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 360538

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

1. Operator Name and Address	2. OGRID Number
STEWARD ENERGY II, LLC 420 Throckmorton Fort Worth, TX 76102	371682
	3. API Number 30-025-52817

4. Property Code	5. Property Name	6. Well No.
317665	HEISENBERG STATE COM	008H

7. Surface Location

UL - Lot	Section	Township	Range	Lot Idn	Feet From	N/S Line	Feet From	E/W Line	County
J	4	14S	38E	J	1989	S	1800	E	Lea

8. Proposed Bottom Hole Location

UL - Lot	Section	Township	Range	Lot Idn	Feet From	N/S Line	Feet From	E/W Line	County
B	33	13S	38E	B	100	N	1415	E	Lea

9. Pool Information

BRONCO;SAN ANDRES, SOUTH	7500

Additional Well Information

11. Work Type	12. Well Type	13. Cable/Rotary	14. Lease Type	15. Ground Level Elevation
New Well	OIL		Private	3813
16. Multiple	**17. Proposed Depth**	**18. Formation**	**19. Contractor**	**20. Spud Date**
N	13644	San Andres		2/12/2025
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	9.625	36	2293	830	0
Prod	8.5	7	29	5530	360	0
Prod	8.5	5.5	20	13644	2300	0

Casing/Cement Program: Additional Comments

Tapered Production Casing

22. Proposed Blowout Prevention Program

Type	Working Pressure	Test Pressure	Manufacturer
Annular	3000	1500	SCHAFER
Double Ram	3000	1500	SCHAFER

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.** Signature:		**OIL CONSERVATION DIVISION**	
Printed Name:	Electronically filed by Ryan Delong	Approved By:	Paul F Kautz
Title:		Title:	Geologist
Email Address:	rdelong@titusoil.com	Approved Date:	4/19/2024 — Expiration Date: 4/19/2026
Date:	4/10/2024 — Phone: 817-852-6370	Conditions of Approval Attached	

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District IV
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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

API Number	Pool Code	Pool Name
	7500	Bronco; San Andres, South

Property Code	Property Name	Well Number
317665	HEISENBERG STATE	#8H

OGRID No.	Operator Name	Elevation
371682	STEWARD ENERGY II, LLC	3813'

Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
J	04	14 S	38 E		1989	SOUTH	1800	EAST	LEA

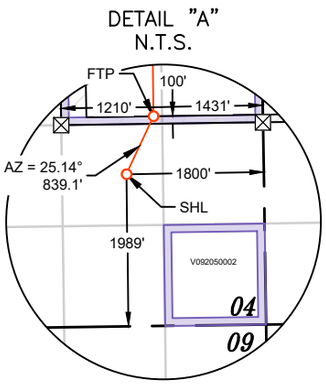
Bottom Hole Location If Different From Surface

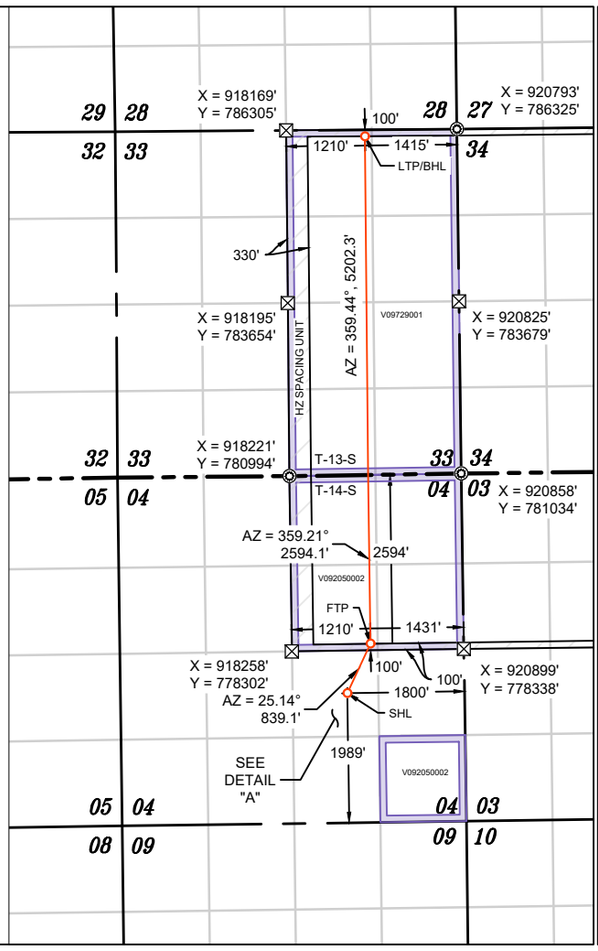
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
B	33	13 S	38 E		100	NORTH	1415	EAST	LEA

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
1453.19			

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

APPROXIMATE WELL BORE DISTANCE FROM FTP TO LTP	
V092050002	2594.15'
V09729001	5202.34'
TOTAL	7796.49'





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.

Signature — Date: 4/2/2024

Ryan DeLong
Printed Name

rdelong@titusoil.com
E-mail Address

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.

JANUARY 19, 2024
Date of Survey

Signature and Seal of Professional Surveyor:

Job No.: 24-01-3869
MATTHEW B. TOMERLIN, N.M.P.L.S.
Certificate Number 23203

NAD 83 (SHL) 1989' FSL & 1800' FEL
LATITUDE = 33.131651°
LONGITUDE = -103.099307°
NAD 27 (SURFACE HOLE LOCATION)
LATITUDE = 33.131543°
LONGITUDE = -103.098808°
STATE PLANE NAD 83 (N.M. EAST)
N: 777658.69' E: 919109.95'
STATE PLANE NAD 27 (N.M. EAST)
N: 777596.15' E: 877933.93'

NAD 83 (FTP) 2594' FNL & 1431' FEL
LATITUDE = 33.133727°
LONGITUDE = -103.098114°
NAD 27 (FTP)
LATITUDE = 33.133619°
LONGITUDE = -103.097615°
STATE PLANE NAD 83 (N.M. EAST)
N: 778418.32' E: 919466.39'
STATE PLANE NAD 27 (N.M. EAST)
N: 778355.78' E: 878290.37'

NAD 83 (LTP/BHL) 100' FNL & 1415' FEL
LATITUDE = 33.155152°
LONGITUDE = -103.098098°
NAD 27 (LTP/BHL)
LATITUDE = 33.155044°
LONGITUDE = -103.097599°
STATE PLANE NAD 83 (N.M. EAST)
N: 786214.31' E: 919379.47'
STATE PLANE NAD 27 (N.M. EAST)
N: 786151.57' E: 878203.50'

NOTES

1. ALL COORDINATES, BEARINGS, AND DISTANCES CONTAINED HEREIN ARE GRID, BASED UPON THE NEW MEXICO STATE PLANE COORDINATES SYSTEM, NORTH AMERICAN DATUM 83, NEW MEXICO EAST (3001), NAVD 88.

2. THIS DOCUMENT IS BASED UPON AN ON THE GROUND SURVEY PERFORMED DURING JANUARY, 2024. CERTIFICATION OF THIS DOCUMENT IS ONLY TO THE LOCATION OF THIS EASEMENT IN RELATION TO RECORDED MONUMENT OF DEEDS PROVIDED BY THE CLIENT.

3. ELEVATIONS MSL, DERIVED FROM G.N.S.S. OBSERVATION AND DERIVED FROM SAID ON-THE-GROUND SURVEY.

◎ FND. U.S.G.L.O. MON. UNLESS OTHERWISE NOTED
☒ CALC. CORNER
○ SHL/ KOP/ FTP / PPP/ LTP / BHL
STATE OIL & GAS LEASE
BLM OIL & GAS LEASE
HORIZONTAL SPACING UNIT

0' 2500' 5000'

SCALE: 1" = 2500'

EXHIBIT 1
LOCATION & ELEVATION VERIFICATION MAP

LEASE NAME AND WELL NUMBER: HEISENBERG STATE #8H
LATITUDE: N 33.131651 LONGITUDE: W 103.099307 ELEVATION: 3813'
DESCRIPTION: 1989' FSL & 1800' FEL

STEWARD ENERGY II

Situated in
SECTION 04, TOWNSHIP 14 SOUTH, RANGE 38 EAST
LEA COUNTY, NEW MEXICO

0 1 MILE 2 MILE
SCALE: 1" = 1 MILE

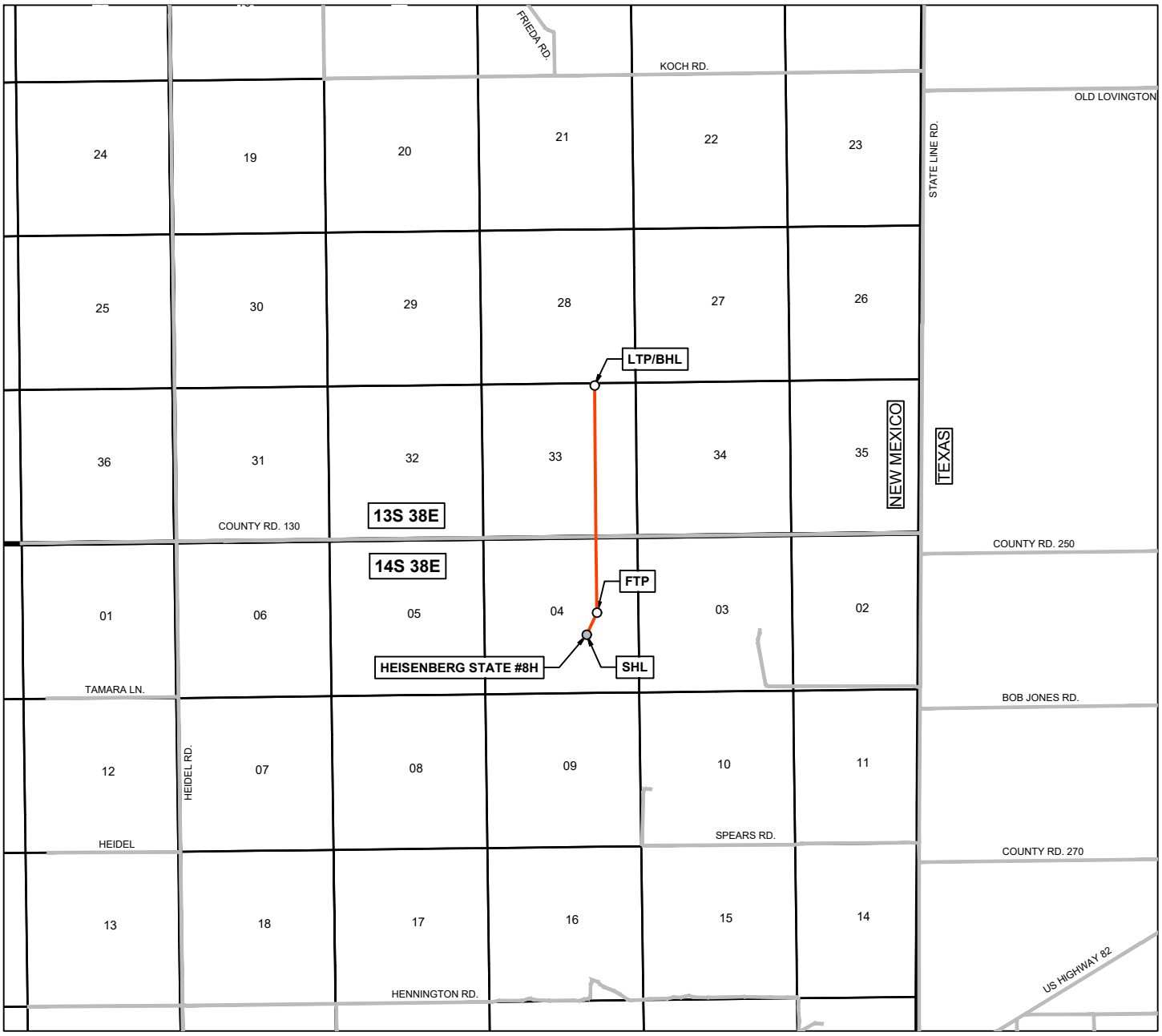
LEGEND
- SHL
- KOP/FTP/PPP/LTP/BHL
- PROPOSED WELL BORE
- SECTION LINE
- TOWNSHIP/RANGE LINE

DATAPOINT SURVEYING AND MAPPING
12450 Network Blvd. - Suite 155
San Antonio, TX 78249
Phone: 726-777-4240
Firm No. 10194585

DRAWN BY: JW	DATE : 01/19/2024	REV. 0
CHECKED BY: JH	DATE : 01/19/2024	
AFE #	PROJECT ID: 24-01-3869	PAGE 1 OF 1

PLOT DATE: 1/17/2024 9:11:09 AM FILENAME: Z:\2024\STEWARD ENERGY\24-01-3869 - HEISENBERG STATE 8H\PLATS\FED PACKET\1-LOCATION ELEVATION MAP\20240117\1-NM-STEWARD-LOCATION ELEVATION MAP-HEISENBERG STATE #8H.DWG

EXHIBIT 2
VICINITY MAP



LEASE NAME AND WELL NUMBER: HEISENBERG STATE #8H
LATITUDE: N 33.131651 LONGITUDE: W 103.099307 ELEVATION: 3813'
DESCRIPTION: 1989' FSL & 1800' FEL

LEGEND
- SHL
- KOP/FTP/PPP/LTP/BHL
- EXISTING ROADS
- PROPOSED WELL BORE
- SECTION LINE
- TOWNSHIP/RANGE LINE

0 1 MILE 2 MILE
SCALE: 1" = 1 MILE

STEWARD ENERGY II

Situated in
SECTION 04, TOWNSHIP 14 SOUTH, RANGE 38 EAST
LEA COUNTY, NEW MEXICO

DATAPOINT SURVEYING AND MAPPING

12450 Network Blvd. - Suite 155
San Antonio, TX 78249
Phone: 726-777-4240
Firm No. 10194585

DRAWN BY: JW	DATE : 01/19/2024	REV. 0
CHECKED BY: JH	DATE : 01/19/2024	
AFE #	PROJECT ID: 24-01-3869	PAGE 1 OF 1

PLOT DATE: 1/19/2024 11:55:57 AM FILENAME: Z:\2024\STEWARD ENERGY\24-01-3869 - HEISENBERG STATE 8H\PLATS\FED PACKET\2-VICINITY MAP\20240117\2-NM-STEWARD-VICINITY MAP-HEISENBERG STATE #8H.DWG

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

Form APD Conditions

Permit 360538

PERMIT CONDITIONS OF APPROVAL

Operator Name and Address:	API Number:
STEWARD ENERGY II, LLC [371682] 420 Throckmorton Fort Worth, TX 76102	30-025-52817
	Well: HEISENBERG STATE COM #008H

OCD Reviewer	Condition
pkautz	Notify OCD 24 hours prior to casing & cement
pkautz	Will require a File As Drilled C-102 and a Directional Survey with the C-104
pkautz	Once the well is spud, to prevent ground water contamination through whole or partial conduits from the surface, the operator shall drill without interruption through the fresh water zone or zones and shall immediately set in cement the water protection string
pkautz	Oil base muds are not to be used until fresh water zones are cased and cemented providing isolation from the oil or diesel. This includes synthetic oils. Oil based mud, drilling fluids and solids must be contained in a steel closed loop system
pkautz	Cement is required to circulate on both surface and production strings of casing
pkautz	If cement does not circulate on any string, a CBL is required for that string of casing
pkautz	The Operator is to notify NMOCD by sundry (Form C-103) within ten (10) days of the well being spud

Steward Energy II, LLC

Lea County, NM (NAD 83) NM East Zone
Heisenberg State 8H
Heisenberg State 8H

Wellbore #1
Plan #1

Anticollision Report

24 January, 2024

Anticollision Report

Company:	Steward Energy II, LLC	**Local Co-ordinate Reference:**	Well Heisenberg State 8H
Project:	Lea County, NM (NAD 83) NM East Zone	**TVD Reference:**	GL 3813' + RKB 19' @ 3832.00ft
Reference Site:	Heisenberg State 8H	**MD Reference:**	GL 3813' + RKB 19' @ 3832.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Heisenberg State 8H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	edmdb
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Reference Plan #1

Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	Stations	**Error Model:**	ISCWSA
Depth Range:	Unlimited	**Scan Method:**	Closest Approach 3D
Results Limited by:	Maximum centre distance of 1,000.00ft	**Error Surface:**	Pedal Curve
Warning Levels Evaluated at:	2.00 **Sigma**	**Casing Method:**	Not applied

Survey Tool Program **Date** 1/24/2024

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.00	13,644.37	Plan #1 (Wellbore #1)	MWD	MWD - Standard

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Gray Matter Fee						
Gray Matter Fee 2H - Lateral - Lateral	13,644.37	10,899.00	158.16	49.13	1.451	Level 3, CC, ES, SF
Gray Matter Fee 2H - Pilot - Pilot						Out of range
Heisenberg State 9H						
Heisenberg State 9H - Wellbore #1 - Plan #1	216.33	217.33	145.71	144.29	102.732	CC
Heisenberg State 9H - Wellbore #1 - Plan #1	300.00	300.00	145.71	143.70	72.320	ES
Heisenberg State 9H - Wellbore #1 - Plan #1	13,644.37	13,646.94	880.00	590.90	3.044	SF

