

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

Form C-101

August 1, 2011

Permit 351019

APPLICATION FOR PERMIT TO DRILL, RE-ENTER, DEEPEN, PLUGBACK, OR ADD A ZONE

1. Operator Name and Address Spur Energy Partners LLC 9655 Katy Freeway Houston, TX 77024		2. OGRID Number 328947
		3. API Number 30-015-54298
4. Property Code 334569	5. Property Name WELCH CD 28 STATE COM	6. Well No. 091H

7. Surface Location

UL - Lot M	Section 27	Township 17S	Range 28E	Lot Idn	Feet From 747	N/S Line S	Feet From 226	E/W Line W	County Eddy
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8. Proposed Bottom Hole Location

UL - Lot M	Section 28	Township 16S	Range 28E	Lot Idn M	Feet From 935	N/S Line S	Feet From 50	E/W Line W	County Eddy
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9. Pool Information

ARTESIA; GLORIETA-YESO (O)	96830
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Additional Well Information

11. Work Type New Well	12. Well Type OIL	13. Cable/Rotary	14. Lease Type State	15. Ground Level Elevation 3680
16. Multiple N	17. Proposed Depth 9768	18. Formation Blinbry	19. Contractor	20. Spud Date 2/24/2024
Depth to Ground water		Distance from nearest fresh water well		Distance to nearest surface water

☒ We will be using a closed-loop system in lieu of lined pits

21. Proposed Casing and Cement Program

Type	Hole Size	Casing Size	Casing Weight/ft	Setting Depth	Sacks of Cement	Estimated TOC
Surf	12.25	9.635	36	1175	345	0
Prod	8.75	7	32	5000	1522	0
Prod	8.75	5.5	20	9768	1522	0

Casing/Cement Program: Additional Comments

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22. Proposed Blowout Prevention Program

Type	Working Pressure	Test Pressure	Manufacturer
Double Ram	5	3000	SHAFFER

23. I hereby certify that the information given above is true and complete to the best of my knowledge and belief. I further certify I have complied with 19.15.14.9 (A) NMAC ☒ and/or 19.15.14.9 (B) NMAC ☒ if applicable.	OIL CONSERVATION DIVISION	
Signature:		
Printed Name: Electronically filed by Sarah Chapman	Approved By: Ward Rikala	
Title: Regulatory Director	Title:	
Email Address: schapman@spurenergy.com	Approved Date: 10/4/2023	Expiration Date: 10/4/2025
Date: 9/29/2023	Phone: 832-930-8613	Conditions of Approval Attached

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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 30-015-54298	² Pool Code 96830	³ Pool Name ARTESIA; GLORIETA-YESO (O)
⁴ Property Code 334569	⁵ Property Name WELCH CD 28 STATE COM	⁶ Well Number 91H
⁷ OGRID NO. 328947	⁸ Operator Name SPUR ENERGY PARTNERS LLC.	⁹ Elevation 3680'

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
M	27	17S	28E		747	SOUTH	226	WEST	EDDY

¹¹ Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
M	28	17S	28E		935	SOUTH	50	WEST	EDDY

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: 654984.9 - E: 590975.8 LAT: 32.8004797° N LONG: 104.1717846° W FIRST TAKE POINT (FTP) 935' FSL & 100' FEL - SEC 28 N: 655167.2 - E: 590651.7 LAT: 32.8009821° N LONG: 104.1728384° W LAST TAKE POINT (LTP) 935' FSL & 100' FWL - SEC 28 N: 655041.3 - E: 585656.6 LAT: 32.8006558° N LONG: 104.1890955° W BOTTOM HOLE (BH) N: 655040.0 - E: 585606.6 LAT: 32.8006525° N LONG: 104.1892582° W CORNER DATA NAD 83 GRID - NM EAST A: FOUND BRASS CAP "1941" N: 654104.0 - E: 585547.5 B: FOUND BRASS CAP "1941" N: 656702.1 - E: 585573.1 C: FOUND BRASS CAP "1941" N: 659297.8 - E: 585602.6 D: FOUND BRASS CAP "1941" N: 659377.1 - E: 588198.9 E: FOUND BRASS CAP "1941" N: 659457.7 - E: 590794.9 F: FOUND BRASS CAP "1941" N: 659466.8 - E: 593406.4 G: FOUND BRASS CAP "1941" N: 659475.1 - E: 596017.9 H: FOUND BRASS CAP "1941" N: 656886.5 - E: 595997.7 I: FOUND BRASS CAP "1941" N: 654298.0 - E: 595977.3 J: FOUND BRASS CAP "1941" N: 654266.7 - E: 593360.1 K: FOUND BRASS CAP "1941" N: 654235.0 - E: 590741.9 L: FOUND BRASS CAP "1941" N: 654169.8 - E: 588139.7 M: FOUND BRASS CAP "1941" N: 656846.0 - E: 590769.0	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> 03/07/2023 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. 12/15/2022 Date of Survey Signature and Seal of Professional Surveyor 14400 Certificate Number DALE E. BELL NEW MEXICO 14400 01/11/2023 PROFESSIONAL SURVEYOR LS22121343
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State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

Form APD Conditions

Permit 351019

PERMIT CONDITIONS OF APPROVAL

Operator Name and Address: Spur Energy Partners LLC [328947] 9655 Katy Freeway Houston, TX 77024	API Number: 30-015-54298
	Well: WELCH CD 28 STATE COM #091H

OCD Reviewer	Condition
ward.rikala	Potable waters shall be protected-as such, surface casing is required to be sat and properly cemented prior to drilling any potentially oil and/or gas bearing strata.
ward.rikala	Notify OCD 24 hours prior to casing & cement
ward.rikala	Will require a File As Drilled C-102 and a Directional Survey with the C-104
ward.rikala	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
ward.rikala	Cement is required to circulate on both surface and intermediate1 strings of casing
ward.rikala	If cement does not circulate on any string , a CBL is required for that string of casing.
ward.rikala	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



SPUR ENERGY PARTNERS, LLC

**EDDY COUNTY, NM (NAD 83 - NME)
WELCH CD 28 STATE COM
91H**

**Wellbore #1
PERMIT**

Anticollision Report

21 March, 2023



Anticollision Report

Company:	SPUR ENERGY PARTNERS, LLC	Local Co-ordinate Reference:	Well 91H
Project:	EDDY COUNTY, NM (NAD 83 - NME)	TVD Reference:	RKB = 20' @ 3700.00usft (AKITA 57)
Reference Site:	WELCH CD 28 STATE COM	MD Reference:	RKB = 20' @ 3700.00usft (AKITA 57)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	91H	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 10.00
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	03/21/23
From (usft)	To (usft)	Survey (Wellbore)
0.00	9,767.78	PERMIT (Wellbore #1)
		Tool Name
		MWD+IFR1+SAG+FDIR
		Description
		OWSG MWD + IFR1 + Sag + FDIR Correction

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						
HALBERD 27 STATE COM						
50H - Wellbore #1 - Wellbore #1						Out of range
51H - Wellbore #1 - Wellbore #1	4,242.74	9,831.39	548.39	467.46	6.777	CC
51H - Wellbore #1 - Wellbore #1	4,250.00	9,834.59	548.43	467.46	6.774	ES, SF
71H - Wellbore #1 - Wellbore #1	4,468.29	10,063.00	1,534.82	1,364.45	9.009	CC, ES
71H - Wellbore #1 - Wellbore #1	4,500.00	10,063.00	1,535.20	1,364.70	9.004	SF
72H - Wellbore #1 - Wellbore #1	4,481.91	10,190.00	422.18	340.21	5.150	CC, ES, SF
90H - Wellbore #1 - Wellbore #1	4,680.15	10,460.00	353.93	298.46	6.380	CC, ES, SF
WELCH B 28 FED						
10H - Wellbore #1 - PERMIT						Out of range
70H - Wellbore #1 - PERMIT						Out of range
WELCH CD 28 STATE COM						
10H - Wellbore #1 - PERMIT	812.97	814.88	8.86	3.47	1.643	CC, ES, SF
20H - Wellbore #1 - PERMIT						Out of range
21H - Wellbore #1 - PERMIT	761.26	765.04	38.19	33.18	7.623	CC, ES
21H - Wellbore #1 - PERMIT	850.00	852.44	41.09	35.44	7.273	SF
50H - Wellbore #1 - PERMIT						Out of range
51H - Wellbore #1 - PERMIT	571.41	571.99	6.56	2.92	1.800	CC, ES, SF
70H - Wellbore #1 - PERMIT	7,550.00	7,841.14	732.43	659.10	9.989	CC
70H - Wellbore #1 - PERMIT	9,750.00	10,041.14	734.48	619.06	6.364	ES
70H - Wellbore #1 - PERMIT	9,767.78	10,042.13	734.69	619.09	6.355	SF
OFFSET: COLLIER STATE 2 - Wellbore #1 - Wellbore #						Out of range
OFFSET: COLLIER STATE 3 - Wellbore #1 - Wellbore #						Out of range
OFFSET: COLLIER STATE 4 - Wellbore #1 - Wellbore #						Out of range
OFFSET: COLLIER-STATE 1 - Wellbore #1 - Wellbore #						Out of range
OFFSET: DELHI 'B' STATE 4 - Wellbore #1 - Wellbore #						Out of range
OFFSET: DELHI B STATE 3 - Wellbore #1 - Wellbore #1						Out of range
OFFSET: DELHI-STATE B 2 - Wellbore #1 - Wellbore #1	8,851.58	4,705.64	620.11	479.95	4.424	CC, ES
OFFSET: DELHI-STATE B 2 - Wellbore #1 - Wellbore #1	8,900.00	4,704.92	622.00	481.34	4.422	SF
OFFSET: ELK STATE 1 - Wellbore #1 - Wellbore #1	3,082.94	3,065.00	509.86	434.84	6.797	CC, ES
OFFSET: ELK STATE 1 - Wellbore #1 - Wellbore #1	3,100.00	3,065.00	510.14	435.07	6.795	SF
OFFSET: GERONIMO '27' STATE COM 2 - Wellbore #1	3,776.77	3,770.31	378.44	291.11	4.334	CC
OFFSET: GERONIMO '27' STATE COM 2 - Wellbore #1	3,800.00	3,793.50	378.72	290.89	4.312	ES
OFFSET: GERONIMO '27' STATE COM 2 - Wellbore #1	3,850.00	3,843.34	381.24	292.51	4.297	SF
OFFSET: GERONIMO '28' STATE COM 1 - Wellbore #1	6,402.16	4,755.10	550.88	429.01	4.520	CC, ES, SF
OFFSET: GERONIMO 28 STATE SWD 2 - Wellbore #1 -						Out of range

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 91H
Project:	EDDY COUNTY, NM (NAD 83 - NME)	TVD Reference:	RKB = 20' @ 3700.00usft (AKITA 57)
Reference Site:	WELCH CD 28 STATE COM	MD Reference:	RKB = 20' @ 3700.00usft (AKITA 57)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	91H	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

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
WELCH CD 28 STATE COM						
OFFSET: HALBERD 27 STATE 3H - Wellbore #1 - Wellb						Out of range
OFFSET: HALBERD 27 STATE COM 1H - Wellbore #1 -	3,813.03	8,810.00	65.54	17.94	1.377	Level 3, CC, ES, SF
OFFSET: HANOVER STATE #3 14 - Wellbore #1 - Wellb	4,956.74	4,673.79	619.40	512.30	5.783	CC
OFFSET: HANOVER STATE #3 14 - Wellbore #1 - Wellb	4,969.28	4,680.06	619.50	512.19	5.773	ES
OFFSET: HANOVER STATE #3 14 - Wellbore #1 - Wellb	5,000.00	4,694.70	620.56	512.81	5.759	SF
OFFSET: KERSEY WILLIAMS A FEDERAL 10 - Wellbor						Out of range
OFFSET: KERSEY WILLIAMS A FEDERAL 7 - Wellbore						Out of range
OFFSET: MALOOF STATE 1 - Wellbore #1 - Wellbore #1						Out of range
OFFSET: OXY SPARKY FEDERAL 1 - Wellbore #1 - We						Out of range
OFFSET: PAN AMERICAN-TE B 1 - Wellbore #1 - Wellb						Out of range
OFFSET: PAN AMERICAN-TE B 1 - Wellbore #1 - Wellb						Out of range
OFFSET: PHILLIPS N G STATE 17 - Wellbore #1 - Wellb						Out of range
OFFSET: PHILLIPS N G STATE 31 - Wellbore #1 - Wellb						Out of range
OFFSET: PHILLIPS N G STATE 8 - Wellbore #1 - Wellb						Out of range
OFFSET: PHILLIPS STATE /NG/ 11 - Wellbore #1 - Well						Out of range
OFFSET: PHILLIPS STATE N G 14 - Wellbore #1 - Wellb						Out of range
OFFSET: RED LAKE 28 K STATE 1 - Wellbore #1 - Wel						Out of range
OFFSET: Red Lake 28 K State 2 - Wellbore #1 - Wellbor						Out of range
OFFSET: RED LAKE 28 K STATE 3 - Wellbore #1 - Wel						Out of range
OFFSET: RED LAKE 28 K STATE 4 - Wellbore #1 - Wel						Out of range
OFFSET: RED LAKE 28 N STATE 1 - Wellbore #1 - Wel	7,840.13	4,720.75	619.60	487.73	4.698	CC
OFFSET: RED LAKE 28 N STATE 1 - Wellbore #1 - Wel	7,850.00	4,720.60	619.68	487.71	4.695	ES, SF
OFFSET: RED LAKE 28 N STATE 2 - Wellbore #1 - Wel						Out of range
OFFSET: RED LAKE 28 N STATE 3 - Wellbore #1 - Wel						Out of range
OFFSET: RED LAKE 28 N STATE 4 - Wellbore #1 - Wel						Out of range
OFFSET: SAN JUAN-STATE 1 - Wellbore #1 - Wellbore	9,024.85	4,702.77	150.48	6.44	1.045	Level 2, CC, ES, SF
OFFSET: STATE /B/ 2 - Wellbore #1 - Wellbore #1						Out of range
OFFSET: STATE 2 - Wellbore #1 - Wellbore #1						Out of range
OFFSET: STATE-FEDERAL GAS C 1 - Wellbore #1 - We						Out of range
OFFSET: SUNRAY-STATE 1 - Wellbore #1 - Wellbore #1						Out of range
OFFSET: TIGNER STATE 1 - Wellbore #1 - Wellbore #1						Out of range
OFFSET: TIGNER STATE 2 - Wellbore #1 - Wellbore #1						Out of range
OFFSET: TIGNER STATE 3 - Wellbore #1 - Wellbore #1						Out of range
OFFSET: TIGNER STATE 4 - Wellbore #1 - Wellbore #1						Out of range
OFFSET: WELCH RL STATE 1 - Wellbore #1 - Wellbore						Out of range
OFFSET: WELCH RL STATE 14 - Wellbore #1 - Wellbor						Out of range
OFFSET: WELCH RL STATE 2 - Wellbore #1 - Wellbore						Out of range
OFFSET: WELCH RL STATE 20 - Wellbore #1 - Wellbor						Out of range
OFFSET: WELCH RL STATE 21 - Wellbore #1 - Wellbor						Out of range
OFFSET: WELCH RL STATE 5 - Wellbore #1 - Wellbore						Out of range
OFFSET: WILLIAMS KERSEY A FEDERAL 6 - Wellbore						Out of range
OFFSET: WILLIAMS KERSEY A FEDERAL 9 - Wellbore						Out of range
SA 10H - Wellbore #1 - PERMIT						Out of range

Offset Design												Offset Site Error:		0.00 usft
Survey Program: 173-Reference												Offset Well Error:		0.00 usft
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	
3,700.00	3,694.53	9,734.16	4,198.35	13.03	65.06	-27.14	746.28	25.83	763.70	685.96	77.74	9.824		

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 91H
Project:	EDDY COUNTY, NM (NAD 83 - NME)	TVD Reference:	RKB = 20' @ 3700.00usft (AKITA 57)
Reference Site:	WELCH CD 28 STATE COM	MD Reference:	RKB = 20' @ 3700.00usft (AKITA 57)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	91H	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 HALBERD 27 STATE COM - 51H - Wellbore #1 - Wellbore #1												Offset Site Error:	0.00 usft
Survey Program: 173-												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
3,746.26	3,740.70	9,730.58	4,198.47	13.19	65.02	-26.77	746.40	29.40	732.14	654.23	77.91	9.398	
3,750.00	3,744.44	9,730.31	4,198.48	13.21	65.02	-22.98	746.41	29.67	729.65	651.71	77.94	9.362	
3,800.00	3,794.36	9,728.53	4,198.54	13.39	65.00	31.73	746.47	31.45	697.51	619.19	78.32	8.906	
3,850.00	3,844.21	9,730.04	4,198.49	13.56	65.01	60.84	746.42	29.94	667.60	589.01	78.59	8.495	
3,900.00	3,893.83	9,734.59	4,198.33	13.73	65.06	73.37	746.26	25.39	640.33	561.51	78.82	8.124	
3,950.00	3,943.10	9,741.97	4,198.05	13.90	65.14	79.83	746.00	18.03	616.06	537.00	79.06	7.792	
4,000.00	3,991.87	9,751.96	4,197.64	14.06	65.25	83.47	745.64	8.05	595.13	515.80	79.33	7.502	
4,050.00	4,040.03	9,764.38	4,197.07	14.23	65.39	85.46	745.19	-4.35	577.85	498.22	79.63	7.256	
4,100.00	4,087.43	9,778.71	4,196.34	14.39	65.54	86.36	744.65	-18.65	564.45	484.49	79.97	7.059	
4,150.00	4,133.94	9,794.91	4,195.50	14.56	65.72	86.44	744.02	-34.82	555.09	474.78	80.32	6.911	
4,200.00	4,179.45	9,813.56	4,194.50	14.73	65.92	85.80	743.29	-53.42	549.79	469.13	80.66	6.816	
4,242.74	4,217.44	9,831.39	4,193.54	14.87	66.12	84.76	742.58	-71.21	548.39	467.46	80.92	6.777 CC	
4,250.00	4,223.81	9,834.59	4,193.37	14.89	66.15	84.55	742.45	-74.40	548.43	467.46	80.96	6.774 ES, SF	
4,300.00	4,266.92	9,857.80	4,192.09	15.06	66.40	82.79	741.50	-97.57	550.78	469.59	81.18	6.784	
4,350.00	4,308.64	9,882.92	4,190.69	15.23	66.68	80.62	740.46	-122.62	556.51	475.24	81.28	6.847	
4,400.00	4,348.88	9,910.27	4,189.18	15.40	66.97	78.10	739.33	-149.90	565.22	484.01	81.21	6.960	
4,450.00	4,387.52	9,926.00	4,188.30	15.57	67.15	76.41	738.68	-165.60	576.60	495.51	81.09	7.111	
4,500.00	4,424.44	9,926.00	4,188.30	15.75	67.15	75.75	738.68	-165.60	591.40	510.37	81.03	7.298	
4,550.00	4,459.56	9,926.00	4,188.30	15.93	67.15	74.82	738.68	-165.60	609.54	528.64	80.90	7.535	
4,600.00	4,492.77	9,926.00	4,188.30	16.11	67.15	73.64	738.68	-165.60	630.69	550.01	80.68	7.817	
4,650.00	4,523.99	9,926.00	4,188.30	16.31	67.15	72.22	738.68	-165.60	654.49	574.13	80.36	8.145	
4,700.00	4,553.13	9,926.00	4,188.30	16.50	67.15	70.58	738.68	-165.60	680.62	600.69	79.92	8.516	
4,750.00	4,580.10	9,926.00	4,188.30	16.71	67.15	68.75	738.68	-165.60	708.73	629.37	79.36	8.930	
4,769.28	4,589.91	9,926.00	4,188.30	16.79	67.15	67.99	738.68	-165.60	720.04	640.93	79.11	9.102	
4,800.00	4,605.27	9,926.00	4,188.30	16.92	67.15	67.99	738.68	-165.60	738.67	659.43	79.24	9.323	
4,850.00	4,630.27	9,926.00	4,188.30	17.15	67.15	67.99	738.68	-165.60	770.65	691.19	79.45	9.699	

