

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 357857

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

1. Operator Name and Address STEWARD ENERGY II, LLC 2600 Dallas Parkway Frisco, TX 75034		2. OGRID Number 371682
		3. API Number 30-025-52524
4. Property Code 317665	5. Property Name HEISENBERG STATE COM	6. Well No. 004H

7. Surface Location

UL - Lot L	Section 3	Township 14S	Range 38E	Lot Idn L	Feet From 2388	N/S Line S	Feet From 1172	E/W Line W	County Lea
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8. Proposed Bottom Hole Location

UL - Lot C	Section 34	Township 13S	Range 38E	Lot Idn C	Feet From 100	N/S Line N	Feet From 2309	E/W Line W	County Lea
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9. Pool Information

BRONCO;SAN ANDRES, SOUTH	7500
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Additional Well Information

11. Work Type New Well	12. Well Type OIL	13. Cable/Rotary	14. Lease Type Private	15. Ground Level Elevation 3806
16. Multiple N	17. Proposed Depth 13794	18. Formation San Andres Formation	19. Contractor	20. Spud Date 2/1/2024
Depth to Ground water		Distance from nearest fresh water well		Distance to nearest surface water

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

21. Proposed Casing and Cement Program

Type	Hole Size	Casing Size	Casing Weight/ft	Setting Depth	Sacks of Cement	Estimated TOC
Surf	12.25	9.625	36	2500	1000	0
Prod	8.75	7	29	5660	1000	0
Prod	8.75	5.5	20	13794	1000	0

Casing/Cement Program: Additional Comments

TAPPEED PRODUCTION STRING

22. Proposed Blowout Prevention Program

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

Printed Name: Electronically filed by Scott Stedman

Title: Executive Vice President

Email Address: scott.stedman@stewardenergy.net

Date: 1/16/2024

Phone: 214-297-0514

OIL CONSERVATION DIVISION

Approved By: Paul F Kautz

Title: Geologist

Approved Date: 2/14/2024

Expiration Date: 2/14/2026

Conditions of Approval Attached

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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	
Property Code		Property Name HEISENBERG STATE			Well Number #4H
OGRID No.		Operator Name STEWARD ENERGY II, LLC			Elevation 3806'

Surface Location

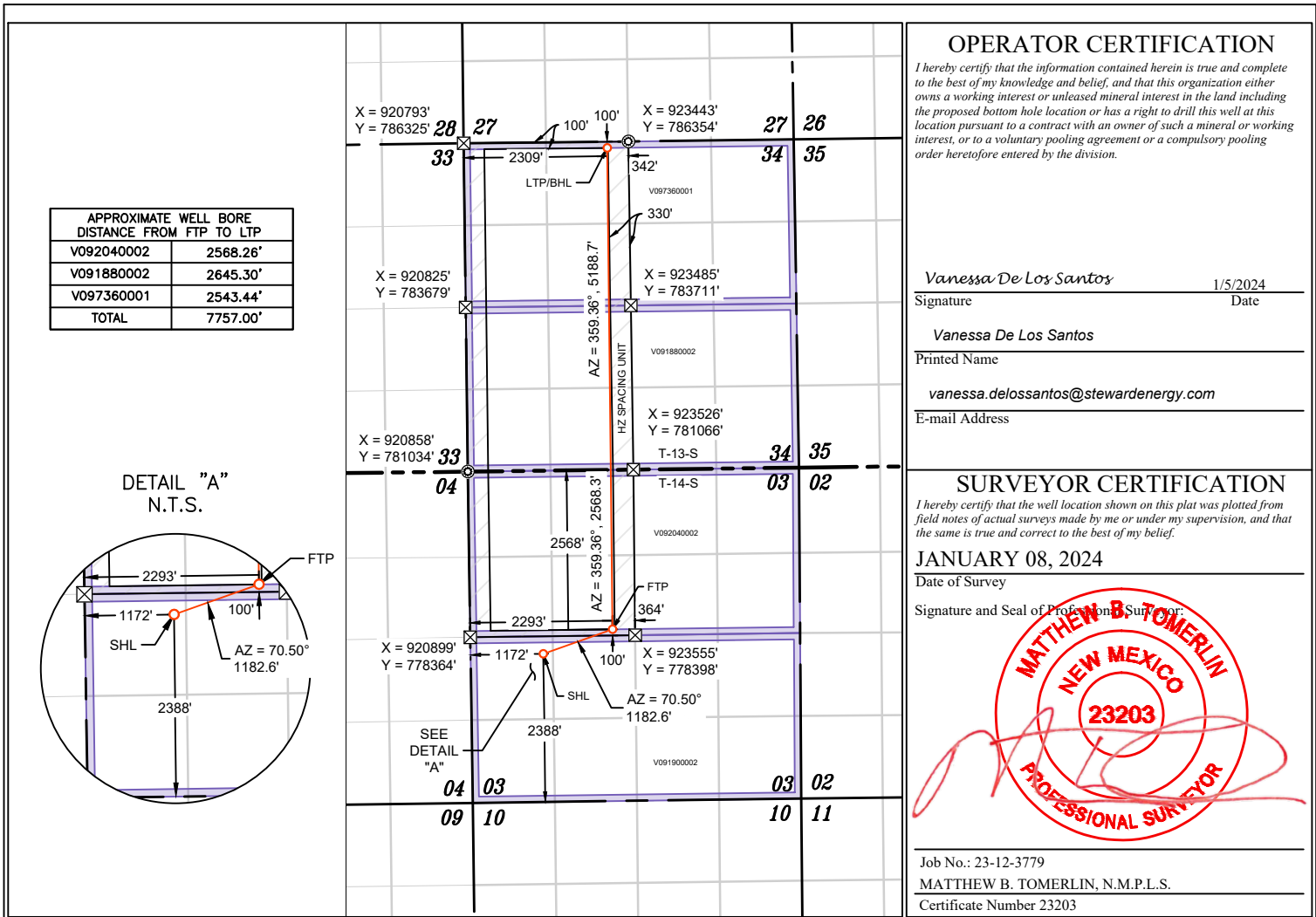
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
L	03	14 S	38 E		2388	SOUTH	1172	WEST	LEA

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
C	34	13 S	38 E		100	NORTH	2309	WEST	LEA

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
484.44			

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



NAD 83 (SHL) 2388' FSL & 1172' FWL
LATITUDE = 33.132763°
LONGITUDE = -103.089605°
NAD 27 (SURFACE HOLE LOCATION)
LATITUDE = 33.132655°
LONGITUDE = -103.089106°
STATE PLANE NAD 83 (N.M. EAST)
N: 778098.48' E: 922075.35'
STATE PLANE NAD 27 (N.M. EAST)
N: 778036.09' E: 880899.33'

NAD 83 (FTP) 2568' FNL & 2293' FWL
LATITUDE = 33.133811°
LONGITUDE = -103.085949°
NAD 27 (FTP)
LATITUDE = 33.133703°
LONGITUDE = -103.085450°
STATE PLANE NAD 83 (N.M. EAST)
N: 778493.30' E: 923190.14'
STATE PLANE NAD 27 (N.M. EAST)
N: 778430.96' E: 882014.13'

NAD 83 (LTP/BHL) 100' FNL & 2309' FWL
LATITUDE = 33.155128°
LONGITUDE = -103.085932°
NAD 27 (LTP/BHL)
LATITUDE = 33.155020°
LONGITUDE = -103.085433°
STATE PLANE NAD 83 (N.M. EAST)
N: 786249.82' E: 923103.08'
STATE PLANE NAD 27 (N.M. EAST)
N: 786187.27' E: 881927.10'

NOTES

- 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.
- THIS DOCUMENT IS BASED UPON AN ON THE GROUND SURVEY PERFORMED DURING DECEMBER, 2023. CERTIFICATION OF THIS DOCUMENT IS ONLY TO THE LOCATION OF THIS EASEMENT IN RELATION TO RECORDED MONUMENT OF DEEDS PROVIDED BY THE CLIENT.
- 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

