

Form 3160-3
(June 2015)FORM APPROVED
OMB No. 1004-0137
Expires: January 31, 2018

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of work: <input type="checkbox"/> DRILL <input type="checkbox"/> REENTER 1b. Type of Well: <input type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other 1c. Type of Completion: <input type="checkbox"/> Hydraulic Fracturing <input type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone		5. Lease Serial No. 6. If Indian, Allottee or Tribe Name 7. If Unit or CA Agreement, Name and No. 8. Lease Name and Well No. <div style="text-align: center; font-weight: bold; font-size: 1.2em;">[330445]</div>	
2. Name of Operator <div style="text-align: center; font-weight: bold; font-size: 1.2em;">[373910]</div>		9. API Well No.	
3a. Address		3b. Phone No. (include area code)	
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At surface At proposed prod. zone		10. Field and Pool, or Exploratory 11. Sec., T. R. M. or Blk. and Survey or Area	
14. Distance in miles and direction from nearest town or post office*		12. County or Parish	
13. State		15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)	
16. No of acres in lease		17. Spacing Unit dedicated to this well	
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.		19. Proposed Depth	
20. BLM/BIA Bond No. in file		21. Elevations (Show whether DF, KDB, RT, GL, etc.)	
22. Approximate date work will start*		23. Estimated duration	
24. Attachments The following, completed in accordance with the requirements of Onshore Oil and Gas Order No. 1, and the Hydraulic Fracturing rule per 43 CFR 3162.3-3 (as applicable)			
1. Well plat certified by a registered surveyor. 2. A Drilling Plan. 3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO must be filed with the appropriate Forest Service Office).		4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above). 5. Operator certification. 6. Such other site specific information and/or plans as may be requested by the BLM.	
25. Signature		Name (Printed/Typed)	
Title		Date	
Approved by (Signature)		Name (Printed/Typed)	
Title		Office	
Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon. Conditions of approval, if any, are attached.			
Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.			

GCP Rec 04/07/2021

SL

(Continued on page 2)



Approval Date: 01/21/2021

 KZ
 04/09/2021

*(Instructions on page 2)

INSTRUCTIONS

GENERAL: This form is designed for submitting proposals to perform certain well operations, as indicated on Federal and Indian lands and leases for action by appropriate Federal agencies, pursuant to applicable Federal laws and regulations. Any necessary special instructions concerning the use of this form and the number of copies to be submitted, particularly with regard to local, area, or regional procedures and practices, either are shown below or will be issued by, or may be obtained from local Federal offices.

ITEM I: If the proposal is to redrill to the same reservoir at a different subsurface location or to a new reservoir, use this form with appropriate notations. Consult applicable Federal regulations concerning subsequent work proposals or reports on the well.

ITEM 4: Locations on Federal or Indian land should be described in accordance with Federal requirements. Consult local Federal offices for specific instructions.

ITEM 14: Needed only when location of well cannot readily be found by road from the land or lease description. A plat, or plats, separate or on the reverse side, showing the roads to, and the surveyed location of, the well, and any other required information, should be furnished when required by Federal agency offices.

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

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

ITEM 24: If the proposal will involve hydraulic fracturing operations, you must comply with 43 CFR 3162.3-3, including providing information about the protection of usable water. Operators should provide the best available information about all formations containing water and their depths. This information could include data and interpretation of resistivity logs run on nearby wells. Information may also be obtained from state or tribal regulatory agencies and from local BLM offices.

NOTICES

The Privacy Act of 1974 and regulation in 43 CFR 2.48(d) provide that you be furnished the following information in connection with information required by this application.

AUTHORITY: 30 U.S.C. 181 et seq., 25 U.S.C. 396; 43 CFR 3160

PRINCIPAL PURPOSES: The information will be used to: (1) process and evaluate your application for a permit to drill a new oil, gas, or service well or to reenter a plugged and abandoned well; and (2) document, for administrative use, information for the management, disposal and use of National Resource Lands and resources including (a) analyzing your proposal to discover and extract the Federal or Indian resources encountered; (b) reviewing procedures and equipment and the projected impact on the land involved; and (c) evaluating the effects of the proposed operation on the surface and subsurface water and other environmental impacts.

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

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

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

The BLM connects this information to an evaluation of the technical, safety, and environmental factors involved with drilling for oil and/or gas on Federal and Indian oil and gas leases. This information will be used to analyze and approve applications. Response to this request is mandatory only if the operator elects to initiate drilling or reentry operations on an oil and gas lease. The BLM would like you to know that you do not have to respond to this or any other Federal agency-sponsored information collection unless it displays a currently valid OMB control number.

BURDEN HOURS STATEMENT: Public reporting burden for this form is estimated to average 8 hours per response, including the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding the burden estimate or any other aspect of this form to U.S. Department of the Interior, Bureau of Land Management (1004-0137), Bureau Information Connection Clearance Officer (WO-630), 1849 C Street, N.W., Mail Stop 401 LS, Washington, D.C. 20240.

Additional Operator Remarks

Location of Well

0. SHL: LOT 4 / 250 FNL / 1241 FWL / TWSP: 25S / RANGE: 35E / SECTION: 1 / LAT: 32.166033 / LONG: -103.325775 (TVD: 0 feet, MD: 0 feet)
PPP: SWSW / 0 FSL / 604 FWL / TWSP: 24S / RANGE: 35E / SECTION: 25 / LAT: 32.181266 / LONG: -103.32786 (TVD: 11592 feet, MD: 17100 feet)
PPP: NWNW / 1324 FNL / 604 FWL / TWSP: 24S / RANGE: 35E / SECTION: 36 / LAT: 32.177627 / LONG: -103.327857 (TVD: 11636 feet, MD: 15800 feet)
PPP: SWSW / 349 FSL / 600 FWL / TWSP: 24S / RANGE: 35E / SECTION: 36 / LAT: 32.167678 / LONG: -103.32785 (TVD: 11761 feet, MD: 12141 feet)
PPP: SWSW / 0 FSL / 600 FWL / TWSP: 24S / RANGE: 35E / SECTION: 36 / LAT: 32.166719 / LONG: -103.327895 (TVD: 11673 feet, MD: 11800 feet)
BHL: NWNW / 150 FNL / 600 FWL / TWSP: 24S / RANGE: 35E / SECTION: 25 / LAT: 32.19536 / LONG: -103.32787 (TVD: 11418 feet, MD: 22218 feet)

BLM Point of Contact

Name: TYLER HILL

Title: LIE

Phone: (575) 234-5972

Email: tjhill@blm.gov

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Review and Appeal Rights

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

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District I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720

District II
811 S. First St., Artesia, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720

District III
1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170

District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

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

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

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-025-48625		² Pool Code 98185	³ Pool Name WC-025 G-09 S253502B;LWR BONE SPRING	
⁴ Property Code 330445	⁵ Property Name WESTERN FED COM			⁶ Well Number 601H
⁷ OGRID No. 373910	⁸ Operator Name FRANKLIN MOUNTAIN ENERGY LLC			⁹ Elevation 3284.1'

¹⁰Surface Location

UL or lot no. 4	Section 1	Township 25S	Range 35E	Lot Idn	Feet from the 250	North/South line NORTH	Feet from the 1241	East/West line WEST	County LEA
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¹¹ Bottom Hole Location If Different From Surface

UL or lot no. D	Section 25	Township 24S	Range 35E	Lot Idn	Feet from the 150	North/South line NORTH	Feet from the 600	East/West line WEST	County LEA
¹² Dedicated Acres 320		¹³ Joint or Infill		¹⁴ Consolidation Code		¹⁵ Order No.			

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

NAD 83 (SURFACE HOLE LOCATION)
 LATITUDE = 32°09'57.72" (32.166033°)
 LONGITUDE = 103°19'32.79" (103.325775°)

NAD 27 (SURFACE HOLE LOCATION)
 LATITUDE = 32°09'57.26" (32.165906°)
 LONGITUDE = 103°19'31.11" (103.325309°)

STATE PLANE NAD 83 (N.M. EAST)
 N: 425597.25' E: 853111.55'

STATE PLANE NAD 27 (N.M. EAST)
 N: 425538.46' E: 811925.12'

NAD 83 (KOP)
 LATITUDE = 32°09'57.78" (32.166049°)
 LONGITUDE = 103°19'40.26" (103.327849°)

NAD 27 (KOP)
 LATITUDE = 32°09'57.32" (32.165923°)
 LONGITUDE = 103°19'38.58" (103.327384°)

STATE PLANE NAD 83 (N.M. EAST)
 N: 425597.25' E: 852469.55'

STATE PLANE NAD 27 (N.M. EAST)
 N: 425538.47' E: 811283.13'

NAD 83 (PPP #1)
 LATITUDE = 32°10'00.19" (32.166719°)
 LONGITUDE = 103°19'40.26" (103.327850°)

NAD 27 (PPP #1)
 LATITUDE = 32°09'59.73" (32.166593°)
 LONGITUDE = 103°19'38.58" (103.327384°)

STATE PLANE NAD 83 (N.M. EAST)
 N: 425840.94' E: 852467.13'

STATE PLANE NAD 27 (N.M. EAST)
 N: 425782.15' E: 811280.72'

NAD 83 (PPP #2 LP)
 LATITUDE = 32°10'03.64" (32.167678°)
 LONGITUDE = 103°19'40.26" (103.327850°)

NAD 27 (PPP #2 LP)
 LATITUDE = 32°10'03.18" (32.167551°)
 LONGITUDE = 103°19'38.59" (103.327385°)

STATE PLANE NAD 83 (N.M. EAST)
 N: 426189.71' E: 852463.66'

STATE PLANE NAD 27 (N.M. EAST)
 N: 426130.92' E: 811277.27'

NAD 83 (PPP #3)
 LATITUDE = 32°10'39.46" (32.177627°)
 LONGITUDE = 103°19'40.29" (103.327857°)

NAD 27 (PPP #3)
 LATITUDE = 32°10'39.00" (32.177500°)
 LONGITUDE = 103°19'38.61" (103.327391°)

STATE PLANE NAD 83 (N.M. EAST)
 N: 429809.16' E: 852427.67'

STATE PLANE NAD 27 (N.M. EAST)
 N: 429750.27' E: 811241.42'

NAD 83 (PPP #4)
 LATITUDE = 32°10'52.56" (32.181266°)
 LONGITUDE = 103°19'40.30" (103.327860°)

NAD 27 (PPP #4)
 LATITUDE = 32°10'52.10" (32.181139°)
 LONGITUDE = 103°19'38.62" (103.327394°)

STATE PLANE NAD 83 (N.M. EAST)
 N: 431133.00' E: 852414.51'

STATE PLANE NAD 27 (N.M. EAST)
 N: 431074.07' E: 811228.31'

NAD 83 (BOTTOM HOLE LOCATION)
 LATITUDE = 32°11'43.30" (32.195360°)
 LONGITUDE = 103°19'40.33" (103.327870°)

NAD 27 (BOTTOM HOLE LOCATION)
 LATITUDE = 32°11'42.84" (32.195234°)
 LONGITUDE = 103°19'38.65" (103.327403°)

STATE PLANE NAD 83 (N.M. EAST)
 N: 436260.54' E: 852363.53'

STATE PLANE NAD 27 (N.M. EAST)
 N: 436201.47' E: 811177.53'

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1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals and Natural Resources Department
Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Submit Original
to Appropriate
District Office

GAS CAPTURE PLAN

Date: 1/29/2021

☒ Original

Operator & OGRID No.: Franklin Mountain Energy, LLC 373910

☐ Amended - Reason for Amendment: _____

This Gas Capture Plan outlines actions to be taken by the Operator to reduce well/production facility flaring/venting for new completion (new drill, recomple to new zone, re-frac) activity.

Note: Form C-129 must be submitted and approved prior to exceeding 60 days allowed by Rule (Subsection A of 19.15.18.12 NMAC).

Well(s)/Production Facility – Name of facility

The well(s) that will be located at the production facility are shown in the table below.

Well Name	API	Well Location (ULSTR)	Footages	Expected MCF/D	Flared or Vented	Comments
Western Fed Com 601H 30-025-48625	TBD	Lot 4-1-25S-35E	250 FNL 1241 FEL	1100 +/-	Flared	New well; expect to tie-in at IP
Western Fed Com 702H	TBD	Lot 4-1-25S-35E	250 FNL 1276 FEL	1100 +/-	Flared	New well; expect to tie-in at IP

Gathering System and Pipeline Notification

Well(s) will be connected to a production facility after flowback operations are complete, if gas transporter system is in place. The gas produced from production facility is dedicated to Lucid Energy and will be connected to Lucid Energy's gathering system located in Lea County, New Mexico. It will require 1,000' of pipeline to connect the facility to low/high pressure gathering system. Franklin Mountain Energy, LLC provides (periodically) to Lucid Energy a drilling, completion and estimated first production date for wells that are scheduled to be drilled in the foreseeable future. In addition, Franklin Mountain Energy, LLC and Lucid Energy have periodic conference calls to discuss changes to drilling and completion schedules. Gas from these wells will be processed at Lucid Energy's Red Hills Processing Plant located in Sec.13, Twn. 24S, Rng. 33E, Lea County, New Mexico. The actual flow of the gas will be based on compression operating parameters and gathering system pressures.

Flowback Strategy

After the fracture treatment/completion operations, well(s) will be produced to permanent central tank battery and gas will be sold or flared. Gas sales should start as soon as the wells start producing gas unless there are operational issues on Lucid Energy's system at that time. Based on current information, it is Franklin Mountain Energy's belief the system can take this gas upon completion of the well(s).

Safety requirements during cleanout operations from the use of underbalanced air cleanout systems may necessitate that sand and non-pipeline quality gas be vented and/or flared rather than sold on a temporary basis.

Alternatives to Reduce Flaring

Below are alternatives considered from a conceptual standpoint to reduce the amount of gas flared.

- Power Generation – On lease
 - Only a portion of gas is consumed operating the generator, remainder of gas will be flared
- Compressed Natural Gas – On lease
 - Gas flared would be minimal, but might be uneconomical to operate when gas volume declines
- NGL Removal – On lease
 - Plants are expensive, residue gas is still flared, and uneconomical to operate when gas volume declines



Western Fed Com 601H

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)	3,284'	30'	30'	0	Sand/Gravels/unconsolidated
Rustler	2,056'	1,258'			Carbonates
Salado	1,938'	1,376'			Salt, Carbonate & Clastics
Base Salt	-213'	3,527'			Shaley Carbonate & Shale
Lamar	-1,778'	5,092'			Carbonate & Clastics
Bell Canyon	-1,836'	5,150'			Sandstone - oil/gas/water
Cherry Canyon	-2,724'	6,038'			Sandstone - oil/gas/water
Brushy Canyon	-4,145'	7,459'			Sand/carb/shales - oil/gas/water
Bone Spring Lime	-5,420'	8,734'			Shale/Carbonates - oil/gas
Avalon	-5,517'	8,831'			Shale/Carbonates - oil/gas
First Bone Spring Sand	-6,709'	10,023'			Sandstone - oil/gas/water
Second Bone Spring Carbonates	-6,839'	10,153'			Shale/Carbonates - oil/gas
Second Bone Spring Sand	-7,215'	10,529'			Sandstone - oil/gas/water
Third Bone Spring Carbonates	-7,763'	11,077'			Shale/Carbonates - oil/gas
Third Bone Spring Sand	-8,295'	11,609'			Sandstone - oil/gas/water
HZ Target at SHL	-8,467'	11,781'			Overpressure shale/sand- Oil/Gas
Wolfcamp	-8,612'	11,926'			Overpressure shale/sand- Oil/Gas
Wolfcamp A	-8,647'	11,961'			Overpressure Shale - Oil/Gas
Wolfcamp B	-8,839'	12,153'			Overpressure Shale - Oil/Gas

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

Upper Permian Sands	0- 400'	Fresh Water
Delaware Sands	5,150'	Oil
Bone Spring	10,023'	Oil
Wolfcamp	11,926'	Oil

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

4. Casing Program:

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

Casing string	Weight	Grade	Burst	Collapse	Tension	Conn	Length	API design factor			
								Burst	Collapse	Tension	Coupling
Surface 13 3/8"	54.5	J-55	2730	1130	853	BTC 909	1300	1.18	1.67	4.99	5.32
Intermediate 9 5/8"	40	HCL-80	7430	4230	916	BTC 1042	5400	1.72	1.67	2.90	3.30
Intermediate 7 5/8"	29.7	HCP-110	8280	7150	827	Stinger 564	12141	1.09	1.26	1.8	1.22
Long string 5 1/2"	23	P-110	14520	14520	729	Anaconda 656	22218	1.32	1.4	1.19	1.07



Cementing Program:

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

String Type	Hole Size	Casing Size	Setting Depth	Sacks	Type of cmt	Lead Yield ft ³ /sk	Water gal/sk	TOC ft	Sacks	Type of cmt	Tail Yield ft ³ /sk	Water gal/sk	TOC	Excess
Surf	17.5	13.375	1300	795	Extenda Cem, 13.5 ppg Class C, 3lb/sk Kol-Seal	1.747	9.06	0	334	HalCem TM, 14.8 ppg, Class C, 1% CaCl ₂ , 0.125pps Celo-Flake	1.349	6.51	1000	100%
Int1	12.25	9.625	5400	1167	Neocem TM, 11.5 ppg, Class C 5% Salt, 0.125 pps Poly-E-Flake, 3lb/sk Kol-Seal	2.444	14.32	0	153	HalCem TM, 14.8 ppg, Class C, 0.1% HR 800 .125 pps Poly-E-Flake	1.334	6.42	5100	100%
Int2	8.75	7.625	12141	348	NeoCem, 11 ppg, Class C 3lb/sk Bridgemaker Gel, 5% Salt, 5pps LCM, 0.25pps Cello-Flake	2.798	17.15	4400	112	NeoCem 13.2 ppg, Class C 0.25 pps Cello-Flake, 2% CaCl ₂	1.44	7.29	11141	50%
Prod	6.75	5.5	22218	816	NeoCem, 13.5 ppg, Gas Migration Control	1.357	6.65	11141						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' – 12,141'	Brine	8.8-10.2	28-34	N/c
12,141' – 22,218' Lateral	Oil Base	10.0-11.0	58-68	3 - 6

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

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

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

7. Auxiliary well control and monitoring equipment:

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

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

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

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

8. Logging, testing and coring program:

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

Open-hole logs are not planned for this well.

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

The estimated bottom-hole temperature at 11,761' TVD (deepest point of the well) is 195F with an estimated maximum bottom-hole pressure (BHP) at the same point of 7,338 psig (based on 12 ppg MW). Hydrogen sulfate may be present in the area. All necessary precautions will be taken before drilling operations commence. See Hydrogen Sulfide Plan below:

10. Hydrogen Sulfide Plan:

A. All personnel shall receive proper awareness H₂S training.

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

C. Required Emergency Equipment

a. Well Control Equipment

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

ii. Choke manifold with a remotely operated hydraulic choke.

iii. Mud/gas separator

b. Protective equipment for essential personnel

i. Breathing Apparatus

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

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



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

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

11. Anticipated starting date and duration of operations:

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

**12. Disposal/environmental concerns:**

- (A) Drilled cuttings will be hauled to and disposed of in a state-certified disposal site.
- (B) Non-hazardous waste mud/cement from the drilling process will 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.

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Franklin Mountain Energy

Project: Lea County, NM (NAD83)
Site: Western/Bidder 49/KC7
Well: Western Fed Com 601H
Wellbore: OH
Design: Plan #1

3284.1' GE + 30' KB @ 3314.10usft



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

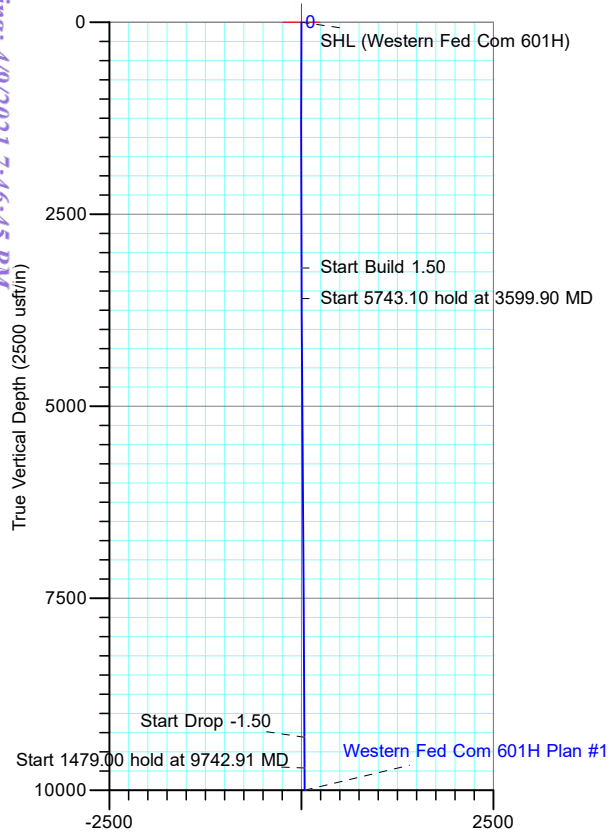
Magnetic Field
Strength: 47587.8nT
Dip Angle: 59.92°
Date: 6/22/2020
Model: IGRF2020

PROJECT DETAILS: Lea County, NM (NAD83)

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



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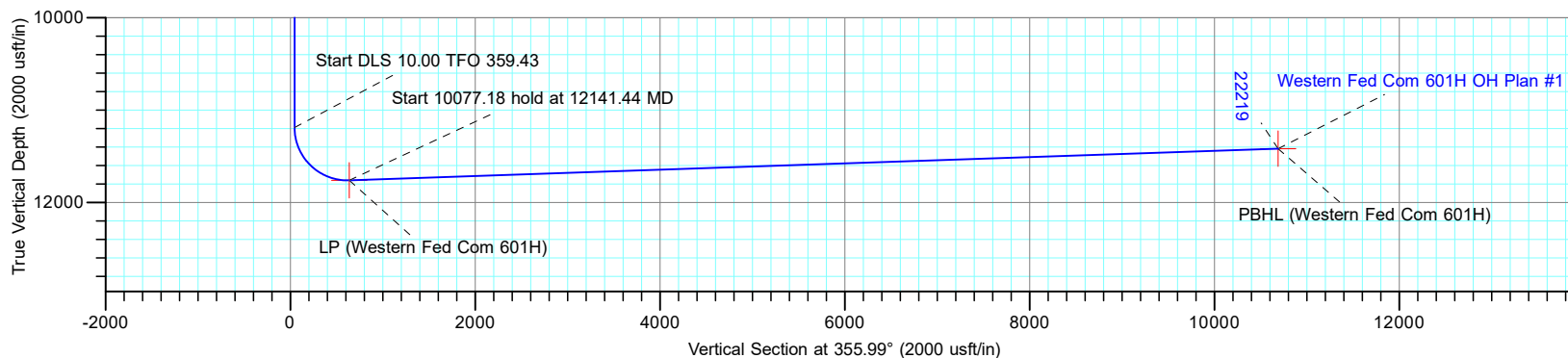
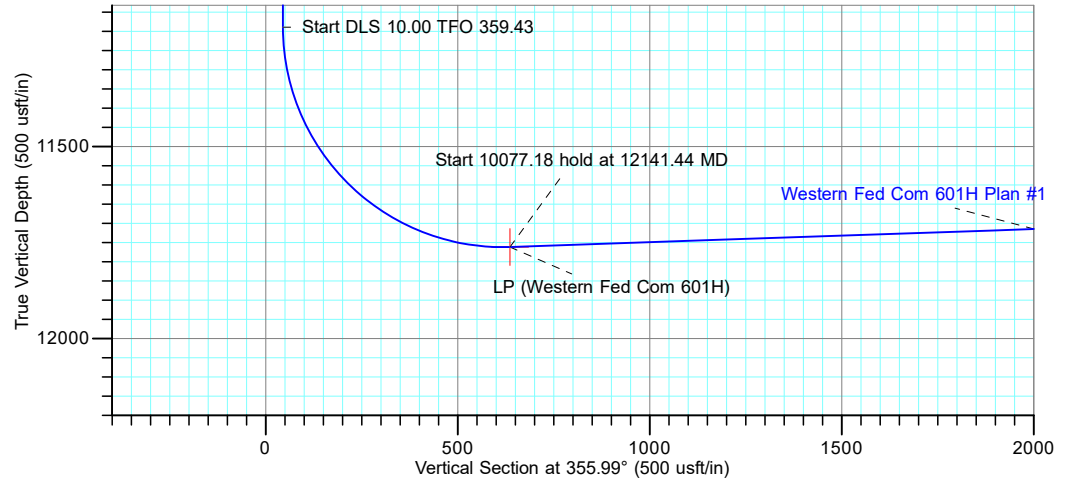


SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Annotation
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
3200.00	0.00	0.00	3200.00	0.00	0.00	0.00	0.00	0.00	Start Build 1.50
3599.90	6.00	270.00	3599.17	0.00	-20.91	1.50	270.00	1.46	Start 5743.10 hold at 3599.90 MD
9343.00	6.00	270.00	9310.83	0.00	-621.09	0.00	0.00	43.46	Start Drop -1.50
9742.91	0.00	0.00	9710.00	0.00	-642.00	1.50	180.00	44.93	Start 1479.00 hold at 9742.91 MD
11221.91	0.00	0.00	11189.00	0.00	-642.00	0.00	0.00	44.93	Start DLS 10.00 TFO 359.43
12141.44	91.95	359.43	11761.62	592.46	-647.89	10.00	359.43	636.35	Start 10077.18 hold at 12141.44 MD
22218.63	91.95	359.43	11418.05	10663.29	-748.02	0.00	0.00	10689.49	TD at 22218.63

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Latitude	Longitude
LP (Western Fed Com 601H)	11761.62	592.46	-647.89	32.167678	-103.327850
PBHL (Western Fed Com 601H)	11418.05	10663.29	-748.02	32.195360	-103.327870
SHL (Western Fed Com 601H)	0.00	0.00	0.00	32.166033	-103.325775



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

Plan: Plan #1 (Western Fed Com 601H/OH)
Western/Bidder 49/KC7
Created By: Dustin Ault
Date: 14:51, June 23 2020
Approved: _____
Date: _____

Page 13 of 85

Franklin Mountain Energy

Project: Lea County, NM (NAD83)
Site: Western/Bidder 49/KC7
Well: Western Fed Com 601H
Wellbore: OH
Design: Plan #1



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

Magnetic Field
Strength: 47587.8nT
Dip Angle: 59.92°
Date: 6/22/2020
Model: IGRF2020

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

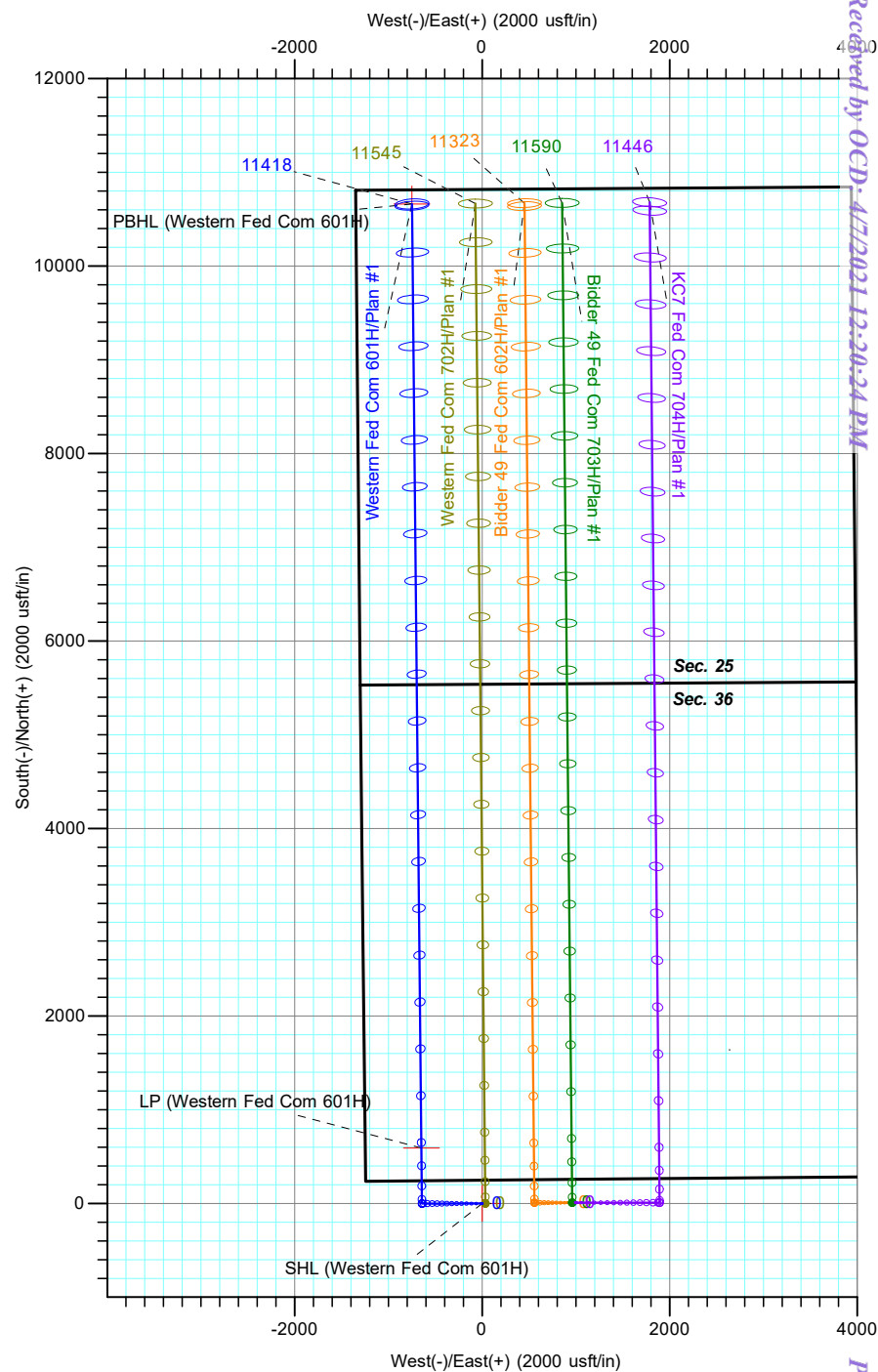
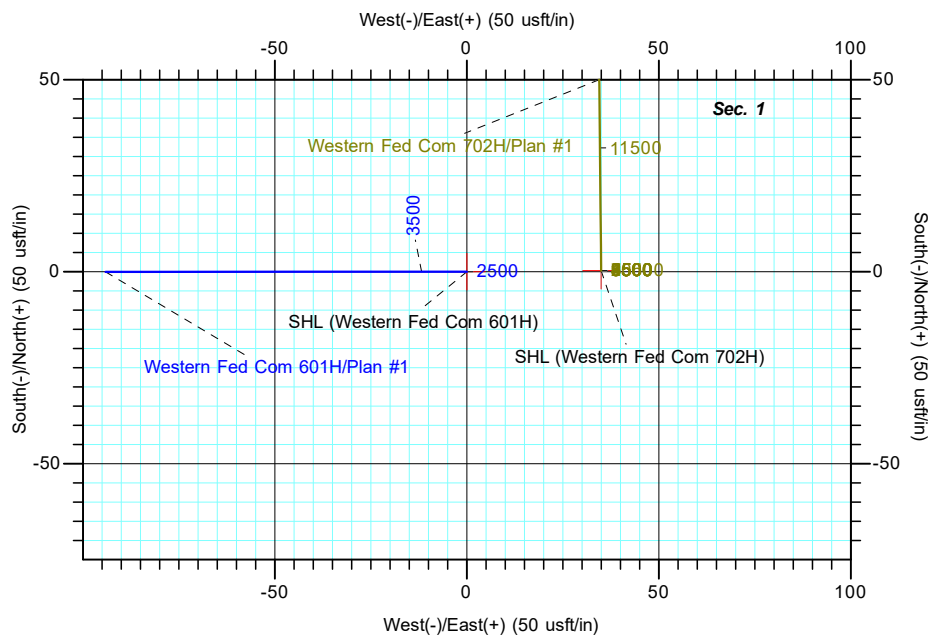


DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
LP (Western Fed Com 601H)	11761.62	592.46	-647.89	426189.71	852463.66	32.167678	-103.327850
PBHL (Western Fed Com 601H)	11418.05	10663.29	-748.02	436260.54	852363.53	32.195360	-103.327870
SHL (Western Fed Com 601H)	0.00	0.00	0.00	425597.25	853111.55	32.166033	-103.325775

