

Form 3160-3
(June 2015)FORM APPROVED
OMB No. 1004-0137
Expires: January 31, 2018UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of work: ☐ DRILL ☐ REENTER		5. Lease Serial No.
1b. Type of Well: ☐ Oil Well ☐ Gas Well ☐ Other		6. If Indian, Allottee or Tribe Name
1c. Type of Completion: ☐ Hydraulic Fracturing ☐ Single Zone ☐ Multiple Zone		7. If Unit or CA Agreement, Name and No.
2. Name of Operator		8. Lease Name and Well No.
3a. Address		9. API Well No. 30-025-52663
3b. Phone No. (include area code)		10. Field and Pool, or Exploratory
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At surface At proposed prod. zone		11. Sec., T. R. M. or Blk. and Survey or Area
14. Distance in miles and direction from nearest town or post office*		12. County or Parish
		13. State
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)	16. No of acres in lease	17. Spacing Unit dedicated to this well
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.	19. Proposed Depth	20. BLM/BIA Bond No. in file
21. Elevations (Show whether DF, KDB, RT, GL, etc.)	22. Approximate date work will start*	23. Estimated duration
24. Attachments		

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

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

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

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

Conditions of approval, if any, are attached.

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

(Continued on page 2)

*(Instructions on page 2)



Approval Date: 03/19/2024

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 30-025-52663	² Pool Code 44500	³ Pool Name MALJAMAR; YESO, WEST
⁴ Property Code 335617	⁵ Property Name MILLER 14 FEDERAL COM	⁶ Well Number 20H
⁷ OGRID NO. 328947	⁸ Operator Name SPUR ENERGY PARTNERS LLC.	⁹ Elevation 4107

¹⁰ Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet From the	East/West line	County
E	13	17S	32E		2210	NORTH	805	WEST	LEA

¹¹ Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
E	14	17S	32E		1650	NORTH	50	WEST	LEA

¹² Dedicated Acres 320	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.
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No allowable will be assigned to this completion until all interest have been consolidated or a non-standard unit has been approved by the division.

16 GEODETIC DATA NAD 83 GRID - NM EAST SURFACE LOCATION (SL) N: 668311.1 - E: 727915.4 LAT: 32.8357387° N LONG: 103.7258761° W BOTTOM HOLE (BH) N: 668848.2 - E: 721877.1 LAT: 32.8373089° N LONG: 103.7455248° W KICK OFF POINT (KOP) 1711' FNL 856' FWL - SEC 13 N: 668809.7 - E: 727962.9 LAT: 32.8371085° N LON: 103.7257122° W FIRST TAKE POINT (FTP) 1650' FNL & 100' FWL - SEC 14 N: 668866.9 - E: 727007.0 LAT: 32.8372809° N LONG: 103.7288231° W LAST TAKE POINT (LTP) 1650' FNL & 100' FWL - SEC 14 N: 668848.2 - E: 721927.1 LAT: 32.8373081° N LONG: 103.7453620° W	CORNER DATA NAD 83 GRID - NM EAST A: FOUND BRASS CAP "1913" N: 665220.0 - E: 721849.6 B: FOUND BRASS CAP "1913" N: 667859.2 - E: 721833.3 C: FOUND BRASS CAP "1913" N: 670497.8 - E: 721816.9 D: FOUND BRASS CAP "1913" N: 670496.2 - E: 724451.5 E: FOUND BRASS CAP "1913" N: 670517.3 - E: 727096.3 F: FOUND BRASS CAP "1913" N: 670527.8 - E: 729734.2 G: FOUND BRASS CAP "1913" N: 670539.6 - E: 732379.8 H: FOUND BRASS CAP "1913" N: 667898.7 - E: 732396.3 I: FOUND BRASS CAP "1913" N: 665259.6 - E: 732412.5 J: FOUND 3/8" BOLT N: 665248.4 - E: 729771.0 K: FOUND BRASS CAP "1913" N: 665238.4 - E: 727129.7 L: FOUND BRASS CAP "1913" N: 665229.1 - E: 724489.8 M: FOUND BRASS CAP "1913" N: 667878.3 - E: 727113.4	17 OPERATOR CERTIFICATION I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division. <i>Sarah Chapman</i> 07/18/2023 Signature Date SARAH CHAPMAN Printed Name SCHAPMAN@SPURENERGY.COM E-mail Address
18 SURVEYOR CERTIFICATION I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief. 01/20/2023 Date of Survey Signature and Seal of Professional Surveyor: 14400 Certificate Number REV: ADD KOP - 07/05/2023 LS23010057R		DALE E. BELL NEW MEXICO 14400 07/06/2023 PROFESSIONAL SURVEYOR

State of New Mexico
Energy, Minerals and Natural Resources DepartmentSubmit Electronically
Via E-permittingOil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505**NATURAL GAS MANAGEMENT PLAN**

This Natural Gas Management Plan must be submitted with each Application for Permit to Drill (APD) for a new or recompleted well.

Section 1 – Plan Description
Effective May 25, 2021**I. Operator:** SPUR ENERGY PARTNERS LLC **OGRID:** 328947 **Date:** 07 / 06 / 2023**II. Type:** ☒ Original ☐ Amendment due to ☐ 19.15.27.9.D(6)(a) NMAC ☐ 19.15.27.9.D(6)(b) NMAC ☐ Other.

If Other, please describe: _____

III. Well(s): Provide the following information for each new or recompleted well or set of wells proposed to be drilled or proposed to be recompleted from a single well pad or connected to a central delivery point.

Well Name	API	ULSTR	Footages	Anticipated Oil BBL/D	Anticipated Gas MCF/D	Anticipated Produced Water BBL/D
MILLER 14 FEDERAL 10H	30-025-	E-13-17S-32E	2210' ENL 785' FWL	370 BBL/D	466 MCF/D	1481 BBL/D
MILLER 14 FEDERAL 20H	30-025-	E-13-17S-32E	2210' ENL 805' FWL	370 BBL/D	466 MCF/D	1481 BBL/D
MILLER 14 FEDERAL 70H	30-025-	E-13-17S-32E	2210' ENL 825' FWL	325 BBL/D	385 MCF/D	1300 MCF/D

IV. Central Delivery Point Name: MILLER 14 FEDERAL TANK BATTERY [See 19.15.27.9(D)(1) NMAC]**V. Anticipated Schedule:** Provide the following information for each new or recompleted well or set of wells proposed to be drilled or proposed to be recompleted from a single well pad or connected to a central delivery point.

Well Name	API	Spud Date	TD Reached Date	Completion Commencement Date	Initial Flow Back Date	First Production Date
MILLER 14 FEDERAL 10H	30-025-	01/13/2025	01/22/2025	02/19/2025	03/11/2025	03/26/2025
MILLER 14 FEDERAL 20H	30-025-	01/22/2025	01/31/2025	02/19/2025	03/11/2025	03/26/2025
MILLER 14 FEDERAL 70H	30-025-	01/31/2025	02/10/2025	02/19/2025	03/11/2025	03/26/2025

VI. Separation Equipment: ☒ Attach a complete description of how Operator will size separation equipment to optimize gas capture.**VII. Operational Practices:** ☒ Attach a complete description of the actions Operator will take to comply with the requirements of Subsection A through F of 19.15.27.8 NMAC.**VIII. Best Management Practices:** ☒ Attach a complete description of Operator's best management practices to minimize venting during active and planned maintenance.

Section 2 – Enhanced Plan

EFFECTIVE APRIL 1, 2022

Beginning April 1, 2022, an operator that is not in compliance with its statewide natural gas capture requirement for the applicable reporting area must complete this section.

☒ Operator certifies that it is not required to complete this section because Operator is in compliance with its statewide natural gas capture requirement for the applicable reporting area.

IX. Anticipated Natural Gas Production:

Well	API	Anticipated Average Natural Gas Rate MCF/D	Anticipated Volume of Natural Gas for the First Year MCF

X. Natural Gas Gathering System (NGGS):

Operator	System	ULSTR of Tie-in	Anticipated Gathering Start Date	Available Maximum Daily Capacity of System Segment Tie-in

XI. Map. ☐ Attach an accurate and legible map depicting the location of the well(s), the anticipated pipeline route(s) connecting the production operations to the existing or planned interconnect of the natural gas gathering system(s), and the maximum daily capacity of the segment or portion of the natural gas gathering system(s) to which the well(s) will be connected.

XII. Line Capacity. The natural gas gathering system ☐ will ☐ will not have capacity to gather 100% of the anticipated natural gas production volume from the well prior to the date of first production.

XIII. Line Pressure. Operator ☐ does ☐ does not anticipate that its existing well(s) connected to the same segment, or portion, of the natural gas gathering system(s) described above will continue to meet anticipated increases in line pressure caused by the new well(s).

☐ Attach Operator's plan to manage production in response to the increased line pressure.

XIV. Confidentiality: ☐ Operator asserts confidentiality pursuant to Section 71-2-8 NMSA 1978 for the information provided in Section 2 as provided in Paragraph (2) of Subsection D of 19.15.27.9 NMAC, and attaches a full description of the specific information for which confidentiality is asserted and the basis for such assertion.

Section 3 - Certifications**Effective May 25, 2021**

Operator certifies that, after reasonable inquiry and based on the available information at the time of submittal:

☒ Operator will be able to connect the well(s) to a natural gas gathering system in the general area with sufficient capacity to transport one hundred percent of the anticipated volume of natural gas produced from the well(s) commencing on the date of first production, taking into account the current and anticipated volumes of produced natural gas from other wells connected to the pipeline gathering system; or

☐ Operator will not be able to connect to a natural gas gathering system in the general area with sufficient capacity to transport one hundred percent of the anticipated volume of natural gas produced from the well(s) commencing on the date of first production, taking into account the current and anticipated volumes of produced natural gas from other wells connected to the pipeline gathering system.

If Operator checks this box, Operator will select one of the following:

Well Shut-In. ☐ Operator will shut-in and not produce the well until it submits the certification required by Paragraph (4) of Subsection D of 19.15.27.9 NMAC; or

Venting and Flaring Plan. ☐ Operator has attached a venting and flaring plan that evaluates and selects one or more of the potential alternative beneficial uses for the natural gas until a natural gas gathering system is available, including:

- (a) power generation on lease;
- (b) power generation for grid;
- (c) compression on lease;
- (d) liquids removal on lease;
- (e) reinjection for underground storage;
- (f) reinjection for temporary storage;
- (g) reinjection for enhanced oil recovery;
- (h) fuel cell production; and
- (i) other alternative beneficial uses approved by the division.

Section 4 - Notices

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

(a) Operator becomes aware that the natural gas gathering system it planned to connect the well(s) to has become unavailable or will not have capacity to transport one hundred percent of the production from the well(s), no later than 20 days after becoming aware of such information, Operator shall submit for OCD's approval a new or revised venting and flaring plan containing the information specified in Paragraph (5) of Subsection D of 19.15.27.9 NMAC; or

(b) Operator becomes aware that it has, cumulatively for the year, become out of compliance with its baseline natural gas capture rate or natural gas capture requirement, no later than 20 days after becoming aware of such information, Operator shall submit for OCD's approval a new or revised Natural Gas Management Plan for each well it plans to spud during the next 90 days containing the information specified in Paragraph (2) of Subsection D of 19.15.27.9 NMAC, and shall file an update for each Natural Gas Management Plan until Operator is back in compliance with its baseline natural gas capture rate or natural gas capture requirement.

2. OCD may deny or conditionally approve an APD if Operator does not make a certification, fails to submit an adequate venting and flaring plan which includes alternative beneficial uses for the anticipated volume of natural gas produced, or if OCD determines that Operator will not have adequate natural gas takeaway capacity at the time a well will be spud.

I certify that, after reasonable inquiry, the statements in and attached to this Natural Gas Management Plan are true and correct to the best of my knowledge and acknowledge that a false statement may be subject to civil and criminal penalties under the Oil and Gas Act.

Signature:	<i>Sarah Chapman</i>
Printed Name:	SARAH CHAPMAN
Title:	REGULATORY DIRECTOR
E-mail Address:	SCHAPMAN@SPUREENERGY.COM
Date:	JULY 6, 2023
Phone:	832-930-8613
OIL CONSERVATION DIVISION (Only applicable when submitted as a standalone form)	
Approved By:	
Title:	
Approval Date:	
Conditions of Approval:	

Spur Energy Partners LLC – Miller 14 Federal Com 20H

1. Geologic Formations

TVD of Target	5,895'
MD at TD	11,721'

Formation	Depth	Lithology	Expected Fluids
Quaternary	0'	Dolomite, other: Caliche	Useable Water
Rustler	1105'	Dolomite, Shale, Anhydrite	Other: Brackish Water
Top Salt	1275'	Anhydrite	Other: Salt
Tansill	2345'	Sandstone, Dolomite	None
Yates	2450'	Dolomite, Limestone, Shale, Siltstone	None
Seven Rivers	2805'	Dolomite, Limestone	Natural Gas, Oil
Queen	3425'	Anhydrite, Dolomite, Sandstone	Natural Gas, Oil
Grayburg	3880'	Anhydrite	Natural Gas, Oil
San Andres	4170'	Dolomite	Natural Gas, Oil
Glorieta	5725'	Dolomite, Siltstone	Natural Gas, Oil
Paddock	5815'	Dolomite, Limestone	Natural Gas, Oil
Blinberry	6210'	Dolomite, Limestone	Natural Gas, Oil
Tubb	7160'	Dolomite, Limestone	Natural Gas, Oil

*H₂S, water flows, loss of circulation, abnormal pressures, etc.

2. Casing Program

All casing strings will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.h

Casing Formation Set Interval	Hole Size (in)	Casing Interval		Csg. Size (in)	Weight (lbs)	Grade	Conn.	SF	SF Burst	Body SF	Joint SF
		From (ft)	To (ft)					Collapse		Tension	Tension
Rustler	17.5	0	1175	13.375	54.5	J-55	BTC	1.125	1.2	1.4	1.4
Seven Rivers	12.25	0	3000	9.625	36	J-55	BTC	1.125	1.2	1.4	1.4
N/A	8.75	0	6300	7	32	L-80	BK-HT	1.125	1.2	1.4	1.4
Yeso	8.75	6300	11721	5.5	20	L-80	BK-HT	1.125	1.2	1.4	1.4
SF Values will meet or Exceed											

Spur Energy Partners LLC – Miller 14 Federal Com 20H

	Y or N
Is casing new? If used, attach certification as required in Onshore Order #1	Y
Does casing meet API specifications? If no, attach casing specification sheet.	Y
Is premium or uncommon casing planned? If yes attach casing specification sheet.	N
Does the above casing design meet or exceed BLM's minimum standards? If not provide justification (loading assumptions, casing design criteria).	Y
Will the intermediate pipe be kept at a minimum 1/3 fluid filled to avoid approaching the collapse pressure rating of the casing?	Y
Is well located within Capitan Reef?	N
If yes, does production casing cement tie back a minimum of 50' above the Reef?	
Is well within the designated 4 string boundary.	
Is well located in SOPA but not in R-111-P?	N
If yes, are the first 2 strings cemented to surface and 3 rd string cement tied back 500' into previous casing?	
Is well located in R-111-P and SOPA?	N
If yes, are the first three strings cemented to surface?	
Is 2 nd string set 100' to 600' below the base of salt?	
Is well located in high Cave/Karst?	N
If yes, are there two strings cemented to surface?	
(For 2 string wells) If yes, is there a contingency casing if lost circulation occurs?	
Is well located in critical Cave/Karst?	N
If yes, are there three strings cemented to surface?	

3. Cementing Program

Casing String	Top (ft)	Bottom (ft)	% Excess
Surface Tail	0	1175	165%
Intermediate (Lead)	0	1175	100%
Intermediate (Tail)	1175	3000	100%
Production (Lead)	0	5300	100%
Production (Tail)	5300	11721	25%

Casing String	# Sks	Wt. (lb/gal)	Yld (ft3/sack)	H2O (gal/sk)	500# Comp. Strength (hours)	Slurry Description
Surface Tail	1143	13.2	1.87	9.92	6:59	Clas C Premium Plus Cement
Intermediate (Lead)	178	12	2.4	13.48	8:12	Clas C Premium Plus Cement
Intermediate (Tail)	622	13.2	1.87	9.92	6:59	Clas C Premium Plus Cement
Production (Lead)	1031	11.4	2.42	15.29	N/A	Clas C Premium Plus Cement
Production (Tail)	1224	13.2	1.56	9.81	N/A	Clas C Premium Plus Cement

Spur Energy Partners LLC – Miller 14 Federal Com 20H

4. Pressure Control Equipment

Spur requests a variance to use a flex line from the BOP to the choke manifold. Documentation will be attached in the APD and be readily available. No external damage to flex line. Flex line to be installed as straight as possible (no bends).

BOP installed and tested before drilling which hole?	Size?	Min. Required WP	Type	✓	Tested to:
12.25" Hole	13-5/8"	5M	Annular	✓	70% of working pressure
		5M	Blind Ram	✓	250 psi / 3000 psi
			Pipe Ram	✓	
			Double Ram		
			Other*		
8.75" Hole	13-5/8"	5M	Annular	✓	70% of working pressure
		5M	Blind Ram	✓	250 psi / 3000 psi
			Pipe Ram	✓	
			Double Ram		
			Other*		

Spur Energy Partners LLC will be utilizing a 5M BOP

Condition	Specify what type and where?
BH Pressure at deepest TVD	2798 psi
Abnormal Temperature	No
BH Temperature at deepest TVD	129°F

*Specify if additional ram is utilized.

BOP/BOPE will be tested by an independent service company to 250 psi low and the high pressure indicated above per Onshore Order 2 requirements. The System may be upgraded to a higher pressure but still tested to the working pressure listed in the table above. If the system is upgraded all the components installed will be functional and tested.

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. Other accessories to the BOP equipment will include a Kelly cock and floor safety valve (inside BOP) and choke lines and choke manifold. See attached schematics.

	Formation integrity test will be performed per Onshore Order #2. On Exploratory wells or 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. Will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.i.
Y	Are anchors required by manufacturer?

Spur Energy Partners LLC – Miller 14 Federal Com 20H

	A conventional wellhead system will be employed. The wellhead and connection to the BOPE will meet all API 6A requirements. The BOP will be tested per Onshore Order #2 after installation on the surface casing which will cover testing requirements for a maximum of 30 days. See attached schematics.
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5. BOP Break Testing Request

Spur Energy Partners LLC requests permission to adjust the BOP break testing requirements as per the verbal agreement reached over the phone between SPUR/BLM on September 7, 2020. A separate sundry will be sent prior to spud that reflects the pad-based break testing plan.

BOP break test under the following conditions:

- After a full BOP test is conducted
- When skidding to drill the production section, where the surface casing point is shallower than the 3 Bone Spring or 10,000 TVD.
- When skidding to drill a production section that does not penetrate the 3rd Bone Spring or deeper.

If the kill line is broken prior to skid, four tests will be performed.

- 1) The void between the wellhead and the spool (this consists of two tests)
- 2) The spool between the kill lines and the choke manifold (this consists of two tests)

If the kill line is not broken prior to skid, two tests will be performed.

- 1) The void between the wellhead and the pipe rams

6. Mud Program

Sufficient mud materials to maintain mud properties and meet minimum lost circulation and weight increase requirements will be kept on location at all times. The following is a general list of products: Barite, Bentonite, Gypsum, Lime, Soda Ash, Caustic Soda, Nut Plug, Cedar Fiber, Cotton Seed Hulls, Drilling Paper, Salt Water Clay, CACL2. Spur will use a closed mud system.

Depth		Type	Weight (ppg)	Viscosity	Water Loss
From (ft)	To (ft)				
0	1175	Water-Based Mud	8.6-8.9	32-36	N/C
1175	3000	Brine	10.0-10.5	32-36	N/C
3000	11721	Brine	10.0-10.5	32-36	N/C

What will be used to monitor the loss or gain of fluid?	PVT/PASON/Visual Monitoring
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Spur Energy Partners LLC – Miller 14 Federal Com 20H

7. Logging and Testing Procedures

Logging, Coring and Testing.		
Yes	Will run GR from TD to surface (horizontal well – vertical portion of hole). Stated logs run will be in the Completion Report and submitted to the BLM.	
No	Logs are planned based on well control or offset log information.	
No	Drill stem test? If yes, explain	
No	Coring? If yes, explain	
Additional logs planned	Interval	
No	Resistivity	
No	Density	
No	CBL	
Yes	Mud log	ICP - TD
No	PEX	

8. Drilling Conditions

Pump high viscosity sweeps as needed for hole cleaning. The mud system will be monitored visually/manually as well as with an electronic PVT. The necessary mud products for additional weight and fluid loss control will be on location at all times. Appropriately weighted mud will be used to isolate potential gas, oil, and water zones until such time as casing can be cemented into place for zonal isolation.

Hydrogen Sulfide (H ₂ S) monitors will be installed prior to drilling out the surface shoe. If H ₂ S is detected in concentrations greater than 100 ppm, the operator will comply with the provisions of Onshore Oil and Gas Order #6. If Hydrogen Sulfide is encountered, measured values and formations will be provided to the BLM.	
N	H ₂ S is present
Y	H ₂ S Plan attached

Total estimated cuttings volume: 1134.2 bbls.

Spur Energy Partners LLC – Miller 14 Federal Com 20H**9. Other facets of operation**

	Yes/No
Will more than one drilling rig be used for drilling operations? If yes, describe. Spur Energy Partners LLC. requests the option to contract a Surface Rig to drill, set surface/intermediate casing and cement for this well. If the timing between rigs is such that Spur Energy Partners LLC. would not be able to preset surface/intermediate the Primary Rig will MIRU and drill the well in its entirety per the APD. Please see the attached document for information on the spudder rig.	Yes

Attachments

- ☒ Directional Plan
☒ H2S Contingency Plan
☒ Akita 57 Attachments
☒ BOP Schematics
☒ Transcend Spudder Rig Attachments

10. Company Personnel

Name	Title	Office Phone	Mobile Phone
Christopher Hollis	Drilling Manager	832-930-8629	713-380-7754
Johnny Nabors	Senior Vice President Operations	832-930-8502	281-904-8811



SPUR ENERGY PARTNERS, LLC

**LEA COUNTY, NM (NAD 83 - NME)
MILLER 14 FEDERAL COM
20H**

**Wellbore #1
PERMIT**

Anticollision Report

29 June, 2023



Anticollision Report

Company:	SPUR ENERGY PARTNERS, LLC	Local Co-ordinate Reference:	Well 20H
Project:	LEA COUNTY, NM (NAD 83 - NME)	TVD Reference:	RKB = 20' @ 4127.00usft (AKITA 57)
Reference Site:	MILLER 14 FEDERAL COM	MD Reference:	RKB = 20' @ 4127.00usft (AKITA 57)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	20H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.1.13 Single User Db
Reference Design:	PERMIT	Offset TVD Reference:	Reference Datum

Reference	PERMIT
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria
Interpolation Method:	MD + Stations Interval 50.00usft
Depth Range:	Unlimited
Results Limited by:	Maximum separation factor of 55.00
Warning Levels Evaluated at:	2.00 Sigma
Error Model:	ISCWSA
Scan Method:	Closest Approach 3D
Error Surface:	Elliptical Conic
Casing Method:	Not applied

Survey Tool Program		Date	06/28/23		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
0.00	11,720.66	PERMIT (Wellbore #1)	MWD+IGRF	OWSG MWD + IGRF or WMM	

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						
MILLER 14 FEDERAL COM						
10H - Wellbore #1 - PERMIT	355.02	355.08	19.87	17.77	9.433	CC
10H - Wellbore #1 - PERMIT	400.00	400.02	20.02	17.59	8.261	ES
10H - Wellbore #1 - PERMIT	11,720.66	11,659.88	957.76	582.82	2.554	SF
70H - Wellbore #1 - PERMIT	300.00	300.00	20.00	18.28	11.624	CC
70H - Wellbore #1 - PERMIT	500.00	499.87	20.22	17.06	6.406	ES
70H - Wellbore #1 - PERMIT	11,720.66	12,107.18	659.40	402.39	2.566	SF
OFFSET: MALMAR UNIT TR-2 #5 - Wellbore #1 - Wellbore	2,423.41	2,406.04	167.95	64.43	1.622	CC
OFFSET: MALMAR UNIT TR-2 #5 - Wellbore #1 - Wellbore	3,100.00	3,078.61	183.39	50.46	1.380	Level 3, ES
OFFSET: MALMAR UNIT TR-2 #5 - Wellbore #1 - Wellbore	3,400.00	3,376.82	198.76	52.94	1.363	Level 3, SF

Offset Design MILLER 14 FEDERAL COM - 10H - Wellbore #1 - PERMIT												Offset Site Error:	0.00 usft
Survey Program: 0-MWD+IGRF												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	
150.00	150.00	150.00	150.00	0.32	0.32	-90.288	-0.10	-19.90	19.90	19.26	0.65	30.841	
200.00	200.00	200.00	200.00	0.50	0.50	-90.288	-0.10	-19.90	19.90	18.90	1.00	19.826	
250.00	250.00	250.00	250.00	0.68	0.68	-90.288	-0.10	-19.90	19.90	18.54	1.36	14.609	
300.00	300.00	300.00	300.00	0.86	0.86	-90.288	-0.10	-19.90	19.90	18.18	1.72	11.565	
350.00	350.00	350.06	350.05	1.04	1.03	-98.219	-0.53	-19.81	19.87	17.80	2.07	9.594	
355.02	355.01	355.08	355.07	1.06	1.05	-98.743	-0.62	-19.79	19.87	17.77	2.11	9.433	CC
400.00	399.98	400.02	400.00	1.22	1.20	-105.636	-1.81	-19.54	20.02	17.59	2.42	8.261	ES
450.00	449.93	449.81	449.74	1.40	1.38	-117.330	-3.93	-19.08	20.98	18.20	2.78	7.543	
500.00	499.84	499.33	499.17	1.58	1.55	-131.166	-6.88	-18.46	23.60	20.45	3.15	7.494	
550.00	549.68	548.64	548.34	1.77	1.72	-144.053	-10.56	-17.67	28.46	24.92	3.54	8.047	
600.00	599.45	597.90	597.44	1.95	1.90	-153.679	-14.34	-16.86	35.20	31.28	3.92	8.982	
612.39	611.77	610.08	609.58	2.00	1.94	-155.594	-15.28	-16.66	37.11	33.09	4.01	9.247	
650.00	649.16	647.05	646.44	2.14	2.08	-160.429	-18.12	-16.06	43.19	38.91	4.28	10.097	
700.00	698.86	696.19	695.43	2.34	2.26	-165.061	-21.90	-15.25	51.61	46.99	4.62	11.164	
750.00	748.56	745.33	744.41	2.53	2.44	-168.384	-25.68	-14.45	60.27	55.30	4.97	12.128	
800.00	798.27	794.47	793.40	2.73	2.63	-170.869	-29.46	-13.64	69.07	63.76	5.32	12.996	
850.00	847.97	843.61	842.39	2.93	2.81	-172.791	-33.24	-12.84	77.98	72.31	5.66	13.769	
900.00	897.67	892.75	891.38	3.12	3.00	-174.318	-37.01	-12.03	86.95	80.94	6.01	14.463	

