720.93	-928.67	878.05	791.40	86.66	10.133				
16,700.00	11,987.51	16,966.42	12,211.10	90.38	0.00	104.68	-4,820.92	-927.80	878.09	790.01	88.07	9.970				
16,800.00	11,988.45	17,066.42	12,212.14	91.85	0.00	104.69	-4,920.91	-926.94	878.12	788.62	89.50	9.812				
16,900.00	11,989.39	17,166.42	12,213.18	93.32	0.00	104.70	-5,020.90	-926.07	878.16	787.23	90.93	9.658				
17,000.00	11,990.33	17,266.42	12,214.23	94.79	0.00	104.70	-5,120.90	-925.21	878.19	785.83	92.37	9.508				
17,100.00	11,991.27	17,366.42	12,215.27	96.28	0.00	104.71	-5,220.89	-924.34	878.23	784.42	93.81	9.362				
17,200.00	11,992.21	17,466.42	12,216.31	97.76	0.00	104.72	-5,320.88	-923.48	878.26	783.01	95.25	9.220				
17,300.00	11,993.15	17,566.42	12,217.35	99.26	0.00	104.72	-5,420.87	-922.61	878.29	781.59	96.71	9.082				
17,400.00	11,994.09	17,666.42	12,218.40	100.76	0.00	104.73	-5,520.86	-921.75	878.33	780.17	98.16	8.948				
17,500.00	11,995.03	17,766.42	12,219.44	102.26	0.00	104.74	-5,620.85	-920.88	878.36	778.74	99.63	8.817				
17,600.00	11,995.97	17,866.42	12,220.48	103.77	0.00	104.74	-5,720.84	-920.02	878.40	777.31	101.09	8.689				
17,700.00	11,996.91	17,966.42	12,221.52	105.28	0.00	104.75	-5,820.83	-919.15	878.43	775.87	102.56	8.565				
17,800.00	11,997.85	18,066.42	12,222.57	106.79	0.00	104.75	-5,920.82	-918.29	878.47	774.43	104.04	8.444				
17,900.00	11,998.79	18,166.42	12,223.61	108.31	0.00	104.76	-6,020.81	-917.42	878.50	772.99	105.51	8.326				
18,000.00	11,999.73	18,266.42	12,224.65	109.84	0.00	104.77	-6,120.80	-916.56	878.54	771.54	107.00	8.211				
18,100.00	12,000.67	18,366.42	12,225.69	111.36	0.00	104.77	-6,220.79	-915.70	878.57	770.09	108.48	8.099				
18,200.00	12,001.61	18,466.42	12,226.74	112.89	0.00	104.78	-6,320.78	-914.83	878.61	768.63	109.97	7.989				
18,300.00	12,002.55	18,566.42	12,227.78	114.43	0.00	104.79	-6,420.78	-913.97	878.64	767.18	111.46	7.883				
18,400.00	12,003.49	18,666.42	12,228.82	115.97	0.00	104.79	-6,520.77	-913.10	878.67	765.72	112.96	7.779				
18,500.00	12,004.43	18,766.42	12,229.86	117.51	0.00	104.80	-6,620.76	-912.24	878.71	764.25	114.46	7.677				
18,600.00	12,005.37	18,866.42	12,230.90	119.05	0.00	104.80	-6,720.75	-911.37	878.74	762.78	115.96	7.578				
18,700.00	12,006.31	18,966.42	12,231.95	120.60	0.00	104.81	-6,820.74	-910.51	878.78	761.32	117.46	7.481				
18,800.00	12,007.25	19,066.42	12,232.99	122.15	0.00	104.82	-6,920.73	-909.64	878.81	759.84	118.97	7.387				
18,900.00	12,008.19	19,166.42	12,234.03	123.70	0.00	104.82	-7,020.72	-908.78	878.85	758.37	120.48	7.295				
19,000.00	12,009.13	19,266.42	12,235.07	125.25	0.00	104.83	-7,120.71	-907.91	878.88	756.89	121.99	7.205				
19,100.00	12,010.07	19,366.42	12,236.12	126.81	0.00	104.84	-7,220.70	-907.05	878.92	755.41	123.50	7.116				
19,200.00	12,011.01	19,466.42	12,237.16	128.37	0.00	104.84	-7,320.69	-906.18	878.95	753.93	125.02	7.030				