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 91H
Project:	EDDY COUNTY, NM (NAD 83 - NME)	TVD Reference:	RKB = 20' @ 3700.00usft (AKITA 57)
Reference Site:	WELCH CD 28 STATE COM	MD Reference:	RKB = 20' @ 3700.00usft (AKITA 57)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	91H	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												Offset Site Error:	0.00 usft
Survey Program: 148-, 1179-												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
3,950.00	3,943.10	9,851.84	4,418.45	13.90	149.55	81.50	1,731.99	55.23	1,617.45	1,455.22	162.23	9.970	
4,000.00	3,991.87	9,863.06	4,418.42	14.06	149.84	85.35	1,732.05	44.00	1,601.91	1,439.33	162.58	9.853	
4,050.00	4,040.03	9,877.14	4,418.39	14.23	150.21	87.85	1,732.11	29.93	1,588.05	1,424.99	163.06	9.739	
4,100.00	4,087.43	9,894.01	4,418.36	14.39	150.65	89.50	1,732.18	13.05	1,575.88	1,412.20	163.68	9.628	
4,150.00	4,133.94	9,913.57	4,418.34	14.56	151.17	90.57	1,732.24	-6.50	1,565.38	1,400.96	164.43	9.520	
4,200.00	4,179.45	9,935.76	4,418.33	14.73	151.75	91.20	1,732.28	-28.69	1,556.54	1,391.25	165.29	9.417	
4,250.00	4,223.81	9,960.52	4,418.33	14.89	152.40	91.49	1,732.30	-53.46	1,549.30	1,383.03	166.27	9.318	
4,300.00	4,266.92	9,987.81	4,418.36	15.06	153.12	91.49	1,732.29	-80.74	1,543.59	1,376.25	167.34	9.224	
4,350.00	4,308.64	10,015.76	4,418.39	15.23	153.85	91.32	1,732.25	-108.69	1,539.34	1,370.91	168.43	9.139	
4,400.00	4,348.88	10,045.48	4,418.43	15.40	154.63	90.97	1,732.21	-138.41	1,536.47	1,366.91	169.56	9.062	
4,450.00	4,387.52	10,063.00	4,418.45	15.57	155.09	90.85	1,732.18	-155.93	1,534.94	1,364.65	170.29	9.014	
4,468.29	4,401.23	10,063.00	4,418.45	15.64	155.09	90.96	1,732.18	-155.93	1,534.82	1,364.45	170.36	9.009 CC, ES	
4,500.00	4,424.44	10,063.00	4,418.45	15.75	155.09	91.10	1,732.18	-155.93	1,535.20	1,364.70	170.50	9.004 SF	
4,550.00	4,459.56	10,063.00	4,418.45	15.93	155.09	91.19	1,732.18	-155.93	1,537.33	1,366.60	170.72	9.005	
4,600.00	4,492.77	10,063.00	4,418.45	16.11	155.09	91.14	1,732.18	-155.93	1,541.32	1,370.36	170.96	9.016	
4,650.00	4,523.99	10,063.00	4,418.45	16.31	155.09	90.96	1,732.18	-155.93	1,547.15	1,375.94	171.21	9.036	
4,700.00	4,553.13	10,063.00	4,418.45	16.50	155.09	90.63	1,732.18	-155.93	1,554.79	1,383.32	171.47	9.068	
4,750.00	4,580.10	10,063.00	4,418.45	16.71	155.09	90.18	1,732.18	-155.93	1,564.17	1,392.45	171.72	9.109	
4,769.28	4,589.91	10,063.00	4,418.45	16.79	155.09	89.98	1,732.18	-155.93	1,568.25	1,396.44	171.81	9.128	
4,800.00	4,605.27	10,063.00	4,418.45	16.92	155.09	89.98	1,732.18	-155.93	1,575.23	1,403.29	171.95	9.161	
4,850.00	4,630.27	10,063.00	4,418.45	17.15	155.09	89.98	1,732.18	-155.93	1,587.80	1,415.62	172.17	9.222	
4,900.00	4,655.27	10,063.00	4,418.45	17.38	155.09	89.98	1,732.18	-155.93	1,601.83	1,429.43	172.40	9.291	
4,950.00	4,680.27	10,063.00	4,418.45	17.62	155.09	89.98	1,732.18	-155.93	1,617.29	1,444.64	172.65	9.367	
4,969.28	4,689.91	10,063.00	4,418.45	17.72	155.09	89.98	1,732.18	-155.93	1,623.62	1,450.87	172.75	9.399	
5,000.00	4,704.55	10,063.00	4,418.45	17.87	155.09	88.86	1,732.18	-155.93	1,634.12	1,461.22	172.90	9.451	
5,050.00	4,725.22	10,063.00	4,418.45	18.13	155.09	86.92	1,732.18	-155.93	1,652.21	1,479.20	173.01	9.550	
5,100.00	4,741.84	10,063.00	4,418.45	18.39	155.09	84.85	1,732.18	-155.93	1,671.39	1,498.50	172.89	9.667	
5,150.00	4,754.30	10,063.00	4,418.45	18.66	155.09	82.67	1,732.18	-155.93	1,691.48	1,518.97	172.50	9.806	
5,200.00	4,762.49	10,063.00	4,418.45	18.92	155.09	80.40	1,732.18	-155.93	1,712.28	1,540.46	171.82	9.966	

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



Anticollision Report

Company:	SPUR ENERGY PARTNERS, LLC	Local Co-ordinate Reference:	Well 91H
Project:	EDDY COUNTY, NM (NAD 83 - NME)	TVD Reference:	RKB = 20' @ 3700.00usft (AKITA 57)
Reference Site:	WELCH CD 28 STATE COM	MD Reference:	RKB = 20' @ 3700.00usft (AKITA 57)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	91H	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 HALBERD 27 STATE COM - 72H - Wellbore #1 - Wellbore #1												Offset Site Error:	0.00 usft
Survey Program: 142-, 1407-												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
3,800.00	3,794.36	9,961.00	4,426.55	13.39	63.81	-147.50	-218.27	52.72	746.74	669.66	77.08	9.688	
3,850.00	3,844.21	9,961.00	4,426.55	13.56	63.81	-124.57	-218.27	52.72	706.41	629.16	77.24	9.145	
3,900.00	3,893.83	9,961.00	4,426.55	13.73	63.81	-117.23	-218.27	52.72	667.44	590.33	77.11	8.655	
3,950.00	3,943.10	9,967.87	4,426.37	13.90	63.89	-114.11	-218.45	45.85	630.17	553.17	77.00	8.184	
4,000.00	3,991.87	9,976.70	4,426.15	14.06	63.99	-112.65	-218.67	37.03	594.94	518.04	76.91	7.736	
4,050.00	4,040.03	9,988.05	4,425.88	14.23	64.11	-111.66	-218.97	25.69	562.12	485.20	76.92	7.308	
4,100.00	4,087.43	10,001.96	4,425.58	14.39	64.26	-110.67	-219.32	11.79	532.06	454.98	77.08	6.903	
4,150.00	4,133.94	10,018.42	4,425.26	14.56	64.45	-109.47	-219.75	-4.67	505.16	427.75	77.41	6.526	
4,200.00	4,179.45	10,037.46	4,424.95	14.73	64.65	-107.94	-220.25	-23.69	481.73	403.84	77.90	6.184	
4,250.00	4,223.81	10,059.04	4,424.66	14.89	64.89	-106.05	-220.81	-45.27	462.09	383.55	78.53	5.884	
4,300.00	4,266.92	10,083.16	4,424.43	15.06	65.16	-103.76	-221.44	-69.38	446.41	367.13	79.28	5.631	
4,350.00	4,308.64	10,110.34	4,424.28	15.23	65.46	-101.02	-222.14	-96.55	434.75	354.65	80.10	5.428	
4,400.00	4,348.88	10,139.94	4,424.23	15.40	65.78	-97.93	-222.87	-126.14	427.01	346.10	80.91	5.278	
4,450.00	4,387.52	10,171.59	4,424.17	15.57	66.13	-94.56	-223.65	-157.77	422.97	341.34	81.62	5.182	
4,481.91	4,411.29	10,190.00	4,424.14	15.68	66.33	-92.57	-224.11	-176.18	422.18	340.21	81.97	5.150 CC, ES, SF	
4,500.00	4,424.44	10,190.00	4,424.14	15.75	66.33	-92.46	-224.11	-176.18	422.56	340.53	82.04	5.151	
4,550.00	4,459.56	10,190.00	4,424.14	15.93	66.33	-91.93	-224.11	-176.18	427.55	345.33	82.22	5.200	
4,600.00	4,492.77	10,190.00	4,424.14	16.11	66.33	-91.09	-224.11	-176.18	438.13	355.73	82.40	5.317	
4,650.00	4,523.99	10,190.00	4,424.14	16.31	66.33	-89.94	-224.11	-176.18	453.87	371.30	82.58	5.496	
4,700.00	4,553.13	10,190.00	4,424.14	16.50	66.33	-88.46	-224.11	-176.18	474.23	391.51	82.72	5.733	
4,750.00	4,580.10	10,190.00	4,424.14	16.71	66.33	-86.67	-224.11	-176.18	498.58	415.78	82.80	6.022	
4,769.28	4,589.91	10,190.00	4,424.14	16.79	66.33	-85.90	-224.11	-176.18	508.91	426.10	82.81	6.146	
4,800.00	4,605.27	10,190.00	4,424.14	16.92	66.33	-85.90	-224.11	-176.18	526.37	443.43	82.94	6.347	
4,850.00	4,630.27	10,190.00	4,424.14	17.15	66.33	-85.90	-224.11	-176.18	557.24	474.08	83.17	6.700	
4,900.00	4,655.27	10,190.00	4,424.14	17.38	66.33	-85.90	-224.11	-176.18	590.74	507.35	83.40	7.084	
4,950.00	4,680.27	10,190.00	4,424.14	17.62	66.33	-85.90	-224.11	-176.18	626.45	542.80	83.64	7.490	
4,969.28	4,689.91	10,190.00	4,424.14	17.72	66.33	-85.90	-224.11	-176.18	640.73	556.99	83.74	7.652	
5,000.00	4,704.55	10,190.00	4,424.14	17.87	66.33	-82.37	-224.11	-176.18	663.95	580.57	83.37	7.964	
5,050.00	4,725.22	10,190.00	4,424.14	18.13	66.33	-76.36	-224.11	-176.18	702.66	620.52	82.15	8.554	
5,100.00	4,741.84	10,190.00	4,424.14	18.39	66.33	-70.21	-224.11	-176.18	742.12	662.01	80.12	9.263	

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 91H
Project:	EDDY COUNTY, NM (NAD 83 - NME)	TVD Reference:	RKB = 20' @ 3700.00usft (AKITA 57)
Reference Site:	WELCH CD 28 STATE COM	MD Reference:	RKB = 20' @ 3700.00usft (AKITA 57)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	91H	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 HALBERD 27 STATE COM - 90H - Wellbore #1 - Wellbore #1												Offset Site Error:	0.00 usft
Survey Program: 142-, 1468-												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
4,300.00	4,266.92	10,384.87	4,780.12	15.06	66.03	140.02	405.30	-99.84	554.58	497.54	57.03	9.724	
4,350.00	4,308.64	10,412.99	4,779.06	15.23	66.34	140.11	404.89	-127.93	514.81	457.22	57.59	8.939	
4,400.00	4,348.88	10,441.06	4,777.97	15.40	66.64	139.94	404.48	-155.99	476.89	418.60	58.29	8.182	
4,450.00	4,387.52	10,460.00	4,777.24	15.57	66.85	140.33	404.20	-174.91	441.15	382.76	58.39	7.555	
4,500.00	4,424.44	10,460.00	4,777.24	15.75	66.85	141.96	404.20	-174.91	409.68	352.41	57.27	7.153	
4,550.00	4,459.56	10,460.00	4,777.24	15.93	66.85	143.17	404.20	-174.91	384.08	327.63	56.45	6.804	
4,600.00	4,492.77	10,460.00	4,777.24	16.11	66.85	144.00	404.20	-174.91	365.67	309.79	55.89	6.543	
4,650.00	4,523.99	10,460.00	4,777.24	16.31	66.85	144.49	404.20	-174.91	355.62	300.06	55.56	6.400	
4,680.15	4,541.81	10,460.00	4,777.24	16.43	66.85	144.63	404.20	-174.91	353.93	298.46	55.48	6.380 CC, ES, SF	
4,700.00	4,553.13	10,460.00	4,777.24	16.50	66.85	144.66	404.20	-174.91	354.67	299.20	55.47	6.394	
4,750.00	4,580.10	10,460.00	4,777.24	16.71	66.85	144.51	404.20	-174.91	362.88	307.27	55.61	6.525	
4,769.28	4,589.91	10,460.00	4,777.24	16.79	66.85	144.37	404.20	-174.91	368.39	312.66	55.73	6.610	
4,800.00	4,605.27	10,460.00	4,777.24	16.92	66.85	144.37	404.20	-174.91	379.28	323.45	55.83	6.793	
4,850.00	4,630.27	10,460.00	4,777.24	17.15	66.85	144.37	404.20	-174.91	401.41	345.41	56.00	7.168	
4,900.00	4,655.27	10,460.00	4,777.24	17.38	66.85	144.37	404.20	-174.91	428.27	372.09	56.17	7.624	
4,950.00	4,680.27	10,460.00	4,777.24	17.62	66.85	144.37	404.20	-174.91	459.01	402.66	56.36	8.145	
4,969.28	4,689.91	10,460.00	4,777.24	17.72	66.85	144.37	404.20	-174.91	471.75	415.33	56.43	8.361	
5,000.00	4,704.55	10,460.00	4,777.24	17.87	66.85	142.55	404.20	-174.91	493.39	435.51	57.87	8.525	
5,050.00	4,725.22	10,460.00	4,777.24	18.13	66.85	138.61	404.20	-174.91	532.26	471.16	61.09	8.712	
5,100.00	4,741.84	10,460.00	4,777.24	18.39	66.85	133.04	404.20	-174.91	574.61	508.96	65.65	8.753	
5,150.00	4,754.30	10,460.00	4,777.24	18.66	66.85	125.15	404.20	-174.91	619.44	547.72	71.72	8.637	
5,200.00	4,762.49	10,460.00	4,777.24	18.92	66.85	114.12	404.20	-174.91	665.94	587.15	78.79	8.452	
5,250.00	4,766.35	10,460.00	4,777.24	19.18	66.85	99.46	404.20	-174.91	713.48	628.75	84.73	8.421	
5,277.78	4,766.61	10,460.00	4,777.24	19.32	66.85	90.02	404.20	-174.91	740.14	654.00	86.14	8.592	
5,300.00	4,766.28	10,460.00	4,777.24	19.44	66.85	90.02	404.20	-174.91	761.52	675.27	86.25	8.829	
5,350.00	4,765.54	10,460.00	4,777.24	19.71	66.85	90.02	404.20	-174.91	809.81	723.28	86.53	9.359	
5,400.00	4,764.80	10,460.00	4,777.24	19.99	66.85	90.02	404.20	-174.91	858.30	771.49	86.81	9.887	

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 91H
Project:	EDDY COUNTY, NM (NAD 83 - NME)	TVD Reference:	RKB = 20' @ 3700.00usft (AKITA 57)
Reference Site:	WELCH CD 28 STATE COM	MD Reference:	RKB = 20' @ 3700.00usft (AKITA 57)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	91H	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 WELCH CD 28 STATE COM - 10H - Wellbore #1 - PERMIT													Offset Site Error:	0.00 usft
Survey Program: 0-MWD+IFR1+SAG+FDIR													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		
500.00	499.94	501.82	501.65	1.56	1.58	-66.83	1.92	-34.21	30.29	27.15	3.14	9.632	1.643 CC, ES, SF	
550.00	549.92	552.09	551.77	1.74	1.76	-91.46	4.23	-30.97	26.93	23.43	3.50	7.692		
600.00	599.87	602.31	601.75	1.92	1.95	-102.56	7.04	-27.02	23.51	19.65	3.86	6.094		
625.58	625.42	627.98	627.26	2.02	2.04	-105.46	8.68	-24.72	21.74	17.70	4.04	5.381		
650.00	649.79	652.46	651.57	2.10	2.13	-103.86	10.36	-22.36	19.98	15.76	4.21	4.740		
700.00	699.70	702.48	701.16	2.28	2.31	-97.78	14.17	-17.01	16.00	11.43	4.57	3.501		
750.00	749.62	752.34	750.47	2.46	2.49	-84.29	18.47	-10.97	11.90	6.97	4.93	2.414		
800.00	799.53	802.02	799.45	2.64	2.67	-54.62	23.25	-4.26	9.03	3.74	5.29	1.706		
812.97	812.48	814.88	812.11	2.68	2.72	-43.83	24.57	-2.41	8.86	3.47	5.39			
850.00	849.45	851.48	848.08	2.81	2.85	-13.99	28.50	3.10	10.31	4.64	5.67	1.819		
900.00	899.36	900.69	896.30	2.99	3.03	10.35	34.20	11.11	15.81	9.79	6.02	2.626		
950.00	949.27	949.64	944.08	3.17	3.21	21.62	40.34	19.74	23.47	17.10	6.37	3.684		
1,000.00	999.19	998.28	991.39	3.35	3.39	27.38	46.92	28.98	32.42	25.70	6.72	4.823		
1,050.00	1,049.10	1,046.61	1,038.18	3.53	3.57	30.66	53.92	38.80	42.38	35.31	7.07	5.993		
1,100.00	1,099.01	1,094.58	1,084.43	3.71	3.75	32.69	61.31	49.19	53.25	45.83	7.42	7.176		
1,150.00	1,148.93	1,142.19	1,130.11	3.88	3.94	34.00	69.09	60.11	64.98	57.21	7.77	8.364		
1,200.00	1,198.84	1,189.45	1,175.23	4.06	4.12	34.88	77.25	71.57	77.53	69.41	8.12	9.552		

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 91H
Project:	EDDY COUNTY, NM (NAD 83 - NME)	TVD Reference:	RKB = 20' @ 3700.00usft (AKITA 57)
Reference Site:	WELCH CD 28 STATE COM	MD Reference:	RKB = 20' @ 3700.00usft (AKITA 57)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	91H	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 WELCH CD 28 STATE COM - 21H - Wellbore #1 - PERMIT													Offset Site Error:	0.00 usft
Survey Program: 0-MWD+IFR1+SAG+FDIR													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		
650.00	649.79	654.24	653.34	2.10	2.11	-138.29	-10.60	-39.38	41.07	36.86	4.21	9.757		
700.00	699.70	704.18	702.84	2.28	2.29	-148.08	-12.80	-33.17	39.20	34.64	4.57	8.583		
750.00	749.62	753.88	751.98	2.46	2.47	-159.62	-15.28	-26.18	38.23	33.30	4.93	7.757		
761.26	760.86	765.04	763.00	2.50	2.51	-162.43	-15.87	-24.50	38.19	33.18	5.01	7.623 CC, ES		
800.00	799.53	803.31	800.72	2.64	2.65	-172.43	-18.02	-18.43	38.70	33.41	5.29	7.318		
850.00	849.45	852.44	849.02	2.81	2.83	174.55	-21.03	-9.95	41.09	35.44	5.65	7.273 SF		
900.00	899.36	901.25	896.84	2.99	3.01	162.47	-24.29	-0.74	45.59	39.59	6.00	7.593		
950.00	949.27	949.71	944.16	3.17	3.19	152.08	-27.79	9.15	52.13	45.77	6.36	8.200		
1,000.00	999.19	997.80	990.92	3.35	3.38	143.54	-31.53	19.71	60.48	53.77	6.71	9.018		
1,050.00	1,049.10	1,045.50	1,037.11	3.53	3.56	136.66	-35.50	30.92	70.39	63.34	7.05	9.978		