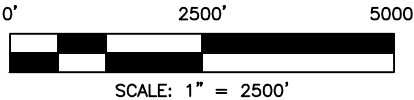
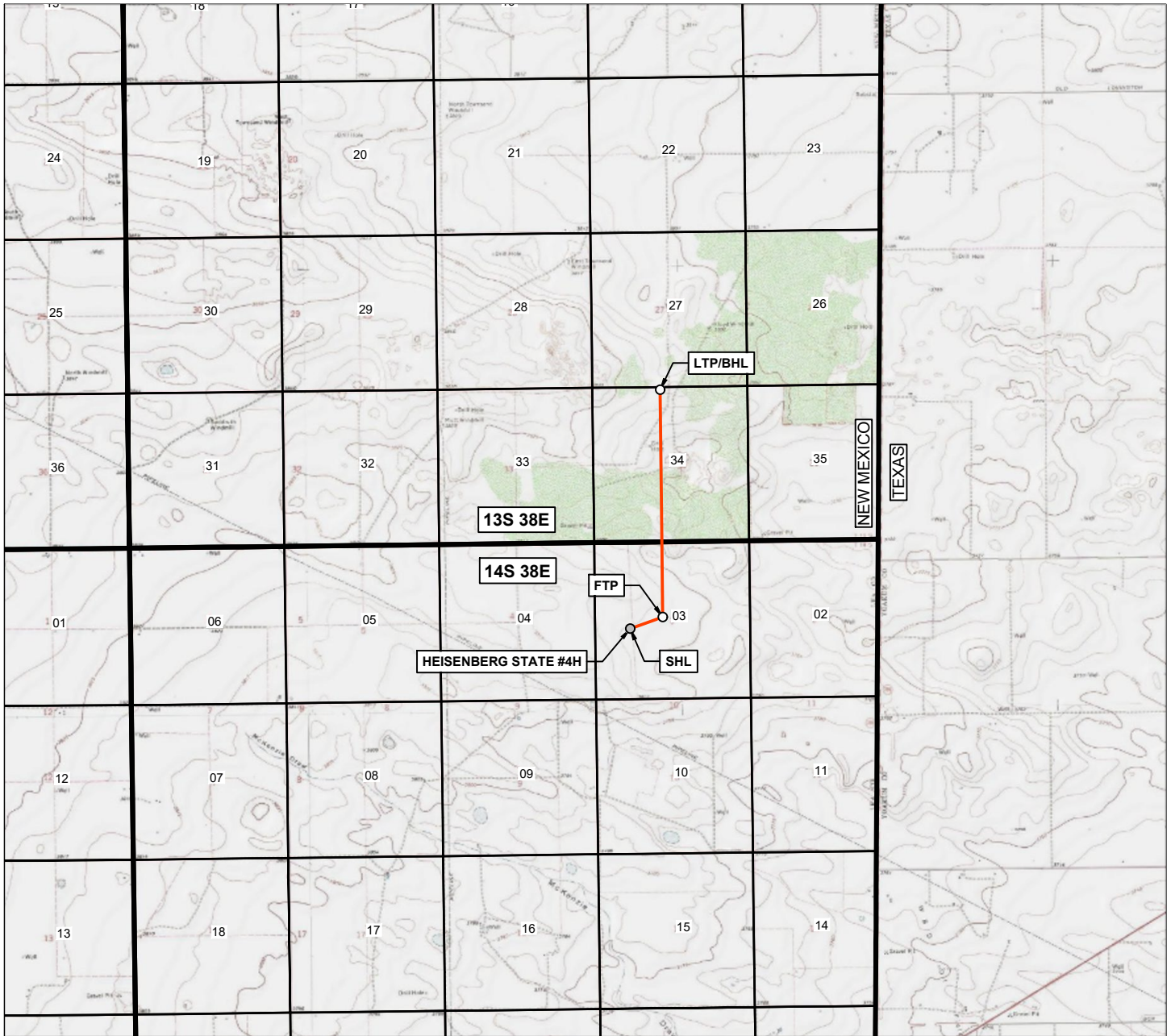


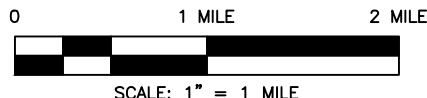
EXHIBIT 1 LOCATION & ELEVATION VERIFICATION MAP



LEASE NAME AND WELL NUMBER: HEISENBERG STATE #4H
 LATITUDE: N 33.132763 LONGITUDE: W 103.089605 ELEVATION: 3806'
 DESCRIPTION: 2388' FSL & 1172' FWL



Situated in
 SECTION 03, TOWNSHIP 14 SOUTH, RANGE 38 EAST
 LEA COUNTY, NEW MEXICO



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 : 01/08/2024

REV.

CHECKED BY: JH

DATE : 01/08/2024

0

AFE #

PROJECT ID: 23-12-3779

PAGE 1 OF 1

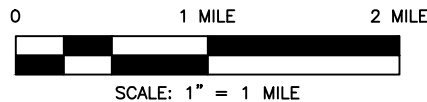
EXHIBIT 2 VICINITY MAP



LEASE NAME AND WELL NUMBER: HEISENBERG STATE #4H
 LATITUDE: N 33.132763 LONGITUDE: W 103.089605 ELEVATION: 3806'
 DESCRIPTION: 2388' FSL & 1172' FWL

LEGEND

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



Situated in
 SECTION 03, TOWNSHIP 14 SOUTH, RANGE 38 EAST
 LEA COUNTY, NEW MEXICO

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

Form APD Comments
Permit 357857

PERMIT COMMENTS

Operator Name and Address: STEWARD ENERGY II, LLC [371682] 2600 Dallas Parkway Frisco, TX 75034		API Number: 30-025-52524
		Well: HEISENBERG STATE COM #004H
Created By	Comment	Comment Date
vlopez	TAPPERED PRODUCTION CASING	1/16/2024
pkautz	HOLD FOR NEW BOND	1/23/2024

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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 357857

PERMIT CONDITIONS OF APPROVAL

Operator Name and Address: STEWARD ENERGY II, LLC [371682] 2600 Dallas Parkway Frisco, TX 75034	API Number: 30-025-52524
	Well: HEISENBERG STATE COM #004H

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 intermediate1 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

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:** 1/16/2024

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 #4H		L-03-14S-38E	2388' FSL	500	100	350
			1172'FWL			

IV. Central Delivery Point Name: _____ [See 19.15.27.9(D)(1) NMAC]

V. Anticipated Schedule: Provide the following information for each new or recompleted well or set of wells proposed to be drilled or proposed to be recompleted from a single well pad or connected to a central delivery point.

Well Name	API	Spud Date	TD Reached Date	Completion Commencement Date	Initial Flow Back Date	First Production Date
Heisenberg State #4H		2/1/24	02/10/2024	02/15/2024	n/a (no flowback)	02/18/2024

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

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

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

Section 2 – Enhanced Plan

EFFECTIVE APRIL 1, 2022

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

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

IX. Anticipated Natural Gas Production:

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

X. Natural Gas Gathering System (NGGS):

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

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

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

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

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

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

Section 3 - Certifications

Effective May 25, 2021

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

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

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

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

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

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

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

Section 4 - Notices

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

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

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

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

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

Signature: <i>Vanessa De Los Santos</i>
Printed Name: Vanessa De Los Santos
Title: Senior Regulatory Analyst
E-mail Address: vanessa.delossantos@stewardenergy.com
Date: 1/16/2024
Phone: 214-297-0500
OIL CONSERVATION DIVISION (Only applicable when submitted as a standalone form)
Approved By:
Title:
Approval Date:
Conditions of Approval:

Steward Energy II, LLC

DrilTech, LLC

Lea County, NM (NAD 83) NM East Zone
Heisenberg State 4H
Heisenberg State 4H
Wellbore #1
Plan #1



