

**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 301680

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

1. Operator Name and Address DEVON ENERGY PRODUCTION COMPANY, LP 333 West Sheridan Ave. Oklahoma City, OK 73102		2. OGRID Number 6137
		3. API Number 30-025-49426
4. Property Code 30884	5. Property Name THISTLE UNIT	6. Well No. 184H

**7. Surface Location**

UL - Lot B	Section 22	Township 23S	Range 33E	Lot Idn B	Feet From 160	N/S Line N	Feet From 1770	E/W Line E	County Lea
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**8. Proposed Bottom Hole Location**

UL - Lot P	Section 34	Township 23S	Range 33E	Lot Idn P	Feet From 20	N/S Line S	Feet From 1225	E/W Line E	County Lea
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**9. Pool Information**

WC-025 G-09 S243310P;UPPER WOLFCAMP	98135
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**Additional Well Information**

11. Work Type New Well	12. Well Type OIL	13. Cable/Rotary	14. Lease Type State	15. Ground Level Elevation 3718
16. Multiple N	17. Proposed Depth 28042	18. Formation Upper Wolfcamp	19. Contractor	20. Spud Date 4/13/2022
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	17.5	13.375	48	1390	1044	0
Int1	9.875	8.625	32	11981	998	0
Prod	7.875	5.5	17	28042	2234	10043

**Casing/Cement Program: Additional Comments**

Intermediate Squeeze described in attached drill plan.
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**22. Proposed Blowout Prevention Program**

Type	Working Pressure	Test Pressure	Manufacturer
Annular	5000	5000	
Blind	5000	5000	
Double Ram	5000	5000	
Annular	5000	5000	
Blind	5000	5000	
Double Ram	5000	5000	

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 Jeff Walla	Approved By: Paul F Kautz
Title: Supervisor Land	Title: Geologist
Email Address: Jeff.Walla@dmv.com	Approved Date: 10/1/2021 Expiration Date: 10/1/2023
Date: 9/30/2021 Phone: 575-748-9925	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

<sup>1</sup> API Number <b>30-025-49426</b>	<sup>2</sup> Pool Code <b>98135</b>	<sup>3</sup> Pool Name <b>WC-025 G-09 S243310P; UPPER WOLFCAMP</b>
<sup>4</sup> Property Code <b>30884</b>	<sup>5</sup> Property Name <b>THISTLE UNIT</b>	<sup>6</sup> Well Number <b>184H</b>
<sup>7</sup> OGRID No. <b>6137</b>	<sup>8</sup> Operator Name <b>DEVON ENERGY PRODUCTION COMPANY, L.P.</b>	<sup>9</sup> Elevation <b>3718.3</b>

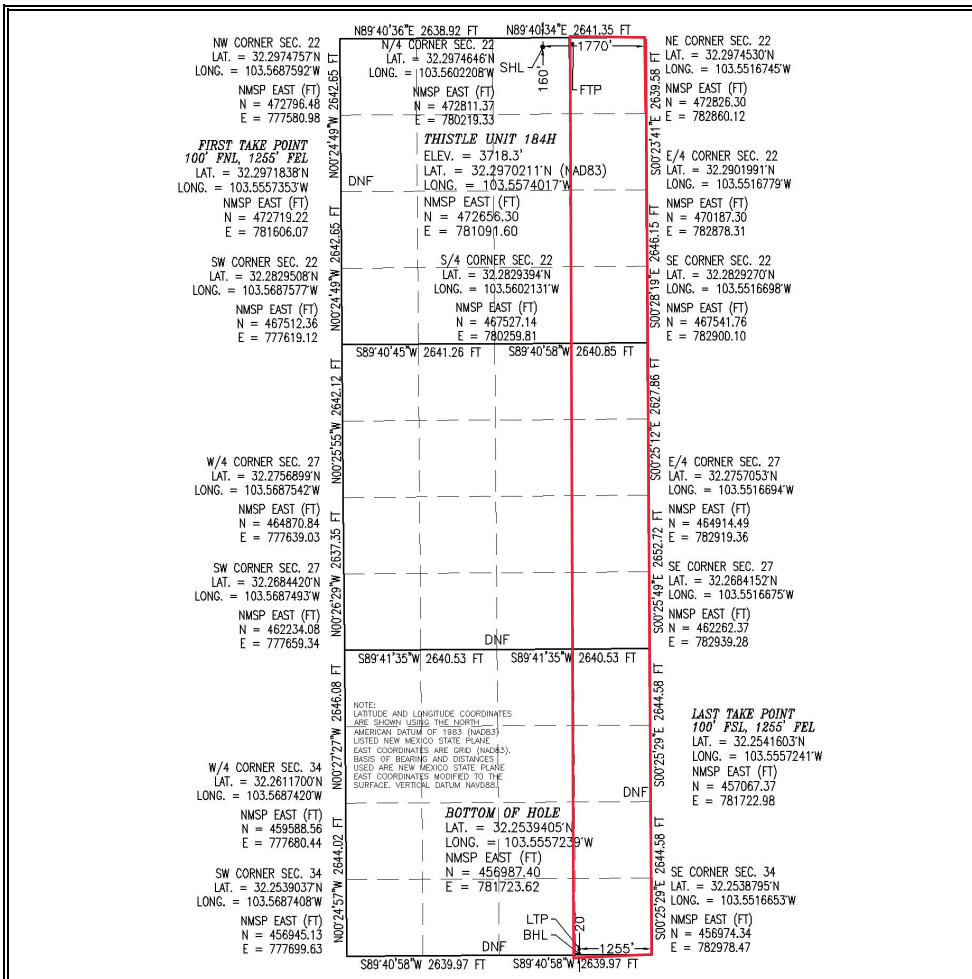
<sup>10</sup> Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
<b>B</b>	<b>22</b>	<b>23 S</b>	<b>33 E</b>		<b>160</b>	<b>NORTH</b>	<b>1770</b>	<b>EAST</b>	<b>LEA</b>

<sup>11</sup> 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>P</b>	<b>34</b>	<b>23 S</b>	<b>33 E</b>		<b>20</b>	<b>SOUTH</b>	<b>1255</b>	<b>EAST</b>	<b>LEA</b>
<sup>12</sup> Dedicated Acres <b>480</b>	<sup>13</sup> Joint or Infill	<sup>14</sup> Consolidation Code	<sup>15</sup> Order No.						

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

<sup>17</sup> 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.

*Rebecca Deal* 9/27/2021  
Signature Date

**Rebecca Deal, Regulatory Analyst**  
Printed Name

**rebecca.deal@dmn.com**  
E-mail Address

<sup>18</sup> 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.

NOVEMBER 16, 2020

Date of Survey

Signature and Seal of Professional Surveyor:  
Certificate Number: **12797**  
**JOHANN F. JARAMILA** SLS 12797  
S. J. 8632A

Intent ☐ As Drilled ☐

API #

Operator Name:	Property Name:	Well Number
<b>DEVON ENERGY PRODUCTION CO., L.P.</b>	<b>THISTLE UNIT</b>	<b>184H</b>

Kick Off Point (KOP)

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

First Take Point (FTP)

UL <b>A</b>	Section <b>22</b>	Township <b>23S</b>	Range <b>33E</b>	Lot	Feet <b>100</b>	From N/S <b>NORTH</b>	Feet <b>1255</b>	From E/W <b>EAST</b>	County <b>LEA</b>
Latitude <b>32.2971838</b>					Longitude <b>103.5557353</b>			NAD <b>83</b>	

Last Take Point (LTP)

UL <b>P</b>	Section <b>34</b>	Township <b>23S</b>	Range <b>33E</b>	Lot	Feet <b>100</b>	From N/S <b>SOUTH</b>	Feet <b>1255</b>	From E/W <b>EAST</b>	County <b>LEA</b>
Latitude <b>32.2541603</b>					Longitude <b>103.5557241</b>			NAD <b>83</b>	

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

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

API #

Operator Name:	Property Name:	Well Number

KZ 06/29/2018

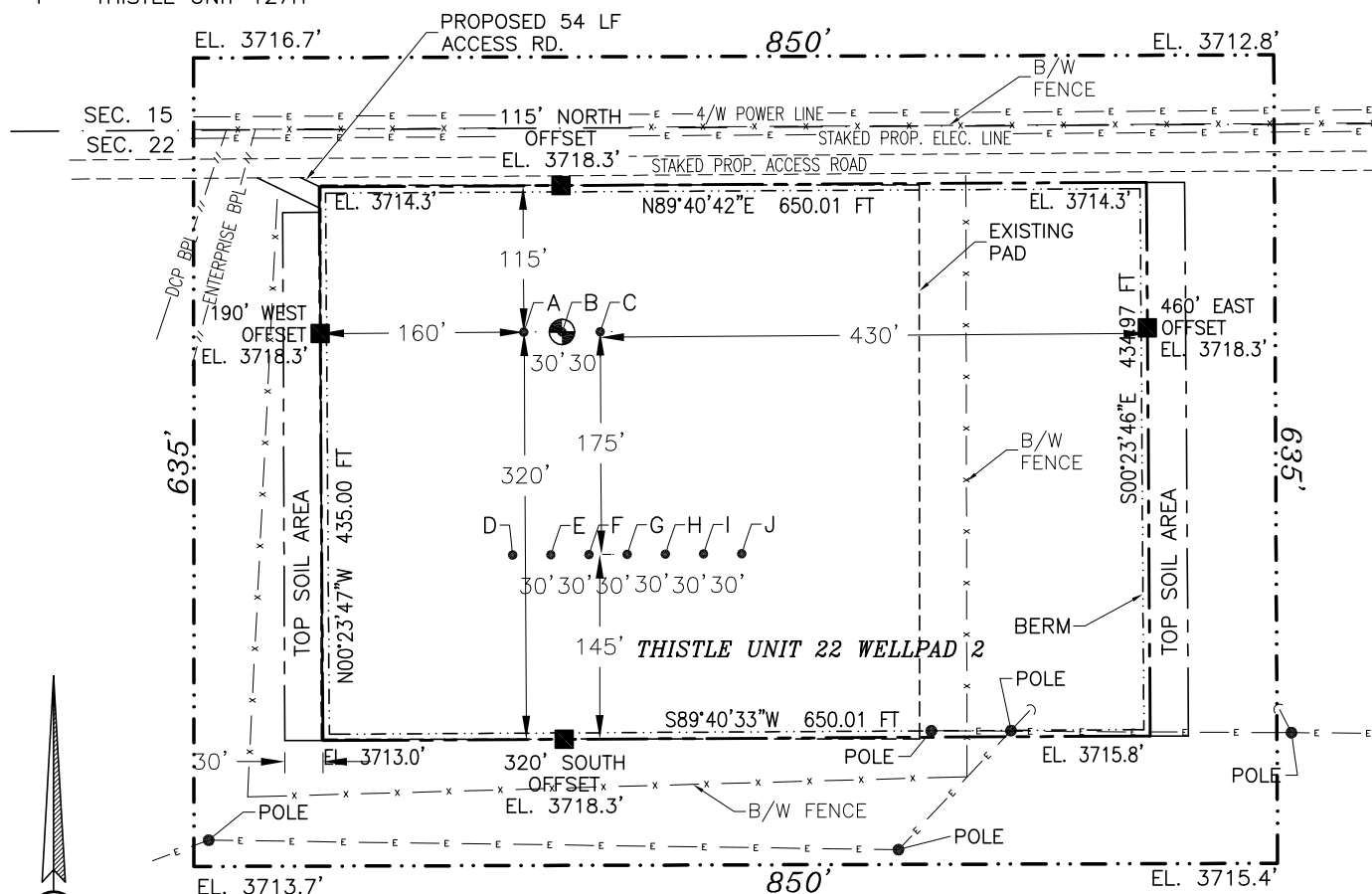
# SECTION 22, TOWNSHIP 23 SOUTH, RANGE 33 EAST, N.M.P.M. LEA COUNTY, STATE OF NEW MEXICO SITE MAP

A - THISTLE UNIT 183H  
B - THISTLE UNIT 184H  
C - THISTLE UNIT 185H  
D - THISTLE UNIT 115H  
E - THISTLE UNIT 162H  
F - THISTLE UNIT 127H

## AS-DRILLED

G - THISTLE UNIT 127H  
H - THISTLE UNIT 116H  
I - THISTLE UNIT 100H  
J - THISTLE UNIT 128H

NOTE: LATITUDE AND LONGITUDE COORDINATES ARE SHOWN USING THE NORTH AMERICAN DATUM OF 1983 (NAD83) LISTED NEW MEXICO STATE PLANE EAST COORDINATES ARE GRID (NAD83). BASIS OF BEARING AND DISTANCES USED ARE NEW MEXICO STATE PLANE EAST COORDINATES MODIFIED TO THE SURFACE. VERTICAL DATUM NAVD88.



## THISTLE UNIT 184H

ELEV. = 3718.3'

6.491± ACRES

LAT. = 32.2970211°N (NAD83)

LONG. = 103.5574017°W

NMSP EAST (FT)

N = 472656.30

E = 781091.60

DEVON ENERGY PRODUCTION COMPANY, L.P.

## THISTLE UNIT 184H

LOCATED 160 FT. FROM THE NORTH LINE  
AND 1770 FT. FROM THE EAST LINE OF  
SECTION 22, TOWNSHIP 23 SOUTH,  
RANGE 33 EAST, N.M.P.M.

LEA COUNTY, STATE OF NEW MEXICO

LAND STATUS: STATE

NOVEMBER 16, 2020

SURVEY NO. 8632A

MADISON SURVEYING, INC.

301 SOUTH CANAL  
(575) 234-3341

CARLSBAD, NEW MEXICO

015 75 150 300

SCALE 1" = 150'

## DIRECTIONS TO LOCATION

FROM STATE HIGHWAY 128 AND CR 21 (DELAWARE BASIN) GO NORTH ON CR 21 3.95 MILES, TURN LEFT ON PAVED ROAD (XL ROAD) AND GO WEST 3.4 MILES, TURN RIGHT ON CALICHE ROAD AND GO NORTH 0.9 MILE, BEND LEFT AND GO NORTHWEST 0.15 MILE, BEND RIGHT AND GO NORTHEAST 0.1 MILE, BEND LEFT GO NORTH 0.95 MILE ON RIGHT SIDE BEGIN PROPOSED ROAD, FOLLOW EAST 3334', THEN 54' SOUTHEAST TO THE NORTHWEST PAD CORNER FOR THIS LOCATION.