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 91H
Project:	EDDY COUNTY, NM (NAD 83 - NME)	TVD Reference:	RKB = 20' @ 3700.00usft (AKITA 57)
Reference Site:	WELCH CD 28 STATE COM	MD Reference:	RKB = 20' @ 3700.00usft (AKITA 57)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	91H	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 WELCH CD 28 STATE COM - 51H - Wellbore #1 - PERMIT													Offset Site Error:	0.00 usft
Survey Program: 0-MWD+IFR1+SAG+FDIR													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	
350.00	350.00	350.34	350.33	1.04	1.04	-3.67	-1.23	-19.66	19.27	17.19	2.08	9.269		
400.00	399.98	400.58	400.56	1.21	1.21	-4.60	-1.33	-18.34	16.66	14.22	2.44	6.819		
450.00	449.96	450.70	450.63	1.39	1.39	-36.40	-1.50	-16.15	13.11	10.33	2.78	4.711		
500.00	499.94	500.73	500.56	1.56	1.57	-86.05	-1.73	-13.09	9.60	6.47	3.13	3.066		
550.00	549.92	550.65	550.33	1.74	1.74	-137.94	-2.02	-9.17	6.92	3.43	3.49	1.985		
571.41	571.32	571.99	571.58	1.82	1.82	-162.04	-2.17	-7.23	6.56	2.92	3.65	1.800 CC, ES, SF		
600.00	599.87	600.44	599.89	1.92	1.92	167.89	-2.38	-4.40	7.25	3.40	3.85	1.882		
625.58	625.42	625.86	625.16	2.02	2.01	147.79	-2.59	-1.64	8.88	4.85	4.04	2.201		
650.00	649.79	650.09	649.22	2.10	2.10	137.24	-2.80	1.20	11.00	6.80	4.21	2.616		
700.00	699.70	699.57	698.27	2.28	2.28	123.44	-3.29	7.64	16.40	11.85	4.56	3.600		
750.00	749.62	748.83	747.00	2.46	2.46	115.17	-3.84	14.89	22.89	17.98	4.91	4.664		
800.00	799.53	797.86	795.36	2.64	2.63	109.60	-4.44	22.93	30.32	25.06	5.26	5.763		
850.00	849.45	846.78	843.47	2.81	2.82	105.56	-5.10	31.74	38.59	32.97	5.62	6.871		
900.00	899.36	896.00	891.84	2.99	3.00	102.79	-5.79	40.83	47.17	41.20	5.97	7.906		
950.00	949.27	945.21	940.20	3.17	3.18	100.88	-6.47	49.91	55.83	49.51	6.32	8.838		
1,000.00	999.19	994.43	988.57	3.35	3.36	99.48	-7.16	58.99	64.53	57.86	6.67	9.679		
3,800.00	3,794.36	4,010.47	3,885.35	13.39	13.98	-168.32	-54.96	158.50	267.91	240.77	27.14	9.871		
3,850.00	3,844.21	4,050.97	3,912.57	13.56	14.11	-135.82	-55.88	128.54	255.86	228.37	27.48	9.310		
3,900.00	3,893.83	4,090.28	3,937.76	13.73	14.23	-119.03	-56.78	98.38	248.17	220.33	27.84	8.915		
3,950.00	3,943.10	4,128.53	3,961.06	13.90	14.36	-107.56	-57.64	68.06	245.10	216.90	28.20	8.692		
3,958.10	3,951.03	4,134.64	3,964.67	13.92	14.38	-105.95	-57.78	63.13	245.04	216.79	28.26	8.672		
4,000.00	3,991.87	4,165.86	3,982.61	14.06	14.48	-98.31	-58.47	37.59	246.63	218.09	28.54	8.641		
4,050.00	4,040.03	4,202.37	4,002.52	14.23	14.61	-90.25	-59.28	7.00	252.46	223.63	28.84	8.755		
4,100.00	4,087.43	4,238.39	4,021.01	14.39	14.75	-82.96	-60.07	-23.91	262.11	233.05	29.06	9.020		
4,150.00	4,133.94	4,277.43	4,040.53	14.56	14.90	-76.03	-60.92	-57.71	274.62	245.44	29.19	9.409		
4,200.00	4,179.45	4,318.06	4,060.84	14.73	15.07	-69.80	-61.81	-92.87	288.87	259.67	29.20	9.893		
9,767.78	4,700.00	9,599.60	4,075.76	61.84	64.22	-25.45	-226.43	-5,340.99	691.67	622.46	69.21	9.993		

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 91H
Project:	EDDY COUNTY, NM (NAD 83 - NME)	TVD Reference:	RKB = 20' @ 3700.00usft (AKITA 57)
Reference Site:	WELCH CD 28 STATE COM	MD Reference:	RKB = 20' @ 3700.00usft (AKITA 57)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	91H	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 WELCH CD 28 STATE COM - 70H - Wellbore #1 - PERMIT												Offset Site Error:	0.00 usft
Survey Program: 0-MWD+IFR1+SAG+FDIR												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	
7,550.00	4,732.90	7,841.14	4,384.96	38.50	43.30	61.63	770.25	-3,162.72	732.43	659.10	73.32	9.989	CC
7,600.00	4,732.16	7,891.14	4,384.12	39.00	43.82	61.63	768.99	-3,212.69	732.47	658.22	74.25	9.865	
7,650.00	4,731.42	7,941.14	4,383.28	39.51	44.35	61.62	767.73	-3,262.67	732.52	657.33	75.19	9.742	
7,700.00	4,730.68	7,991.14	4,382.44	40.02	44.87	61.61	766.48	-3,312.65	732.56	656.44	76.12	9.623	
7,750.00	4,729.93	8,041.14	4,381.60	40.53	45.40	61.61	765.22	-3,362.62	732.61	655.55	77.06	9.507	
7,800.00	4,729.19	8,091.14	4,380.76	41.04	45.93	61.60	763.96	-3,412.60	732.66	654.66	78.00	9.393	
7,850.00	4,728.45	8,141.14	4,379.92	41.55	46.46	61.59	762.71	-3,462.58	732.70	653.76	78.94	9.281	
7,900.00	4,727.71	8,191.14	4,379.08	42.06	46.99	61.59	761.45	-3,512.55	732.75	652.86	79.89	9.172	
7,950.00	4,726.97	8,241.14	4,378.24	42.58	47.52	61.58	760.20	-3,562.53	732.80	651.96	80.83	9.066	
8,000.00	4,726.22	8,291.14	4,377.40	43.09	48.05	61.57	758.94	-3,612.51	732.84	651.06	81.78	8.961	
8,050.00	4,725.48	8,341.14	4,376.56	43.61	48.58	61.57	757.68	-3,662.49	732.89	650.16	82.73	8.859	
8,100.00	4,724.74	8,391.14	4,375.72	44.13	49.11	61.56	756.43	-3,712.46	732.94	649.26	83.68	8.759	
8,150.00	4,724.00	8,441.14	4,374.88	44.64	49.65	61.55	755.17	-3,762.44	732.98	648.36	84.63	8.661	
8,200.00	4,723.26	8,491.14	4,374.04	45.16	50.18	61.55	753.91	-3,812.42	733.03	647.45	85.58	8.565	
8,250.00	4,722.52	8,541.14	4,373.20	45.69	50.72	61.54	752.66	-3,862.39	733.08	646.54	86.54	8.471	
8,300.00	4,721.77	8,591.14	4,372.37	46.21	51.25	61.53	751.40	-3,912.37	733.12	645.63	87.49	8.380	
8,350.00	4,721.03	8,641.14	4,371.53	46.73	51.79	61.53	750.15	-3,962.35	733.17	644.72	88.45	8.289	
8,400.00	4,720.29	8,691.14	4,370.69	47.25	52.32	61.52	748.89	-4,012.33	733.22	643.81	89.40	8.201	
8,450.00	4,719.55	8,741.14	4,369.85	47.78	52.86	61.51	747.63	-4,062.30	733.26	642.90	90.36	8.115	
8,500.00	4,718.81	8,791.14	4,369.01	48.30	53.40	61.50	746.38	-4,112.28	733.31	641.99	91.32	8.030	
8,550.00	4,718.07	8,841.14	4,368.17	48.83	53.93	61.50	745.12	-4,162.26	733.36	641.08	92.28	7.947	
8,600.00	4,717.32	8,891.14	4,367.33	49.36	54.47	61.49	743.86	-4,212.23	733.40	640.16	93.24	7.865	
8,650.00	4,716.58	8,941.14	4,366.49	49.88	55.01	61.48	742.61	-4,262.21	733.45	639.24	94.21	7.786	
8,700.00	4,715.84	8,991.14	4,365.65	50.41	55.55	61.48	741.35	-4,312.19	733.50	638.33	95.17	7.707	
8,750.00	4,715.10	9,041.14	4,364.81	50.94	56.09	61.47	740.09	-4,362.16	733.54	637.41	96.13	7.630	
8,800.00	4,714.36	9,091.14	4,363.97	51.47	56.63	61.46	738.84	-4,412.14	733.59	636.49	97.10	7.555	
8,850.00	4,713.62	9,141.14	4,363.13	52.00	57.17	61.46	737.58	-4,462.12	733.64	635.57	98.07	7.481	
8,900.00	4,712.87	9,191.14	4,362.29	52.53	57.71	61.45	736.33	-4,512.10	733.68	634.65	99.03	7.409	
8,950.00	4,712.13	9,241.14	4,361.45	53.07	58.25	61.44	735.07	-4,562.07	733.73	633.73	100.00	7.337	
9,000.00	4,711.39	9,291.14	4,360.61	53.60	58.79	61.44	733.81	-4,612.05	733.78	632.81	100.97	7.267	
9,050.00	4,710.65	9,341.14	4,359.77	54.13	59.34	61.43	732.56	-4,662.03	733.82	631.89	101.94	7.199	
9,100.00	4,709.91	9,391.14	4,358.93	54.66	59.88	61.42	731.30	-4,712.00	733.87	630.96	102.91	7.131	
9,150.00	4,709.16	9,441.14	4,358.09	55.20	60.42	61.42	730.04	-4,761.98	733.92	630.04	103.88	7.065	
9,200.00	4,708.42	9,491.14	4,357.25	55.73	60.96	61.41	728.79	-4,811.96	733.97	629.11	104.85	7.000	
9,250.00	4,707.68	9,541.14	4,356.41	56.27	61.51	61.40	727.53	-4,861.94	734.01	628.19	105.82	6.936	
9,300.00	4,706.94	9,591.14	4,355.57	56.81	62.05	61.40	726.28	-4,911.91	734.06	627.26	106.80	6.874	
9,350.00	4,706.20	9,641.14	4,354.73	57.34	62.60	61.39	725.02	-4,961.89	734.11	626.34	107.77	6.812	
9,400.00	4,705.46	9,691.14	4,353.89	57.88	63.14	61.38	723.76	-5,011.87	734.15	625.41	108.74	6.751	
9,450.00	4,704.71	9,741.14	4,353.05	58.42	63.69	61.38	722.51	-5,061.84	734.20	624.48	109.72	6.692	
9,500.00	4,703.97	9,791.14	4,352.21	58.95	64.23	61.37	721.25	-5,111.82	734.25	623.55	110.69	6.633	
9,550.00	4,703.23	9,841.14	4,351.38	59.49	64.78	61.36	719.99	-5,161.80	734.29	622.63	111.67	6.576	
9,600.00	4,702.49	9,891.14	4,350.54	60.03	65.32	61.36	718.74	-5,211.77	734.34	621.70	112.64	6.519	
9,650.00	4,701.75	9,941.14	4,349.70	60.57	65.87	61.35	717.48	-5,261.75	734.39	620.77	113.62	6.463	
9,700.00	4,701.01	9,991.14	4,348.86	61.11	66.41	61.34	716.22	-5,311.73	734.43	619.84	114.60	6.409	
9,750.00	4,700.26	10,041.14	4,348.02	61.65	66.80	61.34	714.97	-5,361.71	734.48	619.06	115.42	6.364	ES
9,767.78	4,700.00	10,042.13	4,348.00	61.84	66.80	61.34	714.94	-5,362.70	734.69	619.09	115.60	6.355	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 91H
Project:	EDDY COUNTY, NM (NAD 83 - NME)	TVD Reference:	RKB = 20' @ 3700.00usft (AKITA 57)
Reference Site:	WELCH CD 28 STATE COM	MD Reference:	RKB = 20' @ 3700.00usft (AKITA 57)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	91H	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 WELCH CD 28 STATE COM - OFFSET: DELHI-STATE B 2 - Wellbore #1 - Wellbore #1													Offset Site Error:	0.00 usft
Survey Program: 505-INC-ONLY													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance		Between Centres		Between Ellipses	Minimum Separation	Separation Factor	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)	Centres (usft)	Ellipses (usft)	Separation (usft)	Factor		
7,750.00	4,729.93	4,721.98	4,729.93	40.53	88.49	-91.51	-526.79	-4,437.80	1,264.02	1,135.03	128.99	9.799		
7,800.00	4,729.19	4,721.24	4,729.19	41.04	88.47	-91.44	-526.79	-4,437.80	1,220.70	1,091.21	129.49	9.427		
7,850.00	4,728.45	4,720.50	4,728.45	41.55	88.46	-91.37	-526.79	-4,437.80	1,177.91	1,047.92	129.99	9.062		
7,900.00	4,727.71	4,719.76	4,727.71	42.06	88.44	-91.30	-526.79	-4,437.80	1,135.71	1,005.22	130.48	8.704		
7,950.00	4,726.97	4,719.02	4,726.97	42.58	88.43	-91.24	-526.79	-4,437.80	1,094.16	963.18	130.99	8.353		
8,000.00	4,726.22	4,718.27	4,726.22	43.09	88.41	-91.17	-526.79	-4,437.80	1,053.36	921.87	131.49	8.011		
8,050.00	4,725.48	4,717.53	4,725.48	43.61	88.39	-91.10	-526.79	-4,437.80	1,013.37	881.38	131.99	7.678		
8,100.00	4,724.74	4,716.79	4,724.74	44.13	88.38	-91.03	-526.79	-4,437.80	974.31	841.81	132.49	7.354		
8,150.00	4,724.00	4,716.05	4,724.00	44.64	88.36	-90.96	-526.79	-4,437.80	936.29	803.29	133.00	7.040		
8,200.00	4,723.26	4,715.31	4,723.26	45.16	88.35	-90.89	-526.79	-4,437.80	899.44	765.94	133.50	6.737		
8,250.00	4,722.52	4,714.57	4,722.52	45.69	88.33	-90.82	-526.79	-4,437.80	863.91	729.90	134.01	6.447		
8,300.00	4,721.77	4,713.82	4,721.77	46.21	88.32	-90.76	-526.79	-4,437.80	829.88	695.36	134.52	6.169		
8,350.00	4,721.03	4,713.08	4,721.03	46.73	88.30	-90.69	-526.79	-4,437.80	797.53	662.51	135.03	5.907		
8,400.00	4,720.29	4,712.34	4,720.29	47.25	88.29	-90.62	-526.79	-4,437.80	767.08	631.55	135.53	5.660		
8,450.00	4,719.55	4,711.60	4,719.55	47.78	88.27	-90.55	-526.79	-4,437.80	738.76	602.71	136.04	5.430		
8,500.00	4,718.81	4,710.86	4,718.81	48.30	88.25	-90.48	-526.79	-4,437.80	712.82	576.27	136.55	5.220		
8,550.00	4,718.07	4,710.12	4,718.07	48.83	88.24	-90.41	-526.79	-4,437.80	689.54	552.47	137.06	5.031		
8,600.00	4,717.32	4,709.37	4,717.32	49.36	88.22	-90.34	-526.79	-4,437.80	669.19	531.61	137.57	4.864		
8,650.00	4,716.58	4,708.63	4,716.58	49.88	88.21	-90.28	-526.79	-4,437.80	652.04	513.95	138.09	4.722		
8,700.00	4,715.84	4,707.89	4,715.84	50.41	88.19	-90.21	-526.79	-4,437.80	638.36	499.76	138.60	4.606		
8,750.00	4,715.10	4,707.15	4,715.10	50.94	88.18	-90.14	-526.79	-4,437.80	628.37	489.26	139.11	4.517		
8,800.00	4,714.36	4,706.41	4,714.36	51.47	88.16	-90.07	-526.79	-4,437.80	622.25	482.62	139.63	4.457		
8,850.00	4,713.62	4,705.66	4,713.62	52.00	88.14	-90.00	-526.79	-4,437.80	620.11	479.97	140.14	4.425		
8,851.58	4,713.59	4,705.64	4,713.59	52.02	88.14	-90.00	-526.79	-4,437.80	620.11	479.95	140.16	4.424 CC, ES		
8,900.00	4,712.87	4,704.92	4,712.87	52.53	88.13	-89.93	-526.79	-4,437.80	622.00	481.34	140.65	4.422 SF		
8,950.00	4,712.13	4,704.18	4,712.13	53.07	88.11	-89.87	-526.79	-4,437.80	627.87	486.70	141.17	4.448		
9,000.00	4,711.39	4,703.44	4,711.39	53.60	88.10	-89.80	-526.79	-4,437.80	637.62	495.94	141.68	4.500		
9,050.00	4,710.65	4,702.70	4,710.65	54.13	88.08	-89.73	-526.79	-4,437.80	651.07	508.87	142.20	4.579		
9,100.00	4,709.91	4,701.96	4,709.91	54.66	88.07	-89.66	-526.79	-4,437.80	668.01	525.29	142.72	4.681		
9,150.00	4,709.16	4,701.21	4,709.16	55.20	88.05	-89.59	-526.79	-4,437.80	688.16	544.93	143.23	4.805		
9,200.00	4,708.42	4,700.47	4,708.42	55.73	88.03	-89.52	-526.79	-4,437.80	711.27	567.52	143.75	4.948		
9,250.00	4,707.68	4,699.73	4,707.68	56.27	88.02	-89.45	-526.79	-4,437.80	737.05	592.78	144.27	5.109		
9,300.00	4,706.94	4,698.99	4,706.94	56.81	88.00	-89.39	-526.79	-4,437.80	765.23	620.44	144.78	5.285		
9,350.00	4,706.20	4,698.25	4,706.20	57.34	87.99	-89.32	-526.79	-4,437.80	795.55	650.25	145.30	5.475		
9,400.00	4,705.46	4,697.51	4,705.46	57.88	87.97	-89.25	-526.79	-4,437.80	827.79	681.97	145.82	5.677		
9,450.00	4,704.71	4,696.76	4,704.71	58.42	87.96	-89.18	-526.79	-4,437.80	861.72	715.38	146.34	5.889		
9,500.00	4,703.97	4,696.02	4,703.97	58.95	87.94	-89.11	-526.79	-4,437.80	897.16	750.30	146.86	6.109		
9,550.00	4,703.23	4,695.28	4,703.23	59.49	87.92	-89.04	-526.79	-4,437.80	933.93	786.55	147.37	6.337		
9,600.00	4,702.49	4,694.54	4,702.49	60.03	87.91	-88.97	-526.79	-4,437.80	971.88	823.99	147.89	6.571		
9,650.00	4,701.75	4,693.80	4,701.75	60.57	87.89	-88.91	-526.79	-4,437.80	1,010.88	862.46	148.41	6.811		
9,700.00	4,701.01	4,693.06	4,701.01	61.11	87.88	-88.84	-526.79	-4,437.80	1,050.81	901.88	148.93	7.056		
9,750.00	4,700.26	4,692.31	4,700.26	61.65	87.86	-88.77	-526.79	-4,437.80	1,091.57	942.12	149.45	7.304		
9,767.78	4,700.00	4,692.05	4,700.00	61.84	87.86	-88.74	-526.79	-4,437.80	1,106.25	956.61	149.64	7.393		