SURFACE LOCATION

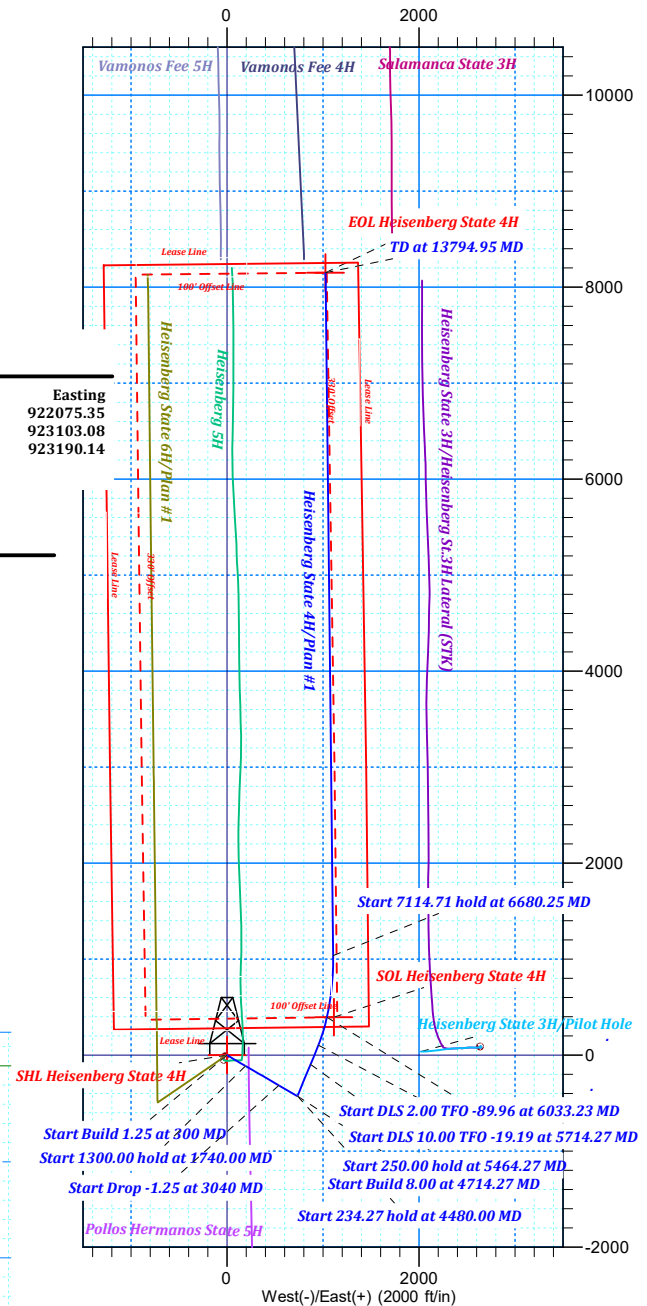
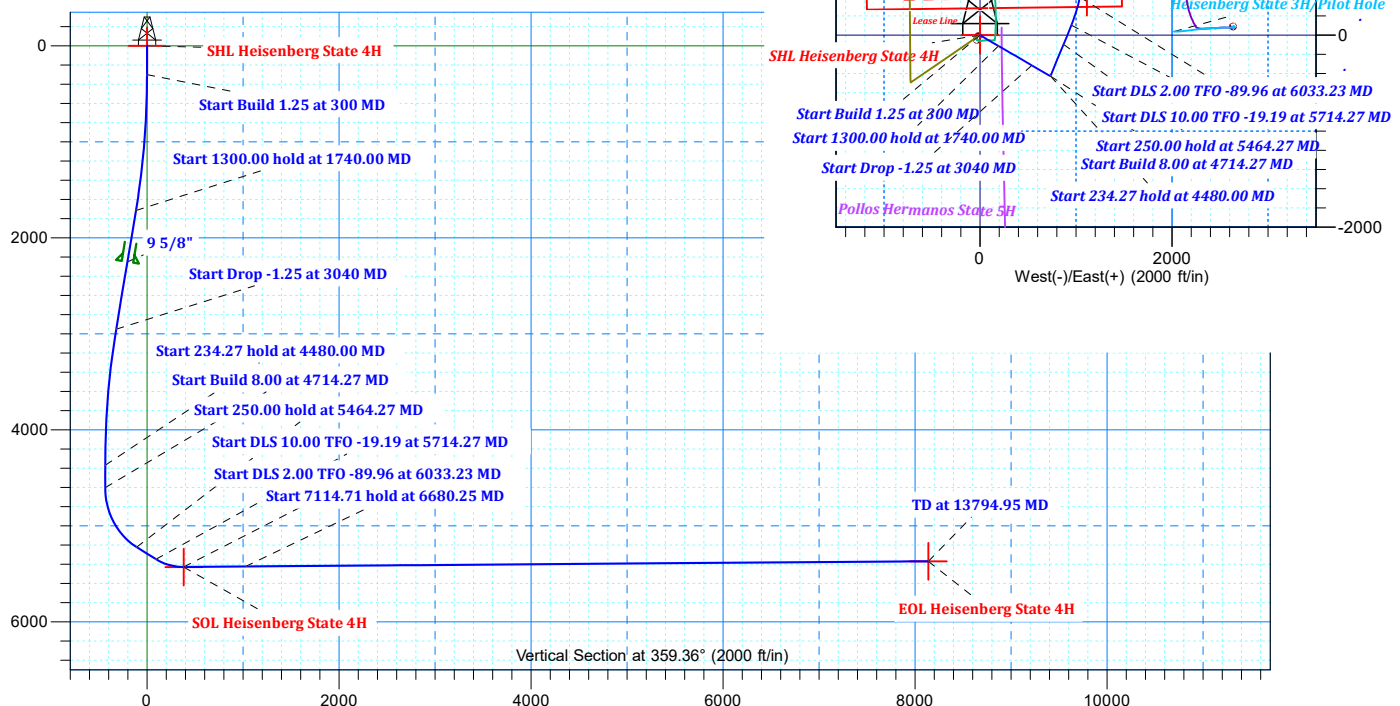
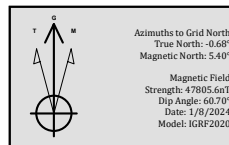
US State Plane 1983
New Mexico Eastern Zone
Elevation: GL 3806' + RKB 19' @ 3825.00ft
Northing 778098.48 Easting 922075.35 Latitude 33.133°N Longitude 103.090°W

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N/-S	+E/-W	Northing	Easting
SHL Heisenberg State 4H	0.00	0.00	0.00	778098.48	922075.35
EOL Heisenberg State 4H	5370.00	8151.36	1027.73	786249.82	923103.08
SOL Heisenberg State 4H	5430.00	394.82	1114.79	778493.30	923190.14

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
1740.00	18.00	120.20	1716.43	-112.85	193.89	1.25	-115.01
3040.00	18.00	120.20	2952.80	-314.92	541.09	0.00	-320.95
4480.00	0.00	0.00	4369.23	-427.77	734.98	1.25	-435.95
4714.27	0.00	0.00	4603.50	-427.77	734.98	0.00	-435.95
5464.27	60.00	22.30	5223.75	-96.45	870.86	8.00	-106.17
5714.27	60.00	22.30	5348.75	103.86	953.02	0.00	93.21
6033.23	90.44	12.30	5429.35	395.02	1041.70	10.00	383.36
6680.25	90.44	359.36	5424.38	1037.30	1107.28	2.00	1024.87
13794.95	90.44	359.36	5370.00	8151.36	1027.73	0.00	8139.37



Steward Energy II, LLC

Lea County, NM (NAD 83) NM East Zone

Heisenberg State 4H

Heisenberg State 4H

Wellbore #1

Plan: Plan #1

Standard Planning Report

09 January, 2024

Planning Report

Database:	edmdb	Local Co-ordinate Reference:	Well Heisenberg State 4H
Company:	Steward Energy II, LLC	TVD Reference:	GL 3806' + RKB 19' @ 3825.00ft
Project:	Lea County, NM (NAD 83) NM East Zone	MD Reference:	GL 3806' + RKB 19' @ 3825.00ft
Site:	Heisenberg State 4H	North Reference:	Grid
Well:	Heisenberg State 4H	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 4H			
Site Position:		Northing:	778,098.48 usft	Latitude: 33.133°N
From:	Map	Easting:	922,075.35 usft	Longitude: 103.090°W
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	

Well	Heisenberg State 4H			
Well Position	+N/-S	0.00 ft	Northing:	778,098.48 usft
	+E/-W	0.00 ft	Easting:	922,075.35 usft
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft
Grid Convergence:		0.68 °	Ground Level:	3,806.00 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2020	1/8/2024	6.08	60.70	47,805.59093435

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	1/9/2024		
Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	13,794.95	Plan #1 (Wellbore #1)	MWD
				MWD - Standard

Planning Report

Database:	edmdb	Local Co-ordinate Reference:	Well Heisenberg State 4H
Company:	Steward Energy II, LLC	TVD Reference:	GL 3806' + RKB 19' @ 3825.00ft
Project:	Lea County, NM (NAD 83) NM East Zone	MD Reference:	GL 3806' + RKB 19' @ 3825.00ft
Site:	Heisenberg State 4H	North Reference:	Grid
Well:	Heisenberg State 4H	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	
1,740.00	18.00	120.20	1,716.43	-112.85	193.89	1.25	1.25	0.00	120.20	
3,040.00	18.00	120.20	2,952.80	-314.92	541.09	0.00	0.00	0.00	0.00	
4,480.00	0.00	0.00	4,369.23	-427.77	734.98	1.25	-1.25	0.00	180.00	
4,714.27	0.00	0.00	4,603.50	-427.77	734.98	0.00	0.00	0.00	0.00	
5,464.27	60.00	22.30	5,223.75	-96.45	870.86	8.00	8.00	0.00	22.30	
5,714.27	60.00	22.30	5,348.75	103.86	953.02	0.00	0.00	0.00	0.00	
6,033.23	90.44	12.30	5,429.35	395.02	1,041.70	10.00	9.54	-3.14	-19.19	
6,680.25	90.44	359.36	5,424.38	1,037.30	1,107.28	2.00	0.00	-2.00	-89.96	
13,794.95	90.44	359.36	5,370.00	8,151.36	1,027.73	0.00	0.00	0.00	0.00	EOL Heisenberg State