Offset Design: Gray Matter Fee - Gray Matter Fee 2H - Lateral - Lateral — **Offset Site Error:** 0.00 ft

Survey Program: 119-MWD, 3233-MWD — **Offset Well Error:** 0.00 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Rule Assigned: Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
12,800.00	5,350.00	10,899.00	5,371.35	130.53	97.55	108.77	8,701.26	327.79	991.36	941.07	50.29	19.714	
12,900.00	5,350.00	10,899.00	5,371.35	132.19	97.55	108.77	8,701.26	327.79	891.58	840.56	51.03	17.473	
13,000.00	5,350.00	10,899.00	5,371.35	133.84	97.55	108.77	8,701.26	327.79	791.87	739.87	52.00	15.228	
13,100.00	5,350.00	10,899.00	5,371.35	135.50	97.55	108.77	8,701.26	327.79	692.23	638.90	53.33	12.979	
13,200.00	5,350.00	10,899.00	5,371.35	137.15	97.55	108.77	8,701.26	327.79	592.72	537.46	55.26	10.726	
13,300.00	5,350.00	10,899.00	5,371.35	138.81	97.55	108.77	8,701.26	327.79	493.41	435.19	58.21	8.476	
13,400.00	5,350.00	10,899.00	5,371.35	140.47	97.55	108.77	8,701.26	327.79	394.44	331.31	63.14	6.248	
13,500.00	5,350.00	10,899.00	5,371.35	142.12	97.55	108.77	8,701.26	327.79	296.17	223.90	72.27	4.098	
13,600.00	5,350.00	10,899.00	5,371.35	143.78	97.55	108.77	8,701.26	327.79	199.62	107.54	92.09	2.168	
13,644.37	5,350.00	10,899.00	5,371.35	144.52	97.55	108.77	8,701.26	327.79	158.16	49.13	109.03	1.451	Level 3, CC, ES, SF

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

Anticollision Report

Company:	Steward Energy II, LLC	**Local Co-ordinate Reference:**	Well Heisenberg State 8H
Project:	Lea County, NM (NAD 83) NM East Zone	**TVD Reference:**	GL 3813' + RKB 19' @ 3832.00ft
Reference Site:	Heisenberg State 8H	**MD Reference:**	GL 3813' + RKB 19' @ 3832.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Heisenberg State 8H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	edmdb
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design: Heisenberg State 9H - Heisenberg State 9H - Wellbore #1 - Plan #1

Offset Site Error: 0.00 ft

Survey Program: 0-MWD

Offset Well Error: 0.00 ft

Rule Assigned:

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.00	0.00	1.00	1.00	0.00	0.00	-98.25	-20.91	-144.20	145.71				
100.00	100.00	101.00	101.00	0.29	0.29	-98.25	-20.91	-144.20	145.71	145.12	0.58	249.369	
200.00	200.00	201.00	201.00	0.65	0.65	-98.25	-20.91	-144.20	145.71	144.41	1.30	111.976	
216.33	216.33	217.33	217.33	0.71	0.71	-98.25	-20.91	-144.20	145.71	144.29	1.42	102.732 CC	
300.00	300.00	300.00	300.00	1.01	1.01	-98.25	-20.91	-144.20	145.71	143.70	2.01	72.320 ES	
400.00	399.99	398.48	398.48	1.36	1.35	156.36	-21.12	-145.02	147.37	144.66	2.71	54.437	
500.00	499.96	495.82	495.79	1.70	1.69	156.63	-21.72	-147.45	152.32	148.93	3.39	44.927	
600.00	599.86	592.84	592.72	2.05	2.03	157.04	-22.73	-151.46	160.56	156.48	4.08	39.333	
700.00	699.68	689.38	689.08	2.41	2.38	157.54	-24.13	-157.03	172.09	167.31	4.78	36.022	
800.00	799.37	785.28	784.70	2.78	2.73	158.09	-25.91	-164.12	186.88	181.40	5.47	34.146	
900.00	898.90	880.40	879.41	3.15	3.08	158.65	-28.06	-172.69	204.92	198.75	6.17	33.226	
939.74	938.42	917.95	916.76	3.30	3.22	158.87	-29.01	-176.49	212.98	206.54	6.44	33.051	
1,000.00	998.30	975.91	974.35	3.53	3.44	159.22	-30.57	-182.73	225.80	218.93	6.87	32.890	
1,100.00	1,097.67	1,073.58	1,071.41	3.92	3.82	159.73	-33.23	-193.33	247.16	239.59	7.57	32.642	
1,200.00	1,197.05	1,171.24	1,168.46	4.31	4.20	160.16	-35.89	-203.93	268.55	260.26	8.28	32.424	
1,300.00	1,296.43	1,268.91	1,265.52	4.70	4.58	160.53	-38.55	-214.53	289.94	280.95	8.99	32.234	
1,400.00	1,395.81	1,366.58	1,362.57	5.09	4.97	160.84	-41.21	-225.13	311.35	301.64	9.71	32.068	
1,500.00	1,495.18	1,464.25	1,459.63	5.49	5.35	161.12	-43.87	-235.73	332.76	322.34	10.42	31.920	
1,600.00	1,594.56	1,561.92	1,556.68	5.88	5.74	161.36	-46.52	-246.33	354.18	343.04	11.14	31.789	
1,700.00	1,693.94	1,659.59	1,653.74	6.28	6.13	161.57	-49.18	-256.93	375.60	363.75	11.86	31.672	
1,800.00	1,793.31	1,757.26	1,750.80	6.68	6.51	161.76	-51.84	-267.53	397.03	384.46	12.58	31.566	
1,900.00	1,892.69	1,854.93	1,847.85	7.07	6.90	161.93	-54.50	-278.13	418.47	405.17	13.30	31.471	
2,000.00	1,992.07	1,952.60	1,944.91	7.47	7.29	162.09	-57.16	-288.73	439.90	425.89	14.02	31.384	
2,100.00	2,091.45	2,050.26	2,041.96	7.87	7.68	162.23	-59.82	-299.33	461.34	446.60	14.74	31.305	
2,200.00	2,190.82	2,147.93	2,139.02	8.27	8.07	162.35	-62.48	-309.93	482.78	467.33	15.46	31.233	
2,300.00	2,290.20	2,245.60	2,236.07	8.67	8.46	162.47	-65.13	-320.53	504.23	488.05	16.18	31.167	
2,400.00	2,389.58	2,343.27	2,333.13	9.07	8.85	162.58	-67.79	-331.13	525.67	508.77	16.90	31.105	
2,500.00	2,488.96	2,440.94	2,430.19	9.47	9.24	162.68	-70.45	-341.72	547.12	529.50	17.62	31.049	
2,600.00	2,588.33	2,538.61	2,527.24	9.87	9.63	162.77	-73.11	-352.32	568.57	550.22	18.34	30.996	
2,700.00	2,687.71	2,636.28	2,624.30	10.27	10.02	162.85	-75.77	-362.92	590.02	570.95	19.07	30.947	
2,800.00	2,787.09	2,733.95	2,721.35	10.67	10.42	162.93	-78.43	-373.52	611.47	591.68	19.79	30.901	
2,900.00	2,886.46	2,831.62	2,818.41	11.07	10.81	163.01	-81.08	-384.12	632.92	612.41	20.51	30.859	
3,000.00	2,985.84	2,929.28	2,915.46	11.47	11.20	163.07	-83.74	-394.72	654.37	633.14	21.23	30.819	
3,100.00	3,085.22	3,026.95	3,012.52	11.87	11.59	163.14	-86.40	-405.32	675.83	653.87	21.96	30.781	
3,200.00	3,184.60	3,124.62	3,109.57	12.27	11.98	163.20	-89.06	-415.92	697.28	674.60	22.68	30.746	
3,300.00	3,283.97	3,222.29	3,206.63	12.67	12.37	163.26	-91.72	-426.52	718.73	695.33	23.40	30.713	
3,400.00	3,383.35	3,319.96	3,303.69	13.07	12.77	163.31	-94.38	-437.12	740.19	716.07	24.13	30.681	
3,500.00	3,482.73	3,417.63	3,400.74	13.47	13.16	163.36	-97.04	-447.72	761.65	736.80	24.85	30.651	
3,600.00	3,582.11	3,515.30	3,497.80	13.87	13.55	163.41	-99.69	-458.32	783.10	757.53	25.57	30.623	
3,708.14	3,689.57	3,620.92	3,602.75	14.30	13.97	163.46	-102.57	-469.78	806.31	779.95	26.35	30.594	
3,800.00	3,780.94	3,711.63	3,692.89	14.67	14.34	163.54	-105.04	-479.62	825.33	798.30	27.02	30.540	
3,900.00	3,880.56	3,826.22	3,806.90	15.05	14.79	163.60	-107.85	-490.84	843.40	815.55	27.85	30.284	
4,000.00	3,980.32	3,941.88	3,922.18	15.43	15.23	163.65	-110.13	-499.91	857.90	829.23	28.67	29.926	
4,100.00	4,080.18	4,058.37	4,038.45	15.79	15.66	163.68	-111.85	-506.77	868.78	839.30	29.47	29.477	
4,200.00	4,180.12	4,175.46	4,155.45	16.14	16.08	163.71	-112.99	-511.35	876.01	845.75	30.27	28.944	
4,300.00	4,280.10	4,292.91	4,272.87	16.48	16.48	163.72	-113.56	-513.61	879.58	848.54	31.04	28.334	
4,347.89	4,327.99	4,349.21	4,329.17	16.64	16.66	-90.80	-113.63	-513.87	880.00	848.60	31.40	28.025	
4,350.44	4,330.55	4,352.21	4,332.17	16.64	16.67	-90.80	-113.63	-513.87	879.99	848.58	31.42	28.008	
4,400.00	4,380.10	4,401.14	4,381.10	16.80	16.83	-90.80	-113.63	-513.87	880.00	848.25	31.74	27.722	
4,500.00	4,480.10	4,501.14	4,481.10	17.12	17.14	-90.80	-113.63	-513.87	880.00	847.59	32.41	27.155	
4,547.89	4,527.99	4,549.03	4,528.99	17.27	17.30	-90.80	-113.63	-513.87	880.00	847.27	32.72	26.891	
4,550.00	4,530.10	4,551.16	4,531.11	17.28	17.30	-90.16	-113.62	-513.87	880.00	847.26	32.74	26.879	

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

Anticollision Report

Company:	Steward Energy II, LLC	**Local Co-ordinate Reference:**	Well Heisenberg State 8H
Project:	Lea County, NM (NAD 83) NM East Zone	**TVD Reference:**	GL 3813' + RKB 19' @ 3832.00ft
Reference Site:	Heisenberg State 8H	**MD Reference:**	GL 3813' + RKB 19' @ 3832.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Heisenberg State 8H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	edmdb
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design: Heisenberg State 9H - Heisenberg State 9H - Wellbore #1 - Plan #1

Offset Site Error: 0.00 ft

Survey Program: 0-MWD

Rule Assigned:

Offset Well Error: 0.00 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
4,600.00	4,580.06	4,601.32	4,581.23	17.43	17.46	-90.15	-111.65	-513.89	880.00	846.93	33.07	26.613	
4,650.00	4,629.76	4,651.48	4,631.08	17.59	17.62	-90.15	-106.17	-513.95	880.00	846.61	33.39	26.358	
4,700.00	4,678.96	4,701.63	4,680.42	17.73	17.77	-90.14	-97.22	-514.05	880.00	846.30	33.70	26.115	
4,750.00	4,727.43	4,751.78	4,729.00	17.88	17.91	-90.13	-84.84	-514.19	880.00	846.00	34.00	25.882	
4,800.00	4,774.93	4,801.92	4,776.59	18.01	18.05	-90.12	-69.10	-514.37	879.99	845.70	34.30	25.657	
4,850.00	4,821.22	4,852.04	4,822.96	18.14	18.18	-90.12	-50.07	-514.58	879.99	845.40	34.60	25.437	
4,859.89	4,830.21	4,861.95	4,831.96	18.17	18.21	-90.11	-45.93	-514.63	879.99	845.34	34.65	25.394	
4,900.00	4,866.09	4,902.16	4,867.87	18.26	18.31	-90.11	-27.85	-514.83	879.99	845.10	34.89	25.219	
4,909.96	4,874.84	4,912.15	4,876.62	18.29	18.33	-90.11	-23.05	-514.88	879.99	845.04	34.95	25.175	
4,950.00	4,909.31	4,952.27	4,911.11	18.38	18.43	-90.10	-2.55	-515.11	879.99	844.79	35.20	25.000	
4,960.08	4,917.80	4,962.37	4,919.60	18.40	18.45	-90.10	2.92	-515.17	879.99	844.73	35.26	24.955	
5,000.00	4,950.67	5,002.37	4,952.47	18.49	18.54	-90.09	25.71	-515.43	879.99	844.48	35.52	24.777	
5,010.22	4,958.88	5,012.62	4,960.67	18.51	18.57	-90.09	31.84	-515.50	879.99	844.41	35.58	24.730	
5,050.00	4,989.97	5,052.46	4,991.74	18.60	18.66	-90.08	56.78	-515.77	879.99	844.14	35.85	24.547	
5,060.39	4,997.86	5,062.87	4,999.62	18.62	18.68	-90.08	63.58	-515.85	879.99	844.07	35.92	24.497	
5,100.00	5,027.02	5,102.54	5,028.74	18.70	18.77	-90.07	90.51	-516.15	879.99	843.79	36.20	24.307	
5,110.59	5,034.56	5,113.15	5,036.26	18.72	18.79	-90.06	97.98	-516.23	879.99	843.71	36.28	24.253	
5,150.00	5,061.64	5,152.60	5,063.28	18.80	18.89	-90.06	126.73	-516.56	879.99	843.41	36.59	24.053	
5,160.85	5,068.81	5,163.46	5,070.43	18.82	18.91	-90.05	134.90	-516.65	879.99	843.32	36.67	23.995	
5,200.00	5,093.66	5,202.66	5,095.20	18.92	19.02	-90.04	165.27	-516.99	879.99	842.99	37.00	23.785	
5,211.21	5,100.46	5,213.87	5,101.98	18.94	19.05	-90.04	174.21	-517.09	879.99	842.89	37.10	23.720	
5,250.00	5,122.92	5,252.70	5,124.34	19.06	19.17	-90.03	205.94	-517.44	879.99	842.55	37.45	23.500	
5,261.23	5,129.10	5,263.93	5,130.49	19.09	19.21	-90.03	215.34	-517.55	879.99	842.44	37.56	23.431	
5,297.89	5,148.24	5,300.61	5,149.52	19.23	19.36	-90.02	246.68	-517.90	879.99	842.08	37.91	23.211	
5,298.33	5,148.46	5,301.06	5,149.75	19.24	19.36	-90.02	247.07	-517.90	879.99	842.07	37.92	23.208	
5,300.00	5,149.29	5,302.72	5,150.58	19.24	19.37	-90.02	248.51	-517.92	879.99	842.06	37.94	23.197	
5,301.13	5,149.86	5,303.86	5,151.15	19.25	19.38	-90.02	249.49	-517.93	879.99	842.04	37.95	23.189	
5,400.00	5,199.29	5,402.72	5,200.58	19.74	19.87	-90.02	335.11	-518.88	879.99	840.95	39.05	22.537	
5,421.13	5,209.86	5,423.86	5,211.15	19.87	20.00	-90.02	353.41	-519.09	879.99	840.67	39.32	22.381	
5,500.00	5,249.29	5,502.72	5,250.58	20.37	20.50	-90.02	421.71	-519.85	879.99	839.66	40.33	21.819	
5,510.14	5,254.36	5,512.86	5,255.65	20.44	20.57	-90.02	430.49	-519.95	879.99	839.52	40.47	21.742	
5,547.89	5,273.24	5,550.61	5,274.52	20.70	20.83	-90.02	463.18	-520.31	879.99	838.99	41.00	21.461	
5,550.00	5,274.29	5,552.73	5,275.57	20.72	20.85	-90.02	465.02	-520.33	879.99	838.96	41.04	21.445	
5,553.34	5,275.94	5,556.07	5,277.21	20.74	20.87	-90.02	467.93	-520.37	879.99	838.91	41.09	21.419	
5,564.17	5,281.18	5,566.91	5,282.40	20.82	20.95	-90.02	477.44	-520.47	879.99	838.75	41.25	21.335	
5,600.00	5,297.21	5,602.75	5,298.29	21.09	21.22	-90.01	509.56	-520.83	879.99	838.21	41.78	21.063	
5,620.35	5,305.41	5,623.10	5,306.41	21.25	21.38	-90.00	528.22	-521.04	879.99	837.89	42.10	20.902	
5,650.00	5,316.16	5,652.75	5,317.04	21.48	21.61	-89.99	555.89	-521.35	879.99	837.43	42.57	20.673	
5,657.88	5,318.78	5,660.63	5,319.62	21.55	21.68	-89.99	563.34	-521.43	879.99	837.30	42.70	20.610	
5,700.00	5,331.02	5,702.73	5,331.67	21.90	22.03	-89.98	603.66	-521.88	879.99	836.60	43.39	20.279	
5,709.32	5,333.32	5,712.04	5,333.93	21.98	22.11	-89.97	612.69	-521.98	879.99	836.44	43.56	20.204	
5,750.00	5,341.66	5,752.69	5,342.08	22.33	22.46	-89.96	652.51	-522.43	879.99	835.73	44.26	19.883	
5,759.94	5,343.26	5,762.62	5,343.64	22.42	22.55	-89.96	662.31	-522.54	879.99	835.56	44.44	19.803	
5,800.00	5,348.00	5,802.63	5,348.20	22.78	22.92	-89.95	702.06	-522.98	879.99	834.84	45.15	19.488	
5,809.95	5,348.74	5,812.57	5,348.90	22.87	23.01	-89.95	711.97	-523.09	879.99	834.66	45.34	19.410	
5,847.89	5,350.00	5,850.45	5,350.00	23.22	23.36	-89.93	749.82	-523.51	879.99	833.96	46.04	19.115	
5,860.05	5,350.00	5,862.62	5,350.00	23.34	23.48	-89.93	761.99	-523.65	879.99	833.73	46.27	19.019	
5,900.00	5,350.00	5,902.57	5,350.00	23.72	23.86	-89.93	801.93	-524.09	879.99	832.96	47.03	18.711	
5,923.30	5,350.00	5,925.86	5,350.00	23.95	24.10	-89.93	825.23	-524.35	879.99	832.49	47.50	18.525	
6,000.00	5,350.00	6,002.57	5,350.00	24.73	24.88	-89.93	901.93	-525.21	879.99	830.94	49.06	17.939	
6,023.30	5,350.00	6,025.86	5,350.00	24.98	25.13	-89.93	925.22	-525.47	879.99	830.44	49.56	17.757	
6,100.00	5,350.00	6,102.57	5,350.00	25.81	25.96	-89.93	1,001.92	-526.32	879.99	828.78	51.22	17.181	