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



Total Directional Services

Anticollision Report



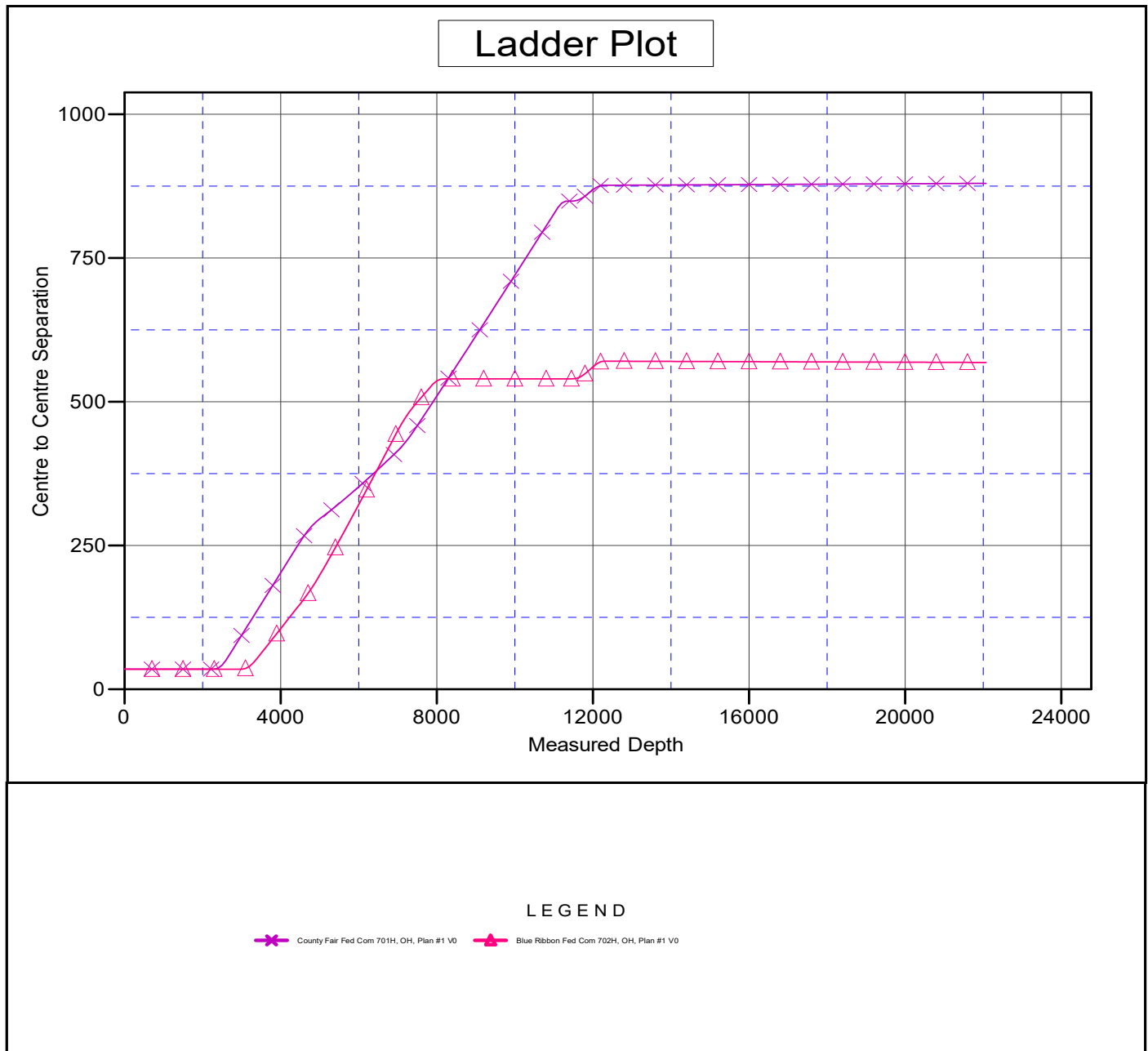
Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well County Fair Fed Com 602H
Project:	Lea County, NM (NAD83)	TVD Reference:	3248.1' GE + 21' KB @ 3269.10usft
Reference Site:	County Fair/Blue Ribbon	MD Reference:	3248.1' GE + 21' KB @ 3269.10usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	County Fair Fed Com 602H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.15 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.00 usft
Survey Program: 0-												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
19,300.00	12,011.95	19,566.42	12,238.20	129.93	0.00	104.85	-7,420.68	-905.32	878.99	752.45	126.54	6.946	
19,400.00	12,012.89	19,666.42	12,239.24	131.50	0.00	104.86	-7,520.67	-904.45	879.02	750.96	128.06	6.864	
19,500.00	12,013.83	19,766.42	12,240.29	133.06	0.00	104.86	-7,620.66	-903.59	879.06	749.47	129.58	6.784	
19,600.00	12,014.77	19,866.42	12,241.33	134.63	0.00	104.87	-7,720.66	-902.73	879.09	747.98	131.11	6.705	
19,700.00	12,015.71	19,966.42	12,242.37	136.20	0.00	104.87	-7,820.65	-901.86	879.12	746.49	132.63	6.628	
19,800.00	12,016.65	20,066.42	12,243.41	137.77	0.00	104.88	-7,920.64	-901.00	879.16	745.00	134.16	6.553	
19,900.00	12,017.59	20,166.42	12,244.46	139.35	0.00	104.89	-8,020.63	-900.13	879.19	743.50	135.69	6.479	
20,000.00	12,018.53	20,266.42	12,245.50	140.92	0.00	104.89	-8,120.62	-899.27	879.23	742.00	137.22	6.407	
20,100.00	12,019.47	20,366.42	12,246.54	142.50	0.00	104.90	-8,220.61	-898.40	879.26	740.51	138.76	6.337	
20,200.00	12,020.41	20,466.42	12,247.58	144.08	0.00	104.91	-8,320.60	-897.54	879.30	739.01	140.29	6.268	
20,300.00	12,021.35	20,566.42	12,248.63	145.66	0.00	104.91	-8,420.59	-896.67	879.33	737.50	141.83	6.200	