Planning Report

Database:	edmdb	Local Co-ordinate Reference:	Well Heisenberg State 4H
Company:	Steward Energy II, LLC	TVD Reference:	GL 3806' + RKB 19' @ 3825.00ft
Project:	Lea County, NM (NAD 83) NM East Zone	MD Reference:	GL 3806' + RKB 19' @ 3825.00ft
Site:	Heisenberg State 4H	North Reference:	Grid
Well:	Heisenberg State 4H	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 1.25 at 300 MD									
400.00	1.25	120.20	399.99	-0.55	0.94	-0.56	1.25	1.25	0.00
500.00	2.50	120.20	499.94	-2.19	3.77	-2.24	1.25	1.25	0.00
600.00	3.75	120.20	599.79	-4.94	8.48	-5.03	1.25	1.25	0.00
700.00	5.00	120.20	699.49	-8.77	15.07	-8.94	1.25	1.25	0.00
800.00	6.25	120.20	799.01	-13.70	23.55	-13.97	1.25	1.25	0.00
900.00	7.50	120.20	898.29	-19.73	33.89	-20.10	1.25	1.25	0.00
1,000.00	8.75	120.20	997.28	-26.83	46.11	-27.35	1.25	1.25	0.00
1,100.00	10.00	120.20	1,095.94	-35.03	60.18	-35.70	1.25	1.25	0.00
1,200.00	11.25	120.20	1,194.23	-44.30	76.12	-45.15	1.25	1.25	0.00
1,300.00	12.50	120.20	1,292.09	-54.65	93.90	-55.70	1.25	1.25	0.00
1,400.00	13.75	120.20	1,389.47	-66.08	113.53	-67.34	1.25	1.25	0.00
1,500.00	15.00	120.20	1,486.34	-78.56	134.99	-80.07	1.25	1.25	0.00
1,600.00	16.25	120.20	1,582.64	-92.11	158.26	-93.87	1.25	1.25	0.00
1,700.00	17.50	120.20	1,678.33	-106.71	183.35	-108.75	1.25	1.25	0.00
1,740.00	18.00	120.20	1,716.43	-112.85	193.89	-115.01	1.25	1.25	0.00
Start 1300.00 hold at 1740.00 MD									
1,800.00	18.00	120.20	1,773.49	-122.17	209.92	-124.51	0.00	0.00	0.00
1,900.00	18.00	120.20	1,868.60	-137.72	236.62	-140.35	0.00	0.00	0.00
2,000.00	18.00	120.20	1,963.70	-153.26	263.33	-156.19	0.00	0.00	0.00
2,100.00	18.00	120.20	2,058.81	-168.81	290.04	-172.04	0.00	0.00	0.00
2,200.00	18.00	120.20	2,153.92	-184.35	316.75	-187.88	0.00	0.00	0.00
2,300.00	18.00	120.20	2,249.02	-199.90	343.45	-203.72	0.00	0.00	0.00
2,301.03	18.00	120.20	2,250.00	-200.06	343.73	-203.88	0.00	0.00	0.00
9 5/8"									
2,400.00	18.00	120.20	2,344.13	-215.44	370.16	-219.56	0.00	0.00	0.00
2,500.00	18.00	120.20	2,439.23	-230.98	396.87	-235.40	0.00	0.00	0.00
2,600.00	18.00	120.20	2,534.34	-246.53	423.58	-251.24	0.00	0.00	0.00
2,700.00	18.00	120.20	2,629.44	-262.07	450.28	-267.09	0.00	0.00	0.00
2,800.00	18.00	120.20	2,724.55	-277.62	476.99	-282.93	0.00	0.00	0.00
2,900.00	18.00	120.20	2,819.66	-293.16	503.70	-298.77	0.00	0.00	0.00
3,000.00	18.00	120.20	2,914.76	-308.70	530.41	-314.61	0.00	0.00	0.00
3,040.00	18.00	120.20	2,952.80	-314.92	541.09	-320.95	0.00	0.00	0.00
Start Drop -1.25 at 3040 MD									
3,100.00	17.25	120.20	3,009.99	-324.06	556.79	-330.26	1.25	-1.25	0.00
3,200.00	16.00	120.20	3,105.80	-338.45	581.52	-344.93	1.25	-1.25	0.00
3,300.00	14.75	120.20	3,202.22	-351.79	604.43	-358.52	1.25	-1.25	0.00
3,400.00	13.50	120.20	3,299.20	-364.06	625.52	-371.03	1.25	-1.25	0.00
3,500.00	12.25	120.20	3,396.68	-375.27	644.78	-382.45	1.25	-1.25	0.00
3,600.00	11.00	120.20	3,494.63	-385.41	662.20	-392.78	1.25	-1.25	0.00
3,700.00	9.75	120.20	3,592.99	-394.47	677.76	-402.01	1.25	-1.25	0.00
3,800.00	8.50	120.20	3,691.72	-402.44	691.47	-410.14	1.25	-1.25	0.00
3,900.00	7.25	120.20	3,790.78	-409.34	703.31	-417.17	1.25	-1.25	0.00
4,000.00	6.00	120.20	3,890.11	-415.14	713.28	-423.08	1.25	-1.25	0.00
4,100.00	4.75	120.20	3,989.67	-419.85	721.38	-427.88	1.25	-1.25	0.00
4,200.00	3.50	120.20	4,089.41	-423.47	727.59	-431.57	1.25	-1.25	0.00
4,300.00	2.25	120.20	4,189.28	-425.99	731.93	-434.14	1.25	-1.25	0.00
4,400.00	1.00	120.20	4,289.24	-427.42	734.38	-435.59	1.25	-1.25	0.00
4,480.00	0.00	0.00	4,369.23	-427.77	734.98	-435.95	1.25	-1.25	0.00
Start 234.27 hold at 4480.00 MD									

Planning Report

Database:	edmdb	Local Co-ordinate Reference:	Well Heisenberg State 4H
Company:	Steward Energy II, LLC	TVD Reference:	GL 3806' + RKB 19' @ 3825.00ft
Project:	Lea County, NM (NAD 83) NM East Zone	MD Reference:	GL 3806' + RKB 19' @ 3825.00ft
Site:	Heisenberg State 4H	North Reference:	Grid
Well:	Heisenberg State 4H	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	4,389.23	-427.77	734.98	-435.95	0.00	0.00	0.00
4,600.00	0.00	0.00	4,489.23	-427.77	734.98	-435.95	0.00	0.00	0.00
4,700.00	0.00	0.00	4,589.23	-427.77	734.98	-435.95	0.00	0.00	0.00
4,714.27	0.00	0.00	4,603.50	-427.77	734.98	-435.95	0.00	0.00	0.00
Start Build 8.00 at 4714.27 MD									
4,800.00	6.86	22.30	4,689.03	-423.03	736.93	-431.23	8.00	8.00	0.00
4,900.00	14.86	22.30	4,787.16	-405.61	744.07	-413.90	8.00	8.00	0.00
5,000.00	22.86	22.30	4,881.71	-375.73	756.32	-384.16	8.00	8.00	0.00
5,100.00	30.86	22.30	4,970.85	-333.96	773.45	-342.58	8.00	8.00	0.00
5,200.00	38.86	22.30	5,052.84	-281.13	795.12	-289.99	8.00	8.00	0.00
5,300.00	46.86	22.30	5,126.09	-218.25	820.91	-227.40	8.00	8.00	0.00
5,400.00	54.86	22.30	5,189.16	-146.55	850.32	-156.03	8.00	8.00	0.00
5,464.27	60.00	22.30	5,223.75	-96.45	870.86	-106.17	8.00	8.00	0.00
Start 250.00 hold at 5464.27 MD									
5,500.00	60.00	22.30	5,241.61	-67.82	882.61	-77.68	0.00	0.00	0.00
5,600.00	60.00	22.30	5,291.61	12.30	915.47	2.08	0.00	0.00	0.00
5,700.00	60.00	22.30	5,341.61	92.43	948.33	81.83	0.00	0.00	0.00
5,714.27	60.00	22.30	5,348.75	103.86	953.02	93.21	0.00	0.00	0.00
Start DLS 10.00 TFO -19.19 at 5714.27 MD									
5,800.00	68.13	19.27	5,386.22	175.89	980.29	164.93	10.00	9.48	-3.53
5,900.00	77.68	16.15	5,415.59	266.85	1,009.27	255.56	10.00	9.54	-3.12
6,000.00	87.25	13.25	5,428.69	362.62	1,034.36	351.05	10.00	9.58	-2.90
6,033.23	90.44	12.30	5,429.35	395.02	1,041.70	383.36	10.00	9.59	-2.85
Start DLS 2.00 TFO -89.96 at 6033.23 MD									
6,100.00	90.44	10.96	5,428.84	460.42	1,055.17	448.60	2.00	0.00	-2.00
6,200.00	90.44	8.96	5,428.07	558.90	1,072.47	546.88	2.00	0.00	-2.00
6,300.00	90.44	6.96	5,427.30	657.93	1,086.32	645.75	2.00	0.00	-2.00
6,400.00	90.44	4.96	5,426.53	757.38	1,096.71	745.08	2.00	0.00	-2.00
6,500.00	90.44	2.96	5,425.76	857.13	1,103.63	844.75	2.00	0.00	-2.00
6,600.00	90.44	0.96	5,424.99	957.06	1,107.05	944.64	2.00	0.00	-2.00
6,680.25	90.44	359.36	5,424.38	1,037.30	1,107.28	1,024.87	2.00	0.00	-2.00
Start 7114.71 hold at 6680.25 MD									
6,700.00	90.44	359.36	5,424.23	1,057.06	1,107.06	1,044.62	0.00	0.00	0.00
6,800.00	90.44	359.36	5,423.46	1,157.05	1,105.94	1,144.62	0.00	0.00	0.00
6,900.00	90.44	359.36	5,422.70	1,257.04	1,104.82	1,244.62	0.00	0.00	0.00
7,000.00	90.44	359.36	5,421.93	1,357.03	1,103.71	1,344.62	0.00	0.00	0.00
7,100.00	90.44	359.36	5,421.17	1,457.02	1,102.59	1,444.61	0.00	0.00	0.00
7,200.00	90.44	359.36	5,420.40	1,557.01	1,101.47	1,544.61	0.00	0.00	0.00
7,300.00	90.44	359.36	5,419.64	1,657.00	1,100.35	1,644.61	0.00	0.00	0.00
7,400.00	90.44	359.36	5,418.88	1,756.99	1,099.23	1,744.60	0.00	0.00	0.00
7,500.00	90.44	359.36	5,418.11	1,856.98	1,098.12	1,844.60	0.00	0.00	0.00
7,600.00	90.44	359.36	5,417.35	1,956.97	1,097.00	1,944.60	0.00	0.00	0.00
7,700.00	90.44	359.36	5,416.58	2,056.96	1,095.88	2,044.59	0.00	0.00	0.00
7,800.00	90.44	359.36	5,415.82	2,156.95	1,094.76	2,144.59	0.00	0.00	0.00
7,900.00	90.44	359.36	5,415.05	2,256.95	1,093.64	2,244.59	0.00	0.00	0.00
8,000.00	90.44	359.36	5,414.29	2,356.94	1,092.52	2,344.59	0.00	0.00	0.00
8,100.00	90.44	359.36	5,413.53	2,456.93	1,091.41	2,444.58	0.00	0.00	0.00
8,200.00	90.44	359.36	5,412.76	2,556.92	1,090.29	2,544.58	0.00	0.00	0.00
8,300.00	90.44	359.36	5,412.00	2,656.91	1,089.17	2,644.58	0.00	0.00	0.00
8,400.00	90.44	359.36	5,411.23	2,756.90	1,088.05	2,744.57	0.00	0.00	0.00
8,500.00	90.44	359.36	5,410.47	2,856.89	1,086.93	2,844.57	0.00	0.00	0.00
8,600.00	90.44	359.36	5,409.70	2,956.88	1,085.82	2,944.57	0.00	0.00	0.00
8,700.00	90.44	359.36	5,408.94	3,056.87	1,084.70	3,044.57	0.00	0.00	0.00

