

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENTFORM APPROVED
OMB NO. 1004-0137
Expires: January 31, 2018**SUNDRY NOTICES AND REPORTS ON WELLS**
*Do not use this form for proposals to drill or to re-enter an abandoned well. Use form 3160-3 (APD) for such proposals.*5. Lease Serial No.
NMNM97151

6. If Indian, Allottee or Tribe Name

7. If Unit or CA/Agreement, Name and/or No.

SUBMIT IN TRIPLICATE - Other instructions on page 2

1. Type of Well

☒ Oil Well ☐ Gas Well ☐ Other

2. Name of Operator

DEVON ENERGY PRODUCTION COMPANY

Contact: REBECCA DEAL

Email: Rebecca.Deal@devn.com

3a. Address

333 WEST SHERIDAN AVENUE
OKLAHOMA CITY, OK 73102

3b. Phone No. (include area code)

Ph: 405-228-8429

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)

Sec 8 T25S R33E SESW 380FSL 2540FWL
32.138901 N Lat, 103.594635 W Lon8. Well Name and No.
FLAGLER 8 FED 32H

9. API Well No.

30-025-44986-00-X1

10. Field and Pool or Exploratory Area
RED HILLS-UP BONE SPRING SHALE

11. County or Parish, State

LEA COUNTY, NM

12. CHECK THE APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
☒ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off
☐ Subsequent Report	☐ Alter Casing	☐ Hydraulic Fracturing	☐ Reclamation	☐ Well Integrity
☐ Final Abandonment Notice	☐ Casing Repair	☐ New Construction	☐ Recomplete	☒ Other
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	Change to Original A
	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal	PD

13. Describe Proposed or Completed Operation: Clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recompleat horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports must be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompleat in a new interval, a Form 3160-4 must be filed once testing has been completed. Final Abandonment Notices must be filed only after all requirements, including reclamation, have been completed and the operator has determined that the site is ready for final inspection.

Devon Energy Production Company, L.P. respectfully requests the following changes to the original APD:

BHL move from 330' FNL & 2435' FWL to 20' FNL & 1880' FWL, both Sec. 8-25S-33E

Target change from 9575' TVD/14,050' MD to 10,900' TVD/15,742' MD.

Please see attached revised C-102, Drilling Plan, Directional Plan & AC Plan.

Carlsbad Field Office
OCD Hobbs

14. I hereby certify that the foregoing is true and correct.

Electronic Submission #442361 verified by the BLM Well Information System

For DEVON ENERGY PRODUCTION COMPANY, sent to the Hobbs

Committed to AFMSS for processing by PRISCILLA PEREZ on 11/02/2018 (19PP0278SE)

Name (Printed/Typed) REBECCA DEAL

Title REGULATORY COMPLIANCE PROFESSI

Signature (Electronic Submission)

Date 11/01/2018

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved By MUSTAFA HAQUE

Title PETROLEUM ENGINEER

Date 11/27/2018

Conditions of approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

Office Hobbs

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

(Instructions on page 2)

** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED **

KZ

District I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720
District III
1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-102
Revised August 1, 2011
Submit one copy to appropriate
District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-025-44986	² Pool Code 96392	³ Pool Name DRAPER MILL;BONE SPRING
⁴ Property Code 322149	⁵ Property Name FLAGLER 8 FEDERAL	⁶ Well Number 32H
⁷ OGRID No. 6137	⁸ Operator Name DEVON ENERGY PRODUCTION COMPANY, L.P.	⁹ Elevation 3447.2

¹⁰ Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
N	8	25 S	33 E		380	SOUTH	2540	WEST	LEA

¹¹ Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
C	8	25 S	33 E		20	NORTH	1880	WEST	LEA

¹² Dedicated Acres 160	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.
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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.