20,400.00	12,022.29	20,666.42	12,249.67	147.24	0.00	104.92	-8,520.58	-895.81	879.37	736.00	143.37	6.134	
20,500.00	12,023.23	20,766.42	12,250.71	148.83	0.00	104.92	-8,620.57	-894.94	879.40	734.50	144.91	6.069	
20,600.00	12,024.17	20,866.42	12,251.75	150.41	0.00	104.93	-8,720.56	-894.08	879.44	732.99	146.45	6.005	
20,700.00	12,025.11	20,966.42	12,252.80	152.00	0.00	104.94	-8,820.55	-893.21	879.47	731.48	147.99	5.943	
20,800.00	12,026.05	21,066.42	12,253.84	153.59	0.00	104.94	-8,920.54	-892.35	879.51	729.97	149.53	5.882	
20,900.00	12,026.99	21,166.42	12,254.88	155.18	0.00	104.95	-9,020.54	-891.48	879.54	728.46	151.08	5.822	
21,000.00	12,027.93	21,266.42	12,255.92	156.77	0.00	104.96	-9,120.53	-890.62	879.58	726.95	152.62	5.763	
21,100.00	12,028.87	21,366.42	12,256.97	158.36	0.00	104.96	-9,220.52	-889.76	879.61	725.44	154.17	5.705	
21,200.00	12,029.81	21,466.42	12,258.01	159.96	0.00	104.97	-9,320.51	-888.89	879.65	723.93	155.72	5.649	
21,300.00	12,030.75	21,566.42	12,259.05	161.55	0.00	104.98	-9,420.50	-888.03	879.68	722.41	157.27	5.593	
21,400.00	12,031.69	21,666.42	12,260.09	163.15	0.00	104.98	-9,520.49	-887.16	879.72	720.90	158.82	5.539	
21,500.00	12,032.63	21,766.42	12,261.14	164.74	0.00	104.99	-9,620.48	-886.30	879.75	719.38	160.37	5.486	
21,600.00	12,033.57	21,866.42	12,262.18	166.34	0.00	104.99	-9,720.47	-885.43	879.79	717.86	161.92	5.433	
21,700.00	12,034.51	21,966.42	12,263.22	167.94	0.00	105.00	-9,820.46	-884.57	879.82	716.34	163.48	5.382	
21,800.00	12,035.45	22,066.42	12,264.26	169.54	0.00	105.01	-9,920.45	-883.70	879.86	714.82	165.03	5.331	
21,900.00	12,036.39	22,166.42	12,265.31	171.14	0.00	105.01	-10,020.44	-882.84	879.89	713.30	166.59	5.282	
22,000.00	12,037.33	22,266.42	12,266.35	172.75	0.00	105.02	-10,120.43	-881.97	879.93	711.78	168.14	5.233	
22,074.19	12,038.03	22,340.62	12,267.12	173.80	0.00	105.02	-10,194.62	-881.33	879.95	710.79	169.16	5.202	

Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well County Fair Fed Com 602H
Project:	Lea County, NM (NAD83)	TVD Reference:	3248.1' GE + 21' KB @ 3269.10usft
Reference Site:	County Fair/Blue Ribbon	MD Reference:	3248.1' GE + 21' KB @ 3269.10usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	County Fair Fed Com 602H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.15 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Reference Depths are relative to 3248.1' GE + 21' KB @ 3269.10usft
Offset Depths are relative to Offset Datum
Central Meridian is -104.333334

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

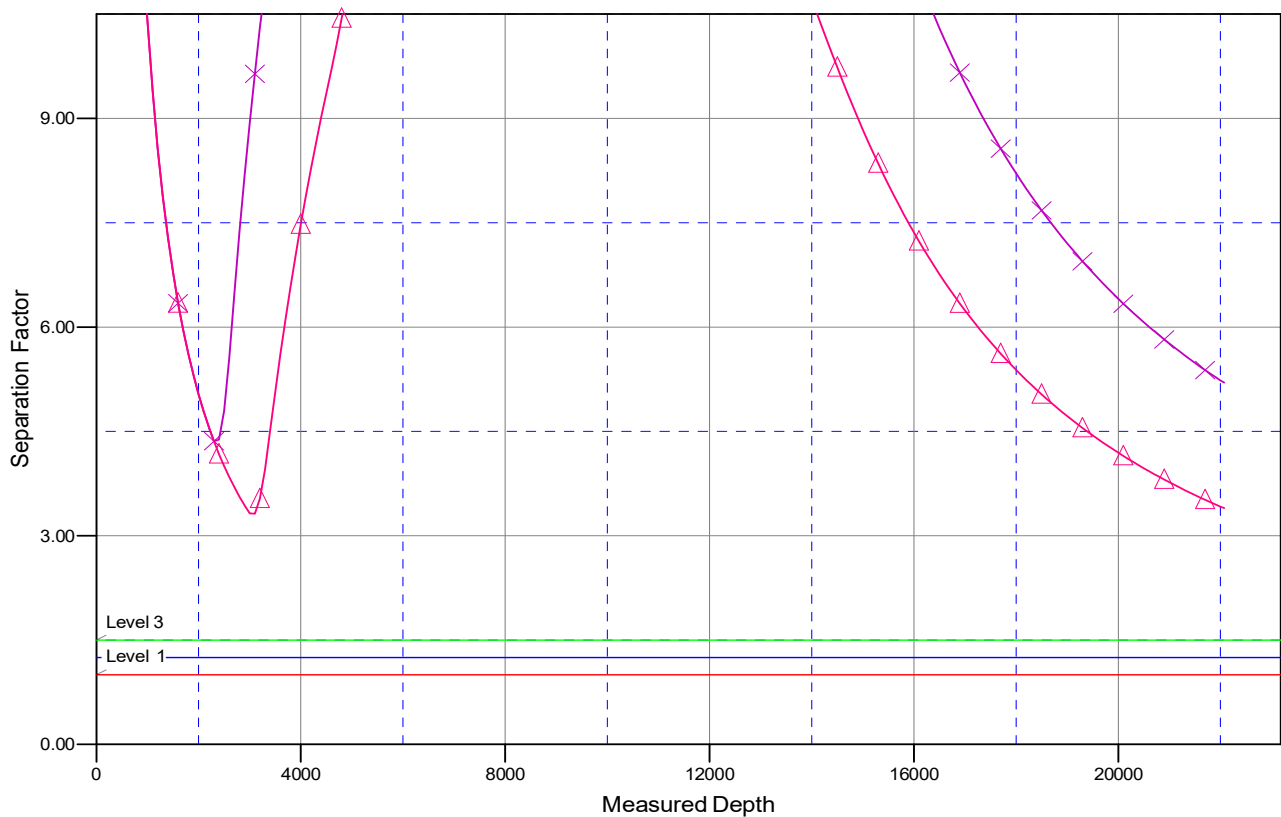


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Grid Convergence at Surface is: 0.53°

Separation Factor Plot



LEGEND

 County Fair Fed Com 701H, OH, Plan #1 V0
 Blue Ribbon Fed Com 702H, OH, Plan #1 V0

PECOS DISTRICT DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Franklin Mountain Energy LLC
LEASE NO.:	NMNM101608
LOCATION:	Section 2, T.25 S., R.35 E., NMPM
COUNTY:	Lea County, New Mexico

WELL NAME & NO.:	County Fair Fed Com 602H
SURFACE HOLE FOOTAGE:	250'/N & 1320'/W
BOTTOM HOLE FOOTAGE:	150'/S & 1200'/W

WELL NAME & NO.:	County Fair Fed Com 701H
SURFACE HOLE FOOTAGE:	250'/N & 1285'/W
BOTTOM HOLE FOOTAGE:	150'/S & 350'/W

COA

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

A. HYDROGEN SULFIDE

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

B. CASING

1. The 13-3/8 inch surface casing shall be set at approximately **1150 feet** (a minimum of **25 feet (Lea County)** into the Rustler Anhydrite and above the salt) and cemented to the surface.
 - a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature

survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.

- b. Wait on cement (WOC) time for a primary cement job will be a minimum of **8 hours** or 500 pounds compressive strength, whichever is greater. (This is to include the lead cement)
 - c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
 - d. If cement falls back, remedial cementing will be done prior to drilling out that string.
2. The minimum required fill of cement behind the **9-5/8** inch intermediate casing shall be set at approximately **5400 feet** is:

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

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