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

Anticollision Report

Company:	Steward Energy II, LLC	**Local Co-ordinate Reference:**	Well Heisenberg State 8H
Project:	Lea County, NM (NAD 83) NM East Zone	**TVD Reference:**	GL 3813' + RKB 19' @ 3832.00ft
Reference Site:	Heisenberg State 8H	**MD Reference:**	GL 3813' + RKB 19' @ 3832.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Heisenberg State 8H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	edmdb
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design: Heisenberg State 9H - Heisenberg State 9H - Wellbore #1 - Plan #1

Offset Site Error: 0.00 ft

Survey Program: 0-MWD

Rule Assigned:

Offset Well Error: 0.00 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
6,123.30	5,350.00	6,125.86	5,350.00	26.07	26.23	-89.93	1,025.22	-526.58	879.99	828.24	51.75	17.005	
6,200.00	5,350.00	6,202.57	5,350.00	26.95	27.11	-89.93	1,101.92	-527.44	879.99	826.49	53.50	16.447	
6,223.30	5,350.00	6,225.86	5,350.00	27.22	27.38	-89.93	1,125.21	-527.70	879.99	825.93	54.06	16.278	
6,300.00	5,350.00	6,302.57	5,350.00	28.14	28.30	-89.93	1,201.91	-528.55	879.99	824.10	55.90	15.744	
6,323.30	5,350.00	6,325.86	5,350.00	28.42	28.59	-89.93	1,225.21	-528.81	879.99	823.52	56.47	15.582	
6,400.00	5,350.00	6,402.57	5,350.00	29.37	29.54	-89.93	1,301.90	-529.67	879.99	821.61	58.38	15.073	
6,423.30	5,350.00	6,425.86	5,350.00	29.67	29.84	-89.93	1,325.20	-529.93	879.99	821.01	58.98	14.920	
6,500.00	5,350.00	6,502.57	5,350.00	30.65	30.82	-89.93	1,401.90	-530.78	879.99	819.04	60.95	14.438	
6,523.30	5,350.00	6,525.86	5,350.00	30.95	31.13	-89.93	1,425.19	-531.04	879.99	818.43	61.57	14.294	
6,600.00	5,350.00	6,602.57	5,350.00	31.96	32.14	-89.93	1,501.89	-531.90	879.99	816.40	63.59	13.838	
6,623.30	5,350.00	6,625.86	5,350.00	32.27	32.45	-89.93	1,525.19	-532.16	879.99	815.77	64.22	13.703	
6,700.00	5,350.00	6,702.57	5,350.00	33.31	33.48	-89.93	1,601.88	-533.01	879.99	813.70	66.30	13.274	
6,723.30	5,350.00	6,725.86	5,350.00	33.63	33.80	-89.93	1,625.18	-533.27	879.99	813.06	66.94	13.146	
6,800.00	5,350.00	6,802.57	5,350.00	34.68	34.86	-89.93	1,701.88	-534.13	879.99	810.94	69.06	12.743	
6,823.30	5,350.00	6,825.86	5,350.00	35.00	35.18	-89.93	1,725.17	-534.39	879.99	810.28	69.71	12.623	
6,900.00	5,350.00	6,902.57	5,350.00	36.08	36.26	-89.93	1,801.87	-535.24	879.99	808.13	71.87	12.245	
6,923.30	5,350.00	6,925.86	5,350.00	36.41	36.59	-89.93	1,825.17	-535.50	879.99	807.46	72.53	12.132	
7,000.00	5,350.00	7,002.57	5,350.00	37.50	37.68	-89.93	1,901.87	-536.36	879.99	805.27	74.72	11.777	
7,023.30	5,350.00	7,025.86	5,350.00	37.83	38.01	-89.93	1,925.16	-536.62	879.99	804.60	75.40	11.672	
7,100.00	5,350.00	7,102.57	5,350.00	38.94	39.12	-89.93	2,001.86	-537.47	879.99	802.38	77.62	11.338	
7,123.30	5,350.00	7,125.86	5,350.00	39.28	39.46	-89.93	2,025.16	-537.73	879.99	801.70	78.30	11.239	
7,200.00	5,350.00	7,202.57	5,350.00	40.39	40.58	-89.93	2,101.85	-538.59	879.99	799.45	80.55	10.925	
7,223.30	5,350.00	7,225.86	5,350.00	40.74	40.92	-89.93	2,125.15	-538.84	879.99	798.76	81.24	10.833	
7,300.00	5,350.00	7,302.57	5,350.00	41.87	42.05	-89.93	2,201.85	-539.70	879.99	796.49	83.51	10.538	
7,323.30	5,350.00	7,325.86	5,350.00	42.21	42.40	-89.93	2,225.14	-539.96	879.99	795.79	84.20	10.451	
7,400.00	5,350.00	7,402.57	5,350.00	43.36	43.54	-89.93	2,301.84	-540.81	879.99	793.50	86.50	10.174	
7,423.30	5,350.00	7,425.86	5,350.00	43.71	43.89	-89.93	2,325.14	-541.07	879.99	792.80	87.20	10.092	
7,500.00	5,350.00	7,502.57	5,350.00	44.86	45.05	-89.93	2,401.84	-541.93	879.99	790.49	89.51	9.831	
7,523.30	5,350.00	7,525.86	5,350.00	45.21	45.40	-89.93	2,425.13	-542.19	879.99	789.78	90.22	9.754	
7,600.00	5,350.00	7,602.57	5,350.00	46.37	46.56	-89.93	2,501.83	-543.04	879.99	787.45	92.55	9.509	
7,623.30	5,350.00	7,625.86	5,350.00	46.73	46.91	-89.93	2,525.12	-543.30	879.99	786.74	93.26	9.436	
7,700.00	5,350.00	7,702.57	5,350.00	47.89	48.08	-89.93	2,601.82	-544.16	879.99	784.39	95.60	9.205	
7,723.30	5,350.00	7,725.86	5,350.00	48.25	48.44	-89.93	2,625.12	-544.42	880.00	783.67	96.32	9.136	
7,800.00	5,350.00	7,802.57	5,350.00	49.43	49.62	-89.93	2,701.82	-545.27	880.00	781.31	98.68	8.918	
7,823.30	5,350.00	7,825.86	5,350.00	49.79	49.98	-89.93	2,725.11	-545.53	880.00	780.59	99.40	8.853	
7,900.00	5,350.00	7,902.57	5,350.00	50.97	51.16	-89.93	2,801.81	-546.39	880.00	778.22	101.77	8.647	
7,923.30	5,350.00	7,925.86	5,350.00	51.33	51.52	-89.93	2,825.11	-546.65	880.00	777.50	102.50	8.585	
8,000.00	5,350.00	8,002.57	5,350.00	52.52	52.71	-89.93	2,901.80	-547.50	880.00	775.11	104.88	8.390	
8,023.30	5,350.00	8,025.86	5,350.00	52.88	53.07	-89.93	2,925.10	-547.76	880.00	774.38	105.61	8.332	
8,100.00	5,350.00	8,102.57	5,350.00	54.08	54.27	-89.93	3,001.80	-548.62	880.00	771.99	108.01	8.148	
8,123.30	5,350.00	8,125.86	5,350.00	54.44	54.63	-89.93	3,025.09	-548.88	880.00	771.26	108.74	8.093	
8,200.00	5,350.00	8,202.57	5,350.00	55.64	55.83	-89.93	3,101.79	-549.73	880.00	768.85	111.14	7.918	
8,223.30	5,350.00	8,225.86	5,350.00	56.00	56.20	-89.93	3,125.09	-549.99	880.00	768.12	111.88	7.866	
8,300.00	5,350.00	8,302.57	5,350.00	57.21	57.40	-89.93	3,201.79	-550.85	880.00	765.71	114.29	7.700	
8,323.30	5,350.00	8,325.86	5,350.00	57.58	57.77	-89.93	3,225.08	-551.11	880.00	764.97	115.03	7.650	
8,400.00	5,350.00	8,402.57	5,350.00	58.78	58.98	-89.93	3,301.78	-551.96	880.00	762.55	117.45	7.493	
8,423.30	5,350.00	8,425.86	5,350.00	59.15	59.35	-89.93	3,325.08	-552.22	880.00	761.81	118.19	7.446	
8,500.00	5,350.00	8,502.57	5,350.00	60.37	60.56	-89.93	3,401.77	-553.08	880.00	759.38	120.62	7.296	
8,523.30	5,350.00	8,525.86	5,350.00	60.73	60.93	-89.93	3,425.07	-553.34	880.00	758.64	121.36	7.251	
8,600.00	5,350.00	8,602.57	5,350.00	61.95	62.15	-89.93	3,501.77	-554.19	880.00	756.20	123.80	7.108	
8,623.30	5,350.00	8,625.86	5,350.00	62.32	62.52	-89.93	3,525.06	-554.45	880.00	755.46	124.54	7.066	
8,700.00	5,350.00	8,702.57	5,350.00	63.54	63.74	-89.93	3,601.76	-555.31	880.00	753.01	126.98	6.930	

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

Anticollision Report

Company:	Steward Energy II, LLC	**Local Co-ordinate Reference:**	Well Heisenberg State 8H
Project:	Lea County, NM (NAD 83) NM East Zone	**TVD Reference:**	GL 3813' + RKB 19' @ 3832.00ft
Reference Site:	Heisenberg State 8H	**MD Reference:**	GL 3813' + RKB 19' @ 3832.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Heisenberg State 8H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	edmdb
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design: Heisenberg State 9H - Heisenberg State 9H - Wellbore #1 - Plan #1

Offset Site Error: 0.00 ft

Survey Program: 0-MWD

Rule Assigned:

Offset Well Error: 0.00 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
8,723.30	5,350.00	8,725.86	5,350.00	63.91	64.11	-89.93	3,625.06	-555.57	880.00	752.27	127.73	6.890	
8,800.00	5,350.00	8,802.57	5,350.00	65.14	65.33	-89.93	3,701.75	-556.42	880.00	749.82	130.18	6.760	
8,823.30	5,350.00	8,825.86	5,350.00	65.51	65.70	-89.93	3,725.05	-556.68	880.00	749.07	130.93	6.721	
8,900.00	5,350.00	8,902.57	5,350.00	66.73	66.93	-89.93	3,801.75	-557.54	880.00	746.61	133.38	6.598	
8,923.30	5,350.00	8,925.86	5,350.00	67.11	67.30	-89.93	3,825.04	-557.80	880.00	745.87	134.13	6.561	
9,000.00	5,350.00	9,002.57	5,350.00	68.34	68.53	-89.93	3,901.74	-558.65	880.00	743.40	136.59	6.443	
9,023.30	5,350.00	9,025.86	5,350.00	68.71	68.90	-89.93	3,925.04	-558.91	880.00	742.66	137.34	6.407	
9,100.00	5,350.00	9,102.57	5,350.00	69.94	70.14	-89.93	4,001.74	-559.77	880.00	740.19	139.81	6.294	
9,123.30	5,350.00	9,125.86	5,350.00	70.31	70.51	-89.93	4,025.03	-560.03	880.00	739.44	140.56	6.261	
9,200.00	5,350.00	9,202.57	5,350.00	71.55	71.74	-89.93	4,101.73	-560.88	880.00	736.97	143.03	6.153	
9,223.30	5,350.00	9,225.86	5,350.00	71.92	72.12	-89.93	4,125.03	-561.14	880.00	736.21	143.78	6.120	
9,300.00	5,350.00	9,302.57	5,350.00	73.16	73.36	-89.93	4,201.72	-561.99	880.00	733.74	146.26	6.017	
9,323.30	5,350.00	9,325.86	5,350.00	73.54	73.73	-89.93	4,225.02	-562.25	880.00	732.99	147.01	5.986	
9,400.00	5,350.00	9,402.57	5,350.00	74.77	74.97	-89.93	4,301.72	-563.11	880.00	730.51	149.49	5.887	
9,423.30	5,350.00	9,425.86	5,350.00	75.15	75.35	-89.93	4,325.01	-563.37	880.00	729.75	150.24	5.857	
9,500.00	5,350.00	9,502.57	5,350.00	76.39	76.59	-89.93	4,401.71	-564.22	880.00	727.27	152.73	5.762	
9,523.30	5,350.00	9,525.86	5,350.00	76.77	76.96	-89.93	4,425.01	-564.48	880.00	726.51	153.48	5.734	
9,600.00	5,350.00	9,602.57	5,350.00	78.01	78.20	-89.93	4,501.70	-565.34	880.00	724.03	155.97	5.642	
9,623.30	5,350.00	9,625.86	5,350.00	78.39	78.58	-89.93	4,525.00	-565.60	880.00	723.27	156.73	5.615	
9,700.00	5,350.00	9,702.57	5,350.00	79.63	79.83	-89.93	4,601.70	-566.45	880.00	720.78	159.22	5.527	
9,723.30	5,350.00	9,725.86	5,350.00	80.01	80.20	-89.93	4,624.99	-566.71	880.00	720.02	159.97	5.501	
9,800.00	5,350.00	9,802.57	5,350.00	81.25	81.45	-89.93	4,701.69	-567.57	880.00	717.53	162.47	5.416	
9,823.30	5,350.00	9,825.86	5,350.00	81.63	81.83	-89.93	4,724.99	-567.83	880.00	716.77	163.22	5.391	
9,900.00	5,350.00	9,902.57	5,350.00	82.88	83.07	-89.93	4,801.69	-568.68	880.00	714.28	165.72	5.310	
9,923.30	5,350.00	9,925.86	5,350.00	83.26	83.45	-89.93	4,824.98	-568.94	880.00	713.52	166.48	5.286	
10,000.00	5,350.00	10,002.57	5,350.00	84.50	84.70	-89.93	4,901.68	-569.80	880.00	711.02	168.98	5.208	
10,023.30	5,350.00	10,025.86	5,350.00	84.88	85.08	-89.93	4,924.98	-570.06	880.00	710.26	169.74	5.184	
10,100.00	5,350.00	10,102.57	5,350.00	86.13	86.33	-89.93	5,001.67	-570.91	880.00	707.76	172.24	5.109	
10,123.30	5,350.00	10,125.86	5,350.00	86.51	86.71	-89.93	5,024.97	-571.17	880.00	707.00	173.00	5.087	
10,200.00	5,350.00	10,202.57	5,350.00	87.76	87.96	-89.93	5,101.67	-572.03	880.00	704.49	175.51	5.014	
10,223.30	5,350.00	10,225.86	5,350.00	88.14	88.34	-89.93	5,124.96	-572.29	880.00	703.73	176.27	4.992	
10,300.00	5,350.00	10,302.57	5,350.00	89.40	89.59	-89.93	5,201.66	-573.14	880.00	701.22	178.77	4.922	
10,323.30	5,350.00	10,325.86	5,350.00	89.78	89.97	-89.93	5,224.96	-573.40	880.00	700.46	179.53	4.902	
10,400.00	5,350.00	10,402.57	5,350.00	91.03	91.23	-89.93	5,301.65	-574.26	880.00	697.95	182.04	4.834	
10,423.30	5,350.00	10,425.86	5,350.00	91.41	91.61	-89.93	5,324.95	-574.52	880.00	697.19	182.81	4.814	
10,500.00	5,350.00	10,502.57	5,350.00	92.66	92.86	-89.93	5,401.65	-575.37	880.00	694.68	185.32	4.749	
10,523.30	5,350.00	10,525.86	5,350.00	93.04	93.24	-89.93	5,424.94	-575.63	880.00	693.92	186.08	4.729	
10,600.00	5,350.00	10,602.57	5,350.00	94.30	94.50	-89.93	5,501.64	-576.49	880.00	691.40	188.59	4.666	
10,623.30	5,350.00	10,625.86	5,350.00	94.68	94.88	-89.93	5,524.94	-576.75	880.00	690.64	189.36	4.647	
10,700.00	5,350.00	10,702.57	5,350.00	95.94	96.13	-89.93	5,601.64	-577.60	880.00	688.13	191.87	4.586	
10,723.30	5,350.00	10,725.86	5,350.00	96.32	96.52	-89.93	5,624.93	-577.86	880.00	687.36	192.63	4.568	
10,800.00	5,350.00	10,802.57	5,350.00	97.58	97.77	-89.93	5,701.63	-578.72	880.00	684.85	195.15	4.509	
10,823.30	5,350.00	10,825.86	5,350.00	97.96	98.16	-89.93	5,724.93	-578.98	880.00	684.08	195.92	4.492	
10,900.00	5,350.00	10,902.57	5,350.00	99.22	99.41	-89.93	5,801.62	-579.83	880.00	681.56	198.43	4.435	
10,923.30	5,350.00	10,925.86	5,350.00	99.60	99.80	-89.93	5,824.92	-580.09	880.00	680.80	199.20	4.418	
11,000.00	5,350.00	11,002.57	5,350.00	100.86	101.05	-89.93	5,901.62	-580.95	880.00	678.28	201.72	4.362	
11,023.30	5,350.00	11,025.86	5,350.00	101.24	101.44	-89.93	5,924.91	-581.21	880.00	677.51	202.48	4.346	
11,100.00	5,350.00	11,102.57	5,350.00	102.50	102.70	-89.93	6,001.61	-582.06	880.00	674.99	205.01	4.293	
11,123.30	5,350.00	11,125.86	5,350.00	102.88	103.08	-89.93	6,024.91	-582.32	880.00	674.23	205.77	4.277	
11,200.00	5,350.00	11,202.57	5,350.00	104.14	104.34	-89.93	6,101.61	-583.18	880.00	671.70	208.29	4.225	
11,223.30	5,350.00	11,225.86	5,350.00	104.52	104.72	-89.93	6,124.90	-583.43	880.00	670.94	209.06	4.209	
11,300.00	5,350.00	11,302.57	5,350.00	105.79	105.98	-89.93	6,201.60	-584.29	880.00	668.41	211.59	4.159	