N89°39'28"E 2646.90 FT 1880' LTP - 100' FNL, 1880' FWL NW CORNER SEC. 8 LAT. = 32.1523717°N LONG. = 103.6028369°W NMSP EAST (FT) N = 419935.12 E = 767410.07 W/4 CORNER SEC. 8 LAT. = 32.1451155°N LONG. = 103.6028369°W NMSP EAST (FT) N = 417295.40 E = 767427.98 SW CORNER SEC. 8 LAT. = 32.1378576°N LONG. = 103.6028383°W NMSP EAST (FT) N = 414655.05 E = 767445.46 FTP - 100' FSL, 1880' FWL S89°37'55"W 2646.65 FT		20' BOTTOM OF HOLE 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. ELEVATION VALUES ARE NAD83. FLAGLER 8 FEDERAL 32H ELEV. = 3447.2' LAT. = 32.1388991°N (NAD83) LONG. = 103.5946332°W NMSP EAST (FT) N = 415051.28 E = 769982.60 SURFACE LOCATION S89°37'35"W 2643.46 FT	N89°33'52"E 2647.55 FT N/4 CORNER SEC. 8 LAT. = 32.1523655°N LONG. = 103.5942861°W NMSP EAST (FT) N = 419950.93 E = 770056.42 LAST TAKE POINT 100' FNL, 1880' FWL LAT. = 32.1520925°N LONG. = 103.5967636°W NE CORNER SEC. 8 LAT. = 32.1523705°N LONG. = 103.5857333°W NMSP EAST (FT) N = 419971.05 E = 772703.39 E/4 CORNER SEC. 8 LAT. = 32.1451079°N LONG. = 103.5857466°W NMSP EAST (FT) N = 417328.96 E = 772717.63 FIRST TAKE POINT 100' FSL, 1880' FWL LAT. = 32.1381304°N LONG. = 103.5967659°W S/4 CORNER SEC. 8 LAT. = 32.1378547°N LONG. = 103.5942897°W NMSP EAST (FT) N = 414672.04 E = 770091.56 SE CORNER SEC. 8 LAT. = 32.1378519°N LONG. = 103.5857514°W NMSP EAST (FT) N = 414689.28 E = 772734.46 S00°18'31"E 2642.63 FT S00°21'55"E 2640.23 FT	¹⁷ OPERATOR CERTIFICATION I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division. <i>Rebecca Deal</i> 11/1/2018 Signature Date Rebecca Deal, Regulatory Analyst Printed Name rebecca.deal@dvn.com E-mail Address ¹⁸ SURVEYOR CERTIFICATION I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief. OCTOBER 4, 2018 Date of Survey <i>[Signature]</i> Signature and Seal of Professional Surveyor: Certificate Number: FELIMON F. JARAMILLO, PLS 12797 SURVEY NO. 5839B
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Intent ☒ As Drilled ☐

API # 30-025-44986		
Operator Name: DEVON ENERGY PRODUCTION COMPANY, L.P.	Property Name: FLAGLER 8 FEDERAL	Well Number 32H

Kick Off Point (KOP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
	8	25S	33E		200	FSL	1880	FWL	LEA
Latitude 32.138417					Longitude -103.596705				NAD 83

First Take Point (FTP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
N	8	25S	33E		100	SOUTH	1880	WEST	LEA
Latitude 32.1381304					Longitude 103.5967659				NAD 83

Last Take Point (LTP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
C	8	25S	33E		100	NORTH	1880	WEST	LEA
Latitude 32.1520925					Longitude 103.5967636				NAD 83

Is this well the defining well for the Horizontal Spacing Unit? ☐ N

Is this well an infill well? ☐ Y

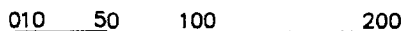
If infill is yes please provide API if available, Operator Name and well number for Defining well for Horizontal Spacing Unit.