I, FILMON F. JARAMILLO, A NEW MEXICO REGISTERED PROFESSIONAL SURVEYOR, CERTIFY THAT I AM RESPONSIBLE FOR THIS SURVEY, THAT THE SURVEY WAS CONDUCTED IN THE BEST OF MY KNOWLEDGE AND BELIEF, AND THAT THIS SURVEY MEETS THE MINIMUM STANDARDS FOR SURVEYING.

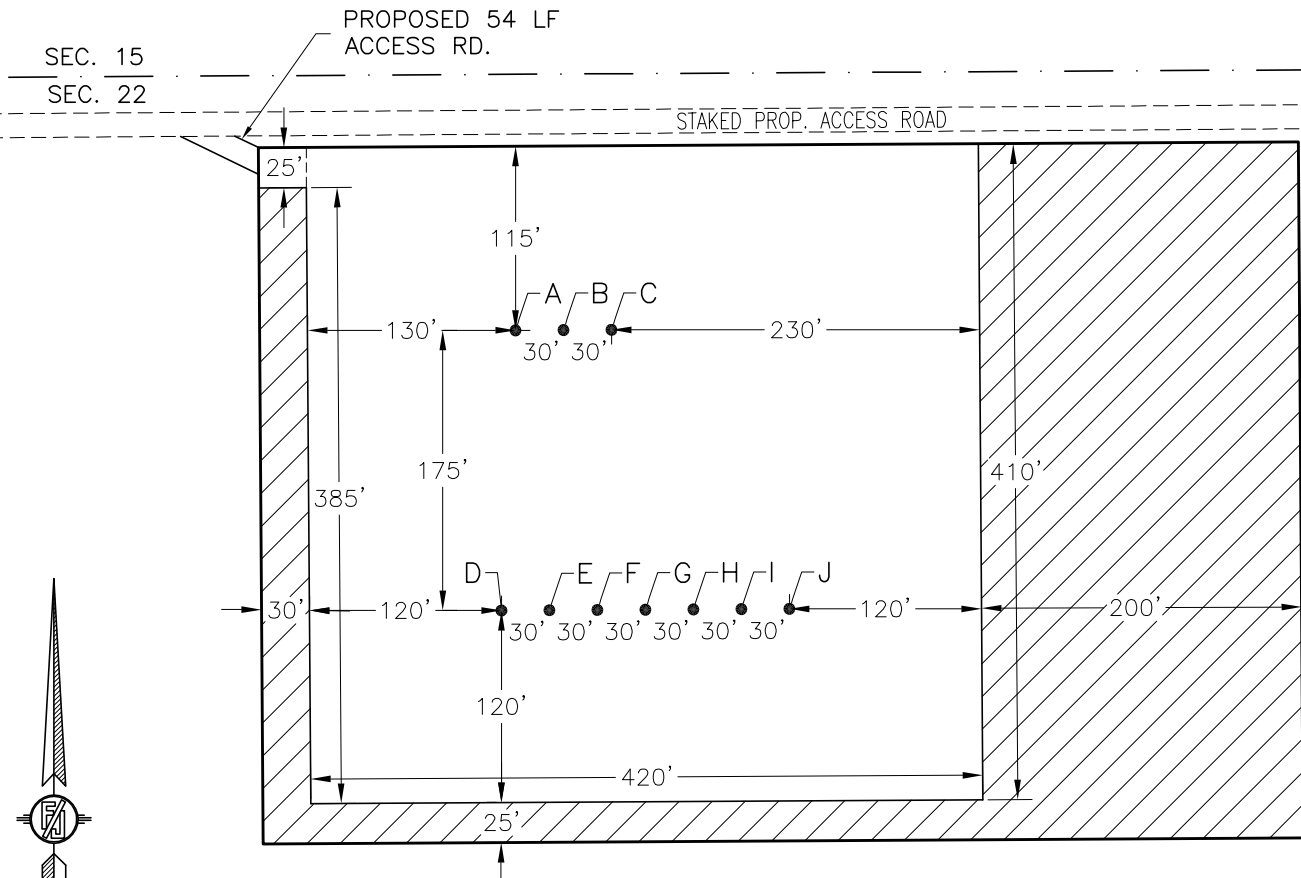
FILMON F. JARAMILLO, 12797

SECTION 22, TOWNSHIP 23 SOUTH, RANGE 33 EAST, N.M.P.M.  
LEA COUNTY, STATE OF NEW MEXICO  
INTERIM SITE BUILD PLAN

A - THISTLE UNIT 183H  
B - THISTLE UNIT 184H  
C - THISTLE UNIT 185H  
D - THISTLE UNIT 115H  
E - THISTLE UNIT 162H  
F - THISTLE UNIT 127H

AS-DRILLED

G - THISTLE UNIT 127H  
H - THISTLE UNIT 116H  
I - THISTLE UNIT 100H  
J - THISTLE UNIT 128H



012 60 120 240  
SCALE 1" = 120'



DENOTES INTERIM PAD  
RECLAMATION AREA  
2.520± ACRES

DEVON ENERGY PRODUCTION COMPANY, L.P.  
**THISTLE UNIT 184H**  
LOCATED 160 FT. FROM THE NORTH LINE  
AND 1770 FT. FROM THE EAST LINE OF  
SECTION 22, TOWNSHIP 23 SOUTH,  
RANGE 33 EAST, N.M.P.M.  
LEA COUNTY, STATE OF NEW MEXICO  
LAND STATUS: STATE

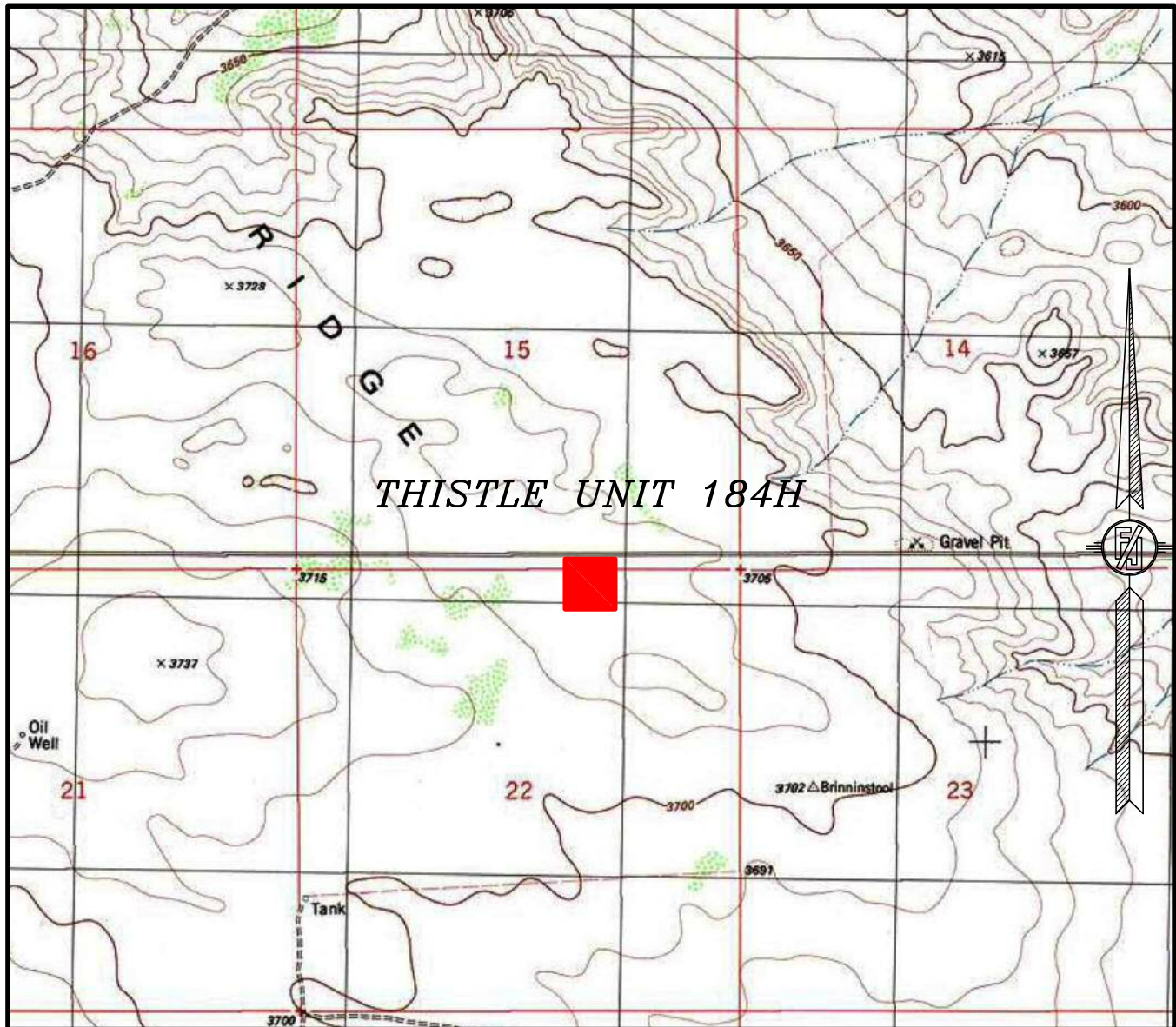
NOVEMBER 16, 2020

SURVEY NO. 8632A

MADRON SURVEYING, INC. 301 SOUTH CANAL  
(575) 234-3341

CARLSBAD, NEW MEXICO

SECTION 22, TOWNSHIP 23 SOUTH, RANGE 33 EAST, N.M.P.M.  
LEA COUNTY, STATE OF NEW MEXICO  
LOCATION VERIFICATION MAP



USGS QUAD MAP:  
TIP TOP WELLS

NOT TO SCALE

DEVON ENERGY PRODUCTION COMPANY, L.P.

**THISTLE UNIT 184H**

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AND 1770 FT. FROM THE EAST LINE OF  
SECTION 22, TOWNSHIP 23 SOUTH,  
RANGE 33 EAST, N.M.P.M.  
LEA COUNTY, STATE OF NEW MEXICO  
LAND STATUS: STATE

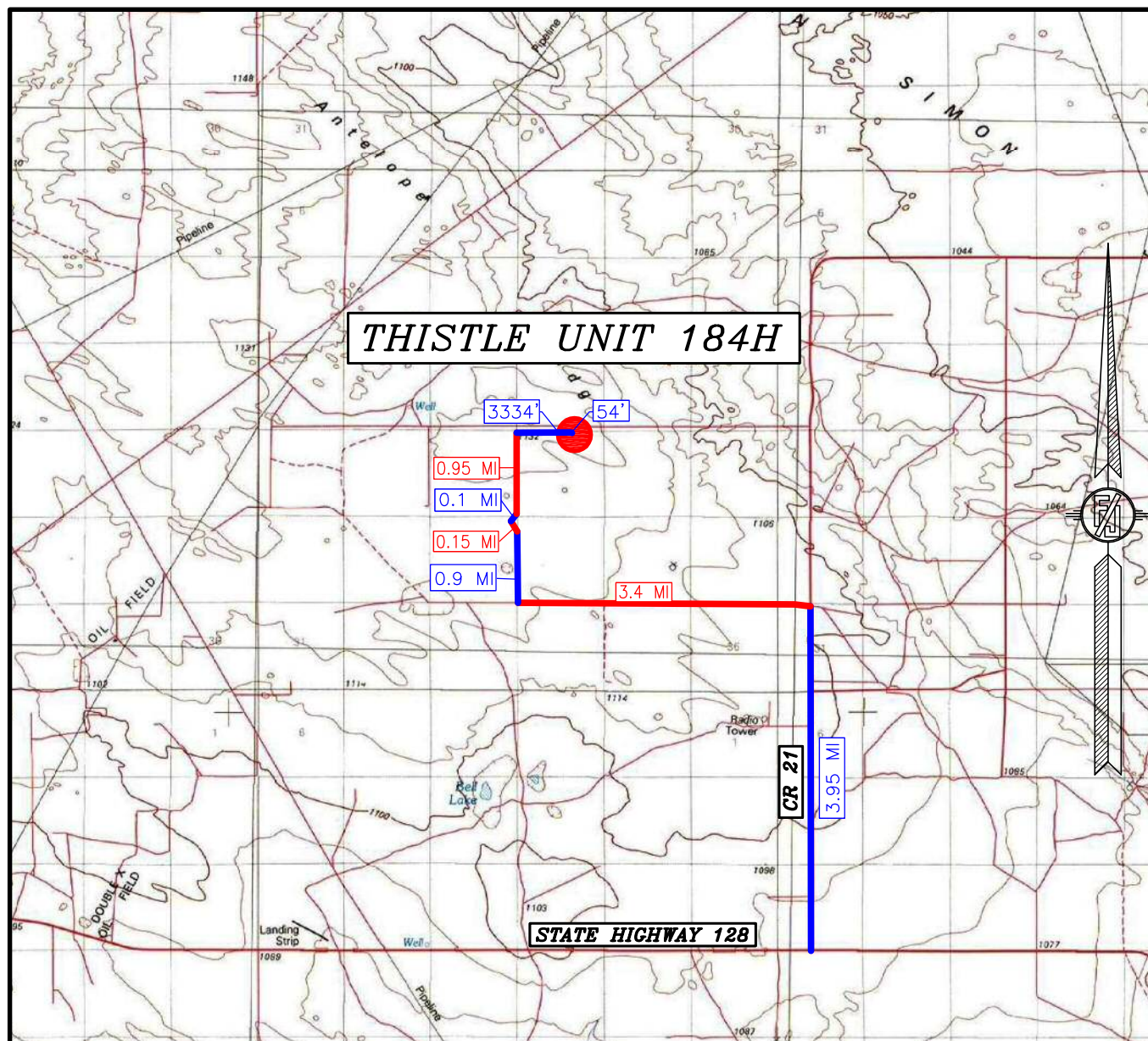
NOVEMBER 16, 2020

SURVEY NO. 8632A

MADRON SURVEYING, INC. 301 SOUTH CANAL  
(575) 234-3341

CARLSBAD, NEW MEXICO

SECTION 22, TOWNSHIP 23 SOUTH, RANGE 33 EAST, N.M.P.M.  
LEA COUNTY, STATE OF NEW MEXICO  
VICINITY MAP



DISTANCES IN MILES

NOT TO SCALE  
DEVON ENERGY PRODUCTION COMPANY, L.P.