3. The minimum required fill of cement behind the **7-5/8** inch intermediate casing is:
 - Cement should tie-back at least **200 feet** into previous casing string. Operator shall provide method of verification.
4. The minimum required fill of cement behind the **5-1/2** inch production casing is:
 - Cement should tie-back at least **200 feet** into previous casing string. Operator shall provide method of verification.

C. PRESSURE CONTROL

Option 1:

- a. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **2000 (2M)** psi.
- b. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the **9-5/8** inch intermediate casing shoe shall be **5000 (5M)** psi.
- c. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the **7-5/8** inch intermediate

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

Option 2:

1. Operator has proposed a multi-bowl wellhead assembly. This assembly will only be tested when installed on the surface casing. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **10,000 (10M) psi. Variance is approved to use a 5000 (5M) Annular which shall be tested to 5000 (5M) psi.**
 - a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
 - b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
 - c. Manufacturer representative shall install the test plug for the initial BOP test.
 - d. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
 - e. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.

D. SPECIAL REQUIREMENT (S)

Communitization Agreement

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

GENERAL REQUIREMENTS

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

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

☒ Eddy County

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

☒ Lea County

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

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

A. CASING

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

B. PRESSURE CONTROL

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

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

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

C. DRILLING MUD

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

D. WASTE MATERIAL AND FLUIDS

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

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