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

Anticollision Report

Company:	Steward Energy II, LLC	**Local Co-ordinate Reference:**	Well Heisenberg State 8H
Project:	Lea County, NM (NAD 83) NM East Zone	**TVD Reference:**	GL 3813' + RKB 19' @ 3832.00ft
Reference Site:	Heisenberg State 8H	**MD Reference:**	GL 3813' + RKB 19' @ 3832.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Heisenberg State 8H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	edmdb
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design: Heisenberg State 9H - Heisenberg State 9H - Wellbore #1 - Plan #1

Offset Site Error: 0.00 ft

Survey Program: 0-MWD

Rule Assigned:

Offset Well Error: 0.00 ft

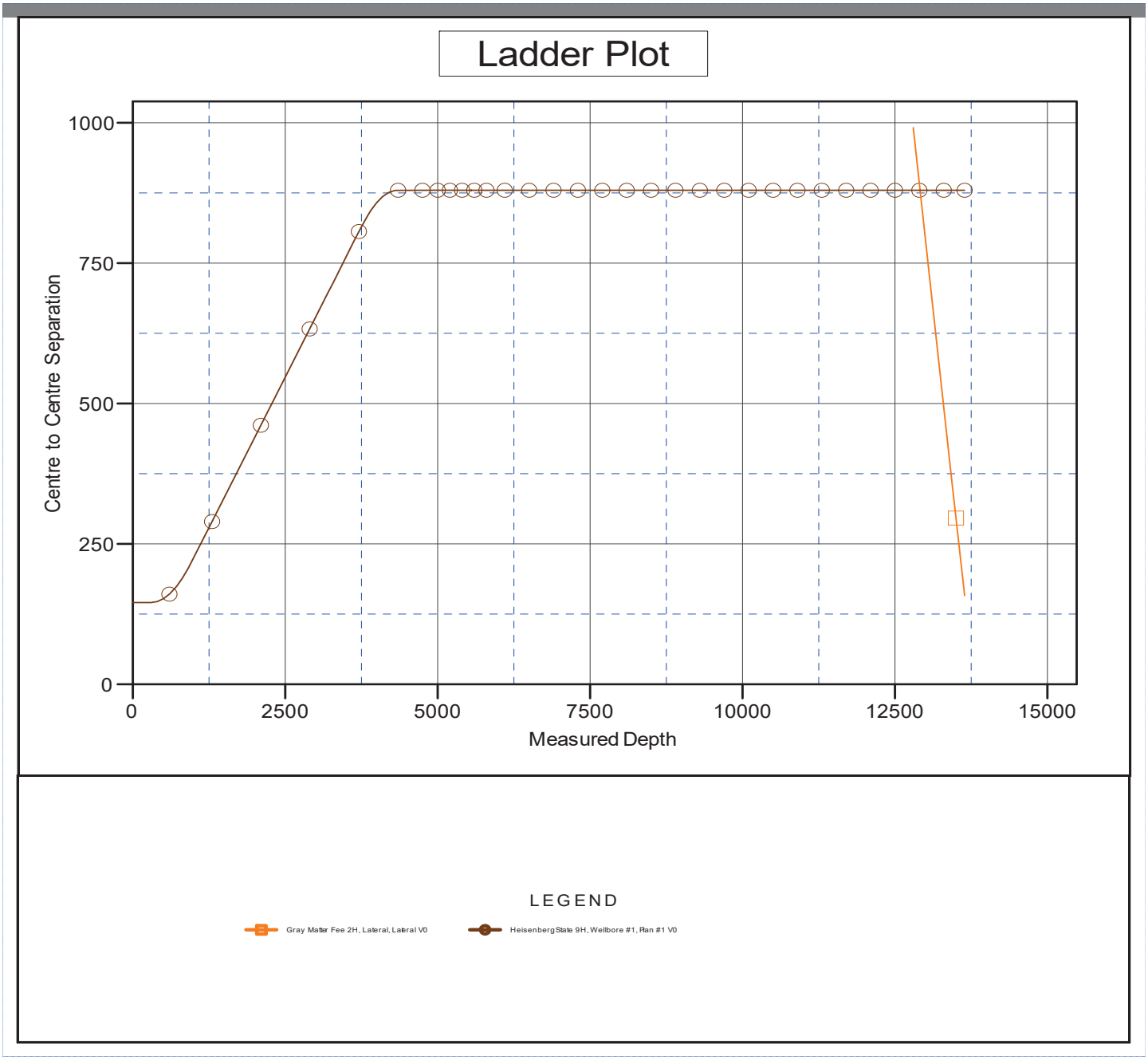
Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
11,323.30	5,350.00	11,325.86	5,350.00	106.17	106.37	-89.93	6,224.90	-584.55	880.00	667.65	212.35	4.144	
11,400.00	5,350.00	11,402.57	5,350.00	107.43	107.63	-89.93	6,301.59	-585.40	880.00	665.12	214.88	4.095	
11,423.30	5,350.00	11,425.86	5,350.00	107.81	108.01	-89.93	6,324.89	-585.66	880.00	664.35	215.64	4.081	
11,500.00	5,350.00	11,502.57	5,350.00	109.08	109.27	-89.93	6,401.59	-586.52	880.00	661.83	218.17	4.034	
11,523.30	5,350.00	11,525.86	5,350.00	109.46	109.66	-89.93	6,424.88	-586.78	880.00	661.06	218.94	4.019	
11,600.00	5,350.00	11,602.57	5,350.00	110.72	110.92	-89.93	6,501.58	-587.63	880.00	658.53	221.47	3.973	
11,623.30	5,350.00	11,625.86	5,350.00	111.11	111.30	-89.93	6,524.88	-587.89	880.00	657.76	222.23	3.960	
11,700.00	5,350.00	11,702.57	5,350.00	112.37	112.57	-89.93	6,601.57	-588.75	880.00	655.23	224.76	3.915	
11,723.30	5,350.00	11,725.86	5,350.00	112.75	112.95	-89.93	6,624.87	-589.01	880.00	654.47	225.53	3.902	
11,800.00	5,350.00	11,802.57	5,350.00	114.02	114.22	-89.93	6,701.57	-589.86	880.00	651.94	228.06	3.859	
11,823.30	5,350.00	11,825.86	5,350.00	114.40	114.60	-89.93	6,724.86	-590.12	880.00	651.17	228.83	3.846	
11,900.00	5,350.00	11,902.57	5,350.00	115.67	115.86	-89.93	6,801.56	-590.98	880.00	648.64	231.36	3.804	
11,923.30	5,350.00	11,925.86	5,350.00	116.05	116.25	-89.93	6,824.86	-591.24	880.00	647.87	232.13	3.791	
12,000.00	5,350.00	12,002.57	5,350.00	117.32	117.51	-89.93	6,901.56	-592.09	880.00	645.33	234.66	3.750	
12,023.30	5,350.00	12,025.86	5,350.00	117.70	117.90	-89.93	6,924.85	-592.35	880.00	644.57	235.43	3.738	
12,100.00	5,350.00	12,102.57	5,350.00	118.97	119.16	-89.93	7,001.55	-593.21	880.00	642.03	237.97	3.698	
12,123.30	5,350.00	12,125.86	5,350.00	119.35	119.55	-89.93	7,024.85	-593.47	880.00	641.26	238.74	3.686	
12,200.00	5,350.00	12,202.57	5,350.00	120.62	120.81	-89.93	7,101.54	-594.32	880.00	638.73	241.27	3.647	
12,223.30	5,350.00	12,225.86	5,350.00	121.00	121.20	-89.93	7,124.84	-594.58	880.00	637.96	242.04	3.636	
12,300.00	5,350.00	12,302.57	5,350.00	122.27	122.47	-89.93	7,201.54	-595.44	880.00	635.42	244.57	3.598	
12,323.30	5,350.00	12,325.86	5,350.00	122.65	122.85	-89.93	7,224.83	-595.70	880.00	634.65	245.34	3.587	
12,400.00	5,350.00	12,402.57	5,350.00	123.92	124.12	-89.93	7,301.53	-596.55	880.00	632.12	247.88	3.550	
12,423.30	5,350.00	12,425.86	5,350.00	124.31	124.50	-89.93	7,324.83	-596.81	880.00	631.35	248.65	3.539	
12,500.00	5,350.00	12,502.57	5,350.00	125.57	125.77	-89.93	7,401.52	-597.67	880.00	628.81	251.19	3.503	
12,523.30	5,350.00	12,525.86	5,350.00	125.96	126.16	-89.93	7,424.82	-597.93	880.00	628.04	251.96	3.493	
12,600.00	5,350.00	12,602.57	5,350.00	127.23	127.42	-89.93	7,501.52	-598.78	880.00	625.50	254.50	3.458	
12,623.30	5,350.00	12,625.86	5,350.00	127.61	127.81	-89.93	7,524.81	-599.04	880.00	624.73	255.27	3.447	
12,700.00	5,350.00	12,702.57	5,350.00	128.88	129.08	-89.93	7,601.51	-599.90	880.00	622.19	257.80	3.413	
12,723.30	5,350.00	12,725.86	5,350.00	129.26	129.46	-89.93	7,624.81	-600.16	880.00	621.42	258.58	3.403	
12,800.00	5,350.00	12,802.57	5,350.00	130.53	130.73	-89.93	7,701.51	-601.01	880.00	618.88	261.11	3.370	
12,823.30	5,350.00	12,825.86	5,350.00	130.92	131.12	-89.93	7,724.80	-601.27	880.00	618.11	261.89	3.360	
12,900.00	5,350.00	12,902.57	5,350.00	132.19	132.39	-89.93	7,801.50	-602.13	880.00	615.57	264.43	3.328	
12,923.30	5,350.00	12,925.86	5,350.00	132.57	132.77	-89.93	7,824.80	-602.39	880.00	614.80	265.20	3.318	
13,000.00	5,350.00	13,002.57	5,350.00	133.84	134.04	-89.93	7,901.49	-603.24	880.00	612.26	267.74	3.287	
13,023.30	5,350.00	13,025.86	5,350.00	134.23	134.43	-89.93	7,924.79	-603.50	880.00	611.49	268.51	3.277	
13,100.00	5,350.00	13,102.57	5,350.00	135.50	135.70	-89.93	8,001.49	-604.36	880.00	608.95	271.05	3.247	
13,123.30	5,350.00	13,125.86	5,350.00	135.88	136.08	-89.93	8,024.78	-604.62	880.00	608.18	271.82	3.237	
13,200.00	5,350.00	13,202.57	5,350.00	137.15	137.35	-89.93	8,101.48	-605.47	880.00	605.64	274.36	3.207	
13,223.30	5,350.00	13,225.86	5,350.00	137.54	137.74	-89.93	8,124.78	-605.73	880.00	604.86	275.14	3.198	
13,300.00	5,350.00	13,302.57	5,350.00	138.81	139.01	-89.93	8,201.47	-606.58	880.00	602.32	277.68	3.169	
13,323.30	5,350.00	13,325.86	5,350.00	139.20	139.39	-89.93	8,224.77	-606.84	880.00	601.55	278.45	3.160	
13,400.00	5,350.00	13,402.57	5,350.00	140.47	140.67	-89.93	8,301.47	-607.70	880.00	599.01	280.99	3.132	
13,423.30	5,350.00	13,425.86	5,350.00	140.85	141.05	-89.93	8,324.76	-607.96	880.00	598.23	281.77	3.123	
13,500.00	5,350.00	13,502.57	5,350.00	142.12	142.32	-89.93	8,401.46	-608.81	880.00	595.69	284.31	3.095	
13,523.30	5,350.00	13,525.86	5,350.00	142.51	142.71	-89.93	8,424.76	-609.07	880.00	594.92	285.08	3.087	
13,600.00	5,350.00	13,602.57	5,350.00	143.78	143.98	-89.93	8,501.46	-609.93	880.00	592.37	287.62	3.060	
13,610.36	5,350.00	13,612.93	5,350.00	143.95	144.15	-89.93	8,511.82	-610.04	880.00	592.03	287.97	3.056	
13,644.37	5,350.00	13,646.94	5,350.00	144.52	144.72	-89.93	8,545.83	-610.42	880.00	590.90	289.10	3.044	SF

Anticollision Report

Company:	Steward Energy II, LLC	**Local Co-ordinate Reference:**	Well Heisenberg State 8H
Project:	Lea County, NM (NAD 83) NM East Zone	**TVD Reference:**	GL 3813' + RKB 19' @ 3832.00ft
Reference Site:	Heisenberg State 8H	**MD Reference:**	GL 3813' + RKB 19' @ 3832.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Heisenberg State 8H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	edmdb
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to GL 3813' + RKB 19' @ 3832.00ft
Offset Depths are relative to Offset Datum
Central Meridian is 104.333°W

Coordinates are relative to: Heisenberg State 8H
Coordinate System is US State Plane 1983, New Mexico Eastern Zone
Grid Convergence at Surface is: 0.67°

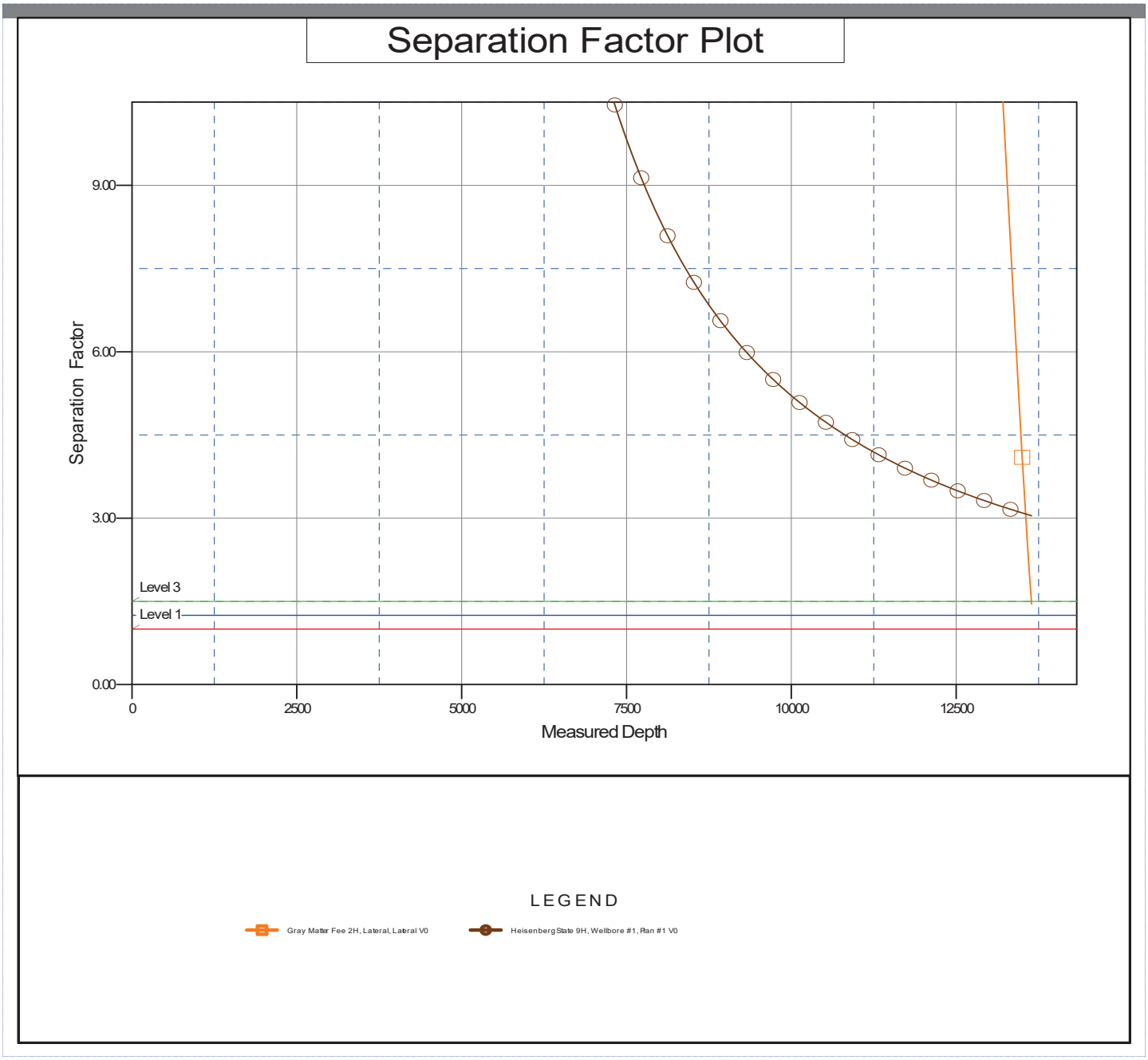


Anticollision Report

Company:	Steward Energy II, LLC	**Local Co-ordinate Reference:**	Well Heisenberg State 8H
Project:	Lea County, NM (NAD 83) NM East Zone	**TVD Reference:**	GL 3813' + RKB 19' @ 3832.00ft
Reference Site:	Heisenberg State 8H	**MD Reference:**	GL 3813' + RKB 19' @ 3832.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Heisenberg State 8H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	edmdb
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to GL 3813' + RKB 19' @ 3832.00ft
Offset Depths are relative to Offset Datum
Central Meridian is 104.333°W