**THISTLE UNIT 184H**

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SECTION 22, TOWNSHIP 23 SOUTH,  
RANGE 33 EAST, N.M.P.M.

LEA COUNTY, STATE OF NEW MEXICO  
LAND STATUS: STATE

NOVEMBER 16, 2020

**DIRECTIONS TO LOCATION**

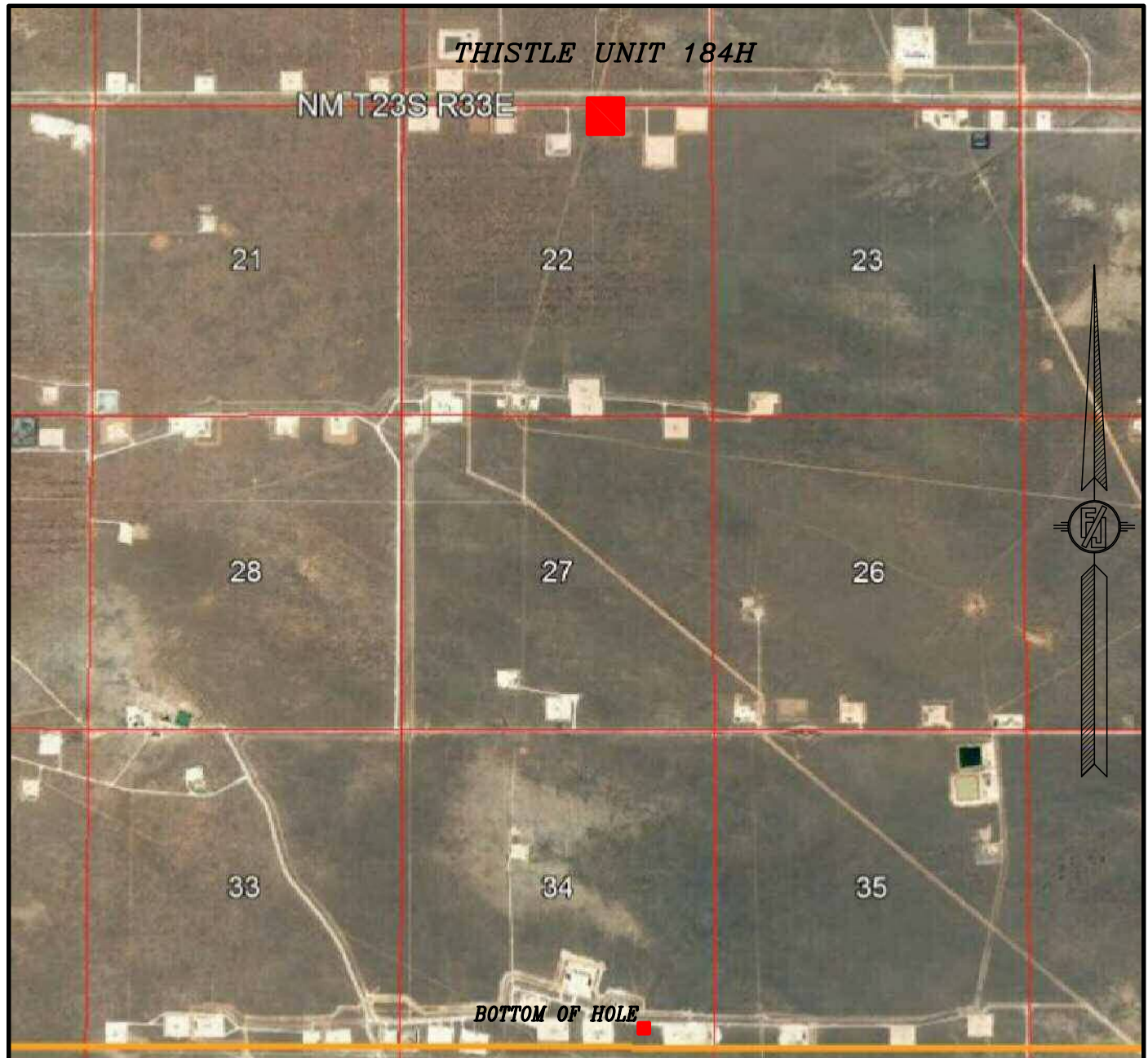
FROM STATE HIGHWAY 128 AND CR 21 (DELAWARE BASIN) GO NORTH ON CR 21 3.95 MILES, TURN LEFT ON PAVED ROAD (XL ROAD) AND GO WEST 3.4 MILES, TURN RIGHT ON CALICHE ROAD AND GO NORTH 0.9 MILE, BEND LEFT AND GO NORTHWEST 0.15 MILE, BEND RIGHT AND GO NORTHEAST 0.1 MILE, BEND LEFT GO NORTH 0.95 MILE ON RIGHT SIDE BEGIN PROPOSED ROAD, FOLLOW EAST 3334', THEN 54' SOUTHEAST TO THE NORTHWEST PAD CORNER FOR THIS LOCATION.

SURVEY NO. 8632A

MADRON SURVEYING, INC. 301 SOUTH CANAL  
(575) 234-3341

CARLSBAD, NEW MEXICO

SECTION 22, TOWNSHIP 23 SOUTH, RANGE 33 EAST, N.M.P.M.  
LEA COUNTY, STATE OF NEW MEXICO  
**AERIAL PHOTO**



NOT TO SCALE  
AERIAL PHOTO:  
GOOGLE EARTH  
NOVEMBER 2017

**DEVON ENERGY PRODUCTION COMPANY, L.P.**

**THISTLE UNIT 184H**

LOCATED 160 FT. FROM THE NORTH LINE  
AND 1770 FT. FROM THE EAST LINE OF  
SECTION 22, TOWNSHIP 23 SOUTH,  
RANGE 33 EAST, N.M.P.M.  
LEA COUNTY, STATE OF NEW MEXICO  
LAND STATUS: STATE

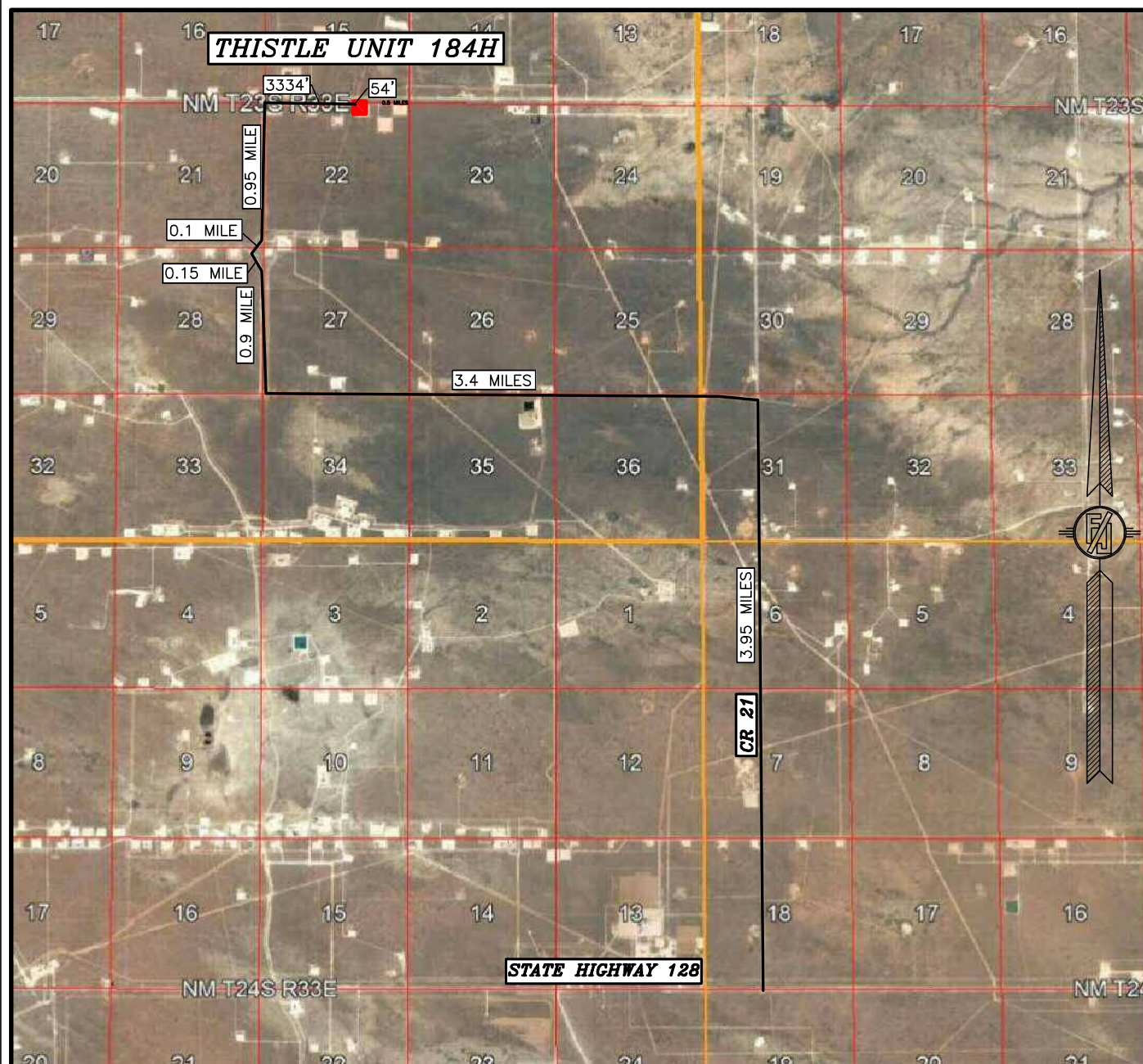
NOVEMBER 16, 2020

SURVEY NO. 8632A

MADRON SURVEYING, INC. 301 SOUTH CANAL  
(575) 234-3341

CARLSBAD, NEW MEXICO

SECTION 22, TOWNSHIP 23 SOUTH, RANGE 33 EAST, N.M.P.M.  
LEA COUNTY, STATE OF NEW MEXICO  
ACCESS AERIAL ROUTE MAP



NOT TO SCALE  
AERIAL PHOTO:  
GOOGLE EARTH  
NOVEMBER 2017

DEVON ENERGY PRODUCTION COMPANY, L.P.

**THISTLE UNIT 184H**

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AND 1770 FT. FROM THE EAST LINE OF  
SECTION 22, TOWNSHIP 23 SOUTH,  
RANGE 33 EAST, N.M.P.M.

LEA COUNTY, STATE OF NEW MEXICO  
LAND STATUS: STATE

NOVEMBER 16, 2020

SURVEY NO. 8632A

MADRON SURVEYING, INC.

301 SOUTH CANAL  
(575) 234-3341

CARLSBAD, NEW MEXICO

**PLAN VIEW**

PROPOSED 54 LF ACCESS RD.  
4/W POWER LINE  
STAKED PROP. ACCESS ROAD  
B/W FENCE  
STAKED PROP. ELEC. LINE  
SEC. 15  
SEC. 22  
DCP BPL  
ENTERPRISE BPL  
LIMITS OF EARTHWORK 3:1 SLOPE (TYP.)  
EXISTING PAD  
THISTLE UNIT 22 WELLPAD 2 EL. = 3714.0'  
PAD CENTER POINT  
A - THISTLE UNIT 183H  
B - THISTLE UNIT 184H  
C - THISTLE UNIT 185H  
D - THISTLE UNIT 115H  
E - THISTLE UNIT 162H  
F - THISTLE UNIT 127H  
G - THISTLE UNIT 127H  
H - THISTLE UNIT 116H  
I - THISTLE UNIT 100H  
J - THISTLE UNIT 128H  
AS-DRILLED  
BERM  
POLE  
B/W FENCE  
LIMITS OF EARTHWORK 3:1 SLOPE (TYP.)  
SCALE 1" = 120'

I, FILIMON F. JARAMILLO, A NEW MEXICO REGISTERED PROFESSIONAL SURVEYOR CERTIFY THAT I DIRECTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO.

**DEVON ENERGY PRODUCTION COMPANY, L.P.**  
**GRADING PLAN AND CROSS SECTIONS**  
**FOR THISTLE UNIT 184H**  
**SECTION 22, TOWNSHIP 23 SOUTH,**  
**RANGE 33 EAST, N.M.P.M.**  
**LEA COUNTY, STATE OF NEW MEXICO**

CUT	FILL	NET
556 CU. YD	7359 CU. YD	6803 CU. YD (FILL)

EARTHWORK QUANTITIES ARE ESTIMATED

SHEET 1-2  
SURVEY NO. 8632A

NOVEMBER 16, 2020  
MADRON SURVEYING, INC. 301 SOUTH CANAL CARLSBAD, NEW MEXICO  
(575) 234-3341

I, FILIMON F. JARAMILLO, A NEW MEXICO REGISTERED PROFESSIONAL SURVEYOR CERTIFY THAT I DIRECTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO.