Planning Report

Database:	edmdb	Local Co-ordinate Reference:	Well Heisenberg State 4H
Company:	Steward Energy II, LLC	TVD Reference:	GL 3806' + RKB 19' @ 3825.00ft
Project:	Lea County, NM (NAD 83) NM East Zone	MD Reference:	GL 3806' + RKB 19' @ 3825.00ft
Site:	Heisenberg State 4H	North Reference:	Grid
Well:	Heisenberg State 4H	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)	
8,800.00	90.44	359.36	5,408.18	3,156.86	1,083.58	3,144.56	0.00	0.00	0.00	
8,900.00	90.44	359.36	5,407.41	3,256.85	1,082.46	3,244.56	0.00	0.00	0.00	
9,000.00	90.44	359.36	5,406.65	3,356.84	1,081.34	3,344.56	0.00	0.00	0.00	
9,100.00	90.44	359.36	5,405.88	3,456.84	1,080.23	3,444.55	0.00	0.00	0.00	
9,200.00	90.44	359.36	5,405.12	3,556.83	1,079.11	3,544.55	0.00	0.00	0.00	
9,300.00	90.44	359.36	5,404.35	3,656.82	1,077.99	3,644.55	0.00	0.00	0.00	
9,400.00	90.44	359.36	5,403.59	3,756.81	1,076.87	3,744.55	0.00	0.00	0.00	
9,500.00	90.44	359.36	5,402.83	3,856.80	1,075.75	3,844.54	0.00	0.00	0.00	
9,600.00	90.44	359.36	5,402.06	3,956.79	1,074.64	3,944.54	0.00	0.00	0.00	
9,700.00	90.44	359.36	5,401.30	4,056.78	1,073.52	4,044.54	0.00	0.00	0.00	
9,800.00	90.44	359.36	5,400.53	4,156.77	1,072.40	4,144.53	0.00	0.00	0.00	
9,900.00	90.44	359.36	5,399.77	4,256.76	1,071.28	4,244.53	0.00	0.00	0.00	
10,000.00	90.44	359.36	5,399.00	4,356.75	1,070.16	4,344.53	0.00	0.00	0.00	
10,100.00	90.44	359.36	5,398.24	4,456.74	1,069.04	4,444.52	0.00	0.00	0.00	
10,200.00	90.44	359.36	5,397.48	4,556.73	1,067.93	4,544.52	0.00	0.00	0.00	
10,300.00	90.44	359.36	5,396.71	4,656.73	1,066.81	4,644.52	0.00	0.00	0.00	
10,400.00	90.44	359.36	5,395.95	4,756.72	1,065.69	4,744.52	0.00	0.00	0.00	
10,500.00	90.44	359.36	5,395.18	4,856.71	1,064.57	4,844.51	0.00	0.00	0.00	
10,600.00	90.44	359.36	5,394.42	4,956.70	1,063.45	4,944.51	0.00	0.00	0.00	
10,700.00	90.44	359.36	5,393.65	5,056.69	1,062.34	5,044.51	0.00	0.00	0.00	
10,800.00	90.44	359.36	5,392.89	5,156.68	1,061.22	5,144.50	0.00	0.00	0.00	
10,900.00	90.44	359.36	5,392.13	5,256.67	1,060.10	5,244.50	0.00	0.00	0.00	
11,000.00	90.44	359.36	5,391.36	5,356.66	1,058.98	5,344.50	0.00	0.00	0.00	
11,100.00	90.44	359.36	5,390.60	5,456.65	1,057.86	5,444.50	0.00	0.00	0.00	
11,200.00	90.44	359.36	5,389.83	5,556.64	1,056.75	5,544.49	0.00	0.00	0.00	
11,300.00	90.44	359.36	5,389.07	5,656.63	1,055.63	5,644.49	0.00	0.00	0.00	
11,400.00	90.44	359.36	5,388.30	5,756.62	1,054.51	5,744.49	0.00	0.00	0.00	
11,500.00	90.44	359.36	5,387.54	5,856.62	1,053.39	5,844.48	0.00	0.00	0.00	
11,600.00	90.44	359.36	5,386.78	5,956.61	1,052.27	5,944.48	0.00	0.00	0.00	
11,700.00	90.44	359.36	5,386.01	6,056.60	1,051.16	6,044.48	0.00	0.00	0.00	
11,800.00	90.44	359.36	5,385.25	6,156.59	1,050.04	6,144.48	0.00	0.00	0.00	
11,900.00	90.44	359.36	5,384.48	6,256.58	1,048.92	6,244.47	0.00	0.00	0.00	
12,000.00	90.44	359.36	5,383.72	6,356.57	1,047.80	6,344.47	0.00	0.00	0.00	
12,100.00	90.44	359.36	5,382.95	6,456.56	1,046.68	6,444.47	0.00	0.00	0.00	
12,200.00	90.44	359.36	5,382.19	6,556.55	1,045.57	6,544.46	0.00	0.00	0.00	
12,300.00	90.44	359.36	5,381.43	6,656.54	1,044.45	6,644.46	0.00	0.00	0.00	
12,400.00	90.44	359.36	5,380.66	6,756.53	1,043.33	6,744.46	0.00	0.00	0.00	
12,500.00	90.44	359.36	5,379.90	6,856.52	1,042.21	6,844.45	0.00	0.00	0.00	
12,600.00	90.44	359.36	5,379.13	6,956.51	1,041.09	6,944.45	0.00	0.00	0.00	
12,700.00	90.44	359.36	5,378.37	7,056.51	1,039.97	7,044.45	0.00	0.00	0.00	
12,800.00	90.44	359.36	5,377.60	7,156.50	1,038.86	7,144.45	0.00	0.00	0.00	
12,900.00	90.44	359.36	5,376.84	7,256.49	1,037.74	7,244.44	0.00	0.00	0.00	
13,000.00	90.44	359.36	5,376.08	7,356.48	1,036.62	7,344.44	0.00	0.00	0.00	
13,100.00	90.44	359.36	5,375.31	7,456.47	1,035.50	7,444.44	0.00	0.00	0.00	
13,200.00	90.44	359.36	5,374.55	7,556.46	1,034.38	7,544.43	0.00	0.00	0.00	
13,300.00	90.44	359.36	5,373.78	7,656.45	1,033.27	7,644.43	0.00	0.00	0.00	
13,400.00	90.44	359.36	5,373.02	7,756.44	1,032.15	7,744.43	0.00	0.00	0.00	
13,500.00	90.44	359.36	5,372.25	7,856.43	1,031.03	7,844.43	0.00	0.00	0.00	
13,600.00	90.44	359.36	5,371.49	7,956.42	1,029.91	7,944.42	0.00	0.00	0.00	
13,700.00	90.44	359.36	5,370.73	8,056.41	1,028.79	8,044.42	0.00	0.00	0.00	
13,794.95	90.44	359.36	5,370.00	8,151.36	1,027.73	8,139.37	0.00	0.00	0.00	
TD at 13794.95 MD										

Planning Report

Database:	edmdb	Local Co-ordinate Reference:	Well Heisenberg State 4H
Company:	Steward Energy II, LLC	TVD Reference:	GL 3806' + RKB 19' @ 3825.00ft
Project:	Lea County, NM (NAD 83) NM East Zone	MD Reference:	GL 3806' + RKB 19' @ 3825.00ft
Site:	Heisenberg State 4H	North Reference:	Grid
Well:	Heisenberg State 4H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1		

Design Targets									
Target Name									
- hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- Shape	(°)	(°)	(ft)	(ft)	(ft)	(usft)	(usft)		
SHL Heisenberg State 4	0.00	0.00	0.00	0.00	0.00	778,098.48	922,075.35	33.133°N	103.090°W
- plan hits target center									
- Point									
EOL Heisenberg State 4	0.00	0.01	5,370.00	8,151.36	1,027.73	786,249.82	923,103.08	33.155°N	103.086°W
- plan hits target center									
- Point									
SOL Heisenberg State 4	0.00	0.00	5,430.00	394.82	1,114.79	778,493.30	923,190.14	33.134°N	103.086°W
- plan misses target center by 71.50ft at 6047.77ft MD (5429.24 TVD, 409.23 N, 1044.76 E)									
- Point									

Casing Points					
Measured Depth	Vertical Depth			Casing Diameter	Hole Diameter
(ft)	(ft)	Name		(in)	(in)
2,301.03	2,250.00	9 5/8"		9.625	12.250