Coordinates are relative to: Heisenberg State 8H
Coordinate System is US State Plane 1983, New Mexico Eastern Zone
Grid Convergence at Surface is: 0.67°



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

Steward Energy II, LLC

DrilTech, LLC

Lea County, NM (NAD 83) NM East Zone
Heisenberg State 8H
Heisenberg State 8H
Wellbore #1
Plan #1

STEWARD ENERGY II

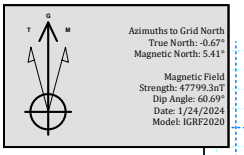
SURFACE LOCATION			
US State Plane 1983 New Mexico Eastern Zone Elevation: GL 3813' + RKB 19' @ 3832.00ft			
Northing	Easting	Latittude	Longitude
777658.69	919109.95	33.132°N	103.099°W

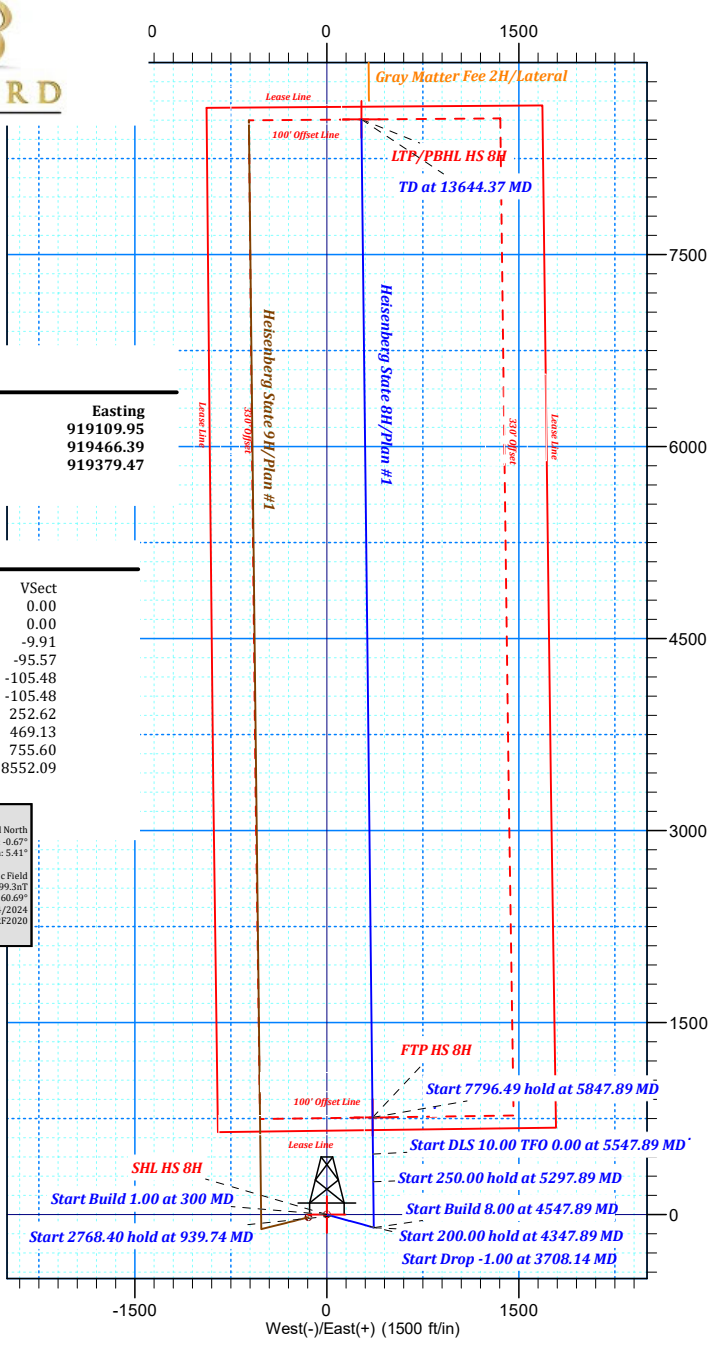
WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

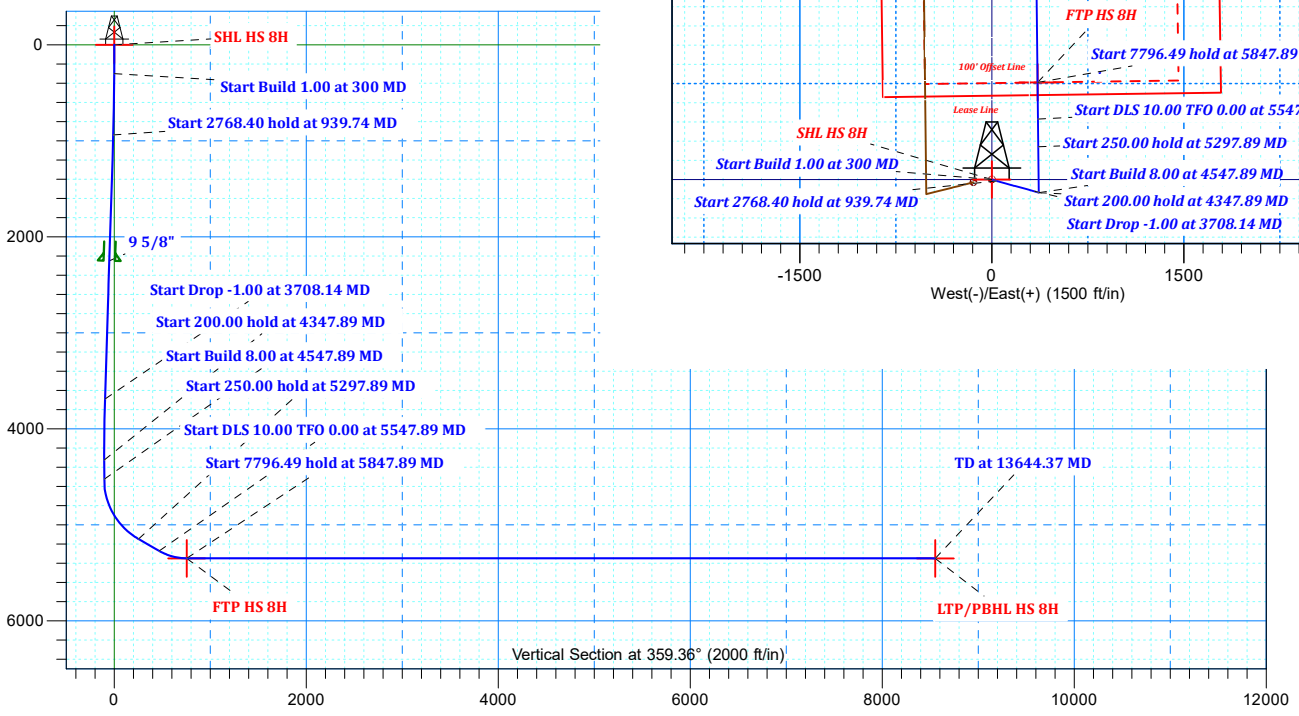
Name	TVD	+N/-S	+E/-W	Northing	Easting
SHL HS 8H	0.00	0.00	0.00	777658.69	919109.95
FTP HS 8H	5350.00	759.63	356.44	778418.32	919466.39
LTP/PBHL HS 8H	5350.00	8555.64	269.52	786214.31	919379.47

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	VSect
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
939.74	6.40	105.48	938.42	-9.52	34.38	1.00	-9.91
3708.14	6.40	105.48	3689.57	-91.87	331.66	0.00	-95.57
4347.89	0.00	0.00	4327.99	-101.40	366.04	1.00	-105.48
4547.89	0.00	0.00	4527.99	-101.40	366.04	0.00	-105.48
5297.89	60.00	359.36	5148.24	256.68	362.04	8.00	252.62
5547.89	60.00	359.36	5273.24	473.17	359.62	0.00	469.13
5847.89	90.00	359.36	5350.00	759.63	356.43	10.00	755.60
13644.37	90.00	359.36	5350.00	8555.64	269.52	0.00	8552.09







Steward Energy II, LLC

Lea County, NM (NAD 83) NM East Zone
Heisenberg State 8H
Heisenberg State 8H

Wellbore #1

Plan: Plan #1

Standard Planning Report

24 January, 2024

Planning Report

Database:	edmdb	**Local Co-ordinate Reference:**	Well Heisenberg State 8H
Company:	Steward Energy II, LLC	**TVD Reference:**	GL 3813' + RKB 19' @ 3832.00ft
Project:	Lea County, NM (NAD 83) NM East Zone	**MD Reference:**	GL 3813' + RKB 19' @ 3832.00ft
Site:	Heisenberg State 8H	**North Reference:**	Grid
Well:	Heisenberg State 8H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1		

Project Lea County, NM (NAD 83) NM East Zone

Map System:	US State Plane 1983	**System Datum:**	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site Heisenberg State 8H

Site Position:		**Northing:**	777,658.69 usft	**Latitude:**	33.132°N
From:	Map	**Easting:**	919,109.95 usft	**Longitude:**	103.099°W
Position Uncertainty:	0.00 ft	**Slot Radius:**	13.200 in		

Well Heisenberg State 8H

Well Position	**+N/-S**	0.00 ft	**Northing:**	777,658.69 usft	**Latitude:**	33.132°N
	+E/-W	0.00 ft	**Easting:**	919,109.95 usft	**Longitude:**	103.099°W
Position Uncertainty		0.00 ft	**Wellhead Elevation:**	ft	**Ground Level:**	3,813.00 ft
Grid Convergence:		0.67 °				

Wellbore Wellbore #1

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2020	1/24/2024	6.08	60.69	47,799.34310632

Design Plan #1

Audit Notes:

Version:		**Phase:**	PLAN	**Tie On Depth:**	0.00

Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	359.36

Plan Survey Tool Program **Date** 1/24/2024

	Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	13,644.37	Plan #1 (Wellbore #1)	MWD	
				MWD - Standard	

Planning Report

Database:	edmdb	**Local Co-ordinate Reference:**	Well Heisenberg State 8H
Company:	Steward Energy II, LLC	**TVD Reference:**	GL 3813' + RKB 19' @ 3832.00ft
Project:	Lea County, NM (NAD 83) NM East Zone	**MD Reference:**	GL 3813' + RKB 19' @ 3832.00ft
Site:	Heisenberg State 8H	**North Reference:**	Grid
Well:	Heisenberg State 8H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1		

Plan Sections

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	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	
939.74	6.40	105.48	938.42	-9.52	34.38	1.00	1.00	0.00	105.48	
3,708.14	6.40	105.48	3,689.57	-91.87	331.66	0.00	0.00	0.00	0.00	
4,347.89	0.00	0.00	4,327.99	-101.40	366.04	1.00	-1.00	0.00	180.00	
4,547.89	0.00	0.00	4,527.99	-101.40	366.04	0.00	0.00	0.00	0.00	
5,297.89	60.00	359.36	5,148.24	256.68	362.04	8.00	8.00	0.00	359.36	
5,547.89	60.00	359.36	5,273.24	473.17	359.62	0.00	0.00	0.00	0.00	
5,847.89	90.00	359.36	5,350.00	759.63	356.43	10.00	10.00	0.00	0.00	
13,644.37	90.00	359.36	5,350.00	8,555.64	269.52	0.00	0.00	0.00	0.00	LTP/PBHL HS 8H

Planning Report

Database:	edmdb	**Local Co-ordinate Reference:**	Well Heisenberg State 8H
Company:	Steward Energy II, LLC	**TVD Reference:**	GL 3813' + RKB 19' @ 3832.00ft
Project:	Lea County, NM (NAD 83) NM East Zone	**MD Reference:**	GL 3813' + RKB 19' @ 3832.00ft
Site:	Heisenberg State 8H	**North Reference:**	Grid
Well:	Heisenberg State 8H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
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
Start Build 1.00 at 300 MD									
400.00	1.00	105.48	399.99	-0.23	0.84	-0.24	1.00	1.00	0.00
500.00	2.00	105.48	499.96	-0.93	3.36	-0.97	1.00	1.00	0.00
600.00	3.00	105.48	599.86	-2.10	7.57	-2.18	1.00	1.00	0.00
700.00	4.00	105.48	699.68	-3.73	13.45	-3.88	1.00	1.00	0.00
800.00	5.00	105.48	799.37	-5.82	21.01	-6.05	1.00	1.00	0.00
900.00	6.00	105.48	898.90	-8.38	30.25	-8.72	1.00	1.00	0.00
939.74	6.40	105.48	938.42	-9.52	34.38	-9.91	1.00	1.00	0.00
Start 2768.40 hold at 939.74 MD									
1,000.00	6.40	105.48	998.30	-11.32	40.85	-11.77	0.00	0.00	0.00
1,100.00	6.40	105.48	1,097.67	-14.29	51.59	-14.87	0.00	0.00	0.00
1,200.00	6.40	105.48	1,197.05	-17.27	62.33	-17.96	0.00	0.00	0.00
1,300.00	6.40	105.48	1,296.43	-20.24	73.07	-21.06	0.00	0.00	0.00
1,400.00	6.40	105.48	1,395.81	-23.22	83.81	-24.15	0.00	0.00	0.00
1,500.00	6.40	105.48	1,495.18	-26.19	94.54	-27.24	0.00	0.00	0.00
1,600.00	6.40	105.48	1,594.56	-29.16	105.28	-30.34	0.00	0.00	0.00
1,700.00	6.40	105.48	1,693.94	-32.14	116.02	-33.43	0.00	0.00	0.00
1,800.00	6.40	105.48	1,793.31	-35.11	126.76	-36.53	0.00	0.00	0.00
1,900.00	6.40	105.48	1,892.69	-38.09	137.50	-39.62	0.00	0.00	0.00
2,000.00	6.40	105.48	1,992.07	-41.06	148.24	-42.72	0.00	0.00	0.00
2,100.00	6.40	105.48	2,091.45	-44.04	158.97	-45.81	0.00	0.00	0.00
2,200.00	6.40	105.48	2,190.82	-47.01	169.71	-48.90	0.00	0.00	0.00
2,259.55	6.40	105.48	2,250.00	-48.78	176.11	-50.75	0.00	0.00	0.00
9 5/8"									
2,300.00	6.40	105.48	2,290.20	-49.99	180.45	-52.00	0.00	0.00	0.00
2,400.00	6.40	105.48	2,389.58	-52.96	191.19	-55.09	0.00	0.00	0.00
2,500.00	6.40	105.48	2,488.96	-55.94	201.93	-58.19	0.00	0.00	0.00
2,600.00	6.40	105.48	2,588.33	-58.91	212.66	-61.28	0.00	0.00	0.00
2,700.00	6.40	105.48	2,687.71	-61.88	223.40	-64.38	0.00	0.00	0.00
2,800.00	6.40	105.48	2,787.09	-64.86	234.14	-67.47	0.00	0.00	0.00
2,900.00	6.40	105.48	2,886.46	-67.83	244.88	-70.56	0.00	0.00	0.00
3,000.00	6.40	105.48	2,985.84	-70.81	255.62	-73.66	0.00	0.00	0.00
3,100.00	6.40	105.48	3,085.22	-73.78	266.35	-76.75	0.00	0.00	0.00
3,200.00	6.40	105.48	3,184.60	-76.76	277.09	-79.85	0.00	0.00	0.00
3,300.00	6.40	105.48	3,283.97	-79.73	287.83	-82.94	0.00	0.00	0.00
3,400.00	6.40	105.48	3,383.35	-82.71	298.57	-86.04	0.00	0.00	0.00
3,500.00	6.40	105.48	3,482.73	-85.68	309.31	-89.13	0.00	0.00	0.00
3,600.00	6.40	105.48	3,582.11	-88.66	320.04	-92.22	0.00	0.00	0.00
3,700.00	6.40	105.48	3,681.48	-91.63	330.78	-95.32	0.00	0.00	0.00
3,708.14	6.40	105.48	3,689.57	-91.87	331.66	-95.57	0.00	0.00	0.00
Start Drop -1.00 at 3708.14 MD									
3,800.00	5.48	105.48	3,780.94	-94.41	340.81	-98.21	1.00	-1.00	0.00
3,900.00	4.48	105.48	3,880.56	-96.73	349.18	-100.62	1.00	-1.00	0.00
4,000.00	3.48	105.48	3,980.32	-98.58	355.87	-102.55	1.00	-1.00	0.00
4,100.00	2.48	105.48	4,080.18	-99.97	360.87	-103.99	1.00	-1.00	0.00
4,200.00	1.48	105.48	4,180.12	-100.89	364.20	-104.95	1.00	-1.00	0.00
4,300.00	0.48	105.48	4,280.10	-101.34	365.85	-105.42	1.00	-1.00	0.00
4,347.89	0.00	0.00	4,327.99	-101.40	366.04	-105.48	1.00	-1.00	0.00
Start 200.00 hold at 4347.89 MD									
4,400.00	0.00	0.00	4,380.10	-101.40	366.04	-105.48	0.00	0.00	0.00