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Annotation
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
3200.00	0.00	0.00	3200.00	0.00	0.00	0.00	0.00	0.00	Start Build 1.50
3599.90	6.00	270.00	3599.17	0.00	-20.91	1.50	270.00	1.46	Start 5743.10 hold at 3599.90 MD
9343.00	6.00	270.00	9310.83	0.00	-621.09	0.00	0.00	43.46	Start Drop -1.50
9742.91	0.00	0.00	9710.00	0.00	-642.00	1.50	180.00	44.93	Start 1479.00 hold at 9742.91 MD
11221.91	0.00	0.00	11189.00	0.00	-642.00	0.00	0.00	44.93	Start DLS 10.00 TFO 359.43
12141.44	91.95	359.43	11761.62	592.46	-647.89	10.00	359.43	636.35	Start 10077.18 hold at 12141.44 MD
22218.63	91.95	359.43	11418.05	10663.29	-748.02	0.00	0.00	10689.49	TD at 22218.63



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

Plan: Plan #1 (Western Fed Com 601H/OH)
Western/Bidder 49/KC7
Created By: Dustin Ault
Date: 14:52, June 23 2020
Approved: _____
Date: _____



Franklin Mountain Energy

Lea County, NM (NAD83)

Western/Bidder 49/KC7

Western Fed Com 601H

OH

Plan: Plan #1

Standard Planning Report

23 June, 2020





Total Directional Services

Planning Report



Database:	EDM 5000.15 Single User Db	Local Co-ordinate Reference:	Well Western Fed Com 601H
Company:	Franklin Mountain Energy	TVD Reference:	3284.1' GE + 30' KB @ 3314.10usft
Project:	Lea County, NM (NAD83)	MD Reference:	3284.1' GE + 30' KB @ 3314.10usft
Site:	Western/Bidder 49/KC7	North Reference:	Grid
Well:	Western Fed Com 601H	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		Western/Bidder 49/KC7			
Site Position:		Northing:	425,597.25 usft	Latitude:	32.166033
From:	Map	Easting:	853,111.55 usft	Longitude:	-103.325775
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.54

Well	Western Fed Com 601H					
Well Position	+N/-S	0.00 usft	Northing:	425,597.25 usft	Latitude:	32.166033
	+E/-W	0.00 usft	Easting:	853,111.55 usft	Longitude:	-103.325775
Position Uncertainty		0.00 usft	Wellhead Elevation:		Ground Level:	3,284.10 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2020	6/22/2020	6.54	59.92	47,587.76699347

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	355.99

Plan Survey Tool Program	Date	6/23/2020		
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	22,218.17 Plan #1 (OH)	OWSG (Rev2) MWD	
			OWSG MWD - Standard	

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
3,200.00	0.00	0.00	3,200.00	0.00	0.00	0.00	0.00	0.00	0.00	
3,599.90	6.00	270.00	3,599.17	0.00	-20.91	1.50	1.50	0.00	270.00	
9,343.00	6.00	270.00	9,310.83	0.00	-621.09	0.00	0.00	0.00	0.00	
9,742.91	0.00	0.00	9,710.00	0.00	-642.00	1.50	-1.50	0.00	180.00	
11,221.91	0.00	0.00	11,189.00	0.00	-642.00	0.00	0.00	0.00	0.00	
12,141.44	91.95	359.43	11,761.62	592.46	-647.89	10.00	10.00	-0.06	359.43	
22,218.63	91.95	359.43	11,418.05	10,663.29	-748.02	0.00	0.00	0.00	0.00	PBHL (Western Fed C



Total Directional Services

Planning Report



Database:	EDM 5000.15 Single User Db	Local Co-ordinate Reference:	Well Western Fed Com 601H
Company:	Franklin Mountain Energy	TVD Reference:	3284.1' GE + 30' KB @ 3314.10usft
Project:	Lea County, NM (NAD83)	MD Reference:	3284.1' GE + 30' KB @ 3314.10usft
Site:	Western/Bidder 49/KC7	North Reference:	Grid
Well:	Western Fed Com 601H	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 (Western Fed Com 601H)									
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	0.00	0.00
2,700.00	0.00	0.00	2,700.00	0.00	0.00	0.00	0.00	0.00	0.00
2,800.00	0.00	0.00	2,800.00	0.00	0.00	0.00	0.00	0.00	0.00
2,900.00	0.00	0.00	2,900.00	0.00	0.00	0.00	0.00	0.00	0.00
3,000.00	0.00	0.00	3,000.00	0.00	0.00	0.00	0.00	0.00	0.00
3,100.00	0.00	0.00	3,100.00	0.00	0.00	0.00	0.00	0.00	0.00
3,200.00	0.00	0.00	3,200.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 1.50									
3,300.00	1.50	270.00	3,299.99	0.00	-1.31	0.09	1.50	1.50	0.00
3,400.00	3.00	270.00	3,399.91	0.00	-5.23	0.37	1.50	1.50	0.00
3,500.00	4.50	270.00	3,499.69	0.00	-11.77	0.82	1.50	1.50	0.00
3,599.90	6.00	270.00	3,599.17	0.00	-20.91	1.46	1.50	1.50	0.00
Start 5743.10 hold at 3599.90 MD									
3,700.00	6.00	270.00	3,698.72	0.00	-31.38	2.20	0.00	0.00	0.00
3,800.00	6.00	270.00	3,798.17	0.00	-41.83	2.93	0.00	0.00	0.00
3,900.00	6.00	270.00	3,897.63	0.00	-52.28	3.66	0.00	0.00	0.00
4,000.00	6.00	270.00	3,997.08	0.00	-62.73	4.39	0.00	0.00	0.00
4,100.00	6.00	270.00	4,096.53	0.00	-73.18	5.12	0.00	0.00	0.00
4,200.00	6.00	270.00	4,195.98	0.00	-83.63	5.85	0.00	0.00	0.00
4,300.00	6.00	270.00	4,295.44	0.00	-94.08	6.58	0.00	0.00	0.00
4,400.00	6.00	270.00	4,394.89	0.00	-104.53	7.31	0.00	0.00	0.00
4,500.00	6.00	270.00	4,494.34	0.00	-114.98	8.05	0.00	0.00	0.00
4,600.00	6.00	270.00	4,593.79	0.00	-125.43	8.78	0.00	0.00	0.00
4,700.00	6.00	270.00	4,693.25	0.00	-135.88	9.51	0.00	0.00	0.00
4,800.00	6.00	270.00	4,792.70	0.00	-146.33	10.24	0.00	0.00	0.00
4,900.00	6.00	270.00	4,892.15	0.00	-156.78	10.97	0.00	0.00	0.00



Total Directional Services

Planning Report



Database:	EDM 5000.15 Single User Db	Local Co-ordinate Reference:	Well Western Fed Com 601H
Company:	Franklin Mountain Energy	TVD Reference:	3284.1' GE + 30' KB @ 3314.10usft
Project:	Lea County, NM (NAD83)	MD Reference:	3284.1' GE + 30' KB @ 3314.10usft
Site:	Western/Bidder 49/KC7	North Reference:	Grid
Well:	Western Fed Com 601H	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)
5,000.00	6.00	270.00	4,991.60	0.00	-167.23	11.70	0.00	0.00	0.00
5,100.00	6.00	270.00	5,091.06	0.00	-177.68	12.43	0.00	0.00	0.00
5,200.00	6.00	270.00	5,190.51	0.00	-188.13	13.16	0.00	0.00	0.00
5,300.00	6.00	270.00	5,289.96	0.00	-198.58	13.90	0.00	0.00	0.00
5,400.00	6.00	270.00	5,389.41	0.00	-209.03	14.63	0.00	0.00	0.00
5,500.00	6.00	270.00	5,488.87	0.00	-219.48	15.36	0.00	0.00	0.00
5,600.00	6.00	270.00	5,588.32	0.00	-229.93	16.09	0.00	0.00	0.00
5,700.00	6.00	270.00	5,687.77	0.00	-240.38	16.82	0.00	0.00	0.00
5,800.00	6.00	270.00	5,787.22	0.00	-250.83	17.55	0.00	0.00	0.00
5,900.00	6.00	270.00	5,886.68	0.00	-261.28	18.28	0.00	0.00	0.00
6,000.00	6.00	270.00	5,986.13	0.00	-271.73	19.02	0.00	0.00	0.00
6,100.00	6.00	270.00	6,085.58	0.00	-282.18	19.75	0.00	0.00	0.00
6,200.00	6.00	270.00	6,185.03	0.00	-292.63	20.48	0.00	0.00	0.00
6,300.00	6.00	270.00	6,284.49	0.00	-303.08	21.21	0.00	0.00	0.00
6,400.00	6.00	270.00	6,383.94	0.00	-313.53	21.94	0.00	0.00	0.00
6,500.00	6.00	270.00	6,483.39	0.00	-323.98	22.67	0.00	0.00	0.00
6,600.00	6.00	270.00	6,582.84	0.00	-334.43	23.40	0.00	0.00	0.00
6,700.00	6.00	270.00	6,682.30	0.00	-344.88	24.13	0.00	0.00	0.00
6,800.00	6.00	270.00	6,781.75	0.00	-355.33	24.87	0.00	0.00	0.00
6,900.00	6.00	270.00	6,881.20	0.00	-365.78	25.60	0.00	0.00	0.00
7,000.00	6.00	270.00	6,980.65	0.00	-376.23	26.33	0.00	0.00	0.00
7,100.00	6.00	270.00	7,080.11	0.00	-386.68	27.06	0.00	0.00	0.00
7,200.00	6.00	270.00	7,179.56	0.00	-397.14	27.79	0.00	0.00	0.00
7,300.00	6.00	270.00	7,279.01	0.00	-407.59	28.52	0.00	0.00	0.00
7,400.00	6.00	270.00	7,378.46	0.00	-418.04	29.25	0.00	0.00	0.00
7,500.00	6.00	270.00	7,477.92	0.00	-428.49	29.98	0.00	0.00	0.00
7,600.00	6.00	270.00	7,577.37	0.00	-438.94	30.72	0.00	0.00	0.00
7,700.00	6.00	270.00	7,676.82	0.00	-449.39	31.45	0.00	0.00	0.00
7,800.00	6.00	270.00	7,776.27	0.00	-459.84	32.18	0.00	0.00	0.00
7,900.00	6.00	270.00	7,875.73	0.00	-470.29	32.91	0.00	0.00	0.00
8,000.00	6.00	270.00	7,975.18	0.00	-480.74	33.64	0.00	0.00	0.00
8,100.00	6.00	270.00	8,074.63	0.00	-491.19	34.37	0.00	0.00	0.00
8,200.00	6.00	270.00	8,174.08	0.00	-501.64	35.10	0.00	0.00	0.00
8,300.00	6.00	270.00	8,273.54	0.00	-512.09	35.83	0.00	0.00	0.00
8,400.00	6.00	270.00	8,372.99	0.00	-522.54	36.57	0.00	0.00	0.00
8,500.00	6.00	270.00	8,472.44	0.00	-532.99	37.30	0.00	0.00	0.00
8,600.00	6.00	270.00	8,571.89	0.00	-543.44	38.03	0.00	0.00	0.00
8,700.00	6.00	270.00	8,671.34	0.00	-553.89	38.76	0.00	0.00	0.00
8,800.00	6.00	270.00	8,770.80	0.00	-564.34	39.49	0.00	0.00	0.00
8,900.00	6.00	270.00	8,870.25	0.00	-574.79	40.22	0.00	0.00	0.00
9,000.00	6.00	270.00	8,969.70	0.00	-585.24	40.95	0.00	0.00	0.00
9,100.00	6.00	270.00	9,069.15	0.00	-595.69	41.68	0.00	0.00	0.00
9,200.00	6.00	270.00	9,168.61	0.00	-606.14	42.42	0.00	0.00	0.00
9,300.00	6.00	270.00	9,268.06	0.00	-616.59	43.15	0.00	0.00	0.00
9,343.00	6.00	270.00	9,310.83	0.00	-621.09	43.46	0.00	0.00	0.00
Start Drop -1.50									
9,400.00	5.14	270.00	9,367.55	0.00	-626.62	43.85	1.50	-1.50	0.00
9,500.00	3.64	270.00	9,467.26	0.00	-634.28	44.39	1.50	-1.50	0.00
9,600.00	2.14	270.00	9,567.13	0.00	-639.33	44.74	1.50	-1.50	0.00
9,700.00	0.64	270.00	9,667.09	0.00	-641.76	44.91	1.50	-1.50	0.00
9,742.91	0.00	0.00	9,710.00	0.00	-642.00	44.93	1.50	-1.50	0.00
Start 1479.00 hold at 9742.91 MD									
9,800.00	0.00	0.00	9,767.09	0.00	-642.00	44.93	0.00	0.00	0.00
9,900.00	0.00	0.00	9,867.09	0.00	-642.00	44.93	0.00	0.00	0.00



Total Directional Services

Planning Report



Database:	EDM 5000.15 Single User Db	Local Co-ordinate Reference:	Well Western Fed Com 601H
Company:	Franklin Mountain Energy	TVD Reference:	3284.1' GE + 30' KB @ 3314.10usft
Project:	Lea County, NM (NAD83)	MD Reference:	3284.1' GE + 30' KB @ 3314.10usft
Site:	Western/Bidder 49/KC7	North Reference:	Grid
Well:	Western Fed Com 601H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
10,000.00	0.00	0.00	9,967.09	0.00	-642.00	44.93	0.00	0.00	0.00	
10,100.00	0.00	0.00	10,067.09	0.00	-642.00	44.93	0.00	0.00	0.00	
10,200.00	0.00	0.00	10,167.09	0.00	-642.00	44.93	0.00	0.00	0.00	
10,300.00	0.00	0.00	10,267.09	0.00	-642.00	44.93	0.00	0.00	0.00	
10,400.00	0.00	0.00	10,367.09	0.00	-642.00	44.93	0.00	0.00	0.00	
10,500.00	0.00	0.00	10,467.09	0.00	-642.00	44.93	0.00	0.00	0.00	
10,600.00	0.00	0.00	10,567.09	0.00	-642.00	44.93	0.00	0.00	0.00	
10,700.00	0.00	0.00	10,667.09	0.00	-642.00	44.93	0.00	0.00	0.00	
10,800.00	0.00	0.00	10,767.09	0.00	-642.00	44.93	0.00	0.00	0.00	
10,900.00	0.00	0.00	10,867.09	0.00	-642.00	44.93	0.00	0.00	0.00	
11,000.00	0.00	0.00	10,967.09	0.00	-642.00	44.93	0.00	0.00	0.00	
11,100.00	0.00	0.00	11,067.09	0.00	-642.00	44.93	0.00	0.00	0.00	
11,200.00	0.00	0.00	11,167.09	0.00	-642.00	44.93	0.00	0.00	0.00	
11,221.91	0.00	0.00	11,189.00	0.00	-642.00	44.93	0.00	0.00	0.00	
Start DLS 10.00 TFO 359.43										
11,250.00	2.81	359.43	11,217.08	0.69	-642.01	45.61	10.00	10.00	0.00	
11,300.00	7.81	359.43	11,266.85	5.31	-642.05	50.23	10.00	10.00	0.00	
11,350.00	12.81	359.43	11,316.03	14.26	-642.14	59.16	10.00	10.00	0.00	
11,400.00	17.81	359.43	11,364.24	27.46	-642.27	72.33	10.00	10.00	0.00	
11,450.00	22.81	359.43	11,411.12	44.80	-642.45	89.65	10.00	10.00	0.00	
11,500.00	27.81	359.43	11,456.30	66.17	-642.66	110.98	10.00	10.00	0.00	
11,550.00	32.81	359.43	11,499.46	91.39	-642.91	136.16	10.00	10.00	0.00	
11,600.00	37.81	359.43	11,540.24	120.28	-643.20	165.00	10.00	10.00	0.00	
11,650.00	42.81	359.43	11,578.36	152.62	-643.52	197.28	10.00	10.00	0.00	
11,700.00	47.81	359.43	11,613.51	188.15	-643.87	232.75	10.00	10.00	0.00	
11,750.00	52.81	359.43	11,645.43	226.61	-644.25	271.14	10.00	10.00	0.00	
11,800.00	57.81	359.43	11,673.88	267.71	-644.66	312.16	10.00	10.00	0.00	
11,850.00	62.81	359.43	11,698.64	311.13	-645.09	355.51	10.00	10.00	0.00	
11,900.00	67.81	359.43	11,719.52	356.54	-645.54	400.84	10.00	10.00	0.00	
11,950.00	72.81	359.43	11,736.36	403.60	-646.01	447.82	10.00	10.00	0.00	
12,000.00	77.81	359.43	11,749.04	451.95	-646.49	496.08	10.00	10.00	0.00	
12,050.00	82.81	359.43	11,757.45	501.22	-646.98	545.26	10.00	10.00	0.00	
12,100.00	87.81	359.43	11,761.54	551.03	-647.48	594.99	10.00	10.00	0.00	
12,141.44	91.95	359.43	11,761.63	592.46	-647.89	636.35	10.00	10.00	0.00	
Start 10077.18 hold at 12141.44 MD - LP (Western Fed Com 601H)										
12,200.00	91.95	359.43	11,759.63	650.98	-648.47	694.76	0.00	0.00	0.00	
12,300.00	91.95	359.43	11,756.22	750.92	-649.47	794.53	0.00	0.00	0.00	
12,400.00	91.95	359.43	11,752.81	850.86	-650.46	894.29	0.00	0.00	0.00	
12,500.00	91.95	359.43	11,749.40	950.79	-651.45	994.05	0.00	0.00	0.00	
12,600.00	91.95	359.43	11,745.99	1,050.73	-652.45	1,093.81	0.00	0.00	0.00	
12,700.00	91.95	359.43	11,742.58	1,150.67	-653.44	1,193.57	0.00	0.00	0.00	
12,800.00	91.95	359.43	11,739.17	1,250.60	-654.43	1,293.33	0.00	0.00	0.00	
12,900.00	91.95	359.43	11,735.76	1,350.54	-655.43	1,393.09	0.00	0.00	0.00	
13,000.00	91.95	359.43	11,732.35	1,450.48	-656.42	1,492.86	0.00	0.00	0.00	
13,100.00	91.95	359.43	11,728.94	1,550.41	-657.42	1,592.62	0.00	0.00	0.00	
13,200.00	91.95	359.43	11,725.53	1,650.35	-658.41	1,692.38	0.00	0.00	0.00	
13,300.00	91.95	359.43	11,722.12	1,750.29	-659.40	1,792.14	0.00	0.00	0.00	
13,400.00	91.95	359.43	11,718.72	1,850.22	-660.40	1,891.90	0.00	0.00	0.00	
13,500.00	91.95	359.43	11,715.31	1,950.16	-661.39	1,991.66	0.00	0.00	0.00	
13,600.00	91.95	359.43	11,711.90	2,050.10	-662.38	2,091.42	0.00	0.00	0.00	
13,700.00	91.95	359.43	11,708.49	2,150.04	-663.38	2,191.19	0.00	0.00	0.00	
13,800.00	91.95	359.43	11,705.08	2,249.97	-664.37	2,290.95	0.00	0.00	0.00	
13,900.00	91.95	359.43	11,701.67	2,349.91	-665.36	2,390.71	0.00	0.00	0.00	
14,000.00	91.95	359.43	11,698.26	2,449.85	-666.36	2,490.47	0.00	0.00	0.00	



Total Directional Services

Planning Report



Database:	EDM 5000.15 Single User Db	Local Co-ordinate Reference:	Well Western Fed Com 601H
Company:	Franklin Mountain Energy	TVD Reference:	3284.1' GE + 30' KB @ 3314.10usft
Project:	Lea County, NM (NAD83)	MD Reference:	3284.1' GE + 30' KB @ 3314.10usft
Site:	Western/Bidder 49/KC7	North Reference:	Grid
Well:	Western Fed Com 601H	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)
14,100.00	91.95	359.43	11,694.85	2,549.78	-667.35	2,590.23	0.00	0.00	0.00
14,200.00	91.95	359.43	11,691.44	2,649.72	-668.34	2,689.99	0.00	0.00	0.00
14,300.00	91.95	359.43	11,688.03	2,749.66	-669.34	2,789.75	0.00	0.00	0.00
14,400.00	91.95	359.43	11,684.62	2,849.59	-670.33	2,889.52	0.00	0.00	0.00
14,500.00	91.95	359.43	11,681.21	2,949.53	-671.33	2,989.28	0.00	0.00	0.00
14,600.00	91.95	359.43	11,677.80	3,049.47	-672.32	3,089.04	0.00	0.00	0.00
14,700.00	91.95	359.43	11,674.39	3,149.40	-673.31	3,188.80	0.00	0.00	0.00
14,800.00	91.95	359.43	11,670.98	3,249.34	-674.31	3,288.56	0.00	0.00	0.00
14,900.00	91.95	359.43	11,667.57	3,349.28	-675.30	3,388.32	0.00	0.00	0.00
15,000.00	91.95	359.43	11,664.16	3,449.22	-676.29	3,488.09	0.00	0.00	0.00
15,100.00	91.95	359.43	11,660.76	3,549.15	-677.29	3,587.85	0.00	0.00	0.00
15,200.00	91.95	359.43	11,657.35	3,649.09	-678.28	3,687.61	0.00	0.00	0.00
15,300.00	91.95	359.43	11,653.94	3,749.03	-679.27	3,787.37	0.00	0.00	0.00
15,400.00	91.95	359.43	11,650.53	3,848.96	-680.27	3,887.13	0.00	0.00	0.00
15,500.00	91.95	359.43	11,647.12	3,948.90	-681.26	3,986.89	0.00	0.00	0.00
15,600.00	91.95	359.43	11,643.71	4,048.84	-682.26	4,086.65	0.00	0.00	0.00
15,700.00	91.95	359.43	11,640.30	4,148.77	-683.25	4,186.42	0.00	0.00	0.00
15,800.00	91.95	359.43	11,636.89	4,248.71	-684.24	4,286.18	0.00	0.00	0.00
15,900.00	91.95	359.43	11,633.48	4,348.65	-685.24	4,385.94	0.00	0.00	0.00
16,000.00	91.95	359.43	11,630.07	4,448.58	-686.23	4,485.70	0.00	0.00	0.00
16,100.00	91.95	359.43	11,626.66	4,548.52	-687.22	4,585.46	0.00	0.00	0.00
16,200.00	91.95	359.43	11,623.25	4,648.46	-688.22	4,685.22	0.00	0.00	0.00
16,300.00	91.95	359.43	11,619.84	4,748.40	-689.21	4,784.98	0.00	0.00	0.00
16,400.00	91.95	359.43	11,616.43	4,848.33	-690.20	4,884.75	0.00	0.00	0.00
16,500.00	91.95	359.43	11,613.02	4,948.27	-691.20	4,984.51	0.00	0.00	0.00
16,600.00	91.95	359.43	11,609.61	5,048.21	-692.19	5,084.27	0.00	0.00	0.00
16,700.00	91.95	359.43	11,606.20	5,148.14	-693.19	5,184.03	0.00	0.00	0.00
16,800.00	91.95	359.43	11,602.79	5,248.08	-694.18	5,283.79	0.00	0.00	0.00
16,900.00	91.95	359.43	11,599.39	5,348.02	-695.17	5,383.55	0.00	0.00	0.00
17,000.00	91.95	359.43	11,595.98	5,447.95	-696.17	5,483.31	0.00	0.00	0.00
17,100.00	91.95	359.43	11,592.57	5,547.89	-697.16	5,583.08	0.00	0.00	0.00
17,200.00	91.95	359.43	11,589.16	5,647.83	-698.15	5,682.84	0.00	0.00	0.00
17,300.00	91.95	359.43	11,585.75	5,747.76	-699.15	5,782.60	0.00	0.00	0.00
17,400.00	91.95	359.43	11,582.34	5,847.70	-700.14	5,882.36	0.00	0.00	0.00
17,500.00	91.95	359.43	11,578.93	5,947.64	-701.13	5,982.12	0.00	0.00	0.00
17,600.00	91.95	359.43	11,575.52	6,047.58	-702.13	6,081.88	0.00	0.00	0.00
17,700.00	91.95	359.43	11,572.11	6,147.51	-703.12	6,181.64	0.00	0.00	0.00
17,800.00	91.95	359.43	11,568.70	6,247.45	-704.12	6,281.41	0.00	0.00	0.00
17,900.00	91.95	359.43	11,565.29	6,347.39	-705.11	6,381.17	0.00	0.00	0.00
18,000.00	91.95	359.43	11,561.88	6,447.32	-706.10	6,480.93	0.00	0.00	0.00
18,100.00	91.95	359.43	11,558.47	6,547.26	-707.10	6,580.69	0.00	0.00	0.00
18,200.00	91.95	359.43	11,555.06	6,647.20	-708.09	6,680.45	0.00	0.00	0.00
18,300.00	91.95	359.43	11,551.65	6,747.13	-709.08	6,780.21	0.00	0.00	0.00
18,400.00	91.95	359.43	11,548.24	6,847.07	-710.08	6,879.98	0.00	0.00	0.00
18,500.00	91.95	359.43	11,544.83	6,947.01	-711.07	6,979.74	0.00	0.00	0.00
18,600.00	91.95	359.43	11,541.42	7,046.94	-712.06	7,079.50	0.00	0.00	0.00
18,700.00	91.95	359.43	11,538.02	7,146.88	-713.06	7,179.26	0.00	0.00	0.00
18,800.00	91.95	359.43	11,534.61	7,246.82	-714.05	7,279.02	0.00	0.00	0.00
18,900.00	91.95	359.43	11,531.20	7,346.76	-715.05	7,378.78	0.00	0.00	0.00
19,000.00	91.95	359.43	11,527.79	7,446.69	-716.04	7,478.54	0.00	0.00	0.00
19,100.00	91.95	359.43	11,524.38	7,546.63	-717.03	7,578.31	0.00	0.00	0.00
19,200.00	91.95	359.43	11,520.97	7,646.57	-718.03	7,678.07	0.00	0.00	0.00
19,300.00	91.95	359.43	11,517.56	7,746.50	-719.02	7,777.83	0.00	0.00	0.00
19,400.00	91.95	359.43	11,514.15	7,846.44	-720.01	7,877.59	0.00	0.00	0.00



Total Directional Services

Planning Report



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Company:	Franklin Mountain Energy	TVD Reference:	3284.1' GE + 30' KB @ 3314.10usft
Project:	Lea County, NM (NAD83)	MD Reference:	3284.1' GE + 30' KB @ 3314.10usft
Site:	Western/Bidder 49/KC7	North Reference:	Grid
Well:	Western Fed Com 601H	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)	
19,500.00	91.95	359.43	11,510.74	7,946.38	-721.01	7,977.35	0.00	0.00	0.00	
19,600.00	91.95	359.43	11,507.33	8,046.31	-722.00	8,077.11	0.00	0.00	0.00	
19,700.00	91.95	359.43	11,503.92	8,146.25	-722.99	8,176.87	0.00	0.00	0.00	
19,800.00	91.95	359.43	11,500.51	8,246.19	-723.99	8,276.64	0.00	0.00	0.00	
19,900.00	91.95	359.43	11,497.10	8,346.12	-724.98	8,376.40	0.00	0.00	0.00	
20,000.00	91.95	359.43	11,493.69	8,446.06	-725.98	8,476.16	0.00	0.00	0.00	
20,100.00	91.95	359.43	11,490.28	8,546.00	-726.97	8,575.92	0.00	0.00	0.00	
20,200.00	91.95	359.43	11,486.87	8,645.94	-727.96	8,675.68	0.00	0.00	0.00	
20,300.00	91.95	359.43	11,483.46	8,745.87	-728.96	8,775.44	0.00	0.00	0.00	
20,400.00	91.95	359.43	11,480.06	8,845.81	-729.95	8,875.20	0.00	0.00	0.00	
20,500.00	91.95	359.43	11,476.65	8,945.75	-730.94	8,974.97	0.00	0.00	0.00	
20,600.00	91.95	359.43	11,473.24	9,045.68	-731.94	9,074.73	0.00	0.00	0.00	
20,700.00	91.95	359.43	11,469.83	9,145.62	-732.93	9,174.49	0.00	0.00	0.00	
20,800.00	91.95	359.43	11,466.42	9,245.56	-733.92	9,274.25	0.00	0.00	0.00	
20,900.00	91.95	359.43	11,463.01	9,345.49	-734.92	9,374.01	0.00	0.00	0.00	
21,000.00	91.95	359.43	11,459.60	9,445.43	-735.91	9,473.77	0.00	0.00	0.00	
21,100.00	91.95	359.43	11,456.19	9,545.37	-736.91	9,573.53	0.00	0.00	0.00	
21,200.00	91.95	359.43	11,452.78	9,645.30	-737.90	9,673.30	0.00	0.00	0.00	
21,300.00	91.95	359.43	11,449.37	9,745.24	-738.89	9,773.06	0.00	0.00	0.00	
21,400.00	91.95	359.43	11,445.96	9,845.18	-739.89	9,872.82	0.00	0.00	0.00	
21,500.00	91.95	359.43	11,442.55	9,945.12	-740.88	9,972.58	0.00	0.00	0.00	
21,600.00	91.95	359.43	11,439.14	10,045.05	-741.87	10,072.34	0.00	0.00	0.00	
21,700.00	91.95	359.43	11,435.73	10,144.99	-742.87	10,172.10	0.00	0.00	0.00	
21,800.00	91.95	359.43	11,432.32	10,244.93	-743.86	10,271.87	0.00	0.00	0.00	
21,900.00	91.95	359.43	11,428.91	10,344.86	-744.85	10,371.63	0.00	0.00	0.00	
22,000.00	91.95	359.43	11,425.50	10,444.80	-745.85	10,471.39	0.00	0.00	0.00	
22,100.00	91.95	359.43	11,422.09	10,544.74	-746.84	10,571.15	0.00	0.00	0.00	
22,200.00	91.95	359.43	11,418.69	10,644.67	-747.83	10,670.91	0.00	0.00	0.00	
22,218.63	91.95	359.43	11,418.05	10,663.29	-748.02	10,689.49	0.00	0.00	0.00	
TD at 22218.63 - PBHL (Western Fed Com 601H)										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
SHL (Western Fed Com - plan hits target center - Shape - Point	0.00	0.00	0.00	0.00	0.00	425,597.25	853,111.55	32.166033	-103.325775	
PBHL (Western Fed Cor - plan hits target center - Shape - Point	0.00	0.00	11,418.05	10,663.29	-748.02	436,260.54	852,363.53	32.195360	-103.327870	
LP (Western Fed Com 6 - plan hits target center - Shape - Point	0.00	0.00	11,761.62	592.46	-647.89	426,189.71	852,463.66	32.167678	-103.327851	



Total Directional Services

Planning Report



Database:	EDM 5000.15 Single User Db	Local Co-ordinate Reference:	Well Western Fed Com 601H
Company:	Franklin Mountain Energy	TVD Reference:	3284.1' GE + 30' KB @ 3314.10usft
Project:	Lea County, NM (NAD83)	MD Reference:	3284.1' GE + 30' KB @ 3314.10usft
Site:	Western/Bidder 49/KC7	North Reference:	Grid
Well:	Western Fed Com 601H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment	
		+N/-S (usft)	+E/-W (usft)		
3,200.00	3,200.00	0.00	0.00	Start Build 1.50	
3,599.90	3,599.17	0.00	-20.91	Start 5743.10 hold at 3599.90 MD	
9,343.00	9,310.83	0.00	-621.09	Start Drop -1.50	
9,742.91	9,710.00	0.00	-642.00	Start 1479.00 hold at 9742.91 MD	
11,221.91	11,189.00	0.00	-642.00	Start DLS 10.00 TFO 359.43	
12,141.44	11,761.62	592.46	-647.89	Start 10077.18 hold at 12141.44 MD	
22,218.63	11,418.05	10,663.29	-748.02	TD at 22218.63	



Franklin Mountain Energy

Lea County, NM (NAD83)

Western/Bidder 49/KC7

Western Fed Com 601H

OH

Plan #1

Anticollision Report

23 June, 2020





Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well Western Fed Com 601H
Project:	Lea County, NM (NAD83)	TVD Reference:	3284.1' GE + 30' KB @ 3314.10usft
Reference Site:	Western/Bidder 49/KC7	MD Reference:	3284.1' GE + 30' KB @ 3314.10usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Western Fed Com 601H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.15 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