DEVON ENERGY PRODUCTION COMPANY, L.P.  
GRADING PLAN AND CROSS SECTIONS  
**FOR THISTLE UNIT 184H**  
SECTION 22, TOWNSHIP 23 SOUTH,  
RANGE 33 EAST, N.M.P.M.  
LEA COUNTY, STATE OF NEW MEXICO

NOVEMBER 16, 2020

301 SOUTH CANAL  
(575) 234-3341

MADRON SURVEYING, INC. 301 SOUTH CANAL CARLSBAD, NEW MEXICO  
(575) 234-3341

0 60 120 240

SCALE 1" = 120'

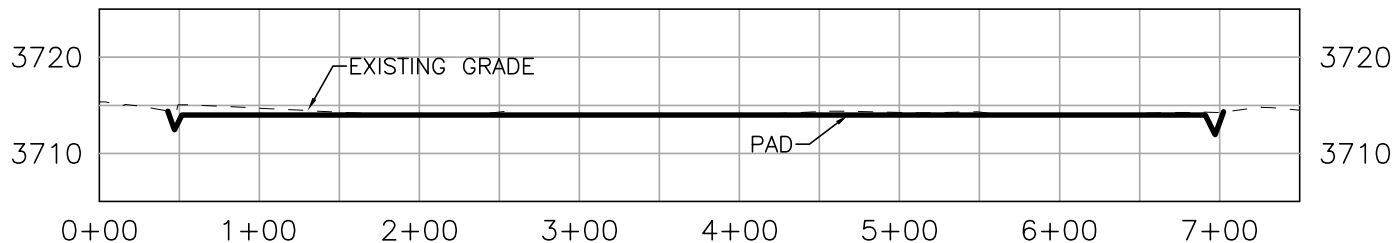
CUT	FILL	NET
556 CU. YD	7359 CU. YD	6803 CU. YD (FILL)

EARTHWORK QUANTITIES ARE ESTIMATED

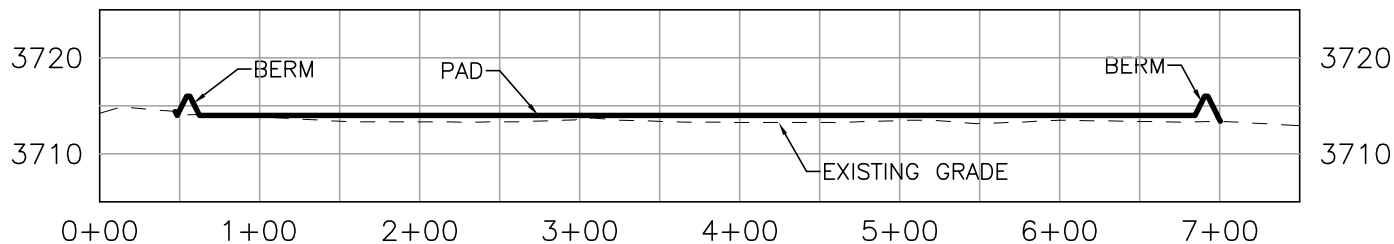
SHEET 1-2  
SURVEY NO. 8632A 

# CROSS SECTIONS

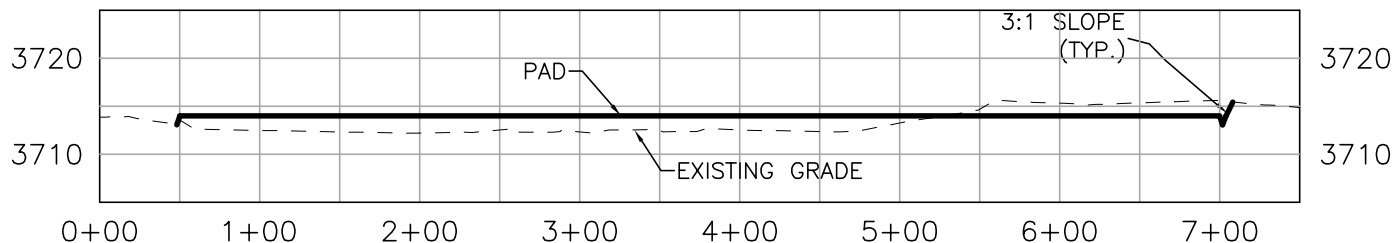
SECTION A-A



SECTION B-B



SECTION C-C



I, FILIMON F. JARAMILLO, A NEW MEXICO REGISTERED PROFESSIONAL SURVEYOR CERTIFY THAT I DIRECTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO.

**DEVON ENERGY PRODUCTION COMPANY, L.P.**  
**GRADING PLAN AND CROSS SECTIONS**  
**FOR THISTLE UNIT 184H**  
 SECTION 22, TOWNSHIP 23 SOUTH,  
 RANGE 33 EAST, N.M.P.M.  
 LEA COUNTY, STATE OF NEW MEXICO

012 60 120 240  
 SCALE 1" = 120' - 1" = 20' VER

CUT	FILL	NET
556 CU. YD	7359 CU. YD	6803 CU. YD (FILL)

EARTHWORK QUANTITIES ARE ESTIMATED

NOVEMBER 16, 2020

301 SOUTH CANAL  
 (575) 234-3341

**MADRON SURVEYING, INC.** CARLSBAD, NEW MEXICO

SHEET 2-2  
 SURVEY NO. 8632A

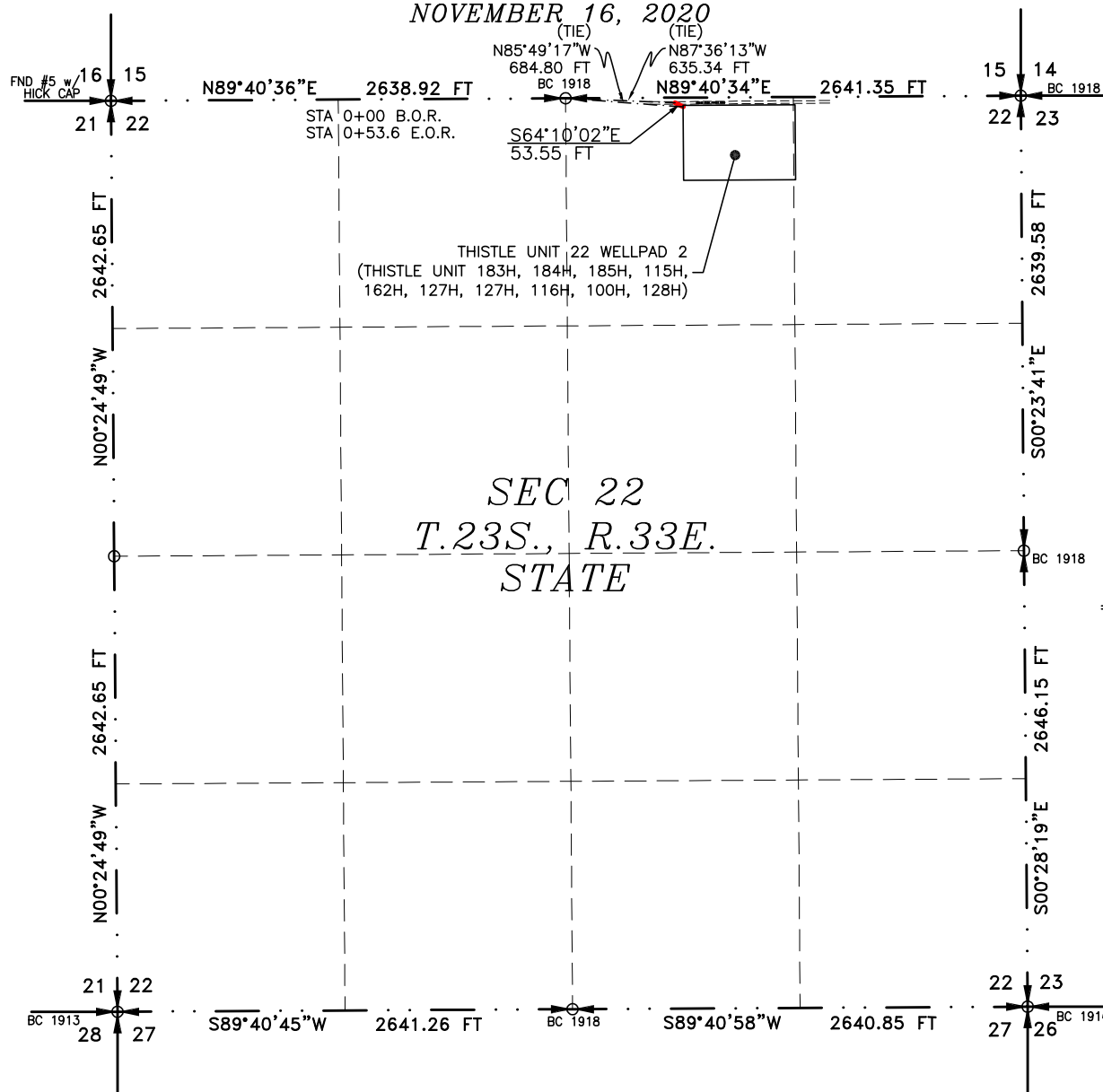


**ACCESS ROAD PLAT (AA000084086)**

ACCESS ROAD TO THE THISTLE UNIT 22 WELLPAD 2

(THISTLE UNIT 183H, 184H, 185H, 115H, 162H, 127H, 127H, 116H, 100H, 128H)

DEVON ENERGY PRODUCTION COMPANY, L.P.  
 CENTERLINE SURVEY OF AN ACCESS ROAD CROSSING  
 SECTION 22, TOWNSHIP 23 SOUTH, RANGE 33 EAST, N.M.P.M.  
 LEA COUNTY, STATE OF NEW MEXICO  
 NOVEMBER 16, 2020



SEE NEXT SHEET (2-2) FOR DESCRIPTION

**GENERAL NOTES**

1.) THE INTENT OF THIS ROUTE SURVEY IS TO ACQUIRE AN EASEMENT.

2.) BASIS OF BEARING AND DISTANCE IS NMSP EAST (NAD83) MODIFIED TO SURFACE COORDINATES. NAD 83 (FEET) AND NAVD 88 (FEET) COORDINATE SYSTEMS USED IN THE SURVEY.

SHEET: 1-2

MADRON SURVEYING, INC.

**SURVEYOR CERTIFICATE**

I, FILIMON F. JARAMILLO, A NEW MEXICO PROFESSIONAL SURVEYOR NO. 12797, HEREBY CERTIFY THAT I HAVE CONDUCTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THAT THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR LAND SURVEYING IN THE STATE OF NEW MEXICO.

IN WITNESS WHEREOF, THIS CERTIFICATE IS EXECUTED AT CARLSBAD,

NEW MEXICO, THIS 17 DAY OF NOVEMBER 2020

FILIMON F. JARAMILLO PLS. 12797  
 NEW MEXICO PROFESSIONAL SURVEYOR

MADRON SURVEYING, INC.  
 301 SOUTH CANAL  
 CARLSBAD, NEW MEXICO 88220  
 Phone (575) 234-3341

SURVEY NO. 8632A

CARLSBAD, NEW MEXICO

**ACCESS ROAD PLAT (AA000084086)**

ACCESS ROAD TO THE THISTLE UNIT 22 WELLPAD 2

(THISTLE UNIT 183H, 184H, 185H, 115H, 162H, 127H, 127H, 116H, 100H, 128H)

**DEVON ENERGY PRODUCTION COMPANY, L.P.**  
**CENTERLINE SURVEY OF AN ACCESS ROAD CROSSING**  
**SECTION 22, TOWNSHIP 23 SOUTH, RANGE 33 EAST, N.M.P.M.**  
**LEA COUNTY, STATE OF NEW MEXICO**  
**NOVEMBER 16, 2020**

**DESCRIPTION**

A STRIP OF LAND 30 FEET WIDE CROSSING STATE OF NEW MEXICO LAND IN SECTION 22, TOWNSHIP 23 SOUTH, RANGE 33 EAST, N.M.P.M., LEA COUNTY, STATE OF NEW MEXICO AND BEING 15 FEET EACH SIDE OF THE FOLLOWING DESCRIBED CENTERLINE SURVEY:

BEGINNING AT A POINT WITHIN THE NW/4 NE/4 OF SAID SECTION 22, TOWNSHIP 23 SOUTH, RANGE 33 EAST, N.M.P.M., WHENCE THE NORTH QUARTER CORNER OF SAID SECTION 22, TOWNSHIP 23 SOUTH, RANGE 33 EAST, N.M.P.M. BEARS N87°36'13"W, A DISTANCE OF 635.34 FEET;

THENCE S64°10'02"E A DISTANCE OF 53.55 FEET THE TERMINUS OF THIS CENTERLINE SURVEY, WHENCE THE NORTH QUARTER CORNER OF SAID SECTION 22, TOWNSHIP 23 SOUTH, RANGE 33 EAST, N.M.P.M. BEARS N85°49'17"W, A DISTANCE OF 684.80 FEET;

SAID STRIP OF LAND BEING 53.55 FEET OR 3.25 RODS IN LENGTH, CONTAINING 0.037 ACRES MORE OR LESS AND BEING ALLOCATED BY FORTIES AS FOLLOWS:

NW/4 NE/4 53.55 L.F. 3.25 RODS 0.037 ACRES

**GENERAL NOTES**

1.) THE INTENT OF THIS ROUTE SURVEY IS TO ACQUIRE AN EASEMENT.

2.) BASIS OF BEARING AND DISTANCE IS NMSP EAST (NAD83) MODIFIED TO SURFACE COORDINATES. NAD 83 (FEET) AND NAVD 88 (FEET) COORDINATE SYSTEMS USED IN THE SURVEY.

**SURVEYOR CERTIFICATE**

I, FILIMON F. JARAMILLO, A NEW MEXICO PROFESSIONAL SURVEYOR NO. 12797, HEREBY CERTIFY THAT I HAVE CONDUCTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THAT THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR LAND SURVEYING IN THE STATE OF NEW MEXICO.