Planning Report

Database:	edmdb	**Local Co-ordinate Reference:**	Well Heisenberg State 8H
Company:	Steward Energy II, LLC	**TVD Reference:**	GL 3813' + RKB 19' @ 3832.00ft
Project:	Lea County, NM (NAD 83) NM East Zone	**MD Reference:**	GL 3813' + RKB 19' @ 3832.00ft
Site:	Heisenberg State 8H	**North Reference:**	Grid
Well:	Heisenberg State 8H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
4,500.00	0.00	0.00	4,480.10	-101.40	366.04	-105.48	0.00	0.00	0.00
4,547.89	0.00	0.00	4,527.99	-101.40	366.04	-105.48	0.00	0.00	0.00
Start Build 8.00 at 4547.89 MD									
4,600.00	4.17	359.36	4,580.06	-99.50	366.02	-103.58	8.00	8.00	0.00
4,700.00	12.17	359.36	4,678.96	-85.30	365.86	-89.39	8.00	8.00	0.00
4,800.00	20.17	359.36	4,774.93	-57.48	365.55	-61.56	8.00	8.00	0.00
4,900.00	28.17	359.36	4,866.09	-16.57	365.09	-20.65	8.00	8.00	0.00
5,000.00	36.17	359.36	4,950.67	36.62	364.50	32.55	8.00	8.00	0.00
5,100.00	44.17	359.36	5,027.02	101.07	363.78	97.00	8.00	8.00	0.00
5,200.00	52.17	359.36	5,093.66	175.52	362.95	171.45	8.00	8.00	0.00
5,297.89	60.00	359.36	5,148.24	256.68	362.04	252.62	8.00	8.00	0.00
Start 250.00 hold at 5297.89 MD									
5,300.00	60.00	359.36	5,149.29	258.51	362.02	254.45	0.00	0.00	0.00
5,400.00	60.00	359.36	5,199.29	345.11	361.05	341.05	0.00	0.00	0.00
5,500.00	60.00	359.36	5,249.29	431.70	360.09	427.66	0.00	0.00	0.00
5,547.89	60.00	359.36	5,273.24	473.17	359.62	469.13	0.00	0.00	0.00
Start DLS 10.00 TFO 0.00 at 5547.89 MD									
5,600.00	65.21	359.36	5,297.21	519.42	359.11	515.38	10.00	10.00	0.00
5,700.00	75.21	359.36	5,331.02	613.39	358.06	609.36	10.00	10.00	0.00
5,800.00	85.21	359.36	5,348.00	711.81	356.96	707.77	10.00	10.00	0.00
5,847.89	90.00	359.36	5,350.00	759.63	356.43	755.60	10.00	10.00	0.00
Start 7796.49 hold at 5847.89 MD									
5,900.00	90.00	359.36	5,350.00	811.74	355.85	807.72	0.00	0.00	0.00
6,000.00	90.00	359.36	5,350.00	911.74	354.73	907.72	0.00	0.00	0.00
6,100.00	90.00	359.36	5,350.00	1,011.73	353.62	1,007.72	0.00	0.00	0.00
6,200.00	90.00	359.36	5,350.00	1,111.73	352.50	1,107.72	0.00	0.00	0.00
6,300.00	90.00	359.36	5,350.00	1,211.72	351.39	1,207.72	0.00	0.00	0.00
6,400.00	90.00	359.36	5,350.00	1,311.71	350.27	1,307.72	0.00	0.00	0.00
6,500.00	90.00	359.36	5,350.00	1,411.71	349.16	1,407.72	0.00	0.00	0.00
6,600.00	90.00	359.36	5,350.00	1,511.70	348.04	1,507.72	0.00	0.00	0.00
6,700.00	90.00	359.36	5,350.00	1,611.69	346.93	1,607.72	0.00	0.00	0.00
6,800.00	90.00	359.36	5,350.00	1,711.69	345.81	1,707.72	0.00	0.00	0.00
6,900.00	90.00	359.36	5,350.00	1,811.68	344.70	1,807.72	0.00	0.00	0.00
7,000.00	90.00	359.36	5,350.00	1,911.68	343.58	1,907.72	0.00	0.00	0.00
7,100.00	90.00	359.36	5,350.00	2,011.67	342.47	2,007.72	0.00	0.00	0.00
7,200.00	90.00	359.36	5,350.00	2,111.66	341.35	2,107.72	0.00	0.00	0.00
7,300.00	90.00	359.36	5,350.00	2,211.66	340.24	2,207.72	0.00	0.00	0.00
7,400.00	90.00	359.36	5,350.00	2,311.65	339.12	2,307.72	0.00	0.00	0.00
7,500.00	90.00	359.36	5,350.00	2,411.64	338.01	2,407.72	0.00	0.00	0.00
7,600.00	90.00	359.36	5,350.00	2,511.64	336.90	2,507.72	0.00	0.00	0.00
7,700.00	90.00	359.36	5,350.00	2,611.63	335.78	2,607.72	0.00	0.00	0.00
7,800.00	90.00	359.36	5,350.00	2,711.63	334.67	2,707.72	0.00	0.00	0.00
7,900.00	90.00	359.36	5,350.00	2,811.62	333.55	2,807.72	0.00	0.00	0.00
8,000.00	90.00	359.36	5,350.00	2,911.61	332.44	2,907.72	0.00	0.00	0.00
8,100.00	90.00	359.36	5,350.00	3,011.61	331.32	3,007.72	0.00	0.00	0.00
8,200.00	90.00	359.36	5,350.00	3,111.60	330.21	3,107.72	0.00	0.00	0.00
8,300.00	90.00	359.36	5,350.00	3,211.60	329.09	3,207.72	0.00	0.00	0.00
8,400.00	90.00	359.36	5,350.00	3,311.59	327.98	3,307.72	0.00	0.00	0.00
8,500.00	90.00	359.36	5,350.00	3,411.58	326.86	3,407.72	0.00	0.00	0.00
8,600.00	90.00	359.36	5,350.00	3,511.58	325.75	3,507.72	0.00	0.00	0.00
8,700.00	90.00	359.36	5,350.00	3,611.57	324.63	3,607.72	0.00	0.00	0.00
8,800.00	90.00	359.36	5,350.00	3,711.56	323.52	3,707.72	0.00	0.00	0.00
8,900.00	90.00	359.36	5,350.00	3,811.56	322.40	3,807.72	0.00	0.00	0.00

Planning Report

Database:	edmdb	**Local Co-ordinate Reference:**	Well Heisenberg State 8H
Company:	Steward Energy II, LLC	**TVD Reference:**	GL 3813' + RKB 19' @ 3832.00ft
Project:	Lea County, NM (NAD 83) NM East Zone	**MD Reference:**	GL 3813' + RKB 19' @ 3832.00ft
Site:	Heisenberg State 8H	**North Reference:**	Grid
Well:	Heisenberg State 8H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
9,000.00	90.00	359.36	5,350.00	3,911.55	321.29	3,907.72	0.00	0.00	0.00
9,100.00	90.00	359.36	5,350.00	4,011.55	320.18	4,007.72	0.00	0.00	0.00
9,200.00	90.00	359.36	5,350.00	4,111.54	319.06	4,107.72	0.00	0.00	0.00
9,300.00	90.00	359.36	5,350.00	4,211.53	317.95	4,207.72	0.00	0.00	0.00
9,400.00	90.00	359.36	5,350.00	4,311.53	316.83	4,307.72	0.00	0.00	0.00
9,500.00	90.00	359.36	5,350.00	4,411.52	315.72	4,407.72	0.00	0.00	0.00
9,600.00	90.00	359.36	5,350.00	4,511.51	314.60	4,507.72	0.00	0.00	0.00
9,700.00	90.00	359.36	5,350.00	4,611.51	313.49	4,607.72	0.00	0.00	0.00
9,800.00	90.00	359.36	5,350.00	4,711.50	312.37	4,707.72	0.00	0.00	0.00
9,900.00	90.00	359.36	5,350.00	4,811.50	311.26	4,807.72	0.00	0.00	0.00
10,000.00	90.00	359.36	5,350.00	4,911.49	310.14	4,907.72	0.00	0.00	0.00
10,100.00	90.00	359.36	5,350.00	5,011.48	309.03	5,007.72	0.00	0.00	0.00
10,200.00	90.00	359.36	5,350.00	5,111.48	307.91	5,107.72	0.00	0.00	0.00
10,300.00	90.00	359.36	5,350.00	5,211.47	306.80	5,207.72	0.00	0.00	0.00
10,400.00	90.00	359.36	5,350.00	5,311.46	305.68	5,307.72	0.00	0.00	0.00
10,500.00	90.00	359.36	5,350.00	5,411.46	304.57	5,407.72	0.00	0.00	0.00
10,600.00	90.00	359.36	5,350.00	5,511.45	303.46	5,507.72	0.00	0.00	0.00
10,700.00	90.00	359.36	5,350.00	5,611.45	302.34	5,607.72	0.00	0.00	0.00
10,800.00	90.00	359.36	5,350.00	5,711.44	301.23	5,707.72	0.00	0.00	0.00
10,900.00	90.00	359.36	5,350.00	5,811.43	300.11	5,807.72	0.00	0.00	0.00
11,000.00	90.00	359.36	5,350.00	5,911.43	299.00	5,907.72	0.00	0.00	0.00
11,100.00	90.00	359.36	5,350.00	6,011.42	297.88	6,007.72	0.00	0.00	0.00
11,200.00	90.00	359.36	5,350.00	6,111.42	296.77	6,107.72	0.00	0.00	0.00
11,300.00	90.00	359.36	5,350.00	6,211.41	295.65	6,207.72	0.00	0.00	0.00
11,400.00	90.00	359.36	5,350.00	6,311.40	294.54	6,307.72	0.00	0.00	0.00
11,500.00	90.00	359.36	5,350.00	6,411.40	293.42	6,407.72	0.00	0.00	0.00
11,600.00	90.00	359.36	5,350.00	6,511.39	292.31	6,507.72	0.00	0.00	0.00
11,700.00	90.00	359.36	5,350.00	6,611.38	291.19	6,607.72	0.00	0.00	0.00
11,800.00	90.00	359.36	5,350.00	6,711.38	290.08	6,707.72	0.00	0.00	0.00
11,900.00	90.00	359.36	5,350.00	6,811.37	288.96	6,807.72	0.00	0.00	0.00
12,000.00	90.00	359.36	5,350.00	6,911.37	287.85	6,907.72	0.00	0.00	0.00
12,100.00	90.00	359.36	5,350.00	7,011.36	286.74	7,007.72	0.00	0.00	0.00
12,200.00	90.00	359.36	5,350.00	7,111.35	285.62	7,107.72	0.00	0.00	0.00
12,300.00	90.00	359.36	5,350.00	7,211.35	284.51	7,207.72	0.00	0.00	0.00
12,400.00	90.00	359.36	5,350.00	7,311.34	283.39	7,307.72	0.00	0.00	0.00
12,500.00	90.00	359.36	5,350.00	7,411.33	282.28	7,407.72	0.00	0.00	0.00
12,600.00	90.00	359.36	5,350.00	7,511.33	281.16	7,507.72	0.00	0.00	0.00
12,700.00	90.00	359.36	5,350.00	7,611.32	280.05	7,607.72	0.00	0.00	0.00
12,800.00	90.00	359.36	5,350.00	7,711.32	278.93	7,707.72	0.00	0.00	0.00
12,900.00	90.00	359.36	5,350.00	7,811.31	277.82	7,807.72	0.00	0.00	0.00
13,000.00	90.00	359.36	5,350.00	7,911.30	276.70	7,907.72	0.00	0.00	0.00
13,100.00	90.00	359.36	5,350.00	8,011.30	275.59	8,007.72	0.00	0.00	0.00
13,200.00	90.00	359.36	5,350.00	8,111.29	274.47	8,107.72	0.00	0.00	0.00
13,300.00	90.00	359.36	5,350.00	8,211.28	273.36	8,207.72	0.00	0.00	0.00
13,400.00	90.00	359.36	5,350.00	8,311.28	272.24	8,307.72	0.00	0.00	0.00
13,500.00	90.00	359.36	5,350.00	8,411.27	271.13	8,407.72	0.00	0.00	0.00
13,600.00	90.00	359.36	5,350.00	8,511.27	270.02	8,507.72	0.00	0.00	0.00
13,644.37	90.00	359.36	5,350.00	8,555.64	269.52	8,552.09	0.00	0.00	0.00
TD at 13644.37 MD									

Planning Report

Database:	edmdb	**Local Co-ordinate Reference:**	Well Heisenberg State 8H
Company:	Steward Energy II, LLC	**TVD Reference:**	GL 3813' + RKB 19' @ 3832.00ft
Project:	Lea County, NM (NAD 83) NM East Zone	**MD Reference:**	GL 3813' + RKB 19' @ 3832.00ft
Site:	Heisenberg State 8H	**North Reference:**	Grid
Well:	Heisenberg State 8H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1		

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
SHL HS 8H - plan hits target center - Point	0.00	0.00	0.00	0.00	0.00	777,658.69	919,109.95	33.132°N	103.099°W
LTP/PBHL HS 8H - plan hits target center - Point	0.00	0.00	5,350.00	8,555.64	269.52	786,214.31	919,379.47	33.155°N	103.098°W
FTP HS 8H - plan misses target center by 0.02ft at 5847.88ft MD (5350.00 TVD, 759.63 N, 356.43 E) - Point	0.00	0.00	5,350.00	759.63	356.44	778,418.32	919,466.39	33.134°N	103.098°W

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)
2,259.55	2,250.00	9 5/8"	9.625	12.250

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
300.00	300.00	0.00	0.00	Start Build 1.00 at 300 MD
939.74	938.42	-9.52	34.38	Start 2768.40 hold at 939.74 MD
3,708.14	3,689.57	-91.87	331.66	Start Drop -1.00 at 3708.14 MD
4,347.89	4,327.99	-101.40	366.04	Start 200.00 hold at 4347.89 MD
4,547.89	4,527.99	-101.40	366.04	Start Build 8.00 at 4547.89 MD
5,297.89	5,148.24	256.68	362.04	Start 250.00 hold at 5297.89 MD
5,547.89	5,273.24	473.17	359.62	Start DLS 10.00 TFO 0.00 at 5547.89 MD
5,847.89	5,350.00	759.63	356.43	Start 7796.49 hold at 5847.89 MD
13,644.37	5,350.00	8,555.64	269.52	TD at 13644.37 MD

Steward Energy II, LLC

Lea County, NM (NAD 83) NM East Zone
Heisenberg State 8H
Heisenberg State 8H

Wellbore #1

Plan: Plan #1

Standard Planning Report - Geographic

24 January, 2024

Planning Report - Geographic

Database:	edmdb	**Local Co-ordinate Reference:**	Well Heisenberg State 8H
Company:	Steward Energy II, LLC	**TVD Reference:**	GL 3813' + RKB 19' @ 3832.00ft
Project:	Lea County, NM (NAD 83) NM East Zone	**MD Reference:**	GL 3813' + RKB 19' @ 3832.00ft
Site:	Heisenberg State 8H	**North Reference:**	Grid
Well:	Heisenberg State 8H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1		

Project Lea County, NM (NAD 83) NM East Zone

Map System:	US State Plane 1983	**System Datum:**	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site Heisenberg State 8H

Site Position:		**Northing:**	777,658.69 usft	**Latitude:**	33.132°N
From:	Map	**Easting:**	919,109.95 usft	**Longitude:**	103.099°W
Position Uncertainty:	0.00 ft	**Slot Radius:**	13.200 in		

Well Heisenberg State 8H

Well Position	**+N/-S**	0.00 ft	**Northing:**	777,658.69 usft	**Latitude:**	33.132°N
	+E/-W	0.00 ft	**Easting:**	919,109.95 usft	**Longitude:**	103.099°W
Position Uncertainty		0.00 ft	**Wellhead Elevation:**	ft	**Ground Level:**	3,813.00 ft
Grid Convergence:		0.67 °				