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



Anticollision Report

Company:	SPUR ENERGY PARTNERS, LLC	Local Co-ordinate Reference:	Well 20H
Project:	LEA COUNTY, NM (NAD 83 - NME)	TVD Reference:	RKB = 20' @ 4127.00usft (AKITA 57)
Reference Site:	MILLER 14 FEDERAL COM	MD Reference:	RKB = 20' @ 4127.00usft (AKITA 57)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	20H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.1.13 Single User Db
Reference Design:	PERMIT	Offset TVD Reference:	Reference Datum

Offset Design MILLER 14 FEDERAL COM - 10H - Wellbore #1 - PERMIT													Offset Site Error:	0.00 usft
Survey Program: 0-MWD+IGRF													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		
950.00	947.38	941.89	940.37	3.32	3.19	-175.560	-40.79	-11.23	95.97	89.61	6.36	15.088		
1,000.00	997.08	991.03	989.36	3.52	3.37	-176.588	-44.57	-10.42	105.02	98.31	6.71	15.649		
1,050.00	1,046.78	1,040.17	1,038.35	3.72	3.56	-177.453	-48.35	-9.62	114.11	107.04	7.06	16.157		
1,100.00	1,096.49	1,089.32	1,087.34	3.92	3.75	-178.190	-52.13	-8.81	123.21	115.80	7.41	16.618		
1,150.00	1,146.19	1,138.46	1,136.33	4.12	3.94	-178.826	-55.91	-8.01	132.33	124.57	7.77	17.038		
1,200.00	1,195.89	1,187.60	1,185.32	4.32	4.13	-179.379	-59.69	-7.20	141.47	133.35	8.12	17.422		
1,250.00	1,245.59	1,236.74	1,234.30	4.53	4.32	-179.866	-63.47	-6.39	150.61	142.14	8.47	17.775		
1,300.00	1,295.30	1,285.88	1,283.29	4.73	4.51	-179.703	-67.24	-5.59	159.77	150.94	8.83	18.099		
1,350.00	1,345.00	1,335.02	1,332.28	4.93	4.70	-179.319	-71.02	-4.78	168.93	159.75	9.18	18.398		
1,400.00	1,394.70	1,384.16	1,381.27	5.13	4.89	-178.974	-74.80	-3.98	178.11	168.57	9.54	18.675		
1,450.00	1,444.41	1,433.30	1,430.26	5.33	5.08	-178.664	-78.58	-3.17	187.28	177.39	9.89	18.932		
1,500.00	1,494.11	1,482.44	1,479.25	5.54	5.27	-178.382	-82.36	-2.37	196.46	186.21	10.25	19.171		
1,550.00	1,543.81	1,531.59	1,528.24	5.74	5.45	-178.125	-86.14	-1.56	205.65	195.04	10.60	19.394		
1,600.00	1,593.52	1,580.73	1,577.23	5.94	5.64	-177.890	-89.92	-0.76	214.84	203.88	10.96	19.602		
1,650.00	1,643.22	1,629.87	1,626.22	6.14	5.84	-177.675	-93.69	0.05	224.03	212.71	11.32	19.797		
1,700.00	1,692.92	1,679.01	1,675.21	6.35	6.03	-177.476	-97.47	0.85	233.22	221.55	11.67	19.980		
1,750.00	1,742.62	1,728.15	1,724.19	6.55	6.22	-177.293	-101.25	1.66	242.42	230.39	12.03	20.152		
1,800.00	1,792.33	1,777.29	1,773.18	6.75	6.41	-177.123	-105.03	2.46	251.62	239.23	12.39	20.314		
1,850.00	1,842.03	1,826.43	1,822.17	6.96	6.60	-176.965	-108.81	3.27	260.82	248.08	12.74	20.467		
1,900.00	1,891.73	1,875.57	1,871.16	7.16	6.79	-176.817	-112.59	4.07	270.03	256.92	13.10	20.612		
1,950.00	1,941.44	1,924.71	1,920.15	7.36	6.98	-176.680	-116.37	4.88	279.23	265.77	13.46	20.749		
2,000.00	1,991.14	1,973.86	1,969.14	7.56	7.17	-176.551	-120.14	5.69	288.44	274.62	13.81	20.878		
2,050.00	2,040.84	2,023.00	2,018.13	7.77	7.36	-176.430	-123.92	6.49	297.64	283.47	14.17	21.002		
2,100.00	2,090.55	2,072.14	2,067.12	7.97	7.55	-176.317	-127.70	7.30	306.85	292.32	14.53	21.118		
2,150.00	2,140.25	2,121.28	2,116.11	8.17	7.74	-176.210	-131.48	8.10	316.06	301.18	14.89	21.230		
2,200.00	2,189.95	2,170.42	2,165.10	8.38	7.93	-176.109	-135.26	8.91	325.27	310.03	15.25	21.336		
2,250.00	2,239.65	2,219.56	2,214.08	8.58	8.12	-176.014	-139.04	9.71	334.49	318.88	15.60	21.437		
2,300.00	2,289.36	2,268.70	2,263.07	8.78	8.31	-175.923	-142.82	10.52	343.70	327.74	15.96	21.533		
2,350.00	2,339.06	2,317.84	2,312.06	8.99	8.50	-175.838	-146.60	11.32	352.91	336.59	16.32	21.626		
2,400.00	2,388.76	2,366.98	2,361.05	9.19	8.69	-175.757	-150.37	12.13	362.13	345.45	16.68	21.714		
2,450.00	2,438.47	2,416.13	2,410.04	9.40	8.88	-175.679	-154.15	12.93	371.34	354.31	17.04	21.798		
2,500.00	2,488.17	2,465.27	2,459.03	9.60	9.07	-175.606	-157.93	13.74	380.56	363.16	17.39	21.879		
2,550.00	2,537.87	2,514.41	2,508.02	9.80	9.27	-175.536	-161.71	14.54	389.77	372.02	17.75	21.957		
2,600.00	2,587.58	2,563.55	2,557.01	10.01	9.46	-175.469	-165.49	15.35	398.99	380.88	18.11	22.031		
2,650.00	2,637.28	2,612.69	2,606.00	10.21	9.65	-175.406	-169.27	16.15	408.21	389.74	18.47	22.103		
2,700.00	2,686.98	2,661.83	2,654.99	10.41	9.84	-175.345	-173.05	16.96	417.42	398.60	18.83	22.172		
2,750.00	2,736.69	2,710.97	2,703.97	10.62	10.03	-175.287	-176.82	17.77	426.64	407.46	19.19	22.238		
2,800.00	2,786.39	2,760.11	2,752.96	10.82	10.22	-175.231	-180.60	18.57	435.86	416.32	19.54	22.302		
2,850.00	2,836.09	2,809.25	2,801.95	11.02	10.41	-175.177	-184.38	19.38	445.08	425.18	19.90	22.363		
2,900.00	2,885.79	2,858.40	2,850.94	11.23	10.60	-175.126	-188.16	20.18	454.30	434.04	20.26	22.423		
2,950.00	2,935.50	2,907.54	2,899.93	11.43	10.79	-175.077	-191.94	20.99	463.52	442.90	20.62	22.480		
3,000.00	2,985.20	2,956.68	2,948.92	11.64	10.98	-175.029	-195.72	21.79	472.74	451.76	20.98	22.535		
3,050.00	3,034.90	3,005.82	2,997.91	11.84	11.18	-174.984	-199.50	22.60	481.96	460.62	21.34	22.588		
3,100.00	3,084.61	3,054.96	3,046.90	12.04	11.37	-174.940	-203.27	23.40	491.18	469.48	21.70	22.640		
3,150.00	3,134.31	3,104.10	3,095.89	12.25	11.56	-174.898	-207.05	24.21	500.40	478.35	22.05	22.690		
3,200.00	3,184.01	3,153.24	3,144.88	12.45	11.75	-174.857	-210.83	25.01	509.62	487.21	22.41	22.738		
3,250.00	3,233.72	3,202.38	3,193.86	12.65	11.94	-174.818	-214.61	25.82	518.84	496.07	22.77	22.785		
3,300.00	3,283.42	3,251.52	3,242.85	12.86	12.13	-174.780	-218.39	26.62	528.06	504.93	23.13	22.830		
3,350.00	3,333.12	3,300.67	3,291.84	13.06	12.32	-174.744	-222.17	27.43	537.29	513.80	23.49	22.874		
3,400.00	3,382.82	3,349.81	3,340.83	13.27	12.51	-174.708	-225.95	28.24	546.51	522.66	23.85	22.916		
3,450.00	3,432.53	3,398.95	3,389.82	13.47	12.70	-174.674	-229.72	29.04	555.73	531.52	24.21	22.958		
3,500.00	3,482.23	3,448.09	3,438.81	13.67	12.89	-174.641	-233.50	29.85	564.95	540.39	24.57	22.998		

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



Anticollision Report

Company:	SPUR ENERGY PARTNERS, LLC	Local Co-ordinate Reference:	Well 20H
Project:	LEA COUNTY, NM (NAD 83 - NME)	TVD Reference:	RKB = 20' @ 4127.00usft (AKITA 57)
Reference Site:	MILLER 14 FEDERAL COM	MD Reference:	RKB = 20' @ 4127.00usft (AKITA 57)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	20H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.1.13 Single User Db
Reference Design:	PERMIT	Offset TVD Reference:	Reference Datum

Offset Design MILLER 14 FEDERAL COM - 10H - Wellbore #1 - PERMIT												Offset Site Error:	0.00 usft
Survey Program: 0-MWD+IGRF												Offset Well Error:	0.00 usft
Reference	Offset	Semi Major Axis		Distance								Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
3,550.00	3,531.93	3,497.23	3,487.80	13.88	13.09	174.609	-237.28	30.65	574.17	549.25	24.92	23.036	
3,600.00	3,581.64	3,546.37	3,536.79	14.08	13.28	174.578	-241.06	31.46	583.40	558.11	25.28	23.074	
3,650.00	3,631.34	3,595.51	3,585.78	14.29	13.47	174.548	-244.84	32.26	592.62	566.98	25.64	23.111	
3,700.00	3,681.04	3,644.65	3,634.77	14.49	13.66	174.519	-248.62	33.07	601.84	575.84	26.00	23.147	
3,750.00	3,730.75	3,693.79	3,683.75	14.69	13.85	174.491	-252.40	33.87	611.07	584.70	26.36	23.181	
3,800.00	3,780.45	3,742.94	3,732.74	14.90	14.04	174.463	-256.18	34.68	620.29	593.57	26.72	23.215	
3,850.00	3,830.15	3,792.08	3,781.73	15.10	14.23	174.437	-259.95	35.48	629.51	602.43	27.08	23.248	
3,900.00	3,879.85	3,841.22	3,830.72	15.30	14.42	174.411	-263.73	36.29	638.74	611.30	27.44	23.280	
3,950.00	3,929.56	3,890.36	3,879.71	15.51	14.61	174.386	-267.51	37.09	647.96	620.16	27.80	23.311	
4,000.00	3,979.26	3,939.50	3,928.70	15.71	14.81	174.362	-271.29	37.90	657.18	629.03	28.16	23.341	
4,050.00	4,028.96	3,988.64	3,977.69	15.92	15.00	174.338	-275.07	38.70	666.41	637.89	28.51	23.371	
4,100.00	4,078.67	4,037.78	4,026.68	16.12	15.19	174.315	-278.85	39.51	675.63	646.76	28.87	23.400	
4,150.00	4,128.37	4,086.92	4,075.67	16.32	15.38	174.293	-282.63	40.32	684.85	655.62	29.23	23.428	
4,200.00	4,178.07	4,136.06	4,124.66	16.53	15.57	174.271	-286.40	41.12	694.08	664.49	29.59	23.455	
4,250.00	4,227.78	4,185.21	4,173.64	16.73	15.76	174.249	-290.18	41.93	703.30	673.35	29.95	23.482	
4,300.00	4,277.48	4,234.35	4,222.63	16.94	15.95	174.229	-293.96	42.73	712.53	682.22	30.31	23.508	
4,350.00	4,327.18	4,283.49	4,271.62	17.14	16.14	174.209	-297.74	43.54	721.75	691.08	30.67	23.533	
4,400.00	4,376.89	4,332.63	4,320.61	17.34	16.34	174.189	-301.52	44.34	730.98	699.95	31.03	23.558	
4,450.00	4,426.59	4,381.77	4,369.60	17.55	16.53	174.170	-305.30	45.15	740.20	708.81	31.39	23.583	
4,500.00	4,476.29	4,430.91	4,418.59	17.75	16.72	174.151	-309.08	45.95	749.42	717.68	31.75	23.606	
4,550.00	4,525.99	4,480.05	4,467.58	17.96	16.91	174.133	-312.85	46.76	758.65	726.54	32.11	23.629	
4,600.00	4,575.70	4,529.19	4,516.57	18.16	17.10	174.115	-316.63	47.56	767.87	735.41	32.47	23.652	
4,650.00	4,625.40	4,578.33	4,565.56	18.36	17.29	174.098	-320.41	48.37	777.10	744.27	32.82	23.674	
4,700.00	4,675.10	4,627.48	4,614.55	18.57	17.48	174.081	-324.19	49.17	786.32	753.14	33.18	23.696	
4,750.00	4,724.81	4,676.62	4,663.53	18.77	17.67	174.064	-327.97	49.98	795.55	762.01	33.54	23.717	
4,800.00	4,774.51	4,725.76	4,712.52	18.98	17.87	174.048	-331.75	50.78	804.77	770.87	33.90	23.738	
4,850.00	4,824.21	4,774.90	4,761.51	19.18	18.06	174.032	-335.53	51.59	814.00	779.74	34.26	23.758	
4,900.00	4,873.92	4,824.04	4,810.50	19.38	18.25	174.017	-339.31	52.40	823.22	788.60	34.62	23.778	
4,950.00	4,923.62	4,873.18	4,859.49	19.59	18.44	174.001	-343.08	53.20	832.45	797.47	34.98	23.798	
5,000.00	4,973.32	4,922.32	4,908.48	19.79	18.63	173.987	-346.86	54.01	841.67	806.34	35.34	23.817	
5,050.00	5,023.02	4,971.46	4,957.47	20.00	18.82	173.972	-350.64	54.81	850.90	815.20	35.70	23.836	
5,058.33	5,031.31	4,979.65	4,965.63	20.03	18.85	173.970	-351.27	54.95	852.44	816.68	35.76	23.839	
5,100.00	5,072.73	5,022.02	5,007.88	20.20	19.02	-162.816	-354.51	55.11	860.05	823.98	36.07	23.844	
5,150.00	5,122.37	5,073.57	5,059.22	20.40	19.21	-139.963	-358.34	52.86	868.92	832.48	36.44	23.846	
5,200.00	5,171.80	5,125.23	5,110.50	20.59	19.39	-125.093	-362.06	47.81	877.47	840.67	36.80	23.843	
5,250.00	5,220.89	5,177.02	5,161.56	20.77	19.57	-115.683	-365.65	39.98	885.69	848.53	37.16	23.836	
5,300.00	5,269.51	5,228.93	5,212.25	20.95	19.74	-109.418	-369.09	29.35	893.53	856.02	37.51	23.821	
5,350.00	5,317.52	5,280.95	5,262.40	21.13	19.91	-104.989	-372.39	15.95	901.00	863.14	37.86	23.796	
5,400.00	5,364.79	5,333.09	5,311.86	21.31	20.07	-101.696	-375.51	-0.20	908.06	869.84	38.22	23.760	
5,450.00	5,411.20	5,385.32	5,360.47	21.48	20.24	-99.145	-378.47	-19.06	914.69	876.11	38.58	23.708	
5,500.00	5,456.61	5,437.65	5,408.07	21.65	20.40	-97.106	-381.23	-40.60	920.87	881.91	38.96	23.637	
5,550.00	5,500.89	5,490.06	5,454.51	21.82	20.56	-95.434	-383.81	-64.76	926.59	887.24	39.36	23.544	
5,600.00	5,543.94	5,542.54	5,499.61	22.00	20.72	-94.039	-386.18	-91.47	931.84	892.05	39.79	23.422	
5,650.00	5,585.63	5,595.08	5,543.24	22.18	20.89	-92.856	-388.33	-120.64	936.59	896.33	40.26	23.266	
5,700.00	5,625.84	5,647.66	5,585.25	22.38	21.07	-91.843	-390.26	-152.21	940.83	900.05	40.78	23.072	
5,750.00	5,664.47	5,700.27	5,625.48	22.59	21.27	-90.969	-391.97	-186.05	944.55	903.18	41.37	22.833	
5,800.00	5,701.40	5,752.89	5,663.82	22.83	21.52	-90.210	-393.44	-222.06	947.74	905.71	42.04	22.545	
5,850.00	5,736.55	5,805.51	5,700.11	23.11	21.82	-89.551	-394.68	-260.13	950.40	907.60	42.80	22.205	
5,900.00	5,769.81	5,858.11	5,734.25	23.43	22.19	-88.977	-395.67	-300.12	952.51	908.84	43.67	21.811	
5,950.00	5,801.09	5,910.66	5,766.13	23.81	22.64	-88.480	-396.42	-341.89	954.07	909.41	44.66	21.364	
6,000.00	5,830.31	5,963.16	5,795.64	24.25	23.17	-88.051	-396.92	-385.30	955.07	909.30	45.77	20.867	
6,050.00	5,857.38	6,015.21	5,822.53	24.77	23.78	-87.687	-397.17	-429.85	955.52	908.51	47.01	20.326	

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



Anticollision Report

Company:	SPUR ENERGY PARTNERS, LLC	Local Co-ordinate Reference:	Well 20H
Project:	LEA COUNTY, NM (NAD 83 - NME)	TVD Reference:	RKB = 20' @ 4127.00usft (AKITA 57)
Reference Site:	MILLER 14 FEDERAL COM	MD Reference:	RKB = 20' @ 4127.00usft (AKITA 57)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	20H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.1.13 Single User Db
Reference Design:	PERMIT	Offset TVD Reference:	Reference Datum

Offset Design MILLER 14 FEDERAL COM - 10H - Wellbore #1 - PERMIT												Offset Site Error:	0.00 usft
Survey Program: 0-MWD+IGRF												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	
6,071.79	5,868.48	6,036.99	5,833.43	25.02	24.07	-87.573	-397.24	-448.71	955.56	907.98	47.59	20.080	
6,100.00	5,882.59	6,065.21	5,847.53	25.35	24.45	-87.573	-397.33	-473.15	955.57	907.20	48.37	19.757	
6,150.00	5,907.59	6,115.21	5,872.53	26.01	25.14	-87.573	-397.49	-516.45	955.57	905.74	49.82	19.179	
6,200.00	5,932.59	6,165.21	5,897.53	26.70	25.90	-87.573	-397.65	-559.75	955.57	904.23	51.34	18.613	
6,223.60	5,944.39	6,188.81	5,909.33	27.05	26.26	-87.573	-397.72	-580.19	955.57	903.48	52.09	18.346	
6,250.00	5,957.59	6,214.68	5,922.23	27.45	26.67	-87.570	-397.80	-602.62	955.57	902.64	52.93	18.055	
6,271.79	5,968.48	6,235.01	5,931.85	27.78	27.01	-87.532	-397.87	-620.53	955.60	901.98	53.62	17.821	
6,300.00	5,981.98	6,261.27	5,943.33	28.23	27.47	-87.453	-397.95	-644.15	955.66	901.10	54.56	17.516	
6,350.00	6,002.85	6,307.70	5,960.92	29.10	28.33	-87.327	-398.11	-687.09	955.75	899.43	56.33	16.968	
6,400.00	6,019.68	6,353.99	5,974.95	30.05	29.25	-87.220	-398.27	-731.19	955.84	897.61	58.23	16.416	
6,450.00	6,032.35	6,400.00	5,985.32	31.06	30.22	-87.133	-398.44	-776.01	955.91	895.67	60.24	15.869	
6,500.00	6,040.75	6,446.26	5,992.09	32.12	31.24	-87.066	-398.61	-821.76	955.97	893.61	62.35	15.331	
6,550.00	6,044.83	6,492.29	5,995.14	33.23	32.29	-87.020	-398.77	-867.67	956.01	891.47	64.54	14.813	
6,588.54	6,045.00	6,527.82	5,994.97	34.11	33.12	-86.998	-398.90	-903.19	956.03	889.76	66.26	14.428	
6,600.00	6,044.67	6,539.28	5,994.58	34.38	33.40	-86.995	-398.95	-914.65	956.03	889.22	66.81	14.310	
6,650.00	6,043.20	6,589.28	5,992.87	35.57	34.60	-86.980	-399.13	-964.62	956.04	886.81	69.23	13.810	
6,700.00	6,041.74	6,639.28	5,991.17	36.76	35.84	-86.966	-399.31	-1,014.59	956.06	884.37	71.69	13.337	
6,750.00	6,040.28	6,689.28	5,989.46	38.01	37.09	-86.951	-399.50	-1,064.56	956.07	881.87	74.21	12.884	
6,800.00	6,038.82	6,739.28	5,987.76	39.25	38.37	-86.937	-399.68	-1,114.53	956.09	879.32	76.76	12.455	
6,850.00	6,037.36	6,789.28	5,986.05	40.54	39.67	-86.922	-399.86	-1,164.50	956.10	876.73	79.37	12.046	
6,900.00	6,035.90	6,839.28	5,984.35	41.84	41.00	-86.908	-400.04	-1,214.47	956.11	874.11	82.01	11.659	
6,950.00	6,034.44	6,889.28	5,982.64	43.16	42.33	-86.893	-400.23	-1,264.44	956.13	871.44	84.69	11.290	
7,000.00	6,032.97	6,939.28	5,980.94	44.49	43.69	-86.878	-400.41	-1,314.41	956.14	868.75	87.39	10.941	
7,050.00	6,031.51	6,989.28	5,979.23	45.85	45.05	-86.864	-400.59	-1,364.38	956.16	866.03	90.13	10.609	
7,100.00	6,030.05	7,039.27	5,977.53	47.21	46.44	-86.849	-400.78	-1,414.35	956.17	863.28	92.89	10.294	
7,150.00	6,028.59	7,089.27	5,975.82	48.60	47.83	-86.835	-400.96	-1,464.32	956.19	860.51	95.68	9.994	
7,200.00	6,027.13	7,139.27	5,974.12	49.98	49.24	-86.820	-401.14	-1,514.29	956.20	857.72	98.48	9.709	
7,250.00	6,025.67	7,189.27	5,972.42	51.39	50.65	-86.806	-401.33	-1,564.26	956.21	854.90	101.31	9.438	
7,300.00	6,024.21	7,239.27	5,970.71	52.80	52.08	-86.791	-401.51	-1,614.23	956.23	852.07	104.16	9.181	
7,350.00	6,022.74	7,289.27	5,969.01	54.22	53.51	-86.777	-401.69	-1,664.20	956.24	849.22	107.02	8.935	
7,400.00	6,021.28	7,339.27	5,967.30	55.65	54.95	-86.762	-401.88	-1,714.17	956.26	846.36	109.90	8.701	
7,450.00	6,019.82	7,389.27	5,965.60	57.09	56.40	-86.747	-402.06	-1,764.14	956.27	843.48	112.79	8.478	
7,500.00	6,018.36	7,439.27	5,963.89	58.53	57.86	-86.733	-402.24	-1,814.11	956.29	840.59	115.70	8.266	
7,550.00	6,016.90	7,489.27	5,962.19	59.98	59.32	-86.718	-402.42	-1,864.08	956.30	837.69	118.62	8.062	
7,600.00	6,015.44	7,539.27	5,960.48	61.44	60.79	-86.704	-402.61	-1,914.05	956.32	834.77	121.54	7.868	
7,650.00	6,013.98	7,589.27	5,958.78	62.90	62.26	-86.689	-402.79	-1,964.02	956.33	831.85	124.49	7.682	
7,700.00	6,012.51	7,639.27	5,957.07	64.37	63.74	-86.675	-402.97	-2,013.99	956.35	828.91	127.43	7.505	
7,750.00	6,011.05	7,689.27	5,955.37	65.84	65.22	-86.660	-403.16	-2,063.96	956.36	825.97	130.39	7.334	
7,800.00	6,009.59	7,739.27	5,953.67	67.32	66.71	-86.646	-403.34	-2,113.93	956.38	823.02	133.36	7.171	
7,850.00	6,008.13	7,789.27	5,951.96	68.81	68.20	-86.631	-403.52	-2,163.90	956.39	820.06	136.34	7.015	
7,900.00	6,006.67	7,839.27	5,950.26	70.29	69.69	-86.617	-403.71	-2,213.87	956.41	817.09	139.32	6.865	
7,950.00	6,005.21	7,889.26	5,948.55	71.78	71.19	-86.602	-403.89	-2,263.84	956.42	814.11	142.31	6.721	
8,000.00	6,003.75	7,939.26	5,946.85	73.28	72.69	-86.587	-404.07	-2,313.81	956.44	811.13	145.31	6.582	
8,050.00	6,002.28	7,989.26	5,945.14	74.77	74.20	-86.573	-404.26	-2,363.78	956.46	808.15	148.31	6.449	
8,100.00	6,000.82	8,039.26	5,943.44	76.27	75.70	-86.558	-404.44	-2,413.75	956.47	805.15	151.32	6.321	
8,150.00	5,999.36	8,089.26	5,941.73	77.78	77.21	-86.544	-404.62	-2,463.72	956.49	802.15	154.33	6.198	
8,200.00	5,997.90	8,139.26	5,940.03	79.29	78.73	-86.529	-404.81	-2,513.69	956.50	799.15	157.35	6.079	
8,250.00	5,996.44	8,189.26	5,938.32	80.80	80.24	-86.515	-404.99	-2,563.66	956.52	796.14	160.38	5.964	
8,300.00	5,994.98	8,239.26	5,936.62	82.31	81.76	-86.500	-405.17	-2,613.63	956.53	793.13	163.40	5.854	
8,350.00	5,993.52	8,289.26	5,934.91	83.82	83.28	-86.486	-405.35	-2,663.60	956.55	790.11	166.44	5.747	
8,400.00	5,992.06	8,339.26	5,933.21	85.34	84.80	-86.471	-405.54	-2,713.57	956.57	787.09	169.47	5.644	
8,450.00	5,990.59	8,389.26	5,931.51	86.86	86.33	-86.456	-405.72	-2,763.54	956.58	784.07	172.51	5.545	

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



Anticollision Report

Company:	SPUR ENERGY PARTNERS, LLC	Local Co-ordinate Reference:	Well 20H
Project:	LEA COUNTY, NM (NAD 83 - NME)	TVD Reference:	RKB = 20' @ 4127.00usft (AKITA 57)
Reference Site:	MILLER 14 FEDERAL COM	MD Reference:	RKB = 20' @ 4127.00usft (AKITA 57)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	20H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.1.13 Single User Db
Reference Design:	PERMIT	Offset TVD Reference:	Reference Datum