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 91H
Project:	EDDY COUNTY, NM (NAD 83 - NME)	TVD Reference:	RKB = 20' @ 3700.00usft (AKITA 57)
Reference Site:	WELCH CD 28 STATE COM	MD Reference:	RKB = 20' @ 3700.00usft (AKITA 57)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	91H	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												Offset Site Error:	0.00 usft
Survey Program: 510-INC-ONLY												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
2,200.00	2,197.12	2,185.25	2,197.12	7.65	44.15	80.82	-21.67	534.20	515.56	463.78	51.78	9.956	
2,250.00	2,247.03	2,235.18	2,247.03	7.83	45.30	81.14	-21.67	534.20	515.10	461.98	53.12	9.697	
2,300.00	2,296.94	2,285.09	2,296.94	8.00	46.46	81.47	-21.67	534.20	514.66	460.20	54.46	9.451	
2,350.00	2,346.86	2,335.00	2,346.86	8.18	47.61	81.79	-21.67	534.20	514.23	458.44	55.79	9.217	
2,400.00	2,396.77	2,384.92	2,396.77	8.36	48.77	82.11	-21.67	534.20	513.82	456.69	57.13	8.994	
2,450.00	2,446.68	2,434.83	2,446.68	8.54	49.93	82.44	-21.67	534.20	513.42	454.96	58.46	8.782	
2,500.00	2,496.60	2,484.75	2,496.60	8.72	51.08	82.76	-21.67	534.20	513.05	453.25	59.80	8.580	
2,550.00	2,546.51	2,534.66	2,546.51	8.90	52.24	83.09	-21.67	534.20	512.68	451.55	61.13	8.386	
2,600.00	2,596.43	2,584.57	2,596.43	9.08	53.39	83.41	-21.67	534.20	512.34	449.87	62.47	8.202	
2,650.00	2,646.34	2,634.49	2,646.34	9.26	54.55	83.74	-21.67	534.20	512.01	448.20	63.80	8.025	
2,700.00	2,696.25	2,684.40	2,696.25	9.44	55.71	84.06	-21.67	534.20	511.70	446.56	65.14	7.855	
2,750.00	2,746.17	2,734.31	2,746.17	9.62	56.86	84.39	-21.67	534.20	511.40	444.93	66.47	7.693	
2,800.00	2,796.08	2,784.27	2,796.08	9.80	57.98	84.72	-21.67	534.20	511.12	443.34	67.78	7.541	
2,850.00	2,845.99	2,834.19	2,845.99	9.98	59.09	85.05	-21.67	534.20	510.86	441.80	69.06	7.397	
2,900.00	2,895.91	2,884.10	2,895.91	10.16	60.20	85.37	-21.67	534.20	510.61	440.26	70.35	7.258	
2,950.00	2,945.82	2,934.01	2,945.82	10.34	61.30	85.70	-21.67	534.20	510.38	438.75	71.63	7.125	
3,000.00	2,995.74	2,983.93	2,995.74	10.52	62.41	86.03	-21.67	534.20	510.17	437.25	72.92	6.996	
3,050.00	3,045.65	3,033.84	3,045.65	10.70	63.52	86.36	-21.67	534.20	509.98	435.77	74.21	6.872	
3,082.94	3,078.53	3,065.00	3,078.78	10.81	64.21	86.56	-21.67	534.20	509.86	434.84	75.02	6.797 CC, ES	
3,100.00	3,095.56	3,065.00	3,076.78	10.87	64.21	86.56	-21.67	534.20	510.14	435.07	75.08	6.795 SF	
3,150.00	3,145.48	3,065.00	3,076.78	11.05	64.21	86.56	-21.67	534.20	514.25	438.99	75.26	6.833	
3,200.00	3,195.39	3,065.00	3,076.78	11.23	64.21	86.56	-21.67	534.20	523.12	447.68	75.44	6.935	
3,250.00	3,245.30	3,065.00	3,076.78	11.41	64.21	86.56	-21.67	534.20	536.52	460.90	75.62	7.095	
3,300.00	3,295.22	3,065.00	3,076.78	11.59	64.21	86.56	-21.67	534.20	554.12	478.33	75.79	7.311	
3,350.00	3,345.13	3,065.00	3,076.78	11.77	64.21	86.56	-21.67	534.20	575.55	499.57	75.97	7.576	
3,400.00	3,395.05	3,065.00	3,076.78	11.95	64.21	86.56	-21.67	534.20	600.38	524.23	76.15	7.884	
3,450.00	3,444.96	3,065.00	3,076.78	12.13	64.21	86.56	-21.67	534.20	628.22	551.88	76.33	8.230	
3,500.00	3,494.87	3,065.00	3,076.78	12.31	64.21	86.56	-21.67	534.20	658.68	582.17	76.51	8.609	
3,550.00	3,544.79	3,065.00	3,076.78	12.49	64.21	86.56	-21.67	534.20	691.42	614.73	76.69	9.016	
3,600.00	3,594.70	3,065.00	3,076.78	12.67	64.21	86.56	-21.67	534.20	726.13	649.26	76.87	9.446	
3,650.00	3,644.61	3,065.00	3,076.78	12.85	64.21	86.56	-21.67	534.20	762.54	685.49	77.05	9.897	

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 91H
Project:	EDDY COUNTY, NM (NAD 83 - NME)	TVD Reference:	RKB = 20' @ 3700.00usft (AKITA 57)
Reference Site:	WELCH CD 28 STATE COM	MD Reference:	RKB = 20' @ 3700.00usft (AKITA 57)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	91H	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												Offset Site Error:	0.00 usft
Survey Program: 202-INC-ONLY												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)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
2,000.00	1,997.46	1,996.52	1,997.46	6.93	38.40	45.96	248.23	437.20	443.05	397.75	45.30	9.781	
2,050.00	2,047.38	2,046.44	2,047.38	7.11	39.39	46.23	248.23	437.20	441.01	394.55	46.46	9.493	
2,100.00	2,097.29	2,096.36	2,097.29	7.29	40.37	46.51	248.23	437.20	438.98	391.37	47.62	9.219	
2,150.00	2,147.20	2,146.28	2,147.20	7.47	41.35	46.79	248.23	437.20	436.96	388.19	48.78	8.958	
2,200.00	2,197.12	2,196.19	2,197.12	7.65	42.33	47.07	248.23	437.20	434.96	385.02	49.94	8.710	
2,250.00	2,247.03	2,246.11	2,247.03	7.83	43.31	47.35	248.23	437.20	432.96	381.86	51.10	8.473	
2,300.00	2,296.94	2,296.02	2,296.94	8.00	44.30	47.64	248.23	437.20	430.97	378.72	52.26	8.247	
2,350.00	2,346.86	2,345.93	2,346.86	8.18	45.28	47.93	248.23	437.20	429.00	375.58	53.42	8.031	
2,400.00	2,396.77	2,395.85	2,396.77	8.36	46.26	48.22	248.23	437.20	427.04	372.46	54.58	7.824	
2,450.00	2,446.68	2,445.76	2,446.68	8.54	47.24	48.51	248.23	437.20	425.08	369.34	55.74	7.626	
2,500.00	2,496.60	2,495.67	2,496.60	8.72	48.22	48.81	248.23	437.20	423.14	366.24	56.90	7.436	
2,550.00	2,546.51	2,545.60	2,546.51	8.90	49.21	49.11	248.23	437.20	421.21	363.15	58.06	7.254	
2,600.00	2,596.43	2,595.52	2,596.43	9.08	50.19	49.42	248.23	437.20	419.30	360.07	59.22	7.080	
2,650.00	2,646.34	2,645.43	2,646.34	9.26	51.17	49.72	248.23	437.20	417.39	357.00	60.39	6.912	
2,700.00	2,696.25	2,695.34	2,696.25	9.44	52.15	50.03	248.23	437.20	415.50	353.95	61.55	6.751	
2,750.00	2,746.17	2,745.26	2,746.17	9.62	53.17	50.34	248.23	437.20	413.61	350.88	62.74	6.593	
2,800.00	2,796.08	2,795.18	2,796.08	9.80	54.19	50.66	248.23	437.20	411.74	347.81	63.94	6.440	
2,850.00	2,845.99	2,845.09	2,845.99	9.98	55.21	50.97	248.23	437.20	409.89	344.75	65.14	6.293	
2,900.00	2,895.91	2,895.00	2,895.91	10.16	56.23	51.29	248.23	437.20	408.04	341.71	66.34	6.151	
2,950.00	2,945.82	2,944.92	2,945.82	10.34	57.25	51.62	248.23	437.20	406.21	338.68	67.54	6.015	
3,000.00	2,995.74	2,994.83	2,995.74	10.52	58.27	51.94	248.23	437.20	404.39	335.66	68.74	5.883	
3,050.00	3,045.65	3,044.74	3,045.65	10.70	59.29	52.27	248.23	437.20	402.59	332.65	69.94	5.757	
3,100.00	3,095.56	3,094.66	3,095.56	10.87	60.31	52.60	248.23	437.20	400.80	329.66	71.14	5.634	
3,150.00	3,145.48	3,144.57	3,145.48	11.05	61.33	52.94	248.23	437.20	399.02	326.68	72.33	5.516	
3,200.00	3,195.39	3,194.48	3,195.39	11.23	62.35	53.27	248.23	437.20	397.25	323.72	73.53	5.402	
3,250.00	3,245.30	3,244.41	3,245.30	11.41	63.37	53.61	248.23	437.20	395.50	320.77	74.73	5.292	
3,300.00	3,295.22	3,294.33	3,295.22	11.59	64.39	53.96	248.23	437.20	393.77	317.83	75.93	5.186	
3,350.00	3,345.13	3,344.24	3,345.13	11.77	65.41	54.30	248.23	437.20	392.04	314.91	77.13	5.083	
3,400.00	3,395.05	3,394.15	3,395.05	11.95	66.43	54.65	248.23	437.20	390.34	312.00	78.33	4.983	
3,450.00	3,444.96	3,444.07	3,444.96	12.13	67.45	55.01	248.23	437.20	388.64	309.11	79.53	4.886	
3,500.00	3,494.87	3,493.98	3,494.87	12.31	68.47	55.36	248.23	437.20	386.96	306.23	80.73	4.793	
3,550.00	3,544.79	3,543.90	3,544.79	12.49	69.49	55.72	248.23	437.20	385.30	303.37	81.93	4.703	
3,600.00	3,594.70	3,593.81	3,594.70	12.67	70.52	56.08	248.23	437.20	383.65	300.52	83.13	4.615	
3,650.00	3,644.61	3,643.72	3,644.61	12.85	71.54	56.45	248.23	437.20	382.02	297.69	84.33	4.530	
3,700.00	3,694.53	3,693.66	3,694.53	13.03	72.53	56.82	248.23	437.20	380.40	294.90	85.51	4.449	
3,746.26	3,740.70	3,739.84	3,740.70	13.19	73.44	57.16	248.23	437.20	378.92	292.34	86.58	4.376	
3,750.00	3,744.44	3,743.57	3,744.44	13.21	73.51	60.74	248.23	437.20	378.81	292.13	86.68	4.370	
3,776.77	3,771.18	3,770.31	3,771.18	13.30	74.04	90.00	248.23	437.20	378.44	291.11	87.32	4.334 CC	
3,800.00	3,794.36	3,793.50	3,794.36	13.39	74.49	113.15	248.23	437.20	378.72	290.89	87.83	4.312 ES	
3,850.00	3,844.21	3,843.34	3,844.21	13.56	75.47	140.61	248.23	437.20	381.24	292.51	88.73	4.297 SF	
3,900.00	3,893.83	3,892.96	3,893.83	13.73	76.45	152.12	248.23	437.20	386.38	297.01	89.38	4.323	
3,950.00	3,943.10	3,942.23	3,943.10	13.90	77.42	158.15	248.23	437.20	394.13	304.38	89.75	4.391	
4,000.00	3,991.87	3,991.01	3,991.87	14.06	78.38	161.90	248.23	437.20	404.47	314.62	89.85	4.502	
4,050.00	4,040.03	4,039.16	4,040.03	14.23	79.33	164.51	248.23	437.20	417.38	327.72	89.66	4.655	
4,100.00	4,087.43	4,086.56	4,087.43	14.39	80.26	166.47	248.23	437.20	432.82	343.64	89.18	4.853	
4,150.00	4,133.94	4,133.07	4,133.94	14.56	81.18	168.01	248.23	437.20	450.76	362.35	88.40	5.099	
4,200.00	4,179.45	4,178.59	4,179.45	14.73	82.06	169.27	248.23	437.20	471.13	383.82	87.32	5.396	
4,250.00	4,223.81	4,222.96	4,223.81	14.89	82.90	170.33	248.23	437.20	493.90	407.99	85.90	5.749	
4,300.00	4,266.92	4,266.06	4,266.92	15.06	83.72	171.23	248.23	437.20	518.98	434.79	84.19	6.165	
4,350.00	4,308.64	4,307.79	4,308.64	15.23	84.51	172.00	248.23	437.20	546.31	464.13	82.17	6.648	
4,400.00	4,348.88	4,348.03	4,348.88	15.40	85.27	172.67	248.23	437.20	575.81	495.94	79.86	7.210	
4,450.00	4,387.52	4,386.66	4,387.52	15.57	86.00	173.26	248.23	437.20	607.39	530.13	77.26	7.862	

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 91H
Project:	EDDY COUNTY, NM (NAD 83 - NME)	TVD Reference:	RKB = 20' @ 3700.00usft (AKITA 57)
Reference Site:	WELCH CD 28 STATE COM	MD Reference:	RKB = 20' @ 3700.00usft (AKITA 57)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	91H	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 WELCH CD 28 STATE COM - OFFSET: GERONIMO '27' STATE COM 2 - Wellbore #1 - Wellbore #1												Offset Site Error:	0.00 usft
Survey Program: 202-INC-ONLY												Offset Well Error:	0.00 usft
Reference	Offset	Semi Major Axis			Distance								Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
4,500.00	4,424.44	4,423.59	4,424.44	15.75	86.70	173.77	248.23	437.20	640.98	566.61	74.37	8.619	
4,550.00	4,459.56	4,458.71	4,459.56	15.93	87.37	174.23	248.23	437.20	676.46	605.26	71.20	9.500	

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 91H
Project:	EDDY COUNTY, NM (NAD 83 - NME)	TVD Reference:	RKB = 20' @ 3700.00usft (AKITA 57)
Reference Site:	WELCH CD 28 STATE COM	MD Reference:	RKB = 20' @ 3700.00usft (AKITA 57)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	91H	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												Offset Site Error:	0.00 usft
Survey Program: 108-INC-ONLY												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	
5,400.00	4,764.80	4,769.97	4,764.80	19.99	94.65	91.55	705.38	-2,018.85	1,143.49	1,028.93	114.56	9.982	
5,450.00	4,764.05	4,769.22	4,764.05	20.29	94.63	91.47	705.38	-2,018.85	1,099.94	985.09	114.85	9.577	
5,500.00	4,763.31	4,768.48	4,763.31	20.59	94.62	91.39	705.38	-2,018.85	1,056.97	941.83	115.14	9.180	
5,550.00	4,762.57	4,767.74	4,762.57	20.92	94.60	91.31	705.38	-2,018.85	1,014.64	899.18	115.45	8.788	
5,600.00	4,761.83	4,767.00	4,761.83	21.24	94.59	91.24	705.38	-2,018.85	973.03	857.27	115.76	8.405	
5,650.00	4,761.09	4,766.26	4,761.09	21.58	94.57	91.16	705.38	-2,018.85	932.25	816.15	116.10	8.030	
5,700.00	4,760.34	4,765.51	4,760.34	21.92	94.56	91.08	705.38	-2,018.85	892.41	775.98	116.43	7.665	
5,750.00	4,759.60	4,764.77	4,759.60	22.28	94.54	91.01	705.38	-2,018.85	853.63	736.86	116.77	7.310	
5,800.00	4,758.86	4,764.03	4,758.86	22.64	94.53	90.93	705.38	-2,018.85	816.08	698.96	117.12	6.968	
5,850.00	4,758.12	4,763.29	4,758.12	23.01	94.51	90.85	705.38	-2,018.85	779.93	662.44	117.49	6.638	
5,900.00	4,757.38	4,762.55	4,757.38	23.39	94.50	90.77	705.38	-2,018.85	745.37	627.52	117.85	6.325	
5,950.00	4,756.64	4,761.81	4,756.64	23.78	94.48	90.70	705.38	-2,018.85	712.65	594.43	118.23	6.028	
6,000.00	4,755.89	4,761.06	4,755.89	24.17	94.47	90.62	705.38	-2,018.85	682.03	563.43	118.61	5.750	
6,050.00	4,755.15	4,760.32	4,755.15	24.57	94.45	90.54	705.38	-2,018.85	653.80	534.81	119.00	5.494	
6,100.00	4,754.41	4,759.58	4,754.41	24.98	94.44	90.47	705.38	-2,018.85	628.29	508.91	119.39	5.263	
6,150.00	4,753.67	4,758.84	4,753.67	25.39	94.42	90.39	705.38	-2,018.85	605.84	486.05	119.79	5.058	
6,200.00	4,752.93	4,758.10	4,752.93	25.80	94.41	90.31	705.38	-2,018.85	586.80	466.61	120.19	4.882	
6,250.00	4,752.19	4,757.36	4,752.19	26.23	94.39	90.23	705.38	-2,018.85	571.51	450.90	120.60	4.739	
6,300.00	4,751.44	4,756.61	4,751.44	26.66	94.38	90.16	705.38	-2,018.85	560.27	439.26	121.02	4.630	
6,350.00	4,750.70	4,755.87	4,750.70	27.09	94.36	90.08	705.38	-2,018.85	553.35	431.91	121.44	4.557	
6,400.00	4,749.96	4,755.13	4,749.96	27.53	94.35	90.00	705.38	-2,018.85	550.89	429.03	121.86	4.521	
6,402.16	4,749.93	4,755.10	4,749.93	27.55	94.34	90.00	705.38	-2,018.85	550.88	429.01	121.88	4.520 CC, ES, SF	
6,450.00	4,749.22	4,754.39	4,749.22	27.97	94.33	89.93	705.38	-2,018.85	552.96	430.67	122.29	4.522	
6,500.00	4,748.48	4,753.65	4,748.48	28.42	94.31	89.85	705.38	-2,018.85	559.50	436.78	122.72	4.559	
6,550.00	4,747.74	4,752.91	4,747.74	28.87	94.30	89.77	705.38	-2,018.85	570.37	447.22	123.16	4.631	
6,600.00	4,746.99	4,752.16	4,746.99	29.32	94.28	89.69	705.38	-2,018.85	585.33	461.73	123.60	4.736	
6,650.00	4,746.25	4,751.42	4,746.25	29.78	94.27	89.62	705.38	-2,018.85	604.06	480.02	124.04	4.870	
6,700.00	4,745.51	4,750.68	4,745.51	30.24	94.25	89.54	705.38	-2,018.85	626.23	501.74	124.49	5.031	
6,750.00	4,744.77	4,749.94	4,744.77	30.71	94.24	89.46	705.38	-2,018.85	651.49	526.55	124.94	5.215	
6,800.00	4,744.03	4,749.20	4,744.03	31.17	94.22	89.39	705.38	-2,018.85	679.50	554.11	125.39	5.419	
6,850.00	4,743.28	4,748.45	4,743.28	31.65	94.21	89.31	705.38	-2,018.85	709.93	584.08	125.85	5.641	
6,900.00	4,742.54	4,747.71	4,742.54	32.12	94.19	89.23	705.38	-2,018.85	742.47	616.17	126.30	5.879	
6,950.00	4,741.80	4,746.97	4,741.80	32.60	94.18	89.15	705.38	-2,018.85	776.88	650.11	126.77	6.128	
7,000.00	4,741.06	4,746.23	4,741.06	33.08	94.16	89.08	705.38	-2,018.85	812.90	685.68	127.23	6.389	
7,050.00	4,740.32	4,745.49	4,740.32	33.56	94.15	89.00	705.38	-2,018.85	850.34	722.65	127.69	6.659	
7,100.00	4,739.58	4,744.75	4,739.58	34.04	94.13	88.92	705.38	-2,018.85	889.02	760.86	128.16	6.937	
7,150.00	4,738.83	4,744.00	4,738.83	34.53	94.12	88.85	705.38	-2,018.85	928.77	800.14	128.63	7.220	
7,200.00	4,738.09	4,743.26	4,738.09	35.02	94.10	88.77	705.38	-2,018.85	969.48	840.38	129.10	7.509	
7,250.00	4,737.35	4,742.52	4,737.35	35.51	94.09	88.69	705.38	-2,018.85	1,011.02	881.44	129.58	7.802	
7,300.00	4,736.61	4,741.78	4,736.61	36.00	94.07	88.62	705.38	-2,018.85	1,053.29	923.24	130.05	8.099	
7,350.00	4,735.87	4,741.04	4,735.87	36.50	94.06	88.54	705.38	-2,018.85	1,096.21	965.68	130.53	8.398	
7,400.00	4,735.13	4,740.30	4,735.13	37.00	94.04	88.46	705.38	-2,018.85	1,139.71	1,008.70	131.01	8.699	
7,450.00	4,734.38	4,739.55	4,734.38	37.50	94.03	88.38	705.38	-2,018.85	1,183.73	1,052.24	131.49	9.002	
7,500.00	4,733.64	4,738.81	4,733.64	38.00	94.01	88.31	705.38	-2,018.85	1,228.20	1,096.23	131.97	9.306	
7,550.00	4,732.90	4,738.07	4,732.90	38.50	94.00	88.23	705.38	-2,018.85	1,273.08	1,140.62	132.46	9.611	
7,600.00	4,732.16	4,737.33	4,732.16	39.00	93.98	88.15	705.38	-2,018.85	1,318.33	1,185.39	132.94	9.917	