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

Survey Tool Program		Date	6/23/2020		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
0.00	22,218.17	Plan #1 (OH)	OWSG (Rev2) MWD	OWSG MWD - Standard	

Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Western/Bidder 49/KC7						
Bidder 49 Fed Com 602H - OH - Plan #1	3,533.32	3,649.07	919.30	901.55	51.817	CC, ES
Bidder 49 Fed Com 602H - OH - Plan #1	22,218.63	22,131.11	1,203.60	948.85	4.725	SF
Bidder 49 Fed Com 703H - OH - Plan #1	3,200.00	3,236.70	960.88	944.89	60.106	CC, ES
Bidder 49 Fed Com 703H - OH - Plan #1	22,218.63	22,385.87	1,610.92	1,356.17	6.324	SF
KC7 Fed Com 704H - OH - Plan #1	3,107.09	3,144.09	995.87	980.35	64.183	CC
KC7 Fed Com 704H - OH - Plan #1	3,200.00	3,229.35	996.01	980.05	62.386	ES
KC7 Fed Com 704H - OH - Plan #1	22,218.63	22,288.25	2,534.93	2,278.91	9.901	SF
Western Fed Com 702H - OH - Plan #1	3,200.00	3,200.60	34.99	19.10	2.201	CC, ES, SF

Offset Design	Western/Bidder 49/KC7 - Bidder 49 Fed Com 602H - OH - Plan #1											Offset Site Error:	0.00 usft
Survey Program:	0-OWSG (Rev2) MWD											Offset Well Error:	0.00 usft
Reference	Offset	Semi Major Axis		Distance									Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
0.00	0.00	35.20	35.20	0.00	0.04	89.43	9.20	925.84	925.89				
100.00	100.00	135.20	135.20	0.13	0.25	89.43	9.20	925.84	925.89	925.60	0.28	3,292.740	
200.00	200.00	235.20	235.20	0.48	0.61	89.43	9.20	925.84	925.89	925.11	0.78	1,188.950	
300.00	300.00	335.20	335.20	0.84	0.97	89.43	9.20	925.84	925.89	924.60	1.28	721.278	
400.00	400.00	435.20	435.20	1.20	1.33	89.43	9.20	925.84	925.89	924.10	1.79	517.327	
500.00	500.00	535.20	535.20	1.56	1.69	89.43	9.20	925.84	925.89	923.59	2.30	403.223	
600.00	600.00	635.20	635.20	1.92	2.04	89.43	9.20	925.84	925.89	923.08	2.80	330.337	
700.00	700.00	735.20	735.20	2.28	2.40	89.43	9.20	925.84	925.89	922.58	3.31	279.758	
800.00	800.00	835.20	835.20	2.63	2.76	89.43	9.20	925.84	925.89	922.07	3.82	242.608	
900.00	900.00	935.20	935.20	2.99	3.12	89.43	9.20	925.84	925.89	921.56	4.32	214.166	
1,000.00	1,000.00	1,035.20	1,035.20	3.35	3.48	89.43	9.20	925.84	925.89	921.06	4.83	191.692	
1,100.00	1,100.00	1,135.20	1,135.20	3.71	3.84	89.43	9.20	925.84	925.89	920.55	5.34	173.486	
1,200.00	1,200.00	1,235.20	1,235.20	4.07	4.19	89.43	9.20	925.84	925.89	920.04	5.84	158.438	
1,300.00	1,300.00	1,335.20	1,335.20	4.43	4.55	89.43	9.20	925.84	925.89	919.53	6.35	145.792	
1,400.00	1,400.00	1,435.20	1,435.20	4.79	4.91	89.43	9.20	925.84	925.89	919.03	6.86	135.015	
1,500.00	1,500.00	1,535.20	1,535.20	5.14	5.27	89.43	9.20	925.84	925.89	918.52	7.36	125.722	
1,600.00	1,600.00	1,635.20	1,635.20	5.50	5.63	89.43	9.20	925.84	925.89	918.01	7.87	117.625	
1,700.00	1,700.00	1,735.20	1,735.20	5.86	5.99	89.43	9.20	925.84	925.89	917.51	8.38	110.508	
1,800.00	1,800.00	1,835.20	1,835.20	6.22	6.35	89.43	9.20	925.84	925.89	917.00	8.89	104.204	
1,900.00	1,900.00	1,935.20	1,935.20	6.58	6.70	89.43	9.20	925.84	925.89	916.49	9.39	98.579	

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



Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well Western Fed Com 601H
Project:	Lea County, NM (NAD83)	TVD Reference:	3284.1' GE + 30' KB @ 3314.10usft
Reference Site:	Western/Bidder 49/KC7	MD Reference:	3284.1' GE + 30' KB @ 3314.10usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Western Fed Com 601H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.15 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 0-OWSG (Rev2) MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
2,000.00	2,000.00	2,035.20	2,035.20	6.94	7.06	89.43	9.20	925.84	925.89	915.99	9.90	93.531		
2,100.00	2,100.00	2,135.20	2,135.20	7.29	7.42	89.43	9.20	925.84	925.89	915.48	10.41	88.975		
2,200.00	2,200.00	2,235.20	2,235.20	7.65	7.78	89.43	9.20	925.84	925.89	914.97	10.91	84.842		
2,300.00	2,300.00	2,335.20	2,335.20	8.01	8.14	89.43	9.20	925.84	925.89	914.47	11.42	81.076		
2,400.00	2,400.00	2,435.20	2,435.20	8.37	8.50	89.43	9.20	925.84	925.89	913.96	11.93	77.630		
2,500.00	2,500.00	2,535.20	2,535.20	8.73	8.85	89.43	9.20	925.84	925.89	913.45	12.43	74.465		
2,600.00	2,600.00	2,635.20	2,635.20	9.09	9.21	89.43	9.20	925.84	925.89	912.94	12.94	71.548		
2,700.00	2,700.00	2,735.20	2,735.20	9.45	9.57	89.43	9.20	925.84	925.89	912.44	13.45	68.850		
2,800.00	2,800.00	2,835.20	2,835.20	9.80	9.93	89.43	9.20	925.84	925.89	911.93	13.95	66.349		
2,900.00	2,900.00	2,935.20	2,935.20	10.16	10.29	89.43	9.20	925.84	925.89	911.42	14.46	64.023		
3,000.00	3,000.00	3,035.20	3,035.20	10.52	10.65	89.43	9.20	925.84	925.89	910.92	14.97	61.855		
3,100.00	3,100.00	3,135.20	3,135.20	10.88	11.01	89.43	9.20	925.84	925.89	910.41	15.48	59.829		
3,200.00	3,200.00	3,246.46	3,246.46	11.24	11.40	89.43	9.20	925.56	925.67	909.66	16.01	57.828		
3,300.00	3,299.99	3,378.39	3,378.33	11.59	11.86	179.43	9.20	921.68	924.04	907.48	16.56	55.793		
3,400.00	3,399.91	3,510.21	3,509.86	11.93	12.31	179.43	9.20	913.25	921.57	904.48	17.09	53.924		
3,500.00	3,499.69	3,615.75	3,615.02	12.27	12.68	179.43	9.20	904.12	919.44	901.86	17.58	52.301		
3,533.32	3,532.89	3,649.07	3,648.21	12.39	12.79	179.43	9.20	901.22	919.30	901.55	17.74	51.817 CC, ES		
3,599.90	3,599.17	3,715.65	3,714.54	12.62	13.03	179.43	9.20	895.42	919.88	901.81	18.06	50.923		
3,700.00	3,698.72	3,815.74	3,814.24	12.97	13.38	179.43	9.20	886.69	921.62	903.07	18.55	49.682		
3,800.00	3,798.17	3,915.72	3,913.84	13.32	13.73	179.43	9.20	877.98	923.36	904.33	19.04	48.501		
3,900.00	3,897.63	4,015.71	4,013.45	13.68	14.08	179.43	9.20	869.27	925.11	905.58	19.53	47.375		
4,000.00	3,997.08	4,115.69	4,113.05	14.04	14.44	179.43	9.20	860.55	926.85	906.83	20.02	46.302		
4,100.00	4,096.53	4,215.68	4,212.66	14.40	14.80	179.43	9.20	851.84	928.59	908.08	20.51	45.277		
4,200.00	4,195.98	4,315.66	4,312.26	14.76	15.16	179.43	9.20	843.12	930.34	909.33	21.00	44.297		
4,300.00	4,295.44	4,415.64	4,411.86	15.12	15.52	179.43	9.20	834.41	932.08	910.58	21.50	43.360		
4,400.00	4,394.89	4,515.63	4,511.47	15.49	15.88	179.44	9.20	825.70	933.82	911.83	21.99	42.464		
4,500.00	4,494.34	4,615.61	4,611.07	15.85	16.24	179.44	9.20	816.98	935.56	913.08	22.49	41.605		
4,600.00	4,493.79	4,715.60	4,710.68	16.22	16.61	179.44	9.20	808.27	937.31	914.32	22.98	40.781		
4,700.00	4,693.25	4,815.58	4,810.28	16.59	16.97	179.44	9.20	799.55	939.05	915.57	23.48	39.991		
4,800.00	4,792.70	4,915.57	4,909.89	16.96	17.34	179.44	9.20	790.84	940.79	916.81	23.98	39.233		
4,900.00	4,892.15	5,015.55	5,009.49	17.33	17.70	179.44	9.20	782.13	942.54	918.06	24.48	38.504		
5,000.00	4,991.60	5,115.54	5,109.10	17.70	18.07	179.44	9.20	773.41	944.28	919.30	24.98	37.804		
5,100.00	5,091.06	5,215.52	5,208.70	18.07	18.44	179.44	9.20	764.70	946.02	920.54	25.48	37.130		
5,200.00	5,190.51	5,315.51	5,308.30	18.45	18.80	179.44	9.20	755.99	947.77	921.79	25.98	36.481		
5,300.00	5,289.96	5,415.49	5,407.91	18.82	19.17	179.44	9.20	747.27	949.51	923.03	26.48	35.855		
5,400.00	5,389.41	5,515.48	5,507.51	19.20	19.54	179.45	9.20	738.56	951.25	924.27	26.98	35.253		
5,500.00	5,488.87	5,615.46	5,607.12	19.58	19.91	179.45	9.20	729.84	953.00	925.51	27.49	34.671		
5,600.00	5,588.32	5,715.45	5,706.72	19.95	20.28	179.45	9.20	721.13	954.74	926.75	27.99	34.110		
5,700.00	5,687.77	5,815.43	5,806.33	20.33	20.65	179.45	9.20	712.42	956.48	927.99	28.49	33.569		
5,800.00	5,787.22	5,915.42	5,905.93	20.71	21.03	179.45	9.20	703.70	958.22	929.23	29.00	33.045		
5,900.00	5,886.68	6,015.40	6,005.53	21.09	21.40	179.45	9.20	694.99	959.97	930.47	29.50	32.539		
6,000.00	5,986.13	6,115.39	6,105.14	21.47	21.77	179.45	9.20	686.28	961.71	931.70	30.01	32.050		
6,100.00	6,085.58	6,215.37	6,204.74	21.85	22.14	179.45	9.20	677.56	963.45	932.94	30.51	31.576		
6,200.00	6,185.03	6,315.36	6,304.35	22.23	22.52	179.45	9.20	668.85	965.20	934.18	31.02	31.118		
6,300.00	6,284.49	6,415.34	6,403.95	22.61	22.89	179.45	9.20	660.13	966.94	935.42	31.52	30.674		
6,400.00	6,383.94	6,515.33	6,503.56	22.99	23.26	179.46	9.20	651.42	968.68	936.65	32.03	30.243		
6,500.00	6,483.39	6,615.31	6,603.16	23.38	23.64	179.46	9.20	642.71	970.43	937.89	32.54	29.826		
6,600.00	6,582.84	6,715.30	6,702.77	23.76	24.01	179.46	9.20	633.99	972.17	939.13	33.04	29.421		
6,700.00	6,682.30	6,815.28	6,802.37	24.14	24.39	179.46	9.20	625.28	973.91	940.36	33.55	29.029		
6,800.00	6,781.75	6,915.26	6,901.97	24.53	24.76	179.46	9.20	616.56	975.65	941.60	34.06	28.647		
6,900.00	6,881.20	7,015.25	7,001.58	24.91	25.14	179.46	9.20	607.85	977.40	942.83	34.57	28.277		
7,000.00	6,980.65	7,115.23	7,101.18	25.29	25.52	179.46	9.20	599.14	979.14	944.07	35.07	27.917		

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



Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well Western Fed Com 601H
Project:	Lea County, NM (NAD83)	TVD Reference:	3284.1' GE + 30' KB @ 3314.10usft
Reference Site:	Western/Bidder 49/KC7	MD Reference:	3284.1' GE + 30' KB @ 3314.10usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Western Fed Com 601H	Survey Calculation Method:	Minimum Curvature
Well 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													Western/Bidder 49/KC7 - Bidder 49 Fed Com 602H - OH - Plan #1		Offset Site Error: 0.00 usft	
Survey Program: 0-OWSG (Rev2) MWD													Offset Well Error: 0.00 usft			
Reference		Offset		Semi Major Axis			Distance							Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor				
7,100.00	7,080.11	7,215.22	7,200.79	25.68	25.89	179.46	9.20	590.42	980.88	945.30	35.58	27.568				
7,200.00	7,179.56	7,315.20	7,300.39	26.06	26.27	179.46	9.20	581.71	982.63	946.54	36.09	27.228				
7,300.00	7,279.01	7,415.19	7,400.00	26.45	26.64	179.46	9.20	573.00	984.37	947.77	36.60	26.897				
7,400.00	7,378.46	7,500.00	7,484.55	26.84	26.96	179.47	9.20	566.39	987.02	949.94	37.08	26.618				
7,500.00	7,477.92	7,575.45	7,559.88	27.22	27.24	179.47	9.20	562.09	991.72	954.19	37.53	26.423				
7,600.00	7,577.37	7,654.61	7,638.98	27.61	27.52	179.47	9.20	559.18	998.50	960.53	37.98	26.292				
7,700.00	7,676.82	7,733.50	7,717.86	27.99	27.80	179.47	9.20	557.90	1,007.35	968.94	38.41	26.228				
7,800.00	7,776.27	7,827.12	7,811.47	28.38	28.12	179.48	9.20	557.84	1,017.72	978.83	38.89	26.172				
7,900.00	7,875.73	7,926.57	7,910.93	28.77	28.47	179.48	9.20	557.84	1,028.17	988.78	39.39	26.104				
8,000.00	7,975.18	8,026.02	8,010.38	29.16	28.81	179.49	9.20	557.84	1,038.62	998.73	39.89	26.038				
8,100.00	8,074.63	8,125.47	8,109.83	29.54	29.15	179.49	9.20	557.84	1,049.07	1,008.68	40.39	25.974				
8,200.00	8,174.08	8,224.93	8,209.28	29.93	29.50	179.50	9.20	557.84	1,059.52	1,018.63	40.89	25.911				
8,300.00	8,273.54	8,324.38	8,308.74	30.32	29.84	179.50	9.20	557.84	1,069.97	1,028.58	41.39	25.849				
8,400.00	8,372.99	8,423.83	8,408.19	30.71	30.19	179.51	9.20	557.84	1,080.42	1,038.52	41.89	25.789				
8,500.00	8,472.44	8,523.28	8,507.64	31.09	30.53	179.51	9.20	557.84	1,090.87	1,048.47	42.40	25.730				
8,600.00	8,571.89	8,622.74	8,607.09	31.48	30.88	179.52	9.20	557.84	1,101.32	1,058.42	42.90	25.672				
8,700.00	8,671.34	8,722.19	8,706.54	31.87	31.22	179.52	9.20	557.84	1,111.77	1,068.37	43.40	25.615				
8,800.00	8,770.80	8,821.64	8,806.00	32.26	31.57	179.53	9.20	557.84	1,122.22	1,078.31	43.90	25.560				
8,900.00	8,870.25	8,921.09	8,905.45	32.65	31.91	179.53	9.20	557.84	1,132.67	1,088.26	44.41	25.506				
9,000.00	8,969.70	9,020.55	9,004.90	33.04	32.26	179.54	9.20	557.84	1,143.12	1,098.21	44.91	25.453				
9,100.00	9,069.15	9,120.00	9,104.35	33.43	32.61	179.54	9.20	557.84	1,153.57	1,108.15	45.41	25.401				
9,200.00	9,168.61	9,219.45	9,203.81	33.82	32.95	179.54	9.20	557.84	1,164.02	1,118.10	45.92	25.350				
9,300.00	9,268.06	9,318.90	9,303.26	34.21	33.30	179.55	9.20	557.84	1,174.47	1,128.05	46.42	25.300				
9,343.00	9,310.83	9,361.67	9,346.03	34.38	33.45	179.55	9.20	557.84	1,178.96	1,132.32	46.64	25.279				
9,400.00	9,367.55	9,418.40	9,402.75	34.60	33.65	179.55	9.20	557.84	1,184.49	1,137.57	46.93	25.242				
9,500.00	9,467.26	9,518.10	9,502.46	34.97	34.00	179.56	9.20	557.84	1,192.15	1,144.73	47.43	25.136				
9,600.00	9,567.13	9,617.97	9,602.33	35.34	34.34	179.56	9.20	557.84	1,197.20	1,149.27	47.93	24.978				
9,700.00	9,667.09	9,717.94	9,702.29	35.69	34.69	179.56	9.20	557.84	1,199.63	1,151.20	48.43	24.770				
9,742.91	9,710.00	9,760.84	9,745.20	35.83	34.84	89.56	9.20	557.84	1,199.88	1,151.23	48.64	24.666				
9,800.00	9,767.09	9,817.94	9,802.29	36.03	35.04	89.56	9.20	557.84	1,199.88	1,150.95	48.93	24.524				
9,900.00	9,867.09	9,917.94	9,902.29	36.36	35.39	89.56	9.20	557.84	1,199.88	1,150.45	49.42	24.279				
10,000.00	9,967.09	10,017.94	10,002.29	36.70	35.74	89.56	9.20	557.84	1,199.88	1,149.96	49.92	24.038				
10,100.00	10,067.09	10,117.94	10,102.29	37.04	36.09	89.56	9.20	557.84	1,199.88	1,149.46	50.41	23.802				
10,200.00	10,167.09	10,217.94	10,202.29	37.37	36.44	89.56	9.20	557.84	1,199.88	1,148.97	50.91	23.570				
10,300.00	10,267.09	10,317.94	10,302.29	37.71	36.79	89.56	9.20	557.84	1,199.88	1,148.47	51.40	23.343				
10,400.00	10,367.09	10,417.94	10,402.29	38.05	37.14	89.56	9.20	557.84	1,199.88	1,147.98	51.90	23.120				
10,500.00	10,467.09	10,517.94	10,502.29	38.39	37.50	89.56	9.20	557.84	1,199.88	1,147.48	52.39	22.901				
10,600.00	10,567.09	10,617.94	10,602.29	38.73	37.85	89.56	9.20	557.84	1,199.88	1,146.99	52.89	22.686				
10,700.00	10,667.09	10,717.94	10,702.29	39.07	38.20	89.56	9.20	557.84	1,199.88	1,146.49	53.39	22.475				
10,800.00	10,767.09	10,817.94	10,802.29	39.41	38.55	89.56	9.20	557.84	1,199.88	1,145.99	53.88	22.268				
10,900.00	10,867.09	10,917.94	10,902.29	39.75	38.90	89.56	9.20	557.84	1,199.88	1,145.50	54.38	22.065				
11,000.00	10,967.09	11,017.94	11,002.29	40.09	39.25	89.56	9.20	557.84	1,199.88	1,145.00	54.88	21.865				
11,100.00	11,067.09	11,117.94	11,102.29	40.43	39.60	89.56	9.20	557.84	1,199.88	1,144.50	55.37	21.668				
11,173.63	11,140.72	11,191.66	11,175.92	40.68	39.86	89.43	11.94	557.81	1,199.87	1,144.13	55.74	21.526				
11,200.00	11,167.09	11,217.77	11,201.84	40.77	39.95	89.28	15.07	557.78	1,199.88	1,144.01	55.87	21.477				
11,221.91	11,189.00	11,239.20	11,222.99	40.84	40.03	89.12	18.53	557.75	1,199.89	1,143.92	55.97	21.436				
11,250.00	11,217.08	11,266.40	11,249.63	40.94	40.12	89.45	24.06	557.69	1,199.93	1,143.82	56.11	21.386				
11,300.00	11,266.85	11,314.27	11,295.75	41.11	40.28	89.03	36.82	557.57	1,200.05	1,143.71	56.34	21.300				
11,350.00	11,316.03	11,361.47	11,340.03	41.28	40.43	88.63	53.13	557.40	1,200.23	1,143.66	56.57	21.218				
11,400.00	11,364.24	11,408.06	11,382.27	41.44	40.57	88.23	72.75	557.21	1,200.46	1,143.68	56.78	21.141				
11,450.00	11,411.12	11,454.07	11,422.29	41.59	40.71	87.85	95.43	556.98	1,200.74	1,143.74	56.99	21.068				
11,500.00	11,456.30	11,500.00	11,460.29	41.74	40.83	87.49	121.19	556.73	1,201.05	1,143.85	57.20	20.997				

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



Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well Western Fed Com 601H
Project:	Lea County, NM (NAD83)	TVD Reference:	3284.1' GE + 30' KB @ 3314.10usft
Reference Site:	Western/Bidder 49/KC7	MD Reference:	3284.1' GE + 30' KB @ 3314.10usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Western Fed Com 601H	Survey Calculation Method:	Minimum Curvature
Well 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 Western/Bidder 49/KC7 - Bidder 49 Fed Com 602H - OH - Plan #1													Offset Site Error:	0.00 usft
Survey Program: 0-OWSG (Rev2) MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
11,550.00	11,499.46	11,544.57	11,495.08	41.88	40.94	87.14	149.03	556.45	1,201.39	1,144.00	57.40	20.932		
11,600.00	11,540.24	11,589.13	11,527.60	42.01	41.05	86.82	179.48	556.15	1,201.75	1,144.17	57.59	20.868		
11,650.00	11,578.36	11,633.30	11,557.40	42.13	41.15	86.52	212.07	555.82	1,202.12	1,144.35	57.77	20.807		
11,700.00	11,613.51	11,677.11	11,584.40	42.24	41.26	86.24	246.56	555.48	1,202.49	1,144.53	57.96	20.747		
11,750.00	11,645.43	11,720.61	11,608.51	42.35	41.37	85.99	282.75	555.12	1,202.85	1,144.71	58.14	20.688		
11,800.00	11,673.88	11,763.83	11,629.69	42.45	41.48	85.76	320.41	554.74	1,203.19	1,144.86	58.33	20.628		
11,850.00	11,698.64	11,806.82	11,647.87	42.56	41.61	85.57	359.35	554.36	1,203.49	1,144.98	58.51	20.569		
11,900.00	11,719.52	11,850.00	11,663.15	42.67	41.74	85.40	399.73	553.96	1,203.77	1,145.06	58.70	20.507		
11,950.00	11,736.36	11,892.21	11,675.10	42.79	41.87	85.26	440.20	553.55	1,203.99	1,145.10	58.89	20.444		
12,000.00	11,749.04	11,934.70	11,684.09	42.92	42.01	85.16	481.71	553.14	1,204.17	1,145.09	59.09	20.379		
12,050.00	11,757.45	11,977.09	11,689.97	43.06	42.16	85.08	523.68	552.72	1,204.30	1,145.01	59.29	20.312		
12,100.00	11,761.54	12,019.42	11,692.73	43.22	42.31	85.04	565.91	552.30	1,204.37	1,144.87	59.50	20.242		
12,141.44	11,761.62	12,054.68	11,692.64	43.37	42.44	85.04	601.16	551.95	1,204.39	1,144.71	59.68	20.180		
12,200.00	11,759.63	12,113.01	11,690.70	43.59	42.67	85.04	659.46	551.37	1,204.38	1,144.38	60.00	20.073		
12,300.00	11,756.22	12,213.01	11,687.38	44.02	43.11	85.04	759.40	550.38	1,204.37	1,143.76	60.61	19.871		
12,400.00	11,752.81	12,313.01	11,684.06	44.51	43.61	85.05	859.34	549.38	1,204.37	1,143.06	61.30	19.646		
12,500.00	11,749.40	12,413.01	11,680.74	45.06	44.17	85.05	959.28	548.39	1,204.36	1,142.28	62.08	19.402		
12,600.00	11,745.99	12,513.01	11,677.42	45.66	44.78	85.05	1,059.22	547.39	1,204.35	1,141.43	62.92	19.140		
12,700.00	11,742.58	12,613.01	11,674.10	46.31	45.44	85.06	1,159.16	546.40	1,204.34	1,140.50	63.85	18.863		
12,800.00	11,739.17	12,713.01	11,670.77	47.02	46.14	85.06	1,259.10	545.41	1,204.33	1,139.49	64.84	18.574		
12,900.00	11,735.76	12,813.01	11,667.45	47.77	46.90	85.07	1,359.04	544.41	1,204.33	1,138.43	65.90	18.275		
13,000.00	11,732.35	12,913.01	11,664.13	48.56	47.70	85.07	1,458.98	543.42	1,204.32	1,137.29	67.03	17.968		
13,100.00	11,728.94	13,013.01	11,660.81	49.40	48.55	85.08	1,558.92	542.42	1,204.31	1,136.10	68.21	17.656		
13,200.00	11,725.53	13,113.01	11,657.49	50.28	49.43	85.08	1,658.86	541.43	1,204.30	1,134.85	69.46	17.339		
13,300.00	11,722.12	13,213.01	11,654.17	51.19	50.35	85.08	1,758.80	540.43	1,204.29	1,133.54	70.75	17.021		
13,400.00	11,718.72	13,313.01	11,650.84	52.14	51.31	85.09	1,858.74	539.44	1,204.29	1,132.18	72.10	16.702		
13,500.00	11,715.31	13,413.01	11,647.52	53.13	52.31	85.09	1,958.67	538.45	1,204.28	1,130.77	73.50	16.384		
13,600.00	11,711.90	13,513.01	11,644.20	54.15	53.33	85.10	2,058.61	537.45	1,204.27	1,129.32	74.95	16.067		
13,700.00	11,708.49	13,613.01	11,640.88	55.20	54.39	85.10	2,158.55	536.46	1,204.26	1,127.82	76.44	15.754		
13,800.00	11,705.08	13,713.01	11,637.56	56.27	55.48	85.10	2,258.49	535.46	1,204.25	1,126.28	77.97	15.445		
13,900.00	11,701.67	13,813.01	11,634.24	57.38	56.59	85.11	2,358.43	534.47	1,204.25	1,124.70	79.54	15.140		
14,000.00	11,698.26	13,913.01	11,630.92	58.51	57.73	85.11	2,458.37	533.48	1,204.24	1,123.09	81.15	14.840		
14,100.00	11,694.85	14,013.01	11,627.59	59.66	58.89	85.12	2,558.31	532.48	1,204.23	1,121.44	82.79	14.546		
14,200.00	11,691.44	14,113.01	11,624.27	60.84	60.08	85.12	2,658.25	531.49	1,204.22	1,119.76	84.46	14.257		
14,300.00	11,688.03	14,213.01	11,620.95	62.04	61.29	85.13	2,758.19	530.49	1,204.21	1,118.05	86.17	13.975		
14,400.00	11,684.62	14,313.01	11,617.63	63.26	62.52	85.13	2,858.13	529.50	1,204.21	1,116.31	87.90	13.700		
14,500.00	11,681.21	14,413.01	11,614.31	64.50	63.77	85.13	2,958.07	528.50	1,204.20	1,114.54	89.66	13.431		
14,600.00	11,677.80	14,513.01	11,610.99	65.76	65.03	85.14	3,058.01	527.51	1,204.19	1,112.75	91.44	13.169		
14,700.00	11,674.39	14,613.01	11,607.66	67.03	66.31	85.14	3,157.95	526.52	1,204.18	1,110.93	93.25	12.913		
14,800.00	11,670.98	14,713.01	11,604.34	68.32	67.61	85.15	3,257.89	525.52	1,204.17	1,109.09	95.08	12.664		
14,900.00	11,667.57	14,813.01	11,601.02	69.63	68.93	85.15	3,357.83	524.53	1,204.17	1,107.23	96.94	12.422		
15,000.00	11,664.16	14,913.01	11,597.70	70.95	70.26	85.15	3,457.77	523.53	1,204.16	1,105.35	98.81	12.187		
15,100.00	11,660.76	15,013.01	11,594.38	72.28	71.60	85.16	3,557.71	522.54	1,204.15	1,103.45	100.70	11.958		
15,200.00	11,657.35	15,113.01	11,591.06	73.63	72.95	85.16	3,657.65	521.54	1,204.14	1,101.53	102.61	11.735		
15,300.00	11,653.94	15,213.01	11,587.73	74.99	74.32	85.17	3,757.59	520.55	1,204.13	1,099.59	104.54	11.519		
15,400.00	11,650.53	15,313.01	11,584.41	76.36	75.70	85.17	3,857.53	519.56	1,204.13	1,097.64	106.48	11.308		
15,500.00	11,647.12	15,413.01	11,581.09	77.74	77.08	85.17	3,957.47	518.56	1,204.12	1,095.68	108.44	11.104		
15,600.00	11,643.71	15,513.01	11,577.77	79.13	78.48	85.18	4,057.41	517.57	1,204.11	1,093.70	110.41	10.905		
15,700.00	11,640.30	15,613.01	11,574.45	80.53	79.89	85.18	4,157.35	516.57	1,204.10	1,091.70	112.40	10.713		
15,800.00	11,636.89	15,713.01	11,571.13	81.94	81.31	85.19	4,257.29	515.58	1,204.09	1,089.69	114.40	10.525		
15,900.00	11,633.48	15,813.01	11,567.80	83.36	82.74	85.19	4,357.23	514.59	1,204.09	1,087.67	116.41	10.343		
16,000.00	11,630.07	15,913.01	11,564.48	84.79	84.17	85.20	4,457.17	513.59	1,204.08	1,085.64	118.44	10.166		