Offset Design MILLER 14 FEDERAL COM - 10H - Wellbore #1 - PERMIT												Offset Site Error:	0.00 usft
Survey Program: 0-MWD+IGRF												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	
8,500.00	5,989.13	8,439.26	5,929.80	88.38	87.85	-86.442	-405.90	-2,813.51	956.60	781.04	175.56	5.449	
8,550.00	5,987.67	8,489.26	5,928.10	89.90	89.38	-86.427	-406.09	-2,863.48	956.61	778.01	178.60	5.356	
8,600.00	5,986.21	8,539.26	5,926.39	91.43	90.91	-86.413	-406.27	-2,913.45	956.63	774.97	181.65	5.266	
8,650.00	5,984.75	8,589.26	5,924.69	92.95	92.44	-86.398	-406.45	-2,963.42	956.65	771.94	184.71	5.179	
8,700.00	5,983.29	8,639.26	5,922.98	94.48	93.97	-86.384	-406.64	-3,013.39	956.66	768.90	187.77	5.095	
8,750.00	5,981.83	8,689.26	5,921.28	96.01	95.51	-86.369	-406.82	-3,063.36	956.68	765.85	190.83	5.013	
8,800.00	5,980.36	8,739.25	5,919.57	97.54	97.04	-86.355	-407.00	-3,113.33	956.69	762.81	193.89	4.934	
8,850.00	5,978.90	8,789.25	5,917.87	99.08	98.58	-86.340	-407.19	-3,163.30	956.71	759.76	196.95	4.858	
8,900.00	5,977.44	8,839.25	5,916.16	100.61	100.12	-86.326	-407.37	-3,213.27	956.73	756.71	200.02	4.783	
8,950.00	5,975.98	8,889.25	5,914.46	102.15	101.65	-86.311	-407.55	-3,263.24	956.74	753.66	203.09	4.711	
9,000.00	5,974.52	8,939.25	5,912.75	103.68	103.19	-86.297	-407.74	-3,313.21	956.76	750.60	206.16	4.641	
9,050.00	5,973.06	8,989.25	5,911.05	105.22	104.74	-86.282	-407.92	-3,363.18	956.78	747.54	209.23	4.573	
9,100.00	5,971.60	9,039.25	5,909.35	106.76	106.28	-86.267	-408.10	-3,413.15	956.79	744.49	212.31	4.507	
9,150.00	5,970.13	9,089.25	5,907.64	108.30	107.82	-86.253	-408.28	-3,463.12	956.81	741.42	215.39	4.442	
9,200.00	5,968.67	9,139.25	5,905.94	109.84	109.37	-86.238	-408.47	-3,513.09	956.83	738.36	218.47	4.380	
9,250.00	5,967.21	9,189.25	5,904.23	111.38	110.91	-86.224	-408.65	-3,563.06	956.85	735.30	221.55	4.319	
9,300.00	5,965.75	9,239.25	5,902.53	112.93	112.46	-86.209	-408.83	-3,613.03	956.86	732.23	224.63	4.260	
9,350.00	5,964.29	9,289.25	5,900.82	114.47	114.00	-86.195	-409.02	-3,663.00	956.88	729.17	227.71	4.202	
9,400.00	5,962.83	9,339.25	5,899.12	116.01	115.55	-86.180	-409.20	-3,712.97	956.90	726.10	230.80	4.146	
9,450.00	5,961.37	9,389.25	5,897.41	117.56	117.10	-86.166	-409.38	-3,762.94	956.91	723.03	233.89	4.091	
9,500.00	5,959.90	9,439.25	5,895.71	119.11	118.65	-86.151	-409.57	-3,812.91	956.93	719.96	236.97	4.038	
9,550.00	5,958.44	9,489.25	5,894.00	120.66	120.20	-86.137	-409.75	-3,862.88	956.95	716.88	240.06	3.986	
9,600.00	5,956.98	9,539.25	5,892.30	122.20	121.75	-86.122	-409.93	-3,912.85	956.97	713.81	243.16	3.936	
9,650.00	5,955.52	9,589.24	5,890.59	123.75	123.30	-86.108	-410.12	-3,962.82	956.98	710.74	246.25	3.886	
9,700.00	5,954.06	9,639.24	5,888.89	125.30	124.85	-86.093	-410.30	-4,012.79	957.00	707.66	249.34	3.838	
9,750.00	5,952.60	9,689.24	5,887.19	126.85	126.41	-86.079	-410.48	-4,062.76	957.02	704.58	252.44	3.791	
9,800.00	5,951.14	9,739.24	5,885.48	128.40	127.96	-86.064	-410.67	-4,112.73	957.04	701.50	255.53	3.745	
9,850.00	5,949.68	9,789.24	5,883.78	129.96	129.51	-86.049	-410.85	-4,162.70	957.05	698.43	258.63	3.701	
9,900.00	5,948.21	9,839.24	5,882.07	131.51	131.07	-86.035	-411.03	-4,212.67	957.07	695.35	261.73	3.657	
9,950.00	5,946.75	9,889.24	5,880.37	133.06	132.62	-86.020	-411.21	-4,262.64	957.09	692.27	264.82	3.614	
10,000.00	5,945.29	9,939.24	5,878.66	134.61	134.18	-86.006	-411.40	-4,312.61	957.11	689.18	267.92	3.572	
10,050.00	5,943.83	9,989.24	5,876.96	136.17	135.73	-85.991	-411.58	-4,362.58	957.12	686.10	271.02	3.532	
10,100.00	5,942.37	10,039.24	5,875.25	137.72	137.29	-85.977	-411.76	-4,412.55	957.14	683.02	274.12	3.492	
10,150.00	5,940.91	10,089.24	5,873.55	139.28	138.85	-85.962	-411.95	-4,462.52	957.16	679.93	277.23	3.453	
10,200.00	5,939.45	10,139.24	5,871.84	140.83	140.40	-85.948	-412.13	-4,512.49	957.18	676.85	280.33	3.414	
10,250.00	5,937.98	10,189.24	5,870.14	142.39	141.96	-85.933	-412.31	-4,562.46	957.20	673.76	283.43	3.377	
10,300.00	5,936.52	10,239.24	5,868.44	143.95	143.52	-85.919	-412.50	-4,612.43	957.22	670.68	286.54	3.341	
10,350.00	5,935.06	10,289.24	5,866.73	145.50	145.08	-85.904	-412.68	-4,662.40	957.23	667.59	289.64	3.305	
10,400.00	5,933.60	10,339.24	5,865.03	147.06	146.64	-85.890	-412.86	-4,712.37	957.25	664.51	292.75	3.270	
10,450.00	5,932.14	10,389.24	5,863.32	148.62	148.20	-85.875	-413.05	-4,762.34	957.27	661.42	295.85	3.236	
10,500.00	5,930.68	10,439.23	5,861.62	150.18	149.76	-85.861	-413.23	-4,812.31	957.29	658.33	298.96	3.202	
10,550.00	5,929.22	10,489.23	5,859.91	151.74	151.32	-85.846	-413.41	-4,862.28	957.31	655.24	302.07	3.169	
10,600.00	5,927.75	10,539.23	5,858.21	153.29	152.88	-85.832	-413.60	-4,912.25	957.33	652.15	305.18	3.137	
10,650.00	5,926.29	10,589.23	5,856.50	154.85	154.44	-85.817	-413.78	-4,962.22	957.35	649.06	308.28	3.105	
10,700.00	5,924.83	10,639.23	5,854.80	156.41	156.00	-85.803	-413.96	-5,012.19	957.36	645.97	311.39	3.074	
10,750.00	5,923.37	10,689.23	5,853.09	157.97	157.56	-85.788	-414.14	-5,062.16	957.38	642.88	314.50	3.044	
10,800.00	5,921.91	10,739.23	5,851.39	159.53	159.12	-85.773	-414.33	-5,112.13	957.40	639.79	317.61	3.014	
10,850.00	5,920.45	10,789.23	5,849.68	161.09	160.68	-85.759	-414.51	-5,162.10	957.42	636.70	320.72	2.985	
10,900.00	5,918.99	10,839.23	5,847.98	162.66	162.25	-85.744	-414.69	-5,212.07	957.44	633.61	323.83	2.957	
10,950.00	5,917.52	10,889.23	5,846.28	164.22	163.81	-85.730	-414.88	-5,262.04	957.46	630.51	326.94	2.929	
11,000.00	5,916.06	10,939.23	5,844.57	165.78	165.37	-85.715	-415.06	-5,312.01	957.48	627.42	330.06	2.901	
11,050.00	5,914.60	10,989.23	5,842.87	167.34	166.93	-85.701	-415.24	-5,361.98	957.50	624.33	333.17	2.874	

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



Anticollision Report

Company:	SPUR ENERGY PARTNERS, LLC	Local Co-ordinate Reference:	Well 20H
Project:	LEA COUNTY, NM (NAD 83 - NME)	TVD Reference:	RKB = 20' @ 4127.00usft (AKITA 57)
Reference Site:	MILLER 14 FEDERAL COM	MD Reference:	RKB = 20' @ 4127.00usft (AKITA 57)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	20H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.1.13 Single User Db
Reference Design:	PERMIT	Offset TVD Reference:	Reference Datum

Offset Design MILLER 14 FEDERAL COM - 10H - Wellbore #1 - PERMIT												Offset Site Error:	0.00 usft
Survey Program: 0-MWD+IGRF												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
11,100.00	5,913.14	11,039.23	5,841.16	168.90	168.50	-85.686	-415.43	-5,411.95	957.52	621.24	336.28	2.847	
11,150.00	5,911.68	11,089.23	5,839.46	170.47	170.06	-85.672	-415.61	-5,461.92	957.54	618.14	339.39	2.821	
11,200.00	5,910.22	11,139.23	5,837.75	172.03	171.63	-85.657	-415.79	-5,511.89	957.55	615.05	342.51	2.796	
11,250.00	5,908.76	11,189.23	5,836.05	173.59	173.19	-85.643	-415.98	-5,561.86	957.57	611.95	345.62	2.771	
11,300.00	5,907.30	11,239.23	5,834.34	175.15	174.75	-85.628	-416.16	-5,611.83	957.59	608.86	348.73	2.746	
11,350.00	5,905.83	11,289.22	5,832.64	176.72	176.32	-85.614	-416.34	-5,661.80	957.61	605.77	351.85	2.722	
11,400.00	5,904.37	11,339.22	5,830.93	178.28	177.88	-85.599	-416.53	-5,711.77	957.63	602.67	354.96	2.698	
11,450.00	5,902.91	11,389.22	5,829.23	179.85	179.45	-85.585	-416.71	-5,761.74	957.65	599.58	358.08	2.674	
11,500.00	5,901.45	11,439.22	5,827.52	181.41	181.01	-85.570	-416.89	-5,811.71	957.67	596.48	361.19	2.651	
11,550.00	5,899.99	11,489.22	5,825.82	182.98	182.58	-85.556	-417.07	-5,861.68	957.69	593.38	364.31	2.629	
11,600.00	5,898.53	11,539.22	5,824.12	184.54	184.14	-85.541	-417.26	-5,911.65	957.71	590.29	367.42	2.607	
11,650.00	5,897.07	11,589.22	5,822.41	186.10	185.71	-85.527	-417.44	-5,961.62	957.73	587.19	370.54	2.585	
11,670.64	5,896.46	11,609.86	5,821.71	186.75	186.36	-85.521	-417.52	-5,982.25	957.74	585.91	371.83	2.576	
11,700.00	5,895.60	11,639.22	5,820.71	187.67	187.28	-85.512	-417.62	-6,011.59	957.75	584.10	373.65	2.563	
11,720.66	5,895.00	11,659.88	5,820.00	188.32	187.92	-85.506	-417.70	-6,032.24	957.76	582.82	374.94	2.554 SF	

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



Anticollision Report

Company:	SPUR ENERGY PARTNERS, LLC	Local Co-ordinate Reference:	Well 20H
Project:	LEA COUNTY, NM (NAD 83 - NME)	TVD Reference:	RKB = 20' @ 4127.00usft (AKITA 57)
Reference Site:	MILLER 14 FEDERAL COM	MD Reference:	RKB = 20' @ 4127.00usft (AKITA 57)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	20H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.1.13 Single User Db
Reference Design:	PERMIT	Offset TVD Reference:	Reference Datum

Offset Design MILLER 14 FEDERAL COM - 70H - Wellbore #1 - PERMIT												Offset Site Error:	0.00 usft
Survey Program: 0-MWD+IGRF												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	
150.00	150.00	150.00	150.00	0.32	0.32	89.714	0.10	20.00	20.00	19.36	0.65	30.996	
200.00	200.00	200.00	200.00	0.50	0.50	89.714	0.10	20.00	20.00	19.00	1.00	19.926	
250.00	250.00	250.00	250.00	0.68	0.68	89.714	0.10	20.00	20.00	18.64	1.36	14.682	
300.00	300.00	300.00	300.00	0.86	0.86	89.714	0.10	20.00	20.00	18.28	1.72	11.624 CC	
350.00	350.00	349.94	349.94	1.04	1.04	84.285	0.53	20.07	20.03	17.95	2.08	9.637	
400.00	399.98	399.92	399.90	1.22	1.22	84.886	1.62	20.26	20.10	17.66	2.44	8.247	
450.00	449.93	449.91	449.88	1.40	1.40	87.834	2.76	20.46	20.12	17.32	2.80	7.193	
500.00	499.84	499.87	499.83	1.58	1.58	93.234	3.89	20.65	20.22	17.06	3.16	6.406 ES	
550.00	549.68	549.79	549.74	1.77	1.76	100.911	5.03	20.85	20.65	17.13	3.52	5.860	
600.00	599.45	599.66	599.59	1.95	1.94	110.312	6.16	21.04	21.72	17.83	3.90	5.575	
612.39	611.77	612.00	611.93	2.00	1.98	112.799	6.44	21.09	22.12	18.13	3.99	5.545	
650.00	649.16	649.48	649.39	2.14	2.11	119.963	7.29	21.24	23.63	19.35	4.27	5.529	
700.00	698.86	699.29	699.20	2.34	2.29	128.044	8.43	21.43	26.11	21.47	4.64	5.622	
750.00	748.56	749.11	749.00	2.53	2.47	134.620	9.56	21.62	29.03	24.01	5.01	5.790	
800.00	798.27	798.92	798.80	2.73	2.65	139.945	10.69	21.82	32.25	26.87	5.38	5.998	
850.00	847.97	848.74	848.60	2.93	2.83	144.275	11.83	22.01	35.70	29.96	5.74	6.222	
900.00	897.67	898.55	898.40	3.12	3.01	147.827	12.96	22.21	39.32	33.22	6.10	6.447	
950.00	947.38	948.37	948.21	3.32	3.19	150.773	14.09	22.40	43.06	36.61	6.46	6.669	
1,000.00	997.08	998.18	998.01	3.52	3.37	153.242	15.22	22.60	46.90	40.08	6.82	6.881	
1,050.00	1,046.78	1,048.00	1,047.81	3.72	3.55	155.336	16.36	22.79	50.81	43.64	7.17	7.083	
1,100.00	1,096.49	1,097.81	1,097.61	3.92	3.73	157.128	17.49	22.99	54.78	47.25	7.53	7.273	
1,150.00	1,146.19	1,147.63	1,147.41	4.12	3.91	158.677	18.62	23.18	58.80	50.91	7.89	7.452	
1,200.00	1,195.89	1,197.44	1,197.21	4.32	4.09	160.027	19.75	23.38	62.85	54.60	8.25	7.620	
1,250.00	1,245.59	1,247.26	1,247.02	4.53	4.27	161.214	20.89	23.57	66.93	58.33	8.61	7.777	
1,300.00	1,295.30	1,297.07	1,296.82	4.73	4.45	162.263	22.02	23.76	71.04	62.08	8.97	7.924	
1,350.00	1,345.00	1,346.89	1,346.62	4.93	4.63	163.198	23.15	23.96	75.17	65.85	9.32	8.062	
1,400.00	1,394.70	1,396.70	1,396.42	5.13	4.80	164.035	24.28	24.15	79.32	69.64	9.68	8.192	
1,450.00	1,444.41	1,446.52	1,446.22	5.33	4.98	164.789	25.42	24.35	83.48	73.44	10.04	8.314	
1,500.00	1,494.11	1,496.33	1,496.02	5.54	5.16	165.471	26.55	24.54	87.66	77.26	10.40	8.428	
1,550.00	1,543.81	1,546.15	1,545.83	5.74	5.34	166.091	27.68	24.74	91.85	81.09	10.76	8.536	
1,600.00	1,593.52	1,595.96	1,595.63	5.94	5.52	166.657	28.81	24.93	96.04	84.92	11.12	8.638	
1,650.00	1,643.22	1,645.78	1,645.43	6.14	5.70	167.175	29.95	25.13	100.25	88.77	11.48	8.733	
1,700.00	1,692.92	1,695.59	1,695.23	6.35	5.88	167.652	31.08	25.32	104.46	92.62	11.84	8.824	
1,750.00	1,742.62	1,745.41	1,745.03	6.55	6.06	168.092	32.21	25.52	108.68	96.48	12.20	8.910	
1,800.00	1,792.33	1,795.22	1,794.83	6.75	6.24	168.499	33.35	25.71	112.91	100.35	12.56	8.991	
1,850.00	1,842.03	1,845.04	1,844.64	6.96	6.42	168.876	34.48	25.91	117.14	104.22	12.92	9.068	
1,900.00	1,891.73	1,894.85	1,894.44	7.16	6.60	169.227	35.61	26.10	121.37	108.09	13.28	9.141	
1,950.00	1,941.44	1,944.67	1,944.24	7.36	6.78	169.555	36.74	26.29	125.61	111.97	13.64	9.211	
2,000.00	1,991.14	1,994.48	1,994.04	7.56	6.96	169.861	37.88	26.49	129.85	115.86	14.00	9.277	
2,050.00	2,040.84	2,044.30	2,043.84	7.77	7.14	170.148	39.01	26.68	134.10	119.74	14.36	9.340	
2,100.00	2,090.55	2,094.11	2,093.64	7.97	7.32	170.417	40.14	26.88	138.35	123.63	14.72	9.400	
2,150.00	2,140.25	2,143.93	2,143.45	8.17	7.50	170.670	41.27	27.07	142.60	127.53	15.08	9.458	
2,200.00	2,189.95	2,193.74	2,193.25	8.38	7.68	170.908	42.41	27.27	146.86	131.42	15.44	9.513	
2,250.00	2,239.65	2,243.56	2,243.05	8.58	7.85	171.133	43.54	27.46	151.12	135.32	15.80	9.565	
2,300.00	2,289.36	2,293.37	2,292.85	8.78	8.03	171.346	44.67	27.66	155.38	139.22	16.16	9.615	
2,350.00	2,339.06	2,343.19	2,342.65	8.99	8.21	171.547	45.80	27.85	159.64	143.12	16.52	9.664	
2,400.00	2,388.76	2,393.00	2,392.46	9.19	8.39	171.738	46.94	28.05	163.90	147.02	16.88	9.710	
2,450.00	2,438.47	2,442.82	2,442.26	9.40	8.57	171.919	48.07	28.24	168.17	150.93	17.24	9.754	
2,500.00	2,488.17	2,492.63	2,492.06	9.60	8.75	172.091	49.20	28.43	172.43	154.83	17.60	9.797	
2,550.00	2,537.87	2,542.45	2,541.86	9.80	8.93	172.255	50.34	28.63	176.70	158.74	17.96	9.838	
2,600.00	2,587.58	2,592.26	2,591.66	10.01	9.11	172.411	51.47	28.82	180.97	162.65	18.32	9.877	
2,650.00	2,637.28	2,642.08	2,641.46	10.21	9.29	172.560	52.60	29.02	185.24	166.56	18.68	9.915	

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



Anticollision Report

Company:	SPUR ENERGY PARTNERS, LLC	Local Co-ordinate Reference:	Well 20H
Project:	LEA COUNTY, NM (NAD 83 - NME)	TVD Reference:	RKB = 20' @ 4127.00usft (AKITA 57)
Reference Site:	MILLER 14 FEDERAL COM	MD Reference:	RKB = 20' @ 4127.00usft (AKITA 57)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	20H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.1.13 Single User Db
Reference Design:	PERMIT	Offset TVD Reference:	Reference Datum

Offset Design MILLER 14 FEDERAL COM - 70H - Wellbore #1 - PERMIT												Offset Site Error:	0.00 usft
Survey Program: 0-MWD+IGRF												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	
2,700.00	2,686.98	2,691.89	2,691.27	10.41	9.47	172.703	53.73	29.21	189.52	170.47	19.04	9.952	
2,750.00	2,736.69	2,741.71	2,741.07	10.62	9.65	172.839	54.87	29.41	193.79	174.39	19.40	9.987	
2,800.00	2,786.39	2,791.52	2,790.87	10.82	9.83	172.969	56.00	29.60	198.06	178.30	19.77	10.021	
2,850.00	2,836.09	2,841.34	2,840.67	11.02	10.01	173.093	57.13	29.80	202.34	182.21	20.13	10.054	
2,900.00	2,885.79	2,891.15	2,890.47	11.23	10.19	173.213	58.26	29.99	206.62	186.13	20.49	10.085	
2,950.00	2,935.50	2,940.97	2,940.27	11.43	10.37	173.327	59.40	30.19	210.89	190.05	20.85	10.116	
3,000.00	2,985.20	2,990.78	2,990.08	11.64	10.55	173.437	60.53	30.38	215.17	193.96	21.21	10.145	
3,050.00	3,034.90	3,040.60	3,039.88	11.84	10.73	173.543	61.66	30.57	219.45	197.88	21.57	10.174	
3,100.00	3,084.61	3,090.41	3,089.68	12.04	10.91	173.645	62.79	30.77	223.73	201.80	21.93	10.202	
3,150.00	3,134.31	3,140.23	3,139.48	12.25	11.09	173.743	63.93	30.96	228.01	205.72	22.29	10.229	
3,200.00	3,184.01	3,190.04	3,189.28	12.45	11.26	173.837	65.06	31.16	232.29	209.64	22.65	10.255	
3,250.00	3,233.72	3,239.86	3,239.08	12.65	11.44	173.928	66.19	31.35	236.57	213.56	23.01	10.280	
3,300.00	3,283.42	3,289.67	3,288.89	12.86	11.62	174.015	67.32	31.55	240.85	217.48	23.37	10.304	
3,350.00	3,333.12	3,339.49	3,338.69	13.06	11.80	174.100	68.46	31.74	245.14	221.40	23.74	10.328	
3,400.00	3,382.82	3,389.30	3,388.49	13.27	11.98	174.182	69.59	31.94	249.42	225.32	24.10	10.351	
3,450.00	3,432.53	3,439.12	3,438.29	13.47	12.16	174.261	70.72	32.13	253.70	229.25	24.46	10.373	
3,500.00	3,482.23	3,488.93	3,488.09	13.67	12.34	174.337	71.86	32.33	257.99	233.17	24.82	10.395	
3,550.00	3,531.93	3,538.75	3,537.89	13.88	12.52	174.411	72.99	32.52	262.27	237.09	25.18	10.416	
3,600.00	3,581.64	3,588.56	3,587.70	14.08	12.70	174.482	74.12	32.71	266.56	241.02	25.54	10.436	
3,650.00	3,631.34	3,638.37	3,637.50	14.29	12.88	174.551	75.25	32.91	270.84	244.94	25.90	10.456	
3,700.00	3,681.04	3,688.19	3,687.30	14.49	13.06	174.618	76.39	33.10	275.13	248.86	26.26	10.476	
3,750.00	3,730.75	3,738.00	3,737.10	14.69	13.24	174.683	77.52	33.30	279.41	252.79	26.62	10.495	
3,800.00	3,780.45	3,787.82	3,786.90	14.90	13.42	174.746	78.65	33.49	283.70	256.71	26.99	10.513	
3,850.00	3,830.15	3,837.63	3,836.71	15.10	13.60	174.807	79.78	33.69	287.99	260.64	27.35	10.531	
3,900.00	3,879.85	3,887.45	3,886.51	15.30	13.78	174.867	80.92	33.88	292.27	264.57	27.71	10.549	
3,950.00	3,929.56	3,937.26	3,936.31	15.51	13.96	174.924	82.05	34.08	296.56	268.49	28.07	10.566	
4,000.00	3,979.26	3,987.08	3,986.11	15.71	14.14	174.980	83.18	34.27	300.85	272.42	28.43	10.582	
4,050.00	4,028.96	4,036.89	4,035.91	15.92	14.32	175.035	84.31	34.47	305.14	276.35	28.79	10.598	
4,100.00	4,078.67	4,086.71	4,085.71	16.12	14.49	175.088	85.45	34.66	309.42	280.27	29.15	10.614	
4,150.00	4,128.37	4,136.52	4,135.52	16.32	14.67	175.139	86.58	34.85	313.71	284.20	29.51	10.629	
4,200.00	4,178.07	4,186.34	4,185.32	16.53	14.85	175.189	87.71	35.05	318.00	288.13	29.87	10.644	
4,250.00	4,227.78	4,236.15	4,235.12	16.73	15.03	175.238	88.85	35.24	322.29	292.05	30.24	10.659	
4,300.00	4,277.48	4,285.97	4,284.92	16.94	15.21	175.285	89.98	35.44	326.58	295.98	30.60	10.674	
4,350.00	4,327.18	4,335.78	4,334.72	17.14	15.39	175.331	91.11	35.63	330.87	299.91	30.96	10.688	
4,400.00	4,376.89	4,385.60	4,384.52	17.34	15.57	175.376	92.24	35.83	335.16	303.84	31.32	10.701	
4,450.00	4,426.59	4,435.41	4,434.33	17.55	15.75	175.420	93.38	36.02	339.45	307.77	31.68	10.715	
4,500.00	4,476.29	4,485.23	4,484.13	17.75	15.93	175.463	94.51	36.22	343.74	311.70	32.04	10.728	
4,550.00	4,525.99	4,535.04	4,533.93	17.96	16.11	175.505	95.64	36.41	348.03	315.62	32.40	10.740	
4,600.00	4,575.70	4,584.86	4,583.73	18.16	16.29	175.546	96.77	36.61	352.32	319.55	32.76	10.753	
4,650.00	4,625.40	4,634.67	4,633.53	18.36	16.47	175.585	97.91	36.80	356.61	323.48	33.13	10.765	
4,700.00	4,675.10	4,684.49	4,683.33	18.57	16.65	175.624	99.04	36.99	360.90	327.41	33.49	10.777	
4,750.00	4,724.81	4,734.30	4,733.14	18.77	16.83	175.662	100.17	37.19	365.19	331.34	33.85	10.789	
4,800.00	4,774.51	4,784.12	4,782.94	18.98	17.01	175.699	101.30	37.38	369.48	335.27	34.21	10.800	
4,850.00	4,824.21	4,833.93	4,832.74	19.18	17.19	175.735	102.44	37.58	373.77	339.20	34.57	10.812	
4,900.00	4,873.92	4,883.75	4,882.54	19.38	17.37	175.771	103.57	37.77	378.06	343.13	34.93	10.823	
4,950.00	4,923.62	4,933.56	4,932.34	19.59	17.55	175.805	104.70	37.97	382.35	347.06	35.29	10.833	
5,000.00	4,973.32	4,983.38	4,982.14	19.79	17.73	175.839	105.83	38.16	386.65	350.99	35.66	10.844	
5,050.00	5,023.02	5,033.19	5,031.95	20.00	17.90	175.872	106.97	38.36	390.94	354.92	36.02	10.854	
5,058.33	5,031.31	5,041.50	5,040.25	20.03	17.93	175.877	107.16	38.39	391.65	355.58	36.08	10.856	
5,100.00	5,072.73	5,083.01	5,081.75	20.20	18.08	-161.226	108.10	38.55	395.15	358.77	36.38	10.861	
5,150.00	5,122.37	5,132.74	5,131.46	20.40	18.26	-139.088	109.23	38.75	399.14	362.39	36.75	10.862	
5,200.00	5,171.80	5,182.25	5,180.96	20.59	18.44	-125.285	110.36	38.94	402.97	365.86	37.11	10.859	