Plan Annotations					
Measured Depth	Vertical Depth	Local Coordinates			
(ft)	(ft)	+N/-S	+E/-W	Comment	
(ft)	(ft)	(ft)	(ft)		
300.00	300.00	0.00	0.00	Start Build 1.25 at 300 MD	
1,740.00	1,716.43	-112.85	193.89	Start 1300.00 hold at 1740.00 MD	
3,040.00	2,952.80	-314.92	541.09	Start Drop -1.25 at 3040 MD	
4,480.00	4,369.23	-427.77	734.98	Start 234.27 hold at 4480.00 MD	
4,714.27	4,603.50	-427.77	734.98	Start Build 8.00 at 4714.27 MD	
5,464.27	5,223.75	-96.45	870.86	Start 250.00 hold at 5464.27 MD	
5,714.27	5,348.75	103.86	953.02	Start DLS 10.00 TFO -19.19 at 5714.27 MD	
6,033.23	5,429.35	395.02	1,041.70	Start DLS 2.00 TFO -89.96 at 6033.23 MD	
6,680.25	5,424.38	1,037.30	1,107.28	Start 7114.71 hold at 6680.25 MD	
13,794.95	5,370.00	8,151.36	1,027.73	TD at 13794.95 MD	

Steward Energy II, LLC

Lea County, NM (NAD 83) NM East Zone

Heisenberg State 4H

Heisenberg State 4H

Wellbore #1

Plan: Plan #1

Standard Planning Report - Geographic

09 January, 2024

Planning Report - Geographic

Database:	edmdb	Local Co-ordinate Reference:	Well Heisenberg State 4H
Company:	Steward Energy II, LLC	TVD Reference:	GL 3806' + RKB 19' @ 3825.00ft
Project:	Lea County, NM (NAD 83) NM East Zone	MD Reference:	GL 3806' + RKB 19' @ 3825.00ft
Site:	Heisenberg State 4H	North Reference:	Grid
Well:	Heisenberg State 4H	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 4H				
Site Position:	Northing:	778,098.48 usft	Latitude:	33.133°N	
From:	Map	Easting:	922,075.35 usft	Longitude:	103.090°W
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in		

Well	Heisenberg State 4H					
Well Position	+N/-S	0.00 ft	Northing:	778,098.48 usft	Latitude:	33.133°N
	+E/-W	0.00 ft	Easting:	922,075.35 usft	Longitude:	103.090°W
Position Uncertainty	0.00 ft	Wellhead Elevation:	ft	Ground Level:	3,806.00 ft	
Grid Convergence:	0.68 °					

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2020	1/8/2024	6.08	60.70	47,805.59093435

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	1/9/2024		
Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	13,794.95 Plan #1 (Wellbore #1)	MWD	
			MWD - Standard	

Planning Report - Geographic

Database:	edmdb	Local Co-ordinate Reference:	Well Heisenberg State 4H
Company:	Steward Energy II, LLC	TVD Reference:	GL 3806' + RKB 19' @ 3825.00ft
Project:	Lea County, NM (NAD 83) NM East Zone	MD Reference:	GL 3806' + RKB 19' @ 3825.00ft
Site:	Heisenberg State 4H	North Reference:	Grid
Well:	Heisenberg State 4H	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	
1,740.00	18.00	120.20	1,716.43	-112.85	193.89	1.25	1.25	0.00	120.20	
3,040.00	18.00	120.20	2,952.80	-314.92	541.09	0.00	0.00	0.00	0.00	
4,480.00	0.00	0.00	4,369.23	-427.77	734.98	1.25	-1.25	0.00	180.00	
4,714.27	0.00	0.00	4,603.50	-427.77	734.98	0.00	0.00	0.00	0.00	
5,464.27	60.00	22.30	5,223.75	-96.45	870.86	8.00	8.00	0.00	22.30	
5,714.27	60.00	22.30	5,348.75	103.86	953.02	0.00	0.00	0.00	0.00	
6,033.23	90.44	12.30	5,429.35	395.02	1,041.70	10.00	9.54	-3.14	-19.19	
6,680.25	90.44	359.36	5,424.38	1,037.30	1,107.28	2.00	0.00	-2.00	-89.96	
13,794.95	90.44	359.36	5,370.00	8,151.36	1,027.73	0.00	0.00	0.00	0.00	EOL Heisenberg State

Planning Report - Geographic

Database:	edmdb	Local Co-ordinate Reference:	Well Heisenberg State 4H
Company:	Steward Energy II, LLC	TVD Reference:	GL 3806' + RKB 19' @ 3825.00ft
Project:	Lea County, NM (NAD 83) NM East Zone	MD Reference:	GL 3806' + RKB 19' @ 3825.00ft
Site:	Heisenberg State 4H	North Reference:	Grid
Well:	Heisenberg State 4H	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	778,098.48	922,075.35	33.133°N	103.090°W
100.00	0.00	0.00	100.00	0.00	0.00	778,098.48	922,075.35	33.133°N	103.090°W
200.00	0.00	0.00	200.00	0.00	0.00	778,098.48	922,075.35	33.133°N	103.090°W
300.00	0.00	0.00	300.00	0.00	0.00	778,098.48	922,075.35	33.133°N	103.090°W
Start Build 1.25 at 300 MD									
400.00	1.25	120.20	399.99	-0.55	0.94	778,097.93	922,076.29	33.133°N	103.090°W
500.00	2.50	120.20	499.94	-2.19	3.77	778,096.28	922,079.12	33.133°N	103.090°W
600.00	3.75	120.20	599.79	-4.94	8.48	778,093.54	922,083.83	33.133°N	103.090°W
700.00	5.00	120.20	699.49	-8.77	15.07	778,089.70	922,090.43	33.133°N	103.090°W
800.00	6.25	120.20	799.01	-13.70	23.55	778,084.77	922,098.90	33.133°N	103.090°W
900.00	7.50	120.20	898.29	-19.73	33.89	778,078.75	922,109.24	33.133°N	103.089°W
1,000.00	8.75	120.20	997.28	-26.83	46.11	778,071.64	922,121.46	33.133°N	103.089°W
1,100.00	10.00	120.20	1,095.94	-35.03	60.18	778,063.45	922,135.54	33.133°N	103.089°W
1,200.00	11.25	120.20	1,194.23	-44.30	76.12	778,054.17	922,151.47	33.133°N	103.089°W
1,300.00	12.50	120.20	1,292.09	-54.65	93.90	778,043.82	922,169.25	33.133°N	103.089°W
1,400.00	13.75	120.20	1,389.47	-66.08	113.53	778,032.40	922,188.88	33.133°N	103.089°W
1,500.00	15.00	120.20	1,486.34	-78.56	134.99	778,019.91	922,210.34	33.133°N	103.089°W
1,600.00	16.25	120.20	1,582.64	-92.11	158.26	778,006.37	922,233.61	33.133°N	103.089°W
1,700.00	17.50	120.20	1,678.33	-106.71	183.35	777,991.76	922,258.70	33.132°N	103.089°W
1,740.00	18.00	120.20	1,716.43	-112.85	193.89	777,985.63	922,269.24	33.132°N	103.089°W
Start 1300.00 hold at 1740.00 MD									
1,800.00	18.00	120.20	1,773.49	-122.17	209.92	777,976.30	922,285.27	33.132°N	103.089°W
1,900.00	18.00	120.20	1,868.60	-137.72	236.62	777,960.76	922,311.97	33.132°N	103.089°W
2,000.00	18.00	120.20	1,963.70	-153.26	263.33	777,945.22	922,338.68	33.132°N	103.089°W
2,100.00	18.00	120.20	2,058.81	-168.81	290.04	777,929.67	922,365.39	33.132°N	103.089°W
2,200.00	18.00	120.20	2,153.92	-184.35	316.75	777,914.13	922,392.10	33.132°N	103.089°W
2,300.00	18.00	120.20	2,249.02	-199.90	343.45	777,898.58	922,418.80	33.132°N	103.088°W
2,301.03	18.00	120.20	2,250.00	-200.06	343.73	777,898.42	922,419.08	33.132°N	103.088°W
9 5/8"									
2,400.00	18.00	120.20	2,344.13	-215.44	370.16	777,883.04	922,445.51	33.132°N	103.088°W
2,500.00	18.00	120.20	2,439.23	-230.98	396.87	777,867.49	922,472.22	33.132°N	103.088°W
2,600.00	18.00	120.20	2,534.34	-246.53	423.58	777,851.95	922,498.93	33.132°N	103.088°W
2,700.00	18.00	120.20	2,629.44	-262.07	450.28	777,836.41	922,525.63	33.132°N	103.088°W
2,800.00	18.00	120.20	2,724.55	-277.62	476.99	777,820.86	922,552.34	33.132°N	103.088°W
2,900.00	18.00	120.20	2,819.66	-293.16	503.70	777,805.32	922,579.05	33.132°N	103.088°W
3,000.00	18.00	120.20	2,914.76	-308.70	530.41	777,789.77	922,605.76	33.132°N	103.088°W
3,040.00	18.00	120.20	2,952.80	-314.92	541.09	777,783.56	922,616.44	33.132°N	103.088°W
Start Drop -1.25 at 3040 MD									
3,100.00	17.25	120.20	3,009.99	-324.06	556.79	777,774.42	922,632.14	33.132°N	103.088°W
3,200.00	16.00	120.20	3,105.80	-338.45	581.52	777,760.03	922,656.87	33.132°N	103.088°W
3,300.00	14.75	120.20	3,202.22	-351.79	604.43	777,746.69	922,679.78	33.132°N	103.088°W
3,400.00	13.50	120.20	3,299.20	-364.06	625.52	777,734.41	922,700.87	33.132°N	103.088°W
3,500.00	12.25	120.20	3,396.68	-375.27	644.78	777,723.21	922,720.13	33.132°N	103.088°W
3,600.00	11.00	120.20	3,494.63	-385.41	662.20	777,713.07	922,737.55	33.132°N	103.087°W
3,700.00	9.75	120.20	3,592.99	-394.47	677.76	777,704.01	922,753.11	33.132°N	103.087°W
3,800.00	8.50	120.20	3,691.72	-402.44	691.47	777,696.03	922,766.82	33.132°N	103.087°W
3,900.00	7.25	120.20	3,790.78	-409.34	703.31	777,689.14	922,778.66	33.132°N	103.087°W
4,000.00	6.00	120.20	3,890.11	-415.14	713.28	777,683.34	922,788.63	33.132°N	103.087°W
4,100.00	4.75	120.20	3,989.67	-419.85	721.38	777,678.63	922,796.73	33.132°N	103.087°W
4,200.00	3.50	120.20	4,089.41	-423.47	727.59	777,675.01	922,802.94	33.132°N	103.087°W
4,300.00	2.25	120.20	4,189.28	-425.99	731.93	777,672.49	922,807.28	33.132°N	103.087°W
4,400.00	1.00	120.20	4,289.24	-427.42	734.38	777,671.06	922,809.73	33.132°N	103.087°W
4,480.00	0.00	0.00	4,369.23	-427.77	734.98	777,670.71	922,810.33	33.132°N	103.087°W
Start 234.27 hold at 4480.00 MD									