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



Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well Western Fed Com 601H
Project:	Lea County, NM (NAD83)	TVD Reference:	3284.1' GE + 30' KB @ 3314.10usft
Reference Site:	Western/Bidder 49/KC7	MD Reference:	3284.1' GE + 30' KB @ 3314.10usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Western Fed Com 601H	Survey Calculation Method:	Minimum Curvature
Well 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 Western/Bidder 49/KC7 - Bidder 49 Fed Com 602H - OH - Plan #1													Offset Site Error:	0.00 usft
Survey Program: 0-OWSG (Rev2) MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
16,100.00	11,626.66	16,013.01	11,561.16	86.23	85.61	85.20	4,557.11	512.60	1,204.07	1,083.60	120.47	9.995		
16,200.00	11,623.25	16,113.01	11,557.84	87.67	87.06	85.20	4,657.05	511.60	1,204.06	1,081.55	122.52	9.828		
16,300.00	11,619.84	16,213.01	11,554.52	89.12	88.52	85.21	4,756.99	510.61	1,204.05	1,079.48	124.57	9.666		
16,400.00	11,616.43	16,313.01	11,551.20	90.58	89.99	85.21	4,856.93	509.61	1,204.05	1,077.41	126.64	9.508		
16,500.00	11,613.02	16,413.01	11,547.87	92.04	91.46	85.22	4,956.87	508.62	1,204.04	1,075.33	128.71	9.355		
16,600.00	11,609.61	16,513.01	11,544.55	93.51	92.93	85.22	5,056.81	507.63	1,204.03	1,073.24	130.79	9.206		
16,700.00	11,606.20	16,613.01	11,541.23	94.99	94.41	85.22	5,156.75	506.63	1,204.02	1,071.14	132.89	9.061		
16,800.00	11,602.79	16,713.01	11,537.91	96.47	95.90	85.23	5,256.69	505.64	1,204.01	1,069.03	134.98	8.920		
16,900.00	11,599.39	16,813.01	11,534.59	97.96	97.40	85.23	5,356.63	504.64	1,204.01	1,066.92	137.09	8.783		
17,000.00	11,595.98	16,913.01	11,531.27	99.45	98.89	85.24	5,456.57	503.65	1,204.00	1,064.80	139.20	8.649		
17,100.00	11,592.57	17,013.01	11,527.94	100.95	100.40	85.24	5,556.51	502.65	1,203.99	1,062.67	141.32	8.519		
17,200.00	11,589.16	17,113.01	11,524.62	102.45	101.90	85.25	5,656.45	501.66	1,203.98	1,060.53	143.45	8.393		
17,300.00	11,585.75	17,213.01	11,521.30	103.96	103.42	85.25	5,756.39	500.67	1,203.98	1,058.39	145.58	8.270		
17,400.00	11,582.34	17,313.01	11,517.98	105.47	104.93	85.25	5,856.33	499.67	1,203.97	1,056.25	147.72	8.150		
17,500.00	11,578.93	17,413.01	11,514.66	106.99	106.45	85.26	5,956.27	498.68	1,203.96	1,054.09	149.87	8.034		
17,600.00	11,575.52	17,513.01	11,511.34	108.51	107.98	85.26	6,056.21	497.68	1,203.95	1,051.94	152.02	7.920		
17,700.00	11,572.11	17,613.01	11,508.01	110.03	109.51	85.27	6,156.15	496.69	1,203.94	1,049.77	154.17	7.809		
17,800.00	11,568.70	17,713.01	11,504.69	111.56	111.04	85.27	6,256.09	495.70	1,203.94	1,047.61	156.33	7.701		
17,900.00	11,565.29	17,813.01	11,501.37	113.09	112.57	85.27	6,356.03	494.70	1,203.93	1,045.43	158.50	7.596		
18,000.00	11,561.88	17,913.01	11,498.05	114.62	114.11	85.28	6,455.97	493.71	1,203.92	1,043.26	160.67	7.493		
18,100.00	11,558.47	18,013.01	11,494.73	116.16	115.65	85.28	6,555.91	492.71	1,203.91	1,041.07	162.84	7.393		
18,200.00	11,555.06	18,113.01	11,491.41	117.70	117.20	85.29	6,655.85	491.72	1,203.91	1,038.89	165.02	7.296		
18,300.00	11,551.65	18,213.01	11,488.08	119.25	118.74	85.29	6,755.79	490.72	1,203.90	1,036.70	167.20	7.200		
18,400.00	11,548.24	18,313.01	11,484.76	120.79	120.29	85.30	6,855.73	489.73	1,203.89	1,034.50	169.39	7.107		
18,500.00	11,544.83	18,413.01	11,481.44	122.34	121.85	85.30	6,955.67	488.74	1,203.88	1,032.30	171.58	7.017		
18,600.00	11,541.42	18,513.01	11,478.12	123.89	123.40	85.30	7,055.61	487.74	1,203.87	1,030.10	173.77	6.928		
18,700.00	11,538.02	18,613.01	11,474.80	125.45	124.96	85.31	7,155.55	486.75	1,203.87	1,027.90	175.97	6.841		
18,800.00	11,534.61	18,713.01	11,471.48	127.00	126.52	85.31	7,255.49	485.75	1,203.86	1,025.69	178.17	6.757		
18,900.00	11,531.20	18,813.01	11,468.16	128.56	128.08	85.32	7,355.43	484.76	1,203.85	1,023.48	180.37	6.674		
19,000.00	11,527.79	18,913.01	11,464.83	130.13	129.65	85.32	7,455.37	483.76	1,203.84	1,021.26	182.58	6.594		
19,100.00	11,524.38	19,013.01	11,461.51	131.69	131.22	85.32	7,555.31	482.77	1,203.84	1,019.05	184.79	6.515		
19,200.00	11,520.97	19,113.01	11,458.19	133.25	132.78	85.33	7,655.25	481.78	1,203.83	1,016.82	187.00	6.437		
19,300.00	11,517.56	19,213.01	11,454.87	134.82	134.36	85.33	7,755.19	480.78	1,203.82	1,014.60	189.22	6.362		
19,400.00	11,514.15	19,313.01	11,451.55	136.39	135.93	85.34	7,855.13	479.79	1,203.81	1,012.38	191.44	6.288		
19,500.00	11,510.74	19,413.01	11,448.23	137.96	137.50	85.34	7,955.07	478.79	1,203.80	1,010.15	193.66	6.216		
19,600.00	11,507.33	19,513.01	11,444.90	139.54	139.08	85.35	8,055.01	477.80	1,203.80	1,007.92	195.88	6.146		
19,700.00	11,503.92	19,613.01	11,441.58	141.11	140.66	85.35	8,154.94	476.81	1,203.79	1,005.68	198.11	6.076		
19,800.00	11,500.51	19,713.01	11,438.26	142.69	142.24	85.35	8,254.88	475.81	1,203.78	1,003.45	200.34	6.009		
19,900.00	11,497.10	19,813.01	11,434.94	144.27	143.82	85.36	8,354.82	474.82	1,203.77	1,001.21	202.57	5.943		
20,000.00	11,493.69	19,913.01	11,431.62	145.85	145.40	85.36	8,454.76	473.82	1,203.77	998.97	204.80	5.878		
20,100.00	11,490.28	20,013.01	11,428.30	147.43	146.99	85.37	8,554.70	472.83	1,203.76	996.72	207.03	5.814		
20,200.00	11,486.87	20,113.01	11,424.97	149.02	148.58	85.37	8,654.64	471.83	1,203.75	994.48	209.27	5.752		
20,300.00	11,483.46	20,213.01	11,421.65	150.60	150.16	85.37	8,754.58	470.84	1,203.74	992.23	211.51	5.691		
20,400.00	11,480.06	20,313.01	11,418.33	152.19	151.75	85.38	8,854.52	469.85	1,203.74	989.98	213.75	5.631		
20,500.00	11,476.65	20,413.01	11,415.01	153.78	153.34	85.38	8,954.46	468.85	1,203.73	987.73	216.00	5.573		
20,600.00	11,473.24	20,513.01	11,411.69	155.37	154.93	85.39	9,054.40	467.86	1,203.72	985.48	218.24	5.516		
20,700.00	11,469.83	20,613.01	11,408.37	156.96	156.53	85.39	9,154.34	466.86	1,203.71	983.23	220.49	5.459		
20,800.00	11,466.42	20,713.01	11,405.04	158.55	158.12	85.40	9,254.28	465.87	1,203.71	980.97	222.74	5.404		
20,900.00	11,463.01	20,813.01	11,401.72	160.14	159.72	85.40	9,354.22	464.87	1,203.70	978.71	224.99	5.350		
21,000.00	11,459.60	20,913.01	11,398.40	161.74	161.31	85.40	9,454.16	463.88	1,203.69	976.45	227.24	5.297		
21,100.00	11,456.19	21,013.01	11,395.08	163.33	162.91	85.41	9,554.10	462.89	1,203.68	974.19	229.49	5.245		
21,200.00	11,452.78	21,113.01	11,391.76	164.93	164.51	85.41	9,654.04	461.89	1,203.67	971.93	231.74	5.194		

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



Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well Western Fed Com 601H
Project:	Lea County, NM (NAD83)	TVD Reference:	3284.1' GE + 30' KB @ 3314.10usft
Reference Site:	Western/Bidder 49/KC7	MD Reference:	3284.1' GE + 30' KB @ 3314.10usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Western Fed Com 601H	Survey Calculation Method:	Minimum Curvature
Well 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 Western/Bidder 49/KC7 - Bidder 49 Fed Com 602H - OH - Plan #1												Offset Site Error:	0.00 usft
Survey Program: 0-OWSG (Rev2) MWD												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
21,300.00	11,449.37	21,213.01	11,388.44	166.53	166.11	85.42	9,753.98	460.90	1,203.67	969.67	234.00	5.144	
21,400.00	11,445.96	21,313.01	11,385.11	168.12	167.71	85.42	9,853.92	459.90	1,203.66	967.40	236.26	5.095	
21,500.00	11,442.55	21,413.01	11,381.79	169.72	169.31	85.42	9,953.86	458.91	1,203.65	965.13	238.52	5.046	
21,600.00	11,439.14	21,513.01	11,378.47	171.33	170.92	85.43	10,053.80	457.92	1,203.64	962.87	240.78	4.999	
21,700.00	11,435.73	21,613.01	11,375.15	172.93	172.52	85.43	10,153.74	456.92	1,203.64	960.60	243.04	4.952	
21,800.00	11,432.32	21,713.01	11,371.83	174.53	174.12	85.44	10,253.68	455.93	1,203.63	958.33	245.30	4.907	
21,900.00	11,428.91	21,813.01	11,368.51	176.13	175.73	85.44	10,353.62	454.93	1,203.62	956.06	247.57	4.862	
22,000.00	11,425.50	21,913.01	11,365.18	177.74	177.34	85.45	10,453.56	453.94	1,203.61	953.78	249.83	4.818	
22,100.00	11,422.09	22,013.01	11,361.86	179.34	178.94	85.45	10,553.50	452.94	1,203.61	951.51	252.10	4.774	
22,200.00	11,418.69	22,113.01	11,358.54	180.95	180.55	85.45	10,653.44	451.95	1,203.60	949.23	254.37	4.732	
22,217.45	11,418.09	22,130.46	11,357.96	181.21	180.83	85.45	10,670.88	451.78	1,203.60	948.86	254.74	4.725	
22,218.63	11,418.05	22,131.11	11,357.94	181.22	180.84	85.45	10,671.53	451.77	1,203.60	948.85	254.75	4.725 SF	

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



Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well Western Fed Com 601H
Project:	Lea County, NM (NAD83)	TVD Reference:	3284.1' GE + 30' KB @ 3314.10usft
Reference Site:	Western/Bidder 49/KC7	MD Reference:	3284.1' GE + 30' KB @ 3314.10usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Western Fed Com 601H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.15 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 0-OWSG (Rev2) MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
0.00	0.00	36.70	36.70	0.00	0.05	89.43	9.55	960.83	960.88					
100.00	100.00	136.70	136.70	0.13	0.26	89.43	9.55	960.83	960.88	960.59	0.29	3,359.568		
200.00	200.00	236.70	236.70	0.48	0.62	89.43	9.55	960.83	960.88	960.09	0.78	1,227.233		
300.00	300.00	336.70	336.70	0.84	0.97	89.43	9.55	960.83	960.88	959.59	1.29	746.176		
400.00	400.00	436.70	436.70	1.20	1.33	89.43	9.55	960.83	960.88	959.08	1.79	535.684		
500.00	500.00	536.70	536.70	1.56	1.69	89.43	9.55	960.83	960.88	958.58	2.30	417.743		
600.00	600.00	636.70	636.70	1.92	2.05	89.43	9.55	960.83	960.88	958.07	2.81	342.342		
700.00	700.00	736.70	736.70	2.28	2.41	89.43	9.55	960.83	960.88	957.56	3.31	289.989		
800.00	800.00	836.70	836.70	2.63	2.77	89.43	9.55	960.83	960.88	957.06	3.82	251.520		
900.00	900.00	936.70	936.70	2.99	3.12	89.43	9.55	960.83	960.88	956.55	4.33	222.060		
1,000.00	1,000.00	1,036.70	1,036.70	3.35	3.48	89.43	9.55	960.83	960.88	956.04	4.83	198.777		
1,100.00	1,100.00	1,136.70	1,136.70	3.71	3.84	89.43	9.55	960.83	960.88	955.54	5.34	179.912		
1,200.00	1,200.00	1,236.70	1,236.70	4.07	4.20	89.43	9.55	960.83	960.88	955.03	5.85	164.317		
1,300.00	1,300.00	1,336.70	1,336.70	4.43	4.56	89.43	9.55	960.83	960.88	954.52	6.35	151.210		
1,400.00	1,400.00	1,436.70	1,436.70	4.79	4.92	89.43	9.55	960.83	960.88	954.02	6.86	140.039		
1,500.00	1,500.00	1,536.70	1,536.70	5.14	5.28	89.43	9.55	960.83	960.88	953.51	7.37	130.405		
1,600.00	1,600.00	1,636.70	1,636.70	5.50	5.63	89.43	9.55	960.83	960.88	953.00	7.88	122.011		
1,700.00	1,700.00	1,736.70	1,736.70	5.86	5.99	89.43	9.55	960.83	960.88	952.50	8.38	114.632		
1,800.00	1,800.00	1,836.70	1,836.70	6.22	6.35	89.43	9.55	960.83	960.88	951.99	8.89	108.095		
1,900.00	1,900.00	1,936.70	1,936.70	6.58	6.71	89.43	9.55	960.83	960.88	951.48	9.40	102.263		
2,000.00	2,000.00	2,036.70	2,036.70	6.94	7.07	89.43	9.55	960.83	960.88	950.97	9.90	97.028		
2,100.00	2,100.00	2,136.70	2,136.70	7.29	7.43	89.43	9.55	960.83	960.88	950.47	10.41	92.303		
2,200.00	2,200.00	2,236.70	2,236.70	7.65	7.78	89.43	9.55	960.83	960.88	949.96	10.92	88.017		
2,300.00	2,300.00	2,336.70	2,336.70	8.01	8.14	89.43	9.55	960.83	960.88	949.45	11.42	84.111		
2,400.00	2,400.00	2,436.70	2,436.70	8.37	8.50	89.43	9.55	960.83	960.88	948.95	11.93	80.538		
2,500.00	2,500.00	2,536.70	2,536.70	8.73	8.86	89.43	9.55	960.83	960.88	948.44	12.44	77.255		
2,600.00	2,600.00	2,636.70	2,636.70	9.09	9.22	89.43	9.55	960.83	960.88	947.93	12.94	74.230		
2,700.00	2,700.00	2,736.70	2,736.70	9.45	9.58	89.43	9.55	960.83	960.88	947.43	13.45	71.432		
2,800.00	2,800.00	2,836.70	2,836.70	9.80	9.94	89.43	9.55	960.83	960.88	946.92	13.96	68.838		
2,900.00	2,900.00	2,936.70	2,936.70	10.16	10.29	89.43	9.55	960.83	960.88	946.41	14.47	66.425		
3,000.00	3,000.00	3,036.70	3,036.70	10.52	10.65	89.43	9.55	960.83	960.88	945.91	14.97	64.176		
3,100.00	3,100.00	3,136.70	3,136.70	10.88	11.01	89.43	9.55	960.83	960.88	945.40	15.48	62.075		
3,200.00	3,200.00	3,236.70	3,236.70	11.24	11.37	89.43	9.55	960.83	960.88	944.89	15.99	60.106 CC, ES		
3,300.00	3,299.99	3,336.69	3,336.69	11.59	11.73	179.43	9.55	960.83	962.19	945.70	16.49	58.361		
3,400.00	3,399.91	3,436.61	3,436.61	11.93	12.09	179.43	9.55	960.83	966.11	949.13	16.98	56.893		
3,500.00	3,499.69	3,536.39	3,536.39	12.27	12.44	179.44	9.55	960.83	972.65	955.18	17.48	55.657		
3,599.90	3,599.17	3,635.87	3,635.87	12.62	12.80	179.44	9.55	960.83	981.79	963.82	17.97	54.637		
3,700.00	3,698.72	3,735.42	3,735.42	12.97	13.16	179.45	9.55	960.83	992.25	973.79	18.46	53.741		
3,800.00	3,798.17	3,834.87	3,834.87	13.32	13.51	179.45	9.55	960.83	1,002.70	983.74	18.96	52.891		
3,900.00	3,897.63	3,934.33	3,934.33	13.68	13.87	179.46	9.55	960.83	1,013.15	993.70	19.45	52.082		
4,000.00	3,997.08	4,033.78	4,033.78	14.04	14.23	179.46	9.55	960.83	1,023.60	1,003.65	19.95	51.311		
4,100.00	4,096.53	4,133.23	4,133.23	14.40	14.58	179.47	9.55	960.83	1,034.05	1,013.60	20.45	50.576		
4,200.00	4,195.98	4,232.68	4,232.68	14.76	14.94	179.47	9.55	960.83	1,044.50	1,023.56	20.94	49.874		
4,300.00	4,295.44	4,332.14	4,332.14	15.12	15.30	179.48	9.55	960.83	1,054.95	1,033.51	21.44	49.204		
4,400.00	4,394.89	4,431.59	4,431.59	15.49	15.65	179.48	9.55	960.83	1,065.40	1,043.46	21.94	48.562		
4,500.00	4,494.34	4,531.04	4,531.04	15.85	16.01	179.49	9.55	960.83	1,075.85	1,053.41	22.44	47.948		
4,600.00	4,593.79	4,630.49	4,630.49	16.22	16.37	179.49	9.55	960.83	1,086.30	1,063.36	22.94	47.360		
4,700.00	4,693.25	4,729.95	4,729.95	16.59	16.72	179.50	9.55	960.83	1,096.75	1,073.31	23.44	46.796		
4,800.00	4,792.70	4,829.40	4,829.40	16.96	17.08	179.50	9.55	960.83	1,107.20	1,083.26	23.94	46.255		
4,900.00	4,892.15	4,928.85	4,928.85	17.33	17.44	179.51	9.55	960.83	1,117.65	1,093.21	24.44	45.735		
5,000.00	4,991.60	5,028.30	5,028.30	17.70	17.79	179.51	9.55	960.83	1,128.10	1,103.16	24.94	45.235		
5,100.00	5,091.06	5,127.76	5,127.76	18.07	18.15	179.52	9.55	960.83	1,138.55	1,113.11	25.44	44.754		

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



Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well Western Fed Com 601H
Project:	Lea County, NM (NAD83)	TVD Reference:	3284.1' GE + 30' KB @ 3314.10usft
Reference Site:	Western/Bidder 49/KC7	MD Reference:	3284.1' GE + 30' KB @ 3314.10usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Western Fed Com 601H	Survey Calculation Method:	Minimum Curvature
Well 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													Western/Bidder 49/KC7 - Bidder 49 Fed Com 703H - OH - Plan #1		Offset Site Error: 0.00 usft	
Survey Program: 0-OWSG (Rev2) MWD													Offset Well Error: 0.00 usft			
Reference		Offset		Semi Major Axis			Distance							Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor				
5,200.00	5,190.51	5,227.21	5,227.21	18.45	18.51	179.52	9.55	960.83	1,149.00	1,123.06	25.94	44.291				
5,300.00	5,289.96	5,326.66	5,326.66	18.82	18.86	179.53	9.55	960.83	1,159.45	1,133.01	26.44	43.846				
5,400.00	5,389.41	5,426.11	5,426.11	19.20	19.22	179.53	9.55	960.83	1,169.90	1,142.95	26.95	43.416				
5,500.00	5,488.87	5,525.57	5,525.57	19.58	19.57	179.53	9.55	960.83	1,180.35	1,152.90	27.45	43.002				
5,600.00	5,588.32	5,625.02	5,625.02	19.95	19.93	179.54	9.55	960.83	1,190.80	1,162.85	27.95	42.602				
5,700.00	5,687.77	5,724.47	5,724.47	20.33	20.29	179.54	9.55	960.83	1,201.25	1,172.79	28.45	42.216				
5,800.00	5,787.22	5,823.92	5,823.92	20.71	20.64	179.55	9.55	960.83	1,211.70	1,182.74	28.96	41.843				
5,900.00	5,886.68	5,923.38	5,923.38	21.09	21.00	179.55	9.55	960.83	1,222.15	1,192.69	29.46	41.483				
6,000.00	5,986.13	6,022.83	6,022.83	21.47	21.36	179.55	9.55	960.83	1,232.60	1,202.63	29.97	41.134				
6,100.00	6,085.58	6,122.28	6,122.28	21.85	21.71	179.56	9.55	960.83	1,243.05	1,212.58	30.47	40.796				
6,200.00	6,185.03	6,221.73	6,221.73	22.23	22.07	179.56	9.55	960.83	1,253.50	1,222.52	30.97	40.470				
6,300.00	6,284.49	6,321.19	6,321.19	22.61	22.43	179.56	9.55	960.83	1,263.95	1,232.47	31.48	40.153				
6,400.00	6,383.94	6,420.64	6,420.64	22.99	22.78	179.57	9.55	960.83	1,274.40	1,242.42	31.98	39.846				
6,500.00	6,483.39	6,520.09	6,520.09	23.38	23.14	179.57	9.55	960.83	1,284.85	1,252.36	32.49	39.549				
6,600.00	6,582.84	6,619.54	6,619.54	23.76	23.50	179.58	9.55	960.83	1,295.30	1,262.31	32.99	39.260				
6,700.00	6,682.30	6,719.00	6,719.00	24.14	23.85	179.58	9.55	960.83	1,305.75	1,272.25	33.50	38.980				
6,800.00	6,781.75	6,818.45	6,818.45	24.53	24.21	179.58	9.55	960.83	1,316.20	1,282.20	34.00	38.708				
6,900.00	6,881.20	6,917.90	6,917.90	24.91	24.57	179.59	9.55	960.83	1,326.65	1,292.14	34.51	38.444				
7,000.00	6,980.65	7,017.35	7,017.35	25.29	24.92	179.59	9.55	960.83	1,337.10	1,302.08	35.01	38.187				
7,100.00	7,080.11	7,116.81	7,116.81	25.68	25.28	179.59	9.55	960.83	1,347.55	1,312.03	35.52	37.938				
7,200.00	7,179.56	7,216.26	7,216.26	26.06	25.64	179.59	9.55	960.83	1,358.00	1,321.97	36.03	37.695				
7,300.00	7,279.01	7,315.71	7,315.71	26.45	25.99	179.60	9.55	960.83	1,368.45	1,331.92	36.53	37.459				
7,400.00	7,378.46	7,415.16	7,415.16	26.84	26.35	179.60	9.55	960.83	1,378.90	1,341.86	37.04	37.230				
7,500.00	7,477.92	7,514.62	7,514.62	27.22	26.70	179.60	9.55	960.83	1,389.35	1,351.81	37.54	37.006				
7,600.00	7,577.37	7,614.07	7,614.07	27.61	27.06	179.61	9.55	960.83	1,399.80	1,361.75	38.05	36.788				
7,700.00	7,676.82	7,713.52	7,713.52	27.99	27.42	179.61	9.55	960.83	1,410.25	1,371.69	38.56	36.576				
7,800.00	7,776.27	7,812.97	7,812.97	28.38	27.77	179.61	9.55	960.83	1,420.70	1,381.64	39.06	36.369				
7,900.00	7,875.73	7,912.43	7,912.43	28.77	28.13	179.62	9.55	960.83	1,431.15	1,391.58	39.57	36.168				
8,000.00	7,975.18	8,011.88	8,011.88	29.16	28.49	179.62	9.55	960.83	1,441.60	1,401.52	40.08	35.971				
8,100.00	8,074.63	8,111.33	8,111.33	29.54	28.84	179.62	9.55	960.83	1,452.05	1,411.47	40.58	35.779				
8,200.00	8,174.08	8,210.78	8,210.78	29.93	29.20	179.62	9.55	960.83	1,462.50	1,421.41	41.09	35.592				
8,300.00	8,273.54	8,310.24	8,310.24	30.32	29.56	179.63	9.55	960.83	1,472.95	1,431.35	41.60	35.410				
8,400.00	8,372.99	8,409.69	8,409.69	30.71	29.91	179.63	9.55	960.83	1,483.40	1,441.30	42.10	35.231				
8,500.00	8,472.44	8,509.14	8,509.14	31.09	30.27	179.63	9.55	960.83	1,493.85	1,451.24	42.61	35.057				
8,600.00	8,571.89	8,608.59	8,608.59	31.48	30.63	179.63	9.55	960.83	1,504.30	1,461.18	43.12	34.887				
8,700.00	8,671.34	8,708.04	8,708.04	31.87	30.98	179.64	9.55	960.83	1,514.75	1,471.12	43.63	34.721				
8,800.00	8,770.80	8,807.50	8,807.50	32.26	31.34	179.64	9.55	960.83	1,525.20	1,481.07	44.13	34.559				
8,900.00	8,870.25	8,906.95	8,906.95	32.65	31.70	179.64	9.55	960.83	1,535.65	1,491.01	44.64	34.400				
9,000.00	8,969.70	9,006.40	9,006.40	33.04	32.05	179.64	9.55	960.83	1,546.10	1,500.95	45.15	34.245				
9,100.00	9,069.15	9,105.85	9,105.85	33.43	32.41	179.65	9.55	960.83	1,556.55	1,510.89	45.66	34.093				
9,200.00	9,168.61	9,205.31	9,205.31	33.82	32.77	179.65	9.55	960.83	1,567.00	1,520.84	46.16	33.944				
9,300.00	9,268.06	9,304.76	9,304.76	34.21	33.12	179.65	9.55	960.83	1,577.45	1,530.78	46.67	33.799				
9,343.00	9,310.83	9,347.53	9,347.53	34.38	33.28	179.65	9.55	960.83	1,581.94	1,535.05	46.89	33.737				
9,400.00	9,367.55	9,404.25	9,404.25	34.60	33.48	179.65	9.55	960.83	1,587.48	1,540.30	47.18	33.648				
9,500.00	9,467.26	9,503.96	9,503.96	34.97	33.84	179.66	9.55	960.83	1,595.14	1,547.45	47.69	33.450				
9,600.00	9,567.13	9,603.83	9,603.83	35.34	34.19	179.66	9.55	960.83	1,600.19	1,551.99	48.19	33.204				
9,700.00	9,667.09	9,703.79	9,703.79	35.69	34.55	179.66	9.55	960.83	1,602.62	1,553.92	48.70	32.910				
9,742.91	9,710.00	9,746.70	9,746.70	35.83	34.71	89.66	9.55	960.83	1,602.86	1,553.95	48.91	32.770				
9,800.00	9,767.09	9,803.79	9,803.79	36.03	34.91	89.66	9.55	960.83	1,602.86	1,553.66	49.20	32.581				
9,900.00	9,867.09	9,903.79	9,903.79	36.36	35.27	89.66	9.55	960.83	1,602.86	1,553.16	49.69	32.254				
10,000.00	9,967.09	10,003.79	10,003.79	36.70	35.63	89.66	9.55	960.83	1,602.86	1,552.67	50.19	31.934				
10,100.00	10,067.09	10,103.79	10,103.79	37.04	35.99	89.66	9.55	960.83	1,602.86	1,552.17	50.69	31.620				

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



Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well Western Fed Com 601H
Project:	Lea County, NM (NAD83)	TVD Reference:	3284.1' GE + 30' KB @ 3314.10usft
Reference Site:	Western/Bidder 49/KC7	MD Reference:	3284.1' GE + 30' KB @ 3314.10usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Western Fed Com 601H	Survey Calculation Method:	Minimum Curvature
Well 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 Western/Bidder 49/KC7 - Bidder 49 Fed Com 703H - OH - Plan #1													Offset Site Error:	0.00 usft
Survey Program: 0-OWSG (Rev2) MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance							Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
10,200.00	10,167.09	10,203.79	10,203.79	37.37	36.34	89.66	9.55	960.83	1,602.86	1,551.67	51.19	31.311		
10,300.00	10,267.09	10,303.79	10,303.79	37.71	36.70	89.66	9.55	960.83	1,602.86	1,551.17	51.69	31.009		
10,400.00	10,367.09	10,403.79	10,403.79	38.05	37.06	89.66	9.55	960.83	1,602.86	1,550.67	52.19	30.713		
10,500.00	10,467.09	10,503.79	10,503.79	38.39	37.42	89.66	9.55	960.83	1,602.86	1,550.17	52.69	30.422		
10,600.00	10,567.09	10,603.79	10,603.79	38.73	37.78	89.66	9.55	960.83	1,602.86	1,549.67	53.19	30.136		
10,700.00	10,667.09	10,703.79	10,703.79	39.07	38.14	89.66	9.55	960.83	1,602.86	1,549.17	53.69	29.855		
10,800.00	10,767.09	10,803.79	10,803.79	39.41	38.50	89.66	9.55	960.83	1,602.86	1,548.67	54.19	29.580		
10,900.00	10,867.09	10,903.79	10,903.79	39.75	38.85	89.66	9.55	960.83	1,602.86	1,548.17	54.69	29.310		
11,000.00	10,967.09	11,003.79	11,003.79	40.09	39.21	89.66	9.55	960.83	1,602.86	1,547.67	55.19	29.044		
11,100.00	11,067.09	11,103.79	11,103.79	40.43	39.57	89.66	9.55	960.83	1,602.86	1,547.17	55.69	28.783		
11,200.00	11,167.09	11,203.79	11,203.79	40.77	39.93	89.66	9.55	960.83	1,602.86	1,546.67	56.19	28.527		
11,221.91	11,189.00	11,225.70	11,225.70	40.84	40.01	89.66	9.55	960.83	1,602.86	1,546.56	56.30	28.471		
11,250.00	11,217.08	11,253.78	11,253.78	40.94	40.11	90.25	9.55	960.83	1,602.86	1,546.42	56.44	28.401		
11,300.00	11,266.85	11,303.55	11,303.55	41.11	40.29	90.41	9.55	960.83	1,602.89	1,546.20	56.69	28.276		
11,350.00	11,316.03	11,352.73	11,352.73	41.28	40.46	90.72	9.55	960.83	1,602.98	1,546.05	56.93	28.156		
11,400.00	11,364.24	11,401.75	11,401.75	41.44	40.64	91.15	9.72	960.83	1,603.20	1,546.02	57.18	28.040		
11,450.00	11,411.12	11,453.42	11,453.42	41.59	40.82	91.64	13.28	960.79	1,603.56	1,546.13	57.43	27.924		
11,500.00	11,456.30	11,506.55	11,506.55	41.74	41.01	92.12	21.77	960.71	1,604.03	1,546.36	57.67	27.812		
11,550.00	11,499.46	11,561.23	11,568.60	41.88	41.20	92.59	35.54	960.57	1,604.61	1,546.68	57.92	27.703		
11,600.00	11,540.24	11,617.54	11,611.45	42.01	41.38	93.05	54.92	960.37	1,605.27	1,547.11	58.17	27.597		
11,650.00	11,578.36	11,675.55	11,663.63	42.13	41.57	93.49	80.20	960.12	1,606.01	1,547.60	58.41	27.495		
11,700.00	11,613.51	11,735.31	11,714.43	42.24	41.76	93.91	111.62	959.80	1,606.78	1,548.13	58.65	27.397		
11,750.00	11,645.43	11,796.81	11,763.00	42.35	41.95	94.31	149.30	959.43	1,607.58	1,548.69	58.89	27.300		
11,800.00	11,673.88	11,860.03	11,808.41	42.45	42.14	94.67	193.23	958.99	1,608.35	1,549.23	59.12	27.204		
11,850.00	11,698.64	11,924.87	11,849.69	42.56	42.34	94.99	243.20	958.48	1,609.08	1,549.72	59.36	27.108		
11,900.00	11,719.52	11,991.21	11,885.79	42.67	42.54	95.29	298.80	957.92	1,609.73	1,550.13	59.60	27.009		
11,950.00	11,736.36	12,058.83	11,915.74	42.79	42.75	95.49	359.38	957.32	1,610.27	1,550.42	59.85	26.905		
12,000.00	11,749.04	12,127.48	11,938.62	42.92	42.97	95.65	424.06	956.67	1,610.67	1,550.56	60.11	26.794		
12,050.00	11,757.45	12,196.84	11,953.72	43.06	43.19	95.75	491.71	955.99	1,610.92	1,550.53	60.39	26.676		
12,100.00	11,761.54	12,266.57	11,960.56	43.22	43.41	95.79	561.05	955.29	1,611.00	1,550.32	60.68	26.550		
12,141.44	11,761.62	12,319.47	11,960.23	43.37	43.59	95.77	613.94	954.76	1,610.95	1,550.03	60.92	26.443		
12,200.00	11,759.63	12,378.02	11,958.29	43.59	43.81	95.77	672.46	954.17	1,610.95	1,549.71	61.24	26.305		
12,300.00	11,756.22	12,478.02	11,954.97	44.02	44.23	95.78	772.40	953.17	1,610.95	1,549.10	61.85	26.046		
12,400.00	11,752.81	12,578.02	11,951.65	44.51	44.71	95.78	872.34	952.16	1,610.95	1,548.41	62.54	25.758		
12,500.00	11,749.40	12,678.02	11,948.33	45.06	45.24	95.78	972.28	951.16	1,610.95	1,547.64	63.31	25.446		
12,600.00	11,745.99	12,778.02	11,945.01	45.66	45.82	95.79	1,072.22	950.16	1,610.95	1,546.79	64.15	25.111		
12,700.00	11,742.58	12,878.02	11,941.70	46.31	46.46	95.79	1,172.16	949.15	1,610.95	1,545.88	65.07	24.758		
12,800.00	11,739.17	12,978.02	11,938.38	47.02	47.14	95.79	1,272.10	948.15	1,610.94	1,544.89	66.05	24.388		
12,900.00	11,735.76	13,078.02	11,935.06	47.77	47.87	95.80	1,372.04	947.14	1,610.94	1,543.84	67.11	24.006		
13,000.00	11,732.35	13,178.02	11,931.74	48.56	48.65	95.80	1,471.98	946.14	1,610.94	1,542.72	68.22	23.614		
13,100.00	11,728.94	13,278.02	11,928.42	49.40	49.47	95.80	1,571.92	945.14	1,610.94	1,541.55	69.40	23.214		
13,200.00	11,725.53	13,378.02	11,925.10	50.28	50.33	95.81	1,671.85	944.13	1,610.94	1,540.31	70.63	22.809		
13,300.00	11,722.12	13,478.02	11,921.79	51.19	51.23	95.81	1,771.79	943.13	1,610.94	1,539.03	71.91	22.401		
13,400.00	11,718.72	13,578.02	11,918.47	52.14	52.17	95.81	1,871.73	942.13	1,610.94	1,537.69	73.25	21.992		
13,500.00	11,715.31	13,678.02	11,915.15	53.13	53.14	95.82	1,971.67	941.12	1,610.94	1,536.30	74.64	21.584		
13,600.00	11,711.90	13,778.02	11,911.83	54.15	54.15	95.82	2,071.61	940.12	1,610.94	1,534.87	76.07	21.177		
13,700.00	11,708.49	13,878.02	11,908.51	55.20	55.18	95.82	2,171.55	939.11	1,610.94	1,533.39	77.54	20.774		
13,800.00	11,705.08	13,978.02	11,905.19	56.27	56.25	95.83	2,271.49	938.11	1,610.94	1,531.87	79.06	20.376		
13,900.00	11,701.67	14,078.02	11,901.88	57.38	57.34	95.83	2,371.43	937.11	1,610.93	1,530.32	80.62	19.983		
14,000.00	11,698.26	14,178.02	11,898.56	58.51	58.46	95.83	2,471.37	936.10	1,610.93	1,528.73	82.21	19.596		
14,100.00	11,694.85	14,278.02	11,895.24	59.66	59.61	95.84	2,571.31	935.10	1,610.93	1,527.10	83.83	19.216		
14,200.00	11,691.44	14,378.02	11,891.92	60.84	60.78	95.84	2,671.25	934.10	1,610.93	1,525.44	85.49	18.843		