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



Anticollision Report

Company:	SPUR ENERGY PARTNERS, LLC	Local Co-ordinate Reference:	Well 20H
Project:	LEA COUNTY, NM (NAD 83 - NME)	TVD Reference:	RKB = 20' @ 4127.00usft (AKITA 57)
Reference Site:	MILLER 14 FEDERAL COM	MD Reference:	RKB = 20' @ 4127.00usft (AKITA 57)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	20H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.1.13 Single User Db
Reference Design:	PERMIT	Offset TVD Reference:	Reference Datum

Offset Design MILLER 14 FEDERAL COM - 70H - Wellbore #1 - PERMIT												Offset Site Error:	0.00 usft
Survey Program: 0-MWD+IGRF												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	
5,250.00	5,220.89	5,231.40	5,230.10	20.77	18.62	-117.267	111.47	39.13	406.72	369.26	37.46	10.857	
5,300.00	5,269.51	5,280.07	5,278.76	20.95	18.79	-112.689	112.58	39.32	410.55	372.74	37.81	10.858	
5,350.00	5,317.52	5,328.12	5,326.79	21.13	18.97	-110.209	113.67	39.51	414.63	376.48	38.15	10.869	
5,400.00	5,364.79	5,375.41	5,374.07	21.31	19.14	-109.081	114.75	39.69	419.19	380.71	38.48	10.895	
5,450.00	5,411.20	5,421.81	5,420.46	21.48	19.30	-108.867	115.80	39.87	424.47	385.68	38.79	10.944	
5,500.00	5,456.61	5,467.52	5,466.16	21.65	19.47	-109.298	116.84	40.05	430.73	391.66	39.07	11.024	
5,550.00	5,500.89	5,517.25	5,515.85	21.82	19.64	-110.309	117.95	38.75	437.94	398.60	39.34	11.132	
5,600.00	5,543.94	5,568.29	5,566.72	22.00	19.82	-111.525	119.03	34.74	445.90	406.32	39.57	11.268	
5,650.00	5,585.63	5,620.75	5,618.70	22.18	20.00	-112.877	120.10	27.79	454.53	414.76	39.77	11.429	
5,700.00	5,625.84	5,674.73	5,671.70	22.38	20.18	-114.318	121.13	17.67	463.75	423.81	39.93	11.613	
5,750.00	5,664.47	5,730.34	5,725.62	22.59	20.36	-115.814	122.13	4.13	473.47	433.41	40.06	11.819	
5,800.00	5,701.40	5,787.70	5,780.32	22.83	20.56	-117.337	123.08	-13.10	483.58	443.42	40.15	12.043	
5,850.00	5,736.55	5,846.94	5,835.61	23.11	20.77	-118.870	123.98	-34.31	493.97	453.75	40.22	12.281	
5,900.00	5,769.81	5,908.16	5,891.26	23.43	21.00	-120.397	124.81	-59.78	504.53	464.26	40.27	12.528	
5,950.00	5,801.09	5,971.49	5,946.99	23.81	21.27	-121.905	125.57	-89.83	515.13	474.81	40.32	12.777	
6,000.00	5,830.31	6,037.04	6,002.44	24.25	21.57	-123.383	126.25	-124.75	525.63	485.26	40.37	13.020	
6,050.00	5,857.38	6,104.89	6,057.18	24.77	21.93	-124.824	126.82	-164.81	535.90	495.44	40.46	13.246	
6,071.79	5,868.48	6,135.19	6,080.69	25.02	22.11	-125.437	127.03	-183.94	540.27	499.76	40.51	13.336	
6,100.00	5,882.59	6,175.31	6,110.85	25.35	22.36	-126.579	127.27	-210.39	545.60	504.95	40.64	13.424	
6,150.00	5,907.59	6,249.04	6,163.27	26.01	22.90	-128.247	127.59	-262.20	553.55	512.50	41.05	13.485	
6,200.00	5,932.59	6,325.51	6,213.25	26.70	23.57	-129.431	127.76	-320.05	559.32	517.65	41.67	13.422	
6,250.00	5,957.59	6,403.86	6,259.49	27.45	24.39	-130.110	127.75	-383.27	562.68	520.08	42.60	13.208	
6,271.79	5,968.48	6,438.33	6,278.17	27.78	24.80	-130.244	127.69	-412.24	563.34	520.24	43.10	13.070	
6,300.00	5,981.98	6,477.42	6,298.11	28.23	25.29	-130.300	127.58	-445.87	563.97	520.45	43.52	12.959	
6,350.00	6,002.85	6,527.19	6,322.99	29.10	25.98	-130.427	127.42	-488.97	566.98	522.76	44.23	12.820	
6,400.00	6,019.68	6,576.37	6,347.58	30.05	26.69	-130.654	127.26	-531.55	572.86	527.80	45.06	12.714	
6,450.00	6,032.35	6,624.57	6,371.68	31.06	27.42	-130.948	127.11	-573.30	581.68	535.65	46.03	12.637	
6,500.00	6,040.75	6,680.53	6,399.54	32.12	28.31	-131.515	126.93	-621.83	593.48	546.37	47.11	12.597	
6,550.00	6,044.83	6,857.05	6,459.39	33.23	31.66	-134.150	126.33	-787.15	602.71	553.93	48.78	12.355	
6,588.54	6,045.00	6,983.63	6,469.89	34.11	34.47	-134.664	125.87	-913.04	604.48	553.24	51.24	11.797	
6,600.00	6,044.67	6,995.10	6,469.72	34.38	34.74	-134.675	125.83	-924.51	604.59	552.97	51.62	11.712	
6,650.00	6,043.20	7,045.09	6,468.99	35.57	35.93	-134.724	125.65	-974.49	605.11	551.77	53.34	11.345	
6,700.00	6,041.74	7,095.08	6,468.26	36.76	37.12	-134.773	125.47	-1,024.48	605.62	550.57	55.05	11.000	
6,750.00	6,040.28	7,145.08	6,467.53	38.01	38.36	-134.822	125.28	-1,074.47	606.14	549.30	56.84	10.664	
6,800.00	6,038.82	7,195.07	6,466.80	39.25	39.60	-134.871	125.10	-1,124.46	606.65	548.02	58.63	10.347	
6,850.00	6,037.36	7,245.07	6,466.07	40.54	40.89	-134.920	124.92	-1,174.45	607.17	546.69	60.47	10.040	
6,900.00	6,035.90	7,295.06	6,465.34	41.84	42.18	-134.969	124.74	-1,224.44	607.68	545.36	62.32	9.751	
6,950.00	6,034.44	7,345.06	6,464.61	43.16	43.51	-135.018	124.56	-1,274.43	608.20	543.99	64.21	9.472	
7,000.00	6,032.97	7,395.05	6,463.88	44.49	44.83	-135.066	124.37	-1,324.42	608.72	542.61	66.11	9.208	
7,050.00	6,031.51	7,445.05	6,463.15	45.85	46.19	-135.115	124.19	-1,374.41	609.24	541.20	68.04	8.955	
7,100.00	6,030.05	7,495.04	6,462.42	47.21	47.54	-135.163	124.01	-1,424.40	609.75	539.79	69.97	8.715	
7,150.00	6,028.59	7,545.04	6,461.68	48.60	48.93	-135.212	123.83	-1,474.38	610.27	538.34	71.93	8.485	
7,200.00	6,027.13	7,595.03	6,460.95	49.98	50.31	-135.260	123.64	-1,524.37	610.79	536.90	73.89	8.266	
7,250.00	6,025.67	7,645.03	6,460.22	51.39	51.71	-135.308	123.46	-1,574.36	611.31	535.43	75.87	8.057	
7,300.00	6,024.21	7,695.02	6,459.49	52.80	53.12	-135.356	123.28	-1,624.35	611.83	533.97	77.86	7.858	
7,350.00	6,022.74	7,745.02	6,458.76	54.22	54.54	-135.404	123.10	-1,674.34	612.35	532.48	79.87	7.667	
7,400.00	6,021.28	7,795.01	6,458.03	55.65	55.96	-135.452	122.92	-1,724.33	612.87	531.00	81.87	7.486	
7,450.00	6,019.82	7,845.00	6,457.30	57.09	57.40	-135.500	122.73	-1,774.32	613.39	529.49	83.90	7.311	
7,500.00	6,018.36	7,895.00	6,456.57	58.53	58.84	-135.548	122.55	-1,824.31	613.91	527.99	85.92	7.145	
7,550.00	6,016.90	7,944.99	6,455.84	59.98	60.29	-135.596	122.37	-1,874.30	614.43	526.48	87.96	6.986	
7,600.00	6,015.44	7,994.99	6,455.11	61.44	61.74	-135.643	122.19	-1,924.29	614.96	524.96	89.99	6.834	
7,650.00	6,013.98	8,044.98	6,454.38	62.90	63.21	-135.691	122.00	-1,974.27	615.48	523.44	92.04	6.687	

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



Anticollision Report

Company:	SPUR ENERGY PARTNERS, LLC	Local Co-ordinate Reference:	Well 20H
Project:	LEA COUNTY, NM (NAD 83 - NME)	TVD Reference:	RKB = 20' @ 4127.00usft (AKITA 57)
Reference Site:	MILLER 14 FEDERAL COM	MD Reference:	RKB = 20' @ 4127.00usft (AKITA 57)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	20H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.1.13 Single User Db
Reference Design:	PERMIT	Offset TVD Reference:	Reference Datum

Offset Design MILLER 14 FEDERAL COM - 70H - Wellbore #1 - PERMIT												Offset Site Error:	0.00 usft
Survey Program: 0-MWD+IGRF												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 Tooface (")	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
7,700.00	6,012.51	8,094.98	6,453.65	64.37	64.67	-135.738	121.82	-2,024.26	616.00	521.92	94.08	6.547	
7,750.00	6,011.05	8,144.97	6,452.91	65.84	66.14	-135.786	121.64	-2,074.25	616.53	520.39	96.14	6.413	
7,800.00	6,009.59	8,194.97	6,452.18	67.32	67.62	-135.833	121.46	-2,124.24	617.05	518.86	98.19	6.284	
7,850.00	6,008.13	8,244.96	6,451.45	68.81	69.10	-135.880	121.28	-2,174.23	617.57	517.32	100.26	6.160	
7,900.00	6,006.67	8,294.96	6,450.72	70.29	70.59	-135.927	121.09	-2,224.22	618.10	515.78	102.32	6.041	
7,950.00	6,005.21	8,344.95	6,449.99	71.78	72.08	-135.974	120.91	-2,274.21	618.62	514.24	104.38	5.926	
8,000.00	6,003.75	8,394.95	6,449.26	73.28	73.57	-136.021	120.73	-2,324.20	619.15	512.70	106.45	5.816	
8,050.00	6,002.28	8,444.94	6,448.53	74.77	75.07	-136.068	120.55	-2,374.19	619.67	511.15	108.52	5.710	
8,100.00	6,000.82	8,494.94	6,447.80	76.27	76.56	-136.115	120.36	-2,424.18	620.20	509.61	110.59	5.608	
8,150.00	5,999.36	8,544.93	6,447.07	77.78	78.07	-136.162	120.18	-2,474.16	620.73	508.07	112.66	5.510	
8,200.00	5,997.90	8,594.92	6,446.34	79.29	79.57	-136.208	120.00	-2,524.15	621.26	506.52	114.73	5.415	
8,250.00	5,996.44	8,644.92	6,445.61	80.80	81.08	-136.255	119.82	-2,574.14	621.78	504.97	116.81	5.323	
8,300.00	5,994.98	8,694.91	6,444.88	82.31	82.59	-136.302	119.64	-2,624.13	622.31	503.43	118.88	5.235	
8,350.00	5,993.52	8,744.91	6,444.14	83.82	84.11	-136.348	119.45	-2,674.12	622.84	501.88	120.96	5.149	
8,400.00	5,992.06	8,794.90	6,443.41	85.34	85.62	-136.394	119.27	-2,724.11	623.37	500.34	123.03	5.067	
8,450.00	5,990.59	8,844.90	6,442.68	86.86	87.14	-136.441	119.09	-2,774.10	623.90	498.79	125.11	4.987	
8,500.00	5,989.13	8,894.89	6,441.95	88.38	88.66	-136.487	118.91	-2,824.09	624.43	497.25	127.18	4.910	
8,550.00	5,987.67	8,944.89	6,441.22	89.90	90.18	-136.533	118.72	-2,874.08	624.96	495.70	129.26	4.835	
8,600.00	5,986.21	8,994.88	6,440.49	91.43	91.70	-136.579	118.54	-2,924.07	625.49	494.16	131.33	4.763	
8,650.00	5,984.75	9,044.88	6,439.76	92.95	93.23	-136.625	118.36	-2,974.05	626.02	492.62	133.40	4.693	
8,700.00	5,983.29	9,094.87	6,439.03	94.48	94.76	-136.671	118.18	-3,024.04	626.55	491.08	135.47	4.625	
8,750.00	5,981.83	9,144.87	6,438.30	96.01	96.29	-136.717	118.00	-3,074.03	627.08	489.54	137.55	4.559	
8,800.00	5,980.36	9,194.86	6,437.57	97.54	97.82	-136.762	117.81	-3,124.02	627.61	488.00	139.62	4.495	
8,850.00	5,978.90	9,244.86	6,436.84	99.08	99.35	-136.808	117.63	-3,174.01	628.15	486.46	141.69	4.433	
8,900.00	5,977.44	9,294.85	6,436.11	100.61	100.88	-136.854	117.45	-3,224.00	628.68	484.93	143.75	4.373	
8,950.00	5,975.98	9,344.84	6,435.37	102.15	102.42	-136.899	117.27	-3,273.99	629.21	483.39	145.82	4.315	
9,000.00	5,974.52	9,394.84	6,434.64	103.68	103.95	-136.945	117.08	-3,323.98	629.75	481.86	147.89	4.258	
9,050.00	5,973.06	9,444.83	6,433.91	105.22	105.49	-136.990	116.90	-3,373.97	630.28	480.33	149.95	4.203	
9,100.00	5,971.60	9,494.83	6,433.18	106.76	107.03	-137.035	116.72	-3,423.96	630.81	478.80	152.01	4.150	
9,150.00	5,970.13	9,544.82	6,432.45	108.30	108.57	-137.080	116.54	-3,473.94	631.35	477.27	154.08	4.098	
9,200.00	5,968.67	9,594.82	6,431.72	109.84	110.11	-137.125	116.36	-3,523.93	631.89	475.75	156.14	4.047	
9,250.00	5,967.21	9,644.81	6,430.99	111.38	111.65	-137.170	116.17	-3,573.92	632.42	474.23	158.19	3.998	
9,300.00	5,965.75	9,694.81	6,430.26	112.93	113.19	-137.215	115.99	-3,623.91	632.96	472.71	160.25	3.950	
9,350.00	5,964.29	9,744.80	6,429.53	114.47	114.74	-137.260	115.81	-3,673.90	633.49	471.19	162.31	3.903	
9,400.00	5,962.83	9,794.80	6,428.80	116.01	116.28	-137.305	115.63	-3,723.89	634.03	469.67	164.36	3.858	
9,450.00	5,961.37	9,844.79	6,428.07	117.56	117.83	-137.350	115.44	-3,773.88	634.57	468.16	166.41	3.813	
9,500.00	5,959.90	9,894.79	6,427.34	119.11	119.37	-137.395	115.26	-3,823.87	635.10	466.65	168.46	3.770	
9,550.00	5,958.44	9,944.78	6,426.60	120.66	120.92	-137.439	115.08	-3,873.86	635.64	465.14	170.51	3.728	
9,600.00	5,956.98	9,994.78	6,425.87	122.20	122.47	-137.484	114.90	-3,923.85	636.18	463.63	172.55	3.687	
9,650.00	5,955.52	10,044.77	6,425.14	123.75	124.02	-137.528	114.72	-3,973.83	636.72	462.12	174.60	3.647	
9,700.00	5,954.06	10,094.76	6,424.41	125.30	125.57	-137.572	114.53	-4,023.82	637.26	460.62	176.64	3.608	
9,750.00	5,952.60	10,144.76	6,423.68	126.85	127.12	-137.617	114.35	-4,073.81	637.80	459.12	178.68	3.570	
9,800.00	5,951.14	10,194.75	6,422.95	128.40	128.67	-137.661	114.17	-4,123.80	638.34	457.63	180.71	3.532	
9,850.00	5,949.68	10,244.75	6,422.22	129.96	130.22	-137.705	113.99	-4,173.79	638.88	456.13	182.75	3.496	
9,900.00	5,948.21	10,294.74	6,421.49	131.51	131.77	-137.749	113.80	-4,223.78	639.42	454.64	184.78	3.460	
9,950.00	5,946.75	10,344.74	6,420.76	133.06	133.33	-137.793	113.62	-4,273.77	639.96	453.15	186.81	3.426	
10,000.00	5,945.29	10,394.73	6,420.03	134.61	134.88	-137.837	113.44	-4,323.76	640.50	451.66	188.84	3.392	
10,050.00	5,943.83	10,444.73	6,419.30	136.17	136.43	-137.881	113.26	-4,373.75	641.04	450.18	190.87	3.359	
10,100.00	5,942.37	10,494.72	6,418.57	137.72	137.99	-137.925	113.08	-4,423.74	641.59	448.70	192.89	3.326	
10,150.00	5,940.91	10,544.72	6,417.83	139.28	139.54	-137.968	112.89	-4,473.72	642.13	447.22	194.91	3.294	
10,200.00	5,939.45	10,594.71	6,417.10	140.83	141.10	-138.012	112.71	-4,523.71	642.67	445.74	196.93	3.263	
10,250.00	5,937.98	10,644.71	6,416.37	142.39	142.65	-138.055	112.53	-4,573.70	643.21	444.27	198.95	3.233	

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



Anticollision Report

Company:	SPUR ENERGY PARTNERS, LLC	Local Co-ordinate Reference:	Well 20H
Project:	LEA COUNTY, NM (NAD 83 - NME)	TVD Reference:	RKB = 20' @ 4127.00usft (AKITA 57)
Reference Site:	MILLER 14 FEDERAL COM	MD Reference:	RKB = 20' @ 4127.00usft (AKITA 57)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	20H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.1.13 Single User Db
Reference Design:	PERMIT	Offset TVD Reference:	Reference Datum

Offset Design MILLER 14 FEDERAL COM - 70H - Wellbore #1 - PERMIT												Offset Site Error:	0.00 usft
Survey Program: 0-MWD+IGRF												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
10,300.00	5,936.52	10,694.70	6,415.64	143.95	144.21	-138.099	112.35	-4,623.69	643.76	442.80	200.96	3.203	
10,350.00	5,935.06	10,744.70	6,414.91	145.50	145.77	-138.142	112.16	-4,673.68	644.30	441.33	202.97	3.174	
10,400.00	5,933.60	10,794.69	6,414.18	147.06	147.32	-138.186	111.98	-4,723.67	644.85	439.86	204.98	3.146	
10,450.00	5,932.14	10,844.68	6,413.45	148.62	148.88	-138.229	111.80	-4,773.66	645.39	438.40	206.99	3.118	
10,500.00	5,930.68	10,894.68	6,412.72	150.18	150.44	-138.272	111.62	-4,823.65	645.94	436.94	209.00	3.091	
10,550.00	5,929.22	10,944.67	6,411.99	151.74	152.00	-138.315	111.44	-4,873.64	646.48	435.48	211.00	3.064	
10,600.00	5,927.75	10,994.67	6,411.26	153.29	153.56	-138.358	111.25	-4,923.63	647.03	434.03	213.00	3.038	
10,650.00	5,926.29	11,044.66	6,410.53	154.85	155.12	-138.401	111.07	-4,973.61	647.57	432.58	215.00	3.012	
10,700.00	5,924.83	11,094.66	6,409.80	156.41	156.68	-138.444	110.89	-5,023.60	648.12	431.13	216.99	2.987	
10,750.00	5,923.37	11,144.65	6,409.06	157.97	158.24	-138.487	110.71	-5,073.59	648.67	429.68	218.98	2.962	
10,800.00	5,921.91	11,194.65	6,408.33	159.53	159.80	-138.529	110.52	-5,123.58	649.21	428.24	220.97	2.938	
10,850.00	5,920.45	11,244.64	6,407.60	161.09	161.36	-138.572	110.34	-5,173.57	649.76	426.80	222.96	2.914	
10,900.00	5,918.99	11,294.64	6,406.87	162.66	162.92	-138.615	110.16	-5,223.56	650.31	425.36	224.95	2.891	
10,950.00	5,917.52	11,344.63	6,406.14	164.22	164.48	-138.657	109.98	-5,273.55	650.86	423.93	226.93	2.868	
11,000.00	5,916.06	11,394.63	6,405.41	165.78	166.04	-138.700	109.80	-5,323.54	651.41	422.50	228.91	2.846	
11,050.00	5,914.60	11,444.62	6,404.68	167.34	167.61	-138.742	109.61	-5,373.53	651.96	421.07	230.89	2.824	
11,100.00	5,913.14	11,494.62	6,403.95	168.90	169.17	-138.784	109.43	-5,423.51	652.51	419.65	232.86	2.802	
11,150.00	5,911.68	11,544.61	6,403.22	170.47	170.73	-138.827	109.25	-5,473.50	653.06	418.22	234.83	2.781	
11,200.00	5,910.22	11,594.60	6,402.49	172.03	172.29	-138.869	109.07	-5,523.49	653.61	416.80	236.80	2.760	
11,250.00	5,908.76	11,644.60	6,401.76	173.59	173.86	-138.911	108.88	-5,573.48	654.16	415.39	238.77	2.740	
11,300.00	5,907.30	11,694.59	6,401.03	175.15	175.42	-138.953	108.70	-5,623.47	654.71	413.97	240.74	2.720	
11,350.00	5,905.83	11,744.59	6,400.29	176.72	176.98	-138.995	108.52	-5,673.46	655.26	412.56	242.70	2.700	
11,400.00	5,904.37	11,794.58	6,399.56	178.28	178.55	-139.037	108.34	-5,723.45	655.81	411.15	244.66	2.681	
11,450.00	5,902.91	11,844.58	6,398.83	179.85	180.11	-139.078	108.16	-5,773.44	656.36	409.75	246.61	2.661	
11,500.00	5,901.45	11,894.57	6,398.10	181.41	181.68	-139.120	107.97	-5,823.43	656.91	408.35	248.57	2.643	
11,550.00	5,899.99	11,944.57	6,397.37	182.98	183.24	-139.162	107.79	-5,873.42	657.47	406.95	250.52	2.624	
11,600.00	5,898.53	11,994.56	6,396.64	184.54	184.81	-139.203	107.61	-5,923.40	658.02	405.55	252.47	2.606	
11,650.00	5,897.07	12,044.56	6,395.91	186.10	186.37	-139.245	107.43	-5,973.39	658.57	404.16	254.42	2.589	
11,670.64	5,896.46	12,065.20	6,395.61	186.75	187.02	-139.262	107.35	-5,994.03	658.80	403.58	255.22	2.581	
11,700.00	5,895.60	12,094.55	6,395.18	187.67	187.94	-139.286	107.24	-6,023.38	659.13	402.77	256.36	2.571	
11,720.66	5,895.00	12,107.18	6,394.99	188.32	188.33	-139.297	107.20	-6,036.01	659.40	402.39	257.02	2.566 SF	

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



Anticollision Report

Company:	SPUR ENERGY PARTNERS, LLC	Local Co-ordinate Reference:	Well 20H
Project:	LEA COUNTY, NM (NAD 83 - NME)	TVD Reference:	RKB = 20' @ 4127.00usft (AKITA 57)
Reference Site:	MILLER 14 FEDERAL COM	MD Reference:	RKB = 20' @ 4127.00usft (AKITA 57)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	20H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.1.13 Single User Db
Reference Design:	PERMIT	Offset TVD Reference:	Reference Datum