IN WITNESS WHEREOF, THIS CERTIFICATE IS EXECUTED AT CARLSBAD,

NEW MEXICO, THIS 17 DAY OF NOVEMBER 2020

*FILIMON F. JARAMILLO*  
 FILIMON F. JARAMILLO PLS. 12797  
 NEW MEXICO PROFESSIONAL SURVEYOR

MADRON SURVEYING, INC.  
 301 SOUTH CANAL  
 CARLSBAD, NEW MEXICO 88220  
 Phone (575) 234-3341

**SURVEY NO. 8632A**

**SHEET: 2-2**

**MADRON SURVEYING, INC. CARLSBAD, NEW MEXICO**

**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 APD Comments

Permit 301680

PERMIT COMMENTS

Operator Name and Address: DEVON ENERGY PRODUCTION COMPANY, LP [6137] 333 West Sheridan Ave. Oklahoma City, OK 73102		API Number: 30-025-49426
		Well: THISTLE UNIT #184H
Created By	Comment	Comment Date
drebecca	Please see attached C-102, Drill Plan, Directional Plan, H2S Plan & NGMP	9/30/2021

**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  
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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 APD Conditions

Permit 301680

**PERMIT CONDITIONS OF APPROVAL**

Operator Name and Address: DEVON ENERGY PRODUCTION COMPANY, LP [6137] 333 West Sheridan Ave. Oklahoma City, OK 73102	API Number: 30-025-49426
	Well: THISTLE UNIT #184H

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	The Operator is to notify NMOCD by sundry (Form C-103) within ten (10) days of the well being spud
pkautz	1) SURFACE & INTERMEDIATE CASING - Cement must circulate to surface -- 2) PRODUCTION CASING - Cement must tie back into intermediate casing --
pkautz	If cement does not circulate to surface, must run temperature survey or other log to determine top of cement
pkautz	Surface casing must be set 25' below top of Rustler Anhydrite in order to seal off protectable water
pkautz	1)- The Operator is to notify NMOCD by sundry (Form C-103) within ten (10) days of the well being spud 2)- Drilling Sundries Form C-103 (Casing and Cement test are to be submitted within 10 days 3)- Completion Reports & Logs are to be submitted within 45 days 4)- Deviation / Directional Drill Survey are to be filed with or prior to C-104
pkautz	It is the operator's responsibility to monitor cancellation dates of approved APDs. APD's are good for 2 years and may be extended for one year. Only one 1 year extension will be granted if submitted by C-103 before expiration date. After expiration date or after a 1 year extension must submit new APD. If an APD expires and if site construction has occurred, site remediation is required.
pkautz	Stage Tool 1) Must notify OCD Hobbs Office prior to running Stage Tool 2) If using Stage Tool on Surface casing, Stage Tool must be set greater than 350' from surface and a minimum of 200 feet above surface shoe. 3) When using a Stage Tool on Intermediate or Production Casing Stage must be a minimum of 50 feet below previous casing shoe

## Thistle Unit 184H

**1. Geologic Formations**

TVD of target	12600	Pilot hole depth	N/A
MD at TD:	28042	Deepest expected fresh water	

**Basin**

Formation	Depth (TVD) from KB	Water/Mineral Bearing/Target Zone?	Hazards*
Rustler	1365		
Salt	1869		
Base of Salt	5180		
Lamar	5180		
Delaware	5257		
Cherry Canyon	6195		
Brushy Canyon	7591		
1st Bone Spring Lime	9069		
Bone Spring 1st	10242		
Bone Spring 2nd	10830		
3rd Bone Spring Lime	11406		
Bone Spring 3rd	11981		
Wolfcamp	12298		

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

## Thistle Unit 184H

**2. Casing Program (Primary Design)**

Hole Size	Csg. Size	Wt (PPF)	Grade	Conn	Casing Interval		Casing Interval	
					From (MD)	To (MD)	From (TVD)	To (TVD)
17 1/2	13 3/8	48	H40	STC	0	1390	0	1390
9 7/8	8 5/8	32	P110	TLW	0	11981	0	11981
7 7/8	5 1/2	17	P110	BTC	0	28042	0	12600

• All casing strings will be tested in accordance with Onshore Oil and Gas Order #2 IILB.1.h Must have table for contingency casing.

**3. Cementing Program (Primary Design)**

Casing	# Sks	TOC	Wt. ppg	Yld (ft3/sack)	Slurry Description
Surface	1044	Surf	13.2	1.44	Lead: Class C Cement + additives
Int 1	533	Surf	9	3.27	Lead: Class C Cement + additives
	465	4000' above	13.2	1.44	Tail: Class H / C + additives
Int 1 Intermediate Squeeze	As Needed	Surf	13.2	1.44	Squeeze Lead: Class C Cement + additives
	533	Surf	9	3.27	Lead: Class C Cement + additives
	465	4000' above	13.2	1.44	Tail: Class H / C + additives
Production	117	10043	9	3.27	Lead: Class H / C + additives
	2117	12043	13.2	1.44	Tail: Class H / C + additives

Casing String	% Excess
Surface	50%
Intermediate 1	30%
Intermediate 1 (Two Stage)	25%
Prod	10%

## Thistle Unit 184H

## 4. Pressure Control Equipment (Three String Design)

BOP installed and tested before drilling which hole?		Size?	Min. Required WP	Type	✓	Tested to:
Int 1	13-5/8"	5M	Annular		X	50% of rated working pressure
			Blind Ram		X	5M
			Pipe Ram			
			Double Ram		X	
			Other*			
Production	13-5/8"	5M	Annular (5M)		X	100% of rated working pressure
			Blind Ram		X	10M
			Pipe Ram			
			Double Ram		X	
			Other*			
			Annular (5M)			
			Blind Ram			
			Pipe Ram			
			Double Ram			
			Other*			
N	A variance is requested for the use of a diverter on the surface casing. See attached for schematic.					
Y	A variance is requested to run a 5 M annular on a 10M system					

## Thistle Unit 184H

**5. Mud Program (Three String Design)**

Section	Type	Weight (ppg)
Surface	FW Gel	8.5-9
Intermediate	DBE / Cut Brine	10-10.5
Production	OBM	10-10.5

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
---	-----------------------------

**6. Logging and Testing Procedures**

Logging, Coring and Testing	
X	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.
	No logs are planned based on well control or offset log information.
	Drill stem test? If yes, explain.
	Coring? If yes, explain.

Additional logs planned		Interval
	Resistivity	Int. shoe to KOP
	Density	Int. shoe to KOP
X	CBL	Production casing
X	Mud log	Intermediate shoe to TD
	PEX	

**7. Drilling Conditions**

Condition	Specify what type and where?
BH pressure at deepest TVD	6879
Abnormal temperature	No

Mitigation measure for abnormal conditions. Describe. Lost circulation material/sweeps/mud scavengers.

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

N	H <sub>2</sub> S is present
Y	H <sub>2</sub> S plan attached.

**8. Other facets of operation**

Is this a walking operation? Potentially

- 1 If operator elects, drilling rig will batch drill the surface holes and run/cement surface casing; walking the rig to next wells on the pad.
- 2 The drilling rig will then batch drill the intermediate sections and run/cement intermediate casing; the wellbore will be isolated with a blind flange and pressure gauge installed for monitoring the well before walking to the next well.
- 3 The drilling rig will then batch drill the production hole sections on the wells with OBM, run/cement production casing, and install TA caps or tubing heads for completions.

NOTE: During batch operations the drilling rig will be moved from well to well however, it will not be removed

## Thistle Unit 184H

from the pad until all wells have production casing run/cemented.

Will be pre-setting casing? Potentially

- 1 Spudder rig will move in and batch drill surface hole.
  - a. Rig will utilize fresh water based mud to drill surface hole to TD. Solids control will be handled entirely on a closed loop basis.,
- 2 After drilling the surface hole section, the spudder rig will run casing and cement following all of the applicable rules and regulations (OnShore Order 2, all COAs and NMOCD regulations).
- 3 The wellhead will be installed and tested once the surface casing is cut off and the WOC time has been reached.
- 4 A blind flange with the same pressure rating as the wellhead will be installed to seal the wellbore. Pressure will be monitored with a pressure gauge installed on the wellhead.
- 5 Spudder rig operations is expected to take 4-5 days per well on a multi-well pa.
- 6 The NMOCD will be contacted and notified 24 hours prior to commencing spudder rig operations.
- 7 Drilling operations will be performed with drilling rig. A that time an approved BOP stack will be nipped up and tested on the wellhead before drilling operations commences on each well.
  - a. The NMOCD will be contacted / notified 24 hours before the drilling rig moves back on to the pad with the pre-set surface casing.

## Attachments

X Directional Plan  
           Other, describe

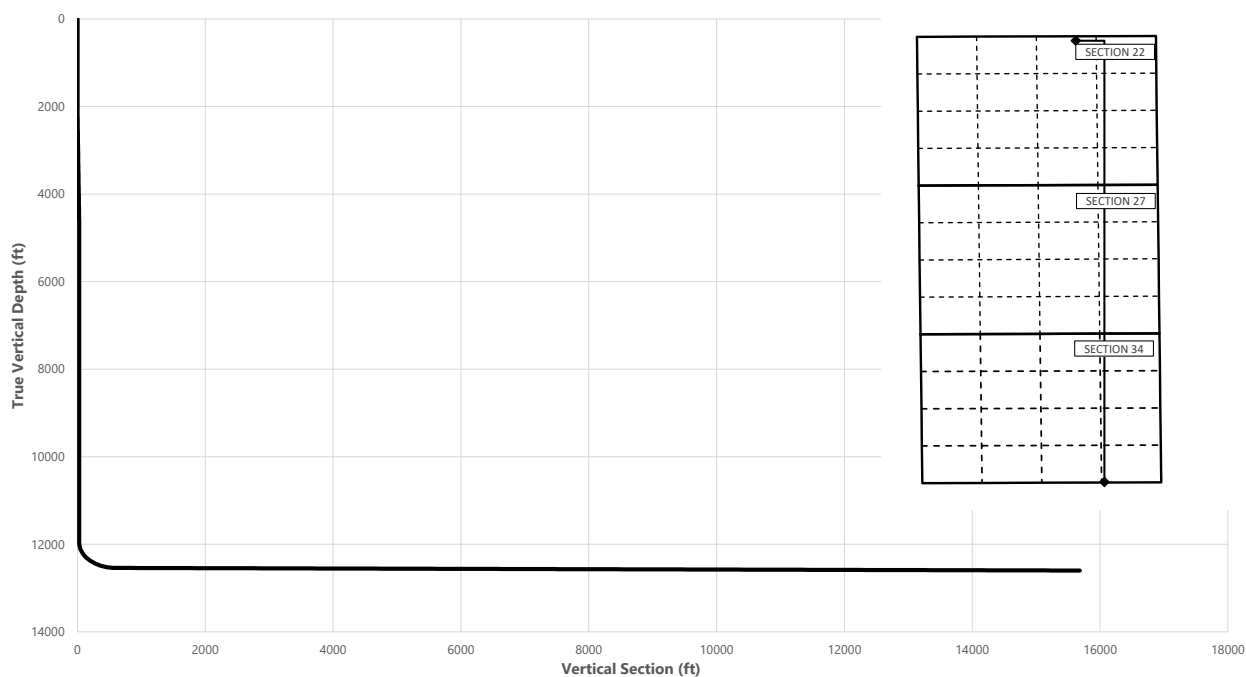
Thistle Unit 184H



**Well:** Thistle Unit 184H  
**County:** Lea  
**Wellbore:** Permit Plan  
**Design:** Permit Plan #1

**Geodetic System:** US State Plane 1983  
**Datum:** North American Datum 1927  
**Ellipsoid:** Clarke 1866  
**Zone:** 3001 - NM East (NAD83)

MD (ft)	INC (°)	AZI (°)	TVD (ft)	NS (ft)	EW (ft)	VS (ft)	DLS (°/100ft)	Comment
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	SHL
2000.00	0.00	90.00	2000.00	0.00	0.00	0.00	0.00	Start Tangent
2500.00	15.00	90.00	2494.31	0.00	65.08	2.62	1.00	Hold Tangent
4313.80	15.00	90.00	4246.31	0.00	534.52	21.54	0.00	Drop to Vertical
5063.80	0.00	90.00	4987.77	0.00	632.14	25.48	2.00	Hold Vertical
12043.08	0.00	180.00	11967.05	0.00	632.14	25.48	0.00	KOP
12940.80	89.77	180.00	12540.00	-570.68	632.14	595.69	10.00	Landing Point
28042.20	89.77	180.00	12600.00	-15671.95	632.14	15684.70	0.00	BHL



Key Depths	MD (ft)	TVD (ft)
Rustler	0.00	0.00
Salt	1869.00	1869.00
Base of Salt	5256.03	5180.00
Lamar	5256.03	5180.00
Delaware	5333.03	5257.00
Cherry Canyon	6271.03	6195.00
Brushy Canyon	7667.03	7591.00
1st Bone Spring Lime	9145.03	9069.00
Bone Spring 1st	10318.03	10242.00
Bone Spring 2nd	10906.03	10830.00
3rd Bone Spring Lime	11482.03	11406.00
Bone Spring 3rd	12057.04	11981.00
Wolfcamp / Point of Penetration	12395.92	12298.00
exit	27962.20	12599.70

**SHL**  
**KOP**  
**Point of Penetration**  
**Exit**  
**BHL**

MD (ft)	TVD (ft)	Lat (°)	Long (°)	Section Footages
0.00	0.00	32.2969	-103.5575	160' FNL, 1770' FEL of Sec 22 in T23S, R33E
12043.08	11967.05	32.2969	-103.5554	164' FNL, 1138' FEL of Sec 22 in T23S, R33E
12395.92	12298.00	32.2972	-103.5557	100' FNL, 1255' FEL of Sec 22 in T23S, R33E
27962.20	12599.70	32.2542	-103.5557	100' FSL, 1255' FEL of Sec 34 in T23S, R33E
28042.20	12600.00	32.2538	-103.5558	20' FSL, 1255' FEL of Sec 34 in T23S, R33E

Thistle Unit 184H



Well: Thistle Unit 184H  
 County: Lea  
 Wellbore: Permit Plan  
 Design: Permit Plan #1

Geodetic System: US State Plane 1983  
 Datum: North American Datum 1927  
 Ellipsoid: Clarke 1866  
 Zone: 3001 - NM East (NAD83)