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 91H
Project:	EDDY COUNTY, NM (NAD 83 - NME)	TVD Reference:	RKB = 20' @ 3700.00usft (AKITA 57)
Reference Site:	WELCH CD 28 STATE COM	MD Reference:	RKB = 20' @ 3700.00usft (AKITA 57)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	91H	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												Offset Site Error:	0.00 usft
Survey Program: 100-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
3,350.00	3,345.13	8,810.00	3,811.03	11.77	159.86	78.84	168.23	128.76	471.67	423.98	47.69	9.891	
3,400.00	3,395.05	8,810.00	3,811.03	11.95	159.86	78.84	168.23	128.76	422.17	374.30	47.87	8.820	
3,450.00	3,444.96	8,810.00	3,811.03	12.13	159.86	78.84	168.23	128.76	372.81	324.76	48.05	7.759	
3,500.00	3,494.87	8,810.00	3,811.03	12.31	159.86	78.84	168.23	128.76	323.64	275.42	48.23	6.711	
3,550.00	3,544.79	8,810.00	3,811.03	12.49	159.86	78.84	168.23	128.76	274.77	226.37	48.41	5.677	
3,600.00	3,594.70	8,810.00	3,811.03	12.67	159.86	78.84	168.23	128.76	226.40	177.82	48.58	4.660	
3,650.00	3,644.61	8,810.00	3,811.03	12.85	159.86	78.84	168.23	128.76	178.93	130.17	48.76	3.669	
3,700.00	3,694.53	8,810.00	3,811.03	13.03	159.86	78.84	168.23	128.76	133.32	84.37	48.94	2.724	
3,746.26	3,740.70	8,810.00	3,811.03	13.19	159.86	78.84	168.23	128.76	95.13	46.02	49.11	1.937	
3,750.00	3,744.44	8,810.00	3,811.03	13.21	159.86	82.33	168.23	128.76	92.36	43.42	48.95	1.887	
3,800.00	3,794.36	8,810.00	3,811.03	13.39	159.86	133.89	168.23	128.76	66.90	19.23	47.67	1.403	Level 3
3,813.03	3,807.36	8,810.00	3,811.03	13.43	159.86	143.58	168.23	128.76	65.54	17.94	47.60	1.377	Level 3, CC, ES, SF
3,850.00	3,844.21	8,810.00	3,811.03	13.56	159.86	161.06	168.23	128.76	75.85	27.92	47.93	1.583	
3,900.00	3,893.83	8,810.00	3,811.03	13.73	159.86	172.87	168.23	128.76	111.17	61.40	49.77	2.234	
3,950.00	3,943.10	8,810.00	3,811.03	13.90	159.86	-179.97	168.23	128.76	155.80	102.07	53.74	2.899	
4,000.00	3,991.87	8,810.00	3,811.03	14.06	159.86	-173.67	168.23	128.76	203.64	142.37	61.27	3.324	
4,050.00	4,040.03	8,810.00	3,811.03	14.23	159.86	-165.43	168.23	128.76	252.77	176.40	76.37	3.310	
4,100.00	4,087.43	8,810.00	3,811.03	14.39	159.86	-148.95	168.23	128.76	302.47	191.07	111.40	2.715	
4,150.00	4,133.94	8,810.00	3,811.03	14.56	159.86	-101.54	168.23	128.76	352.38	179.14	173.25	2.034	
4,200.00	4,179.45	8,810.00	3,811.03	14.73	159.86	-45.98	168.23	128.76	402.33	280.03	122.30	3.290	
4,250.00	4,223.81	8,810.00	3,811.03	14.89	159.86	-26.61	168.23	128.76	452.17	371.59	80.58	5.611	
4,300.00	4,266.92	8,810.00	3,811.03	15.06	159.86	-18.75	168.23	128.76	501.83	438.14	63.69	7.880	
4,350.00	4,308.64	8,810.00	3,811.03	15.23	159.86	-14.59	168.23	128.76	551.24	495.33	55.91	9.859	

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 91H
Project:	EDDY COUNTY, NM (NAD 83 - NME)	TVD Reference:	RKB = 20' @ 3700.00usft (AKITA 57)
Reference Site:	WELCH CD 28 STATE COM	MD Reference:	RKB = 20' @ 3700.00usft (AKITA 57)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	91H	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 WELCH CD 28 STATE COM - OFFSET: HANOVER STATE #3 14 - Wellbore #1 - Wellbore #1												Offset Site Error:	0.00 usft
Survey Program: 542-INC-ONLY												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	
3,950.00	3,943.10	3,933.21	3,943.10	13.90	74.19	-58.20	-428.60	-559.80	864.38	776.83	87.55	9.873	
4,000.00	3,991.87	3,981.99	3,991.87	14.06	75.19	-55.76	-428.60	-559.80	858.27	769.96	88.31	9.718	
4,050.00	4,040.03	4,030.17	4,040.03	14.23	76.18	-54.67	-428.60	-559.80	850.39	761.41	88.98	9.557	
4,100.00	4,087.43	4,077.57	4,087.43	14.39	77.15	-54.42	-428.60	-559.80	840.83	751.24	89.58	9.386	
4,150.00	4,133.94	4,124.08	4,133.94	14.56	78.10	-54.78	-428.60	-559.80	829.69	739.55	90.14	9.204	
4,200.00	4,179.45	4,169.58	4,179.45	14.73	79.03	-55.62	-428.60	-559.80	817.11	726.41	90.70	9.009	
4,250.00	4,223.81	4,213.95	4,223.81	14.89	79.93	-56.87	-428.60	-559.80	803.23	711.94	91.30	8.798	
4,300.00	4,266.92	4,257.05	4,266.92	15.06	80.82	-58.46	-428.60	-559.80	788.24	696.26	91.98	8.570	
4,350.00	4,308.64	4,298.78	4,308.64	15.23	81.67	-60.37	-428.60	-559.80	772.32	679.54	92.78	8.324	
4,400.00	4,348.88	4,339.02	4,348.88	15.40	82.49	-62.55	-428.60	-559.80	755.70	661.97	93.72	8.063	
4,450.00	4,387.52	4,377.65	4,387.52	15.57	83.28	-64.97	-428.60	-559.80	738.63	643.80	94.83	7.789	
4,500.00	4,424.44	4,414.58	4,424.44	15.75	84.04	-67.58	-428.60	-559.80	721.39	625.31	96.08	7.508	
4,550.00	4,459.56	4,449.70	4,459.56	15.93	84.75	-70.34	-428.60	-559.80	704.31	606.85	97.46	7.227	
4,600.00	4,492.77	4,482.91	4,492.77	16.11	85.43	-73.19	-428.60	-559.80	687.71	588.82	98.90	6.954	
4,650.00	4,523.99	4,515.00	4,523.99	16.31	86.09	-76.11	-428.60	-559.80	671.98	571.61	100.38	6.694	
4,700.00	4,553.13	4,543.28	4,553.13	16.50	86.69	-78.86	-428.60	-559.80	657.52	555.76	101.76	6.462	
4,750.00	4,580.10	4,570.25	4,580.10	16.71	87.26	-81.54	-428.60	-559.80	644.72	541.67	103.05	6.256	
4,769.28	4,589.91	4,580.06	4,589.91	16.79	87.47	-82.53	-428.60	-559.80	640.32	536.81	103.51	6.186	
4,800.00	4,605.27	4,595.42	4,605.27	16.92	87.80	-83.75	-428.60	-559.80	634.10	529.93	104.18	6.087	
4,850.00	4,630.27	4,620.42	4,630.27	17.15	88.33	-85.73	-428.60	-559.80	626.26	521.06	105.20	5.953	
4,900.00	4,655.27	4,645.42	4,655.27	17.38	88.86	-87.73	-428.60	-559.80	621.35	515.21	106.14	5.854	
4,950.00	4,680.27	4,670.42	4,680.27	17.62	89.39	-89.73	-428.60	-559.80	619.43	512.43	107.00	5.789	
4,956.74	4,683.64	4,673.79	4,683.64	17.66	89.46	-90.00	-428.60	-559.80	619.40	512.30	107.11	5.783 CC	
4,969.28	4,689.91	4,680.06	4,689.91	17.72	89.59	-90.50	-428.60	-559.80	619.50	512.19	107.30	5.773 ES	
5,000.00	4,704.55	4,694.70	4,704.55	17.87	89.91	-91.59	-428.60	-559.80	620.56	512.81	107.75	5.759 SF	
5,050.00	4,725.22	4,715.37	4,725.22	18.13	90.34	-92.88	-428.60	-559.80	624.99	516.61	108.38	5.766	
5,100.00	4,741.84	4,732.00	4,741.84	18.39	90.70	-93.51	-428.60	-559.80	633.00	524.06	108.94	5.811	
5,150.00	4,754.30	4,744.45	4,754.30	18.66	90.96	-93.42	-428.60	-559.80	644.73	535.26	109.47	5.890	
5,200.00	4,762.49	4,752.64	4,762.49	18.92	91.14	-92.54	-428.60	-559.80	660.11	550.14	109.97	6.002	
5,250.00	4,766.35	4,756.50	4,766.35	19.18	91.22	-90.87	-428.60	-559.80	678.95	568.57	110.38	6.151	
5,277.78	4,766.61	4,756.76	4,766.61	19.32	91.22	-89.58	-428.60	-559.80	690.80	580.28	110.52	6.250	
5,300.00	4,766.28	4,756.43	4,766.28	19.44	91.22	-89.55	-428.60	-559.80	700.91	590.29	110.63	6.336	
5,350.00	4,765.54	4,755.69	4,765.54	19.71	91.20	-89.48	-428.60	-559.80	725.66	614.77	110.89	6.544	
5,400.00	4,764.80	4,754.95	4,764.80	19.99	91.19	-89.41	-428.60	-559.80	752.92	641.77	111.15	6.774	
5,450.00	4,764.05	4,754.21	4,764.05	20.29	91.17	-89.34	-428.60	-559.80	782.42	670.99	111.43	7.022	
5,500.00	4,763.31	4,753.46	4,763.31	20.59	91.15	-89.28	-428.60	-559.80	813.93	702.22	111.71	7.286	
5,550.00	4,762.57	4,752.72	4,762.57	20.92	91.14	-89.21	-428.60	-559.80	847.22	735.20	112.02	7.563	
5,600.00	4,761.83	4,751.98	4,761.83	21.24	91.12	-89.14	-428.60	-559.80	882.09	769.77	112.32	7.853	
5,650.00	4,761.09	4,751.24	4,761.09	21.58	91.11	-89.07	-428.60	-559.80	918.35	805.71	112.64	8.153	
5,700.00	4,760.34	4,750.50	4,760.34	21.92	91.09	-89.00	-428.60	-559.80	955.86	842.89	112.96	8.462	
5,750.00	4,759.60	4,749.75	4,759.60	22.28	91.07	-88.93	-428.60	-559.80	994.46	881.16	113.30	8.777	
5,800.00	4,758.86	4,749.01	4,758.86	22.64	91.06	-88.86	-428.60	-559.80	1,034.04	920.40	113.64	9.099	
5,850.00	4,758.12	4,748.27	4,758.12	23.01	91.04	-88.80	-428.60	-559.80	1,074.49	960.49	114.00	9.425	
5,900.00	4,757.38	4,747.53	4,757.38	23.39	91.03	-88.73	-428.60	-559.80	1,115.72	1,001.36	114.36	9.757	

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 91H
Project:	EDDY COUNTY, NM (NAD 83 - NME)	TVD Reference:	RKB = 20' @ 3700.00usft (AKITA 57)
Reference Site:	WELCH CD 28 STATE COM	MD Reference:	RKB = 20' @ 3700.00usft (AKITA 57)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	91H	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 WELCH CD 28 STATE COM - OFFSET: RED LAKE 28 N STATE 1 - Wellbore #1 - Wellbore #1												Offset Site Error:	0.00 usft
Survey Program: 542-INC-ONLY												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)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
6,800.00	4,744.03	4,736.18	4,744.03	31.17	90.77	-91.43	-500.87	-3,426.80	1,210.60	1,088.68	121.91	9.930	
6,850.00	4,743.28	4,735.44	4,743.28	31.65	90.75	-91.36	-500.87	-3,426.80	1,167.93	1,045.55	122.37	9.544	
6,900.00	4,742.54	4,734.69	4,742.54	32.12	90.73	-91.29	-500.87	-3,426.80	1,125.86	1,003.03	122.83	9.166	
6,950.00	4,741.80	4,733.95	4,741.80	32.60	90.72	-91.22	-500.87	-3,426.80	1,084.47	961.17	123.30	8.796	
7,000.00	4,741.06	4,733.21	4,741.06	33.08	90.70	-91.15	-500.87	-3,426.80	1,043.83	920.07	123.76	8.434	
7,050.00	4,740.32	4,732.47	4,740.32	33.56	90.69	-91.08	-500.87	-3,426.80	1,004.03	879.80	124.23	8.082	
7,100.00	4,739.58	4,731.73	4,739.58	34.04	90.67	-91.02	-500.87	-3,426.80	965.19	840.49	124.70	7.740	
7,150.00	4,738.83	4,730.99	4,738.83	34.53	90.66	-90.95	-500.87	-3,426.80	927.41	802.23	125.17	7.409	
7,200.00	4,738.09	4,730.24	4,738.09	35.02	90.64	-90.88	-500.87	-3,426.80	890.84	765.19	125.65	7.090	
7,250.00	4,737.35	4,729.50	4,737.35	35.51	90.62	-90.81	-500.87	-3,426.80	855.62	729.50	126.13	6.784	
7,300.00	4,736.61	4,728.76	4,736.61	36.00	90.61	-90.74	-500.87	-3,426.80	821.94	695.34	126.60	6.492	
7,350.00	4,735.87	4,728.02	4,735.87	36.50	90.59	-90.67	-500.87	-3,426.80	789.99	662.91	127.09	6.216	
7,400.00	4,735.13	4,727.28	4,735.13	37.00	90.58	-90.60	-500.87	-3,426.80	759.99	632.42	127.57	5.958	
7,450.00	4,734.38	4,726.54	4,734.38	37.50	90.56	-90.54	-500.87	-3,426.80	732.17	604.12	128.05	5.718	
7,500.00	4,733.64	4,725.79	4,733.64	38.00	90.54	-90.47	-500.87	-3,426.80	706.80	578.27	128.54	5.499	
7,550.00	4,732.90	4,725.05	4,732.90	38.50	90.53	-90.40	-500.87	-3,426.80	684.15	555.13	129.02	5.303	
7,600.00	4,732.16	4,724.31	4,732.16	39.00	90.51	-90.33	-500.87	-3,426.80	664.50	534.99	129.51	5.131	
7,650.00	4,731.42	4,723.57	4,731.42	39.51	90.50	-90.26	-500.87	-3,426.80	648.11	518.11	130.00	4.985	
7,700.00	4,730.68	4,722.83	4,730.68	40.02	90.48	-90.19	-500.87	-3,426.80	635.25	504.76	130.49	4.868	
7,750.00	4,729.93	4,722.09	4,729.93	40.53	90.47	-90.12	-500.87	-3,426.80	626.12	495.14	130.99	4.780	
7,800.00	4,729.19	4,721.34	4,729.19	41.04	90.45	-90.06	-500.87	-3,426.80	620.90	489.42	131.48	4.722	
7,840.13	4,728.60	4,720.75	4,728.60	41.45	90.44	-90.00	-500.87	-3,426.80	619.60	487.73	131.88	4.698	CC
7,850.00	4,728.45	4,720.60	4,728.45	41.55	90.43	-89.99	-500.87	-3,426.80	619.68	487.71	131.97	4.695	ES, SF
7,900.00	4,727.71	4,719.86	4,727.71	42.06	90.42	-89.92	-500.87	-3,426.80	622.49	490.02	132.47	4.699	
7,950.00	4,726.97	4,719.12	4,726.97	42.58	90.40	-89.85	-500.87	-3,426.80	629.27	496.30	132.97	4.732	
8,000.00	4,726.22	4,718.38	4,726.22	43.09	90.39	-89.78	-500.87	-3,426.80	639.89	506.42	133.47	4.794	
8,050.00	4,725.48	4,717.63	4,725.48	43.61	90.37	-89.71	-500.87	-3,426.80	654.17	520.21	133.96	4.883	
8,100.00	4,724.74	4,716.89	4,724.74	44.13	90.36	-89.64	-500.87	-3,426.80	671.88	537.42	134.46	4.997	
8,150.00	4,724.00	4,716.15	4,724.00	44.64	90.34	-89.57	-500.87	-3,426.80	692.75	557.79	134.97	5.133	
8,200.00	4,723.26	4,715.41	4,723.26	45.16	90.32	-89.51	-500.87	-3,426.80	716.51	581.04	135.47	5.289	
8,250.00	4,722.52	4,714.67	4,722.52	45.69	90.31	-89.44	-500.87	-3,426.80	742.87	606.90	135.97	5.464	
8,300.00	4,721.77	4,713.93	4,721.77	46.21	90.29	-89.37	-500.87	-3,426.80	771.58	635.11	136.47	5.654	
8,350.00	4,721.03	4,713.18	4,721.03	46.73	90.28	-89.30	-500.87	-3,426.80	802.38	665.40	136.98	5.858	
8,400.00	4,720.29	4,712.44	4,720.29	47.25	90.26	-89.23	-500.87	-3,426.80	835.04	697.56	137.48	6.074	
8,450.00	4,719.55	4,711.70	4,719.55	47.78	90.25	-89.16	-500.87	-3,426.80	869.35	731.36	137.99	6.300	
8,500.00	4,718.81	4,710.96	4,718.81	48.30	90.23	-89.09	-500.87	-3,426.80	905.12	766.62	138.49	6.535	
8,550.00	4,718.07	4,710.22	4,718.07	48.83	90.21	-89.03	-500.87	-3,426.80	942.18	803.18	139.00	6.778	
8,600.00	4,717.32	4,709.48	4,717.32	49.36	90.20	-88.96	-500.87	-3,426.80	980.40	840.89	139.51	7.028	
8,650.00	4,716.58	4,708.73	4,716.58	49.88	90.18	-88.89	-500.87	-3,426.80	1,019.63	879.62	140.01	7.282	
8,700.00	4,715.84	4,707.99	4,715.84	50.41	90.17	-88.82	-500.87	-3,426.80	1,059.77	919.25	140.52	7.542	
8,750.00	4,715.10	4,707.25	4,715.10	50.94	90.15	-88.75	-500.87	-3,426.80	1,100.72	959.69	141.03	7.805	
8,800.00	4,714.36	4,706.51	4,714.36	51.47	90.14	-88.68	-500.87	-3,426.80	1,142.39	1,000.85	141.54	8.071	
8,850.00	4,713.62	4,705.77	4,713.62	52.00	90.12	-88.62	-500.87	-3,426.80	1,184.70	1,042.65	142.05	8.340	
8,900.00	4,712.87	4,705.03	4,712.87	52.53	90.10	-88.55	-500.87	-3,426.80	1,227.59	1,085.03	142.56	8.611	
8,950.00	4,712.13	4,704.28	4,712.13	53.07	90.09	-88.48	-500.87	-3,426.80	1,271.00	1,127.93	143.07	8.884	
9,000.00	4,711.39	4,703.54	4,711.39	53.60	90.07	-88.41	-500.87	-3,426.80	1,314.88	1,171.29	143.58	9.158	
9,050.00	4,710.65	4,702.80	4,710.65	54.13	90.06	-88.34	-500.87	-3,426.80	1,359.18	1,215.08	144.09	9.433	
9,100.00	4,709.91	4,702.06	4,709.91	54.66	90.04	-88.27	-500.87	-3,426.80	1,403.86	1,259.25	144.61	9.708	
9,150.00	4,709.16	4,701.32	4,709.16	55.20	90.03	-88.20	-500.87	-3,426.80	1,448.89	1,303.77	145.12	9.984	