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



Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well Western Fed Com 601H
Project:	Lea County, NM (NAD83)	TVD Reference:	3284.1' GE + 30' KB @ 3314.10usft
Reference Site:	Western/Bidder 49/KC7	MD Reference:	3284.1' GE + 30' KB @ 3314.10usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Western Fed Com 601H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.15 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 0-OWSG (Rev2) MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
14,300.00	11,688.03	14,478.02	11,888.60	62.04	61.97	95.84	2,771.19	933.09	1,610.93	1,523.75	87.18	18.478		
14,400.00	11,684.62	14,578.02	11,885.28	63.26	63.18	95.85	2,871.13	932.09	1,610.93	1,522.03	88.90	18.121		
14,500.00	11,681.21	14,678.02	11,881.97	64.50	64.41	95.85	2,971.07	931.08	1,610.93	1,520.29	90.64	17.772		
14,600.00	11,677.80	14,778.02	11,878.65	65.76	65.66	95.85	3,071.01	930.08	1,610.93	1,518.52	92.41	17.432		
14,700.00	11,674.39	14,878.02	11,875.33	67.03	66.92	95.86	3,170.95	929.08	1,610.93	1,516.72	94.21	17.100		
14,800.00	11,670.98	14,978.02	11,872.01	68.32	68.21	95.86	3,270.89	928.07	1,610.93	1,514.90	96.02	16.776		
14,900.00	11,667.57	15,078.02	11,868.69	69.63	69.50	95.86	3,370.83	927.07	1,610.93	1,513.06	97.86	16.461		
15,000.00	11,664.16	15,178.02	11,865.38	70.95	70.82	95.86	3,470.77	926.06	1,610.93	1,511.20	99.72	16.154		
15,100.00	11,660.76	15,278.02	11,862.06	72.28	72.15	95.87	3,570.71	925.06	1,610.92	1,509.32	101.60	15.855		
15,200.00	11,657.35	15,378.02	11,858.74	73.63	73.49	95.87	3,670.65	924.06	1,610.92	1,507.43	103.50	15.565		
15,300.00	11,653.94	15,478.02	11,855.42	74.99	74.84	95.87	3,770.59	923.05	1,610.92	1,505.51	105.41	15.282		
15,400.00	11,650.53	15,578.02	11,852.10	76.36	76.20	95.88	3,870.53	922.05	1,610.92	1,503.58	107.34	15.007		
15,500.00	11,647.12	15,678.02	11,848.78	77.74	77.58	95.88	3,970.47	921.05	1,610.92	1,501.63	109.29	14.740		
15,600.00	11,643.71	15,778.02	11,845.47	79.13	78.97	95.88	4,070.41	920.04	1,610.92	1,499.67	111.25	14.480		
15,700.00	11,640.30	15,878.02	11,842.15	80.53	80.36	95.89	4,170.35	919.04	1,610.92	1,497.70	113.22	14.228		
15,800.00	11,636.89	15,978.02	11,838.83	81.94	81.77	95.89	4,270.29	918.03	1,610.92	1,495.71	115.21	13.983		
15,900.00	11,633.48	16,078.02	11,835.51	83.36	83.18	95.89	4,370.23	917.03	1,610.92	1,493.71	117.21	13.744		
16,000.00	11,630.07	16,178.02	11,832.19	84.79	84.61	95.90	4,470.17	916.03	1,610.92	1,491.70	119.22	13.512		
16,100.00	11,626.66	16,278.02	11,828.87	86.23	86.04	95.90	4,570.11	915.02	1,610.92	1,489.68	121.24	13.287		
16,200.00	11,623.25	16,378.02	11,825.56	87.67	87.48	95.90	4,670.05	914.02	1,610.92	1,487.64	123.27	13.068		
16,300.00	11,619.84	16,478.02	11,822.24	89.12	88.93	95.91	4,769.99	913.01	1,610.92	1,485.60	125.32	12.855		
16,400.00	11,616.43	16,578.02	11,818.92	90.58	90.38	95.91	4,869.93	912.01	1,610.91	1,483.54	127.37	12.647		
16,500.00	11,613.02	16,678.02	11,815.60	92.04	91.84	95.91	4,969.87	911.01	1,610.91	1,481.48	129.43	12.446		
16,600.00	11,609.61	16,778.02	11,812.28	93.51	93.31	95.92	5,069.81	910.00	1,610.91	1,479.41	131.50	12.250		
16,700.00	11,606.20	16,878.02	11,808.96	94.99	94.78	95.92	5,169.75	909.00	1,610.91	1,477.33	133.58	12.059		
16,800.00	11,602.79	16,978.02	11,805.65	96.47	96.26	95.92	5,269.69	908.00	1,610.91	1,475.24	135.67	11.874		
16,900.00	11,599.39	17,078.02	11,802.33	97.96	97.75	95.93	5,369.63	906.99	1,610.91	1,473.15	137.76	11.693		
17,000.00	11,595.98	17,178.02	11,799.01	99.45	99.24	95.93	5,469.57	905.99	1,610.91	1,471.04	139.87	11.518		
17,100.00	11,592.57	17,278.02	11,795.69	100.95	100.73	95.93	5,569.51	904.98	1,610.91	1,468.94	141.97	11.346		
17,200.00	11,589.16	17,378.02	11,792.37	102.45	102.23	95.94	5,669.45	903.98	1,610.91	1,466.82	144.09	11.180		
17,300.00	11,585.75	17,478.02	11,789.06	103.96	103.74	95.94	5,769.39	902.98	1,610.91	1,464.70	146.21	11.018		
17,400.00	11,582.34	17,578.02	11,785.74	105.47	105.25	95.94	5,869.33	901.97	1,610.91	1,462.57	148.34	10.860		
17,500.00	11,578.93	17,678.02	11,782.42	106.99	106.76	95.95	5,969.27	900.97	1,610.91	1,460.43	150.47	10.706		
17,600.00	11,575.52	17,778.02	11,779.10	108.51	108.28	95.95	6,069.21	899.96	1,610.91	1,458.29	152.61	10.555		
17,700.00	11,572.11	17,878.02	11,775.78	110.03	109.80	95.95	6,169.15	898.96	1,610.91	1,456.15	154.76	10.409		
17,800.00	11,568.70	17,978.02	11,772.46	111.56	111.33	95.96	6,269.09	897.96	1,610.91	1,454.00	156.91	10.267		
17,900.00	11,565.29	18,078.02	11,769.15	113.09	112.85	95.96	6,369.03	896.95	1,610.90	1,451.84	159.06	10.127		
18,000.00	11,561.88	18,178.02	11,765.83	114.62	114.39	95.96	6,468.97	895.95	1,610.90	1,449.68	161.22	9.992		
18,100.00	11,558.47	18,278.02	11,762.51	116.16	115.92	95.97	6,568.91	894.95	1,610.90	1,447.52	163.39	9.859		
18,200.00	11,555.06	18,378.02	11,759.19	117.70	117.46	95.97	6,668.85	893.94	1,610.90	1,445.35	165.55	9.730		
18,300.00	11,551.65	18,478.02	11,755.87	119.25	119.00	95.97	6,768.79	892.94	1,610.90	1,443.17	167.73	9.604		
18,400.00	11,548.24	18,578.02	11,752.55	120.79	120.55	95.98	6,868.73	891.93	1,610.90	1,441.00	169.90	9.481		
18,500.00	11,544.83	18,678.02	11,749.24	122.34	122.09	95.98	6,968.67	890.93	1,610.90	1,438.82	172.08	9.361		
18,600.00	11,541.42	18,778.02	11,745.92	123.89	123.64	95.98	7,068.61	889.93	1,610.90	1,436.63	174.27	9.244		
18,700.00	11,538.02	18,878.02	11,742.60	125.45	125.20	95.99	7,168.55	888.92	1,610.90	1,434.44	176.46	9.129		
18,800.00	11,534.61	18,978.02	11,739.28	127.00	126.75	95.99	7,268.49	887.92	1,610.90	1,432.25	178.65	9.017		
18,900.00	11,531.20	19,078.02	11,735.96	128.56	128.31	95.99	7,368.43	886.92	1,610.90	1,430.06	180.84	8.908		
19,000.00	11,527.79	19,178.02	11,732.64	130.13	129.87	96.00	7,468.37	885.91	1,610.90	1,427.86	183.04	8.801		
19,100.00	11,524.38	19,278.02	11,729.33	131.69	131.43	96.00	7,568.31	884.91	1,610.90	1,425.66	185.24	8.696		
19,200.00	11,520.97	19,378.02	11,726.01	133.25	133.00	96.00	7,668.25	883.90	1,610.90	1,423.45	187.44	8.594		
19,300.00	11,517.56	19,478.02	11,722.69	134.82	134.56	96.01	7,768.19	882.90	1,610.90	1,421.25	189.65	8.494		
19,400.00	11,514.15	19,578.02	11,719.37	136.39	136.13	96.01	7,868.13	881.90	1,610.90	1,419.04	191.86	8.396		

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



Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well Western Fed Com 601H
Project:	Lea County, NM (NAD83)	TVD Reference:	3284.1' GE + 30' KB @ 3314.10usft
Reference Site:	Western/Bidder 49/KC7	MD Reference:	3284.1' GE + 30' KB @ 3314.10usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Western Fed Com 601H	Survey Calculation Method:	Minimum Curvature
Well 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 Western/Bidder 49/KC7 - Bidder 49 Fed Com 703H - OH - Plan #1													Offset Site Error:	0.00 usft
Survey Program: 0-OWSG (Rev2) MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance								Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
19,500.00	11,510.74	19,678.02	11,716.05	137.96	137.70	96.01	7,968.07	880.89	1,610.89	1,416.83	194.07	8.301		
19,600.00	11,507.33	19,778.02	11,712.74	139.54	139.28	96.01	8,068.01	879.89	1,610.89	1,414.61	196.28	8.207		
19,700.00	11,503.92	19,878.02	11,709.42	141.11	140.85	96.02	8,167.95	878.88	1,610.89	1,412.40	198.50	8.115		
19,800.00	11,500.51	19,978.02	11,706.10	142.69	142.43	96.02	8,267.89	877.88	1,610.89	1,410.18	200.72	8.026		
19,900.00	11,497.10	20,078.02	11,702.78	144.27	144.00	96.02	8,367.82	876.88	1,610.89	1,407.95	202.94	7.938		
20,000.00	11,493.69	20,178.02	11,699.46	145.85	145.58	96.03	8,467.76	875.87	1,610.89	1,405.73	205.16	7.852		
20,100.00	11,490.28	20,278.02	11,696.14	147.43	147.16	96.03	8,567.70	874.87	1,610.89	1,403.51	207.39	7.768		
20,200.00	11,486.87	20,378.02	11,692.83	149.02	148.75	96.03	8,667.64	873.87	1,610.89	1,401.28	209.61	7.685		
20,300.00	11,483.46	20,478.02	11,689.51	150.60	150.33	96.04	8,767.58	872.86	1,610.89	1,399.05	211.84	7.604		
20,400.00	11,480.06	20,578.02	11,686.19	152.19	151.92	96.04	8,867.52	871.86	1,610.89	1,396.81	214.08	7.525		
20,500.00	11,476.65	20,678.02	11,682.87	153.78	153.50	96.04	8,967.46	870.85	1,610.89	1,394.58	216.31	7.447		
20,600.00	11,473.24	20,778.02	11,679.55	155.37	155.09	96.05	9,067.40	869.85	1,610.89	1,392.34	218.54	7.371		
20,700.00	11,469.83	20,878.02	11,676.23	156.96	156.68	96.05	9,167.34	868.85	1,610.89	1,390.11	220.78	7.296		
20,800.00	11,466.42	20,978.02	11,672.92	158.55	158.27	96.05	9,267.28	867.84	1,610.89	1,387.87	223.02	7.223		
20,900.00	11,463.01	21,078.02	11,669.60	160.14	159.87	96.06	9,367.22	866.84	1,610.89	1,385.63	225.26	7.151		
21,000.00	11,459.60	21,178.02	11,666.28	161.74	161.46	96.06	9,467.16	865.83	1,610.89	1,383.38	227.50	7.081		
21,100.00	11,456.19	21,278.02	11,662.96	163.33	163.05	96.06	9,567.10	864.83	1,610.89	1,381.14	229.75	7.012		
21,200.00	11,452.78	21,378.02	11,659.64	164.93	164.65	96.07	9,667.04	863.83	1,610.89	1,378.89	231.99	6.944		
21,300.00	11,449.37	21,478.02	11,656.33	166.53	166.25	96.07	9,766.98	862.82	1,610.89	1,376.65	234.24	6.877		
21,400.00	11,445.96	21,578.02	11,653.01	168.12	167.84	96.07	9,866.92	861.82	1,610.89	1,374.40	236.49	6.812		
21,500.00	11,442.55	21,678.02	11,649.69	169.72	169.44	96.08	9,966.86	860.82	1,610.88	1,372.15	238.74	6.748		
21,600.00	11,439.14	21,778.02	11,646.37	171.33	171.04	96.08	10,066.80	859.81	1,610.88	1,369.90	240.99	6.684		
21,700.00	11,435.73	21,878.02	11,643.05	172.93	172.64	96.08	10,166.74	858.81	1,610.88	1,367.64	243.24	6.623		
21,800.00	11,432.32	21,978.02	11,639.73	174.53	174.25	96.09	10,266.68	857.80	1,610.88	1,365.39	245.50	6.562		
21,900.00	11,428.91	22,078.02	11,636.42	176.13	175.85	96.09	10,366.62	856.80	1,610.88	1,363.13	247.75	6.502		
22,000.00	11,425.50	22,178.02	11,633.10	177.74	177.45	96.09	10,466.56	855.80	1,610.88	1,360.88	250.01	6.443		
22,100.00	11,422.09	22,278.02	11,629.78	179.34	179.06	96.10	10,566.50	854.79	1,610.88	1,358.62	252.26	6.386		
22,200.00	11,418.69	22,378.02	11,626.46	180.95	180.66	96.10	10,666.44	853.79	1,610.88	1,356.36	254.52	6.329		
22,207.86	11,418.42	22,385.87	11,626.20	181.07	180.79	96.10	10,674.29	853.71	1,610.88	1,356.19	254.69	6.325		
22,218.63	11,418.05	22,385.87	11,626.20	181.22	180.79	96.10	10,674.29	853.71	1,610.92	1,356.17	254.74	6.324 SF		

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



Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well Western Fed Com 601H
Project:	Lea County, NM (NAD83)	TVD Reference:	3284.1' GE + 30' KB @ 3314.10usft
Reference Site:	Western/Bidder 49/KC7	MD Reference:	3284.1' GE + 30' KB @ 3314.10usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Western Fed Com 601H	Survey Calculation Method:	Minimum Curvature
Well 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 Western/Bidder 49/KC7 - KC7 Fed Com 704H - OH - Plan #1													Offset Site Error:	0.00 usft
Survey Program: 0-OWSG (Rev2) MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance								Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
0.00	0.00	37.00	37.00	0.00	0.05	89.43	9.89	995.82	995.87					
100.00	100.00	137.00	137.00	0.13	0.26	89.43	9.89	995.82	995.87	995.58	0.29	3,470.181		
200.00	200.00	237.00	237.00	0.48	0.62	89.43	9.89	995.82	995.87	995.09	0.78	1,270.553		
300.00	300.00	337.00	337.00	0.84	0.98	89.43	9.89	995.82	995.87	994.58	1.29	772.861		
400.00	400.00	437.00	437.00	1.20	1.33	89.43	9.89	995.82	995.87	994.07	1.79	554.944		
500.00	500.00	537.00	537.00	1.56	1.69	89.43	9.89	995.82	995.87	993.57	2.30	432.807		
600.00	600.00	637.00	637.00	1.92	2.05	89.43	9.89	995.82	995.87	993.06	2.81	354.709		
700.00	700.00	737.00	737.00	2.28	2.41	89.43	9.89	995.82	995.87	992.55	3.31	300.478		
800.00	800.00	837.00	837.00	2.63	2.77	89.43	9.89	995.82	995.87	992.05	3.82	260.626		
900.00	900.00	937.00	937.00	2.99	3.13	89.43	9.89	995.82	995.87	991.54	4.33	230.106		
1,000.00	1,000.00	1,037.00	1,037.00	3.35	3.48	89.43	9.89	995.82	995.87	991.03	4.83	205.982		
1,100.00	1,100.00	1,137.00	1,137.00	3.71	3.84	89.43	9.89	995.82	995.87	990.53	5.34	186.437		
1,200.00	1,200.00	1,237.00	1,237.00	4.07	4.20	89.43	9.89	995.82	995.87	990.02	5.85	170.278		
1,300.00	1,300.00	1,337.00	1,337.00	4.43	4.56	89.43	9.89	995.82	995.87	989.51	6.36	156.697		
1,400.00	1,400.00	1,437.00	1,437.00	4.79	4.92	89.43	9.89	995.82	995.87	989.01	6.86	145.122		
1,500.00	1,500.00	1,537.00	1,537.00	5.14	5.28	89.43	9.89	995.82	995.87	988.50	7.37	135.140		
1,600.00	1,600.00	1,637.00	1,637.00	5.50	5.64	89.43	9.89	995.82	995.87	987.99	7.88	126.442		
1,700.00	1,700.00	1,737.00	1,737.00	5.86	5.99	89.43	9.89	995.82	995.87	987.49	8.38	118.796		
1,800.00	1,800.00	1,837.00	1,837.00	6.22	6.35	89.43	9.89	995.82	995.87	986.98	8.89	112.022		
1,900.00	1,900.00	1,937.00	1,937.00	6.58	6.71	89.43	9.89	995.82	995.87	986.47	9.40	105.979		
2,000.00	2,000.00	2,037.00	2,037.00	6.94	7.07	89.43	9.89	995.82	995.87	985.97	9.90	100.554		
2,100.00	2,100.00	2,137.00	2,137.00	7.29	7.43	89.43	9.89	995.82	995.87	985.46	10.41	95.658		
2,200.00	2,200.00	2,237.00	2,237.00	7.65	7.79	89.43	9.89	995.82	995.87	984.95	10.92	91.216		
2,300.00	2,300.00	2,337.00	2,337.00	8.01	8.14	89.43	9.89	995.82	995.87	984.44	11.42	87.169		
2,400.00	2,400.00	2,437.00	2,437.00	8.37	8.50	89.43	9.89	995.82	995.87	983.94	11.93	83.465		
2,500.00	2,500.00	2,537.00	2,537.00	8.73	8.86	89.43	9.89	995.82	995.87	983.43	12.44	80.063		
2,600.00	2,600.00	2,637.00	2,637.00	9.09	9.22	89.43	9.89	995.82	995.87	982.92	12.95	76.928		
2,700.00	2,700.00	2,737.00	2,737.00	9.45	9.58	89.43	9.89	995.82	995.87	982.42	13.45	74.029		
2,800.00	2,800.00	2,837.00	2,837.00	9.80	9.94	89.43	9.89	995.82	995.87	981.91	13.96	71.341		
2,900.00	2,900.00	2,937.00	2,937.00	10.16	10.30	89.43	9.89	995.82	995.87	981.40	14.47	68.841		
3,000.00	3,000.00	3,037.00	3,037.00	10.52	10.65	89.43	9.89	995.82	995.87	980.90	14.97	66.510		
3,100.00	3,100.00	3,137.00	3,137.00	10.88	11.01	89.43	9.89	995.82	995.87	980.39	15.48	64.332		
3,107.09	3,107.09	3,144.09	3,144.09	10.91	11.04	89.43	9.89	995.82	995.87	980.35	15.52	64.183 CC		
3,200.00	3,200.00	3,229.35	3,229.35	11.24	11.34	89.43	9.89	995.93	996.01	980.05	15.97	62.386 ES		
3,300.00	3,299.99	3,300.00	3,299.99	11.59	11.59	179.43	9.89	997.13	999.17	982.79	16.38	61.008		
3,400.00	3,399.91	3,387.56	3,387.49	11.93	11.89	179.43	9.89	1,000.42	1,006.92	990.10	16.82	59.857		
3,500.00	3,499.69	3,465.98	3,465.77	12.27	12.16	179.44	9.89	1,005.08	1,019.37	1,002.14	17.23	59.146		
3,599.90	3,599.17	3,543.55	3,543.09	12.62	12.43	179.44	9.89	1,011.26	1,036.41	1,018.77	17.64	58.759		
3,700.00	3,698.72	3,620.48	3,619.63	12.97	12.69	179.45	9.89	1,018.94	1,056.76	1,038.72	18.03	58.599		
3,800.00	3,798.17	3,700.00	3,698.57	13.32	12.97	179.46	9.89	1,028.50	1,079.05	1,060.62	18.43	58.537		
3,900.00	3,897.63	3,783.30	3,781.08	13.68	13.27	179.47	9.89	1,039.95	1,103.01	1,084.16	18.85	58.522		
4,000.00	3,997.08	3,880.33	3,877.16	14.04	13.62	179.48	9.89	1,053.46	1,127.20	1,107.88	19.32	58.336		
4,100.00	4,096.53	3,977.36	3,973.25	14.40	13.97	179.49	9.89	1,066.96	1,151.39	1,131.59	19.80	58.153		
4,200.00	4,195.98	4,074.39	4,069.33	14.76	14.32	179.50	9.89	1,080.47	1,175.59	1,155.31	20.28	57.974		
4,300.00	4,295.44	4,171.42	4,165.42	15.12	14.68	179.51	9.89	1,093.98	1,199.78	1,179.02	20.76	57.800		
4,400.00	4,394.89	4,268.44	4,261.50	15.49	15.04	179.52	9.89	1,107.49	1,223.97	1,202.73	21.24	57.630		
4,500.00	4,494.34	4,365.47	4,357.59	15.85	15.40	179.53	9.89	1,121.00	1,248.17	1,226.44	21.72	57.464		
4,600.00	4,593.79	4,462.50	4,453.67	16.22	15.77	179.54	9.89	1,134.50	1,272.36	1,250.15	22.20	57.303		
4,700.00	4,693.25	4,559.53	4,549.76	16.59	16.13	179.55	9.89	1,148.01	1,296.55	1,273.86	22.69	57.145		
4,800.00	4,792.70	4,656.56	4,645.84	16.96	16.50	179.56	9.89	1,161.52	1,320.74	1,297.57	23.17	56.992		
4,900.00	4,892.15	4,753.59	4,741.92	17.33	16.87	179.57	9.89	1,175.03	1,344.94	1,321.28	23.66	56.842		
5,000.00	4,991.60	4,850.62	4,838.01	17.70	17.25	179.57	9.89	1,188.53	1,369.13	1,344.98	24.15	56.697		

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



Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well Western Fed Com 601H
Project:	Lea County, NM (NAD83)	TVD Reference:	3284.1' GE + 30' KB @ 3314.10usft
Reference Site:	Western/Bidder 49/KC7	MD Reference:	3284.1' GE + 30' KB @ 3314.10usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Western Fed Com 601H	Survey Calculation Method:	Minimum Curvature
Well 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 Western/Bidder 49/KC7 - KC7 Fed Com 704H - OH - Plan #1													Offset Site Error:	0.00 usft
Survey Program: 0-OWSG (Rev2) MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
5,100.00	5,091.06	4,947.65	4,934.09	18.07	17.62	179.58	9.89	1,202.04	1,393.32	1,368.69	24.64	56.555		
5,200.00	5,190.51	5,044.68	5,030.18	18.45	18.00	179.59	9.89	1,215.55	1,417.52	1,392.39	25.13	56.417		
5,300.00	5,289.96	5,141.71	5,126.26	18.82	18.37	179.59	9.89	1,229.06	1,441.71	1,416.09	25.62	56.282		
5,400.00	5,389.41	5,238.74	5,222.35	19.20	18.75	179.60	9.89	1,242.56	1,465.90	1,439.80	26.11	56.151		
5,500.00	5,488.87	5,335.77	5,318.43	19.58	19.13	179.61	9.89	1,256.07	1,490.09	1,463.50	26.60	56.023		
5,600.00	5,588.32	5,432.80	5,414.52	19.95	19.51	179.61	9.89	1,269.58	1,514.29	1,487.20	27.09	55.899		
5,700.00	5,687.77	5,529.82	5,510.60	20.33	19.89	179.62	9.89	1,283.09	1,538.48	1,510.90	27.58	55.778		
5,800.00	5,787.22	5,626.85	5,606.68	20.71	20.28	179.63	9.89	1,296.59	1,562.67	1,534.60	28.08	55.659		
5,900.00	5,886.68	5,723.88	5,702.77	21.09	20.66	179.63	9.89	1,310.10	1,586.87	1,558.30	28.57	55.544		
6,000.00	5,986.13	5,820.91	5,798.85	21.47	21.05	179.64	9.89	1,323.61	1,611.06	1,582.00	29.06	55.432		
6,100.00	6,085.58	5,917.94	5,894.94	21.85	21.43	179.64	9.89	1,337.12	1,635.25	1,605.69	29.56	55.322		
6,200.00	6,185.03	6,014.97	5,991.02	22.23	21.82	179.65	9.89	1,350.63	1,659.45	1,629.39	30.05	55.215		
6,300.00	6,284.49	6,112.00	6,087.11	22.61	22.21	179.65	9.89	1,364.13	1,683.64	1,653.09	30.55	55.111		
6,400.00	6,383.94	6,209.03	6,183.19	22.99	22.60	179.66	9.89	1,377.64	1,707.83	1,676.79	31.05	55.009		
6,500.00	6,483.39	6,306.06	6,279.28	23.38	22.99	179.66	9.89	1,391.15	1,732.03	1,700.48	31.54	54.910		
6,600.00	6,582.84	6,403.09	6,375.36	23.76	23.38	179.67	9.89	1,404.66	1,756.22	1,724.18	32.04	54.813		
6,700.00	6,682.30	6,500.12	6,471.44	24.14	23.77	179.67	9.89	1,418.16	1,780.41	1,747.87	32.54	54.718		
6,800.00	6,781.75	6,597.15	6,567.53	24.53	24.16	179.68	9.89	1,431.67	1,804.60	1,771.57	33.04	54.626		
6,900.00	6,881.20	6,694.18	6,663.61	24.91	24.55	179.68	9.89	1,445.18	1,828.80	1,795.26	33.53	54.535		
7,000.00	6,980.65	6,791.20	6,759.70	25.29	24.94	179.68	9.89	1,458.69	1,852.99	1,818.96	34.03	54.447		
7,100.00	7,080.11	6,888.23	6,855.78	25.68	25.33	179.69	9.89	1,472.19	1,877.18	1,842.65	34.53	54.360		
7,200.00	7,179.56	6,985.26	6,951.87	26.06	25.73	179.69	9.89	1,485.70	1,901.38	1,866.35	35.03	54.276		
7,300.00	7,279.01	7,082.29	7,047.95	26.45	26.12	179.70	9.89	1,499.21	1,925.57	1,890.04	35.53	54.194		
7,400.00	7,378.46	7,179.32	7,144.03	26.84	26.52	179.70	9.89	1,512.72	1,949.76	1,913.73	36.03	54.113		
7,500.00	7,477.92	7,276.35	7,240.12	27.22	26.91	179.70	9.89	1,526.23	1,973.96	1,937.43	36.53	54.034		
7,600.00	7,577.37	7,373.38	7,336.20	27.61	27.31	179.71	9.89	1,539.73	1,998.15	1,961.12	37.03	53.957		
7,700.00	7,676.82	7,470.41	7,432.29	27.99	27.70	179.71	9.89	1,553.24	2,022.34	1,984.81	37.53	53.881		
7,800.00	7,776.27	7,567.44	7,528.37	28.38	28.10	179.71	9.89	1,566.75	2,046.54	2,008.50	38.03	53.807		
7,900.00	7,875.73	7,664.47	7,624.46	28.77	28.50	179.72	9.89	1,580.26	2,070.73	2,032.19	38.54	53.734		
8,000.00	7,975.18	7,761.50	7,720.54	29.16	28.89	179.72	9.89	1,593.76	2,094.92	2,055.89	39.04	53.663		
8,100.00	8,074.63	7,858.53	7,816.63	29.54	29.29	179.72	9.89	1,607.27	2,119.12	2,079.58	39.54	53.594		
8,200.00	8,174.08	7,955.56	7,912.71	29.93	29.69	179.73	9.89	1,620.78	2,143.31	2,103.27	40.04	53.526		
8,300.00	8,273.54	8,052.58	8,008.79	30.32	30.08	179.73	9.89	1,634.29	2,167.50	2,126.96	40.55	53.459		
8,400.00	8,372.99	8,149.61	8,104.88	30.71	30.48	179.73	9.89	1,647.79	2,191.70	2,150.65	41.05	53.393		
8,500.00	8,472.44	8,246.64	8,200.96	31.09	30.88	179.74	9.89	1,661.30	2,215.89	2,174.34	41.55	53.329		
8,600.00	8,571.89	8,343.67	8,297.05	31.48	31.28	179.74	9.89	1,674.81	2,240.08	2,198.03	42.05	53.266		
8,700.00	8,671.34	8,440.70	8,393.13	31.87	31.68	179.74	9.89	1,688.32	2,264.28	2,221.72	42.56	53.205		
8,800.00	8,770.80	8,537.73	8,489.22	32.26	32.08	179.74	9.89	1,701.83	2,288.47	2,245.41	43.06	53.144		
8,900.00	8,870.25	8,634.76	8,585.30	32.65	32.48	179.75	9.89	1,715.33	2,312.66	2,269.10	43.57	53.085		
9,000.00	8,969.70	8,731.79	8,681.39	33.04	32.88	179.75	9.89	1,728.84	2,336.86	2,292.79	44.07	53.026		
9,100.00	9,069.15	8,828.82	8,777.47	33.43	33.28	179.75	9.89	1,742.35	2,361.05	2,316.48	44.57	52.969		
9,200.00	9,168.61	8,925.85	8,873.55	33.82	33.68	179.76	9.89	1,755.86	2,385.24	2,340.16	45.08	52.913		
9,300.00	9,268.06	9,022.88	8,969.64	34.21	34.08	179.76	9.89	1,769.36	2,409.44	2,363.85	45.58	52.858		
9,343.00	9,310.83	9,064.60	9,010.96	34.38	34.25	179.76	9.89	1,775.17	2,419.84	2,374.04	45.80	52.834		
9,400.00	9,367.55	9,120.01	9,065.82	34.60	34.48	179.76	9.89	1,782.89	2,433.22	2,387.13	46.09	52.794		
9,500.00	9,467.26	9,217.67	9,162.54	34.97	34.88	179.76	9.89	1,796.48	2,454.68	2,408.09	46.59	52.682		
9,600.00	9,567.13	9,315.87	9,259.78	35.34	35.29	179.77	9.89	1,810.15	2,473.58	2,426.48	47.10	52.518		
9,700.00	9,667.09	9,414.52	9,357.47	35.69	35.70	179.77	9.89	1,823.89	2,489.91	2,442.30	47.61	52.302		
9,742.91	9,710.00	9,456.98	9,399.51	35.83	35.87	89.77	9.89	1,829.80	2,496.12	2,448.30	47.82	52.196		
9,800.00	9,767.09	9,513.51	9,455.50	36.03	36.11	89.77	9.89	1,837.67	2,504.07	2,455.96	48.11	52.050		
9,900.00	9,867.09	9,612.54	9,553.56	36.36	36.52	89.77	9.89	1,851.45	2,517.99	2,469.38	48.61	51.799		
10,000.00	9,967.09	9,847.12	9,786.52	36.70	37.45	89.78	9.89	1,878.67	2,530.06	2,480.41	49.65	50.956		