MD (ft)	INC (°)	AZI (°)	TVD (ft)	NS (ft)	EW (ft)	VS (ft)	DLS (°/100ft)	Comment
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	SHL
100.00	0.00	90.00	100.00	0.00	0.00	0.00	0.00	
200.00	0.00	90.00	200.00	0.00	0.00	0.00	0.00	
300.00	0.00	90.00	300.00	0.00	0.00	0.00	0.00	
400.00	0.00	90.00	400.00	0.00	0.00	0.00	0.00	
500.00	0.00	90.00	500.00	0.00	0.00	0.00	0.00	
600.00	0.00	90.00	600.00	0.00	0.00	0.00	0.00	
700.00	0.00	90.00	700.00	0.00	0.00	0.00	0.00	
800.00	0.00	90.00	800.00	0.00	0.00	0.00	0.00	
900.00	0.00	90.00	900.00	0.00	0.00	0.00	0.00	
1000.00	0.00	90.00	1000.00	0.00	0.00	0.00	0.00	
1100.00	0.00	90.00	1100.00	0.00	0.00	0.00	0.00	
1200.00	0.00	90.00	1200.00	0.00	0.00	0.00	0.00	
1300.00	0.00	90.00	1300.00	0.00	0.00	0.00	0.00	
1365.00	0.00	90.00	1365.00	0.00	0.00	0.00	0.00	Rustler
1400.00	0.00	90.00	1400.00	0.00	0.00	0.00	0.00	
1500.00	0.00	90.00	1500.00	0.00	0.00	0.00	0.00	
1600.00	0.00	90.00	1600.00	0.00	0.00	0.00	0.00	
1700.00	0.00	90.00	1700.00	0.00	0.00	0.00	0.00	
1800.00	0.00	90.00	1800.00	0.00	0.00	0.00	0.00	
1869.00	0.00	90.00	1869.00	0.00	0.00	0.00	0.00	Salt
1900.00	0.00	90.00	1900.00	0.00	0.00	0.00	0.00	
2000.00	0.00	90.00	2000.00	0.00	0.00	0.00	0.00	Start Tangent
2100.00	3.00	90.00	2099.95	0.00	2.62	0.11	3.00	
2200.00	6.00	90.00	2199.63	0.00	10.46	0.42	3.00	
2300.00	9.00	90.00	2298.77	0.00	23.51	0.95	3.00	
2400.00	12.00	90.00	2397.08	0.00	41.73	1.68	3.00	
2500.00	15.00	90.00	2494.31	0.00	65.08	2.62	1.00	Hold Tangent
2600.00	15.00	90.00	2590.90	0.00	90.96	3.67	0.00	
2700.00	15.00	90.00	2687.49	0.00	116.84	4.71	0.00	
2800.00	15.00	90.00	2784.09	0.00	142.72	5.75	0.00	
2900.00	15.00	90.00	2880.68	0.00	168.60	6.80	0.00	
3000.00	15.00	90.00	2977.27	0.00	194.49	7.84	0.00	
3100.00	15.00	90.00	3073.86	0.00	220.37	8.88	0.00	
3200.00	15.00	90.00	3170.46	0.00	246.25	9.92	0.00	
3300.00	15.00	90.00	3267.05	0.00	272.13	10.97	0.00	
3400.00	15.00	90.00	3363.64	0.00	298.01	12.01	0.00	
3500.00	15.00	90.00	3460.23	0.00	323.90	13.05	0.00	
3600.00	15.00	90.00	3556.83	0.00	349.78	14.10	0.00	
3700.00	15.00	90.00	3653.42	0.00	375.66	15.14	0.00	
3800.00	15.00	90.00	3750.01	0.00	401.54	16.18	0.00	
3900.00	15.00	90.00	3846.60	0.00	427.42	17.23	0.00	
4000.00	15.00	90.00	3943.20	0.00	453.31	18.27	0.00	
4100.00	15.00	90.00	4039.79	0.00	479.19	19.31	0.00	
4200.00	15.00	90.00	4136.38	0.00	505.07	20.36	0.00	
4300.00	15.00	90.00	4232.97	0.00	530.95	21.40	0.00	
4313.80	15.00	90.00	4246.31	0.00	534.52	21.54	0.00	Drop to Vertical
4400.00	13.28	90.00	4329.89	0.00	555.58	22.39	2.00	
4500.00	11.28	90.00	4427.60	0.00	576.84	23.25	2.00	
4600.00	9.28	90.00	4525.99	0.00	594.68	23.97	2.00	
4700.00	7.28	90.00	4624.94	0.00	609.07	24.55	2.00	
4800.00	5.28	90.00	4724.34	0.00	620.00	24.99	2.00	
4900.00	3.28	90.00	4824.06	0.00	627.46	25.29	2.00	
5000.00	1.28	90.00	4923.97	0.00	631.43	25.45	2.00	
5063.80	0.00	90.00	4987.77	0.00	632.14	25.48	2.00	Hold Vertical
5100.00	0.00	180.00	5023.97	0.00	632.14	25.48	0.00	
5200.00	0.00	180.00	5123.97	0.00	632.14	25.48	0.00	
5256.03	0.00	180.00	5180.00	0.00	632.14	25.48	0.00	Base of Salt, Lamar
5300.00	0.00	180.00	5223.97	0.00	632.14	25.48	0.00	
5333.03	0.00	180.00	5257.00	0.00	632.14	25.48	0.00	Delaware
5400.00	0.00	180.00	5323.97	0.00	632.14	25.48	0.00	
5500.00	0.00	180.00	5423.97	0.00	632.14	25.48	0.00	
5600.00	0.00	180.00	5523.97	0.00	632.14	25.48	0.00	
5700.00	0.00	180.00	5623.97	0.00	632.14	25.48	0.00	
5800.00	0.00	180.00	5723.97	0.00	632.14	25.48	0.00	
5900.00	0.00	180.00	5823.97	0.00	632.14	25.48	0.00	
6000.00	0.00	180.00	5923.97	0.00	632.14	25.48	0.00	
6100.00	0.00	180.00	6023.97	0.00	632.14	25.48	0.00	
6200.00	0.00	180.00	6123.97	0.00	632.14	25.48	0.00	
6271.03	0.00	180.00	6195.00	0.00	632.14	25.48	0.00	Cherry Canyon

Thistle Unit 184H



Well: Thistle Unit 184H  
 County: Lea  
 Wellbore: Permit Plan  
 Design: Permit Plan #1

Geodetic System: US State Plane 1983  
 Datum: North American Datum 1927  
 Ellipsoid: Clarke 1866  
 Zone: 3001 - NM East (NAD83)

MD (ft)	INC (°)	AZI (°)	TVD (ft)	NS (ft)	EW (ft)	VS (ft)	DLS (°/100ft)	Comment
6300.00	0.00	180.00	6223.97	0.00	632.14	25.48	0.00	
6400.00	0.00	180.00	6323.97	0.00	632.14	25.48	0.00	
6500.00	0.00	180.00	6423.97	0.00	632.14	25.48	0.00	
6600.00	0.00	180.00	6523.97	0.00	632.14	25.48	0.00	
6700.00	0.00	180.00	6623.97	0.00	632.14	25.48	0.00	
6800.00	0.00	180.00	6723.97	0.00	632.14	25.48	0.00	
6900.00	0.00	180.00	6823.97	0.00	632.14	25.48	0.00	
7000.00	0.00	180.00	6923.97	0.00	632.14	25.48	0.00	
7100.00	0.00	180.00	7023.97	0.00	632.14	25.48	0.00	
7200.00	0.00	180.00	7123.97	0.00	632.14	25.48	0.00	
7300.00	0.00	180.00	7223.97	0.00	632.14	25.48	0.00	
7400.00	0.00	180.00	7323.97	0.00	632.14	25.48	0.00	
7500.00	0.00	180.00	7423.97	0.00	632.14	25.48	0.00	
7600.00	0.00	180.00	7523.97	0.00	632.14	25.48	0.00	
7667.03	0.00	180.00	7591.00	0.00	632.14	25.48	0.00	Brushy Canyon
7700.00	0.00	180.00	7623.97	0.00	632.14	25.48	0.00	
7800.00	0.00	180.00	7723.97	0.00	632.14	25.48	0.00	
7900.00	0.00	180.00	7823.97	0.00	632.14	25.48	0.00	
8000.00	0.00	180.00	7923.97	0.00	632.14	25.48	0.00	
8100.00	0.00	180.00	8023.97	0.00	632.14	25.48	0.00	
8200.00	0.00	180.00	8123.97	0.00	632.14	25.48	0.00	
8300.00	0.00	180.00	8223.97	0.00	632.14	25.48	0.00	
8400.00	0.00	180.00	8323.97	0.00	632.14	25.48	0.00	
8500.00	0.00	180.00	8423.97	0.00	632.14	25.48	0.00	
8600.00	0.00	180.00	8523.97	0.00	632.14	25.48	0.00	
8700.00	0.00	180.00	8623.97	0.00	632.14	25.48	0.00	
8800.00	0.00	180.00	8723.97	0.00	632.14	25.48	0.00	
8900.00	0.00	180.00	8823.97	0.00	632.14	25.48	0.00	
9000.00	0.00	180.00	8923.97	0.00	632.14	25.48	0.00	
9100.00	0.00	180.00	9023.97	0.00	632.14	25.48	0.00	
9145.03	0.00	180.00	9069.00	0.00	632.14	25.48	0.00	1st Bone Spring Lime
9200.00	0.00	180.00	9123.97	0.00	632.14	25.48	0.00	
9300.00	0.00	180.00	9223.97	0.00	632.14	25.48	0.00	
9400.00	0.00	180.00	9323.97	0.00	632.14	25.48	0.00	
9500.00	0.00	180.00	9423.97	0.00	632.14	25.48	0.00	
9600.00	0.00	180.00	9523.97	0.00	632.14	25.48	0.00	
9700.00	0.00	180.00	9623.97	0.00	632.14	25.48	0.00	
9800.00	0.00	180.00	9723.97	0.00	632.14	25.48	0.00	
9900.00	0.00	180.00	9823.97	0.00	632.14	25.48	0.00	
10000.00	0.00	180.00	9923.97	0.00	632.14	25.48	0.00	
10100.00	0.00	180.00	10023.97	0.00	632.14	25.48	0.00	
10200.00	0.00	180.00	10123.97	0.00	632.14	25.48	0.00	
10300.00	0.00	180.00	10223.97	0.00	632.14	25.48	0.00	
10318.03	0.00	180.00	10242.00	0.00	632.14	25.48	0.00	Bone Spring 1st
10400.00	0.00	180.00	10323.97	0.00	632.14	25.48	0.00	
10500.00	0.00	180.00	10423.97	0.00	632.14	25.48	0.00	
10600.00	0.00	180.00	10523.97	0.00	632.14	25.48	0.00	
10700.00	0.00	180.00	10623.97	0.00	632.14	25.48	0.00	
10800.00	0.00	180.00	10723.97	0.00	632.14	25.48	0.00	
10900.00	0.00	180.00	10823.97	0.00	632.14	25.48	0.00	
10906.03	0.00	180.00	10830.00	0.00	632.14	25.48	0.00	Bone Spring 2nd
11000.00	0.00	180.00	10923.97	0.00	632.14	25.48	0.00	
11100.00	0.00	180.00	11023.97	0.00	632.14	25.48	0.00	
11200.00	0.00	180.00	11123.97	0.00	632.14	25.48	0.00	
11300.00	0.00	180.00	11223.97	0.00	632.14	25.48	0.00	
11400.00	0.00	180.00	11323.97	0.00	632.14	25.48	0.00	
11482.03	0.00	180.00	11406.00	0.00	632.14	25.48	0.00	3rd Bone Spring Lime
11500.00	0.00	180.00	11423.97	0.00	632.14	25.48	0.00	
11600.00	0.00	180.00	11523.97	0.00	632.14	25.48	0.00	
11700.00	0.00	180.00	11623.97	0.00	632.14	25.48	0.00	
11800.00	0.00	180.00	11723.97	0.00	632.14	25.48	0.00	
11900.00	0.00	180.00	11823.97	0.00	632.14	25.48	0.00	
12000.00	0.00	180.00	11923.97	0.00	632.14	25.48	0.00	
12043.08	0.00	180.00	11967.05	0.00	632.14	25.48	0.00	KOP
12057.04	1.40	180.00	11981.00	-0.17	632.14	25.65	10.00	Bone Spring 3rd
12100.00	5.69	180.00	12023.87	-2.82	632.14	28.30	10.00	
12200.00	15.69	180.00	12122.01	-21.35	632.14	46.81	10.00	
12300.00	25.69	180.00	12215.44	-56.64	632.14	82.08	10.00	
12395.92	35.28	180.00	12298.00	-105.25	632.14	130.64	10.00	Wolfcamp / Point of Penetration
12400.00	35.69	180.00	12301.33	-107.62	632.14	133.01	10.00	

Thistle Unit 184H



**Well:** Thistle Unit 184H  
**County:** Lea  
**Wellbore:** Permit Plan  
**Design:** Permit Plan #1

**Geodetic System:** US State Plane 1983  
**Datum:** North American Datum 1927  
**Ellipsoid:** Clarke 1866  
**Zone:** 3001 - NM East (NAD83)