Offset Design MILLER 14 FEDERAL COM - OFFSET: MALMAR UNIT TR-2 #5 - Wellbore #1 - Wellbore #1												Offset Site Error:	0.00 usft
Survey Program: 100-UNKNOWN												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	
200.00	200.00	194.00	200.00	0.50	5.76	-32.670	229.07	-146.89	272.12	265.86	6.26	43.457	
250.00	250.00	244.00	250.00	0.68	7.76	-32.670	229.07	-146.89	272.12	263.68	8.44	32.238	
300.00	300.00	294.00	300.00	0.86	9.76	-32.670	229.07	-146.89	272.12	261.50	10.62	25.623	
350.00	350.00	344.00	350.00	1.04	11.76	-38.173	229.07	-146.89	271.78	258.98	12.80	21.231	
400.00	399.98	393.98	399.98	1.22	13.76	-38.357	229.07	-146.89	270.75	255.77	14.98	18.075	
450.00	449.93	443.93	449.93	1.40	15.76	-38.667	229.07	-146.89	269.04	251.89	17.16	15.683	
500.00	499.84	493.84	499.84	1.58	17.75	-39.106	229.07	-146.89	266.66	247.34	19.32	13.800	
550.00	549.68	543.68	549.68	1.77	19.75	-39.682	229.07	-146.89	263.63	242.14	21.49	12.269	
600.00	599.45	593.45	599.45	1.95	21.74	-40.403	229.07	-146.89	259.95	236.31	23.64	10.996	
612.39	611.77	605.77	611.77	2.00	22.23	-40.605	229.07	-146.89	258.95	234.77	24.17	10.712	
650.00	649.16	643.16	649.16	2.14	23.73	-41.200	229.07	-146.89	255.84	230.04	25.80	9.915	
700.00	698.86	692.86	698.86	2.34	25.71	-42.014	229.07	-146.89	251.77	223.79	27.97	9.001	
750.00	748.56	742.56	748.56	2.53	27.70	-42.854	229.07	-146.89	247.74	217.60	30.14	8.219	
800.00	798.27	792.27	798.27	2.73	29.69	-43.721	229.07	-146.89	243.77	211.45	32.31	7.544	
850.00	847.97	841.97	847.97	2.93	31.68	-44.617	229.07	-146.89	239.85	205.37	34.49	6.955	
900.00	897.67	891.67	897.67	3.12	33.67	-45.542	229.07	-146.89	236.00	199.34	36.66	6.437	
950.00	947.38	941.38	947.38	3.32	35.66	-46.498	229.07	-146.89	232.21	193.37	38.84	5.979	
1,000.00	997.08	991.08	997.08	3.52	37.64	-47.484	229.07	-146.89	228.48	187.47	41.02	5.571	
1,050.00	1,046.78	1,040.78	1,046.78	3.72	39.63	-48.503	229.07	-146.89	224.83	181.63	43.20	5.205	
1,100.00	1,096.49	1,090.49	1,096.49	3.92	41.62	-49.555	229.07	-146.89	221.25	175.87	45.38	4.876	
1,150.00	1,146.19	1,140.19	1,146.19	4.12	43.61	-50.641	229.07	-146.89	217.75	170.18	47.56	4.578	
1,200.00	1,195.89	1,189.89	1,195.89	4.32	45.60	-51.761	229.07	-146.89	214.33	164.58	49.75	4.308	
1,250.00	1,245.59	1,239.59	1,245.59	4.53	47.58	-52.918	229.07	-146.89	210.99	159.05	51.94	4.063	
1,300.00	1,295.30	1,289.30	1,295.30	4.73	49.57	-54.110	229.07	-146.89	207.74	153.62	54.12	3.838	
1,350.00	1,345.00	1,339.00	1,345.00	4.93	51.56	-55.340	229.07	-146.89	204.58	148.27	56.31	3.633	
1,400.00	1,394.70	1,388.70	1,394.70	5.13	53.55	-56.607	229.07	-146.89	201.53	143.02	58.51	3.445	
1,450.00	1,444.41	1,438.41	1,444.41	5.33	55.54	-57.913	229.07	-146.89	198.57	137.87	60.70	3.271	
1,500.00	1,494.11	1,488.11	1,494.11	5.54	57.52	-59.257	229.07	-146.89	195.72	132.83	62.89	3.112	
1,550.00	1,543.81	1,537.81	1,543.81	5.74	59.51	-60.639	229.07	-146.89	192.99	127.90	65.09	2.965	
1,600.00	1,593.52	1,587.52	1,593.52	5.94	61.50	-62.060	229.07	-146.89	190.36	123.08	67.29	2.829	
1,650.00	1,643.22	1,637.22	1,643.22	6.14	63.49	-63.519	229.07	-146.89	187.86	118.38	69.49	2.704	
1,700.00	1,692.92	1,686.92	1,692.92	6.35	65.48	-65.016	229.07	-146.89	185.49	113.80	71.69	2.587	
1,750.00	1,742.62	1,736.62	1,742.62	6.55	67.46	-66.551	229.07	-146.89	183.25	109.36	73.89	2.480	
1,800.00	1,792.33	1,786.33	1,792.33	6.75	69.45	-68.122	229.07	-146.89	181.14	105.05	76.09	2.381	
1,850.00	1,842.03	1,836.03	1,842.03	6.96	71.44	-69.729	229.07	-146.89	179.17	100.88	78.29	2.288	
1,900.00	1,891.73	1,885.73	1,891.73	7.16	73.43	-71.369	229.07	-146.89	177.35	96.85	80.50	2.203	
1,950.00	1,941.44	1,935.44	1,941.44	7.36	75.42	-73.042	229.07	-146.89	175.68	92.98	82.70	2.124	
2,000.00	1,991.14	1,985.14	1,991.14	7.56	77.41	-74.745	229.07	-146.89	174.16	89.26	84.90	2.051	
2,050.00	2,040.84	2,034.84	2,040.84	7.77	79.39	-76.476	229.07	-146.89	172.80	85.69	87.11	1.984	
2,100.00	2,090.55	2,084.55	2,090.55	7.97	81.38	-78.233	229.07	-146.89	171.60	82.29	89.31	1.921	
2,150.00	2,140.25	2,134.25	2,140.25	8.17	83.37	-80.012	229.07	-146.89	170.57	79.06	91.51	1.864	
2,200.00	2,189.95	2,183.95	2,189.95	8.38	85.36	-81.811	229.07	-146.89	169.70	75.99	93.71	1.811	
2,250.00	2,239.65	2,233.65	2,239.65	8.58	87.35	-83.627	229.07	-146.89	169.01	73.10	95.91	1.762	
2,300.00	2,289.36	2,283.36	2,289.36	8.78	89.33	-85.455	229.07	-146.89	168.49	70.38	98.11	1.717	
2,350.00	2,339.06	2,333.06	2,339.06	8.99	91.32	-87.293	229.07	-146.89	168.14	67.84	100.31	1.676	
2,400.00	2,388.76	2,382.76	2,388.76	9.19	93.31	-89.136	229.07	-146.89	167.97	65.47	102.50	1.639	
2,423.41	2,412.04	2,406.04	2,412.04	9.29	94.24	-90.000	229.07	-146.89	167.95	64.43	103.53	1.622 CC	
2,450.00	2,438.47	2,432.47	2,438.47	9.40	95.30	-90.981	229.07	-146.89	167.98	63.29	104.69	1.604	
2,500.00	2,488.17	2,482.17	2,488.17	9.60	97.29	-92.824	229.07	-146.89	168.16	61.28	106.88	1.573	
2,550.00	2,537.87	2,531.87	2,537.87	9.80	99.27	-94.661	229.07	-146.89	168.52	59.45	109.07	1.545	
2,600.00	2,587.58	2,581.58	2,587.58	10.01	101.26	-96.489	229.07	-146.89	169.05	57.80	111.25	1.520	
2,650.00	2,637.28	2,631.28	2,637.28	10.21	103.25	-98.304	229.07	-146.89	169.75	56.32	113.43	1.497 Level 3	

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



Anticollision Report

Company:	SPUR ENERGY PARTNERS, LLC	Local Co-ordinate Reference:	Well 20H
Project:	LEA COUNTY, NM (NAD 83 - NME)	TVD Reference:	RKB = 20' @ 4127.00usft (AKITA 57)
Reference Site:	MILLER 14 FEDERAL COM	MD Reference:	RKB = 20' @ 4127.00usft (AKITA 57)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	20H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.1.13 Single User Db
Reference Design:	PERMIT	Offset TVD Reference:	Reference Datum

Offset Design MILLER 14 FEDERAL COM - OFFSET: MALMAR UNIT TR-2 #5 - Wellbore #1 - Wellbore #1												Offset Site Error:	0.00 usft
Survey Program: 100-UNKNOWN												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 Tooface (")	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
2,700.00	2,686.98	2,680.98	2,686.98	10.41	105.24	-100.101	229.07	-146.89	170.63	55.02	115.61	1.476	Level 3
2,750.00	2,736.69	2,730.69	2,736.69	10.62	107.23	-101.879	229.07	-146.89	171.67	53.89	117.78	1.458	Level 3
2,800.00	2,786.39	2,780.39	2,786.39	10.82	109.22	-103.635	229.07	-146.89	172.88	52.93	119.96	1.441	Level 3
2,850.00	2,836.09	2,830.09	2,836.09	11.02	111.20	-105.364	229.07	-146.89	174.25	52.13	122.12	1.427	Level 3
2,900.00	2,885.79	2,879.79	2,885.79	11.23	113.19	-107.065	229.07	-146.89	175.78	51.49	124.29	1.414	Level 3
2,950.00	2,935.50	2,929.50	2,935.50	11.43	115.18	-108.736	229.07	-146.89	177.46	51.01	126.45	1.403	Level 3
3,000.00	2,985.20	2,979.20	2,985.20	11.64	117.17	-110.374	229.07	-146.89	179.29	50.68	128.61	1.394	Level 3
3,050.00	3,034.90	3,028.90	3,034.90	11.84	119.16	-111.979	229.07	-146.89	181.27	50.50	130.77	1.386	Level 3
3,100.00	3,084.61	3,078.61	3,084.61	12.04	121.14	-113.547	229.07	-146.89	183.39	50.46	132.92	1.380	Level 3, ES
3,150.00	3,134.31	3,128.31	3,134.31	12.25	123.13	-115.080	229.07	-146.89	185.64	50.56	135.08	1.374	Level 3
3,200.00	3,184.01	3,178.01	3,184.01	12.45	125.12	-116.575	229.07	-146.89	188.02	50.79	137.23	1.370	Level 3
3,250.00	3,233.72	3,227.72	3,233.72	12.65	127.11	-118.032	229.07	-146.89	190.53	51.15	139.38	1.367	Level 3
3,300.00	3,283.42	3,277.42	3,283.42	12.86	129.10	-119.450	229.07	-146.89	193.16	51.63	141.53	1.365	Level 3
3,350.00	3,333.12	3,327.12	3,333.12	13.06	131.08	-120.830	229.07	-146.89	195.90	52.23	143.67	1.364	Level 3
3,400.00	3,382.82	3,376.82	3,382.82	13.27	133.07	-122.171	229.07	-146.89	198.76	52.94	145.82	1.363	Level 3, SF
3,450.00	3,432.53	3,426.53	3,432.53	13.47	135.06	-123.474	229.07	-146.89	201.72	53.76	147.96	1.363	Level 3
3,500.00	3,482.23	3,476.23	3,482.23	13.67	137.05	-124.739	229.07	-146.89	204.78	54.68	150.10	1.364	Level 3
3,550.00	3,531.93	3,525.93	3,531.93	13.88	139.04	-125.966	229.07	-146.89	207.94	55.70	152.25	1.366	Level 3
3,600.00	3,581.64	3,575.64	3,581.64	14.08	141.03	-127.157	229.07	-146.89	211.20	56.81	154.39	1.368	Level 3
3,650.00	3,631.34	3,625.34	3,631.34	14.29	143.01	-128.311	229.07	-146.89	214.54	58.01	156.53	1.371	Level 3
3,700.00	3,681.04	3,675.04	3,681.04	14.49	145.00	-129.429	229.07	-146.89	217.97	59.30	158.67	1.374	Level 3
3,750.00	3,730.75	3,724.75	3,730.75	14.69	146.99	-130.513	229.07	-146.89	221.48	60.67	160.81	1.377	Level 3
3,800.00	3,780.45	3,774.45	3,780.45	14.90	148.98	-131.563	229.07	-146.89	225.06	62.11	162.95	1.381	Level 3
3,850.00	3,830.15	3,824.15	3,830.15	15.10	150.97	-132.579	229.07	-146.89	228.72	63.63	165.09	1.385	Level 3
3,900.00	3,879.85	3,873.85	3,879.85	15.30	152.95	-133.564	229.07	-146.89	232.45	65.22	167.23	1.390	Level 3
3,950.00	3,929.56	3,923.56	3,929.56	15.51	154.94	-134.517	229.07	-146.89	236.24	66.87	169.37	1.395	Level 3
4,000.00	3,979.26	3,973.26	3,979.26	15.71	156.93	-135.441	229.07	-146.89	240.10	68.59	171.51	1.400	Level 3
4,050.00	4,028.96	4,022.96	4,028.96	15.92	158.92	-136.335	229.07	-146.89	244.02	70.37	173.65	1.405	Level 3
4,100.00	4,078.67	4,072.67	4,078.67	16.12	160.91	-137.200	229.07	-146.89	247.99	72.20	175.79	1.411	Level 3
4,150.00	4,128.37	4,122.37	4,128.37	16.32	162.89	-138.039	229.07	-146.89	252.02	74.09	177.93	1.416	Level 3
4,200.00	4,178.07	4,172.07	4,178.07	16.53	164.88	-138.850	229.07	-146.89	256.11	76.03	180.07	1.422	Level 3
4,250.00	4,227.78	4,221.78	4,227.78	16.73	166.87	-139.637	229.07	-146.89	260.24	78.03	182.21	1.428	Level 3
4,300.00	4,277.48	4,271.48	4,277.48	16.94	168.86	-140.399	229.07	-146.89	264.42	80.06	184.35	1.434	Level 3
4,350.00	4,327.18	4,321.18	4,327.18	17.14	170.85	-141.137	229.07	-146.89	268.64	82.15	186.49	1.440	Level 3
4,400.00	4,376.89	4,370.89	4,376.89	17.34	172.84	-141.852	229.07	-146.89	272.91	84.27	188.64	1.447	Level 3
4,450.00	4,426.59	4,420.59	4,426.59	17.55	174.83	-142.541	229.07	-146.89	277.23	86.41	190.79	1.454	Level 3
4,500.00	4,476.29	4,470.29	4,476.29	17.75	176.82	-143.201	229.07	-146.89	281.60	88.60	192.94	1.461	Level 3
4,550.00	4,525.99	4,519.99	4,525.99	17.96	178.81	-143.835	229.07	-146.89	286.02	90.83	195.09	1.468	Level 3
4,600.00	4,575.70	4,569.70	4,575.70	18.16	180.80	-144.445	229.07	-146.89	290.49	93.10	197.24	1.475	Level 3
4,650.00	4,625.40	4,619.40	4,625.40	18.36	182.79	-145.031	229.07	-146.89	295.01	95.41	199.39	1.482	Level 3
4,700.00	4,675.10	4,669.10	4,675.10	18.57	184.78	-145.593	229.07	-146.89	299.58	97.76	201.54	1.489	Level 3
4,750.00	4,724.81	4,718.81	4,724.81	18.77	186.77	-146.131	229.07	-146.89	304.20	100.15	203.69	1.496	Level 3
4,800.00	4,774.51	4,768.51	4,774.51	18.98	188.76	-146.645	229.07	-146.89	308.87	102.59	205.84	1.503	Level 3
4,850.00	4,824.21	4,818.21	4,824.21	19.18	190.75	-147.135	229.07	-146.89	313.59	105.07	207.99	1.510	Level 3
4,900.00	4,873.92	4,867.92	4,873.92	19.38	192.74	-147.601	229.07	-146.89	318.36	107.60	210.14	1.517	Level 3
4,950.00	4,923.62	4,917.62	4,923.62	19.59	194.73	-148.043	229.07	-146.89	323.18	110.17	212.29	1.524	Level 3
5,000.00	4,973.32	4,967.32	4,973.32	19.79	196.72	-148.461	229.07	-146.89	328.05	112.78	214.44	1.531	Level 3
5,050.00	5,023.02	5,017.02	5,023.02	20.00	198.71	-148.855	229.07	-146.89	332.97	115.43	216.59	1.538	Level 3
5,058.33	5,031.31	5,025.31	5,031.31	20.03	198.91	-148.881	229.07	-146.89	333.33	115.78	216.94	1.539	Level 3
5,100.00	5,072.73	5,066.73	5,072.73	20.20	199.80	-149.011	229.07	-146.89	335.11	116.77	218.03	1.543	Level 3
5,150.00	5,122.37	5,116.37	5,122.37	20.40	200.69	-149.105	229.07	-146.89	336.94	117.80	219.17	1.547	Level 3
5,200.00	5,171.80	5,165.80	5,171.80	20.59	201.58	-149.163	229.07	-146.89	338.82	118.87	220.35	1.551	Level 3

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



Anticollision Report

Company:	SPUR ENERGY PARTNERS, LLC	Local Co-ordinate Reference:	Well 20H
Project:	LEA COUNTY, NM (NAD 83 - NME)	TVD Reference:	RKB = 20' @ 4127.00usft (AKITA 57)
Reference Site:	MILLER 14 FEDERAL COM	MD Reference:	RKB = 20' @ 4127.00usft (AKITA 57)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	20H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.1.13 Single User Db
Reference Design:	PERMIT	Offset TVD Reference:	Reference Datum

Offset Design MILLER 14 FEDERAL COM - OFFSET: MALMAR UNIT TR-2 #5 - Wellbore #1 - Wellbore #1												Offset Site Error:	0.00 usft
Survey Program: 100-UNKNOWN												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	
5,250.00	5,220.89	4,400.00	4,406.00	20.77	174.00	-59.134	229.07	-146.89	882.58	689.72	192.86	4.576	
5,300.00	5,269.51	4,400.00	4,406.00	20.95	174.00	-50.631	229.07	-146.89	927.10	735.44	191.66	4.837	
5,350.00	5,317.52	4,400.00	4,406.00	21.13	174.00	-44.305	229.07	-146.89	971.11	781.25	189.86	5.115	
5,400.00	5,364.79	4,400.00	4,406.00	21.31	174.00	-39.399	229.07	-146.89	1,014.56	827.07	187.48	5.411	
5,450.00	5,411.20	4,400.00	4,406.00	21.48	174.00	-35.476	229.07	-146.89	1,057.41	872.87	184.54	5.730	
5,500.00	5,456.61	4,400.00	4,406.00	21.65	174.00	-32.265	229.07	-146.89	1,099.61	918.56	181.05	6.073	
5,550.00	5,500.89	4,400.00	4,406.00	21.82	174.00	-29.590	229.07	-146.89	1,141.14	964.10	177.04	6.445	
5,600.00	5,543.94	4,400.00	4,406.00	22.00	174.00	-27.330	229.07	-146.89	1,181.95	1,009.41	172.54	6.850	
5,650.00	5,585.63	4,400.00	4,406.00	22.18	174.00	-25.399	229.07	-146.89	1,222.01	1,054.45	167.56	7.293	
5,700.00	5,625.84	4,400.00	4,406.00	22.38	174.00	-23.734	229.07	-146.89	1,261.29	1,099.15	162.14	7.779	
5,750.00	5,664.47	4,400.00	4,406.00	22.59	174.00	-22.287	229.07	-146.89	1,299.75	1,143.45	156.29	8.316	
5,800.00	5,701.40	4,400.00	4,406.00	22.83	174.00	-21.022	229.07	-146.89	1,337.36	1,187.30	150.06	8.912	
5,850.00	5,736.55	4,400.00	4,406.00	23.11	174.00	-19.911	229.07	-146.89	1,374.10	1,230.64	143.46	9.578	
5,900.00	5,769.81	4,400.00	4,406.00	23.43	174.00	-18.930	229.07	-146.89	1,409.93	1,273.40	136.53	10.327	
5,950.00	5,801.09	4,400.00	4,406.00	23.81	174.00	-18.062	229.07	-146.89	1,444.83	1,315.52	129.31	11.173	
6,000.00	5,830.31	4,400.00	4,406.00	24.25	174.00	-17.291	229.07	-146.89	1,478.78	1,356.94	121.83	12.138	
6,050.00	5,857.38	4,400.00	4,406.00	24.77	174.00	-16.605	229.07	-146.89	1,511.74	1,397.59	114.14	13.244	
6,071.79	5,868.48	4,400.00	4,406.00	25.02	174.00	-16.330	229.07	-146.89	1,525.78	1,415.04	110.74	13.778	
6,100.00	5,882.59	4,400.00	4,406.00	25.35	174.00	-16.330	229.07	-146.89	1,544.00	1,433.10	110.90	13.922	
6,150.00	5,907.59	4,400.00	4,406.00	26.01	174.00	-16.330	229.07	-146.89	1,577.02	1,465.82	111.20	14.182	
6,200.00	5,932.59	4,400.00	4,406.00	26.70	174.00	-16.330	229.07	-146.89	1,610.90	1,499.41	111.50	14.448	
6,250.00	5,957.59	4,400.00	4,406.00	27.45	174.00	-16.330	229.07	-146.89	1,645.61	1,533.80	111.81	14.718	
6,271.79	5,968.48	4,400.00	4,406.00	27.78	174.00	-16.330	229.07	-146.89	1,660.98	1,549.03	111.95	14.837	
6,300.00	5,981.98	4,400.00	4,406.00	28.23	174.00	-15.578	229.07	-146.89	1,680.62	1,576.51	104.11	16.143	
6,350.00	6,002.85	4,400.00	4,406.00	29.10	174.00	-14.440	229.07	-146.89	1,713.63	1,623.58	90.05	19.030	
6,400.00	6,019.68	4,400.00	4,406.00	30.05	174.00	-13.504	229.07	-146.89	1,744.25	1,668.14	76.12	22.916	
6,450.00	6,032.35	4,400.00	4,406.00	31.06	174.00	-12.732	229.07	-146.89	1,772.38	1,709.47	62.91	28.173	
6,500.00	6,040.75	4,400.00	4,406.00	32.12	174.00	-12.093	229.07	-146.89	1,797.92	1,746.39	51.54	34.887	
6,550.00	6,044.83	4,400.00	4,406.00	33.23	174.00	-11.565	229.07	-146.89	1,820.80	1,776.85	43.95	41.429	
6,588.54	6,045.00	4,400.00	4,406.00	34.11	174.00	-11.224	229.07	-146.89	1,836.57	1,794.30	42.27	43.453	
6,600.00	6,044.67	4,400.00	4,406.00	34.38	174.00	-11.224	229.07	-146.89	1,841.04	1,798.68	42.36	43.458	
6,650.00	6,043.20	4,400.00	4,406.00	35.57	174.00	-11.224	229.07	-146.89	1,861.26	1,818.46	42.80	43.485	
6,700.00	6,041.74	4,400.00	4,406.00	36.76	174.00	-11.224	229.07	-146.89	1,882.59	1,839.35	43.24	43.541	
6,750.00	6,040.28	4,400.00	4,406.00	38.01	174.00	-11.224	229.07	-146.89	1,904.99	1,861.31	43.69	43.606	
6,800.00	6,038.82	4,400.00	4,406.00	39.25	174.00	-11.224	229.07	-146.89	1,928.43	1,884.30	44.13	43.697	
6,850.00	6,037.36	4,400.00	4,406.00	40.54	174.00	-11.224	229.07	-146.89	1,952.87	1,908.28	44.59	43.799	
6,900.00	6,035.90	4,400.00	4,406.00	41.84	174.00	-11.224	229.07	-146.89	1,978.27	1,933.23	45.04	43.922	
6,950.00	6,034.44	4,400.00	4,406.00	43.16	174.00	-11.224	229.07	-146.89	2,004.60	1,959.10	45.50	44.054	
7,000.00	6,032.97	4,400.00	4,406.00	44.49	174.00	-11.224	229.07	-146.89	2,031.81	1,985.85	45.96	44.206	
7,050.00	6,031.51	4,400.00	4,406.00	45.85	174.00	-11.224	229.07	-146.89	2,059.88	2,013.46	46.43	44.367	
7,100.00	6,030.05	4,400.00	4,406.00	47.21	174.00	-11.224	229.07	-146.89	2,088.77	2,041.88	46.89	44.544	
7,150.00	6,028.59	4,400.00	4,406.00	48.60	174.00	-11.224	229.07	-146.89	2,118.45	2,071.09	47.36	44.728	
7,200.00	6,027.13	4,400.00	4,406.00	49.98	174.00	-11.224	229.07	-146.89	2,148.88	2,101.05	47.83	44.927	
7,250.00	6,025.67	4,400.00	4,406.00	51.39	174.00	-11.224	229.07	-146.89	2,180.03	2,131.73	48.30	45.132	
7,300.00	6,024.21	4,400.00	4,406.00	52.80	174.00	-11.224	229.07	-146.89	2,211.88	2,163.10	48.77	45.349	
7,350.00	6,022.74	4,400.00	4,406.00	54.22	174.00	-11.224	229.07	-146.89	2,244.38	2,195.13	49.25	45.572	
7,400.00	6,021.28	4,400.00	4,406.00	55.65	174.00	-11.224	229.07	-146.89	2,277.52	2,227.80	49.72	45.804	
7,450.00	6,019.82	4,400.00	4,406.00	57.09	174.00	-11.224	229.07	-146.89	2,311.27	2,261.07	50.20	46.041	
7,500.00	6,018.36	4,400.00	4,406.00	58.53	174.00	-11.224	229.07	-146.89	2,345.60	2,294.92	50.68	46.287	
7,550.00	6,016.90	4,400.00	4,406.00	59.98	174.00	-11.224	229.07	-146.89	2,380.48	2,329.32	51.15	46.536	
7,600.00	6,015.44	4,400.00	4,406.00	61.44	174.00	-11.224	229.07	-146.89	2,415.89	2,364.26	51.63	46.791	
7,650.00	6,013.98	4,400.00	4,406.00	62.90	174.00	-11.224	229.07	-146.89	2,451.81	2,399.70	52.11	47.050	

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



Anticollision Report

Company:	SPUR ENERGY PARTNERS, LLC	Local Co-ordinate Reference:	Well 20H
Project:	LEA COUNTY, NM (NAD 83 - NME)	TVD Reference:	RKB = 20' @ 4127.00usft (AKITA 57)
Reference Site:	MILLER 14 FEDERAL COM	MD Reference:	RKB = 20' @ 4127.00usft (AKITA 57)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	20H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.1.13 Single User Db
Reference Design:	PERMIT	Offset TVD Reference:	Reference Datum

Offset Design MILLER 14 FEDERAL COM - OFFSET: MALMAR UNIT TR-2 #5 - Wellbore #1 - Wellbore #1												Offset Site Error:	0.00 usft
Survey Program: 100-UNKNOWN												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	
7,700.00	6,012.51	4,400.00	4,406.00	64.37	174.00	-11.224	229.07	-146.89	2,488.22	2,435.63	52.59	47.314	
7,750.00	6,011.05	4,400.00	4,406.00	65.84	174.00	-11.224	229.07	-146.89	2,525.09	2,472.02	53.07	47.580	
7,800.00	6,009.59	4,400.00	4,406.00	67.32	174.00	-11.224	229.07	-146.89	2,562.41	2,508.86	53.55	47.850	
7,850.00	6,008.13	4,400.00	4,406.00	68.81	174.00	-11.224	229.07	-146.89	2,600.15	2,546.12	54.03	48.122	
7,900.00	6,006.67	4,400.00	4,406.00	70.29	174.00	-11.224	229.07	-146.89	2,638.31	2,583.79	54.51	48.397	
7,950.00	6,005.21	4,400.00	4,406.00	71.78	174.00	-11.224	229.07	-146.89	2,676.85	2,621.85	55.00	48.673	
8,000.00	6,003.75	4,400.00	4,406.00	73.28	174.00	-11.224	229.07	-146.89	2,715.76	2,660.28	55.48	48.951	
8,050.00	6,002.28	4,400.00	4,406.00	74.77	174.00	-11.224	229.07	-146.89	2,755.04	2,699.07	55.96	49.230	
8,100.00	6,000.82	4,400.00	4,406.00	76.27	174.00	-11.224	229.07	-146.89	2,794.65	2,738.21	56.45	49.511	
8,150.00	5,999.36	4,400.00	4,406.00	77.78	174.00	-11.224	229.07	-146.89	2,834.60	2,777.67	56.93	49.792	
8,200.00	5,997.90	4,400.00	4,406.00	79.29	174.00	-11.224	229.07	-146.89	2,874.85	2,817.44	57.41	50.073	
8,250.00	5,996.44	4,400.00	4,406.00	80.80	174.00	-11.224	229.07	-146.89	2,915.41	2,857.52	57.90	50.355	
8,300.00	5,994.98	4,400.00	4,406.00	82.31	174.00	-11.224	229.07	-146.89	2,956.26	2,897.88	58.38	50.637	
8,350.00	5,993.52	4,400.00	4,406.00	83.82	174.00	-11.224	229.07	-146.89	2,997.39	2,938.52	58.87	50.918	
8,400.00	5,992.06	4,400.00	4,406.00	85.34	174.00	-11.224	229.07	-146.89	3,038.78	2,979.43	59.35	51.200	
8,450.00	5,990.59	4,400.00	4,406.00	86.86	174.00	-11.224	229.07	-146.89	3,080.43	3,020.59	59.84	51.480	
8,500.00	5,989.13	4,400.00	4,406.00	88.38	174.00	-11.224	229.07	-146.89	3,122.33	3,062.00	60.32	51.761	
8,550.00	5,987.67	4,400.00	4,406.00	89.90	174.00	-11.224	229.07	-146.89	3,164.45	3,103.65	60.81	52.040	
8,600.00	5,986.21	4,400.00	4,406.00	91.43	174.00	-11.224	229.07	-146.89	3,206.81	3,145.52	61.29	52.318	
8,650.00	5,984.75	4,400.00	4,406.00	92.95	174.00	-11.224	229.07	-146.89	3,249.38	3,187.60	61.78	52.596	
8,700.00	5,983.29	4,400.00	4,406.00	94.48	174.00	-11.224	229.07	-146.89	3,292.16	3,229.90	62.27	52.872	
8,750.00	5,981.83	4,400.00	4,406.00	96.01	174.00	-11.224	229.07	-146.89	3,335.14	3,272.39	62.75	53.147	
8,800.00	5,980.36	4,400.00	4,406.00	97.54	174.00	-11.224	229.07	-146.89	3,378.32	3,315.08	63.24	53.421	
8,850.00	5,978.90	4,400.00	4,406.00	99.08	174.00	-11.224	229.07	-146.89	3,421.68	3,357.95	63.73	53.693	
8,900.00	5,977.44	4,400.00	4,406.00	100.61	174.00	-11.224	229.07	-146.89	3,465.22	3,401.01	64.21	53.964	
8,950.00	5,975.98	4,400.00	4,406.00	102.15	174.00	-11.224	229.07	-146.89	3,508.93	3,444.23	64.70	54.234	
9,000.00	5,974.52	4,400.00	4,406.00	103.68	174.00	-11.224	229.07	-146.89	3,552.81	3,487.62	65.19	54.502	
9,050.00	5,973.06	4,400.00	4,406.00	105.22	174.00	-11.224	229.07	-146.89	3,596.85	3,531.17	65.67	54.768	