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



Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well Western Fed Com 601H
Project:	Lea County, NM (NAD83)	TVD Reference:	3284.1' GE + 30' KB @ 3314.10usft
Reference Site:	Western/Bidder 49/KC7	MD Reference:	3284.1' GE + 30' KB @ 3314.10usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Western Fed Com 601H	Survey Calculation Method:	Minimum Curvature
Well 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 Western/Bidder 49/KC7 - KC7 Fed Com 704H - OH - Plan #1													Offset Site Error:	0.00 usft
Survey Program: 0-OWSG (Rev2) MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance								Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
10,100.00	10,067.09	10,143.58	10,082.58	37.04	38.51	89.78	9.89	1,892.68	2,534.79	2,484.05	50.74	49.957		
10,200.00	10,167.09	10,265.10	10,204.09	37.37	38.91	89.78	9.89	1,892.82	2,534.84	2,483.56	51.28	49.433		
10,300.00	10,267.09	10,365.10	10,304.09	37.71	39.24	89.78	9.89	1,892.82	2,534.84	2,483.07	51.77	48.967		
10,400.00	10,367.09	10,465.10	10,404.09	38.05	39.56	89.78	9.89	1,892.82	2,534.84	2,482.59	52.25	48.510		
10,500.00	10,467.09	10,565.10	10,504.09	38.39	39.89	89.78	9.89	1,892.82	2,534.84	2,482.10	52.74	48.060		
10,600.00	10,567.09	10,665.10	10,604.09	38.73	40.22	89.78	9.89	1,892.82	2,534.84	2,481.61	53.23	47.619		
10,700.00	10,667.09	10,765.10	10,704.09	39.07	40.55	89.78	9.89	1,892.82	2,534.84	2,481.12	53.72	47.185		
10,800.00	10,767.09	10,865.10	10,804.09	39.41	40.88	89.78	9.89	1,892.82	2,534.84	2,480.63	54.21	46.759		
10,900.00	10,867.09	10,965.10	10,904.09	39.75	41.20	89.78	9.89	1,892.82	2,534.84	2,480.14	54.70	46.340		
11,000.00	10,967.09	11,065.10	11,004.09	40.09	41.53	89.78	9.89	1,892.82	2,534.84	2,479.65	55.19	45.928		
11,100.00	11,067.09	11,165.10	11,104.09	40.43	41.86	89.78	9.89	1,892.82	2,534.84	2,479.16	55.68	45.523		
11,200.00	11,167.09	11,265.10	11,204.09	40.77	42.19	89.78	9.89	1,892.82	2,534.84	2,478.67	56.17	45.126		
11,221.91	11,189.00	11,287.06	11,226.06	40.84	42.27	89.78	9.89	1,892.82	2,534.84	2,478.56	56.28	45.039		
11,250.00	11,217.08	11,315.92	11,254.90	40.94	42.36	90.34	10.72	1,892.81	2,534.84	2,478.42	56.42	44.928		
11,300.00	11,266.85	11,367.27	11,305.98	41.11	42.53	90.34	15.79	1,892.76	2,534.84	2,478.17	56.67	44.733		
11,350.00	11,316.03	11,418.58	11,356.37	41.28	42.69	90.33	25.39	1,892.67	2,534.83	2,477.92	56.91	44.541		
11,400.00	11,364.24	11,469.85	11,405.66	41.44	42.85	90.31	39.45	1,892.53	2,534.83	2,477.68	57.15	44.355		
11,450.00	11,411.12	11,521.07	11,453.44	41.59	43.00	90.30	57.83	1,892.34	2,534.83	2,477.44	57.38	44.173		
11,500.00	11,456.30	11,572.21	11,499.33	41.74	43.15	90.28	80.38	1,892.12	2,534.82	2,477.21	57.62	43.995		
11,550.00	11,499.46	11,623.29	11,542.97	41.88	43.28	90.26	106.88	1,891.86	2,534.82	2,476.98	57.84	43.822		
11,600.00	11,540.24	11,674.28	11,584.01	42.01	43.40	90.24	137.11	1,891.55	2,534.82	2,476.75	58.07	43.653		
11,650.00	11,578.36	11,725.18	11,622.14	42.13	43.51	90.22	170.81	1,891.22	2,534.81	2,476.52	58.29	43.486		
11,700.00	11,613.51	11,775.99	11,657.06	42.24	43.62	90.20	207.69	1,890.85	2,534.81	2,476.29	58.51	43.321		
11,750.00	11,645.43	11,826.69	11,688.52	42.35	43.71	90.17	247.43	1,890.46	2,534.80	2,476.07	58.74	43.156		
11,800.00	11,673.88	11,877.29	11,716.29	42.45	43.80	90.14	289.70	1,890.04	2,534.80	2,475.84	58.96	42.992		
11,850.00	11,698.64	11,927.77	11,740.18	42.56	43.89	90.11	334.15	1,889.59	2,534.80	2,475.61	59.19	42.827		
11,900.00	11,719.52	11,978.14	11,760.02	42.67	43.98	90.08	380.43	1,889.13	2,534.79	2,475.38	59.42	42.661		
11,950.00	11,736.36	12,028.39	11,775.69	42.79	44.08	90.05	428.16	1,888.66	2,534.79	2,475.14	59.65	42.493		
12,000.00	11,749.04	12,078.53	11,787.09	42.92	44.18	90.02	476.96	1,888.17	2,534.79	2,474.90	59.89	42.325		
12,050.00	11,757.45	12,128.54	11,794.18	43.06	44.30	89.99	526.45	1,887.68	2,534.79	2,474.66	60.13	42.155		
12,051.23	11,757.60	12,129.77	11,794.30	43.07	44.30	89.99	527.68	1,887.67	2,534.79	2,474.65	60.14	42.151		
12,100.00	11,761.54	12,178.44	11,796.92	43.22	44.43	89.96	576.26	1,887.19	2,534.79	2,474.42	60.38	41.983		
12,141.44	11,761.62	12,219.79	11,796.15	43.37	44.55	89.94	617.60	1,886.78	2,534.79	2,474.20	60.59	41.835		
12,200.00	11,759.63	12,278.35	11,794.34	43.59	44.75	89.95	676.12	1,886.19	2,534.79	2,473.88	60.92	41.611		
12,300.00	11,756.22	12,378.35	11,791.23	44.02	45.14	89.96	776.07	1,885.20	2,534.79	2,473.25	61.54	41.191		
12,400.00	11,752.81	12,478.35	11,788.12	44.51	45.60	89.96	876.01	1,884.21	2,534.79	2,472.55	62.24	40.725		
12,500.00	11,749.40	12,578.35	11,785.02	45.06	46.12	89.97	975.96	1,883.21	2,534.79	2,471.77	63.02	40.219		
12,600.00	11,745.99	12,678.35	11,781.91	45.66	46.70	89.98	1,075.91	1,882.22	2,534.79	2,470.91	63.88	39.679		
12,700.00	11,742.58	12,778.35	11,778.81	46.31	47.33	89.98	1,175.85	1,881.22	2,534.79	2,469.98	64.81	39.109		
12,800.00	11,739.17	12,878.35	11,775.70	47.02	48.02	89.99	1,275.80	1,880.23	2,534.79	2,468.97	65.81	38.514		
12,900.00	11,735.76	12,978.35	11,772.60	47.77	48.75	90.00	1,375.74	1,879.24	2,534.79	2,467.91	66.88	37.899		
13,000.00	11,732.35	13,078.35	11,769.49	48.56	49.53	90.00	1,475.69	1,878.24	2,534.79	2,466.77	68.01	37.269		
13,100.00	11,728.94	13,178.34	11,766.39	49.40	50.35	90.01	1,575.64	1,877.25	2,534.79	2,465.58	69.21	36.627		
13,200.00	11,725.53	13,278.34	11,763.28	50.28	51.21	90.02	1,675.58	1,876.25	2,534.79	2,464.33	70.46	35.977		
13,300.00	11,722.12	13,378.34	11,760.18	51.19	52.11	90.02	1,775.53	1,875.26	2,534.79	2,463.03	71.76	35.324		
13,400.00	11,718.72	13,478.34	11,757.07	52.14	53.05	90.03	1,875.48	1,874.27	2,534.79	2,461.67	73.11	34.669		
13,500.00	11,715.31	13,578.34	11,753.96	53.13	54.02	90.04	1,975.42	1,873.27	2,534.79	2,460.27	74.52	34.016		
13,600.00	11,711.90	13,678.34	11,750.86	54.15	55.03	90.04	2,075.37	1,872.28	2,534.79	2,458.82	75.97	33.367		
13,700.00	11,708.49	13,778.34	11,747.75	55.20	56.06	90.05	2,175.32	1,871.28	2,534.79	2,457.33	77.46	32.723		
13,800.00	11,705.08	13,878.34	11,744.65	56.27	57.12	90.06	2,275.26	1,870.29	2,534.79	2,455.79	78.99	32.088		
13,858.64	11,703.08	13,936.99	11,742.83	56.92	57.76	90.06	2,333.87	1,869.71	2,534.79	2,454.87	79.92	31.718		
13,900.00	11,701.67	13,978.34	11,741.54	57.38	58.22	90.07	2,375.21	1,869.30	2,534.79	2,454.22	80.57	31.462		

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



Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well Western Fed Com 601H
Project:	Lea County, NM (NAD83)	TVD Reference:	3284.1' GE + 30' KB @ 3314.10usft
Reference Site:	Western/Bidder 49/KC7	MD Reference:	3284.1' GE + 30' KB @ 3314.10usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Western Fed Com 601H	Survey Calculation Method:	Minimum Curvature
Well 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 Western/Bidder 49/KC7 - KC7 Fed Com 704H - OH - Plan #1													Offset Site Error:	0.00 usft
Survey Program: 0-OWSG (Rev2) MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
14,000.00	11,698.26	14,078.34	11,738.44	58.51	59.33	90.07	2,475.15	1,868.30	2,534.79	2,452.61	82.18	30.846		
14,100.00	11,694.85	14,178.34	11,735.33	59.66	60.47	90.08	2,575.10	1,867.31	2,534.79	2,450.97	83.82	30.241		
14,200.00	11,691.44	14,278.34	11,732.23	60.84	61.64	90.09	2,675.05	1,866.31	2,534.79	2,449.29	85.50	29.648		
14,300.00	11,688.03	14,378.34	11,729.12	62.04	62.83	90.09	2,774.99	1,865.32	2,534.79	2,447.59	87.20	29.068		
14,400.00	11,684.62	14,478.34	11,726.02	63.26	64.03	90.10	2,874.94	1,864.32	2,534.79	2,445.85	88.94	28.501		
14,500.00	11,681.21	14,578.34	11,722.91	64.50	65.26	90.11	2,974.89	1,863.33	2,534.79	2,444.09	90.70	27.948		
14,600.00	11,677.80	14,678.34	11,719.80	65.76	66.50	90.11	3,074.83	1,862.34	2,534.79	2,442.30	92.49	27.407		
14,700.00	11,674.39	14,778.34	11,716.70	67.03	67.77	90.12	3,174.78	1,861.34	2,534.79	2,440.49	94.30	26.881		
14,800.00	11,670.98	14,878.34	11,713.59	68.32	69.04	90.13	3,274.73	1,860.35	2,534.79	2,438.66	96.13	26.368		
14,900.00	11,667.57	14,978.34	11,710.49	69.63	70.34	90.13	3,374.67	1,859.35	2,534.79	2,436.80	97.99	25.869		
15,000.00	11,664.16	15,078.34	11,707.38	70.95	71.65	90.14	3,474.62	1,858.36	2,534.79	2,434.93	99.86	25.383		
15,100.00	11,660.76	15,178.34	11,704.28	72.28	72.97	90.15	3,574.56	1,857.37	2,534.79	2,433.03	101.76	24.910		
15,200.00	11,657.35	15,278.34	11,701.17	73.63	74.31	90.15	3,674.51	1,856.37	2,534.79	2,431.12	103.67	24.451		
15,300.00	11,653.94	15,378.33	11,698.07	74.99	75.66	90.16	3,774.46	1,855.38	2,534.79	2,429.19	105.60	24.004		
15,400.00	11,650.53	15,478.33	11,694.96	76.36	77.02	90.17	3,874.40	1,854.38	2,534.79	2,427.25	107.55	23.570		
15,500.00	11,647.12	15,578.33	11,691.86	77.74	78.39	90.17	3,974.35	1,853.39	2,534.79	2,425.29	109.51	23.147		
15,600.00	11,643.71	15,678.33	11,688.75	79.13	79.77	90.18	4,074.30	1,852.40	2,534.79	2,423.31	111.48	22.737		
15,700.00	11,640.30	15,778.33	11,685.64	80.53	81.16	90.19	4,174.24	1,851.40	2,534.79	2,421.32	113.47	22.339		
15,800.00	11,636.89	15,878.33	11,682.54	81.94	82.56	90.20	4,274.19	1,850.41	2,534.79	2,419.32	115.47	21.951		
15,900.00	11,633.48	15,978.33	11,679.43	83.36	83.97	90.20	4,374.14	1,849.41	2,534.79	2,417.31	117.49	21.575		
16,000.00	11,630.07	16,078.33	11,676.33	84.79	85.39	90.21	4,474.08	1,848.42	2,534.80	2,415.28	119.52	21.209		
16,100.00	11,626.66	16,178.33	11,673.22	86.23	86.82	90.22	4,574.03	1,847.43	2,534.80	2,413.24	121.55	20.853		
16,200.00	11,623.25	16,278.33	11,670.12	87.67	88.26	90.22	4,673.97	1,846.43	2,534.80	2,411.20	123.60	20.508		
16,300.00	11,619.84	16,378.33	11,667.01	89.12	89.70	90.23	4,773.92	1,845.44	2,534.80	2,409.14	125.66	20.172		
16,400.00	11,616.43	16,478.33	11,663.91	90.58	91.15	90.24	4,873.87	1,844.44	2,534.80	2,407.07	127.73	19.845		
16,500.00	11,613.02	16,578.33	11,660.80	92.04	92.61	90.24	4,973.81	1,843.45	2,534.80	2,404.99	129.81	19.528		
16,600.00	11,609.61	16,678.33	11,657.70	93.51	94.07	90.25	5,073.76	1,842.46	2,534.80	2,402.91	131.89	19.219		
16,700.00	11,606.20	16,778.33	11,654.59	94.99	95.54	90.26	5,173.71	1,841.46	2,534.80	2,400.82	133.99	18.919		
16,800.00	11,602.79	16,878.33	11,651.48	96.47	97.02	90.26	5,273.65	1,840.47	2,534.80	2,398.72	136.09	18.626		
16,900.00	11,599.39	16,978.33	11,648.38	97.96	98.50	90.27	5,373.60	1,839.47	2,534.80	2,396.61	138.20	18.342		
17,000.00	11,595.98	17,078.33	11,645.27	99.45	99.98	90.28	5,473.55	1,838.48	2,534.80	2,394.49	140.31	18.065		
17,100.00	11,592.57	17,178.33	11,642.17	100.95	101.47	90.28	5,573.49	1,837.49	2,534.81	2,392.37	142.44	17.796		
17,200.00	11,589.16	17,278.33	11,639.06	102.45	102.97	90.29	5,673.44	1,836.49	2,534.81	2,390.24	144.57	17.534		
17,300.00	11,585.75	17,378.33	11,635.96	103.96	104.47	90.30	5,773.38	1,835.50	2,534.81	2,388.10	146.70	17.278		
17,400.00	11,582.34	17,478.32	11,632.85	105.47	105.98	90.31	5,873.33	1,834.50	2,534.81	2,385.96	148.85	17.030		
17,500.00	11,578.93	17,578.32	11,629.75	106.99	107.49	90.31	5,973.28	1,833.51	2,534.81	2,383.82	150.99	16.787		
17,600.00	11,575.52	17,678.32	11,626.64	108.51	109.00	90.32	6,073.22	1,832.52	2,534.81	2,381.66	153.15	16.551		
17,700.00	11,572.11	17,778.32	11,623.54	110.03	110.52	90.33	6,173.17	1,831.52	2,534.81	2,379.51	155.31	16.321		
17,800.00	11,568.70	17,878.32	11,620.43	111.56	112.04	90.33	6,273.12	1,830.53	2,534.82	2,377.34	157.47	16.097		
17,900.00	11,565.29	17,978.32	11,617.32	113.09	113.57	90.34	6,373.06	1,829.53	2,534.82	2,375.18	159.64	15.878		
18,000.00	11,561.88	18,078.32	11,614.22	114.62	115.09	90.35	6,473.01	1,828.54	2,534.82	2,373.00	161.81	15.665		
18,100.00	11,558.47	18,178.32	11,611.11	116.16	116.63	90.35	6,572.96	1,827.54	2,534.82	2,370.83	163.99	15.457		
18,200.00	11,555.06	18,278.32	11,608.01	117.70	118.16	90.36	6,672.90	1,826.55	2,534.82	2,368.65	166.17	15.254		
18,300.00	11,551.65	18,378.32	11,604.90	119.25	119.70	90.37	6,772.85	1,825.56	2,534.82	2,366.46	168.36	15.056		
18,400.00	11,548.24	18,478.32	11,601.80	120.79	121.24	90.37	6,872.79	1,824.56	2,534.82	2,364.27	170.55	14.862		
18,500.00	11,544.83	18,578.32	11,598.69	122.34	122.79	90.38	6,972.74	1,823.57	2,534.83	2,362.08	172.75	14.674		
18,600.00	11,541.42	18,678.32	11,595.59	123.89	124.33	90.39	7,072.69	1,822.57	2,534.83	2,359.88	174.94	14.489		
18,700.00	11,538.02	18,778.32	11,592.48	125.45	125.88	90.39	7,172.63	1,821.58	2,534.83	2,357.68	177.15	14.309		
18,800.00	11,534.61	18,878.32	11,589.37	127.00	127.44	90.40	7,272.58	1,820.59	2,534.83	2,355.48	179.35	14.133		
18,900.00	11,531.20	18,978.32	11,586.27	128.56	128.99	90.41	7,372.53	1,819.59	2,534.83	2,353.27	181.56	13.961		
19,000.00	11,527.79	19,078.32	11,583.16	130.13	130.55	90.42	7,472.47	1,818.60	2,534.84	2,351.06	183.77	13.793		
19,100.00	11,524.38	19,178.32	11,580.06	131.69	132.11	90.42	7,572.42	1,817.60	2,534.84	2,348.85	185.99	13.629		

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



Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well Western Fed Com 601H
Project:	Lea County, NM (NAD83)	TVD Reference:	3284.1' GE + 30' KB @ 3314.10usft
Reference Site:	Western/Bidder 49/KC7	MD Reference:	3284.1' GE + 30' KB @ 3314.10usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Western Fed Com 601H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.15 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 0-OWSG (Rev2) MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
19,200.00	11,520.97	19,278.32	11,576.95	133.25	133.67	90.43	7,672.37	1,816.61	2,534.84	2,346.64	188.20	13.469		
19,300.00	11,517.56	19,378.32	11,573.85	134.82	135.24	90.44	7,772.31	1,815.62	2,534.84	2,344.42	190.42	13.312		
19,400.00	11,514.15	19,478.32	11,570.74	136.39	136.80	90.44	7,872.26	1,814.62	2,534.84	2,342.20	192.65	13.158		
19,500.00	11,510.74	19,578.32	11,567.64	137.96	138.37	90.45	7,972.20	1,813.63	2,534.84	2,339.97	194.87	13.008		
19,600.00	11,507.33	19,678.31	11,564.53	139.54	139.94	90.46	8,072.15	1,812.63	2,534.85	2,337.75	197.10	12.861		
19,700.00	11,503.92	19,778.31	11,561.43	141.11	141.51	90.46	8,172.10	1,811.64	2,534.85	2,335.52	199.33	12.717		
19,800.00	11,500.51	19,878.31	11,558.32	142.69	143.09	90.47	8,272.04	1,810.65	2,534.85	2,333.29	201.57	12.576		
19,900.00	11,497.10	19,978.31	11,555.21	144.27	144.66	90.48	8,371.99	1,809.65	2,534.85	2,331.05	203.80	12.438		
20,000.00	11,493.69	20,078.31	11,552.11	145.85	146.24	90.48	8,471.94	1,808.66	2,534.86	2,328.82	206.04	12.303		
20,100.00	11,490.28	20,178.31	11,549.00	147.43	147.82	90.49	8,571.88	1,807.66	2,534.86	2,326.58	208.28	12.171		
20,200.00	11,486.87	20,278.31	11,545.90	149.02	149.40	90.50	8,671.83	1,806.67	2,534.86	2,324.34	210.52	12.041		
20,300.00	11,483.46	20,378.31	11,542.79	150.60	150.98	90.50	8,771.78	1,805.68	2,534.86	2,322.10	212.76	11.914		
20,400.00	11,480.06	20,478.31	11,539.69	152.19	152.56	90.51	8,871.72	1,804.68	2,534.86	2,319.85	215.01	11.789		
20,500.00	11,476.65	20,578.31	11,536.58	153.78	154.15	90.52	8,971.67	1,803.69	2,534.87	2,317.61	217.26	11.668		
20,600.00	11,473.24	20,678.31	11,533.48	155.37	155.73	90.53	9,071.61	1,802.69	2,534.87	2,315.36	219.51	11.548		
20,700.00	11,469.83	20,778.31	11,530.37	156.96	157.32	90.53	9,171.56	1,801.70	2,534.87	2,313.11	221.76	11.431		
20,800.00	11,466.42	20,878.31	11,527.27	158.55	158.91	90.54	9,271.51	1,800.71	2,534.87	2,310.86	224.01	11.316		
20,900.00	11,463.01	20,978.31	11,524.16	160.14	160.50	90.55	9,371.45	1,799.71	2,534.88	2,308.61	226.27	11.203		
21,000.00	11,459.60	21,078.31	11,521.05	161.74	162.09	90.55	9,471.40	1,798.72	2,534.88	2,306.35	228.52	11.092		
21,100.00	11,456.19	21,178.31	11,517.95	163.33	163.69	90.56	9,571.35	1,797.72	2,534.88	2,304.10	230.78	10.984		
21,200.00	11,452.78	21,278.31	11,514.84	164.93	165.28	90.57	9,671.29	1,796.73	2,534.89	2,301.84	233.04	10.877		
21,300.00	11,449.37	21,378.31	11,511.74	166.53	166.88	90.57	9,771.24	1,795.74	2,534.89	2,299.58	235.30	10.773		
21,400.00	11,445.96	21,478.31	11,508.63	168.12	168.47	90.58	9,871.19	1,794.74	2,534.89	2,297.32	237.57	10.670		
21,500.00	11,442.55	21,578.31	11,505.53	169.72	170.07	90.59	9,971.13	1,793.75	2,534.89	2,295.06	239.83	10.569		
21,600.00	11,439.14	21,678.31	11,502.42	171.33	171.67	90.59	10,071.08	1,792.75	2,534.90	2,292.80	242.10	10.471		
21,700.00	11,435.73	21,778.31	11,499.32	172.93	173.27	90.60	10,171.02	1,791.76	2,534.90	2,290.54	244.36	10.373		
21,800.00	11,432.32	21,878.30	11,496.21	174.53	174.87	90.61	10,270.97	1,790.77	2,534.90	2,288.27	246.63	10.278		
21,900.00	11,428.91	21,978.30	11,493.11	176.13	176.47	90.61	10,370.92	1,789.77	2,534.90	2,286.00	248.90	10.184		
22,000.00	11,425.50	22,078.30	11,490.00	177.74	178.07	90.62	10,470.86	1,788.78	2,534.91	2,283.74	251.17	10.092		
22,100.00	11,422.09	22,178.30	11,486.89	179.34	179.67	90.63	10,570.81	1,787.78	2,534.91	2,281.47	253.44	10.002		
22,200.00	11,418.69	22,278.30	11,483.79	180.95	181.28	90.64	10,670.76	1,786.79	2,534.91	2,279.20	255.72	9.913		
22,200.10	11,418.68	22,278.41	11,483.79	180.95	181.28	90.64	10,670.86	1,786.79	2,534.91	2,279.20	255.72	9.913		
22,218.63	11,418.05	22,288.25	11,483.48	181.22	181.44	90.64	10,680.70	1,786.69	2,534.93	2,278.91	256.02	9.901 SF		

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



Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well Western Fed Com 601H
Project:	Lea County, NM (NAD83)	TVD Reference:	3284.1' GE + 30' KB @ 3314.10usft
Reference Site:	Western/Bidder 49/KC7	MD Reference:	3284.1' GE + 30' KB @ 3314.10usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Western Fed Com 601H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.15 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 0-OWSG (Rev2) MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
0.00	0.00	0.60	0.60	0.00	0.00	89.44	0.34	34.99	34.99					
100.00	100.00	100.60	100.60	0.13	0.13	89.44	0.34	34.99	34.99	34.81	0.18	195.526		
200.00	200.00	200.60	200.60	0.48	0.49	89.44	0.34	34.99	34.99	34.31	0.69	51.015		
300.00	300.00	300.60	300.60	0.84	0.84	89.44	0.34	34.99	34.99	33.80	1.19	29.334		
400.00	400.00	400.60	400.60	1.20	1.20	89.44	0.34	34.99	34.99	33.29	1.70	20.585		
500.00	500.00	500.60	500.60	1.56	1.56	89.44	0.34	34.99	34.99	32.78	2.21	15.856		
600.00	600.00	600.60	600.60	1.92	1.92	89.44	0.34	34.99	34.99	32.28	2.71	12.894		
700.00	700.00	700.60	700.60	2.28	2.28	89.44	0.34	34.99	34.99	31.77	3.22	10.865		
800.00	800.00	800.60	800.60	2.63	2.64	89.44	0.34	34.99	34.99	31.26	3.73	9.387		
900.00	900.00	900.60	900.60	2.99	3.00	89.44	0.34	34.99	34.99	30.76	4.23	8.263		
1,000.00	1,000.00	1,000.60	1,000.60	3.35	3.35	89.44	0.34	34.99	34.99	30.25	4.74	7.380		
1,100.00	1,100.00	1,100.60	1,100.60	3.71	3.71	89.44	0.34	34.99	34.99	29.74	5.25	6.667		
1,200.00	1,200.00	1,200.60	1,200.60	4.07	4.07	89.44	0.34	34.99	34.99	29.24	5.76	6.080		
1,300.00	1,300.00	1,300.60	1,300.60	4.43	4.43	89.44	0.34	34.99	34.99	28.73	6.26	5.588		
1,400.00	1,400.00	1,400.60	1,400.60	4.79	4.79	89.44	0.34	34.99	34.99	28.22	6.77	5.169		
1,500.00	1,500.00	1,500.60	1,500.60	5.14	5.15	89.44	0.34	34.99	34.99	27.72	7.28	4.809		
1,600.00	1,600.00	1,600.60	1,600.60	5.50	5.50	89.44	0.34	34.99	34.99	27.21	7.78	4.496		
1,700.00	1,700.00	1,700.60	1,700.60	5.86	5.86	89.44	0.34	34.99	34.99	26.70	8.29	4.221		
1,800.00	1,800.00	1,800.60	1,800.60	6.22	6.22	89.44	0.34	34.99	34.99	26.19	8.80	3.978		
1,900.00	1,900.00	1,900.60	1,900.60	6.58	6.58	89.44	0.34	34.99	34.99	25.69	9.30	3.761		
2,000.00	2,000.00	2,000.60	2,000.60	6.94	6.94	89.44	0.34	34.99	34.99	25.18	9.81	3.567		
2,100.00	2,100.00	2,100.60	2,100.60	7.29	7.30	89.44	0.34	34.99	34.99	24.67	10.32	3.391		
2,200.00	2,200.00	2,200.60	2,200.60	7.65	7.66	89.44	0.34	34.99	34.99	24.17	10.83	3.232		
2,300.00	2,300.00	2,300.60	2,300.60	8.01	8.01	89.44	0.34	34.99	34.99	23.66	11.33	3.088		
2,400.00	2,400.00	2,400.60	2,400.60	8.37	8.37	89.44	0.34	34.99	34.99	23.15	11.84	2.956		
2,500.00	2,500.00	2,500.60	2,500.60	8.73	8.73	89.44	0.34	34.99	34.99	22.65	12.35	2.834		
2,600.00	2,600.00	2,600.60	2,600.60	9.09	9.09	89.44	0.34	34.99	34.99	22.14	12.85	2.722		
2,700.00	2,700.00	2,700.60	2,700.60	9.45	9.45	89.44	0.34	34.99	34.99	21.63	13.36	2.619		
2,800.00	2,800.00	2,800.60	2,800.60	9.80	9.81	89.44	0.34	34.99	34.99	21.12	13.87	2.523		
2,900.00	2,900.00	2,900.60	2,900.60	10.16	10.16	89.44	0.34	34.99	34.99	20.62	14.37	2.434		
3,000.00	3,000.00	3,000.60	3,000.60	10.52	10.52	89.44	0.34	34.99	34.99	20.11	14.88	2.351		
3,100.00	3,100.00	3,100.60	3,100.60	10.88	10.88	89.44	0.34	34.99	34.99	19.60	15.39	2.274		
3,200.00	3,200.00	3,200.60	3,200.60	11.24	11.24	89.44	0.34	34.99	34.99	19.10	15.89	2.201	CC, ES, SF	
3,300.00	3,299.99	3,300.59	3,300.59	11.59	11.60	179.46	0.34	34.99	36.30	19.91	16.40	2.214		
3,400.00	3,399.91	3,400.51	3,400.51	11.93	11.96	179.52	0.34	34.99	40.23	23.34	16.89	2.382		
3,500.00	3,499.69	3,500.29	3,500.29	12.27	12.31	179.58	0.34	34.99	46.77	29.38	17.38	2.690		
3,599.90	3,599.17	3,599.77	3,599.77	12.62	12.67	179.65	0.34	34.99	55.91	38.03	17.88	3.127		
3,700.00	3,698.72	3,699.32	3,699.32	12.97	13.03	179.70	0.34	34.99	66.37	47.99	18.37	3.612		
3,800.00	3,798.17	3,798.77	3,798.77	13.32	13.38	179.75	0.34	34.99	76.82	57.95	18.87	4.072		
3,900.00	3,897.63	3,898.23	3,898.23	13.68	13.74	179.78	0.34	34.99	87.27	67.91	19.36	4.507		
4,000.00	3,997.08	3,997.68	3,997.68	14.04	14.10	179.80	0.34	34.99	97.72	77.86	19.86	4.921		
4,100.00	4,096.53	4,097.13	4,097.13	14.40	14.45	179.82	0.34	34.99	108.17	87.81	20.35	5.314		
4,200.00	4,195.98	4,196.58	4,196.58	14.76	14.81	179.83	0.34	34.99	118.62	97.77	20.85	5.689		
4,300.00	4,295.44	4,296.04	4,296.04	15.12	15.17	179.85	0.34	34.99	129.07	107.72	21.35	6.046		
4,400.00	4,394.89	4,395.49	4,395.49	15.49	15.52	179.86	0.34	34.99	139.52	117.67	21.85	6.386		
4,500.00	4,494.34	4,494.94	4,494.94	15.85	15.88	179.87	0.34	34.99	149.97	127.62	22.35	6.711		
4,600.00	4,593.79	4,594.39	4,594.39	16.22	16.24	179.88	0.34	34.99	160.42	137.57	22.84	7.022		
4,700.00	4,693.25	4,693.85	4,693.85	16.59	16.59	179.89	0.34	34.99	170.87	147.52	23.34	7.319		
4,800.00	4,792.70	4,793.30	4,793.30	16.96	16.95	179.89	0.34	34.99	181.32	157.47	23.84	7.604		
4,900.00	4,892.15	4,892.75	4,892.75	17.33	17.31	179.90	0.34	34.99	191.77	167.42	24.35	7.877		
5,000.00	4,991.60	4,992.20	4,992.20	17.70	17.66	179.90	0.34	34.99	202.22	177.37	24.85	8.139		
5,100.00	5,091.06	5,091.66	5,091.66	18.07	18.02	179.91	0.34	34.99	212.67	187.32	25.35	8.390		