Wellbore Wellbore #1

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2020	1/24/2024	6.08	60.69	47,799.34310632

Design Plan #1

Audit Notes:

Version:		**Phase:**	PLAN	**Tie On Depth:**	0.00

Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	359.36

Plan Survey Tool Program **Date** 1/24/2024

	Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	13,644.37	Plan #1 (Wellbore #1)	MWD MWD - Standard	

Planning Report - Geographic

Database:	edmdb	**Local Co-ordinate Reference:**	Well Heisenberg State 8H
Company:	Steward Energy II, LLC	**TVD Reference:**	GL 3813' + RKB 19' @ 3832.00ft
Project:	Lea County, NM (NAD 83) NM East Zone	**MD Reference:**	GL 3813' + RKB 19' @ 3832.00ft
Site:	Heisenberg State 8H	**North Reference:**	Grid
Well:	Heisenberg State 8H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1		

Plan Sections

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	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	
939.74	6.40	105.48	938.42	-9.52	34.38	1.00	1.00	0.00	105.48	
3,708.14	6.40	105.48	3,689.57	-91.87	331.66	0.00	0.00	0.00	0.00	
4,347.89	0.00	0.00	4,327.99	-101.40	366.04	1.00	-1.00	0.00	180.00	
4,547.89	0.00	0.00	4,527.99	-101.40	366.04	0.00	0.00	0.00	0.00	
5,297.89	60.00	359.36	5,148.24	256.68	362.04	8.00	8.00	0.00	359.36	
5,547.89	60.00	359.36	5,273.24	473.17	359.62	0.00	0.00	0.00	0.00	
5,847.89	90.00	359.36	5,350.00	759.63	356.43	10.00	10.00	0.00	0.00	
13,644.37	90.00	359.36	5,350.00	8,555.64	269.52	0.00	0.00	0.00	0.00	LTP/PBHL HS 8H

Planning Report - Geographic

Database:	edmdb	**Local Co-ordinate Reference:**	Well Heisenberg State 8H
Company:	Steward Energy II, LLC	**TVD Reference:**	GL 3813' + RKB 19' @ 3832.00ft
Project:	Lea County, NM (NAD 83) NM East Zone	**MD Reference:**	GL 3813' + RKB 19' @ 3832.00ft
Site:	Heisenberg State 8H	**North Reference:**	Grid
Well:	Heisenberg State 8H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
0.00	0.00	0.00	0.00	0.00	0.00	777,658.69	919,109.95	33.132°N	103.099°W
100.00	0.00	0.00	100.00	0.00	0.00	777,658.69	919,109.95	33.132°N	103.099°W
200.00	0.00	0.00	200.00	0.00	0.00	777,658.69	919,109.95	33.132°N	103.099°W
300.00	0.00	0.00	300.00	0.00	0.00	777,658.69	919,109.95	33.132°N	103.099°W
Start Build 1.00 at 300 MD									
400.00	1.00	105.48	399.99	-0.23	0.84	777,658.45	919,110.79	33.132°N	103.099°W
500.00	2.00	105.48	499.96	-0.93	3.36	777,657.76	919,113.31	33.132°N	103.099°W
600.00	3.00	105.48	599.86	-2.10	7.57	777,656.59	919,117.52	33.132°N	103.099°W
700.00	4.00	105.48	699.68	-3.73	13.45	777,654.96	919,123.40	33.132°N	103.099°W
800.00	5.00	105.48	799.37	-5.82	21.01	777,652.87	919,130.96	33.132°N	103.099°W
900.00	6.00	105.48	898.90	-8.38	30.25	777,650.31	919,140.20	33.132°N	103.099°W
939.74	6.40	105.48	938.42	-9.52	34.38	777,649.16	919,144.33	33.132°N	103.099°W
Start 2768.40 hold at 939.74 MD									
1,000.00	6.40	105.48	998.30	-11.32	40.85	777,647.37	919,150.80	33.132°N	103.099°W
1,100.00	6.40	105.48	1,097.67	-14.29	51.59	777,644.40	919,161.54	33.132°N	103.099°W
1,200.00	6.40	105.48	1,197.05	-17.27	62.33	777,641.42	919,172.28	33.132°N	103.099°W
1,300.00	6.40	105.48	1,296.43	-20.24	73.07	777,638.45	919,183.02	33.132°N	103.099°W
1,400.00	6.40	105.48	1,395.81	-23.22	83.81	777,635.47	919,193.76	33.132°N	103.099°W
1,500.00	6.40	105.48	1,495.18	-26.19	94.54	777,632.50	919,204.49	33.132°N	103.099°W
1,600.00	6.40	105.48	1,594.56	-29.16	105.28	777,629.52	919,215.23	33.132°N	103.099°W
1,700.00	6.40	105.48	1,693.94	-32.14	116.02	777,626.55	919,225.97	33.132°N	103.099°W
1,800.00	6.40	105.48	1,793.31	-35.11	126.76	777,623.57	919,236.71	33.132°N	103.099°W
1,900.00	6.40	105.48	1,892.69	-38.09	137.50	777,620.60	919,247.45	33.132°N	103.099°W
2,000.00	6.40	105.48	1,992.07	-41.06	148.24	777,617.62	919,258.19	33.132°N	103.099°W
2,100.00	6.40	105.48	2,091.45	-44.04	158.97	777,614.65	919,268.92	33.132°N	103.099°W
2,200.00	6.40	105.48	2,190.82	-47.01	169.71	777,611.68	919,279.66	33.132°N	103.099°W
2,259.55	6.40	105.48	2,250.00	-48.78	176.11	777,609.90	919,286.06	33.132°N	103.099°W
9 5/8"									
2,300.00	6.40	105.48	2,290.20	-49.99	180.45	777,608.70	919,290.40	33.132°N	103.099°W
2,400.00	6.40	105.48	2,389.58	-52.96	191.19	777,605.73	919,301.14	33.131°N	103.099°W
2,500.00	6.40	105.48	2,488.96	-55.94	201.93	777,602.75	919,311.88	33.131°N	103.099°W
2,600.00	6.40	105.48	2,588.33	-58.91	212.66	777,599.78	919,322.61	33.131°N	103.099°W
2,700.00	6.40	105.48	2,687.71	-61.88	223.40	777,596.80	919,333.35	33.131°N	103.099°W
2,800.00	6.40	105.48	2,787.09	-64.86	234.14	777,593.83	919,344.09	33.131°N	103.099°W
2,900.00	6.40	105.48	2,886.46	-67.83	244.88	777,590.85	919,354.83	33.131°N	103.099°W
3,000.00	6.40	105.48	2,985.84	-70.81	255.62	777,587.88	919,365.57	33.131°N	103.098°W
3,100.00	6.40	105.48	3,085.22	-73.78	266.35	777,584.90	919,376.30	33.131°N	103.098°W
3,200.00	6.40	105.48	3,184.60	-76.76	277.09	777,581.93	919,387.04	33.131°N	103.098°W
3,300.00	6.40	105.48	3,283.97	-79.73	287.83	777,578.96	919,397.78	33.131°N	103.098°W
3,400.00	6.40	105.48	3,383.35	-82.71	298.57	777,575.98	919,408.52	33.131°N	103.098°W
3,500.00	6.40	105.48	3,482.73	-85.68	309.31	777,573.01	919,419.26	33.131°N	103.098°W
3,600.00	6.40	105.48	3,582.11	-88.66	320.04	777,570.03	919,429.99	33.131°N	103.098°W
3,700.00	6.40	105.48	3,681.48	-91.63	330.78	777,567.06	919,440.73	33.131°N	103.098°W
3,708.14	6.40	105.48	3,689.57	-91.87	331.66	777,566.82	919,441.61	33.131°N	103.098°W
Start Drop -1.00 at 3708.14 MD									
3,800.00	5.48	105.48	3,780.94	-94.41	340.81	777,564.28	919,450.76	33.131°N	103.098°W
3,900.00	4.48	105.48	3,880.56	-96.73	349.18	777,561.96	919,459.13	33.131°N	103.098°W
4,000.00	3.48	105.48	3,980.32	-98.58	355.87	777,560.11	919,465.82	33.131°N	103.098°W
4,100.00	2.48	105.48	4,080.18	-99.97	360.87	777,558.72	919,470.82	33.131°N	103.098°W
4,200.00	1.48	105.48	4,180.12	-100.89	364.20	777,557.80	919,474.15	33.131°N	103.098°W
4,300.00	0.48	105.48	4,280.10	-101.34	365.85	777,557.34	919,475.80	33.131°N	103.098°W
4,347.89	0.00	0.00	4,327.99	-101.40	366.04	777,557.29	919,475.99	33.131°N	103.098°W
Start 200.00 hold at 4347.89 MD									
4,400.00	0.00	0.00	4,380.10	-101.40	366.04	777,557.29	919,475.99	33.131°N	103.098°W

Planning Report - Geographic

Database:	edmdb	**Local Co-ordinate Reference:**	Well Heisenberg State 8H
Company:	Steward Energy II, LLC	**TVD Reference:**	GL 3813' + RKB 19' @ 3832.00ft
Project:	Lea County, NM (NAD 83) NM East Zone	**MD Reference:**	GL 3813' + RKB 19' @ 3832.00ft
Site:	Heisenberg State 8H	**North Reference:**	Grid
Well:	Heisenberg State 8H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
4,500.00	0.00	0.00	4,480.10	-101.40	366.04	777,557.29	919,475.99	33.131°N	103.098°W
4,547.89	0.00	0.00	4,527.99	-101.40	366.04	777,557.29	919,475.99	33.131°N	103.098°W
Start Build 8.00 at 4547.89 MD									
4,600.00	4.17	359.36	4,580.06	-99.50	366.02	777,559.19	919,475.97	33.131°N	103.098°W
4,700.00	12.17	359.36	4,678.96	-85.30	365.86	777,573.38	919,475.81	33.131°N	103.098°W
4,800.00	20.17	359.36	4,774.93	-57.48	365.55	777,601.21	919,475.50	33.131°N	103.098°W
4,900.00	28.17	359.36	4,866.09	-16.57	365.09	777,642.11	919,475.04	33.132°N	103.098°W
5,000.00	36.17	359.36	4,950.67	36.62	364.50	777,695.31	919,474.45	33.132°N	103.098°W
5,100.00	44.17	359.36	5,027.02	101.07	363.78	777,759.76	919,473.73	33.132°N	103.098°W
5,200.00	52.17	359.36	5,093.66	175.52	362.95	777,834.20	919,472.90	33.132°N	103.098°W
5,297.89	60.00	359.36	5,148.24	256.68	362.04	777,915.37	919,471.99	33.132°N	103.098°W
Start 250.00 hold at 5297.89 MD									
5,300.00	60.00	359.36	5,149.29	258.51	362.02	777,917.20	919,471.97	33.132°N	103.098°W
5,400.00	60.00	359.36	5,199.29	345.11	361.05	778,003.79	919,471.00	33.133°N	103.098°W
5,500.00	60.00	359.36	5,249.29	431.70	360.09	778,090.39	919,470.04	33.133°N	103.098°W
5,547.89	60.00	359.36	5,273.24	473.17	359.62	778,131.86	919,469.57	33.133°N	103.098°W
Start DLS 10.00 TFO 0.00 at 5547.89 MD									
5,600.00	65.21	359.36	5,297.21	519.42	359.11	778,178.11	919,469.06	33.133°N	103.098°W
5,700.00	75.21	359.36	5,331.02	613.39	358.06	778,272.08	919,468.01	33.133°N	103.098°W
5,800.00	85.21	359.36	5,348.00	711.81	356.96	778,370.49	919,466.91	33.134°N	103.098°W
5,847.89	90.00	359.36	5,350.00	759.63	356.43	778,418.32	919,466.38	33.134°N	103.098°W
Start 7796.49 hold at 5847.89 MD									
5,900.00	90.00	359.36	5,350.00	811.74	355.85	778,470.43	919,465.79	33.134°N	103.098°W
6,000.00	90.00	359.36	5,350.00	911.74	354.73	778,570.42	919,464.68	33.134°N	103.098°W
6,100.00	90.00	359.36	5,350.00	1,011.73	353.62	778,670.42	919,463.57	33.134°N	103.098°W
6,200.00	90.00	359.36	5,350.00	1,111.73	352.50	778,770.41	919,462.45	33.135°N	103.098°W
6,300.00	90.00	359.36	5,350.00	1,211.72	351.39	778,870.40	919,461.34	33.135°N	103.098°W
6,400.00	90.00	359.36	5,350.00	1,311.71	350.27	778,970.40	919,460.22	33.135°N	103.098°W
6,500.00	90.00	359.36	5,350.00	1,411.71	349.16	779,070.39	919,459.11	33.136°N	103.098°W
6,600.00	90.00	359.36	5,350.00	1,511.70	348.04	779,170.39	919,457.99	33.136°N	103.098°W
6,700.00	90.00	359.36	5,350.00	1,611.69	346.93	779,270.38	919,456.88	33.136°N	103.098°W
6,800.00	90.00	359.36	5,350.00	1,711.69	345.81	779,370.37	919,455.76	33.136°N	103.098°W
6,900.00	90.00	359.36	5,350.00	1,811.68	344.70	779,470.37	919,454.65	33.137°N	103.098°W
7,000.00	90.00	359.36	5,350.00	1,911.68	343.58	779,570.36	919,453.53	33.137°N	103.098°W
7,100.00	90.00	359.36	5,350.00	2,011.67	342.47	779,670.35	919,452.42	33.137°N	103.098°W
7,200.00	90.00	359.36	5,350.00	2,111.66	341.35	779,770.35	919,451.30	33.137°N	103.098°W
7,300.00	90.00	359.36	5,350.00	2,211.66	340.24	779,870.34	919,450.19	33.138°N	103.098°W
7,400.00	90.00	359.36	5,350.00	2,311.65	339.12	779,970.33	919,449.07	33.138°N	103.098°W
7,500.00	90.00	359.36	5,350.00	2,411.64	338.01	780,070.33	919,447.96	33.138°N	103.098°W
7,600.00	90.00	359.36	5,350.00	2,511.64	336.90	780,170.32	919,446.85	33.139°N	103.098°W
7,700.00	90.00	359.36	5,350.00	2,611.63	335.78	780,270.31	919,445.73	33.139°N	103.098°W
7,800.00	90.00	359.36	5,350.00	2,711.63	334.67	780,370.31	919,444.62	33.139°N	103.098°W
7,900.00	90.00	359.36	5,350.00	2,811.62	333.55	780,470.30	919,443.50	33.139°N	103.098°W
8,000.00	90.00	359.36	5,350.00	2,911.61	332.44	780,570.30	919,442.39	33.140°N	103.098°W
8,100.00	90.00	359.36	5,350.00	3,011.61	331.32	780,670.29	919,441.27	33.140°N	103.098°W
8,200.00	90.00	359.36	5,350.00	3,111.60	330.21	780,770.28	919,440.16	33.140°N	103.098°W
8,300.00	90.00	359.36	5,350.00	3,211.60	329.09	780,870.28	919,439.04	33.140°N	103.098°W
8,400.00	90.00	359.36	5,350.00	3,311.59	327.98	780,970.27	919,437.93	33.141°N	103.098°W
8,500.00	90.00	359.36	5,350.00	3,411.58	326.86	781,070.26	919,436.81	33.141°N	103.098°W
8,600.00	90.00	359.36	5,350.00	3,511.58	325.75	781,170.26	919,435.70	33.141°N	103.098°W
8,700.00	90.00	359.36	5,350.00	3,611.57	324.63	781,270.25	919,434.58	33.142°N	103.098°W
8,800.00	90.00	359.36	5,350.00	3,711.56	323.52	781,370.24	919,433.47	33.142°N	103.098°W
8,900.00	90.00	359.36	5,350.00	3,811.56	322.40	781,470.24	919,432.35	33.142°N	103.098°W
9,000.00	90.00	359.36	5,350.00	3,911.55	321.29	781,570.23	919,431.24	33.142°N	103.098°W