API # 30-025-45260		
Operator Name: DEVON ENERGY PRODUCTION CO., L.P.	Property Name: FLAGLER 8 FEDERAL	Well Number 38H

KZ 06/29/2018

SITE MAP

**PROPOSED 913 L.F.
ACCESS ROAD**



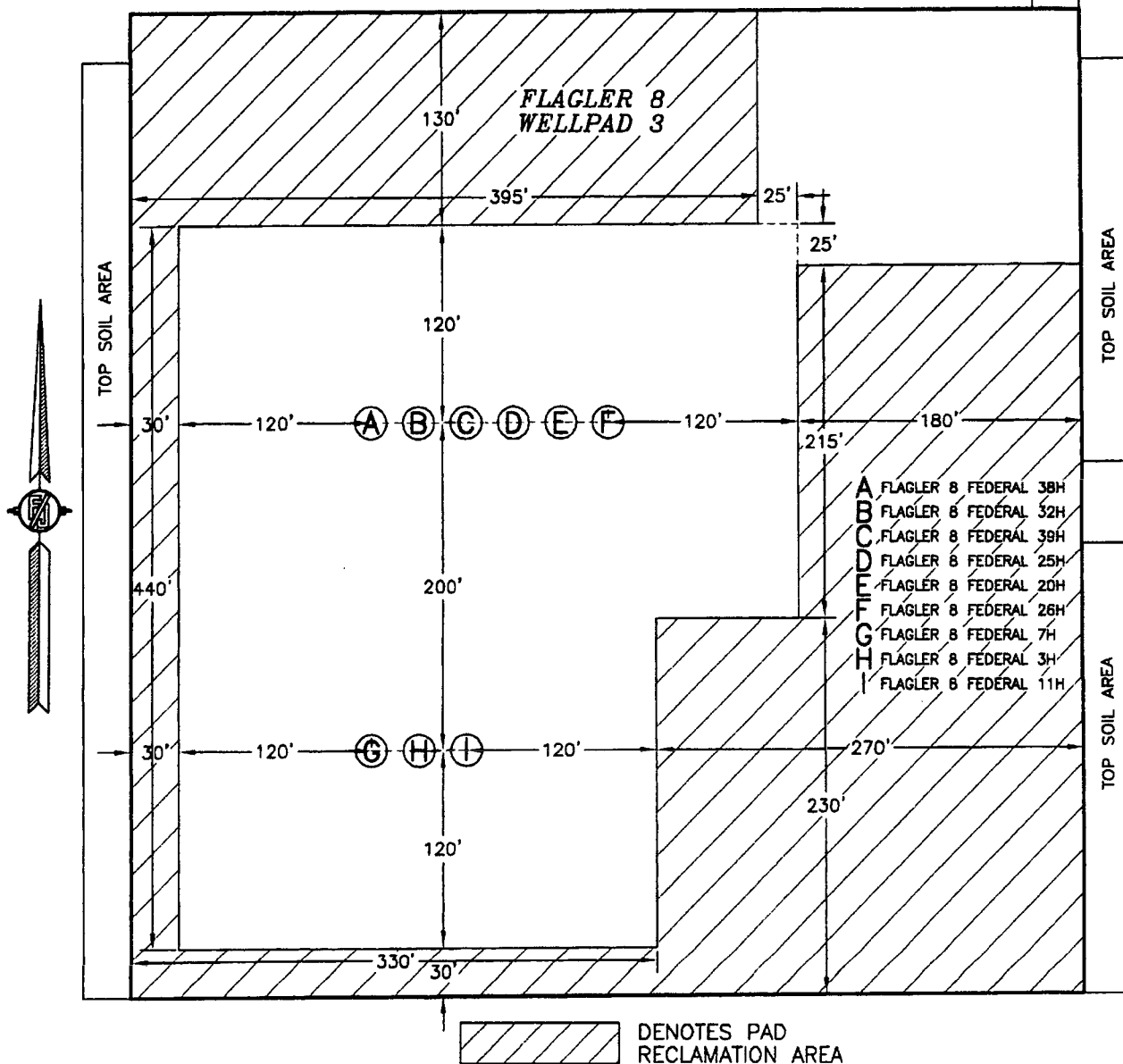
MADRON SURVEYING, INC. 301 SOUTH CANAL
(575) 234-3341