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



Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well Western Fed Com 601H
Project:	Lea County, NM (NAD83)	TVD Reference:	3284.1' GE + 30' KB @ 3314.10usft
Reference Site:	Western/Bidder 49/KC7	MD Reference:	3284.1' GE + 30' KB @ 3314.10usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Western Fed Com 601H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.15 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 0-OWSG (Rev2) MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
5,200.00	5,190.51	5,191.11	5,191.11	18.45	18.38	179.91	0.34	34.99	223.12	197.27	25.85	8.631		
5,300.00	5,289.96	5,290.56	5,290.56	18.82	18.73	179.92	0.34	34.99	233.57	207.22	26.35	8.864		
5,400.00	5,389.41	5,390.01	5,390.01	19.20	19.09	179.92	0.34	34.99	244.02	217.17	26.85	9.087		
5,500.00	5,488.87	5,489.47	5,489.47	19.58	19.45	179.92	0.34	34.99	254.47	227.11	27.36	9.302		
5,600.00	5,588.32	5,588.92	5,588.92	19.95	19.80	179.93	0.34	34.99	264.92	237.06	27.86	9.509		
5,700.00	5,687.77	5,688.37	5,688.37	20.33	20.16	179.93	0.34	34.99	275.37	247.01	28.36	9.709		
5,800.00	5,787.22	5,787.82	5,787.82	20.71	20.51	179.93	0.34	34.99	285.82	256.96	28.87	9.902		
5,900.00	5,886.68	5,887.28	5,887.28	21.09	20.87	179.93	0.34	34.99	296.27	266.90	29.37	10.088		
6,000.00	5,986.13	5,986.73	5,986.73	21.47	21.23	179.94	0.34	34.99	306.72	276.85	29.87	10.267		
6,100.00	6,085.58	6,086.18	6,086.18	21.85	21.58	179.94	0.34	34.99	317.17	286.79	30.38	10.441		
6,200.00	6,185.03	6,185.63	6,185.63	22.23	21.94	179.94	0.34	34.99	327.62	296.74	30.88	10.609		
6,300.00	6,284.49	6,285.09	6,285.09	22.61	22.30	179.94	0.34	34.99	338.07	306.69	31.39	10.771		
6,400.00	6,383.94	6,384.54	6,384.54	22.99	22.65	179.94	0.34	34.99	348.52	316.63	31.89	10.929		
6,500.00	6,483.39	6,483.99	6,483.99	23.38	23.01	179.95	0.34	34.99	358.97	326.58	32.40	11.081		
6,600.00	6,582.84	6,583.44	6,583.44	23.76	23.37	179.95	0.34	34.99	369.42	336.52	32.90	11.228		
6,700.00	6,682.30	6,682.90	6,682.90	24.14	23.72	179.95	0.34	34.99	379.87	346.47	33.41	11.371		
6,800.00	6,781.75	6,782.35	6,782.35	24.53	24.08	179.95	0.34	34.99	390.32	356.41	33.91	11.510		
6,900.00	6,881.20	6,881.80	6,881.80	24.91	24.44	179.95	0.34	34.99	400.77	366.36	34.42	11.645		
7,000.00	6,980.65	6,981.25	6,981.25	25.29	24.79	179.95	0.34	34.99	411.22	376.30	34.92	11.775		
7,100.00	7,080.11	7,080.71	7,080.71	25.68	25.15	179.95	0.34	34.99	421.68	386.25	35.43	11.902		
7,200.00	7,179.56	7,180.16	7,180.16	26.06	25.51	179.95	0.34	34.99	432.13	396.19	35.93	12.026		
7,300.00	7,279.01	7,279.61	7,279.61	26.45	25.86	179.96	0.34	34.99	442.58	406.14	36.44	12.145		
7,400.00	7,378.46	7,379.06	7,379.06	26.84	26.22	179.96	0.34	34.99	453.03	416.08	36.95	12.262		
7,500.00	7,477.92	7,478.52	7,478.52	27.22	26.58	179.96	0.34	34.99	463.48	426.02	37.45	12.375		
7,600.00	7,577.37	7,577.97	7,577.97	27.61	26.93	179.96	0.34	34.99	473.93	435.97	37.96	12.485		
7,700.00	7,676.82	7,677.42	7,677.42	27.99	27.29	179.96	0.34	34.99	484.38	445.91	38.46	12.593		
7,800.00	7,776.27	7,776.87	7,776.87	28.38	27.64	179.96	0.34	34.99	494.83	455.86	38.97	12.697		
7,900.00	7,875.73	7,876.33	7,876.33	28.77	28.00	179.96	0.34	34.99	505.28	465.80	39.48	12.799		
8,000.00	7,975.18	7,975.78	7,975.78	29.16	28.36	179.96	0.34	34.99	515.73	475.74	39.98	12.898		
8,100.00	8,074.63	8,075.23	8,075.23	29.54	28.71	179.96	0.34	34.99	526.18	485.69	40.49	12.995		
8,200.00	8,174.08	8,174.68	8,174.68	29.93	29.07	179.96	0.34	34.99	536.63	495.63	41.00	13.089		
8,300.00	8,273.54	8,274.14	8,274.14	30.32	29.43	179.96	0.34	34.99	547.08	505.57	41.51	13.181		
8,400.00	8,372.99	8,373.59	8,373.59	30.71	29.78	179.96	0.34	34.99	557.53	515.52	42.01	13.270		
8,500.00	8,472.44	8,473.04	8,473.04	31.09	30.14	179.97	0.34	34.99	567.98	525.46	42.52	13.358		
8,600.00	8,571.89	8,572.49	8,572.49	31.48	30.50	179.97	0.34	34.99	578.43	535.40	43.03	13.443		
8,700.00	8,671.34	8,671.94	8,671.94	31.87	30.85	179.97	0.34	34.99	588.88	545.34	43.53	13.527		
8,800.00	8,770.80	8,771.40	8,771.40	32.26	31.21	179.97	0.34	34.99	599.33	555.29	44.04	13.608		
8,900.00	8,870.25	8,870.85	8,870.85	32.65	31.57	179.97	0.34	34.99	609.78	565.23	44.55	13.688		
9,000.00	8,969.70	8,970.30	8,970.30	33.04	31.92	179.97	0.34	34.99	620.23	575.17	45.06	13.765		
9,100.00	9,069.15	9,069.75	9,069.75	33.43	32.28	179.97	0.34	34.99	630.68	585.12	45.57	13.841		
9,200.00	9,168.61	9,169.21	9,169.21	33.82	32.64	179.97	0.34	34.99	641.13	595.06	46.07	13.916		
9,300.00	9,268.06	9,268.66	9,268.66	34.21	32.99	179.97	0.34	34.99	651.58	605.00	46.58	13.988		
9,343.00	9,310.83	9,311.43	9,311.43	34.38	33.15	179.97	0.34	34.99	656.08	609.28	46.80	14.019		
9,400.00	9,367.55	9,368.15	9,368.15	34.60	33.35	179.97	0.34	34.99	661.61	614.52	47.09	14.050		
9,500.00	9,467.26	9,467.86	9,467.86	34.97	33.71	179.97	0.34	34.99	669.27	621.67	47.60	14.062		
9,600.00	9,567.13	9,567.73	9,567.73	35.34	34.06	179.97	0.34	34.99	674.32	626.22	48.10	14.019		
9,700.00	9,667.09	9,667.69	9,667.69	35.69	34.42	179.97	0.34	34.99	676.75	628.14	48.61	13.923		
9,742.91	9,710.00	9,710.60	9,710.60	35.83	34.58	89.97	0.34	34.99	676.99	628.17	48.82	13.867		
9,800.00	9,767.09	9,767.69	9,767.69	36.03	34.78	89.97	0.34	34.99	676.99	627.89	49.10	13.787		
9,900.00	9,867.09	9,867.69	9,867.69	36.36	35.14	89.97	0.34	34.99	676.99	627.39	49.60	13.648		
10,000.00	9,967.09	9,967.69	9,967.69	36.70	35.50	89.97	0.34	34.99	676.99	626.89	50.10	13.512		
10,100.00	10,067.09	10,067.69	10,067.69	37.04	35.86	89.97	0.34	34.99	676.99	626.39	50.60	13.379		

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



Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well Western Fed Com 601H
Project:	Lea County, NM (NAD83)	TVD Reference:	3284.1' GE + 30' KB @ 3314.10usft
Reference Site:	Western/Bidder 49/KC7	MD Reference:	3284.1' GE + 30' KB @ 3314.10usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Western Fed Com 601H	Survey Calculation Method:	Minimum Curvature
Well 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 Western/Bidder 49/KC7 - Western Fed Com 702H - OH - Plan #1													Offset Site Error:	0.00 usft
Survey Program: 0-OWSG (Rev2) MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
10,200.00	10,167.09	10,167.69	10,167.69	37.37	36.22	89.97	0.34	34.99	676.99	625.89	51.10	13.248		
10,300.00	10,267.09	10,267.69	10,267.69	37.71	36.57	89.97	0.34	34.99	676.99	625.39	51.60	13.120		
10,400.00	10,367.09	10,367.69	10,367.69	38.05	36.93	89.97	0.34	34.99	676.99	624.89	52.10	12.995		
10,500.00	10,467.09	10,467.69	10,467.69	38.39	37.29	89.97	0.34	34.99	676.99	624.39	52.60	12.871		
10,600.00	10,567.09	10,567.69	10,567.69	38.73	37.65	89.97	0.34	34.99	676.99	623.89	53.10	12.750		
10,700.00	10,667.09	10,667.69	10,667.69	39.07	38.01	89.97	0.34	34.99	676.99	623.39	53.60	12.631		
10,800.00	10,767.09	10,767.69	10,767.69	39.41	38.37	89.97	0.34	34.99	676.99	622.89	54.10	12.515		
10,900.00	10,867.09	10,867.69	10,867.69	39.75	38.72	89.97	0.34	34.99	676.99	622.39	54.60	12.400		
11,000.00	10,967.09	10,967.69	10,967.69	40.09	39.08	89.97	0.34	34.99	676.99	621.89	55.10	12.288		
11,100.00	11,067.09	11,067.69	11,067.69	40.43	39.44	89.97	0.34	34.99	676.99	621.39	55.60	12.177		
11,200.00	11,167.09	11,167.69	11,167.69	40.77	39.80	89.97	0.34	34.99	676.99	620.89	56.10	12.068		
11,221.91	11,189.00	11,189.60	11,189.60	40.84	39.88	89.97	0.34	34.99	676.99	620.78	56.21	12.045		
11,250.00	11,217.08	11,217.68	11,217.68	40.94	39.98	90.60	0.34	34.99	677.00	620.65	56.35	12.015		
11,300.00	11,266.85	11,267.45	11,267.45	41.11	40.16	90.98	0.34	34.99	677.06	620.47	56.60	11.963		
11,350.00	11,316.03	11,316.80	11,316.80	41.28	40.33	91.71	0.36	34.99	677.27	620.43	56.84	11.915		
11,400.00	11,364.24	11,367.99	11,367.90	41.44	40.52	92.58	3.07	34.96	677.68	620.59	57.09	11.869		
11,450.00	11,411.12	11,420.21	11,419.57	41.59	40.70	93.45	10.53	34.89	678.25	620.90	57.35	11.827		
11,500.00	11,456.30	11,473.52	11,471.39	41.74	40.88	94.30	22.95	34.76	678.95	621.36	57.59	11.789		
11,550.00	11,499.46	11,527.95	11,522.87	41.88	41.07	95.13	40.55	34.59	679.78	621.95	57.83	11.754		
11,600.00	11,540.24	11,583.52	11,573.47	42.01	41.25	95.92	63.48	34.36	680.71	622.65	58.06	11.723		
11,650.00	11,578.36	11,640.23	11,622.57	42.13	41.43	96.67	91.81	34.07	681.71	623.43	58.28	11.697		
11,700.00	11,613.51	11,698.08	11,669.52	42.24	41.61	97.37	125.56	33.73	682.74	624.26	58.48	11.674		
11,750.00	11,645.43	11,757.03	11,713.62	42.35	41.79	98.02	164.65	33.34	683.77	625.10	58.67	11.654		
11,800.00	11,673.88	11,817.03	11,754.13	42.45	41.97	98.60	208.86	32.90	684.76	625.90	58.85	11.635		
11,850.00	11,698.64	11,877.98	11,790.32	42.56	42.16	99.10	257.87	32.40	685.66	626.63	59.03	11.615		
11,900.00	11,719.52	11,939.78	11,821.50	42.67	42.35	99.52	311.19	31.87	686.46	627.24	59.21	11.593		
11,950.00	11,736.36	12,002.29	11,847.01	42.79	42.54	99.85	368.22	31.30	687.10	627.69	59.41	11.566		
12,000.00	11,749.04	12,065.35	11,866.29	42.92	42.74	100.09	428.22	30.69	687.57	627.95	59.62	11.532		
12,050.00	11,757.45	12,128.76	11,878.92	43.06	42.94	100.23	490.33	30.07	687.84	627.98	59.86	11.490		
12,100.00	11,761.54	12,192.35	11,884.62	43.22	43.15	100.26	553.63	29.43	687.91	627.77	60.14	11.439		
12,141.44	11,761.62	12,242.11	11,884.27	43.37	43.32	100.23	603.37	28.93	687.83	627.45	60.38	11.392		
12,200.00	11,759.63	12,300.67	11,882.30	43.59	43.54	100.23	661.89	28.35	687.83	627.13	60.69	11.333		
12,300.00	11,756.22	12,400.67	11,878.94	44.02	43.96	100.23	761.83	27.34	687.82	626.52	61.30	11.220		
12,400.00	11,752.81	12,500.67	11,875.57	44.51	44.43	100.24	861.76	26.34	687.82	625.83	61.99	11.096		
12,500.00	11,749.40	12,600.67	11,872.21	45.06	44.97	100.24	961.70	25.34	687.82	625.06	62.76	10.960		
12,600.00	11,745.99	12,700.67	11,868.84	45.66	45.56	100.24	1,061.64	24.33	687.82	624.22	63.59	10.816		
12,700.00	11,742.58	12,800.67	11,865.48	46.31	46.19	100.25	1,161.58	23.33	687.82	623.31	64.51	10.663		
12,800.00	11,739.17	12,900.67	11,862.12	47.02	46.88	100.25	1,261.52	22.32	687.82	622.33	65.48	10.503		
12,900.00	11,735.76	13,000.67	11,858.75	47.77	47.62	100.26	1,361.46	21.32	687.81	621.28	66.53	10.338		
13,000.00	11,732.35	13,100.67	11,855.39	48.56	48.40	100.26	1,461.39	20.32	687.81	620.18	67.64	10.169		
13,100.00	11,728.94	13,200.67	11,852.03	49.40	49.22	100.26	1,561.33	19.31	687.81	619.01	68.80	9.997		
13,200.00	11,725.53	13,300.67	11,848.66	50.28	50.09	100.27	1,661.27	18.31	687.81	617.78	70.03	9.822		
13,300.00	11,722.12	13,400.67	11,845.30	51.19	50.99	100.27	1,761.21	17.31	687.81	616.50	71.30	9.646		
13,400.00	11,718.72	13,500.67	11,841.93	52.14	51.94	100.28	1,861.15	16.30	687.81	615.18	72.63	9.470		
13,500.00	11,715.31	13,600.67	11,838.57	53.13	52.91	100.28	1,961.09	15.30	687.80	613.80	74.00	9.294		
13,600.00	11,711.90	13,700.67	11,835.21	54.15	53.92	100.28	2,061.02	14.30	687.80	612.38	75.42	9.119		
13,700.00	11,708.49	13,800.67	11,831.84	55.20	54.96	100.29	2,160.96	13.29	687.80	610.91	76.89	8.946		
13,800.00	11,705.08	13,900.67	11,828.48	56.27	56.03	100.29	2,260.90	12.29	687.80	609.41	78.39	8.774		
13,900.00	11,701.67	14,000.67	11,825.12	57.38	57.13	100.29	2,360.84	11.28	687.80	607.87	79.93	8.605		
14,000.00	11,698.26	14,100.67	11,821.75	58.51	58.25	100.30	2,460.78	10.28	687.79	606.29	81.51	8.438		
14,100.00	11,694.85	14,200.67	11,818.39	59.66	59.40	100.30	2,560.72	9.28	687.79	604.68	83.12	8.275		
14,200.00	11,691.44	14,300.67	11,815.02	60.84	60.57	100.31	2,660.65	8.27	687.79	603.03	84.76	8.115		

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



Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well Western Fed Com 601H
Project:	Lea County, NM (NAD83)	TVD Reference:	3284.1' GE + 30' KB @ 3314.10usft
Reference Site:	Western/Bidder 49/KC7	MD Reference:	3284.1' GE + 30' KB @ 3314.10usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Western Fed Com 601H	Survey Calculation Method:	Minimum Curvature
Well 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 Western/Bidder 49/KC7 - Western Fed Com 702H - OH - Plan #1													Offset Site Error:	0.00 usft
Survey Program: 0-OWSG (Rev2) MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
14,300.00	11,688.03	14,400.67	11,811.66	62.04	61.76	100.31	2,760.59	7.27	687.79	601.36	86.43	7.958		
14,400.00	11,684.62	14,500.67	11,808.30	63.26	62.98	100.31	2,860.53	6.27	687.79	599.66	88.13	7.804		
14,500.00	11,681.21	14,600.67	11,804.93	64.50	64.21	100.32	2,960.47	5.26	687.79	597.93	89.86	7.654		
14,600.00	11,677.80	14,700.67	11,801.57	65.76	65.46	100.32	3,060.41	4.26	687.78	596.17	91.61	7.508		
14,700.00	11,674.39	14,800.67	11,798.21	67.03	66.73	100.33	3,160.35	3.26	687.78	594.40	93.39	7.365		
14,800.00	11,670.98	14,900.67	11,794.84	68.32	68.02	100.33	3,260.28	2.25	687.78	592.60	95.19	7.226		
14,900.00	11,667.57	15,000.67	11,791.48	69.63	69.32	100.33	3,360.22	1.25	687.78	590.77	97.01	7.090		
15,000.00	11,664.16	15,100.67	11,788.11	70.95	70.64	100.34	3,460.16	0.24	687.78	588.93	98.85	6.958		
15,100.00	11,660.76	15,200.67	11,784.75	72.28	71.97	100.34	3,560.10	-0.76	687.78	587.07	100.70	6.830		
15,200.00	11,657.35	15,300.67	11,781.39	73.63	73.31	100.35	3,660.04	-1.76	687.78	585.19	102.58	6.705		
15,300.00	11,653.94	15,400.67	11,778.02	74.99	74.67	100.35	3,759.98	-2.77	687.77	583.30	104.47	6.583		
15,400.00	11,650.53	15,500.67	11,774.66	76.36	76.04	100.35	3,859.91	-3.77	687.77	581.39	106.38	6.465		
15,500.00	11,647.12	15,600.67	11,771.29	77.74	77.41	100.36	3,959.85	-4.77	687.77	579.47	108.30	6.350		
15,600.00	11,643.71	15,700.67	11,767.93	79.13	78.80	100.36	4,059.79	-5.78	687.77	577.53	110.24	6.239		
15,700.00	11,640.30	15,800.67	11,764.57	80.53	80.20	100.36	4,159.73	-6.78	687.77	575.57	112.19	6.130		
15,800.00	11,636.89	15,900.67	11,761.20	81.94	81.61	100.37	4,259.67	-7.78	687.77	573.61	114.16	6.025		
15,900.00	11,633.48	16,000.67	11,757.84	83.36	83.03	100.37	4,359.61	-8.79	687.76	571.63	116.13	5.922		
16,000.00	11,630.07	16,100.67	11,754.48	84.79	84.46	100.38	4,459.55	-9.79	687.76	569.64	118.12	5.823		
16,100.00	11,626.66	16,200.67	11,751.11	86.23	85.89	100.38	4,559.48	-10.80	687.76	567.64	120.12	5.726		
16,200.00	11,623.25	16,300.67	11,747.75	87.67	87.33	100.38	4,659.42	-11.80	687.76	565.63	122.13	5.631		
16,300.00	11,619.84	16,400.67	11,744.38	89.12	88.78	100.39	4,759.36	-12.80	687.76	563.61	124.15	5.540		
16,400.00	11,616.43	16,500.67	11,741.02	90.58	90.24	100.39	4,859.30	-13.81	687.76	561.58	126.17	5.451		
16,500.00	11,613.02	16,600.67	11,737.66	92.04	91.70	100.40	4,959.24	-14.81	687.75	559.54	128.21	5.364		
16,600.00	11,609.61	16,700.67	11,734.29	93.51	93.17	100.40	5,059.18	-15.81	687.75	557.50	130.26	5.280		
16,700.00	11,606.20	16,800.67	11,730.93	94.99	94.65	100.40	5,159.11	-16.82	687.75	555.44	132.31	5.198		
16,800.00	11,602.79	16,900.67	11,727.57	96.47	96.13	100.41	5,259.05	-17.82	687.75	553.38	134.37	5.118		
16,900.00	11,599.39	17,000.67	11,724.20	97.96	97.61	100.41	5,358.99	-18.82	687.75	551.31	136.44	5.041		
17,000.00	11,595.98	17,100.67	11,720.84	99.45	99.11	100.42	5,458.93	-19.83	687.75	549.23	138.51	4.965		
17,100.00	11,592.57	17,200.67	11,717.47	100.95	100.60	100.42	5,558.87	-20.83	687.74	547.15	140.59	4.892		
17,200.00	11,589.16	17,300.67	11,714.11	102.45	102.10	100.42	5,658.81	-21.84	687.74	545.06	142.68	4.820		
17,300.00	11,585.75	17,400.67	11,710.75	103.96	103.61	100.43	5,758.74	-22.84	687.74	542.97	144.78	4.750		
17,400.00	11,582.34	17,500.67	11,707.38	105.47	105.12	100.43	5,858.68	-23.84	687.74	540.86	146.88	4.682		
17,500.00	11,578.93	17,600.67	11,704.02	106.99	106.64	100.44	5,958.62	-24.85	687.74	538.76	148.98	4.616		
17,600.00	11,575.52	17,700.67	11,700.66	108.51	108.16	100.44	6,058.56	-25.85	687.74	536.65	151.09	4.552		
17,700.00	11,572.11	17,800.67	11,697.29	110.03	109.68	100.44	6,158.50	-26.85	687.74	534.53	153.21	4.489		
17,800.00	11,568.70	17,900.67	11,693.93	111.56	111.21	100.45	6,258.44	-27.86	687.73	532.41	155.33	4.428		
17,900.00	11,565.29	18,000.67	11,690.56	113.09	112.74	100.45	6,358.37	-28.86	687.73	530.28	157.45	4.368		
18,000.00	11,561.88	18,100.67	11,687.20	114.62	114.27	100.45	6,458.31	-29.86	687.73	528.15	159.58	4.310		
18,100.00	11,558.47	18,200.67	11,683.84	116.16	115.81	100.46	6,558.25	-30.87	687.73	526.02	161.71	4.253		
18,200.00	11,555.06	18,300.67	11,680.47	117.70	117.35	100.46	6,658.19	-31.87	687.73	523.88	163.85	4.197		
18,300.00	11,551.65	18,400.67	11,677.11	119.25	118.89	100.47	6,758.13	-32.88	687.73	521.74	165.99	4.143		
18,400.00	11,548.24	18,500.67	11,673.74	120.79	120.43	100.47	6,858.07	-33.88	687.72	519.59	168.14	4.090		
18,500.00	11,544.83	18,600.67	11,670.38	122.34	121.98	100.47	6,958.00	-34.88	687.72	517.44	170.28	4.039		
18,600.00	11,541.42	18,700.67	11,667.02	123.89	123.53	100.48	7,057.94	-35.89	687.72	515.29	172.43	3.988		
18,700.00	11,538.02	18,800.67	11,663.65	125.45	125.09	100.48	7,157.88	-36.89	687.72	513.13	174.59	3.939		
18,800.00	11,534.61	18,900.67	11,660.29	127.00	126.64	100.49	7,257.82	-37.89	687.72	510.97	176.75	3.891		
18,900.00	11,531.20	19,000.67	11,656.93	128.56	128.20	100.49	7,357.76	-38.90	687.72	508.81	178.91	3.844		
19,000.00	11,527.79	19,100.67	11,653.56	130.13	129.76	100.49	7,457.70	-39.90	687.72	506.64	181.07	3.798		
19,100.00	11,524.38	19,200.67	11,650.20	131.69	131.33	100.50	7,557.63	-40.90	687.71	504.48	183.24	3.753		
19,200.00	11,520.97	19,300.67	11,646.83	133.25	132.89	100.50	7,657.57	-41.91	687.71	502.31	185.41	3.709		
19,300.00	11,517.56	19,400.67	11,643.47	134.82	134.46	100.51	7,757.51	-42.91	687.71	500.13	187.58	3.666		
19,400.00	11,514.15	19,500.67	11,640.11	136.39	136.03	100.51	7,857.45	-43.92	687.71	497.96	189.75	3.624		

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



Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well Western Fed Com 601H
Project:	Lea County, NM (NAD83)	TVD Reference:	3284.1' GE + 30' KB @ 3314.10usft
Reference Site:	Western/Bidder 49/KC7	MD Reference:	3284.1' GE + 30' KB @ 3314.10usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Western Fed Com 601H	Survey Calculation Method:	Minimum Curvature
Well 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 Western/Bidder 49/KC7 - Western Fed Com 702H - OH - Plan #1													Offset Site Error:	0.00 usft
Survey Program: 0-OWSG (Rev2) MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
19,500.00	11,510.74	19,600.67	11,636.74	137.96	137.60	100.51	7,957.39	-44.92	687.71	495.78	191.93	3.583		
19,600.00	11,507.33	19,700.67	11,633.38	139.54	139.18	100.52	8,057.33	-45.92	687.71	493.60	194.11	3.543		
19,700.00	11,503.92	19,800.67	11,630.02	141.11	140.75	100.52	8,157.26	-46.93	687.70	491.42	196.29	3.504		
19,800.00	11,500.51	19,900.67	11,626.65	142.69	142.33	100.52	8,257.20	-47.93	687.70	489.23	198.47	3.465		
19,900.00	11,497.10	20,000.67	11,623.29	144.27	143.91	100.53	8,357.14	-48.93	687.70	487.05	200.65	3.427		
20,000.00	11,493.69	20,100.67	11,619.92	145.85	145.49	100.53	8,457.08	-49.94	687.70	484.86	202.84	3.390		
20,100.00	11,490.28	20,200.67	11,616.56	147.43	147.07	100.54	8,557.02	-50.94	687.70	482.67	205.03	3.354		
20,200.00	11,486.87	20,300.67	11,613.20	149.02	148.65	100.54	8,656.96	-51.94	687.70	480.48	207.22	3.319		
20,300.00	11,483.46	20,400.67	11,609.83	150.60	150.24	100.54	8,756.89	-52.95	687.70	478.29	209.41	3.284		
20,400.00	11,480.06	20,500.67	11,606.47	152.19	151.82	100.55	8,856.83	-53.95	687.69	476.09	211.60	3.250		
20,500.00	11,476.65	20,600.67	11,603.11	153.78	153.41	100.55	8,956.77	-54.96	687.69	473.90	213.79	3.217		
20,600.00	11,473.24	20,700.67	11,599.74	155.37	155.00	100.56	9,056.71	-55.96	687.69	471.70	215.99	3.184		
20,700.00	11,469.83	20,800.67	11,596.38	156.96	156.59	100.56	9,156.65	-56.96	687.69	469.50	218.19	3.152		
20,800.00	11,466.42	20,900.67	11,593.01	158.55	158.18	100.56	9,256.59	-57.97	687.69	467.30	220.39	3.120		
20,900.00	11,463.01	21,000.67	11,589.65	160.14	159.78	100.57	9,356.52	-58.97	687.69	465.10	222.59	3.090		
21,000.00	11,459.60	21,100.67	11,586.29	161.74	161.37	100.57	9,456.46	-59.97	687.69	462.90	224.79	3.059		
21,100.00	11,456.19	21,200.67	11,582.92	163.33	162.97	100.58	9,556.40	-60.98	687.68	460.69	226.99	3.030		
21,200.00	11,452.78	21,300.67	11,579.56	164.93	164.56	100.58	9,656.34	-61.98	687.68	458.49	229.19	3.000		
21,300.00	11,449.37	21,400.67	11,576.20	166.53	166.16	100.58	9,756.28	-62.98	687.68	456.28	231.40	2.972		
21,400.00	11,445.96	21,500.67	11,572.83	168.12	167.76	100.59	9,856.22	-63.99	687.68	454.08	233.60	2.944		
21,500.00	11,442.55	21,600.67	11,569.47	169.72	169.36	100.59	9,956.15	-64.99	687.68	451.87	235.81	2.916		
21,600.00	11,439.14	21,700.67	11,566.10	171.33	170.96	100.59	10,056.09	-66.00	687.68	449.66	238.02	2.889		
21,700.00	11,435.73	21,800.67	11,562.74	172.93	172.56	100.60	10,156.03	-67.00	687.68	447.45	240.23	2.863		
21,800.00	11,432.32	21,900.67	11,559.38	174.53	174.16	100.60	10,255.97	-68.00	687.67	445.24	242.43	2.837		
21,900.00	11,428.91	22,000.67	11,556.01	176.13	175.77	100.61	10,355.91	-69.01	687.67	443.03	244.64	2.811		
22,000.00	11,425.50	22,100.67	11,552.65	177.74	177.37	100.61	10,455.85	-70.01	687.67	440.82	246.85	2.786		
22,100.00	11,422.09	22,200.67	11,549.28	179.34	178.98	100.61	10,555.79	-71.01	687.67	438.60	249.07	2.761		
22,200.00	11,418.69	22,300.67	11,545.92	180.95	180.58	100.62	10,655.72	-72.02	687.67	436.39	251.28	2.737		
22,211.98	11,418.28	22,312.65	11,545.52	181.13	180.78	100.62	10,667.70	-72.14	687.67	436.14	251.53	2.734		
22,218.63	11,418.05	22,312.88	11,545.51	181.22	180.78	100.62	10,667.93	-72.14	687.70	436.20	251.50	2.734		

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



Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well Western Fed Com 601H
Project:	Lea County, NM (NAD83)	TVD Reference:	3284.1' GE + 30' KB @ 3314.10usft
Reference Site:	Western/Bidder 49/KC7	MD Reference:	3284.1' GE + 30' KB @ 3314.10usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Western Fed Com 601H	Survey Calculation Method:	Minimum Curvature
Well 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 3284.1' GE + 30' KB @ 3314.10usft