Planning Report - Geographic

Database:	edmdb	**Local Co-ordinate Reference:**	Well Heisenberg State 8H
Company:	Steward Energy II, LLC	**TVD Reference:**	GL 3813' + RKB 19' @ 3832.00ft
Project:	Lea County, NM (NAD 83) NM East Zone	**MD Reference:**	GL 3813' + RKB 19' @ 3832.00ft
Site:	Heisenberg State 8H	**North Reference:**	Grid
Well:	Heisenberg State 8H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
9,100.00	90.00	359.36	5,350.00	4,011.55	320.18	781,670.22	919,430.13	33.143°N	103.098°W
9,200.00	90.00	359.36	5,350.00	4,111.54	319.06	781,770.22	919,429.01	33.143°N	103.098°W
9,300.00	90.00	359.36	5,350.00	4,211.53	317.95	781,870.21	919,427.90	33.143°N	103.098°W
9,400.00	90.00	359.36	5,350.00	4,311.53	316.83	781,970.21	919,426.78	33.143°N	103.098°W
9,500.00	90.00	359.36	5,350.00	4,411.52	315.72	782,070.20	919,425.67	33.144°N	103.098°W
9,600.00	90.00	359.36	5,350.00	4,511.51	314.60	782,170.19	919,424.55	33.144°N	103.098°W
9,700.00	90.00	359.36	5,350.00	4,611.51	313.49	782,270.19	919,423.44	33.144°N	103.098°W
9,800.00	90.00	359.36	5,350.00	4,711.50	312.37	782,370.18	919,422.32	33.145°N	103.098°W
9,900.00	90.00	359.36	5,350.00	4,811.50	311.26	782,470.17	919,421.21	33.145°N	103.098°W
10,000.00	90.00	359.36	5,350.00	4,911.49	310.14	782,570.17	919,420.09	33.145°N	103.098°W
10,100.00	90.00	359.36	5,350.00	5,011.48	309.03	782,670.16	919,418.98	33.145°N	103.098°W
10,200.00	90.00	359.36	5,350.00	5,111.48	307.91	782,770.15	919,417.86	33.146°N	103.098°W
10,300.00	90.00	359.36	5,350.00	5,211.47	306.80	782,870.15	919,416.75	33.146°N	103.098°W
10,400.00	90.00	359.36	5,350.00	5,311.46	305.68	782,970.14	919,415.63	33.146°N	103.098°W
10,500.00	90.00	359.36	5,350.00	5,411.46	304.57	783,070.14	919,414.52	33.147°N	103.098°W
10,600.00	90.00	359.36	5,350.00	5,511.45	303.46	783,170.13	919,413.41	33.147°N	103.098°W
10,700.00	90.00	359.36	5,350.00	5,611.45	302.34	783,270.12	919,412.29	33.147°N	103.098°W
10,800.00	90.00	359.36	5,350.00	5,711.44	301.23	783,370.12	919,411.18	33.147°N	103.098°W
10,900.00	90.00	359.36	5,350.00	5,811.43	300.11	783,470.11	919,410.06	33.148°N	103.098°W
11,000.00	90.00	359.36	5,350.00	5,911.43	299.00	783,570.10	919,408.95	33.148°N	103.098°W
11,100.00	90.00	359.36	5,350.00	6,011.42	297.88	783,670.10	919,407.83	33.148°N	103.098°W
11,200.00	90.00	359.36	5,350.00	6,111.42	296.77	783,770.09	919,406.72	33.148°N	103.098°W
11,300.00	90.00	359.36	5,350.00	6,211.41	295.65	783,870.08	919,405.60	33.149°N	103.098°W
11,400.00	90.00	359.36	5,350.00	6,311.40	294.54	783,970.08	919,404.49	33.149°N	103.098°W
11,500.00	90.00	359.36	5,350.00	6,411.40	293.42	784,070.07	919,403.37	33.149°N	103.098°W
11,600.00	90.00	359.36	5,350.00	6,511.39	292.31	784,170.06	919,402.26	33.150°N	103.098°W
11,700.00	90.00	359.36	5,350.00	6,611.38	291.19	784,270.06	919,401.14	33.150°N	103.098°W
11,800.00	90.00	359.36	5,350.00	6,711.38	290.08	784,370.05	919,400.03	33.150°N	103.098°W
11,900.00	90.00	359.36	5,350.00	6,811.37	288.96	784,470.05	919,398.91	33.150°N	103.098°W
12,000.00	90.00	359.36	5,350.00	6,911.37	287.85	784,570.04	919,397.80	33.151°N	103.098°W
12,100.00	90.00	359.36	5,350.00	7,011.36	286.74	784,670.03	919,396.69	33.151°N	103.098°W
12,200.00	90.00	359.36	5,350.00	7,111.35	285.62	784,770.03	919,395.57	33.151°N	103.098°W
12,300.00	90.00	359.36	5,350.00	7,211.35	284.51	784,870.02	919,394.46	33.151°N	103.098°W
12,400.00	90.00	359.36	5,350.00	7,311.34	283.39	784,970.01	919,393.34	33.152°N	103.098°W
12,500.00	90.00	359.36	5,350.00	7,411.33	282.28	785,070.01	919,392.23	33.152°N	103.098°W
12,600.00	90.00	359.36	5,350.00	7,511.33	281.16	785,170.00	919,391.11	33.152°N	103.098°W
12,700.00	90.00	359.36	5,350.00	7,611.32	280.05	785,269.99	919,390.00	33.153°N	103.098°W
12,800.00	90.00	359.36	5,350.00	7,711.32	278.93	785,369.99	919,388.88	33.153°N	103.098°W
12,900.00	90.00	359.36	5,350.00	7,811.31	277.82	785,469.98	919,387.77	33.153°N	103.098°W
13,000.00	90.00	359.36	5,350.00	7,911.30	276.70	785,569.97	919,386.65	33.153°N	103.098°W
13,100.00	90.00	359.36	5,350.00	8,011.30	275.59	785,669.97	919,385.54	33.154°N	103.098°W
13,200.00	90.00	359.36	5,350.00	8,111.29	274.47	785,769.96	919,384.42	33.154°N	103.098°W
13,300.00	90.00	359.36	5,350.00	8,211.28	273.36	785,869.96	919,383.31	33.154°N	103.098°W
13,400.00	90.00	359.36	5,350.00	8,311.28	272.24	785,969.95	919,382.19	33.154°N	103.098°W
13,500.00	90.00	359.36	5,350.00	8,411.27	271.13	786,069.94	919,381.08	33.155°N	103.098°W
13,600.00	90.00	359.36	5,350.00	8,511.27	270.02	786,169.94	919,379.97	33.155°N	103.098°W
13,644.37	90.00	359.36	5,350.00	8,555.64	269.52	786,214.31	919,379.47	33.155°N	103.098°W
TD at 13644.37 MD									

Planning Report - Geographic

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Company:	Steward Energy II, LLC	**TVD Reference:**	GL 3813' + RKB 19' @ 3832.00ft
Project:	Lea County, NM (NAD 83) NM East Zone	**MD Reference:**	GL 3813' + RKB 19' @ 3832.00ft
Site:	Heisenberg State 8H	**North Reference:**	Grid
Well:	Heisenberg State 8H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1		

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
SHL HS 8H - plan hits target center - Point	0.00	0.00	0.00	0.00	0.00	777,658.69	919,109.95	33.132°N	103.099°W
LTP/PBHL HS 8H - plan hits target center - Point	0.00	0.00	5,350.00	8,555.64	269.52	786,214.31	919,379.47	33.155°N	103.098°W
FTP HS 8H - plan misses target center by 0.02ft at 5847.88ft MD (5350.00 TVD, 759.63 N, 356.43 E) - Point	0.00	0.00	5,350.00	759.63	356.44	778,418.32	919,466.39	33.134°N	103.098°W

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)
2,259.55	2,250.00	9 5/8"	9.625	12.250

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
300.00	300.00	0.00	0.00	Start Build 1.00 at 300 MD
939.74	938.42	-9.52	34.38	Start 2768.40 hold at 939.74 MD
3,708.14	3,689.57	-91.87	331.66	Start Drop -1.00 at 3708.14 MD
4,347.89	4,327.99	-101.40	366.04	Start 200.00 hold at 4347.89 MD
4,547.89	4,527.99	-101.40	366.04	Start Build 8.00 at 4547.89 MD
5,297.89	5,148.24	256.68	362.04	Start 250.00 hold at 5297.89 MD
5,547.89	5,273.24	473.17	359.62	Start DLS 10.00 TFO 0.00 at 5547.89 MD
5,847.89	5,350.00	759.63	356.43	Start 7796.49 hold at 5847.89 MD
13,644.37	5,350.00	8,555.64	269.52	TD at 13644.37 MD

Steward Energy II - Heisenberg State Com 8H

1. Geologic Formations

TVD of target	5,350' EOL	Pilot hole depth	NA
MD at TD:	13,644'	Deepest expected fresh water:	400'

Formation	Depth (TVD) from KB	Water/Mineral Bearing/ Target Zone?	Hazards*
Rustler	2243	anhydrite	
Salado	2360	siltstone/sandstone/limestone	
Castile	3044	red shale/anhydrite/sandstone	
Tansill	3120	anhydrite	
Yates	3215	dolomite/sandstone	
Seven Rivers	3477	sandstone/dolomite/shale	
Queen	3982	dolomite/sandstone/anhydrite	
Grayburg	4420	dolomite/sandstone/anhydrite	
San Andres	4698	dolomite/anhydrite	
Manz Marker	5186	dolomite/anhydrite	
Chambliss	5265	dolomite/anhydrite	
Pi Marker	5310	dolomite/anhydrite	
Brahaney B	5360	dolomite/anhydrite	
Brahaney C	5417	dolomite/anhydrite	
X	X	dolomite/anhydrite	
X	X	dolomite/anhydrite	
X	X	dolomite/anhydrite	

2. Casing Program

Hole Size	Casing Interval From	Casing Interval To	Csg. Size	Weight (lbs.)	Grade	Conn.	SF Collapse	SF Burst	SF Tension
12.25”	0	2,293	9.625”	36	J55	BTC	1.88	1.53	6.83
8.5"	0	5,530	7"	29	HCL80	BTC	3.24	3.54	4.42
8.5"	5,530	13,644	5.5”	20	L80	BTC	3.11	3.99	4.36
				BLM Minimum Safety Factor			1.125	1	1.6 Dry
									1.8 Wet

All casing strings will be kept at least 1/3 full while running to mitigate collapse.
Production casing burst based on 0.7 psi/ft frac gradient at the shoe with Gas Gradient 0.1 psi/ft to surface.
All casing strings will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.h

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	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 3rd 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 2nd string set 100' to 600' below the base of salt?	
Is well located in high Cave/Karst?	N
If yes, are there two strings cemented to surface?	
(For 2 string wells) If yes, is there a contingency casing if lost circulation occurs?	
Is well located in critical Cave/Karst?	N
If yes, are there three strings cemented to surface?	

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3. Cementing Program

Casing	# Sks	Density (lb./gal.)	Yield (ft.3/sk.)	H_20 (gal/sk.)	500# Comp. Strength (hrs.)	Slurry Description
Surf.	580	12.8	1.94	10.4	12	Lead: Class C + 6% Gel + 5% CaCl2
	250	14.8	1.32	6.3	8	Tail: Class C + 2% CaCl2
Prod.	360	11.5	2.7	16.4	72	Lead: 50:50:10 Class C Blend
	2300	14	1.3	6.5	19	Tail: 50:50:2 Class C Blend

Volumes Subject to Observed Hole Conditions and/or Fluid Caliper Results
Lab reports with the 500 psi compressive strength time for the cement will be onsite for review.

Casing String	TOC	% Excess
Surface	0’	100%
Production	0’	50% OH in Lateral (KOP to EOL) – 100% OH in Vertical

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4. Pressure Control Equipment

N	A variance is requested for the use of a diverter on the surface casing. See attached for schematic.

BOP installed and tested before drilling which hole?	Size?	Minimum Required Working Pressure	Type	x	Tested to:
8.5"	11"	3M	Annular	x	50% Testing Pressure
			Blind Ram	x	3M
			Pipe Ram	x	
			Double Ram		
			Other*		

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.

X	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	A variance is requested for the use of a flexible choke line from the BOP to Choke Manifold. See attached for specs and hydrostatic test chart.
	N Are anchors required by manufacturer?
Y	A multibowl wellhead is being used. 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. If any seal subject to test pressure is broken the system must be tested.

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5. 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.

What will be used to monitor the loss or gain of fluid?	PVT/Pason/Visual Monitoring

Depth		Type	Weight (ppg)	Viscosity	Water Loss
From	To				
0	Surface Shoe	FW Gel	8.6 - 9	28-34	N/C
Surface Shoe	Lateral TD	Saturated Brine	10 - 10.2	28-34	N/C

6. Logging and Testing Procedures

Logging, Coring and Testing.	
Y	Will run GR/CNL from TD to surface (horizontal well – vertical portion of hole). Stated logs run will be in the Completion Report and submitted to the BLM.
Y	No Logs are planned based on well control or offset log information.
N	Drill stem test? If yes, explain.
N	Coring? If yes, explain.

Additional logs planned		Interval
N	Resistivity	Pilot Hole TD to ICP
N	Density	Pilot Hole TD to ICP
Y	CBL	Production casing (If cement not circulated to surface)
Y	Mud log	Intermediate shoe to TD
N	PEX	

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7. Drilling Conditions

Condition	Specify what type and where?
BH Pressure at deepest TVD	2840 psi at 5350' TVD
Abnormal Temperature	No. 115 Deg. F.

No abnormal pressure or temperature conditions are anticipated. Sufficient mud materials to maintain mud properties and weight increase requirements will be kept on location at all times.

Sufficient supplies of Paper/LCM for periodic sweeps to control seepage and losses will be maintained on location.

Hydrogen Sulfide (H2S) monitors will be installed prior to drilling out the surface shoe. If H2S 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	H2S is present
Y	H2S Plan attached

8. Other Facets of Operation

Y	Is it a walking operation?
N	Is casing pre-set?

X	H2S Plan
X	BOP & Choke Schematics
X	Directional Plan

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: Steward Energy II, LLC **OGRID:** 371682 **Date:** 04 / 04 / 2024

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
Heisenberg State 8H		J-Sec 4-T14S-R38E	1989 FSL 1800 FEL	685	450	2160

IV. Central Delivery Point Name: Heisenberg [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
Heisenberg State 8H		2/15/2025	2/27/2025	4/11/2025	5/1/2025	5/6/2025

VI. Separation Equipment: ☒ Attach a complete description of how Operator will size separation equipment to optimize gas capture.

VII. Operational Practices: ☒ Attach a complete description of the actions Operator will take to comply with the requirements of Subsection A through F of 19.15.27.8 NMAC.

VIII. Best Management Practices: ☒ Attach a complete description of Operator's best management practices to minimize venting during active and planned maintenance.

Section 2 – Enhanced Plan

EFFECTIVE APRIL 1, 2022

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

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

IX. Anticipated Natural Gas Production:

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

X. Natural Gas Gathering System (NGGS):

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

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

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

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

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

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

Section 3 - Certifications

Effective May 25, 2021

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

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

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

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

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

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

Section 4 - Notices

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

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

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

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

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

Signature:	
Printed Name:	Ryan DeLong
Title:	Vice President - Planning & Regulatory
E-mail Address:	rdelong@titusoil.com
Date:	
Phone:	817-852-6370

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 engineering staff based on stated manufacturer daily throughput capacities and anticipated daily production rates to ensure adequate capacity. Closed vent system piping, compression needs, and VRUs will be sized utilizing modelling software to ensure adequate capacity for anticipated production volumes and conditions.

VII. Steward Energy II, LLC (SEII) will take the following actions to comply with the regulations listed in 19.15.27.8:

A. SEII will maximize the recovery of natural gas by minimizing the waste, as defined by 19.15.2 NMAC, of natural gas through venting and flaring. SEII will ensure that well(s) will be connected to a natural gas gathering system with sufficient capacity to transport natural gas. If there is no adequate takeaway for the gas, well(s) will be shut in until the natural gas gathering system is available.

B. All drilling operations will be equipped with a rig flare located at least 100' from the nearest surface hole. Rig flare will be utilized to combust any natural gas that is brought to surface during normal drilling operations. In the case of emergency venting or flaring the volumes will be estimated and reported appropriately.

C. During completion, SEII does not allow the well to flow during CO so there will be nothing to flare. Immediately following the finish of completion operations. Produced natural gas from separation equipment will be sent to sales. It is not anticipated that gas will not meet pipeline standards. However, if natural gas does not meet gathering pipeline quality specifications, SEII will flare the natural gas for 60 days or until the natural gas meets the pipeline quality specifications, whichever is sooner. SEII will ensure that the flare is sized properly and is equipped with automatic igniter or continuous pilot. The gas sample will be analyzed twice per week and the gas will be routed into a gathering system as soon as pipeline specifications are met.

D. Natural gas will not be flared with the exceptions and provisions listed in the 19.15.27.8 D.(I) through (4). If there is no adequate takeaway for the separator gas, well(s) will be shut in until the natural gas gathering system is available with exception of emergency or malfunction situations. Venting and/or flaring volumes will be estimated and reported appropriately.

E. SEII will comply with the performance standards requirements and provisions listed in 19.15.27.8 E.(I)through (8). All equipment will be designed and sized to handle maximum anticipated pressures and throughputs to minimize the waste. Production storage tanks constructed after May 25, 2021, will be equipped with automatic gauging system. Flares constructed after May 25, 2021, will be equipped with automatic igniter or continuous pilot. Flares will be located at least 100' from the

well and storage tanks unless otherwise approved by the division. SEII will conduct AVO (LDAR) 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 will be resolved as quickly and safely as feasible to minimize waste.

F. The volume of natural gas that is vented or flared as the result of malfunction or emergency during drilling and completions operations will be estimated. The volume of natural gas that is vented, flared, or beneficially used during production operations, will be measured, or estimated. SEII will install equipment to measure the volume of natural gas flared from existing process piping, or a flowline piped from equipment such as high-pressure separators, heater treaters, or vapor recovery units associated with a well or facility associated with a well authorized by an APD issued after May 25, 2021, that has an average daily production greater than 60 Mcf/day. If metering is not practicable due to circumstances such as low flow rate or low pressure venting and flaring, SEII will estimate the volume of vented or flared natural gas. Measuring equipment will conform to industry standards and will not be designed or equipped with a manifold that allows the diversion of natural gas around the metering element except for the sole purpose of inspecting and servicing the measurement equipment.

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