301 SOUTH CANAL
(575) 234-3341

CARLSBAD, NEW MEXICO

SECTION 8, TOWNSHIP 25 SOUTH, RANGE 33 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO
SITE BUILD PLAN

PROPOSED 913 L.F.
ACCESS ROAD



010 50 100 200
SCALE 1" = 100'

4.023± ACRES PAD RECLAMATION AREA
4.241± ACRES NON-RECLAIMED AREA
8.264± ACRES FLAGLER 8 WELLPAD 3

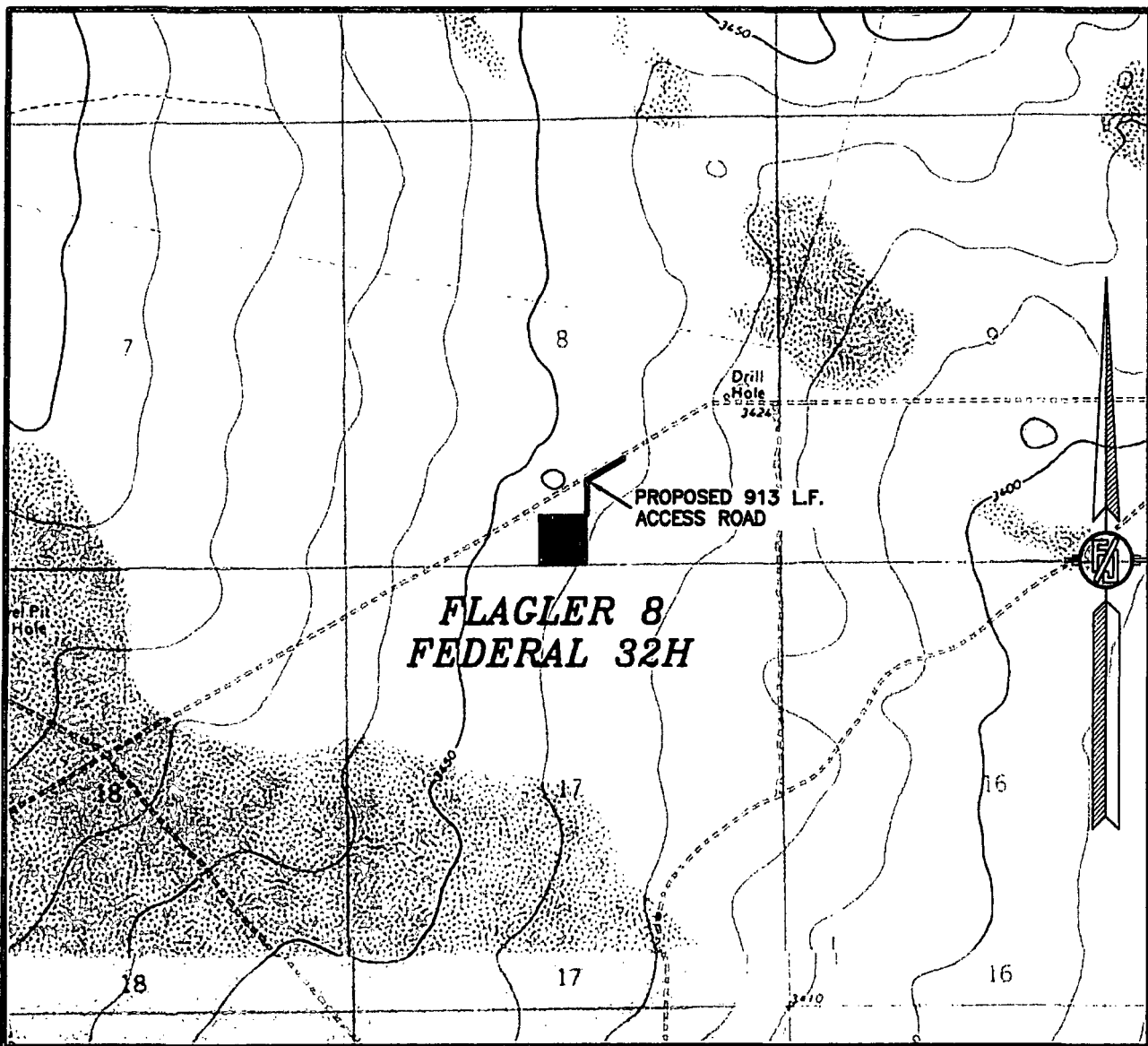
DEVON ENERGY PRODUCTION COMPANY, L.P.
FLAGLER 8 FEDERAL 32H
LOCATED 380 FT. FROM THE SOUTH LINE
AND 2540 FT. FROM THE WEST LINE OF
SECTION 8, TOWNSHIP 25 SOUTH,
RANGE 33 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO