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 91H
Project:	EDDY COUNTY, NM (NAD 83 - NME)	TVD Reference:	RKB = 20' @ 3700.00usft (AKITA 57)
Reference Site:	WELCH CD 28 STATE COM	MD Reference:	RKB = 20' @ 3700.00usft (AKITA 57)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	91H	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 WELCH CD 28 STATE COM - OFFSET: SAN JUAN-STATE 1 - Wellbore #1 - Wellbore #1												Offset Site Error:	0.00 usft
Survey Program: 542-INC-ONLY												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
7,750.00	4,729.93	4,721.69	4,729.93	40.53	90.58	-97.16	-61.66	-4,622.80	1,283.56	1,153.31	130.24	9.855	
7,800.00	4,729.19	4,720.94	4,729.19	41.04	90.57	-96.88	-61.66	-4,622.80	1,233.92	1,103.12	130.81	9.433	
7,850.00	4,728.45	4,720.20	4,728.45	41.55	90.55	-96.61	-61.66	-4,622.80	1,184.32	1,052.95	131.37	9.015	
7,900.00	4,727.71	4,719.46	4,727.71	42.06	90.54	-96.33	-61.66	-4,622.80	1,134.75	1,002.82	131.93	8.601	
7,950.00	4,726.97	4,718.72	4,726.97	42.58	90.52	-96.05	-61.66	-4,622.80	1,085.21	952.73	132.48	8.191	
8,000.00	4,726.22	4,717.98	4,726.22	43.09	90.51	-95.77	-61.66	-4,622.80	1,035.73	902.68	133.04	7.785	
8,050.00	4,725.48	4,717.23	4,725.48	43.61	90.49	-95.49	-61.66	-4,622.80	986.29	852.69	133.60	7.383	
8,100.00	4,724.74	4,716.49	4,724.74	44.13	90.47	-95.21	-61.66	-4,622.80	936.91	802.76	134.15	6.984	
8,150.00	4,724.00	4,715.75	4,724.00	44.64	90.46	-94.93	-61.66	-4,622.80	887.60	752.90	134.70	6.589	
8,200.00	4,723.26	4,715.01	4,723.26	45.16	90.44	-94.65	-61.66	-4,622.80	838.37	703.12	135.25	6.198	
8,250.00	4,722.52	4,714.27	4,722.52	45.69	90.43	-94.37	-61.66	-4,622.80	789.24	653.44	135.80	5.812	
8,300.00	4,721.77	4,713.53	4,721.77	46.21	90.41	-94.09	-61.66	-4,622.80	740.22	603.87	136.35	5.429	
8,350.00	4,721.03	4,712.78	4,721.03	46.73	90.40	-93.81	-61.66	-4,622.80	691.35	554.45	136.90	5.050	
8,400.00	4,720.29	4,712.04	4,720.29	47.25	90.38	-93.52	-61.66	-4,622.80	642.65	505.21	137.44	4.676	
8,450.00	4,719.55	4,711.30	4,719.55	47.78	90.36	-93.24	-61.66	-4,622.80	594.16	456.17	137.98	4.306	
8,500.00	4,718.81	4,710.56	4,718.81	48.30	90.35	-92.96	-61.66	-4,622.80	545.94	407.42	138.52	3.941	
8,550.00	4,718.07	4,709.82	4,718.07	48.83	90.33	-92.68	-61.66	-4,622.80	498.07	359.01	139.06	3.582	
8,600.00	4,717.32	4,709.08	4,717.32	49.36	90.32	-92.40	-61.66	-4,622.80	450.67	311.07	139.59	3.228	
8,650.00	4,716.58	4,708.33	4,716.58	49.88	90.30	-92.12	-61.66	-4,622.80	403.89	263.76	140.13	2.882	
8,700.00	4,715.84	4,707.59	4,715.84	50.41	90.29	-91.83	-61.66	-4,622.80	357.98	217.32	140.66	2.545	
8,750.00	4,715.10	4,706.85	4,715.10	50.94	90.27	-91.55	-61.66	-4,622.80	313.32	172.13	141.18	2.219	
8,800.00	4,714.36	4,706.11	4,714.36	51.47	90.25	-91.27	-61.66	-4,622.80	270.53	128.83	141.71	1.909	
8,850.00	4,713.62	4,705.37	4,713.62	52.00	90.24	-90.99	-61.66	-4,622.80	230.67	88.44	142.23	1.622	
8,900.00	4,712.87	4,704.63	4,712.87	52.53	90.22	-90.71	-61.66	-4,622.80	195.52	52.76	142.75	1.370 Level 3	
8,950.00	4,712.13	4,703.88	4,712.13	53.07	90.21	-90.42	-61.66	-4,622.80	168.06	24.79	143.27	1.173 Level 2	
9,000.00	4,711.39	4,703.14	4,711.39	53.60	90.19	-90.14	-61.66	-4,622.80	152.51	8.73	143.78	1.061 Level 2	
9,024.85	4,711.02	4,702.77	4,711.02	53.86	90.18	-90.00	-61.66	-4,622.80	150.48	6.44	144.04	1.045 Level 2, CC, ES, SF	
9,050.00	4,710.65	4,702.40	4,710.65	54.13	90.18	-89.86	-61.66	-4,622.80	152.56	8.27	144.30	1.057 Level 2	
9,100.00	4,709.91	4,701.66	4,709.91	54.66	90.16	-89.58	-61.66	-4,622.80	168.19	23.39	144.81	1.162 Level 2	
9,150.00	4,709.16	4,700.92	4,709.16	55.20	90.14	-89.29	-61.66	-4,622.80	195.71	50.40	145.31	1.347 Level 3	
9,200.00	4,708.42	4,700.17	4,708.42	55.73	90.13	-89.01	-61.66	-4,622.80	230.90	85.08	145.82	1.583	
9,250.00	4,707.68	4,699.43	4,707.68	56.27	90.11	-88.73	-61.66	-4,622.80	270.79	124.47	146.32	1.851	
9,300.00	4,706.94	4,698.69	4,706.94	56.81	90.10	-88.45	-61.66	-4,622.80	313.58	166.77	146.82	2.136	
9,350.00	4,706.20	4,697.95	4,706.20	57.34	90.08	-88.16	-61.66	-4,622.80	358.25	210.94	147.31	2.432	
9,400.00	4,705.46	4,697.21	4,705.46	57.88	90.07	-87.88	-61.66	-4,622.80	404.17	256.36	147.80	2.734	
9,450.00	4,704.71	4,696.47	4,704.71	58.42	90.05	-87.60	-61.66	-4,622.80	450.95	302.66	148.29	3.041	
9,500.00	4,703.97	4,695.72	4,703.97	58.95	90.03	-87.32	-61.66	-4,622.80	498.36	349.58	148.78	3.350	
9,550.00	4,703.23	4,694.98	4,703.23	59.49	90.02	-87.04	-61.66	-4,622.80	546.23	396.97	149.26	3.660	
9,600.00	4,702.49	4,694.24	4,702.49	60.03	90.00	-86.76	-61.66	-4,622.80	594.45	444.71	149.74	3.970	
9,650.00	4,701.75	4,693.50	4,701.75	60.57	89.99	-86.47	-61.66	-4,622.80	642.94	492.72	150.22	4.280	
9,700.00	4,701.01	4,692.76	4,701.01	61.11	89.97	-86.19	-61.66	-4,622.80	691.64	540.95	150.69	4.590	
9,750.00	4,700.26	4,692.02	4,700.26	61.65	89.96	-85.91	-61.66	-4,622.80	740.52	589.36	151.16	4.899	
9,767.78	4,700.00	4,691.75	4,700.00	61.84	89.95	-85.81	-61.66	-4,622.80	757.94	606.62	151.33	5.009	

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



Anticollision Report

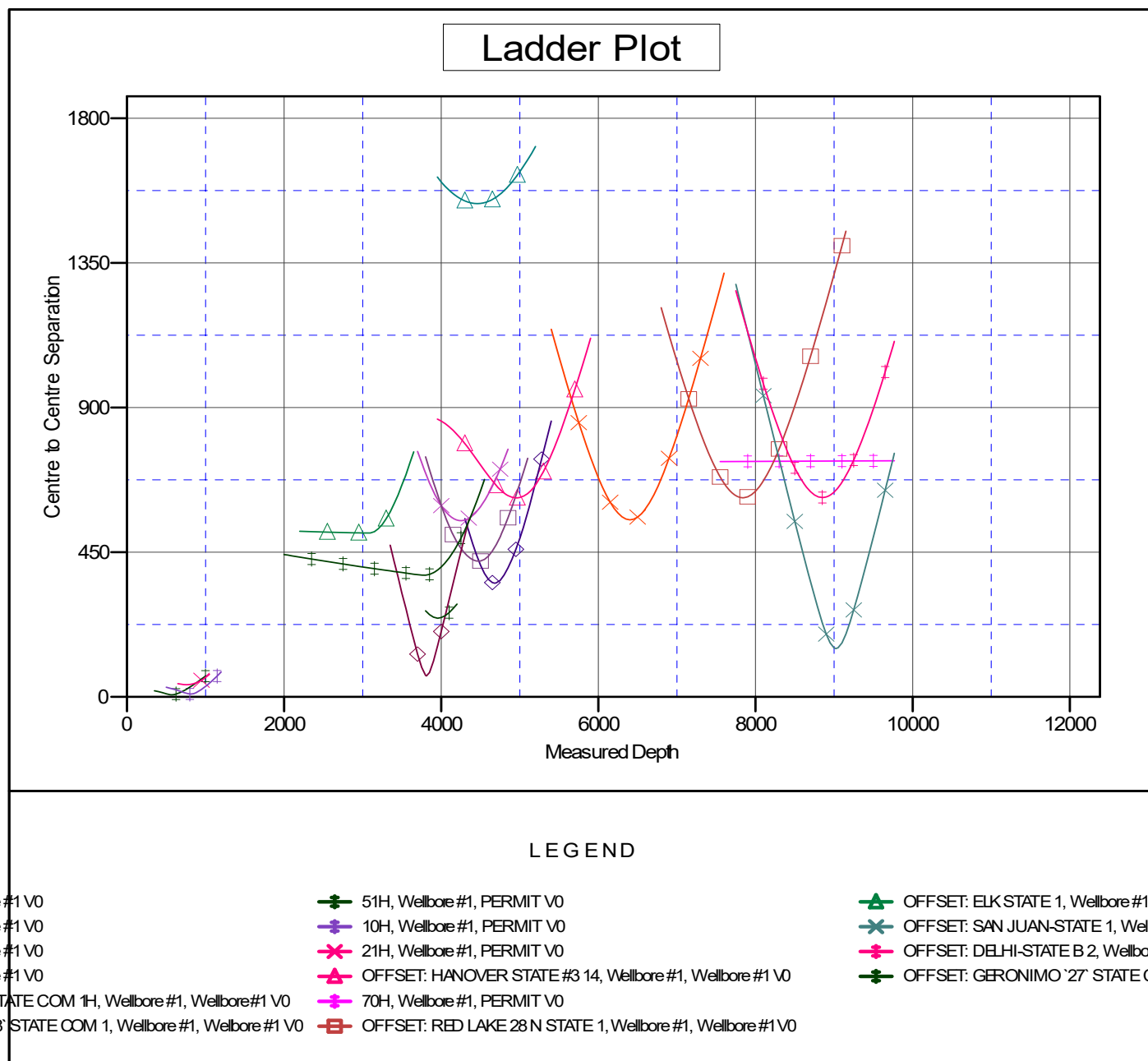
Company:	SPUR ENERGY PARTNERS, LLC	Local Co-ordinate Reference:	Well 91H
Project:	EDDY COUNTY, NM (NAD 83 - NME)	TVD Reference:	RKB = 20' @ 3700.00usft (AKITA 57)
Reference Site:	WELCH CD 28 STATE COM	MD Reference:	RKB = 20' @ 3700.00usft (AKITA 57)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	91H	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' @ 3700.00usft (AKITA 57) Coordinates are relative to: 91H

Offset Depths are relative to Offset Datum

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

Grid Convergence at Surface is: 0.09°



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 91H
Project:	EDDY COUNTY, NM (NAD 83 - NME)	TVD Reference:	RKB = 20' @ 3700.00usft (AKITA 57)
Reference Site:	WELCH CD 28 STATE COM	MD Reference:	RKB = 20' @ 3700.00usft (AKITA 57)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	91H	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' @ 3700.00usft (AKITA 57) Coordinates are relative to: 91H

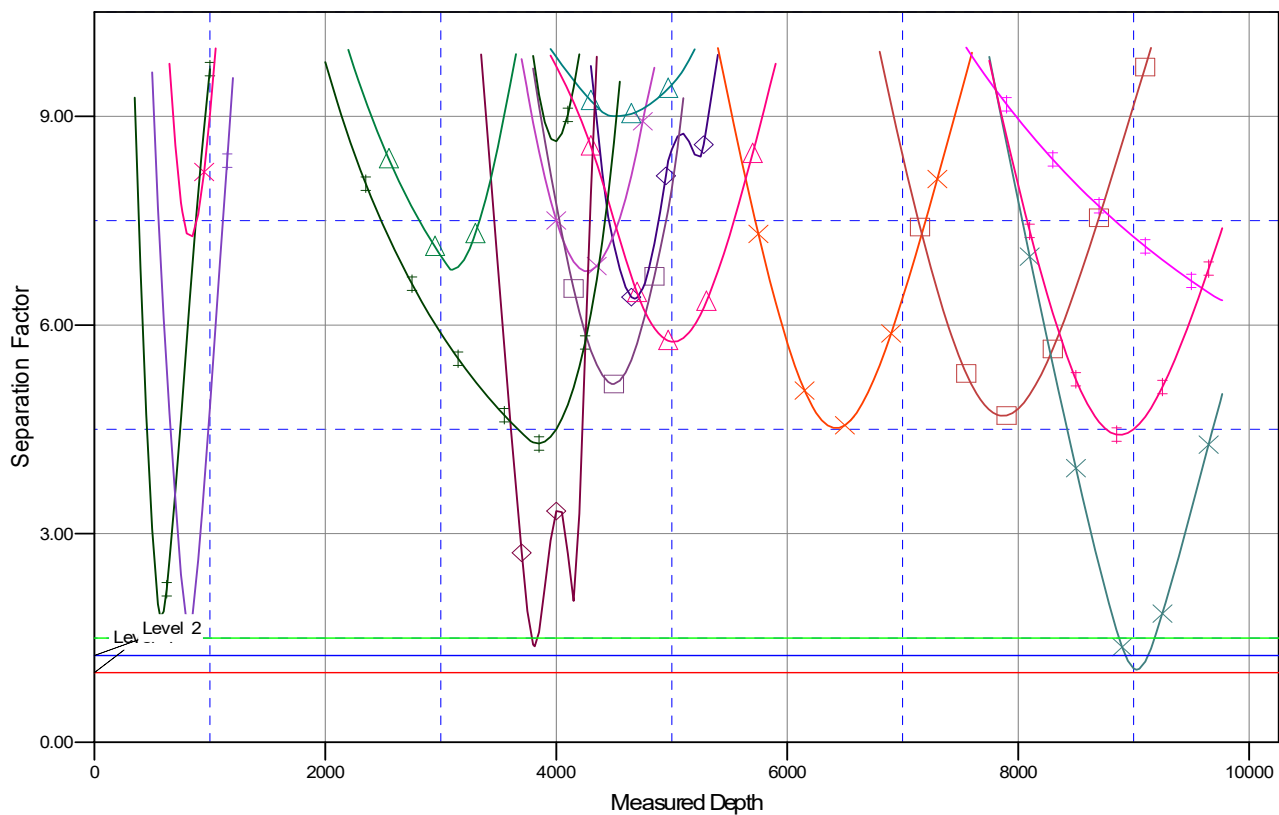
Offset Depths are relative to Offset Datum

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

Central Meridian is -104.333333

Grid Convergence at Surface is: 0.09°

Separation Factor Plot



LEGEND

e#1 V0	51H, Wellbore #1, PERMIT V0	OFFSET: ELK STATE 1, Wellbore #1, V0
e#1 V0	10H, Wellbore #1, PERMIT V0	OFFSET: SAN JUAN STATE 1, Wellbore #1, V0
e#1 V0	21H, Wellbore #1, PERMIT V0	OFFSET: DELHI STATE B 2, Wellbore #1, V0
e#1 V0	OFFSET: HANOVER STATE #3 14, Wellbore #1, Wellbore #1 V0	OFFSET: GERONIMO STATE COM 1, Wellbore #1, Wellbore #1 V0
STATE COM 1H, Wellbore #1, Wellbore #1 V0	70H, Wellbore #1, PERMIT V0	
STATE COM 1, Wellbore #1, Wellbore #1 V0	OFFSET: RED LAKE 28 N STATE 1, Wellbore #1, Wellbore #1 V0	

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



SPUR ENERGY PARTNERS, LLC

EDDY COUNTY, NM (NAD 83 - NME)

WELCH CD 28 STATE COM

91H

Wellbore #1

Plan: PERMIT

Standard Planning Report

21 March, 2023



Planning Report

Database:	EDM 5000.1.13 Single User Db	Local Co-ordinate Reference:	Well 91H
Company:	SPUR ENERGY PARTNERS, LLC	TVD Reference:	RKB = 20' @ 3700.00usft (AKITA 57)
Project:	EDDY COUNTY, NM (NAD 83 - NME)	MD Reference:	RKB = 20' @ 3700.00usft (AKITA 57)
Site:	WELCH CD 28 STATE COM	North Reference:	Grid
Well:	91H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	PERMIT		

Project	EDDY 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		WELCH CD 28 STATE COM			
Site Position:		Northing:	654,982.70 usft	Latitude:	32.8004739
From:	Map	Easting:	590,935.80 usft	Longitude:	-104.1719146
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.09 °

Well	91H					
Well Position	+N/-S	2.20 usft	Northing:	654,984.90 usft	Latitude:	32.8004798
	+E/-W	40.00 usft	Easting:	590,975.80 usft	Longitude:	-104.1717844
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	3,680.00 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2020	03/15/23	6.67	60.28	47,588

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	268.56	

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	
400.00	2.00	270.00	399.98	0.00	-1.75	2.00	2.00	0.00	270.00	
625.58	3.37	21.92	625.42	6.15	-3.21	2.00	0.61	49.61	136.17	
3,746.26	3.37	21.92	3,740.70	176.15	65.20	0.00	0.00	0.00	0.00	
4,769.28	60.00	268.56	4,589.91	194.69	-413.08	6.00	5.54	-11.08	-115.08	
4,969.28	60.00	268.56	4,689.91	190.33	-586.23	0.00	0.00	0.00	0.00	
5,277.78	90.85	268.56	4,766.61	182.92	-881.11	10.00	10.00	0.00	0.00	
9,767.78	90.85	268.56	4,700.00	70.10	-5,369.20	0.00	0.00	0.00	0.00	