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



Anticollision Report

Company:	SPUR ENERGY PARTNERS, LLC	Local Co-ordinate Reference:	Well 20H
Project:	LEA COUNTY, NM (NAD 83 - NME)	TVD Reference:	RKB = 20' @ 4127.00usft (AKITA 57)
Reference Site:	MILLER 14 FEDERAL COM	MD Reference:	RKB = 20' @ 4127.00usft (AKITA 57)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	20H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.1.13 Single User Db
Reference Design:	PERMIT	Offset TVD Reference:	Reference Datum

Reference Depths are relative to RKB = 20' @ 4127.00usft (AKITA 57) Coordinates are relative to: 20H

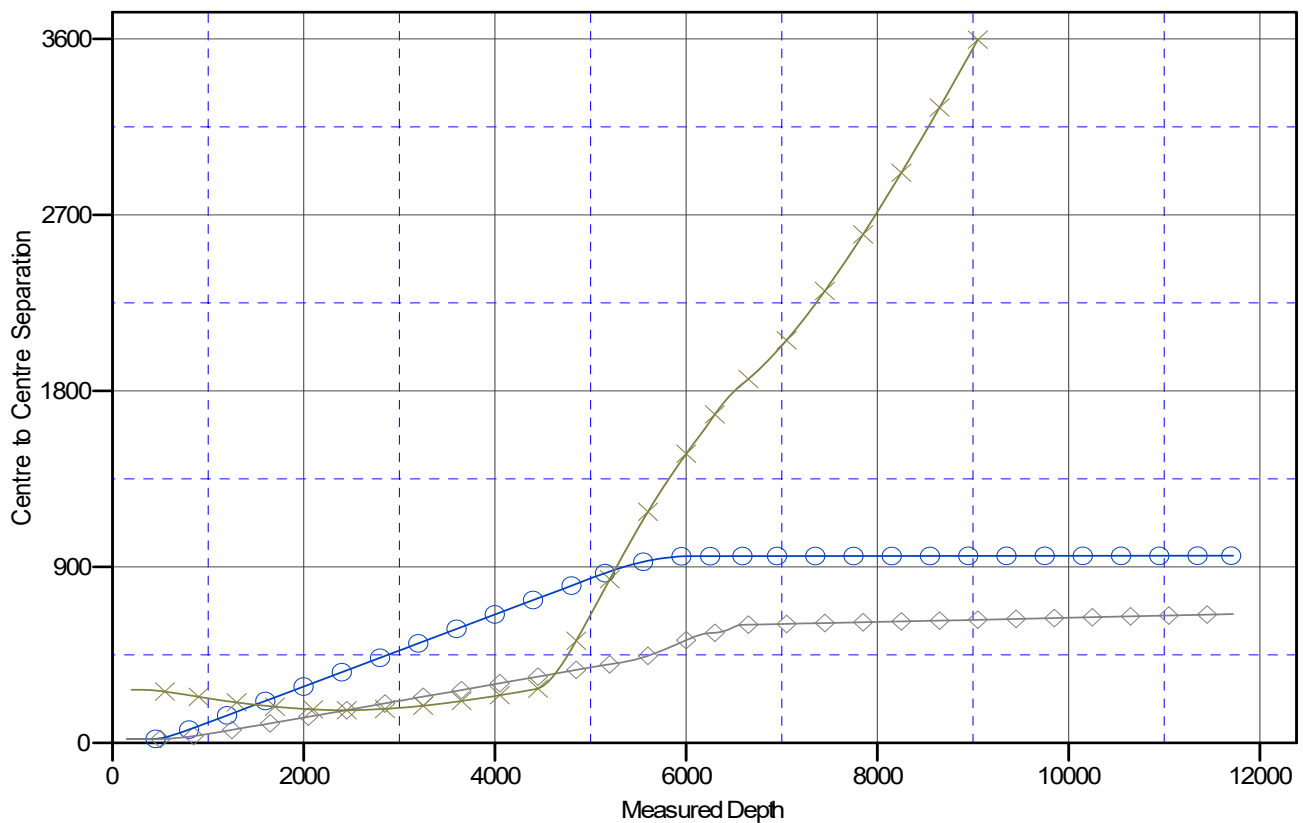
Offset Depths are relative to Offset Datum

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

Central Meridian is -104.333333

Grid Convergence at Surface is: 0.329°

Ladder Plot



LEGEND

Wellbore #1, PERMIT V0

70H, Wellbore #1, PERMIT V0

OFFSET: MALMAR UNIT TR-2 #5, Wellbore

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

06/29/23 3:20:25PM

Page 17

COMPASS 5000.1 Build 74



Anticollision Report

Company:	SPUR ENERGY PARTNERS, LLC	Local Co-ordinate Reference:	Well 20H
Project:	LEA COUNTY, NM (NAD 83 - NME)	TVD Reference:	RKB = 20' @ 4127.00usft (AKITA 57)
Reference Site:	MILLER 14 FEDERAL COM	MD Reference:	RKB = 20' @ 4127.00usft (AKITA 57)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	20H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.1.13 Single User Db
Reference Design:	PERMIT	Offset TVD Reference:	Reference Datum

Reference Depths are relative to RKB = 20' @ 4127.00usft (AKITA 57) Coordinates are relative to: 20H

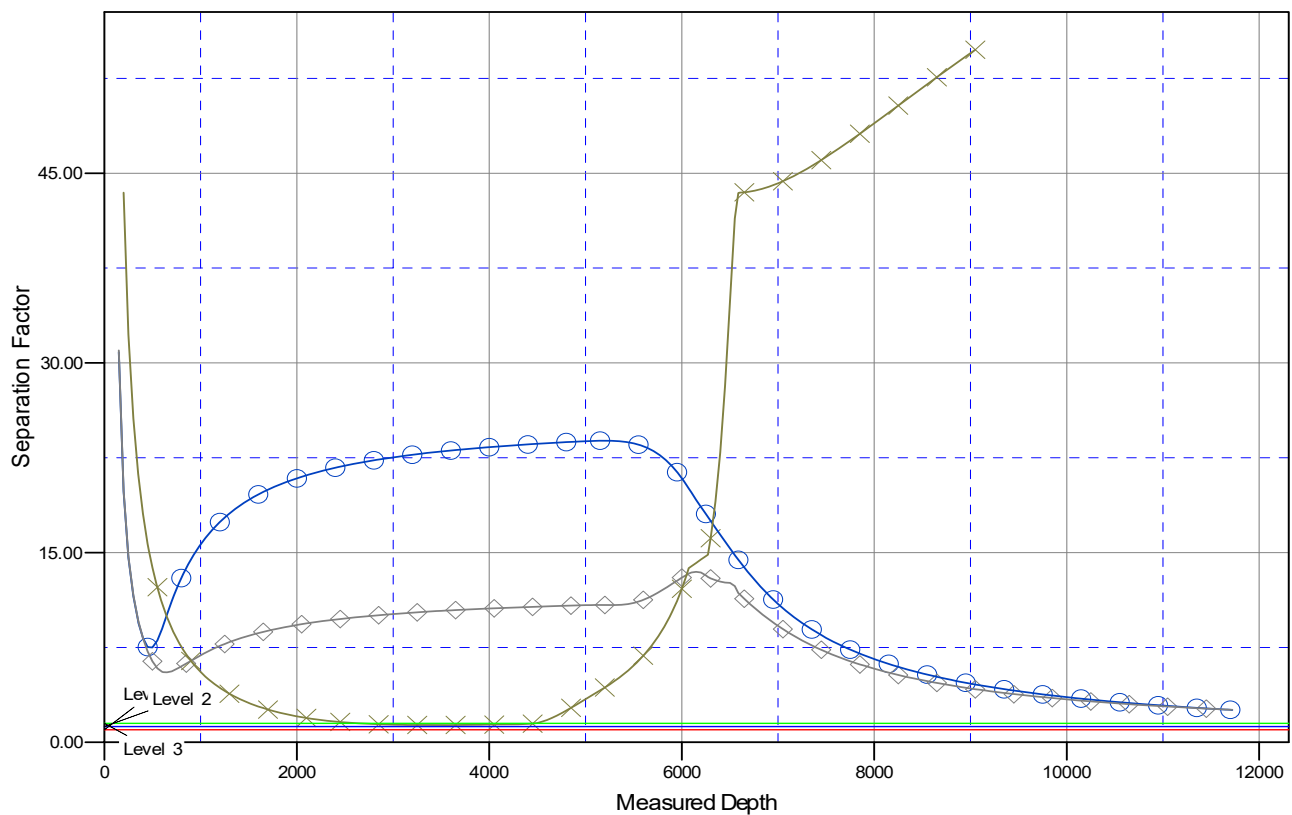
Offset Depths are relative to Offset Datum

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

Central Meridian is -104.3333333

Grid Convergence at Surface is: 0.329°

Separation Factor Plot



LEGEND

70H, Wellbore #1, PERMIT V0

70H, Wellbore #1, PERMIT V0

OFFSET: MALMAR UNIT TR-2#5, Wellbore

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



SPUR ENERGY PARTNERS, LLC

LEA COUNTY, NM (NAD 83 - NME)

MILLER 14 FEDERAL COM

20H

Wellbore #1

Plan: PERMIT

Standard Planning Report

29 June, 2023



Planning Report

Database:	EDM 5000.1.13 Single User Db	Local Co-ordinate Reference:	Well 20H
Company:	SPUR ENERGY PARTNERS, LLC	TVD Reference:	RKB = 20' @ 4127.00usft (AKITA 57)
Project:	LEA COUNTY, NM (NAD 83 - NME)	MD Reference:	RKB = 20' @ 4127.00usft (AKITA 57)
Site:	MILLER 14 FEDERAL COM	North Reference:	Grid
Well:	20H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	PERMIT		

Project	LEA COUNTY, NM (NAD 83 - NME)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site						MILLER 14 FEDERAL COM											
Site Position:			Northing:			668,311.00 usft			Latitude:			32.8357389					
From:			Map			Easting:			727,895.50 usft			Longitude:			-103.7259409		
Position Uncertainty:			0.00 usft			Slot Radius:			13-3/16 "			Grid Convergence:			0.329		

Well	20H					
Well Position	+N/-S	0.10 usft	Northing:	668,311.10 usft	Latitude:	32.8357389
	+E/-W	19.90 usft	Easting:	727,915.40 usft	Longitude:	-103.7258761
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	4,107.00 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2020	06/27/23	6.427	60.363	47,622

Design	PERMIT				
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	269.79	

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	0.000	
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.000	
612.39	6.25	5.44	611.77	16.94	1.61	2.00	2.00	0.00	5.442	
5,058.33	6.25	5.44	5,031.31	498.60	47.50	0.00	0.00	0.00	0.000	
6,071.79	60.00	269.79	5,868.48	557.54	-431.97	6.00	5.30	-9.44	-99.174	
6,271.79	60.00	269.79	5,968.48	556.91	-605.18	0.00	0.00	0.00	0.000	
6,588.54	91.67	269.79	6,045.00	555.80	-908.40	10.00	10.00	0.00	0.000	MILLER 14 FEDER
11,670.64	91.67	269.79	5,896.46	537.28	-5,988.30	0.00	0.00	0.00	0.000	MILLER 14 FEDER
11,720.66	91.67	269.79	5,895.00	537.10	-6,038.30	0.00	0.00	0.00	0.000	MILLER 14 FEDER



Planning Report

Database:	EDM 5000.1.13 Single User Db	Local Co-ordinate Reference:	Well 20H
Company:	SPUR ENERGY PARTNERS, LLC	TVD Reference:	RKB = 20' @ 4127.00usft (AKITA 57)
Project:	LEA COUNTY, NM (NAD 83 - NME)	MD Reference:	RKB = 20' @ 4127.00usft (AKITA 57)
Site:	MILLER 14 FEDERAL COM	North Reference:	Grid
Well:	20H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	PERMIT		

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
MILLER 14 FEDERAL COM 20H SHL: 2210' FNL, 805' FWL									
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	2.00	5.44	399.98	1.74	0.17	-0.17	2.00	2.00	0.00
500.00	4.00	5.44	499.84	6.95	0.66	-0.69	2.00	2.00	0.00
600.00	6.00	5.44	599.45	15.62	1.49	-1.55	2.00	2.00	0.00
612.39	6.25	5.44	611.77	16.94	1.61	-1.68	2.00	2.00	0.00
700.00	6.25	5.44	698.86	26.43	2.52	-2.61	0.00	0.00	0.00
800.00	6.25	5.44	798.27	37.26	3.55	-3.69	0.00	0.00	0.00
900.00	6.25	5.44	897.67	48.10	4.58	-4.76	0.00	0.00	0.00
1,000.00	6.25	5.44	997.08	58.93	5.61	-5.83	0.00	0.00	0.00
1,100.00	6.25	5.44	1,096.49	69.77	6.65	-6.90	0.00	0.00	0.00
1,200.00	6.25	5.44	1,195.89	80.60	7.68	-7.97	0.00	0.00	0.00
1,300.00	6.25	5.44	1,295.30	91.43	8.71	-9.05	0.00	0.00	0.00
1,400.00	6.25	5.44	1,394.70	102.27	9.74	-10.12	0.00	0.00	0.00
1,500.00	6.25	5.44	1,494.11	113.10	10.78	-11.19	0.00	0.00	0.00
1,600.00	6.25	5.44	1,593.52	123.93	11.81	-12.26	0.00	0.00	0.00
1,700.00	6.25	5.44	1,692.92	134.77	12.84	-13.33	0.00	0.00	0.00
1,800.00	6.25	5.44	1,792.33	145.60	13.87	-14.41	0.00	0.00	0.00
1,900.00	6.25	5.44	1,891.73	156.43	14.90	-15.48	0.00	0.00	0.00
2,000.00	6.25	5.44	1,991.14	167.27	15.94	-16.55	0.00	0.00	0.00
2,100.00	6.25	5.44	2,090.55	178.10	16.97	-17.62	0.00	0.00	0.00
2,200.00	6.25	5.44	2,189.95	188.94	18.00	-18.69	0.00	0.00	0.00
2,300.00	6.25	5.44	2,289.36	199.77	19.03	-19.77	0.00	0.00	0.00
2,400.00	6.25	5.44	2,388.76	210.60	20.07	-20.84	0.00	0.00	0.00
2,500.00	6.25	5.44	2,488.17	221.44	21.10	-21.91	0.00	0.00	0.00
2,600.00	6.25	5.44	2,587.58	232.27	22.13	-22.98	0.00	0.00	0.00
2,700.00	6.25	5.44	2,686.98	243.10	23.16	-24.05	0.00	0.00	0.00
2,800.00	6.25	5.44	2,786.39	253.94	24.19	-25.12	0.00	0.00	0.00
2,900.00	6.25	5.44	2,885.79	264.77	25.23	-26.20	0.00	0.00	0.00
3,000.00	6.25	5.44	2,985.20	275.61	26.26	-27.27	0.00	0.00	0.00
3,100.00	6.25	5.44	3,084.61	286.44	27.29	-28.34	0.00	0.00	0.00
3,200.00	6.25	5.44	3,184.01	297.27	28.32	-29.41	0.00	0.00	0.00
3,300.00	6.25	5.44	3,283.42	308.11	29.36	-30.48	0.00	0.00	0.00
3,400.00	6.25	5.44	3,382.82	318.94	30.39	-31.56	0.00	0.00	0.00
3,500.00	6.25	5.44	3,482.23	329.77	31.42	-32.63	0.00	0.00	0.00
3,600.00	6.25	5.44	3,581.64	340.61	32.45	-33.70	0.00	0.00	0.00
3,700.00	6.25	5.44	3,681.04	351.44	33.48	-34.77	0.00	0.00	0.00
3,800.00	6.25	5.44	3,780.45	362.28	34.52	-35.84	0.00	0.00	0.00
3,900.00	6.25	5.44	3,879.85	373.11	35.55	-36.92	0.00	0.00	0.00
4,000.00	6.25	5.44	3,979.26	383.94	36.58	-37.99	0.00	0.00	0.00
4,100.00	6.25	5.44	4,078.67	394.78	37.61	-39.06	0.00	0.00	0.00
4,200.00	6.25	5.44	4,178.07	405.61	38.64	-40.13	0.00	0.00	0.00
4,300.00	6.25	5.44	4,277.48	416.44	39.68	-41.20	0.00	0.00	0.00
4,400.00	6.25	5.44	4,376.89	427.28	40.71	-42.27	0.00	0.00	0.00
4,500.00	6.25	5.44	4,476.29	438.11	41.74	-43.35	0.00	0.00	0.00
4,600.00	6.25	5.44	4,575.70	448.95	42.77	-44.42	0.00	0.00	0.00
4,700.00	6.25	5.44	4,675.10	459.78	43.81	-45.49	0.00	0.00	0.00
4,800.00	6.25	5.44	4,774.51	470.61	44.84	-46.56	0.00	0.00	0.00
4,900.00	6.25	5.44	4,873.92	481.45	45.87	-47.63	0.00	0.00	0.00
5,000.00	6.25	5.44	4,973.32	492.28	46.90	-48.71	0.00	0.00	0.00
5,058.33	6.25	5.44	5,031.31	498.60	47.50	-49.33	0.00	0.00	0.00



Planning Report

Database:	EDM 5000.1.13 Single User Db	Local Co-ordinate Reference:	Well 20H
Company:	SPUR ENERGY PARTNERS, LLC	TVD Reference:	RKB = 20' @ 4127.00usft (AKITA 57)
Project:	LEA COUNTY, NM (NAD 83 - NME)	MD Reference:	RKB = 20' @ 4127.00usft (AKITA 57)
Site:	MILLER 14 FEDERAL COM	North Reference:	Grid
Well:	20H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	PERMIT		

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)
5,100.00	6.35	342.52	5,072.73	503.05	47.03	-48.87	6.00	0.24	-55.02
5,150.00	7.63	319.99	5,122.37	508.23	44.06	-45.93	6.00	2.57	-45.05
5,200.00	9.70	305.43	5,171.80	513.22	38.50	-40.38	6.00	4.14	-29.12
5,250.00	12.16	296.31	5,220.89	518.00	30.34	-32.24	6.00	4.92	-18.23
5,300.00	14.82	290.32	5,269.51	522.55	19.62	-21.54	6.00	5.32	-11.98
5,350.00	17.58	286.15	5,317.52	526.87	6.37	-8.30	6.00	5.53	-8.35
5,400.00	20.42	283.09	5,364.79	530.95	-9.38	7.44	6.00	5.66	-6.12
5,450.00	23.29	280.75	5,411.20	534.77	-27.59	25.63	6.00	5.74	-4.67
5,500.00	26.19	278.91	5,456.61	538.33	-48.21	46.23	6.00	5.80	-3.69
5,550.00	29.10	277.41	5,500.89	541.60	-71.17	69.18	6.00	5.84	-3.00
5,600.00	32.04	276.16	5,543.94	544.59	-96.42	94.42	6.00	5.86	-2.50
5,650.00	34.98	275.10	5,585.63	547.29	-123.89	121.88	6.00	5.89	-2.12
5,700.00	37.93	274.18	5,625.84	549.69	-153.49	151.48	6.00	5.90	-1.83
5,750.00	40.89	273.38	5,664.47	551.77	-185.16	183.14	6.00	5.91	-1.60
5,800.00	43.85	272.67	5,701.40	553.55	-218.81	216.78	6.00	5.92	-1.42
5,850.00	46.81	272.04	5,736.55	555.00	-254.33	252.30	6.00	5.93	-1.28
5,900.00	49.78	271.46	5,769.81	556.14	-291.64	289.60	6.00	5.94	-1.16
5,950.00	52.75	270.93	5,801.09	556.94	-330.63	328.59	6.00	5.94	-1.06
6,000.00	55.73	270.44	5,830.31	557.42	-371.20	369.15	6.00	5.95	-0.98
6,050.00	58.70	269.98	5,857.38	557.57	-413.23	411.18	6.00	5.95	-0.91
6,071.79	60.00	269.79	5,868.48	557.54	-431.97	429.93	6.00	5.95	-0.87
6,100.00	60.00	269.79	5,882.59	557.45	-456.41	454.36	0.00	0.00	0.00
6,200.00	60.00	269.79	5,932.59	557.13	-543.01	540.96	0.00	0.00	0.00
6,271.79	60.00	269.79	5,968.48	556.91	-605.18	603.13	0.00	0.00	0.00
6,300.00	62.82	269.79	5,981.98	556.82	-629.95	627.90	10.00	10.00	0.00
6,350.00	67.82	269.79	6,002.85	556.65	-675.37	673.32	10.00	10.00	0.00
6,400.00	72.82	269.79	6,019.68	556.48	-722.43	720.39	10.00	10.00	0.00
6,450.00	77.82	269.79	6,032.35	556.30	-770.78	768.74	10.00	10.00	0.00
6,500.00	82.82	269.79	6,040.75	556.12	-820.05	818.01	10.00	10.00	0.00
6,550.00	87.82	269.79	6,044.83	555.94	-869.87	867.83	10.00	10.00	0.00
6,588.54	91.67	269.79	6,045.00	555.80	-908.40	906.36	10.00	10.00	0.00
MILLER 14 FEDERAL COM 20H FTP: 100' FEL									
6,600.00	91.67	269.79	6,044.67	555.76	-919.86	917.82	0.00	0.00	0.00
6,700.00	91.67	269.79	6,041.74	555.39	-1,019.82	1,017.77	0.00	0.00	0.00
6,800.00	91.67	269.79	6,038.82	555.03	-1,119.77	1,117.73	0.00	0.00	0.00
6,900.00	91.67	269.79	6,035.90	554.67	-1,219.73	1,217.69	0.00	0.00	0.00
7,000.00	91.67	269.79	6,032.97	554.30	-1,319.69	1,317.64	0.00	0.00	0.00
7,100.00	91.67	269.79	6,030.05	553.94	-1,419.64	1,417.60	0.00	0.00	0.00
7,200.00	91.67	269.79	6,027.13	553.57	-1,519.60	1,517.56	0.00	0.00	0.00
7,300.00	91.67	269.79	6,024.21	553.21	-1,619.56	1,617.52	0.00	0.00	0.00
7,400.00	91.67	269.79	6,021.28	552.84	-1,719.51	1,717.47	0.00	0.00	0.00
7,500.00	91.67	269.79	6,018.36	552.48	-1,819.47	1,817.43	0.00	0.00	0.00
7,600.00	91.67	269.79	6,015.44	552.11	-1,919.43	1,917.39	0.00	0.00	0.00
7,700.00	91.67	269.79	6,012.51	551.75	-2,019.38	2,017.35	0.00	0.00	0.00
7,800.00	91.67	269.79	6,009.59	551.39	-2,119.34	2,117.30	0.00	0.00	0.00
7,900.00	91.67	269.79	6,006.67	551.02	-2,219.29	2,217.26	0.00	0.00	0.00
8,000.00	91.67	269.79	6,003.75	550.66	-2,319.25	2,317.22	0.00	0.00	0.00
8,100.00	91.67	269.79	6,000.82	550.29	-2,419.21	2,417.17	0.00	0.00	0.00
8,200.00	91.67	269.79	5,997.90	549.93	-2,519.16	2,517.13	0.00	0.00	0.00
8,300.00	91.67	269.79	5,994.98	549.56	-2,619.12	2,617.09	0.00	0.00	0.00
8,400.00	91.67	269.79	5,992.06	549.20	-2,719.08	2,717.05	0.00	0.00	0.00
8,500.00	91.67	269.79	5,989.13	548.84	-2,819.03	2,817.00	0.00	0.00	0.00
8,600.00	91.67	269.79	5,986.21	548.47	-2,918.99	2,916.96	0.00	0.00	0.00



Planning Report

Database:	EDM 5000.1.13 Single User Db	Local Co-ordinate Reference:	Well 20H
Company:	SPUR ENERGY PARTNERS, LLC	TVD Reference:	RKB = 20' @ 4127.00usft (AKITA 57)
Project:	LEA COUNTY, NM (NAD 83 - NME)	MD Reference:	RKB = 20' @ 4127.00usft (AKITA 57)
Site:	MILLER 14 FEDERAL COM	North Reference:	Grid
Well:	20H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	PERMIT		

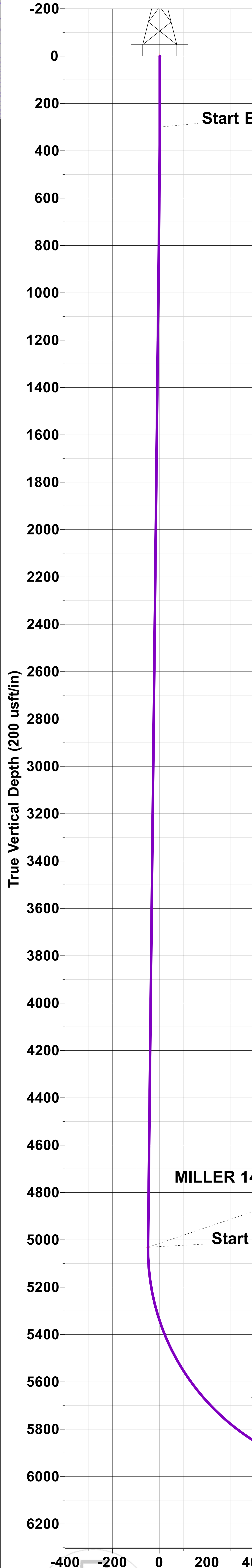
Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
8,700.00	91.67	269.79	5,983.29	548.11	-3,018.95	3,016.92	0.00	0.00	0.00
8,800.00	91.67	269.79	5,980.36	547.74	-3,118.90	3,116.88	0.00	0.00	0.00
8,900.00	91.67	269.79	5,977.44	547.38	-3,218.86	3,216.83	0.00	0.00	0.00
9,000.00	91.67	269.79	5,974.52	547.01	-3,318.82	3,316.79	0.00	0.00	0.00
9,100.00	91.67	269.79	5,971.60	546.65	-3,418.77	3,416.75	0.00	0.00	0.00
9,200.00	91.67	269.79	5,968.67	546.28	-3,518.73	3,516.71	0.00	0.00	0.00
9,300.00	91.67	269.79	5,965.75	545.92	-3,618.69	3,616.66	0.00	0.00	0.00
9,400.00	91.67	269.79	5,962.83	545.56	-3,718.64	3,716.62	0.00	0.00	0.00
9,500.00	91.67	269.79	5,959.90	545.19	-3,818.60	3,816.58	0.00	0.00	0.00
9,600.00	91.67	269.79	5,956.98	544.83	-3,918.56	3,916.53	0.00	0.00	0.00
9,700.00	91.67	269.79	5,954.06	544.46	-4,018.51	4,016.49	0.00	0.00	0.00
9,800.00	91.67	269.79	5,951.14	544.10	-4,118.47	4,116.45	0.00	0.00	0.00
9,900.00	91.67	269.79	5,948.21	543.73	-4,218.43	4,216.41	0.00	0.00	0.00
10,000.00	91.67	269.79	5,945.29	543.37	-4,318.38	4,316.36	0.00	0.00	0.00
10,100.00	91.67	269.79	5,942.37	543.01	-4,418.34	4,416.32	0.00	0.00	0.00
10,200.00	91.67	269.79	5,939.45	542.64	-4,518.30	4,516.28	0.00	0.00	0.00
10,300.00	91.67	269.79	5,936.52	542.28	-4,618.25	4,616.24	0.00	0.00	0.00
10,400.00	91.67	269.79	5,933.60	541.91	-4,718.21	4,716.19	0.00	0.00	0.00
10,500.00	91.67	269.79	5,930.68	541.55	-4,818.17	4,816.15	0.00	0.00	0.00
10,600.00	91.67	269.79	5,927.75	541.18	-4,918.12	4,916.11	0.00	0.00	0.00
10,700.00	91.67	269.79	5,924.83	540.82	-5,018.08	5,016.06	0.00	0.00	0.00
10,800.00	91.67	269.79	5,921.91	540.45	-5,118.04	5,116.02	0.00	0.00	0.00
10,900.00	91.67	269.79	5,918.99	540.09	-5,217.99	5,215.98	0.00	0.00	0.00
11,000.00	91.67	269.79	5,916.06	539.73	-5,317.95	5,315.94	0.00	0.00	0.00
11,100.00	91.67	269.79	5,913.14	539.36	-5,417.91	5,415.89	0.00	0.00	0.00
11,200.00	91.67	269.79	5,910.22	539.00	-5,517.86	5,515.85	0.00	0.00	0.00
11,300.00	91.67	269.79	5,907.30	538.63	-5,617.82	5,615.81	0.00	0.00	0.00
11,400.00	91.67	269.79	5,904.37	538.27	-5,717.78	5,715.77	0.00	0.00	0.00
11,500.00	91.67	269.79	5,901.45	537.90	-5,817.73	5,815.72	0.00	0.00	0.00
11,600.00	91.67	269.79	5,898.53	537.54	-5,917.69	5,915.68	0.00	0.00	0.00
11,670.64	91.67	269.79	5,896.46	537.28	-5,988.30	5,986.29	0.00	0.00	0.00
MILLER 14 FEDERAL COM 20H LTP: 100' FWL									
11,700.00	91.67	269.79	5,895.60	537.18	-6,017.65	6,015.64	0.00	0.00	0.00
11,720.66	91.67	269.79	5,895.00	537.10	-6,038.30	6,036.29	0.00	0.00	0.00
MILLER 14 FEDERAL COM 20H BHL: 1650' FNL, 50' FWL									