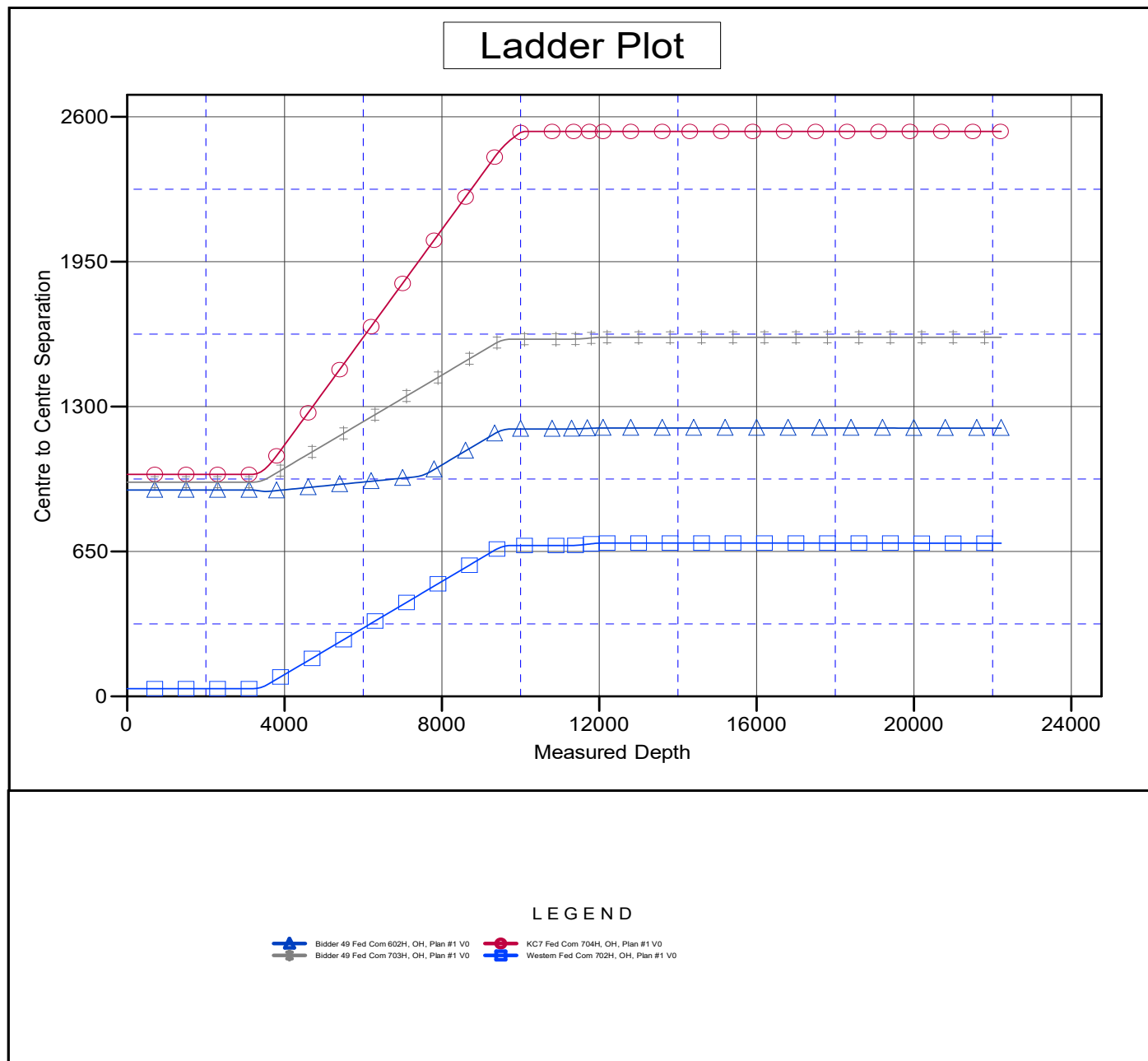
Offset Depths are relative to Offset Datum

Central Meridian is -104.333334

Coordinates are relative to: Western Fed Com 601H

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

Grid Convergence at Surface is: 0.54°



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



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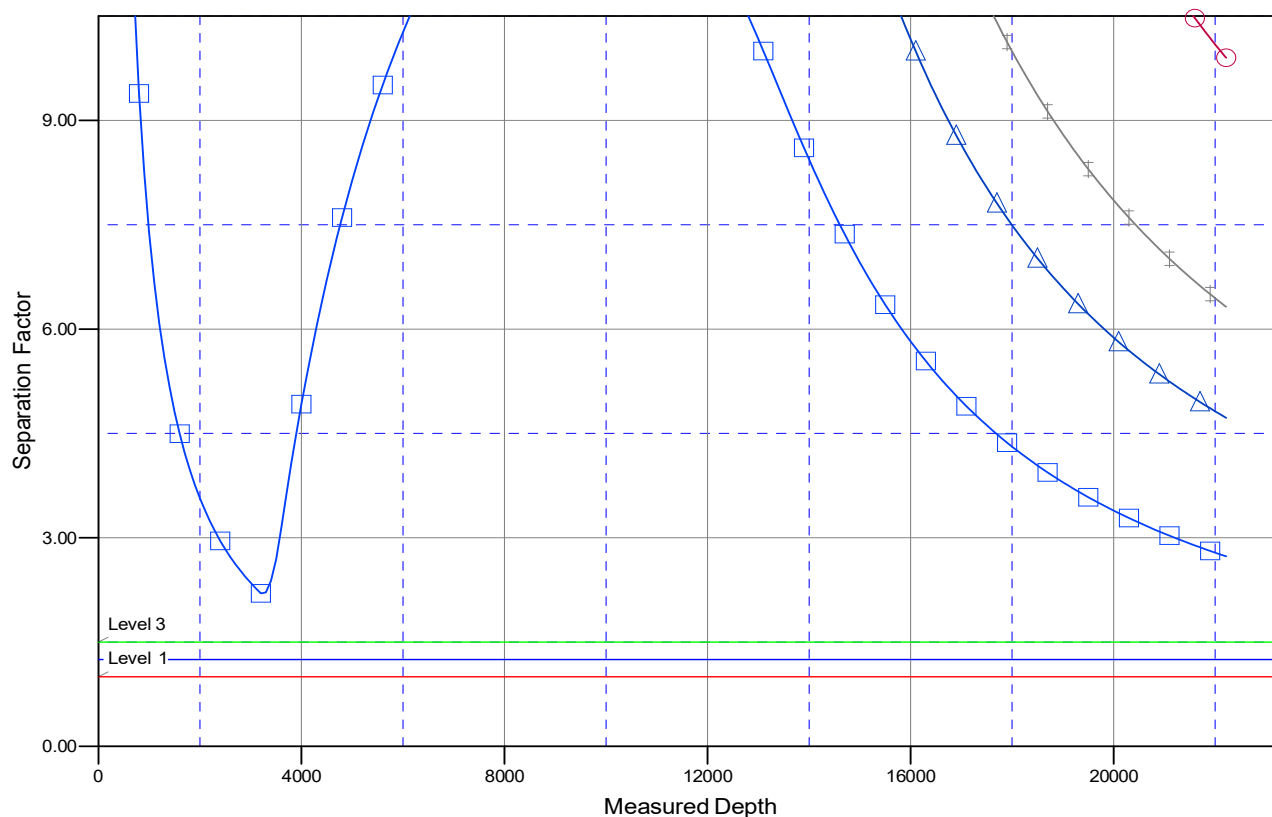
Central Meridian is -104.333334

Coordinates are relative to: Western Fed Com 601H

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

Grid Convergence at Surface is: 0.54°

Separation Factor Plot



LEGEND

- Bidder 49 Fed Com 602H, OH, Plan #1 V0
- KC7 Fed Com 704H, OH, Plan #1 V0
- Bidder 49 Fed Com 703H, OH, Plan #1 V0
- Western Fed Com 702H, OH, Plan #1 V0

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

PECOS DISTRICT SURFACE USE CONDITIONS OF APPROVAL

OPERATOR'S NAME: WELL NAME & NO.: SURFACE HOLE FOOTAGE: BOTTOM HOLE FOOTAGE: SURFACE LOCATION: COUNTY:	FRANKLIN MOUNTAIN ENERGY LLC WESTERN FED COM 601H 250'/N & 1241'/W 150'/N & 600'/W Section 1, T.25 S., R.35 E., NMP Lea County, New Mexico
OPERATOR'S NAME: WELL NAME & NO.: SURFACE HOLE FOOTAGE: BOTTOM HOLE FOOTAGE: SURFACE LOCATION: COUNTY:	FRANKLIN MOUNTAIN ENERGY LLC WESTERN FED COM 702H 250'/N & 1276'/W 150'/N & 1276'/W Section 1, T.25 S., R.35 E., NMP Lea County, New Mexico
OPERATOR'S NAME: WELL NAME & NO.: SURFACE HOLE FOOTAGE: BOTTOM HOLE FOOTAGE: SURFACE LOCATION: COUNTY:	FRANKLIN MOUNTAIN ENERGY LLC BIDDER 49 FED COM 602H 250'/N & 2167'/W 150'/N & 1800'/W Section 1, T.25 S., R.35 E., NMP Lea County, New Mexico
OPERATOR'S NAME: WELL NAME & NO.: SURFACE HOLE FOOTAGE: BOTTOM HOLE FOOTAGE: SURFACE LOCATION: COUNTY:	FRANKLIN MOUNTAIN ENERGY LLC BIDDER 49 FED COM 703H 250'/N & 2202'/W 150'/N & 2202'/W Section 1, T.25 S., R.35 E., NMP Lea County, New Mexico
OPERATOR'S NAME: WELL NAME & NO.: SURFACE HOLE FOOTAGE: BOTTOM HOLE FOOTAGE: SURFACE LOCATION: COUNTY:	FRANKLIN MOUNTAIN ENERGY LLC KC7 FED COM 704H 250'/N & 2237'/W 150'/N & 2152'/E Section 1, T.25 S., R.35 E., NMP Lea County, New Mexico

TABLE OF CONTENTS

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

- ☐ **General Provisions**
- ☐ **Permit Expiration**
- ☐ **Archaeology, Paleontology, and Historical Sites**
- ☐ **Noxious Weeds**
- ☒ **Special Requirements**
 - Lesser Prairie-Chicken Timing Stipulations
 - Ground-level Abandoned Well Marker
 - Hydrology
- ☐ **Construction**
 - Notification
 - Topsoil
 - Closed Loop System
 - Well Pads
 - Roads
- ☐ **Road Section Diagram**
- ☐ **Production (Post Drilling)**
 - Well Structures & Facilities
- ☐ **Interim Reclamation**
- ☐ **Final Abandonment & Reclamation**

I. GENERAL PROVISIONS

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

II. PERMIT EXPIRATION

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

III. ARCHAEOLOGICAL, PALEONTOLOGY & HISTORICAL SITES

Any cultural and/or paleontological resource discovered by the operator or by any person working on the operator's behalf shall immediately report such findings to the Authorized Officer. The operator is fully accountable for the actions of their contractors and subcontractors. The operator shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery shall be made by the Authorized Officer to determine the appropriate actions that shall be required to prevent the loss of significant cultural or scientific values of the discovery. The operator shall be held responsible for the cost of the proper mitigation measures that the Authorized Officer assesses after consultation with the operator on the evaluation and decisions of the discovery. Any unauthorized collection or disturbance of cultural or paleontological resources may result in a shutdown order by the Authorized Officer.

IV. NOXIOUS WEEDS

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

V. SPECIAL REQUIREMENT(S)

Chicken stips Only applies to the western fed com pad.

Timing Limitation Stipulation / Condition of Approval for lesser prairie-chicken:

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

Timing Limitation Exceptions:

The Carlsbad Field Office will publish an annual map of where the LPC timing and noise stipulations and conditions of approval (Limitations) will apply for the identified year (between March 1 and June 15) based on the latest survey information. The LPC Timing Area map will identify areas which are Habitat Areas (HA), Isolated Population Area (IPA), and Primary Population Area (PPA). The LPC Timing Area map will also have an area in red crosshatch. The red crosshatch area is the only area where an operator is required to submit a request for exception to the LPC Limitations. If an operator is operating outside the red crosshatch area, the LPC Limitations do not apply for that year and an exception to LPC Limitations is not required.

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

Everything else applies to every pad.

Hydrology:

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

within the bermed area, the fluid must be vacuumed into a safe container and disposed of properly at a state approved facility.

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

Any water erosion that may occur due to the construction of overhead electric line and during the life of the power line will be quickly corrected and proper measures will be taken to prevent future erosion. A power pole should not be placed in drainages, playas, wetlands, riparian areas, or floodplains and must span across the features at a distance away that would not promote further erosion.

Range:

Cattleguards

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

Fence Requirement

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

Livestock Watering Requirement

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

VI. CONSTRUCTION

A. NOTIFICATION

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

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

B. TOPSOIL

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

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

C. CLOSED LOOP SYSTEM

Tanks are required for drilling operations: No Pits.

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

D. FEDERAL MINERAL MATERIALS PIT

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

E. WELL PAD SURFACING

Surfacing of the well pad is not required.

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

F. EXCLOSURE FENCING (CELLARS & PITS)

Exclosure Fencing

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

G. ON LEASE ACCESS ROADS**Road Width**

The access road shall have a driving surface that creates the smallest possible surface disturbance and does not exceed fourteen (24) feet in width. The maximum width of surface disturbance, when constructing the access road, shall not exceed thirty (30) feet.

Surfacing

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

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

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

Crowning

Crowning shall be done on the access road driving surface. The road crown shall have a grade of approximately 2% (i.e., a 1" crown on a 24' wide road). The road shall conform to Figure 1; cross section and plans for typical road construction.

Ditching

Ditching shall be required on both sides of the road.

Turnouts

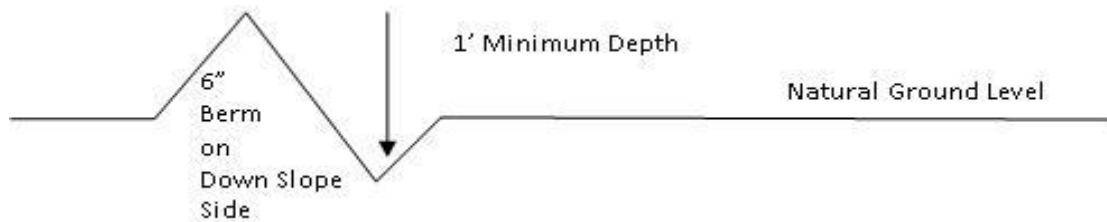
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall conform to Figure 1; cross section and plans for typical road construction.

Drainage

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

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

Cross Section of a Typical Lead-off Ditch



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

Formula for Spacing Interval of Lead-off Ditches

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

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

Cattle guards

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

Fence Requirement

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

Public Access

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

Construction Steps

1. Salvage topsoil
2. Construct road

3. Redistribute topsoil
4. Revegetate slopes



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

VII. PRODUCTION (POST DRILLING)

A. WELL STRUCTURES & FACILITIES

Placement of Production Facilities

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

Exclosure Netting (Open-top Tanks)

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

Chemical and Fuel Secondary Containment and Exclosure Screening

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

Open-Vent Exhaust Stack Exclosures

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

Containment Structures

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

Painting Requirement

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

B. STANDARD STIPULATIONS FOR OIL AND GAS RELATED SITES

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

The holder agrees to comply with the following stipulations to the satisfaction of the Authorized Officer, BLM.

1. The holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant and for all response costs, penalties, damages, claims, and other costs arising from the provisions of the Resource Conservation and Recovery Act (RCRA), 42 U.S.C. Chap. 82, Section 6901 et. seq., from the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), 42 U.S.C. Chap. 109, Section 9601 et. seq., and from other applicable environmental statutes.
2. The holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976, as amended (15 U.S.C. 2601, et. seq.) with regard to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized by this grant. (See 40 CFR, Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR, Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation and Liability Act, Section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the Authorized Officer concurrent with the filing of the reports to the involved Federal agency or State government.
3. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et. seq. or the Resource Conservation and Recovery Act, 42 U.S.C. 6901, et.

seq.) on the right-of-way (unless the release or threatened release is wholly unrelated to the right-of-way holder's activity on the right-of-way). This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.

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

5. Sites shall be maintained in an orderly, sanitary condition at all times. Waste materials, both liquid and solid, shall be disposed of promptly at an appropriate, authorized waste disposal facility in accordance with all applicable State and Federal laws. "Waste" means all discarded matter including, but not limited to, human waste, trash, garbage, refuse, petroleum products, brines, chemicals, oil drums, ashes, and equipment.

6. The operator will notify the Bureau of Land Management (BLM) authorized officer and nearest Fish and Wildlife Service (FWS) Law Enforcement office within 24 hours, if the operator discovers a dead or injured federally protected species (i.e., migratory bird species, bald or golden eagle, or species listed by the FWS as threatened or endangered) in or adjacent to a pit, trench, tank, exhaust stack, or fence. (If the operator is unable to contact the FWS Law Enforcement office, the operator must contact the nearest FWS Ecological Services office.)

7. All above-ground structures not subject to safety requirements shall be painted by the holder to blend with the natural color of the landscape. The paint used shall be a color which simulates "Standard Environmental Colors" designated by the Rocky Mountain Five-State Interagency Committee. The color selected for this project is **Shale Green**, Munsell Soil Color Chart Number 5Y 4/2.

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

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

9. A sales contract for removal of mineral material (caliche, sand, gravel, fill dirt) from an authorized pit, site, or on location must be obtained from the BLM prior to commencing construction. There are several options available for purchasing mineral material: contact the BLM office (575-234-5972).

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

11. Once the site is no longer in service or use, the site must undergo final abandonment. At final abandonment, the site and access roads must undergo "final" reclamation so that the character and productivity of the land are restored. Earthwork for final reclamation must be completed within six (6) months of the abandonment of the site. All pads and facility locations and roads must be reclaimed to a satisfactory revegetated, safe, and stable condition, unless an agreement is made with the landowner or BLM to keep the road and/or pad intact. After all disturbed areas have been satisfactorily prepared, these areas need to be revegetated with the seed mixture provided. Seeding should be accomplished by drilling on the contour whenever practical or by other approved methods. Seeding may need to be repeated until revegetation is successful, as determined by the BLM.

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

12. The holder shall stockpile an adequate amount of topsoil where blading occurs. The topsoil to be stripped is approximately 6 inches in depth. The topsoil will be segregated from other spoil piles. The topsoil will be used for final reclamation.

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

- | | |
|--|--|
| <input type="checkbox"/> seed mixture 1 | <input type="checkbox"/> seed mixture 3 |
| <input checked="" type="checkbox"/> seed mixture 2 | <input type="checkbox"/> seed mixture 4 |
| <input type="checkbox"/> seed mixture 2/LPC | <input type="checkbox"/> Aplomado Falcon Mixture |

14. In those areas where erosion control structures are required to stabilize soil conditions, the holder shall install such structures as are suitable for the specific soil

conditions being encountered and which are in accordance with sound management practices. Any earth work will require prior approval by the Authorized Officer.

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

16. The operator will prevent all hazardous, poisonous, flammable, and toxic substances from coming into contact with soil and water. At a minimum, the operator will install and maintain an

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

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

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

C. BURIED PIPELINE STIPULATIONS

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

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

1. The Holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant.
2. The Holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976 as amended, 15 USC 2601 et seq. (1982) with regards to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant. (See 40 CFR Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation, and Liability Act, section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the authorized officer concurrent with the filing of the reports to the involved Federal agency or State government.
3. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et seq. or the Resource Conservation and Recovery Act, 42 U.S.C. 6901, et seq.) on the Right-of-Way (unless the release or threatened release is wholly unrelated to the Right-of-Way holder's activity on the Right-of-Way), or resulting from the activity of the Right-of-Way holder on the Right-of-Way. This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.
4. If, during any phase of the construction, operation, maintenance, or termination of the pipeline, any oil or other pollutant should be discharged from the pipeline system, impacting Federal lands, the control and total removal, disposal, and cleaning up of such oil or other pollutant, wherever found, shall be the responsibility of holder, regardless of fault. Upon failure of holder to control, dispose of, or clean up such discharge on or affecting Federal lands, or to repair all damages resulting therefrom, on the Federal lands, the Authorized Officer may take such measures as he deems necessary to control and clean up the discharge and restore the area, including where appropriate, the aquatic environment and fish and wildlife habitats, at the full expense of the holder. Such action by the Authorized Officer shall not relieve holder of any responsibility as provided herein.

5. All construction and maintenance activity will be confined to the authorized right-of-way.
6. The pipeline will be buried with a minimum cover of 36 inches between the top of the pipe and ground level.
7. The maximum allowable disturbance for construction in this right-of-way will be 60 feet:
 - Blading of vegetation within the right-of-way will be allowed: maximum width of blading operations will not exceed 50 feet. The trench is included in this area. (*Blading is defined as the complete removal of brush and ground vegetation.*)
 - Clearing of brush species within the right-of-way will be allowed: maximum width of clearing operations will not exceed 50 feet. The trench and bladed area are included in this area. (*Clearing is defined as the removal of brush while leaving ground vegetation (grasses, weeds, etc.) intact. Clearing is best accomplished by holding the blade 4 to 6 inches above the ground surface.*)
 - The remaining area of the right-of-way (if any) shall only be disturbed by compressing the vegetation. (*Compressing can be caused by vehicle tires, placement of equipment, etc.*)
8. The holder shall stockpile an adequate amount of topsoil where blading is allowed. The topsoil to be stripped is approximately 6 inches in depth. The topsoil will be segregated from other spoil piles from trench construction. The topsoil will be evenly distributed over the bladed area for the preparation of seeding.
9. The holder shall minimize disturbance to existing fences and other improvements on public lands. The holder is required to promptly repair improvements to at least their former state. Functional use of these improvements will be maintained at all times. The holder will contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting of the fence. No permanent gates will be allowed unless approved by the Authorized Officer.
10. Vegetation, soil, and rocks left as a result of construction or maintenance activity will be randomly scattered on this right-of-way and will not be left in rows, piles, or berms, unless otherwise approved by the Authorized Officer. The entire right-of-way shall be recontoured to match the surrounding landscape. The backfilled soil shall be compacted and a 6 inch berm will be left over the ditch line to allow for settling back to grade.
11. In those areas where erosion control structures are required to stabilize soil conditions, the holder will install such structures as are suitable for the specific soil conditions being encountered and which are in accordance with sound resource management practices.

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

- | | |
|--|--|
| <input type="checkbox"/> seed mixture 1 | <input type="checkbox"/> seed mixture 3 |
| <input checked="" type="checkbox"/> seed mixture 2 | <input type="checkbox"/> seed mixture 4 |
| <input type="checkbox"/> seed mixture 2/LPC | <input type="checkbox"/> Aplomado Falcon Mixture |

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

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

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

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

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

18. Escape Ramps - The operator will construct and maintain pipeline/utility trenches that are not otherwise fenced, screened, or netted to prevent livestock, wildlife, and humans from becoming entrapped. At a minimum, the operator will construct and maintain escape ramps, ladders, or

other methods of avian and terrestrial wildlife escape in the trenches according to the following criteria:

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

19. Special Stipulations:

Lesser Prairie-Chicken

Oil and gas activities will not be allowed in lesser prairie-chicken habitat during the period from March 1st through June 15th annually. During that period, other activities that produce noise or involve human activity, such as the maintenance of oil and gas facilities, geophysical exploration other than 3-D operations, and pipeline, road, and well pad construction, will be allowed except between 3:00 am and 9:00 am. The 3:00 am to 9:00 am restriction will not apply to normal, around-the-clock operations, such as venting, flaring, or pumping, which do not require a human presence during this period. Normal vehicle use on existing roads will not be restricted. Exhaust noise from pump jack engines must be muffled or otherwise controlled so as not to exceed 75 db measured at 30 ft. from the source of the noise.

This authorization is subject to your Certificate of Participation and/or Certificate of Inclusion under the New Mexico Candidate Conservation Agreement. Because it involves surface disturbing activities covered under your Certificate, your Habitat Conservation Fund Account with the Center of Excellence for Hazardous Materials Management (CEHMM) will be debited according to Exhibit B Part 2 of the Certificate of Participation.

D.

STANDARD STIPULATIONS FOR OVERHEAD ELECTRIC DISTRIBUTION LINES

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

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

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

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

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

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

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

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

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

7. The BLM serial number assigned to this authorization shall be posted in a permanent,

conspicuous manner where the power line crosses roads and at all serviced facilities. Numbers will be at least two inches high and will be affixed to the pole nearest the road crossing and at the facilities served.

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

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

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

11. Special Stipulations:

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

VIII. INTERIM RECLAMATION

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

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

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

loss of vegetation, the area will need to be revegetated. Communicate with the appropriate BLM office for any exceptions/exemptions if needed.

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

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

IX. FINAL ABANDONMENT & RECLAMATION

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

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

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

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

Seed Mixture 2, for Sandy Sites

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

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

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

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

*Pounds of pure live seed:

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

PECOS DISTRICT DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Franklin Mountain Energy LLC
LEASE NO.:	NMNM138897
WELL NAME & NO.:	Western Fed Com 601H
SURFACE HOLE FOOTAGE:	250'N & 1241'W
BOTTOM HOLE FOOTAGE:	150'N & 600'W
LOCATION:	Section 1, T.25 S., R.35 E., NMPM
COUNTY:	Lea County, New Mexico

COA

H2S	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	
Potash	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Secretary	<input type="checkbox"/> R-111-P
Cave/Karst Potential	<input checked="" type="checkbox"/> Low	<input type="checkbox"/> Medium	<input type="checkbox"/> High
Cave/Karst Potential	<input type="checkbox"/> Critical		
Variance	<input type="checkbox"/> None	<input checked="" type="checkbox"/> Flex Hose	<input type="checkbox"/> Other
Wellhead	<input type="checkbox"/> Conventional	<input checked="" type="checkbox"/> Multibowl	<input type="checkbox"/> Both
Other	<input checked="" type="checkbox"/> 4 String Area	<input checked="" type="checkbox"/> Capitan Reef	<input type="checkbox"/> WIPP
Other	<input checked="" type="checkbox"/> Fluid Filled	<input type="checkbox"/> Cement Squeeze	<input type="checkbox"/> Pilot Hole
Special Requirements	<input type="checkbox"/> Water Disposal	<input checked="" type="checkbox"/> COM	<input type="checkbox"/> 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 **1335 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.
Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst, potash or capitan reef.

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

3. The minimum required fill of cement behind the **7-5/8** inch intermediate casing is:
- Cement should tie-back at least **50 feet** on top of Capitan Reef top **or 200 feet** into the previous casing, whichever is greater. If cement does not circulate see B.1.a, c-d above.
Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst, potash or capitan reef.
Cement excess is less than 25%, more cement might be required.
- ❖ In Capitan Reef Areas if cement does not circulate to surface on the first two casing strings, the cement on the 3rd casing string must come to surface.
- ❖ **Special Capitan Reef requirements.** If lost circulation (50% or greater) occurs below the Base of the Salt, the operator shall do the following:
- Switch to fresh water mud to protect the Capitan Reef and use fresh water mud until setting the intermediate casing. The appropriate BLM office is to be notified for a PET to witness the switch to fresh water.
 - Daily drilling reports from the Base of the Salt to the setting of the intermediate casing are to be submitted to the BLM CFO engineering staff via e-mail by 0800 hours each morning. Any lost circulation encountered is to be recorded on these drilling reports. The daily drilling report should show mud volume per shift/tour. Failure to submit these reports will result in an Incidence of Non-Compliance being issued for failure to comply with the Conditions of Approval. If not already planned, the operator shall run a caliper survey for the intermediate well bore and submit to the appropriate BLM office.

4. The minimum required fill of cement behind the **5-1/2** inch production casing is:

- Cement should tie-back at least **200 feet** into previous casing string. Operator shall provide method of verification.

C. PRESSURE CONTROL

1. Variance approved to use flex line from BOP to choke manifold. Manufacturer's specification to be readily available. No external damage to flex line. Flex line to be installed as straight as possible (no hard bends).'
2. 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 **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.



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



Western Fed Com 601H

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)	3,284'	30'	30'	0	Sand/Gravels/unconsolidated
Rustler	2,056'	1,258'			Carbonates
Salado	1,938'	1,376'			Salt, Carbonate & Clastics
Base Salt	-213'	3,527'			Shaley Carbonate & Shale
Lamar	-1,778'	5,092'			Carbonate & Clastics
Bell Canyon	-1,836'	5,150'			Sandstone - oil/gas/water
Cherry Canyon	-2,724'	6,038'			Sandstone - oil/gas/water
Brushy Canyon	-4,145'	7,459'			Sand/carb/shales - oil/gas/water
Bone Spring Lime	-5,420'	8,734'			Shale/Carbonates - oil/gas
Avalon	-5,517'	8,831'			Shale/Carbonates - oil/gas
First Bone Spring Sand	-6,709'	10,023'			Sandstone - oil/gas/water
Second Bone Spring Carbonates	-6,839'	10,153'			Shale/Carbonates - oil/gas
Second Bone Spring Sand	-7,215'	10,529'			Sandstone - oil/gas/water
Third Bone Spring Carbonates	-7,763'	11,077'			Shale/Carbonates - oil/gas
Third Bone Spring Sand	-8,295'	11,609'			Sandstone - oil/gas/water
HZ Target at SHL	-8,467'	11,781'			Overpressure shale/sand- Oil/Gas
Wolfcamp	-8,612'	11,926'			Overpressure shale/sand- Oil/Gas
Wolfcamp A	-8,647'	11,961'			Overpressure Shale - Oil/Gas
Wolfcamp B	-8,839'	12,153'			Overpressure Shale - Oil/Gas

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

Upper Permian Sands	0- 400'	Fresh Water
Delaware Sands	5,150'	Oil
Bone Spring	10,023'	Oil
Wolfcamp	11,926'	Oil

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

4. Casing Program:

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

Casing string	Weight	Grade	Burst	Collapse	Tension	Conn	Length	API design factor			
								Burst	Collapse	Tension	Coupling
Surface 13 3/8"	54.5	J-55	2730	1130	853	BTC 909	1300	1.18	1.67	4.99	5.32
Intermediate 9 5/8"	40	HCL-80	7430	4230	916	BTC 1042	5400	1.72	1.67	2.90	3.30
Intermediate 7 5/8"	29.7	HCP-110	8280	7150	827	Stinger 564	12141	1.09	1.26	1.8	1.22
Long string 5 1/2"	23	P-110	14520	14520	729	Anaconda 656	22218	1.32	1.4	1.19	1.07



Cementing Program:

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

String Type	Hole Size	Casing Size	Setting Depth	Sacks	Type of cmt	Lead Yield 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	795	Extenda Cem, 13.5 ppg Class C, 3lb/sk Kol-Seal	1.747	9.06	0	334	HalCem TM, 14.8 ppg, Class C, 1% CaCl ₂ , 0.125pps Celo-Flake	1.349	6.51	1000	100%
Int1	12.25	9.625	5400	1167	Neocem TM, 11.5 ppg, Class C 5% Salt, 0.125 pps Poly-E-Flake, 3lb/sk Kol-Seal	2.444	14.32	0	153	HalCem TM, 14.8 ppg, Class C, 0.1% HR 800 .125 pps Poly-E-Flake	1.334	6.42	5100	100%
Int2	8.75	7.625	12141	348	NeoCem, 11 ppg, Class C 3lb/sk Bridgemaker Gel, 5% Salt, 5pps LCM, 0.25pps Cello-Flake	2.798	17.15	4400	112	NeoCem 13.2 ppg, Class C 0.25 pps Cello-Flake, 2% CaCl ₂	1.44	7.29	11141	50%
Prod	6.75	5.5	22218	816	NeoCem, 13.5 ppg, Gas Migration Control	1.357	6.65	11141						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' – 12,141'	Brine	8.8-10.2	28-34	N/c
12,141' – 22,218' Lateral	Oil Base	10.0-11.0	58-68	3 - 6

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

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

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

7. Auxiliary well control and monitoring equipment:

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

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

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

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

8. Logging, testing and coring program:

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

Open-hole logs are not planned for this well.

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

The estimated bottom-hole temperature at 11,761' TVD (deepest point of the well) is 195F with an estimated maximum bottom-hole pressure (BHP) at the same point of 7,338 psig (based on 12 ppg MW). Hydrogen sulfate may be present in the area. All necessary precautions will be taken before drilling operations commence. See Hydrogen Sulfide Plan below:

10. Hydrogen Sulfide Plan:

A. All personnel shall receive proper awareness H₂S training.

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

C. Required Emergency Equipment

a. Well Control Equipment

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

ii. Choke manifold with a remotely operated hydraulic choke.

iii. Mud/gas separator

b. Protective equipment for essential personnel

i. Breathing Apparatus

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

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



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

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

11. Anticipated starting date and duration of operations:

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

**12. Disposal/environmental concerns:**

- (A) Drilled cuttings will be hauled to and disposed of in a state-certified disposal site.
- (B) Non-hazardous waste mud/cement from the drilling process will 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.

District I

1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720

District II

811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720

District III

1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170

District IV

1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

CONDITIONS

Action 23277

CONDITIONS OF APPROVAL

Operator:		OGRID:	Action Number:	Action Type:
FRANKLIN MOUNTAIN ENERGY LLC	44 Cook Street	373910	23277	FORM 3160-3
Suite 1000	Denver, CO80206			

OCD Reviewer	Condition
pkautz	Will require a File As Drilled C-102 and a Directional Survey with the C-104
pkautz	Once the well is spud, to prevent ground water contamination through whole or partial conduits from the surface, the operator shall drill without interruption through the fresh water zone or zones and shall immediately set in cement the water protection string