MD (ft)	INC (°)	AZI (°)	TVD (ft)	NS (ft)	EW (ft)	VS (ft)	DLS (°/100ft)	Comment
12500.00	45.69	180.00	12377.05	-172.74	632.14	198.08	10.00	
12600.00	55.69	180.00	12440.32	-250.01	632.14	275.29	10.00	
12700.00	65.69	180.00	12489.21	-337.10	632.14	362.31	10.00	
12800.00	75.69	180.00	12522.23	-431.36	632.14	456.49	10.00	
12900.00	85.69	180.00	12538.39	-529.92	632.14	554.97	10.00	
12940.80	89.77	180.00	12540.00	-570.68	632.14	595.69	10.00	Landing Point
13000.00	89.77	180.00	12540.24	-629.88	632.14	654.84	0.00	
13100.00	89.77	180.00	12540.63	-729.88	632.14	754.76	0.00	
13200.00	89.77	180.00	12541.03	-829.88	632.14	854.68	0.00	
13300.00	89.77	180.00	12541.43	-929.87	632.14	954.60	0.00	
13400.00	89.77	180.00	12541.83	-1029.87	632.14	1054.52	0.00	
13500.00	89.77	180.00	12542.22	-1129.87	632.14	1154.43	0.00	
13600.00	89.77	180.00	12542.62	-1229.87	632.14	1254.35	0.00	
13700.00	89.77	180.00	12543.02	-1329.87	632.14	1354.27	0.00	
13800.00	89.77	180.00	12543.41	-1429.87	632.14	1454.19	0.00	
13900.00	89.77	180.00	12543.81	-1529.87	632.14	1554.10	0.00	
14000.00	89.77	180.00	12544.21	-1629.87	632.14	1654.02	0.00	
14100.00	89.77	180.00	12544.61	-1729.87	632.14	1753.94	0.00	
14200.00	89.77	180.00	12545.00	-1829.87	632.14	1853.86	0.00	
14300.00	89.77	180.00	12545.40	-1929.87	632.14	1953.78	0.00	
14400.00	89.77	180.00	12545.80	-2029.87	632.14	2053.69	0.00	
14500.00	89.77	180.00	12546.20	-2129.87	632.14	2153.61	0.00	
14600.00	89.77	180.00	12546.59	-2229.86	632.14	2253.53	0.00	
14700.00	89.77	180.00	12546.99	-2329.86	632.14	2353.45	0.00	
14800.00	89.77	180.00	12547.39	-2429.86	632.14	2453.37	0.00	
14900.00	89.77	180.00	12547.79	-2529.86	632.14	2553.28	0.00	
15000.00	89.77	180.00	12548.18	-2629.86	632.14	2653.20	0.00	
15100.00	89.77	180.00	12548.58	-2729.86	632.14	2753.12	0.00	
15200.00	89.77	180.00	12548.98	-2829.86	632.14	2853.04	0.00	
15300.00	89.77	180.00	12549.38	-2929.86	632.15	2952.96	0.00	
15400.00	89.77	180.00	12549.77	-3029.86	632.15	3052.87	0.00	
15500.00	89.77	180.00	12550.17	-3129.86	632.15	3152.79	0.00	
15600.00	89.77	180.00	12550.57	-3229.86	632.15	3252.71	0.00	
15700.00	89.77	180.00	12550.97	-3329.86	632.15	3352.63	0.00	
15800.00	89.77	180.00	12551.36	-3429.86	632.15	3452.55	0.00	
15900.00	89.77	180.00	12551.76	-3529.85	632.15	3552.46	0.00	
16000.00	89.77	180.00	12552.16	-3629.85	632.15	3652.38	0.00	
16100.00	89.77	180.00	12552.56	-3729.85	632.15	3752.30	0.00	
16200.00	89.77	180.00	12552.95	-3829.85	632.15	3852.22	0.00	
16300.00	89.77	180.00	12553.35	-3929.85	632.15	3952.14	0.00	
16400.00	89.77	180.00	12553.75	-4029.85	632.15	4052.05	0.00	
16500.00	89.77	180.00	12554.15	-4129.85	632.15	4151.97	0.00	
16600.00	89.77	180.00	12554.54	-4229.85	632.15	4251.89	0.00	
16700.00	89.77	180.00	12554.94	-4329.85	632.15	4351.81	0.00	
16800.00	89.77	180.00	12555.34	-4429.85	632.15	4451.73	0.00	
16900.00	89.77	180.00	12555.74	-4529.85	632.15	4551.64	0.00	
17000.00	89.77	180.00	12556.13	-4629.85	632.15	4651.56	0.00	
17100.00	89.77	180.00	12556.53	-4729.84	632.15	4751.48	0.00	
17200.00	89.77	180.00	12556.93	-4829.84	632.15	4851.40	0.00	
17300.00	89.77	180.00	12557.33	-4929.84	632.15	4951.32	0.00	
17400.00	89.77	180.00	12557.72	-5029.84	632.15	5051.23	0.00	
17500.00	89.77	180.00	12558.12	-5129.84	632.15	5151.15	0.00	
17600.00	89.77	180.00	12558.52	-5229.84	632.15	5251.07	0.00	
17700.00	89.77	180.00	12558.92	-5329.84	632.15	5350.99	0.00	
17800.00	89.77	180.00	12559.31	-5429.84	632.15	5450.91	0.00	
17900.00	89.77	180.00	12559.71	-5529.84	632.15	5550.82	0.00	
18000.00	89.77	180.00	12560.11	-5629.84	632.15	5650.74	0.00	
18100.00	89.77	180.00	12560.51	-5729.84	632.15	5750.66	0.00	
18200.00	89.77	180.00	12560.90	-5829.84	632.15	5850.58	0.00	
18300.00	89.77	180.00	12561.30	-5929.84	632.15	5950.50	0.00	
18400.00	89.77	180.00	12561.70	-6029.83	632.15	6050.41	0.00	
18500.00	89.77	180.00	12562.09	-6129.83	632.15	6150.33	0.00	
18600.00	89.77	180.00	12562.49	-6229.83	632.15	6250.25	0.00	
18700.00	89.77	180.00	12562.89	-6329.83	632.15	6350.17	0.00	
18800.00	89.77	180.00	12563.29	-6429.83	632.15	6450.09	0.00	
18900.00	89.77	180.00	12563.68	-6529.83	632.15	6550.00	0.00	
19000.00	89.77	180.00	12564.08	-6629.83	632.15	6649.92	0.00	
19100.00	89.77	180.00	12564.48	-6729.83	632.16	6749.84	0.00	
19200.00	89.77	180.00	12564.88	-6829.83	632.16	6849.76	0.00	
19300.00	89.77	180.00	12565.27	-6929.83	632.16	6949.68	0.00	

Thistle Unit 184H



**Well:** Thistle Unit 184H  
**County:** Lea  
**Wellbore:** Permit Plan  
**Design:** Permit Plan #1

**Geodetic System:** US State Plane 1983  
**Datum:** North American Datum 1927  
**Ellipsoid:** Clarke 1866  
**Zone:** 3001 - NM East (NAD83)

MD (ft)	INC (°)	AZI (°)	TVD (ft)	NS (ft)	EW (ft)	VS (ft)	DLS (°/100ft)	Comment
19400.00	89.77	180.00	12565.67	-7029.83	632.16	7049.59	0.00	
19500.00	89.77	180.00	12566.07	-7129.83	632.16	7149.51	0.00	
19600.00	89.77	180.00	12566.47	-7229.83	632.16	7249.43	0.00	
19700.00	89.77	180.00	12566.86	-7329.82	632.16	7349.35	0.00	
19800.00	89.77	180.00	12567.26	-7429.82	632.16	7449.26	0.00	
19900.00	89.77	180.00	12567.66	-7529.82	632.16	7549.18	0.00	
20000.00	89.77	180.00	12568.06	-7629.82	632.16	7649.10	0.00	
20100.00	89.77	180.00	12568.45	-7729.82	632.16	7749.02	0.00	
20200.00	89.77	180.00	12568.85	-7829.82	632.16	7848.94	0.00	
20300.00	89.77	180.00	12569.25	-7929.82	632.16	7948.85	0.00	
20400.00	89.77	180.00	12569.65	-8029.82	632.16	8048.77	0.00	
20500.00	89.77	180.00	12570.04	-8129.82	632.16	8148.69	0.00	
20600.00	89.77	180.00	12570.44	-8229.82	632.16	8248.61	0.00	
20700.00	89.77	180.00	12570.84	-8329.82	632.16	8348.53	0.00	
20800.00	89.77	180.00	12571.24	-8429.82	632.16	8448.44	0.00	
20900.00	89.77	180.00	12571.63	-8529.81	632.16	8548.36	0.00	
21000.00	89.77	180.00	12572.03	-8629.81	632.16	8648.28	0.00	
21100.00	89.77	180.00	12572.43	-8729.81	632.16	8748.20	0.00	
21200.00	89.77	180.00	12572.83	-8829.81	632.16	8848.12	0.00	
21300.00	89.77	180.00	12573.22	-8929.81	632.16	8948.03	0.00	
21400.00	89.77	180.00	12573.62	-9029.81	632.16	9047.95	0.00	
21500.00	89.77	180.00	12574.02	-9129.81	632.16	9147.87	0.00	
21600.00	89.77	180.00	12574.42	-9229.81	632.16	9247.79	0.00	
21700.00	89.77	180.00	12574.81	-9329.81	632.16	9347.71	0.00	
21800.00	89.77	180.00	12575.21	-9429.81	632.16	9447.62	0.00	
21900.00	89.77	180.00	12575.61	-9529.81	632.16	9547.54	0.00	
22000.00	89.77	180.00	12576.01	-9629.81	632.16	9647.46	0.00	
22100.00	89.77	180.00	12576.40	-9729.81	632.16	9747.38	0.00	
22200.00	89.77	180.00	12576.80	-9829.80	632.16	9847.30	0.00	
22300.00	89.77	180.00	12577.20	-9929.80	632.16	9947.21	0.00	
22400.00	89.77	180.00	12577.60	-10029.80	632.16	10047.13	0.00	
22500.00	89.77	180.00	12577.99	-10129.80	632.16	10147.05	0.00	
22600.00	89.77	180.00	12578.39	-10229.80	632.16	10246.97	0.00	
22700.00	89.77	180.00	12578.79	-10329.80	632.16	10346.89	0.00	
22800.00	89.77	180.00	12579.19	-10429.80	632.16	10446.80	0.00	
22900.00	89.77	180.00	12579.58	-10529.80	632.17	10546.72	0.00	
23000.00	89.77	180.00	12579.98	-10629.80	632.17	10646.64	0.00	
23100.00	89.77	180.00	12580.38	-10729.80	632.17	10746.56	0.00	
23200.00	89.77	180.00	12580.77	-10829.80	632.17	10846.48	0.00	
23300.00	89.77	180.00	12581.17	-10929.80	632.17	10946.39	0.00	
23400.00	89.77	180.00	12581.57	-11029.80	632.17	11046.31	0.00	
23500.00	89.77	180.00	12581.97	-11129.79	632.17	11146.23	0.00	
23600.00	89.77	180.00	12582.36	-11229.79	632.17	11246.15	0.00	
23700.00	89.77	180.00	12582.76	-11329.79	632.17	11346.07	0.00	
23800.00	89.77	180.00	12583.16	-11429.79	632.17	11445.98	0.00	
23900.00	89.77	180.00	12583.56	-11529.79	632.17	11545.90	0.00	
24000.00	89.77	180.00	12583.95	-11629.79	632.17	11645.82	0.00	
24100.00	89.77	180.00	12584.35	-11729.79	632.17	11745.74	0.00	
24200.00	89.77	180.00	12584.75	-11829.79	632.17	11845.66	0.00	
24300.00	89.77	180.00	12585.15	-11929.79	632.17	11945.57	0.00	
24400.00	89.77	180.00	12585.54	-12029.79	632.17	12045.49	0.00	
24500.00	89.77	180.00	12585.94	-12129.79	632.17	12145.41	0.00	
24600.00	89.77	180.00	12586.34	-12229.79	632.17	12245.33	0.00	
24700.00	89.77	180.00	12586.74	-12329.78	632.17	12345.25	0.00	
24800.00	89.77	180.00	12587.13	-12429.78	632.17	12445.16	0.00	
24900.00	89.77	180.00	12587.53	-12529.78	632.17	12545.08	0.00	
25000.00	89.77	180.00	12587.93	-12629.78	632.17	12645.00	0.00	
25100.00	89.77	180.00	12588.33	-12729.78	632.17	12744.92	0.00	
25200.00	89.77	180.00	12588.72	-12829.78	632.17	12844.84	0.00	
25300.00	89.77	180.00	12589.12	-12929.78	632.17	12944.75	0.00	
25400.00	89.77	180.00	12589.52	-13029.78	632.17	13044.67	0.00	
25500.00	89.77	180.00	12589.92	-13129.78	632.17	13144.59	0.00	#####
25600.00	89.77	180.00	12590.31	-13229.78	632.17	13244.51	0.00	#####
25700.00	89.77	180.00	12590.71	-13329.78	632.17	13344.43	0.00	#####
25800.00	89.77	180.00	12591.11	-13429.78	632.17	13444.34	0.00	#####
25900.00	89.77	180.00	12591.51	-13529.78	632.17	13544.26	0.00	#####
26000.00	89.77	180.00	12591.90	-13629.77	632.17	13644.18	0.00	#####
26100.00	89.77	180.00	12592.30	-13729.77	632.17	13744.10	0.00	#####
26200.00	89.77	180.00	12592.70	-13829.77	632.17	13844.01	0.00	#####
26300.00	89.77	180.00	12593.10	-13929.77	632.17	13943.93	0.00	#####



**Devon Energy Center  
333 West Sheridan Avenue  
Oklahoma City, Oklahoma 73102-5015**

# **Hydrogen Sulfide (H<sub>2</sub>S) Contingency Plan**

**For**

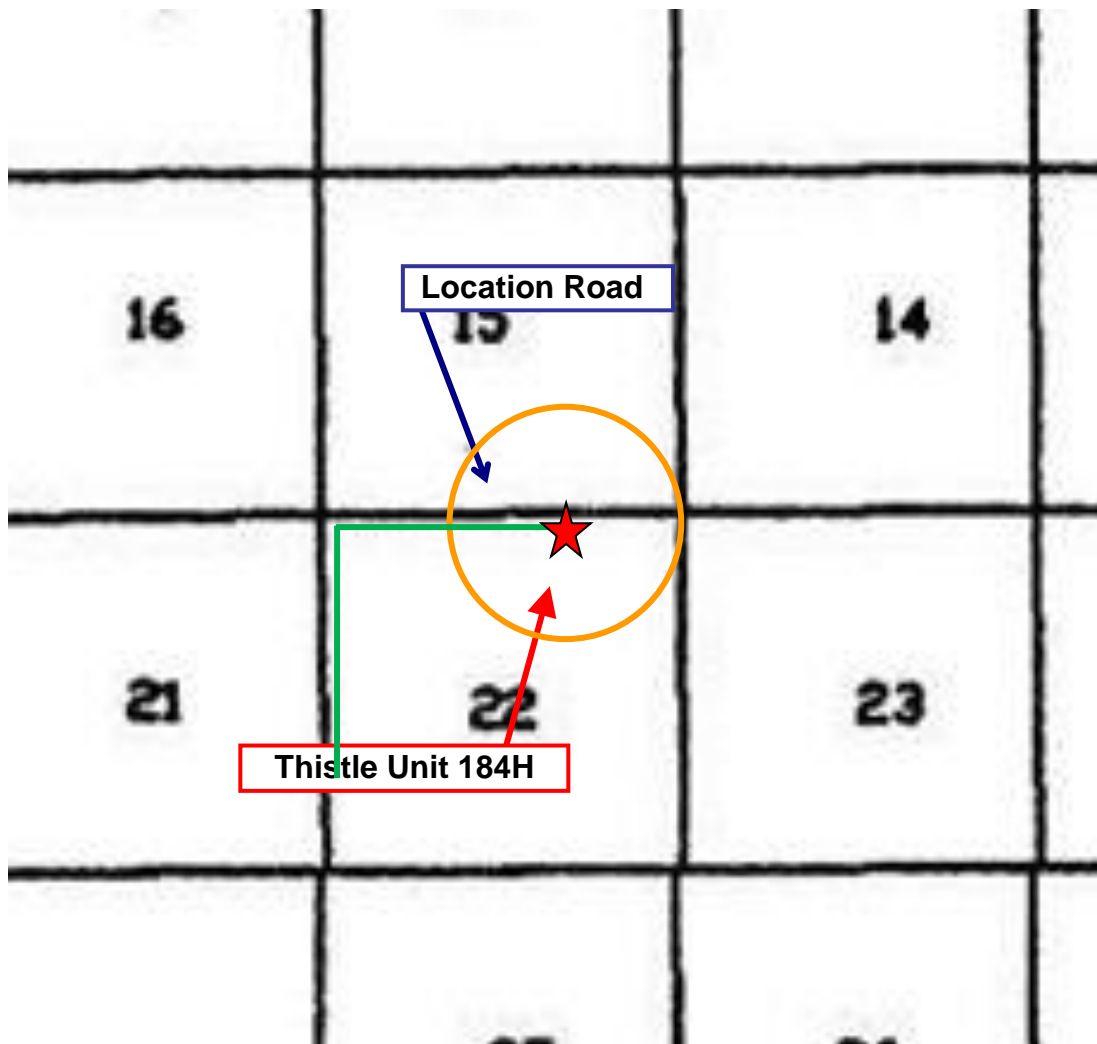
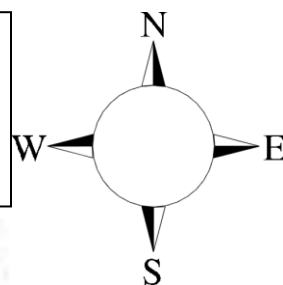
**Thistle Unit 184H**

**Sec-22 T-23S R-33E  
160 FNL & 1770' FEL  
LAT. = 32.2970212' N (NAD83)  
LONG = 103.5574987 W**

**Lea County NM**

## Thistle Unit 184H

This is an open drilling site. H<sub>2</sub>S monitoring equipment and emergency response equipment will be used within 500' of zones known to contain H<sub>2</sub>S, including warning signs, wind indicators and H<sub>2</sub>S monitor.