Planning Report

Database:	EDM 5000.1.13 Single User Db	Local Co-ordinate Reference:	Well 20H
Company:	SPUR ENERGY PARTNERS, LLC	TVD Reference:	RKB = 20' @ 4127.00usft (AKITA 57)
Project:	LEA COUNTY, NM (NAD 83 - NME)	MD Reference:	RKB = 20' @ 4127.00usft (AKITA 57)
Site:	MILLER 14 FEDERAL COM	North Reference:	Grid
Well:	20H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	PERMIT		

Design Targets									
Target Name									
- hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- Shape	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)		
MILLER 14 FEDERAL - plan hits target center - Point	0.00	0.00	0.00	0.00	0.00	668,311.10	727,915.40	32.8357389	-103.7258761
MILLER 14 FEDERAL - plan hits target center - Point	0.00	0.00	5,895.00	537.10	-6,038.30	668,848.20	721,877.10	32.8373090	-103.7455249
MILLER 14 FEDERAL - plan misses target center by 0.18usft at 11670.64usft MD (5896.46 TVD, 537.28 N, -5988.30 E) - Point	0.00	0.00	5,896.46	537.10	-5,988.30	668,848.20	721,927.10	32.8373082	-103.7453621
MILLER 14 FEDERAL - plan hits target center - Point	0.00	0.00	6,045.00	555.80	-908.40	668,866.90	727,007.00	32.8372808	-103.7288232



Project: LEA COUNTY, NM (NAD 83 - NME)
Site: MILLER 14 FEDERAL COM
Well: 20H
Wellbore: Wellbore #1
Design: PERMIT

PROJECT DETAILS: LEA COUNTY, NM (NAD 83 - NME)

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

WELL DETAILS: 20H

Rig Name:		AKITA 57	RKB = 20' @ 4127.00usft (AKITA 57)		Ground Level: 4107.00	
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	
0.00	0.00	668311.10	727915.40	32.8357389	-103.7258762	



SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	VSect	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	
3	612.39	6.25	5.44	611.77	16.94	1.61	2.00	-1.68	
4	5058.33	6.25	5.44	5031.31	498.60	47.50	0.00	-49.33	
5	6071.79	60.00	269.79	5868.48	557.54	-431.97	6.00	429.93	
6	6271.79	60.00	269.79	5968.48	556.91	-605.18	0.00	603.13	
7	6588.54	91.67	269.79	6045.00	555.80	-908.40	10.00	906.36	
8	11670.64	91.67	269.79	5896.46	537.28	-5988.30	0.00	5986.29	
9	11720.66	91.67	269.79	5895.00	537.10	-6038.30	0.00	6036.29	

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
MILLER 14 FEDERAL COM 20H BHL: 1650' FNL, 50' FWL	5895.00	537.10	-6038.30	668848.20	721877.10	32.8373089	-103.7455249
MILLER 14 FEDERAL COM 20H FTP: 100' FEL	6045.00	555.80	-908.40	668866.90	727007.00	32.8372808	-103.7288232
MILLER 14 FEDERAL COM 20H KOP: 5058.33' MD	5031.31	498.60	47.50	668809.70	727962.90	32.8371085	-103.7257122
MILLER 14 FEDERAL COM 20H LTP: 100' FWL	5896.46	537.10	-5988.30	668848.20	721927.10	32.8373082	-103.7453621
MILLER 14 FEDERAL COM 20H SHL: 2210' FNL, 805' FWL	0.00	0.00	0.00	668311.10	727915.40	32.8357389	-103.7258762

MILLER 14 FEDERAL COM 20H KOP: 5058.33' MD

Start DLS 6.00 TFO -99.174

Start 200.00 hold at 6071.79 MD

Start Build 10.00

LP at 6588.54 MD

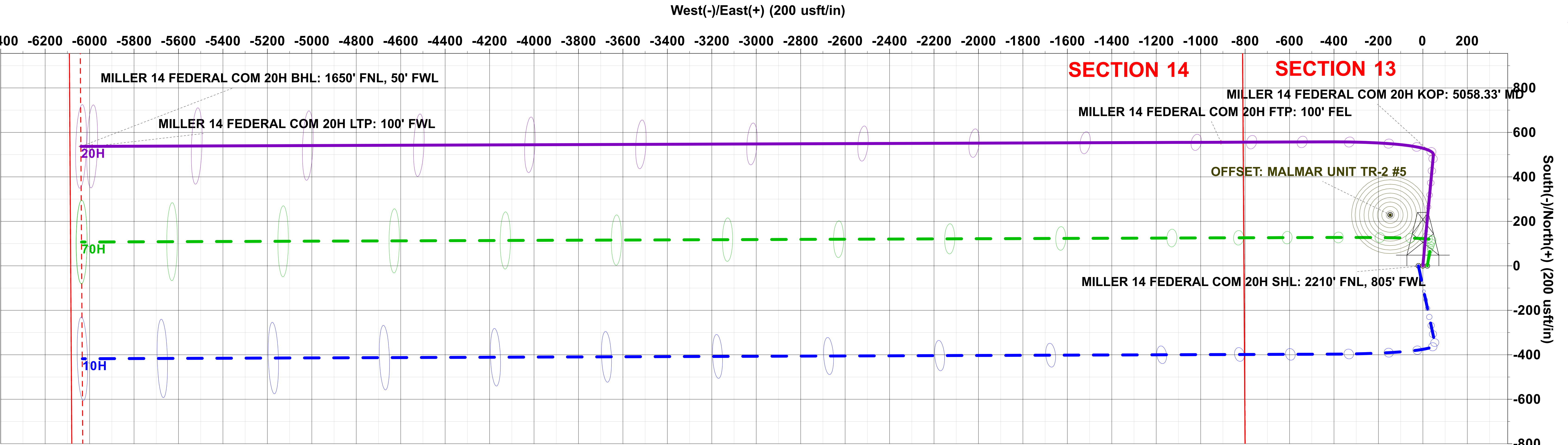
MILLER 14 FEDERAL COM 20H FTP: 100' FEL

MILLER 14 FEDERAL COM 20H LTP: 100' FWL

TD at 11720.66

MILLER 14 FEDERAL COM 20H BHL: 1650' FNL, 50' FWL

Vertical Section at 269.79° (200 usft/in)

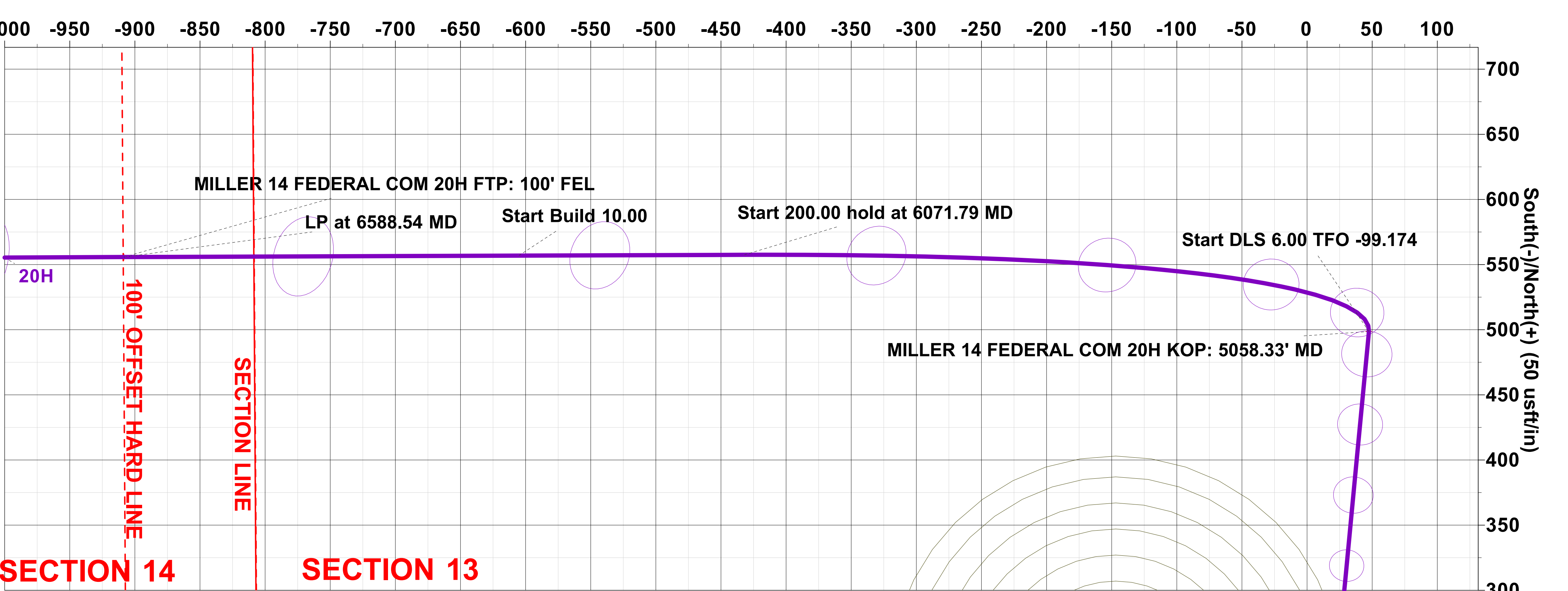


SECTION 14

SECTION 13

OFFSET: MALMAR UNIT TR-2 #5

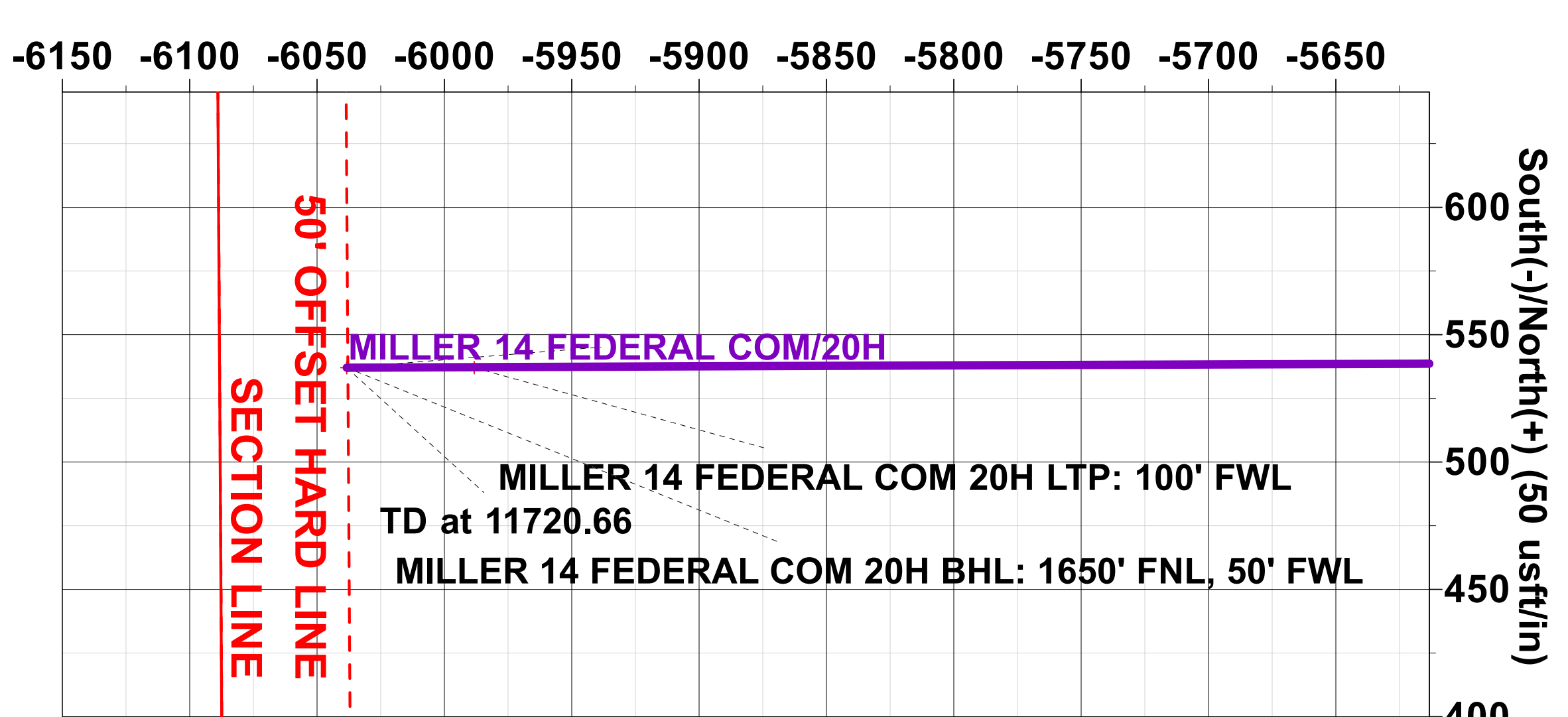
West(-)/East(+) (50 usft/in)



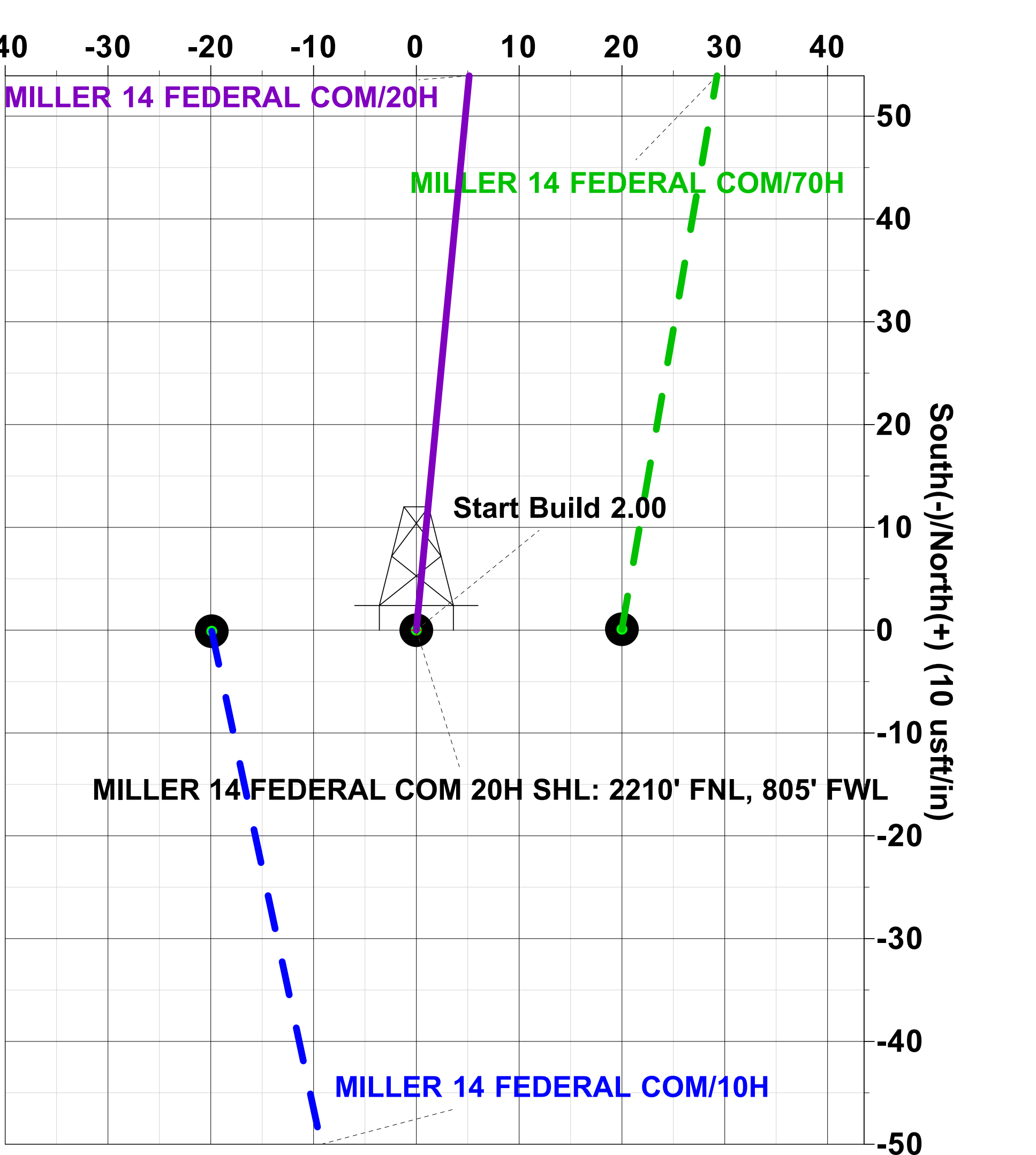
SECTION 14

SECTION 13

West(-)/East(+) (50 usft/in)



West(-)/East(+) (10 usft/in)



Plan: PERMIT (20H/Wellbore #1)

Created By: PROTOTYPE WELL PLANNING / Date: 9:33, July 05 2023

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Pecos District

Application for Permit to Drill

Conditions of Approval

Geology Concerns

Potash	☒ None	☐ Secretary	☐ R-111-P
Cave/Karst	☐ Medium	☐ High	☐ Critical
H2S	☐ None	☐ Below 100 PPM	☒ Above 100 PPM
Other	☐ 4 String Area	☐ Capitan Reef	☐ SWD Well

Note: The geology of the area where the well is being drilled determines the COAs that apply, not the above table.

Additional Engineering Requirements

Surface casing must be set at: 1,175 feet

Intermediate casing must be set at: 2,985 feet

General Requirements

1. Changes to the approved APD casing program need prior approval.
2. The Bureau of Land Management (BLM) will be notified in advance for a representative to witness:
 - a. Well spudding (minimum of 24 hours notice)
 - b. Setting and/or cementing of all casing strings (minimum of 4 hours notice)
 - c. BOPE tests (minimum of 4 hours notice)

Eddy County

620 East Greene Street, Carlsbad, NM 88220

(575) 361-2822

BLM_NM_CFO_DrillingNotifications@BLM.GOV

Lea County

414 West Taylor, Hobbs, NM 88240

(575) 689-5981

3. The initial wellhead installed on the well will remain on the well with spools used as needed.
4. 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:
 - i. 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 a Spudder Rig:
 - i. Notify the BLM when moving in and removing the Spudder Rig.
 - ii. 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.
 - iii. BOP/BOPE test to be conducted per 43 CFR 3172.6 as soon as 2nd Rig is rigged up on well.
5. 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 always be operational during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table or the area immediately above the substructure on which the draw works are located (this does not include the doghouse or stairway area).
6. 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.

Pressure Control

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in 43 CFR 3172.6 and API STD 53 Sec. 5.3.
2. 5M or higher systems require 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.
3. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.
 - a. 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.
 - b. The results of the test shall be reported to the appropriate BLM office.
 - c. 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.

- d. 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.
 - e. 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 43 CFR 3172.6(b)(9).
 - f. 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).
 - g. 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.
 - h. The tests shall be done by an independent service company utilizing a test plug, not a cup or J-packer and can be initiated immediately with the casing valve open. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to 43 CFR 3172 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).
4. If the operator has proposed using a 5,000 (5M) Annular on a 10M BOP:
- a. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be 10,000 (10M) psi.
5. 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 43 CFR 3172 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.
6. If a variance is approved for break testing the BOPE, the following requirements apply:
- a. BOPE break testing is only approved for a BOP rated at 5M or less.
 - b. Approval is only for the intermediate hole sections, so long as those sections do not go deeper than the Bone Springs formation.
 - c. The Annular Preventer must be tested to a minimum of 70% of BOPE working pressure and shall be higher than the MASP.
 - d. A full BOP test shall be performed every 21 days (at a minimum).
 - e. A full BOP test is required prior to drilling the first intermediate hole section (if applicable). If any subsequent intermediate hole interval is deeper than the first, a full BOP test shall be required (a maximum 200 foot difference in true vertical depth (TVD) is allowed).
 - f. BOPE break testing is not permitted for drilling the production hole section.
 - g. While in transfer, the BOP shall be secured by the hydraulic carrier or cradle.
 - h. If any repairs or replacements of the BOPE is required, the BOPE shall be tested as required by 43 CFR 3172.
 - i. Pressure tests shall be performed on any BOPE components that have been disconnected. A low pressure (250-300 psi) and a high pressure (BOP max pressure rating) test are required.
 - j. If a testing plug is used, pressure shall be maintained for at least 10 minutes. If there is any bleed off in pressure, the test shall be considered to have failed.
 - k. If no testing plug is used, pressure shall be maintained for at least 30 minutes. If there is a decline in pressure of more than 10 percent, the test shall be considered to have failed.
 - l. The appropriate Bureau of Land Management (BLM) office shall be notified a minimum of 4 hours before testing occurs.
 - m. Any well control event while drilling require notification to the BLM Petroleum Engineer (575-706-2779) prior to the commencement of any BOPE Break Testing operations.
 - n. If break testing is not used, then a full BOPE test shall be conducted.
7. If a variance is approved for a flexible hose to be installed from the BOP to the choke manifold, the following requirements apply:
- a. The flex line must meet the requirements of API 16C.

- b. Check condition of flexible line from BOP to choke manifold (replace if exterior is damaged or if line fails test).
- c. Line is to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements.
- d. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating.
- e. Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, shall be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.

Casing and Cement

1. 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.).
2. On any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. The 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.
3. 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.
4. The surface casing shall be set at a minimum of 25 feet into the Rustler Anhydrite and 80 feet 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 24 hours in the Potash Area) 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.

5. Intermediate casing must be kept fluid filled to meet BLM minimum collapse requirement.
6. Intermediate casing must be cemented to surface. For medium/high cave/karst, potash, and Capitan Reef, wait on cement (WOC) time for a primary cement job is to include the lead cement slurry.
7. The production cement should tie-back at least 200 feet (500 feet in Secretary Potash, surface in R-111-P potash) into previous casing string. Operator shall provide method of verification.
8. Production liner cement should tie-back at least 100 feet into previous casing string. Operator shall provide verification of cement top.
9. In WIPP Areas, cement must come to surface on the first three casing strings.
10. If cement does not circulate to surface on the first two casing strings, the cement on the 3rd casing string must come to surface. The casing integrity test can be done (prior to the cement setting up) immediately after bumping the plug.
11. No pea gravel permitted for remedial cement or fall back remedial cement without prior authorization from a BLM petroleum engineer.
12. 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.
13. DV tools:
 - a. First stage to DV tool (The DV tool may be cancelled if cement circulates to surface on the first stage):
 - i. Cement to circulate. If cement does not circulate off the DV tool, contact the appropriate BLM office before proceeding with second stage cement job.
 - b. Second stage above DV tool:
 - i. For intermediate casing, cement to surface.
 - ii. For production casing, cement should tie-back at least 200 feet (500 feet in Secretary Potash, surface in R-111-P potash) into previous casing string. Operator shall provide method of verification.
 - iii. If cement does not circulate, contact the appropriate BLM office.

14. Potash Areas:

- a. Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry.
- b. After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met:
 - i. Cement reaches a minimum compressive strength of 500 psi for all cement blends
 - ii. Until cement has been in place at least 24 hours.
- c. WOC time will be recorded in the driller's log.
- d. Whenever a casing string is cemented in the R-111-P potash area, the NMOCD requirements shall be followed.
- e. In R111 Potash Areas, if cement does not circulate to surface on the first two salt protection casing strings, the cement on the 3rd casing salt string must come to surface.
- f. In Secretary Potash 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.

15. Wait on cement (WOC) for Water Basin:

- a. After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met:
 - i. Cement reaches a minimum compressive strength of 500 psi at the shoe
 - ii. Until cement has been in place at least 8 hours.
- b. WOC time will be recorded in the driller's log.

16. Medium/High/Critical Cave/Karst Areas:

- a. Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry.
- b. In Critical Cave/Karst Areas cement must come to surface on the first three casing strings.
- c. In Medium and High Cave/Karst 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.
- d. In Critical Cave/Karst Areas, if cement does not circulate to surface on the first three casing strings, the cement on the 4th casing string must come to surface.

Drilling Mud

1. 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.

Waste Material and Fluids

1. 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.

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

Special Requirements

1. Communitization Agreement

- a. The operator will submit a Communitization Agreement to the Santa Fe Office (301 Dinosaur Trail, Santa Fe, NM 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.
- b. 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.
 - i. The operator will submit an as-drilled survey well plat of the well completion, but are not limited to, those specified in 43 CFR 3171 and 3172.
 - ii. 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.
- c. In addition, the well sign shall include the surface and bottom hole lease numbers.
 - i. When the Communitization Agreement number is known, it shall also be on the sign.

2. Unit Wells

- a. The well sign for a unit well shall include the unit number in addition to the surface and bottom hole lease numbers. This also applies to participating area numbers.
 - i. If a participating area has not been established, the operator can use the general unit designation, but will replace the unit number with the participating area number when the sign is replaced.
- b. Commercial Well Determination
 - i. A commercial well determination shall be submitted after production has been established for at least six months (this is not necessary for secondary recovery unit wells).