Planning Report

Database:	EDM 5000.1.13 Single User Db	Local Co-ordinate Reference:	Well 91H
Company:	SPUR ENERGY PARTNERS, LLC	TVD Reference:	RKB = 20' @ 3700.00usft (AKITA 57)
Project:	EDDY COUNTY, NM (NAD 83 - NME)	MD Reference:	RKB = 20' @ 3700.00usft (AKITA 57)
Site:	WELCH CD 28 STATE COM	North Reference:	Grid
Well:	91H	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
WELCH CD 28 STATE COM #91H SHL: 747' FSL, 226' 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	270.00	399.98	0.00	-1.75	1.74	2.00	2.00	0.00
500.00	1.49	338.10	499.94	1.21	-3.98	3.94	2.00	-0.51	68.10
600.00	2.91	17.76	599.87	4.83	-3.69	3.57	2.00	1.42	39.67
625.58	3.37	21.92	625.42	6.15	-3.21	3.05	2.00	1.79	16.24
700.00	3.37	21.92	699.70	10.20	-1.58	1.32	0.00	0.00	0.00
800.00	3.37	21.92	799.53	15.65	0.61	-1.01	0.00	0.00	0.00
900.00	3.37	21.92	899.36	21.10	2.81	-3.33	0.00	0.00	0.00
1,000.00	3.37	21.92	999.19	26.54	5.00	-5.66	0.00	0.00	0.00
1,100.00	3.37	21.92	1,099.01	31.99	7.19	-7.99	0.00	0.00	0.00
1,200.00	3.37	21.92	1,198.84	37.44	9.38	-10.32	0.00	0.00	0.00
1,300.00	3.37	21.92	1,298.67	42.89	11.57	-12.65	0.00	0.00	0.00
1,400.00	3.37	21.92	1,398.50	48.33	13.77	-14.98	0.00	0.00	0.00
1,500.00	3.37	21.92	1,498.32	53.78	15.96	-17.30	0.00	0.00	0.00
1,600.00	3.37	21.92	1,598.15	59.23	18.15	-19.63	0.00	0.00	0.00
1,700.00	3.37	21.92	1,697.98	64.68	20.34	-21.96	0.00	0.00	0.00
1,800.00	3.37	21.92	1,797.81	70.12	22.53	-24.29	0.00	0.00	0.00
1,900.00	3.37	21.92	1,897.63	75.57	24.73	-26.62	0.00	0.00	0.00
2,000.00	3.37	21.92	1,997.46	81.02	26.92	-28.95	0.00	0.00	0.00
2,100.00	3.37	21.92	2,097.29	86.47	29.11	-31.27	0.00	0.00	0.00
2,200.00	3.37	21.92	2,197.12	91.91	31.30	-33.60	0.00	0.00	0.00
2,300.00	3.37	21.92	2,296.94	97.36	33.49	-35.93	0.00	0.00	0.00
2,400.00	3.37	21.92	2,396.77	102.81	35.69	-38.26	0.00	0.00	0.00
2,500.00	3.37	21.92	2,496.60	108.26	37.88	-40.59	0.00	0.00	0.00
2,600.00	3.37	21.92	2,596.43	113.70	40.07	-42.92	0.00	0.00	0.00
2,700.00	3.37	21.92	2,696.25	119.15	42.26	-45.24	0.00	0.00	0.00
2,800.00	3.37	21.92	2,796.08	124.60	44.45	-47.57	0.00	0.00	0.00
2,900.00	3.37	21.92	2,895.91	130.05	46.65	-49.90	0.00	0.00	0.00
3,000.00	3.37	21.92	2,995.74	135.49	48.84	-52.23	0.00	0.00	0.00
3,100.00	3.37	21.92	3,095.56	140.94	51.03	-54.56	0.00	0.00	0.00
3,200.00	3.37	21.92	3,195.39	146.39	53.22	-56.89	0.00	0.00	0.00
3,300.00	3.37	21.92	3,295.22	151.84	55.42	-59.21	0.00	0.00	0.00
3,400.00	3.37	21.92	3,395.05	157.28	57.61	-61.54	0.00	0.00	0.00
3,500.00	3.37	21.92	3,494.87	162.73	59.80	-63.87	0.00	0.00	0.00
3,600.00	3.37	21.92	3,594.70	168.18	61.99	-66.20	0.00	0.00	0.00
3,700.00	3.37	21.92	3,694.53	173.63	64.18	-68.53	0.00	0.00	0.00
3,746.26	3.37	21.92	3,740.70	176.15	65.20	-69.60	0.00	0.00	0.00
WELCH CD 28 STATE COM #91H KOP: 3746.26' MD									
3,750.00	3.28	18.36	3,744.44	176.35	65.27	-69.68	6.00	-2.38	-95.11
3,800.00	3.54	326.27	3,794.36	178.99	64.87	-69.34	6.00	0.52	-104.17
3,850.00	5.68	299.17	3,844.21	181.48	61.85	-66.39	6.00	4.29	-54.21
3,900.00	8.37	288.03	3,893.83	183.81	56.23	-60.83	6.00	5.37	-22.28
3,950.00	11.21	282.38	3,943.10	185.98	48.02	-52.67	6.00	5.69	-11.29
4,000.00	14.12	279.02	3,991.87	187.98	37.24	-41.95	6.00	5.82	-6.73
4,050.00	17.06	276.79	4,040.03	189.80	23.93	-28.69	6.00	5.88	-4.46
4,100.00	20.02	275.20	4,087.43	191.45	8.12	-12.93	6.00	5.91	-3.18
4,150.00	22.99	274.01	4,133.94	192.91	-10.15	5.30	6.00	5.94	-2.39
4,200.00	25.96	273.08	4,179.45	194.18	-30.82	25.93	6.00	5.95	-1.87
4,250.00	28.94	272.32	4,223.81	195.26	-53.85	48.92	6.00	5.96	-1.51
4,300.00	31.93	271.70	4,266.92	196.14	-79.16	74.20	6.00	5.97	-1.25



Planning Report

Database:	EDM 5000.1.13 Single User Db	Local Co-ordinate Reference:	Well 91H
Company:	SPUR ENERGY PARTNERS, LLC	TVD Reference:	RKB = 20' @ 3700.00usft (AKITA 57)
Project:	EDDY COUNTY, NM (NAD 83 - NME)	MD Reference:	RKB = 20' @ 3700.00usft (AKITA 57)
Site:	WELCH CD 28 STATE COM	North Reference:	Grid
Well:	91H	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)
4,350.00	34.91	271.17	4,308.64	196.83	-106.68	101.70	6.00	5.97	-1.05
4,400.00	37.90	270.72	4,348.88	197.31	-136.35	131.35	6.00	5.98	-0.91
4,450.00	40.89	270.32	4,387.52	197.60	-168.08	163.06	6.00	5.98	-0.79
4,500.00	43.88	269.97	4,424.44	197.68	-201.78	196.75	6.00	5.98	-0.70
4,550.00	46.87	269.66	4,459.56	197.56	-237.36	232.32	6.00	5.98	-0.63
4,600.00	49.86	269.37	4,492.77	197.25	-274.73	269.68	6.00	5.98	-0.57
4,650.00	52.86	269.11	4,523.99	196.73	-313.78	308.73	6.00	5.99	-0.52
4,662.89	53.63	269.05	4,531.70	196.56	-324.10	319.06	6.00	5.99	-0.50
WELCH CD 28 STATE COM #91H FTP: 100' FEL									
4,700.00	55.85	268.87	4,553.13	196.01	-354.40	349.36	6.00	5.99	-0.48
4,750.00	58.85	268.64	4,580.10	195.09	-396.48	391.45	6.00	5.99	-0.45
4,769.28	60.00	268.56	4,589.91	194.69	-413.08	408.05	6.00	5.99	-0.43
4,800.00	60.00	268.56	4,605.27	194.02	-439.67	434.65	0.00	0.00	0.00
4,900.00	60.00	268.56	4,655.27	191.84	-526.24	521.26	0.00	0.00	0.00
4,969.28	60.00	268.56	4,689.91	190.33	-586.23	581.26	0.00	0.00	0.00
5,000.00	63.07	268.56	4,704.55	189.66	-613.22	608.26	10.00	10.00	0.00
5,050.00	68.07	268.56	4,725.22	188.51	-658.71	653.77	10.00	10.00	0.00
5,100.00	73.07	268.56	4,741.84	187.33	-705.84	700.91	10.00	10.00	0.00
5,150.00	78.07	268.56	4,754.30	186.11	-754.23	749.31	10.00	10.00	0.00
5,200.00	83.07	268.56	4,762.49	184.87	-803.52	798.62	10.00	10.00	0.00
5,250.00	88.07	268.56	4,766.35	183.62	-853.34	848.46	10.00	10.00	0.00
5,277.78	90.85	268.56	4,766.61	182.92	-881.11	876.24	10.00	10.00	0.00
WELCH CD 28 STATE COM #91H LP: 5277.78' MD									
5,300.00	90.85	268.56	4,766.28	182.36	-903.32	898.45	0.00	0.00	0.00
5,400.00	90.85	268.56	4,764.80	179.85	-1,003.28	998.44	0.00	0.00	0.00
5,500.00	90.85	268.56	4,763.31	177.34	-1,103.23	1,098.43	0.00	0.00	0.00
5,600.00	90.85	268.56	4,761.83	174.83	-1,203.19	1,198.42	0.00	0.00	0.00
5,700.00	90.85	268.56	4,760.34	172.31	-1,303.15	1,298.41	0.00	0.00	0.00
5,800.00	90.85	268.56	4,758.86	169.80	-1,403.11	1,398.40	0.00	0.00	0.00
5,900.00	90.85	268.56	4,757.38	167.29	-1,503.06	1,498.38	0.00	0.00	0.00
6,000.00	90.85	268.56	4,755.89	164.77	-1,603.02	1,598.37	0.00	0.00	0.00
6,100.00	90.85	268.56	4,754.41	162.26	-1,702.98	1,698.36	0.00	0.00	0.00
6,200.00	90.85	268.56	4,752.93	159.75	-1,802.94	1,798.35	0.00	0.00	0.00
6,300.00	90.85	268.56	4,751.44	157.24	-1,902.89	1,898.34	0.00	0.00	0.00
6,400.00	90.85	268.56	4,749.96	154.72	-2,002.85	1,998.33	0.00	0.00	0.00
6,500.00	90.85	268.56	4,748.48	152.21	-2,102.81	2,098.32	0.00	0.00	0.00
6,600.00	90.85	268.56	4,746.99	149.70	-2,202.77	2,198.31	0.00	0.00	0.00
6,700.00	90.85	268.56	4,745.51	147.19	-2,302.72	2,298.30	0.00	0.00	0.00
6,800.00	90.85	268.56	4,744.03	144.67	-2,402.68	2,398.29	0.00	0.00	0.00
6,900.00	90.85	268.56	4,742.54	142.16	-2,502.64	2,498.27	0.00	0.00	0.00
7,000.00	90.85	268.56	4,741.06	139.65	-2,602.60	2,598.26	0.00	0.00	0.00
7,100.00	90.85	268.56	4,739.58	137.13	-2,702.55	2,698.25	0.00	0.00	0.00
7,200.00	90.85	268.56	4,738.09	134.62	-2,802.51	2,798.24	0.00	0.00	0.00
7,300.00	90.85	268.56	4,736.61	132.11	-2,902.47	2,898.23	0.00	0.00	0.00
7,400.00	90.85	268.56	4,735.13	129.60	-3,002.42	2,998.22	0.00	0.00	0.00
7,500.00	90.85	268.56	4,733.64	127.08	-3,102.38	3,098.21	0.00	0.00	0.00
7,600.00	90.85	268.56	4,732.16	124.57	-3,202.34	3,198.20	0.00	0.00	0.00
7,700.00	90.85	268.56	4,730.68	122.06	-3,302.30	3,298.19	0.00	0.00	0.00
7,800.00	90.85	268.56	4,729.19	119.55	-3,402.25	3,398.18	0.00	0.00	0.00
7,900.00	90.85	268.56	4,727.71	117.03	-3,502.21	3,498.16	0.00	0.00	0.00
8,000.00	90.85	268.56	4,726.22	114.52	-3,602.17	3,598.15	0.00	0.00	0.00
8,100.00	90.85	268.56	4,724.74	112.01	-3,702.13	3,698.14	0.00	0.00	0.00
8,200.00	90.85	268.56	4,723.26	109.49	-3,802.08	3,798.13	0.00	0.00	0.00
8,300.00	90.85	268.56	4,721.77	106.98	-3,902.04	3,898.12	0.00	0.00	0.00



Planning Report

Database:	EDM 5000.1.13 Single User Db	Local Co-ordinate Reference:	Well 91H
Company:	SPUR ENERGY PARTNERS, LLC	TVD Reference:	RKB = 20' @ 3700.00usft (AKITA 57)
Project:	EDDY COUNTY, NM (NAD 83 - NME)	MD Reference:	RKB = 20' @ 3700.00usft (AKITA 57)
Site:	WELCH CD 28 STATE COM	North Reference:	Grid
Well:	91H	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)	
8,400.00	90.85	268.56	4,720.29	104.47	-4,002.00	3,998.11	0.00	0.00	0.00	
8,500.00	90.85	268.56	4,718.81	101.96	-4,101.96	4,098.10	0.00	0.00	0.00	
8,600.00	90.85	268.56	4,717.32	99.44	-4,201.91	4,198.09	0.00	0.00	0.00	
8,700.00	90.85	268.56	4,715.84	96.93	-4,301.87	4,298.08	0.00	0.00	0.00	
8,800.00	90.85	268.56	4,714.36	94.42	-4,401.83	4,398.07	0.00	0.00	0.00	
8,900.00	90.85	268.56	4,712.87	91.91	-4,501.79	4,498.05	0.00	0.00	0.00	
9,000.00	90.85	268.56	4,711.39	89.39	-4,601.74	4,598.04	0.00	0.00	0.00	
9,100.00	90.85	268.56	4,709.91	86.88	-4,701.70	4,698.03	0.00	0.00	0.00	
9,200.00	90.85	268.56	4,708.42	84.37	-4,801.66	4,798.02	0.00	0.00	0.00	
9,300.00	90.85	268.56	4,706.94	81.85	-4,901.62	4,898.01	0.00	0.00	0.00	
9,400.00	90.85	268.56	4,705.46	79.34	-5,001.57	4,998.00	0.00	0.00	0.00	
9,500.00	90.85	268.56	4,703.97	76.83	-5,101.53	5,097.99	0.00	0.00	0.00	
9,600.00	90.85	268.56	4,702.49	74.32	-5,201.49	5,197.98	0.00	0.00	0.00	
9,700.00	90.85	268.56	4,701.01	71.80	-5,301.45	5,297.97	0.00	0.00	0.00	
WELCH CD 28 STATE COM #91H LTP: 100' FWL										
9,767.78	90.85	268.56	4,700.00	70.10	-5,369.20	5,365.74	0.00	0.00	0.00	
WELCH CD 28 STATE COM #91H BHL: 950' FSL, 50' FWL										

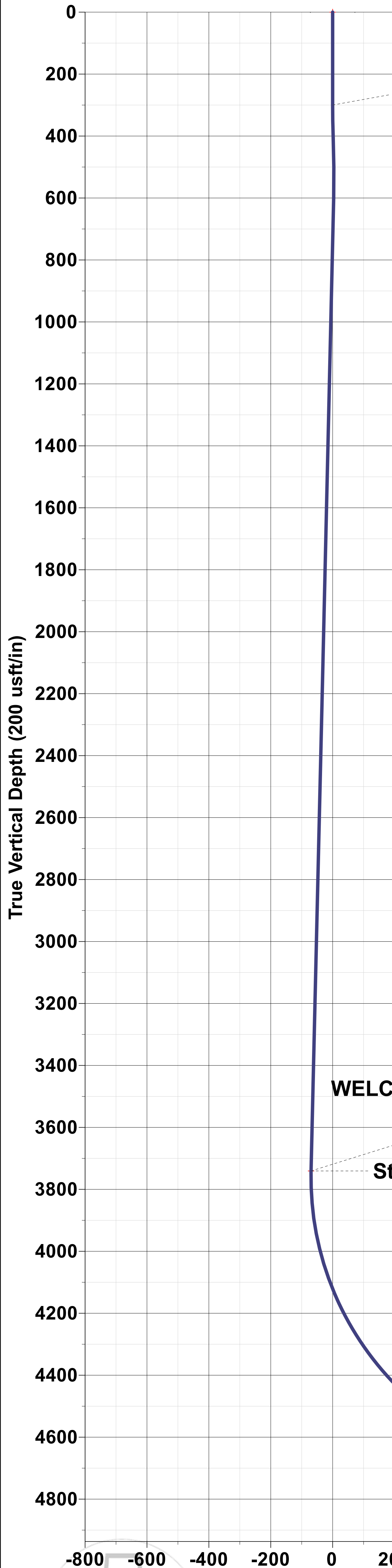
Design Targets										
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
WELCH CD 28 STATE - plan hits target center - Point	0.00	0.00	0.00	0.00	0.00	654,984.90	590,975.80	32.8004798	-104.1717844	
WELCH CD 28 STATE - plan hits target center - Point	0.00	0.00	3,740.70	176.15	65.20	655,161.05	591,041.00	32.8009637	-104.1715714	
WELCH CD 28 STATE - plan misses target center by 0.01usft at 4662.89usft MD (4531.70 TVD, 196.56 N, -324.10 E) - Point	0.00	0.00	4,531.70	196.57	-324.10	655,181.47	590,651.70	32.8010215	-104.1728382	
WELCH CD 28 STATE - plan hits target center - Point	0.00	0.00	4,700.00	70.10	-5,369.20	655,055.00	585,606.60	32.8006938	-104.1892582	
WELCH CD 28 STATE - plan misses target center by 17.76usft at 9700.00usft MD (4701.01 TVD, 71.80 N, -5301.45 E) - Point	0.00	0.00	4,700.74	71.36	-5,319.20	655,056.26	585,656.60	32.8006971	-104.1890955	
WELCH CD 28 STATE - plan hits target center - Point	0.00	0.00	4,766.61	182.92	-881.11	655,167.83	590,094.69	32.8009863	-104.1746511	



Project: EDDY COUNTY, NM (NAD 83 - NME)
Site: WELCH CD 28 STATE COM
Well: 91H
Wellbore: Wellbore #1
Design: PERMIT

WELL DETAILS: 91H

Rig Name:		AKITA 57		RKB = 20' @ 3700.00usft (AKITA 57)	
		Ground Level:		3680.00	
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	654984.90	590975.80	32.8004798	-104.1717844