Planning Report - Geographic

Database:	edmdb	Local Co-ordinate Reference:	Well Heisenberg State 4H
Company:	Steward Energy II, LLC	TVD Reference:	GL 3806' + RKB 19' @ 3825.00ft
Project:	Lea County, NM (NAD 83) NM East Zone	MD Reference:	GL 3806' + RKB 19' @ 3825.00ft
Site:	Heisenberg State 4H	North Reference:	Grid
Well:	Heisenberg State 4H	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	4,389.23	-427.77	734.98	777,670.71	922,810.33	33.132°N	103.087°W
4,600.00	0.00	0.00	4,489.23	-427.77	734.98	777,670.71	922,810.33	33.132°N	103.087°W
4,700.00	0.00	0.00	4,589.23	-427.77	734.98	777,670.71	922,810.33	33.132°N	103.087°W
4,714.27	0.00	0.00	4,603.50	-427.77	734.98	777,670.71	922,810.33	33.132°N	103.087°W
Start Build 8.00 at 4714.27 MD									
4,800.00	6.86	22.30	4,689.03	-423.03	736.93	777,675.45	922,812.28	33.132°N	103.087°W
4,900.00	14.86	22.30	4,787.16	-405.61	744.07	777,692.87	922,819.42	33.132°N	103.087°W
5,000.00	22.86	22.30	4,881.71	-375.73	756.32	777,722.75	922,831.67	33.132°N	103.087°W
5,100.00	30.86	22.30	4,970.85	-333.96	773.45	777,764.51	922,848.80	33.132°N	103.087°W
5,200.00	38.86	22.30	5,052.84	-281.13	795.12	777,817.35	922,870.47	33.132°N	103.087°W
5,300.00	46.86	22.30	5,126.09	-218.25	820.91	777,880.23	922,896.26	33.132°N	103.087°W
5,400.00	54.86	22.30	5,189.16	-146.55	850.32	777,951.93	922,925.67	33.132°N	103.087°W
5,464.27	60.00	22.30	5,223.75	-96.45	870.86	778,002.02	922,946.21	33.132°N	103.087°W
Start 250.00 hold at 5464.27 MD									
5,500.00	60.00	22.30	5,241.61	-67.82	882.61	778,030.66	922,957.96	33.133°N	103.087°W
5,600.00	60.00	22.30	5,291.61	12.30	915.47	778,110.78	922,990.82	33.133°N	103.087°W
5,700.00	60.00	22.30	5,341.61	92.43	948.33	778,190.91	923,023.68	33.133°N	103.086°W
5,714.27	60.00	22.30	5,348.75	103.86	953.02	778,202.34	923,028.37	33.133°N	103.086°W
Start DLS 10.00 TFO -19.19 at 5714.27 MD									
5,800.00	68.13	19.27	5,386.22	175.89	980.29	778,274.37	923,055.64	33.133°N	103.086°W
5,900.00	77.68	16.15	5,415.59	266.85	1,009.27	778,365.32	923,084.61	33.133°N	103.086°W
6,000.00	87.25	13.25	5,428.69	362.62	1,034.36	778,461.10	923,109.71	33.134°N	103.086°W
6,033.23	90.44	12.30	5,429.35	395.02	1,041.70	778,493.50	923,117.05	33.134°N	103.086°W
Start DLS 2.00 TFO -89.96 at 6033.23 MD									
6,100.00	90.44	10.96	5,428.84	460.42	1,055.17	778,558.89	923,130.51	33.134°N	103.086°W
6,200.00	90.44	8.96	5,428.07	558.90	1,072.47	778,657.38	923,147.82	33.134°N	103.086°W
6,300.00	90.44	6.96	5,427.30	657.93	1,086.32	778,756.40	923,161.67	33.135°N	103.086°W
6,400.00	90.44	4.96	5,426.53	757.38	1,096.71	778,855.85	923,172.06	33.135°N	103.086°W
6,500.00	90.44	2.96	5,425.76	857.13	1,103.63	778,955.61	923,178.98	33.135°N	103.086°W
6,600.00	90.44	0.96	5,424.99	957.06	1,107.05	779,055.54	923,182.40	33.135°N	103.086°W
6,680.25	90.44	359.36	5,424.38	1,037.30	1,107.28	779,135.78	923,182.63	33.136°N	103.086°W
Start 7114.71 hold at 6680.25 MD									
6,700.00	90.44	359.36	5,424.23	1,057.06	1,107.06	779,155.53	923,182.41	33.136°N	103.086°W
6,800.00	90.44	359.36	5,423.46	1,157.05	1,105.94	779,255.52	923,181.29	33.136°N	103.086°W
6,900.00	90.44	359.36	5,422.70	1,257.04	1,104.82	779,355.51	923,180.17	33.136°N	103.086°W
7,000.00	90.44	359.36	5,421.93	1,357.03	1,103.71	779,455.50	923,179.05	33.136°N	103.086°W
7,100.00	90.44	359.36	5,421.17	1,457.02	1,102.59	779,555.49	923,177.94	33.137°N	103.086°W
7,200.00	90.44	359.36	5,420.40	1,557.01	1,101.47	779,655.48	923,176.82	33.137°N	103.086°W
7,300.00	90.44	359.36	5,419.64	1,657.00	1,100.35	779,755.47	923,175.70	33.137°N	103.086°W
7,400.00	90.44	359.36	5,418.88	1,756.99	1,099.23	779,855.47	923,174.58	33.138°N	103.086°W
7,500.00	90.44	359.36	5,418.11	1,856.98	1,098.12	779,955.46	923,173.46	33.138°N	103.086°W
7,600.00	90.44	359.36	5,417.35	1,956.97	1,097.00	780,055.45	923,172.35	33.138°N	103.086°W
7,700.00	90.44	359.36	5,416.58	2,056.96	1,095.88	780,155.44	923,171.23	33.138°N	103.086°W
7,800.00	90.44	359.36	5,415.82	2,156.95	1,094.76	780,255.43	923,170.11	33.139°N	103.086°W
7,900.00	90.44	359.36	5,415.05	2,256.95	1,093.64	780,355.42	923,168.99	33.139°N	103.086°W
8,000.00	90.44	359.36	5,414.29	2,356.94	1,092.52	780,455.41	923,167.87	33.139°N	103.086°W
8,100.00	90.44	359.36	5,413.53	2,456.93	1,091.41	780,555.40	923,166.76	33.139°N	103.086°W
8,200.00	90.44	359.36	5,412.76	2,556.92	1,090.29	780,655.39	923,165.64	33.140°N	103.086°W
8,300.00	90.44	359.36	5,412.00	2,656.91	1,089.17	780,755.38	923,164.52	33.140°N	103.086°W
8,400.00	90.44	359.36	5,411.23	2,756.90	1,088.05	780,855.37	923,163.40	33.140°N	103.086°W
8,500.00	90.44	359.36	5,410.47	2,856.89	1,086.93	780,955.36	923,162.28	33.141°N	103.086°W
8,600.00	90.44	359.36	5,409.70	2,956.88	1,085.82	781,055.35	923,161.16	33.141°N	103.086°W
8,700.00	90.44	359.36	5,408.94	3,056.87	1,084.70	781,155.34	923,160.05	33.141°N	103.086°W
8,800.00	90.44	359.36	5,408.18	3,156.86	1,083.58	781,255.33	923,158.93	33.141°N	103.086°W