3. Hydrogen Sulfide (H₂S)

- a. If H₂S is encountered, provide measured values and formations to the BLM.
- b. An H₂S area must meet 43 CFR 3176 requirements, which includes equipment and personnel/public protection items.

- c. An H2S Drilling Plan shall be activated 500 feet prior to drilling into any formation designated as having H2S.
 - d. Hydrogen Sulfide 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 43 CFR 3176 requirements, which includes equipment and personnel/public protection items.
- 4. Capitan Reef
 - a. If lost circulation (50% or greater) occurs below the Base of the Salt, the operator shall do the following (Use this for 3 string wells in the Capitan Reef, if it is a 4 string well ensure fresh water based mud is used across the Capitan interval):
 - i. 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.
 - ii. 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.
 - iii. The daily drilling report should show mud volume per shift/tour.
 - iv. Failure to submit these reports will result in an Incidence of Non-Compliance being issued for failure to comply with the Conditions of Approval.
 - v. If not already planned, the operator shall run a caliper survey for the intermediate well bore and submit to the appropriate BLM office.
- 5. Salt Water Disposal Wells
 - a. The operator shall supply the BLM with a copy of a mudlog over the permitted disposal interval and estimated in situ water salinity based on open-hole logs.
 - b. If hydrocarbons are encountered while drilling, the operator shall notify the BLM.
 - c. The operator shall provide to the BLM a summary of formation depth picks based on mudlog and geophysical logs along with a copy of the mudlog and open-hole logs from total depth to top of Devonian.
 - d. An NOI sundry with the completion procedure for this well shall be submitted and approved prior to commencing completion work. The procedure will be reviewed to verify that the completion proposal will allow the operator to:
 - i. Properly evaluate the injection zone utilizing open-hole logs, swab testing and/or any other method to confirm that hydrocarbons cannot be produced in paying quantities. This evaluation shall be reviewed by the BLM prior to injection commencing.
 - ii. Restrict the injection fluid to the approved formation.
 - iii. If a step rate test will be run, an NOI sundry shall be submitted to the BLM for approval.

- e. If off-lease water will be disposed in this well, the operator shall provide proof of right-of-way approval.
6. WIPP Requirements
- a. If the proposed surface well or bottom hole is located within 330 feet of the WIPP Land Withdrawal Area boundary:
 - i. Daily drilling reports, logs, and deviation survey information are required to be submitted to the Bureau of Land Management Engineering Department and the U.S. Department of Energy (per requirements of the Joint Powers Agreement) until a total vertical depth of 7,000 feet is reached. These reports will have at a minimum the rate of penetration and a clearly marked section showing the deviation for each 500-foot interval. Operator may be required to do more frequent deviation surveys based on the daily information submitted and may be required to take other corrective measures.
 - ii. Information will also be provided to the New Mexico Oil Conservation Division after drilling activities have been completed.
 - iii. Upon completion of the well, the operator shall submit a complete directional survey.
 - iv. Any future entry into the well for purposes of completing additional drilling will require supplemental information.
 - b. Required information shall be emailed to OilGasReports@wipp.ws.
 - i. Attached files must not be greater than 20 MB.
 - ii. Call WIPP Tech Support at 575-234-7422, during the hours of 7:00am to 4:30pm, if there are any issues sending to this address.

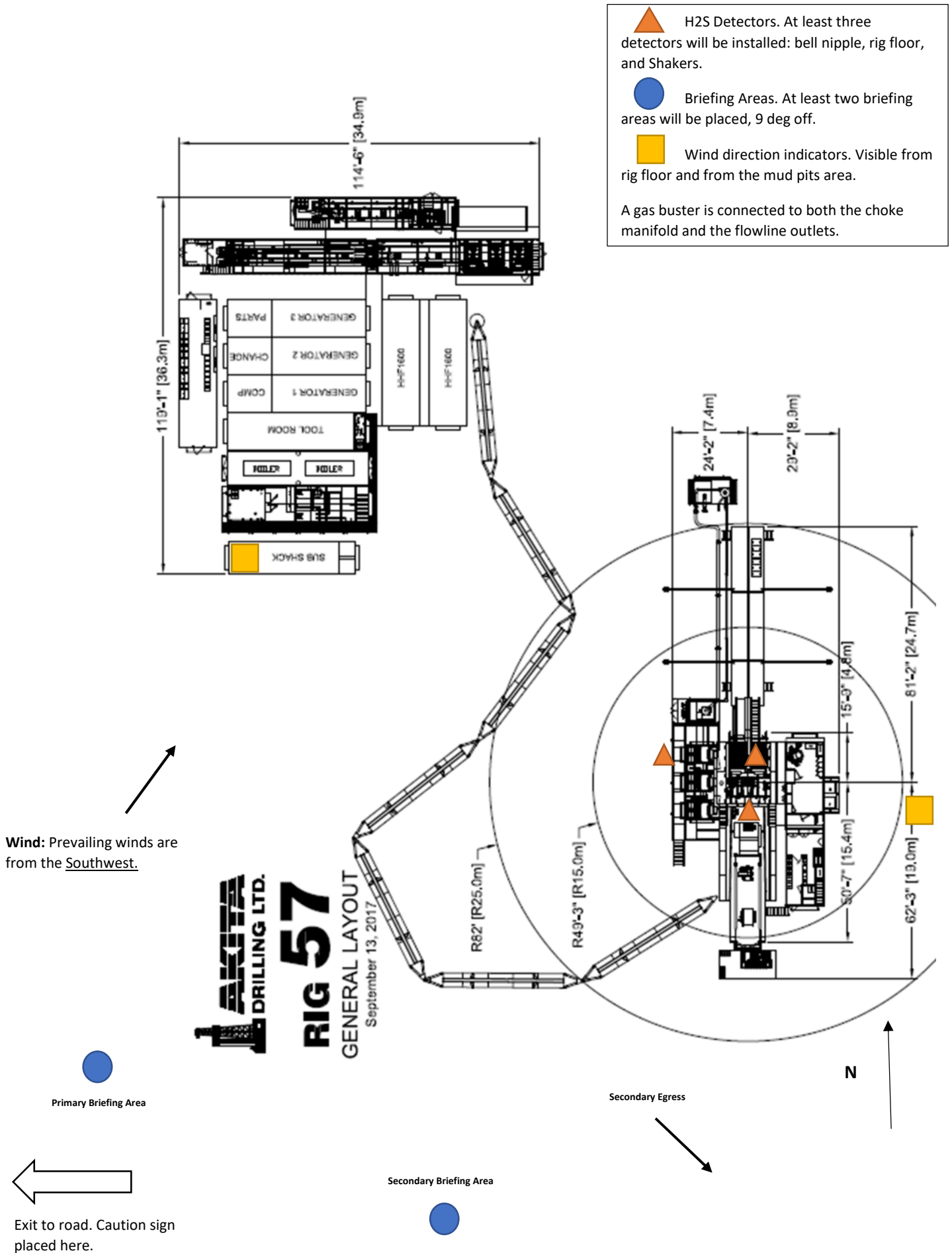


Permian Drilling Hydrogen Sulfide Drilling Operations Plan Miller 14 Federal Com

Open drill site. No homes or buildings are near the proposed location.

1. Escape

Personnel shall escape upwind of wellbore in the event of an emergency gas release. Escape can take place through the lease road on the Southeast side of the location. Personnel need to move to a safe distance and block the entrance to location. If the primary route is not an option due to the wind direction, then a secondary egress route should be taken.





RIG # 57_{1,150 HP Double Mast Drilling Rig}

SUBSTRUCTURE

One Piece Step Down

Floor Height: 18' 9" (on 4' pony sub moving system)

Clear Height (beneath rotary beams): 15' 5"

Rotary Capacity: 400,000 lbf

Max Pipe Setback: 400,000 lbf

Note: All floor heights above are based on the substructure sitting on 6" mats & 4' pony sub moving system

MAST

106' telescoping, Drill Line: 1-1/8"

Static Hook Load: 440,000 lbf

Racking Capacity: 18,000' of 4" DP, 12,500' of 5" DP

DRAWWORKS

TSM 850 425,000lbs w/ 10 Lines

Input Power: 1,150 hp AC traction motor

Main Brake: 1,150 hp AC traction motor (Dynamic)

Aux Parking Brake: Eaton brake & drum / band brake system

TOP DRIVE

Tesco EXI 600 AC 350 Ton: Max speed 220 rpm,

Continuous Drill Torque: 30,000 ft-lbs

Max Torque (Make / Break): 45,000 ft-lbs

600 hp AC induction motor & drive system with PLC

250 Ton 5 x 36" Becket Block Assembly

IRON ROUGHNECK

NOV ST-90C Conn Range: 4 1/4" to 8 1/2"

Spin Speed: 75 rpm nominal on 5" drill pipe

Spin Torque: 1,750 ft-lbs

Maximum Make-up torque: 60,000 ft-lbs

Maximum Break-out torque: 80,000 ft-lbs

ROTARY TABLE

National 27 1/2" 500 Ton with hydraulic drive to position tools only

27 1/2" Diameter opening

POWER SYSTEM

VFD, MCC, Eaton Drives, Current Power Systems Controls, three Caterpillar C32 gen

sets, 1220 BHP.

MUD PUMP #1

HHF1600 Triplex Rated Power: 1600 hp

Stroke: 12"

Input Power: 1500 hp AC traction motor

Pressure Rating: 5000 psi

MUD PUMP #2

HHF1600 Triplex Rated Power: 1600 hp

Stroke: 12"

Input Power: 1500 hp AC traction motor

Pressure Rating: 5000 psi

MUD TANKS

Two Tank system w/ 1200 bbls total capacity

Shakers: Three MI Swaco Mongoose 4 panel dual motion

Mud Gas Separator: MI Swaco 4' OD x 12' tall

Pill Tank: 54 bbls

MUD SYSTEM

5000 psi Max Pressure

5" Main plumbing and standpipe

SCALPING TANK

Main Tank: 186 bbls capacity

Trip Tank: 24 bbls capacity

Shakers: Three NOV Venom shakers dual motion

BOP (NACE)

11" x 5000 psi WP Spherical Annular

11" x 5000 psi WP Double Ram

11" x 5000 psi WP Single Ram (Optional)

MANIFOLD

3-1/8" 5,000 psi c/w two 3 1/8" manual chokes

ACCUMULATOR

CTI: 160 gal 6 station 3000 psi, c/w N2 Backup & electric triplex pump

CATWALK

Ja-co Power Catwalk, tubular max length 47' 6", max OD 13 5/8", max weight 10,000lbs

TUBULARS

Drill Pipe: Supplied as needed, per availability

Drill Collars & heavywate: Supplied as needed, per availability

MISC.

Water Tank: 409 bbls; Fuel Tank 189 bbls; Screw Compressor

Boiler: 125 hp with Full Winterization

MOVING SYSTEM:

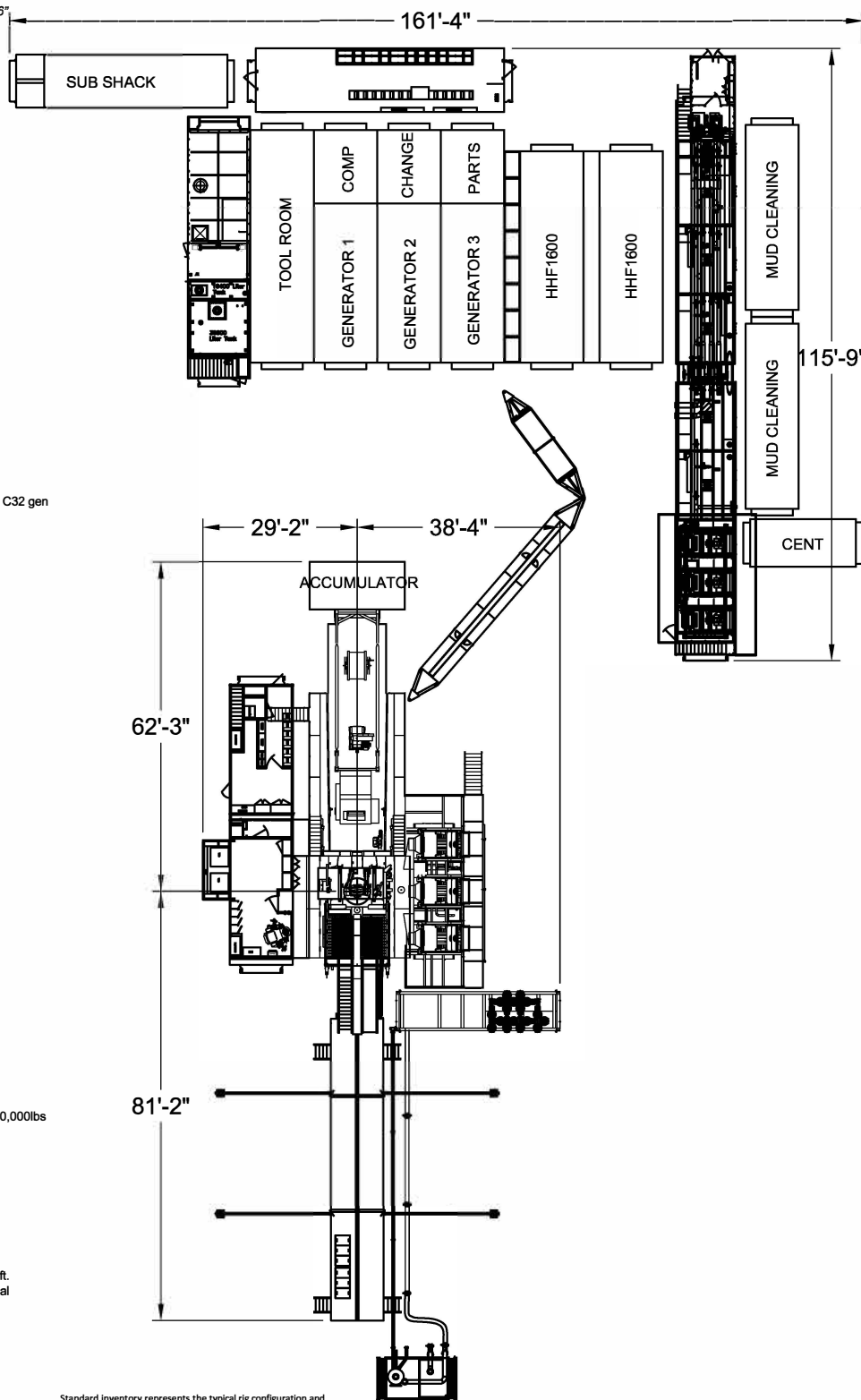
Walking beam hydraulic pony sub moving system for linear motion & side shift.

350' of Utility Suitcase style [50' lengths] connection for hydraulic and electrical supply.

TOOL/ STORAGE/ CAMP

Parts Storage Room and Tool House Room

Rig Manage Trailer: 14' x 44' skid mounted



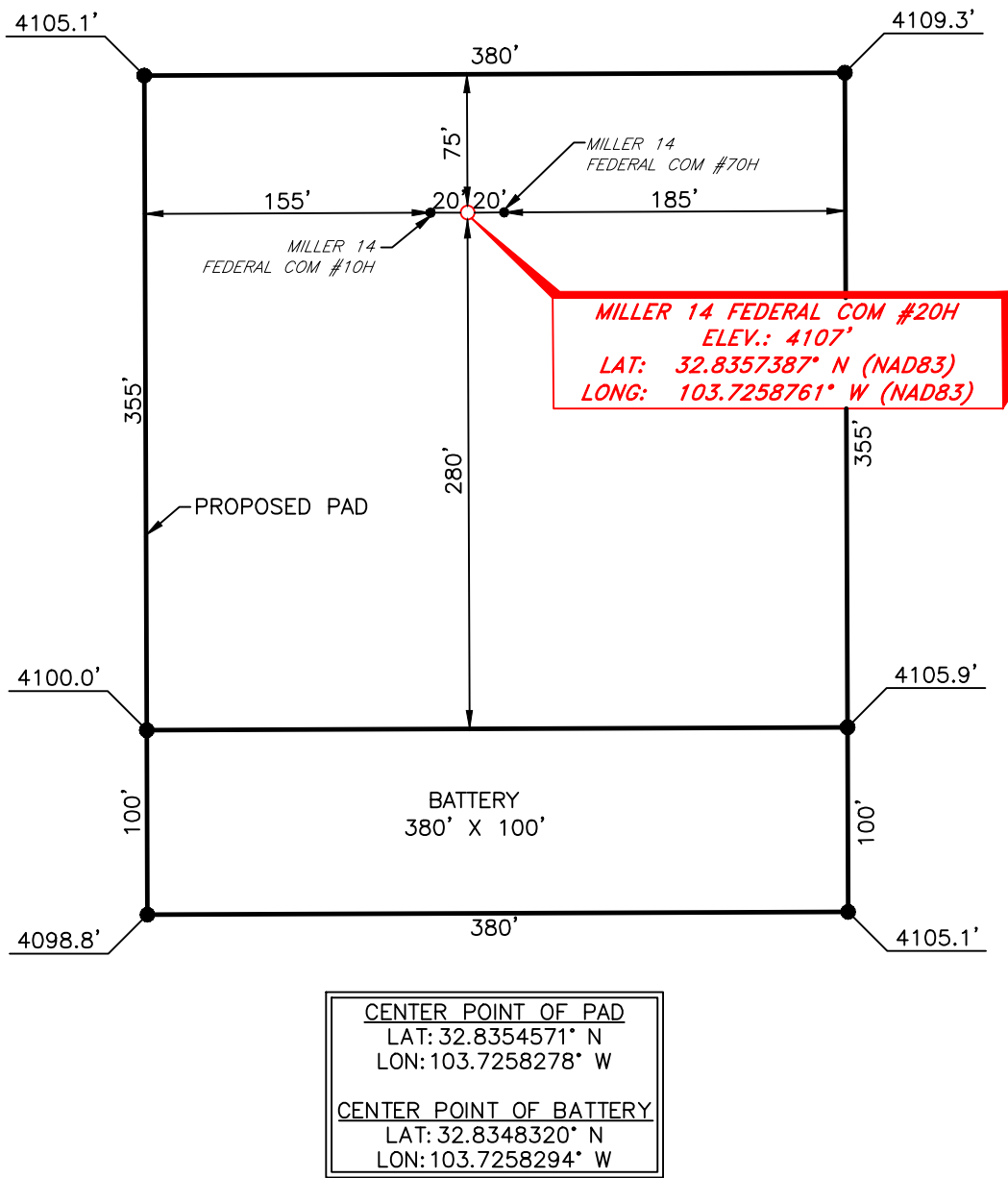
Standard inventory represents the typical rig configuration and inventory available, but specifications are subject to slight modifications from time to time due to customer requirements.

All ratings quoted herein are manufacturer specifications. AKITA's normal operating parameters are 90% of manufacturer mast ratings and 80% of mud pump manufacturer pressure rating. Operation of rig equipment beyond these parameters requires approval from AKITA field office management.

© AKITA DRILLING August, 2020

TRANSCEND RIG 4	Contractor Specification
Make	Schram
Model	TXD 130
Year of Manufacture	2006
Truck Mounted	YES
Rated Drilling Depth	130,000# hook load
Rated Depth with Tubing	
Derrick Height	69' 9"
Derrick Type	Telescoping Hydraulic
Derrick Capacity	130,000#
Elevators	N/A
Drawworks	760 HP Detroit
Wire Diameter	Hydraulic
Workfloor Max Height	8'
Tongs	Hydraulic Iron Roughneck
Slips	Manual Slips
Included Tubing Handling Tools	• 13 3/8" handling tools
Included Rod Handling Tools	85jts of 4.5" drill pipe
BOP Class Compatibility	
Weight Indicator	Hydraulic
Rig Safety Equipment	Eye wash station, fire extengushers, wind sock
Pad Size Requirements/Limitations	60' x 60'
Guy Line Spacing	N/A
Other Supplied Rig Equipment	Standard Rig Hand Tools: • (2) 36" pipe wrenches • (2) 24" pipe wrenches • (2) 18" pipe wrenches • (1) 24" crescent wrench • (2) 12" crescent wrenches • (1) 4 lb shop hammer • (1) 12 lb sledge hammer • (1) 4 foot pry bar • Vehicles for Contractor personnel • Air Impact Wrench with Sockets • Mud Scales (as needed) 1- F800 pump 1- Pill pit 80bbl 1- 400 bbl mud mix 1- Shaker 150mesh 1- 500 bbl fresh water frac tank

SPUR ENERGY PARTNERS LLC.
MILLER 14 FEDERAL COM #20H
(2210' FNL & 805' FWL)
SECTION 13, T17S, R32E
N. M. P. M., LEA COUNTY, NEW MEXICO



DIRECTIONS TO LOCATION

From the intersection of CR #126A (Maljamar Rd.) and CR #125 (Mescalero Rd.);
Go Southeast on CR #125 approx. 2.2 miles to a proposed road on the left;
Turn left and go Northeast approx. 0.2 miles to location on the left.



SCALE: 1" = 100'
0 50 100
BEARINGS ARE
NAD 83 GRID - NM EAST
DISTANCES ARE GROUND

I, Dale E. Bell, New Mexico Professional Surveyor No. 14400, do hereby certify that this Plat and the actual survey on the ground upon which it is based were performed by me or under my direct supervision; that I am responsible for this survey, said survey and plat meets the Minimum Standards for Land Surveying in the State of New Mexico and that it is true and correct to the best of my knowledge and belief.

Dale E. Bell NM PS 14400



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NO.	REVISION	DATE
JOB NO.: LS23010057		
DWG. NO.: 23010057-4		



SCALE: 1" = 100'
DATE: 01/25/2023
SURVEYED BY: JF/DC
DRAWN BY: RQ
APPROVED BY: DEB
SHEET: 1 OF 1

Intent ☐ As Drilled ☐

API #		
Operator Name:	Property Name:	Well Number

Kick Off Point (KOP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
Latitude					Longitude				NAD

First Take Point (FTP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
Latitude					Longitude				NAD

Last Take Point (LTP)

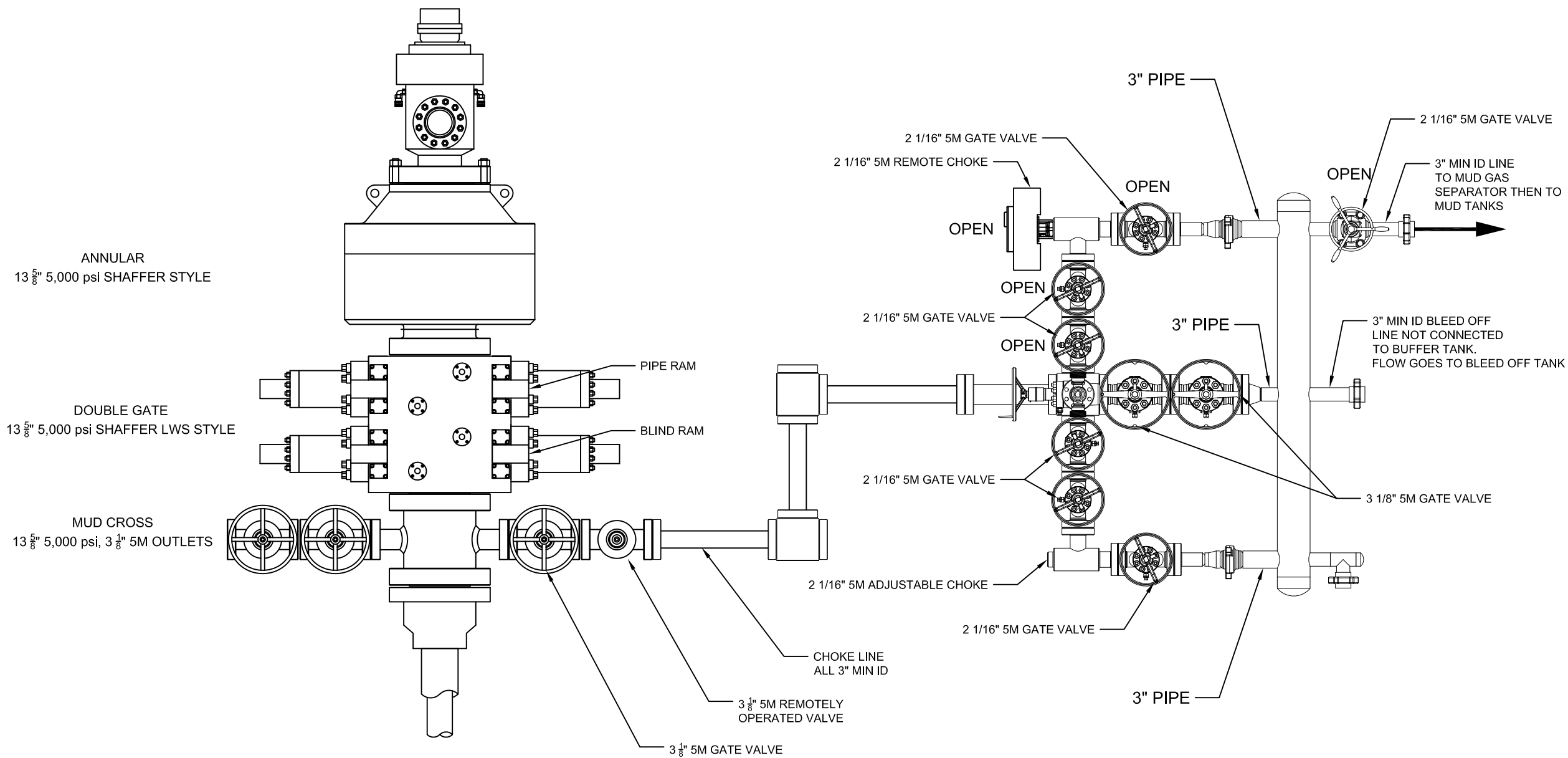
UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
Latitude					Longitude				NAD

Is this well the defining well for the Horizontal Spacing Unit? ☐Is this well an infill well? ☐

If infill is yes please provide API if available, Operator Name and well number for Defining well for Horizontal Spacing Unit.

API #		
Operator Name:	Property Name:	Well Number

KZ 06/29/2018



Notes
-
-
-

No.	Revision	Date
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AKITA
DRILLING LTD.
2302 8th Street, Nisku Alberta
T9E 7Z2 Tel: (780) 955-6700

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Date	5-6-2021	Scale	NTS
Des / Chk'd By	BG	File Name	R57 13 5M dou..
Project	R57		

RIG 57 BOP SCHEMATIC

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 324758

CONDITIONS

Operator: Spur Energy Partners LLC 9655 Katy Freeway Houston, TX 77024	OGRID:
	328947
	Action Number:
	324758
Action Type: [C-101] BLM - Federal/Indian Land Lease (Form 3160-3)	

CONDITIONS

Created By	Condition	Condition Date
pkautz	Will require a File As Drilled C-102 and a Directional Survey with the C-104	3/20/2024
pkautz	Once the well is spud, to prevent ground water contamination through whole or partial conduits from the surface, the operator shall drill without interruption through the fresh water zone or zones and shall immediately set in cement the water protection string	3/20/2024
pkautz	Oil base muds are not to be used until fresh water zones are cased and cemented providing isolation from the oil or diesel. This includes synthetic oils. Oil based mud, drilling fluids and solids must be contained in a steel closed loop system	3/20/2024
pkautz	Cement is required to circulate on both surface and intermediate1 strings of casing	3/20/2024
pkautz	If cement does not circulate on any string, a CBL is required for that string of casing	3/20/2024