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

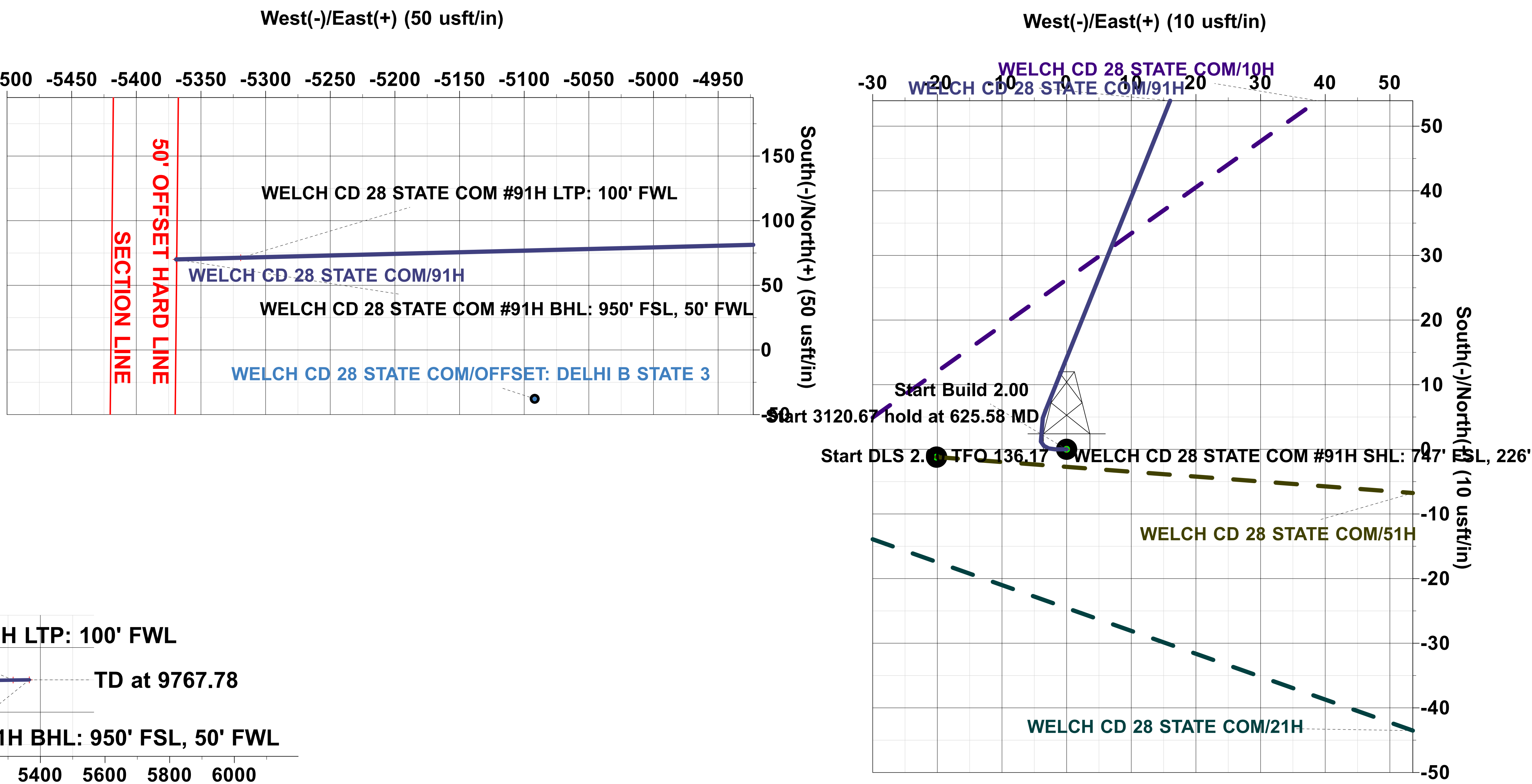
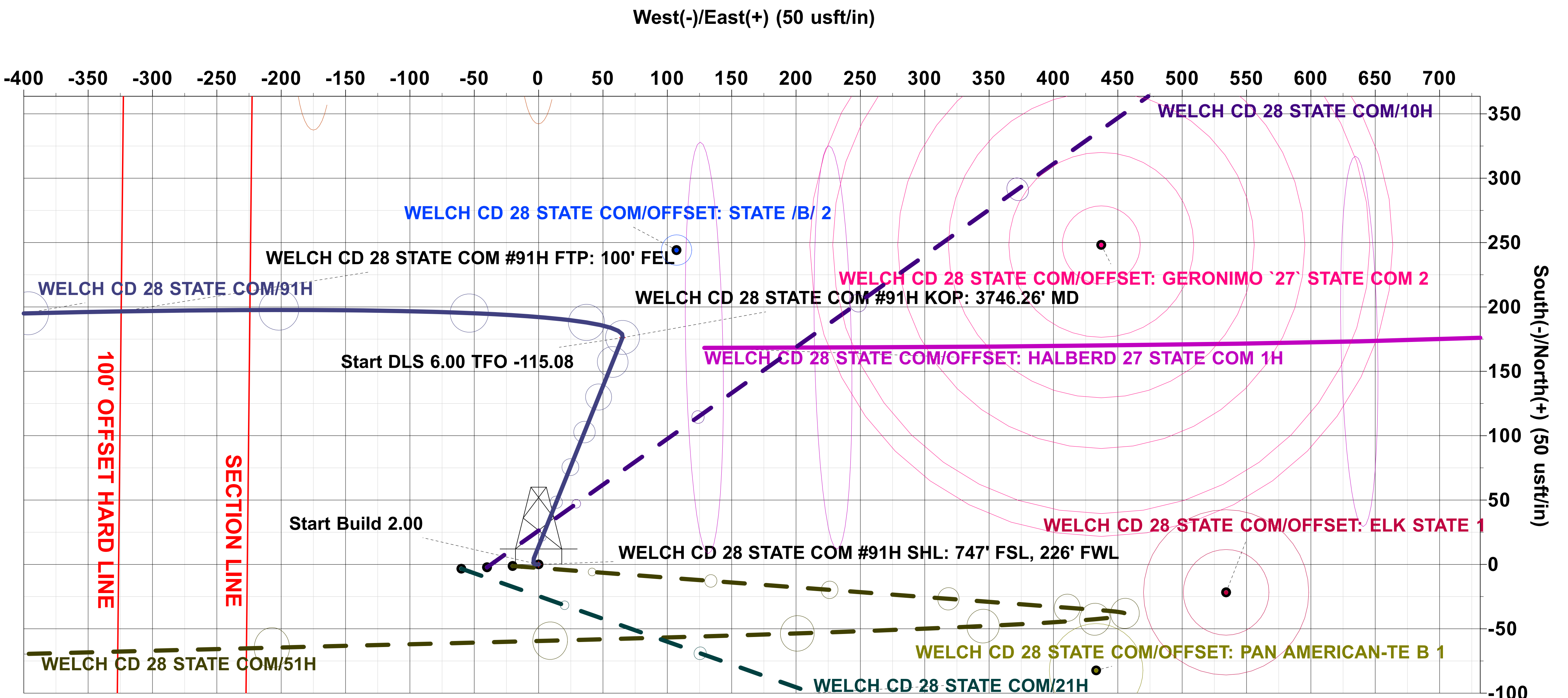
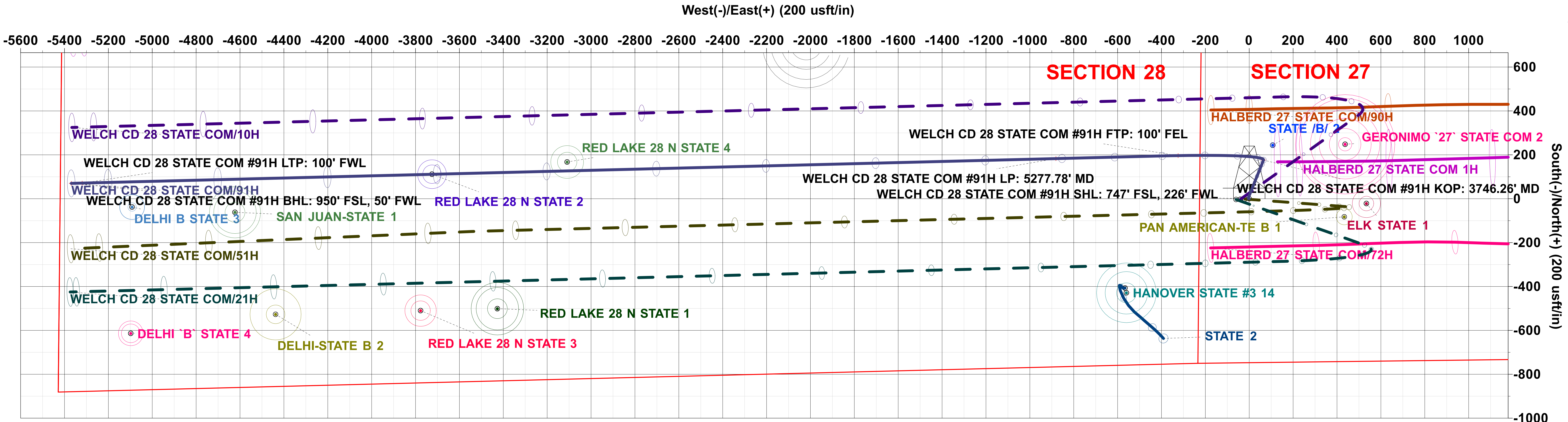
Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: New Mexico Eastern Zone
System Datum: Mean Sea Level

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	VSect
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	400.00	2.00	270.00	399.98	0.00	-1.75	2.00	1.74
4	625.58	3.37	21.92	625.42	6.15	-3.21	2.00	3.05
5	3746.26	3.37	21.92	3740.70	176.15	65.20	0.00	-69.60
6	4769.28	60.00	268.56	4589.91	194.69	-413.08	6.00	408.05
7	4969.28	60.00	268.56	4689.91	190.33	-586.23	0.00	581.26
8	5277.78	90.85	268.56	4766.61	182.92	-881.11	10.00	876.24
9	9767.78	90.85	268.56	4700.00	70.10	-5369.20	0.00	5365.74

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
WELCH CD 28 STATE COM #91H SHL: 747' FSL, 226' FWL	0.00	0.00	0.00	654984.90	590975.80	32.8004798	-104.1717844
WELCH CD 28 STATE COM #91H KOP: 3746.26' MD	3740.70	176.15	65.20	655161.05	591041.00	32.8009637	-104.1715714
WELCH CD 28 STATE COM #91H FTP: 100' FEL	4531.70	196.57	-324.10	655181.47	590651.70	32.8010214	-104.1728383
WELCH CD 28 STATE COM #91H BHL: 950' FSL, 50' FWL	4700.00	70.10	-5369.20	655055.00	585606.60	32.8006938	-104.1892583
WELCH CD 28 STATE COM #91H LTP: 100' FWL	4700.74	71.36	-5319.20	655056.26	585656.60	32.8006971	-104.1890955
WELCH CD 28 STATE COM #91H LP: 5277.78' MD	4766.61	182.92	-881.11	655167.82	590094.69	32.8009862	-104.1746511



Vertical Section at 268.56° (200 usft/in)

Plan: PERMIT (91H/Wellbore #1)

Created By: PROTOTYPE WELL PLANNING / Date: 15:03, March 21 2023

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State of New Mexico
Energy, Minerals and Natural Resources Department

Submit Electronically
Via E-permitting

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

NATURAL GAS MANAGEMENT PLAN

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

Section 1 – Plan Description

Effective May 25, 2021

I. Operator: SPUR ENERGY PARTNERS LLC **OGRID:** 328947 **Date:** 9/ /28 / 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
WELCH CD 28 STATE COM 10H	30-015-	M-27-17S-28E	746 FSL 186' FWL	337 BBL/D	369 MCF/D	1349 BBL/D
WELCH CD 28 STATE COM 51H	30-015-	M-27-17S-28E	747' FSL 206' FWL	326 BBL/D	525 MCF/D	1304 BBL/D
WELCH CD 28 STATE COM 91H	30-015-	M-27-17S-28E	747' FSL 226' FWL	326 BBL/D	525 MCF/D	1304 BBL/D

IV. Central Delivery Point Name: _____ [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
WELCH CD 28 STATE COM 10H	30-015-	2/15/2024	3/23/2024	4/24/2024	5/24/2024	5/29/2024
WELCH CD 28 STATE COM 51H	30-015-	3/4/2024	3/12/2024	4/24/2024	5/24/2024	5/29/2024
WELCH CD 28 STATE COM 91H	30-015-	2/24/2024	4/24/2024	4/24/2024	5/24/2024	5/29/2024

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>Cynthia Villacorta</i>
Printed Name:	CYNTHIA VILLAOCORTA
Title:	REGULATORY CONSULTANT
E-mail Address:	CYNTHIA.VILLACORTA@SPUREENERGY.COM
Date:	09/28/2023
Phone:	
OIL CONSERVATION DIVISION (Only applicable when submitted as a standalone form)	
Approved By:	
Title:	
Approval Date:	
Conditions of Approval:	



Natural Gas Management Plan – Attachment

VI. Separation equipment will be sized by construction engineering staff based on anticipated daily production to ensure adequate capacity.

VII. Spur Energy Partners LLC ("Spur") will take the following actions to comply with the regulations listed in 19.15.27.8:

- A. Spur will maximize the recovery of natural gas by minimizing waste, as defined by 19.15.2 NMAC, of natural gas through venting and flaring. Spur will ensure that our wells will be connected to a natural gas gathering system with sufficient capacity to transport natural gas.
- B. All drilling operations will be equipped with a rig flare at least 100 feet from the nearest surface hole location. Rig flare will be utilized to combust any natural gas that is brought to surface during normal operations. In the case of emergency, flaring volumes will be reported appropriately.
- C. During completion operations any natural gas brought to surface will be flared. Immediately following completion operations, wells will flow to permanent separation equipment. Produced natural gas from separation equipment will be sent to sales. If natural gas does not meet gathering pipeline specifications, Spur will flare for 60 days or until natural gas meets the pipeline specifications. Spur will ensure flare is properly sized and is equipped with an automatic igniter or continuous pilot. Gas samples will be taken twice per week and natural gas will be routed into a gathering system as soon as the pipeline specifications are met.
- D. Natural gas will not be flared with the exception of 19.15.27.8(D)(1-4). If there is no adequate takeaway for the separator gas, wells will be shut-in until that natural gas gathering system is available with exception of emergency or malfunction situations. Volumes will be reported appropriately.
- E. Spur will comply with performance standards pursuant to 19.15.27.8(E)(1-8). All equipment will be designed and sized to handle maximum pressures to minimize waste. Storage tanks constructed after May 25, 2021 will be equipped with an automatic gauging system that reduces venting of natural gas. Flare stacks installed or replaced after May 25, 2021 will be equipped with an automatic igniter or continuous pilot. Spur will conduct AVO inspections as described in 19.15.27.8(E)(5)(a) with frequencies specified in 19.15.27.8(E)(5)(b) and (c). All emergencies or malfunctions will be resolved as quickly and safely as possible to minimize waste.
- F. The volume of natural gas that is vented or flared as the result of an emergency or malfunction during drilling and/or completion operations will be estimated and reported accordingly. The volume of natural gas that is vented, flared or beneficially used during production operations, will be measured and reported accordingly. Spur will install equipment to measure the volume of natural gas flared from existing piping or a flowline piped from equipment such as high-pressure separators, heater treaters, or VRUs associated with a well or facility associated with a well authorized by an APD after May 25, 2021 that has an average daily production of less than 60,000 cubic feet of natural gas. If metering is not practicable due to circumstances such as low flow rate or low pressure venting or flaring, Spur will estimate the volume of flared or vented natural gas. Measuring equipment will conform to industry standards and will not be equipped with a manifold



that allows the diversion of natural gas around the metering element except for the sole purpose of inspecting and servicing equipment.

VIII. For maintenance activities involving production equipment and compression, venting be limited to the depressurization of the subject equipment to ensure safe working conditions. For maintenance of production equipment, the associated producing wells will be shut-in to eliminate venting. For maintenance of VRUs, all natural gas normally routed to the VRU will be routed to flare.

State of New Mexico
Energy, Minerals and Natural Resources Department

Submit Electronically
Via E-permitting

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

NATURAL GAS MANAGEMENT PLAN

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

Section 1 – Plan Description

Effective May 25, 2021

I. Operator: SPUR ENERGY PARTNERS LLC **OGRID:** 328947 **Date:** 9/ /28 / 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: _____

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WELCH CD 28 STATE COM 10H	30-015-	M-27-17S-28E	746 FSL 186' FWL	337 BBL/D	369 MCF/D	1349 BBL/D
WELCH CD 28 STATE COM 51H	30-015-	M-27-17S-28E	747' FSL 206' FWL	326 BBL/D	525 MCF/D	1304 BBL/D
WELCH CD 28 STATE COM 91H	30-015-	M-27-17S-28E	747' FSL 226' FWL	326 BBL/D	525 MCF/D	1304 BBL/D

IV. Central Delivery Point Name: _____ [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
WELCH CD 28 STATE COM 10H	30-015-	2/15/2024	3/23/2024	4/24/2024	5/24/2024	5/29/2024
WELCH CD 28 STATE COM 51H	30-015-	3/4/2024	3/12/2024	4/24/2024	5/24/2024	5/29/2024
WELCH CD 28 STATE COM 91H	30-015-	2/24/2024	4/24/2024	4/24/2024	5/24/2024	5/29/2024

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

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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>Cynthia Villacorta</i>
Printed Name:	CYNTHIA VILLAOCORTA
Title:	REGULATORY CONSULTANT
E-mail Address:	CYNTHIA.VILLACORTA@SPUREENERGY.COM
Date:	09/28/2023
Phone:	
OIL CONSERVATION DIVISION (Only applicable when submitted as a standalone form)	
Approved By:	
Title:	
Approval Date:	
Conditions of Approval:	



Natural Gas Management Plan – Attachment

VI. Separation equipment will be sized by construction engineering staff based on anticipated daily production to ensure adequate capacity.

VII. Spur Energy Partners LLC ("Spur") will take the following actions to comply with the regulations listed in 19.15.27.8:

- A. Spur will maximize the recovery of natural gas by minimizing waste, as defined by 19.15.2 NMAC, of natural gas through venting and flaring. Spur will ensure that our wells will be connected to a natural gas gathering system with sufficient capacity to transport natural gas.
- B. All drilling operations will be equipped with a rig flare at least 100 feet from the nearest surface hole location. Rig flare will be utilized to combust any natural gas that is brought to surface during normal operations. In the case of emergency, flaring volumes will be reported appropriately.
- C. During completion operations any natural gas brought to surface will be flared. Immediately following completion operations, wells will flow to permanent separation equipment. Produced natural gas from separation equipment will be sent to sales. If natural gas does not meet gathering pipeline specifications, Spur will flare for 60 days or until natural gas meets the pipeline specifications. Spur will ensure flare is properly sized and is equipped with an automatic igniter or continuous pilot. Gas samples will be taken twice per week and natural gas will be routed into a gathering system as soon as the pipeline specifications are met.
- D. Natural gas will not be flared with the exception of 19.15.27.8(D)(1-4). If there is no adequate takeaway for the separator gas, wells will be shut-in until that natural gas gathering system is available with exception of emergency or malfunction situations. Volumes will be reported appropriately.
- E. Spur will comply with performance standards pursuant to 19.15.27.8(E)(1-8). All equipment will be designed and sized to handle maximum pressures to minimize waste. Storage tanks constructed after May 25, 2021 will be equipped with an automatic gauging system that reduces venting of natural gas. Flare stacks installed or replaced after May 25, 2021 will be equipped with an automatic igniter or continuous pilot. Spur will conduct AVO inspections as described in 19.15.27.8(E)(5)(a) with frequencies specified in 19.15.27.8(E)(5)(b) and (c). All emergencies or malfunctions will be resolved as quickly and safely as possible to minimize waste.
- F. The volume of natural gas that is vented or flared as the result of an emergency or malfunction during drilling and/or completion operations will be estimated and reported accordingly. The volume of natural gas that is vented, flared or beneficially used during production operations, will be measured and reported accordingly. Spur will install equipment to measure the volume of natural gas flared from existing piping or a flowline piped from equipment such as high-pressure separators, heater treaters, or VRUs associated with a well or facility associated with a well authorized by an APD after May 25, 2021 that has an average daily production of less than 60,000 cubic feet of natural gas. If metering is not practicable due to circumstances such as low flow rate or low pressure venting or flaring, Spur will estimate the volume of flared or vented natural gas. Measuring equipment will conform to industry standards and will not be equipped with a manifold



that allows the diversion of natural gas around the metering element except for the sole purpose of inspecting and servicing equipment.

VIII. For maintenance activities involving production equipment and compression, venting be limited to the depressurization of the subject equipment to ensure safe working conditions. For maintenance of production equipment, the associated producing wells will be shut-in to eliminate venting. For maintenance of VRUs, all natural gas normally routed to the VRU will be routed to flare.

Spur Energy Partners LLC – Welch CD 28 State Com 91H

1. Geologic Formations

TVD of Target	4,700'
MD at TD	9,768'

WELCH CD 28 STATE COM: SOUTH PAD			
FORMATION	DEPTH (KB TVD)	LITHOLOGY	EXPECTED FLUIDS
QUATERNARY	0'	DOLOMITE, OTHER: CALICHE	USEABLE WATER
TANSILL	400'	SANDSTONE, DOLOMITE	NONE
YATES	475'	DOLOMITE, LIMESTONE, SHALE, SILTSTONE	NONE
SEVEN RIVERS	740'	DOLOMITE, LIMESTONE	NATURAL GAS, OIL
QUEEN	1315'	SANDSTONE W INTERBEDDED DOLOMITE, ANHYDRITE	NATURAL GAS, OIL
GRAYBURG	1725'	DOLOMITE W MINOR SANDSTONE, ANHYDRITE	NATURAL GAS, OIL
SAN ANDRES	2050'	DOLOMITIC LIMESTONE	NATURAL GAS, OIL
GLORIETA	3500'	DOLOMITE, SILTSTONE	NATURAL GAS, OIL
YESO - Paddock	3615'	DOLOMITIC LIMESTONE	NATURAL GAS, OIL
YESO - upper Blinebry	4115'	DOLOMITIC LIMESTONE	NATURAL GAS, OIL
YESO - lower Blinebry	4565'	DOLOMITIC LIMESTONE	NATURAL GAS, OIL
ABO	5630'	DOLOMITIC 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
Seven Rivers	12.25	0	1175	9.625	36	J-55	BTC	1.125	1.2	1.4	1.4
N/A	8.75	0	5000	7	32	L-80	BK-HT	1.125	1.2	1.4	1.4
Yeso	8.75	5000	9768	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 – Welch CD 28 State Com 91H

	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?	
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 (Lead)	0	950	100%
Surface (Tail)	950	1175	100%
Production (Lead)	0	4000	100%
Production (Tail)	4000	9768	25%

Casing String	# Sks	Wt. (lb/gal)	Yld (ft3/sack)	H2O (gal/sk)	500# Comp. Strength (hours)	Slurry Description
Surface (Lead)	259	12	2.4	13.48	8:12	Clas C Premium Plus Cement
Surface (Tail)	86	13.2	1.87	9.92	6:59	Clas C Premium Plus Cement
Production (Lead)	433	11.4	2.42	15.29	N/A	Clas C Premium Plus Cement
Production (Tail)	1089	13.2	1.56	9.81	N/A	Clas C Premium Plus Cement

Spur Energy Partners LLC – Welch CD 28 State Com 91H**4. Pressure Control Equipment*****Spur Energy Partners LLC variance for flex hose***

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	2207 psi
Abnormal Temperature	No
BH Temperature at deepest TVD	119°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 – Welch CD 28 State Com 91H

	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 follows:

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	9768	Water-Based Mud	8.6-8.9	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 – Welch CD 28 State Com 91H

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	SCP - 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: 897.8 bbls.

Spur Energy Partners LLC – Welch CD 28 State Com 91H**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 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, 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



Permian Drilling

Hydrogen Sulfide Drilling Operations Plan

Welch CD 28 State Com Development

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

1. Escape

Personnel shall escape upwind of wellbore in the even 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 secondary egress route should be taken.