Assumed 100 ppm ROE = 3000' (Radius of Exposure)  
100 ppm H<sub>2</sub>S concentration shall trigger activation of this plan.

### Escape

Crews shall escape upwind of escaping gas in the event of an emergency release of gas. Escape can be facilitated from the location entrance road. Crews should then block the entrance to the location from the lease road so as not to allow anyone traversing into a hazardous area. The blockade should be at a safe distance outside of the ROE. There are no homes or buildings in or near the ROE.

**Assumed 100 ppm ROE = 3000'**

## 100 ppm H<sub>2</sub>S concentration shall trigger activation of this plan.

### Emergency Procedures

In the event of a release of gas containing H<sub>2</sub>S, the first responder(s) must

- Isolate the area and prevent entry by other persons into the 100 ppm ROE.
- Evacuate any public places encompassed by the 100 ppm ROE.
- Be equipped with H<sub>2</sub>S monitors and air packs in order to control the release.
- Use the “buddy system” to ensure no injuries occur during the response
- Take precautions to avoid personal injury during this operation.
- Contact operator and/or local officials to aid in operation. See list of phone numbers attached.
- Have received training in the
  - Detection of H<sub>2</sub>S, and
  - Measures for protection against the gas,
  - Equipment used for protection and emergency response.

### **Ignition of Gas Source**

Should control of the well be considered lost and ignition considered, take care to protect against exposure to Sulfur Dioxide (SO<sub>2</sub>). Intentional ignition must be coordinated with the NMOCD and local officials. Additionally the NM State Police may become involved. NM State Police shall be the Incident Command on scene of any major release. Take care to protect downwind whenever there is an ignition of the gas

### **Characteristics of H<sub>2</sub>S and SO<sub>2</sub>**

<b>Common Name</b>	<b>Chemical Formula</b>	<b>Specific Gravity</b>	<b>Threshold Limit</b>	<b>Hazardous Limit</b>	<b>Lethal Concentration</b>
<b>Hydrogen Sulfide</b>	H <sub>2</sub> S	1.189 Air = 1	10 ppm	100 ppm/hr	600 ppm
<b>Sulfur Dioxide</b>	SO <sub>2</sub>	2.21 Air = 1	2 ppm	N/A	1000 ppm

### **Contacting Authorities**

Devon Energy Corp. personnel must liaison with local and state agencies to ensure a proper response to a major release. Additionally, the OCD must be notified of the release as soon as possible but no later than 4 hours. Agencies will ask for information such as type and volume of release, wind direction, location of release, etc. Be prepared with all information available. The following call list of essential and potential responders has been prepared for use during a release. Devon Energy Corp. Company response must be in coordination with the State of New Mexico's 'Hazardous Materials Emergency Response Plan' (HMER)

## Hydrogen Sulfide Drilling Operation Plan

### I. HYDROGEN SULFIDE (H<sub>2</sub>S) TRAINING

All personnel, whether regularly assigned, contracted, or employed on an unscheduled basis, will receive training from a qualified instructor in the following areas prior to commencing drilling operations on this well:

1. The hazards and characteristics of hydrogen sulfide (H<sub>2</sub>S)
2. The proper use and maintenance of personal protective equipment and life support systems.
3. The proper use of H<sub>2</sub>S detectors, alarms, warning systems, briefing areas, evacuation procedures, and prevailing winds.
4. The proper techniques for first aid and rescue procedures.

In addition, supervisory personnel will be trained in the following areas:

1. The effects of H<sub>2</sub>S metal components. If high tensile tubulars are to be used, personnel will be trained in their special maintenance requirements.
2. Corrective action and shut-in procedures when drilling or reworking a well and blowout prevention and well control procedures.
3. The contents and requirements of the H<sub>2</sub>S Drilling Operations Plan.

There will be weekly H<sub>2</sub>S and well control drills for all personnel in each crew.

### II. HYDROGEN SULFIDE TRAINING

Note: All H<sub>2</sub>S safety equipment and systems will be installed, tested, and operational when drilling reaches a depth of 500 feet above, or three days prior to penetrating the first zone containing or reasonably expected to contain H<sub>2</sub>S.

**1. Well Control Equipment**

- A. Flare line
- B. Choke manifold – Remotely Operated
- C. Blind rams and pipe rams to accommodate all pipe sizes with properly sized closing unit
- D. Auxiliary equipment may include if applicable: annular preventer and rotating head.
- E. Mud/Gas Separator

**2. Protective equipment for essential personnel:**

30-minute SCBA units located at briefing areas, as indicated on well site diagram, with escape units available in the top doghouse. As it may be difficult to communicate audibly while wearing these units, hand signals shall be utilized.

**3. H<sub>2</sub>S detection and monitoring equipment:**

Portable H<sub>2</sub>S monitors positioned on location for best coverage and response. These units have warning lights which activate when H<sub>2</sub>S levels reach 10 ppm and audible sirens which activate at 15 ppm. Sensor locations:

- Bell nipple
- Possum Belly/Shale shaker
- Rig floor
- Choke manifold
- Cellar

**Visual warning systems:**

- A. Wind direction indicators as shown on well site diagram
- B. Caution/ Danger signs shall be posted on roads providing direct access to locations. Signs will be painted a high visibility yellow with black lettering of sufficient size to be reasonable distance from the immediate location. Bilingual signs will be used when appropriate.

**4. Mud program:**

The mud program has been designed to minimize the volume of H<sub>2</sub>S circulated to surface. Proper mud weight, safe drilling practices and the use of H<sub>2</sub>S scavengers will minimize hazards when penetrating H<sub>2</sub>S bearing zones.

**5. Metallurgy:**

- A. All drill strings, casings, tubing, wellhead, blowout preventer, drilling spool, kill lines, choke manifold lines, and valves shall be H<sub>2</sub>S trim.
- B. All elastomers used for packing and seals shall be H<sub>2</sub>S trim.

**6. Communication:**

- A. Company personnel have/use cellular telephones in the field.
- B. Land line (telephone) communications at Office

**7. Well testing:**

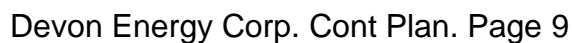
- A. Drill stem testing will be performed with a minimum number of personnel in the immediate vicinity, which are necessary to safety and adequately conduct the test. The drill stem testing will be conducted during daylight hours and formation fluids will not be flowed to the surface. All drill-stem-testing operations conducted in an H<sub>2</sub>S environment will use the closed chamber method of testing.
- B. There will be no drill stem testing.

<b><u>Devon Energy Corp. Company Call List</u></b>			
<b>Employee/Company Contact Representative</b>	<b>Position</b>	<b>Phone Number</b>	<b>After Hours Number</b>
Jonathan Fisher (North)	Drilling Manager	832-967-7912	
Jason Hildebrand (South)	Drilling Manager	405-552-6514	
Rich Downey	Drilling VP	405-228-2415	
Josh Harvey	EHS Manger	405-228-2440	918-500-5536
Laura Wright	EHS Supervisor	405-552-5334	832-969-8145
Robert Glover	EHS Professional	575-703-5712	575-703-5712
Lane Frank	Lead EHS	580-579-7052	580-579-7052
Rickey Porter	Lead EHS	903-720-8315	903-720-8315
Ronnie Handy	Lead EHS	918-839-2046	918-839-2046
Brock Vise	Lead EHS	918-413-3291	918-413-3291
<b><u>Agency Call List</u></b>			
<b><u>Lea County (575)</u></b>	<b>Hobbs</b>		
	Lea County Communication Authority		397-9265
	State Police		885-3138
	City Police		397-9265
	Sheriff's Office		396-3611
	<b>Ambulance</b>		<b>911</b>
	Fire Department		397-9308
	LEPC (Local Emergency Planning Committee)		393-2870
	NMOCD		393-6161
	US Bureau of Land Management (Closed)		393-0002
<b><u>Eddy County (575)</u></b>	<b>Carlsbad</b>		
	State Police		885-3137
	City Police		885-2111
	Sheriff's Office		887-7551
	<b>Ambulance</b>		<b>911</b>
	Fire Department		885-3125
	LEPC (Local Emergency Planning Committee)		887-3798
	US Bureau of Land Management		234-5972
	NM Emergency Response Commission (Santa Fe)	(505) 476-9600	
	24 HR	(505) 827-9126	
	National Emergency Response Center	(800) 424-8802	
	National Pollution Control Center: Direct	(703) 872-6000	
	For Oil Spills	(800) 280-7118	
	<b>Emergency Services</b>		
	Wild Well Control		(281) 784-4700
	Cudd Pressure Control	(915) 699-0139	(915) 563-3356
	Halliburton		(575) 746-2757
	B. J. Services		(575) 746-3569

<b>Give GPS position:</b>	Native Air – Emergency Helicopter – Hobbs	(575) 347-9836
	For Air Ambulance - <b>Eddy County</b> Dispatch	(575)-616-7155
	For Air Ambulance - <b>Lea County</b> (LCCA)	(575)-397-9265
	Poison Control (24/7)	(800) 222-1222
	Oil & Gas Pipeline 24 Hour Service	(800) 364-4366
	NOAA – Website - <a href="http://www.nhc.noaa.gov">www.nhc.noaa.gov</a>	
	National Pollution Control Center	202-795-6958
	NPCC – Oil Spills	800-280-7118

Prepared in conjunction with  
Dave Small





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:** Devon Energy Production Company, L.P. **OGRID:** 6137 **Date:** 09 / 27 / 2021

**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
See Attached						

**IV. Central Delivery Point Name:** Thistle Unit 22 CTB 2 [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
See Attached						

**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: Lindsey Miles
Title: Land Manager
E-mail Address:
Date:
Phone:
<b>OIL CONSERVATION DIVISION</b> <b>(Only applicable when submitted as a standalone form)</b>
Approved By:
Title:
Approval Date:
Conditions of Approval:

Well Name	STR	N/S Footage	Call	E/W Footage	Call	Anticipated Oil BBL/D	Anticipated Gas MCF/D	Anticipated Produced Water BBL/D
Thistle Unit 183H	22 23S 33E	160	FNL	1800	FEL	4000	8000	7000
Thistle Unit 184H	22 23S 33E	160	FNL	1770	FEL	4000	8000	7000
Thistle Unit 185H	22 23S 33E	160	FNL	1740	FEL	4000	8000	7000

Well Name	API	Spud Date	TD Reached Date	Completion Commencement Date	Initial Flow Back Date	First Production Date
Thistle Unit 183H		2/13/2022	3/15/2022	7/13/2022	7/13/2022	7/13/2022
Thistle Unit 184H		4/13/2022	5/13/2022	9/10/2022	9/10/2022	9/10/2022
Thistle Unit 185H		3/14/2022	4/13/2022	8/11/2022	8/11/2022	8/11/2022



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## VI. Separation Equipment

Devon Energy Production Company, L.P. utilizes a "stage separation" process in which oil and gas separation is carried out through a series of separators operating at successively reduced pressures. Hydrocarbon liquids are produced into a high-pressure inlet separator, then carried through one or more lower pressure separation vessels before entering the storage tanks. The purpose of this separation process is to attain maximum recovery of liquid hydrocarbons from the fluids and allow maximum capture of produced gas into the sales pipeline. Devon utilizes a series of Low-Pressure Compression units to capture gas off the staged separation and send it to the sales pipeline. This process minimizes the amount of flash gas that enters the end-stage storage tanks that is subsequently vented or flared.



## VII. Operational Practices

Devon Energy Production Company, L. P. will employ best management practices and control technologies to maximize the recovery and minimize waste of natural gas through venting and flaring.

- During drilling operations, Devon will utilize flares and/or combustors to capture and control natural gas, where technically feasible. If flaring is deemed technically in-feasible, Devon will employ best management practices to minimize or reduce venting to the extent possible.
- During completions operations, Devon will utilize Green Completion methods to capture gas produced during well completions that is otherwise vented or flared. If capture is technically in-feasible, flares and/or combustors will be used to capture and control flow back fluids entering into frac tanks during initial flowback. Upon indication of first measurable hydrocarbon volumes, Devon will turn operations to onsite separation vessels and flow to the gathering pipeline.
- During production operations, Devon will take every practical effort to minimize waste of natural gas through venting and flaring by:
  - Designing and constructing facilities in a manner consistent to achieve maximum capture and control of hydrocarbon liquids & produced gas
  - Utilizing a closed-loop capture system to collect and route produced gas to sales line via low pressure compression, or to a flare/combustor
  - Flaring in lieu of venting, where technically feasible
  - Utilizing auto-ignitors or continuous pilots, with thermocouples connected to Scada, to quickly detect and resolve issues related to malfunctioning flares/combustors
  - Employ the use of automatic tank gauging to minimize storage tank venting during loading events
  - Installing air-driven or electric-driven pneumatics & combustion engines, where technically feasible to minimize venting to the atmosphere
  - Confirm equipment is properly maintained and repaired through a preventative maintenance and repair program to ensure equipment meets all manufacturer specifications
  - Conduct and document AVO inspections on the frequency set forth in Part 27 to detect and repair any onsite leaks as quickly and efficiently as is feasible



#### VIII. Best Management Practices during Maintenance

Devon Energy Production Company, L.P. will utilize best management practices to minimize venting during active and planned maintenance activities. Devon is operating under guidance that production facilities permitted under NOI permits have no provisions to allow high pressure flaring and high pressure flaring is only allowed in disruption scenarios so long as the duration is less than eight hours. When technically feasible, flaring during maintenance activities will be utilized in lieu of venting to the atmosphere. Devon will work with third-party operators during scheduled maintenance of downstream pipeline or processing plants to address those events ahead of time to minimize venting. Actions considered include identifying alternative capture approaches or planning to temporarily reduce production or shut in the well to address these circumstances.