Planning Report - Geographic

Database:	edmdb	Local Co-ordinate Reference:	Well Heisenberg State 4H
Company:	Steward Energy II, LLC	TVD Reference:	GL 3806' + RKB 19' @ 3825.00ft
Project:	Lea County, NM (NAD 83) NM East Zone	MD Reference:	GL 3806' + RKB 19' @ 3825.00ft
Site:	Heisenberg State 4H	North Reference:	Grid
Well:	Heisenberg State 4H	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		
8,900.00	90.44	359.36	5,407.41	3,256.85	1,082.46	781,355.32	923,157.81	33.142°N	103.086°W	
9,000.00	90.44	359.36	5,406.65	3,356.84	1,081.34	781,455.32	923,156.69	33.142°N	103.086°W	
9,100.00	90.44	359.36	5,405.88	3,456.84	1,080.23	781,555.31	923,155.57	33.142°N	103.086°W	
9,200.00	90.44	359.36	5,405.12	3,556.83	1,079.11	781,655.30	923,154.46	33.142°N	103.086°W	
9,300.00	90.44	359.36	5,404.35	3,656.82	1,077.99	781,755.29	923,153.34	33.143°N	103.086°W	
9,400.00	90.44	359.36	5,403.59	3,756.81	1,076.87	781,855.28	923,152.22	33.143°N	103.086°W	
9,500.00	90.44	359.36	5,402.83	3,856.80	1,075.75	781,955.27	923,151.10	33.143°N	103.086°W	
9,600.00	90.44	359.36	5,402.06	3,956.79	1,074.64	782,055.26	923,149.98	33.144°N	103.086°W	
9,700.00	90.44	359.36	5,401.30	4,056.78	1,073.52	782,155.25	923,148.87	33.144°N	103.086°W	
9,800.00	90.44	359.36	5,400.53	4,156.77	1,072.40	782,255.24	923,147.75	33.144°N	103.086°W	
9,900.00	90.44	359.36	5,399.77	4,256.76	1,071.28	782,355.23	923,146.63	33.144°N	103.086°W	
10,000.00	90.44	359.36	5,399.00	4,356.75	1,070.16	782,455.22	923,145.51	33.145°N	103.086°W	
10,100.00	90.44	359.36	5,398.24	4,456.74	1,069.04	782,555.21	923,144.39	33.145°N	103.086°W	
10,200.00	90.44	359.36	5,397.48	4,556.73	1,067.93	782,655.20	923,143.28	33.145°N	103.086°W	
10,300.00	90.44	359.36	5,396.71	4,656.73	1,066.81	782,755.19	923,142.16	33.146°N	103.086°W	
10,400.00	90.44	359.36	5,395.95	4,756.72	1,065.69	782,855.18	923,141.04	33.146°N	103.086°W	
10,500.00	90.44	359.36	5,395.18	4,856.71	1,064.57	782,955.18	923,139.92	33.146°N	103.086°W	
10,600.00	90.44	359.36	5,394.42	4,956.70	1,063.45	783,055.17	923,138.80	33.146°N	103.086°W	
10,700.00	90.44	359.36	5,393.65	5,056.69	1,062.34	783,155.16	923,137.68	33.147°N	103.086°W	
10,800.00	90.44	359.36	5,392.89	5,156.68	1,061.22	783,255.15	923,136.57	33.147°N	103.086°W	
10,900.00	90.44	359.36	5,392.13	5,256.67	1,060.10	783,355.14	923,135.45	33.147°N	103.086°W	
11,000.00	90.44	359.36	5,391.36	5,356.66	1,058.98	783,455.13	923,134.33	33.147°N	103.086°W	
11,100.00	90.44	359.36	5,390.60	5,456.65	1,057.86	783,555.12	923,133.21	33.148°N	103.086°W	
11,200.00	90.44	359.36	5,389.83	5,556.64	1,056.75	783,655.11	923,132.09	33.148°N	103.086°W	
11,300.00	90.44	359.36	5,389.07	5,656.63	1,055.63	783,755.10	923,130.98	33.148°N	103.086°W	
11,400.00	90.44	359.36	5,388.30	5,756.62	1,054.51	783,855.09	923,129.86	33.149°N	103.086°W	
11,500.00	90.44	359.36	5,387.54	5,856.62	1,053.39	783,955.08	923,128.74	33.149°N	103.086°W	
11,600.00	90.44	359.36	5,386.78	5,956.61	1,052.27	784,055.07	923,127.62	33.149°N	103.086°W	
11,700.00	90.44	359.36	5,386.01	6,056.60	1,051.16	784,155.06	923,126.50	33.149°N	103.086°W	
11,800.00	90.44	359.36	5,385.25	6,156.59	1,050.04	784,255.05	923,125.39	33.150°N	103.086°W	
11,900.00	90.44	359.36	5,384.48	6,256.58	1,048.92	784,355.04	923,124.27	33.150°N	103.086°W	
12,000.00	90.44	359.36	5,383.72	6,356.57	1,047.80	784,455.03	923,123.15	33.150°N	103.086°W	
12,100.00	90.44	359.36	5,382.95	6,456.56	1,046.68	784,555.03	923,122.03	33.150°N	103.086°W	
12,200.00	90.44	359.36	5,382.19	6,556.55	1,045.57	784,655.02	923,120.91	33.151°N	103.086°W	
12,300.00	90.44	359.36	5,381.43	6,656.54	1,044.45	784,755.01	923,119.80	33.151°N	103.086°W	
12,400.00	90.44	359.36	5,380.66	6,756.53	1,043.33	784,855.00	923,118.68	33.151°N	103.086°W	
12,500.00	90.44	359.36	5,379.90	6,856.52	1,042.21	784,954.99	923,117.56	33.152°N	103.086°W	
12,600.00	90.44	359.36	5,379.13	6,956.51	1,041.09	785,054.98	923,116.44	33.152°N	103.086°W	
12,700.00	90.44	359.36	5,378.37	7,056.51	1,039.97	785,154.97	923,115.32	33.152°N	103.086°W	
12,800.00	90.44	359.36	5,377.60	7,156.50	1,038.86	785,254.96	923,114.21	33.152°N	103.086°W	
12,900.00	90.44	359.36	5,376.84	7,256.49	1,037.74	785,354.95	923,113.09	33.153°N	103.086°W	
13,000.00	90.44	359.36	5,376.08	7,356.48	1,036.62	785,454.94	923,111.97	33.153°N	103.086°W	
13,100.00	90.44	359.36	5,375.31	7,456.47	1,035.50	785,554.93	923,110.85	33.153°N	103.086°W	
13,200.00	90.44	359.36	5,374.55	7,556.46	1,034.38	785,654.92	923,109.73	33.153°N	103.086°W	
13,300.00	90.44	359.36	5,373.78	7,656.45	1,033.27	785,754.91	923,108.61	33.154°N	103.086°W	
13,400.00	90.44	359.36	5,373.02	7,756.44	1,032.15	785,854.90	923,107.50	33.154°N	103.086°W	
13,500.00	90.44	359.36	5,372.25	7,856.43	1,031.03	785,954.89	923,106.38	33.154°N	103.086°W	
13,600.00	90.44	359.36	5,371.49	7,956.42	1,029.91	786,054.88	923,105.26	33.155°N	103.086°W	
13,700.00	90.44	359.36	5,370.73	8,056.41	1,028.79	786,154.88	923,104.14	33.155°N	103.086°W	
13,794.95	90.44	359.36	5,370.00	8,151.36	1,027.73	786,249.82	923,103.08	33.155°N	103.086°W	
TD at 13794.95 MD										

Planning Report - Geographic

Database:	edmdb	Local Co-ordinate Reference:	Well Heisenberg State 4H
Company:	Steward Energy II, LLC	TVD Reference:	GL 3806' + RKB 19' @ 3825.00ft
Project:	Lea County, NM (NAD 83) NM East Zone	MD Reference:	GL 3806' + RKB 19' @ 3825.00ft
Site:	Heisenberg State 4H	North Reference:	Grid
Well:	Heisenberg State 4H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1		

Design Targets									
Target Name									
- hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- Shape	(°)	(°)	(ft)	(ft)	(ft)	(usft)	(usft)		
SHL Heisenberg State 4	0.00	0.00	0.00	0.00	0.00	778,098.48	922,075.35	33.133°N	103.090°W
- plan hits target center									
- Point									
EOL Heisenberg State 4	0.00	0.01	5,370.00	8,151.36	1,027.73	786,249.82	923,103.08	33.155°N	103.086°W
- plan hits target center									
- Point									
SOL Heisenberg State 4	0.00	0.00	5,430.00	394.82	1,114.79	778,493.30	923,190.14	33.134°N	103.086°W
- plan misses target center by 71.50ft at 6047.77ft MD (5429.24 TVD, 409.23 N, 1044.76 E)									
- Point									

Casing Points					
Measured Depth	Vertical Depth			Casing Diameter	Hole Diameter
(ft)	(ft)	Name		(in)	(in)
2,301.03	2,250.00	9 5/8"		9.625	12.250

Plan Annotations					
Measured Depth	Vertical Depth	Local Coordinates			
(ft)	(ft)	+N/-S	+E/-W	Comment	
(ft)	(ft)	(ft)	(ft)		
300.00	300.00	0.00	0.00	Start Build 1.25 at 300 MD	
1,740.00	1,716.43	-112.85	193.89	Start 1300.00 hold at 1740.00 MD	
3,040.00	2,952.80	-314.92	541.09	Start Drop -1.25 at 3040 MD	
4,480.00	4,369.23	-427.77	734.98	Start 234.27 hold at 4480.00 MD	
4,714.27	4,603.50	-427.77	734.98	Start Build 8.00 at 4714.27 MD	
5,464.27	5,223.75	-96.45	870.86	Start 250.00 hold at 5464.27 MD	
5,714.27	5,348.75	103.86	953.02	Start DLS 10.00 TFO -19.19 at 5714.27 MD	
6,033.23	5,429.35	395.02	1,041.70	Start DLS 2.00 TFO -89.96 at 6033.23 MD	
6,680.25	5,424.38	1,037.30	1,107.28	Start 7114.71 hold at 6680.25 MD	
13,794.95	5,370.00	8,151.36	1,027.73	TD at 13794.95 MD	