OCTOBER 4, 2018

SURVEY NO. 5839B

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

SECTION 8, TOWNSHIP 25 SOUTH, RANGE 33 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO
LOCATION VERIFICATION MAP



USGS QUAD MAP:
BELL LAKE

NOT TO SCALE

DEVON ENERGY PRODUCTION COMPANY, L.P.
FLAGLER 8 FEDERAL 32H

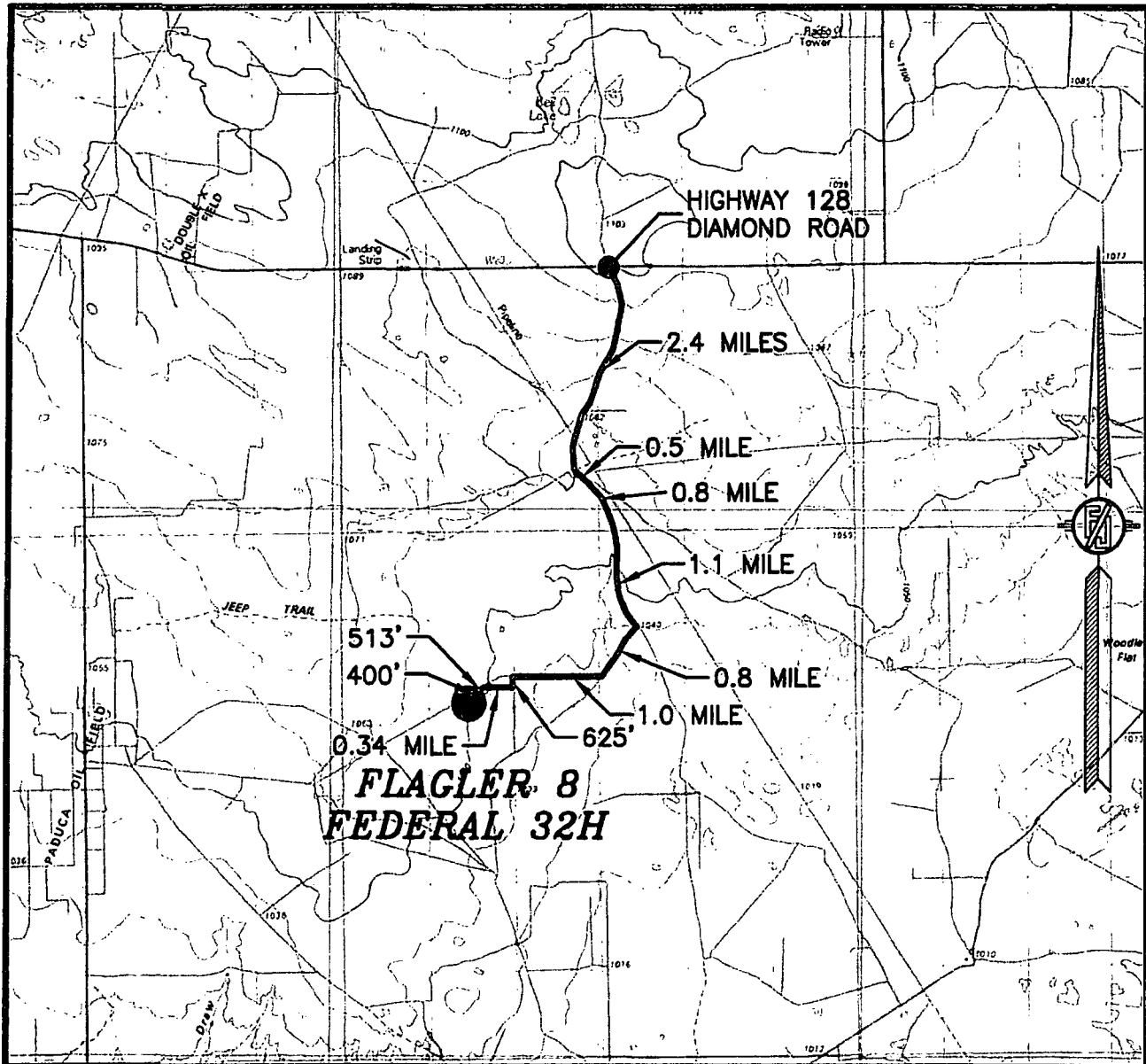
LOCATED 380 FT. FROM THE SOUTH LINE
AND 2540 FT. FROM THE WEST LINE OF
SECTION 8, TOWNSHIP 25 SOUTH,
RANGE 33 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO

OCTOBER 4, 2018

SURVEY NO. 5839B

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

SECTION 8, TOWNSHIP 25 SOUTH, RANGE 33 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO
VICINITY MAP



DISTANCES IN MILES

NOT TO SCALE

DIRECTIONS TO LOCATION

FROM THE INTERSECTION OF HWY. 128 & DIAMOND ROAD, GO SOUTH ON DIAMOND ROAD APPROX. 2.4 MILES WHERE PAVEMENT ENDS & RANCH HOUSE, CONTINUE SOUTH APPROX. 0.5 MILE TO A Y INTERSECTION, GO SOUTH APPROX. 0.8 MILE TO A CATTLE GUARD, CONTINUE SOUTH APPROX. 1.1 MILE TO A Y INTERSECTION, GO SOUTHWEST ON LEASE ROAD APPROX 0.8 MILE TO A LEASE ROAD ON RIGHT (WEST), TURN WEST (RIGHT) GO 1.0 MILE TO GATE, GO THROUGH GATE TO A PROPOSED ROAD SURVEY, FOLLOW PROPOSED ROAD SOUTH 625' TO A PROPOSED "T" INTERSECTION, GO WEST 0.34 MILE TO A PROPOSED Y INTERSECTION, GO SOUTHWEST 513' AND SOUTH 400' TO THE NORTHEAST PAD CORNER FOR THIS LOCATION.

DEVON ENERGY PRODUCTION COMPANY, L.P.
FLAGLER 8 FEDERAL 32H

LOCATED 380 FT. FROM THE SOUTH LINE
AND 2540 FT. FROM THE WEST LINE OF
SECTION 8, TOWNSHIP 25 SOUTH,
RANGE 33 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO

OCTOBER 4, 2018

SURVEY NO. 5839B

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

CARLSBAD, NEW MEXICO

SECTION 8, TOWNSHIP 25 SOUTH, RANGE 33 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO
AERIAL PHOTO



NOT TO SCALE
AERIAL PHOTO:
GOOGLE EARTH
NOV. 2017

DEVON ENERGY PRODUCTION COMPANY, L.P.
FLAGLER 8 FEDERAL 32H

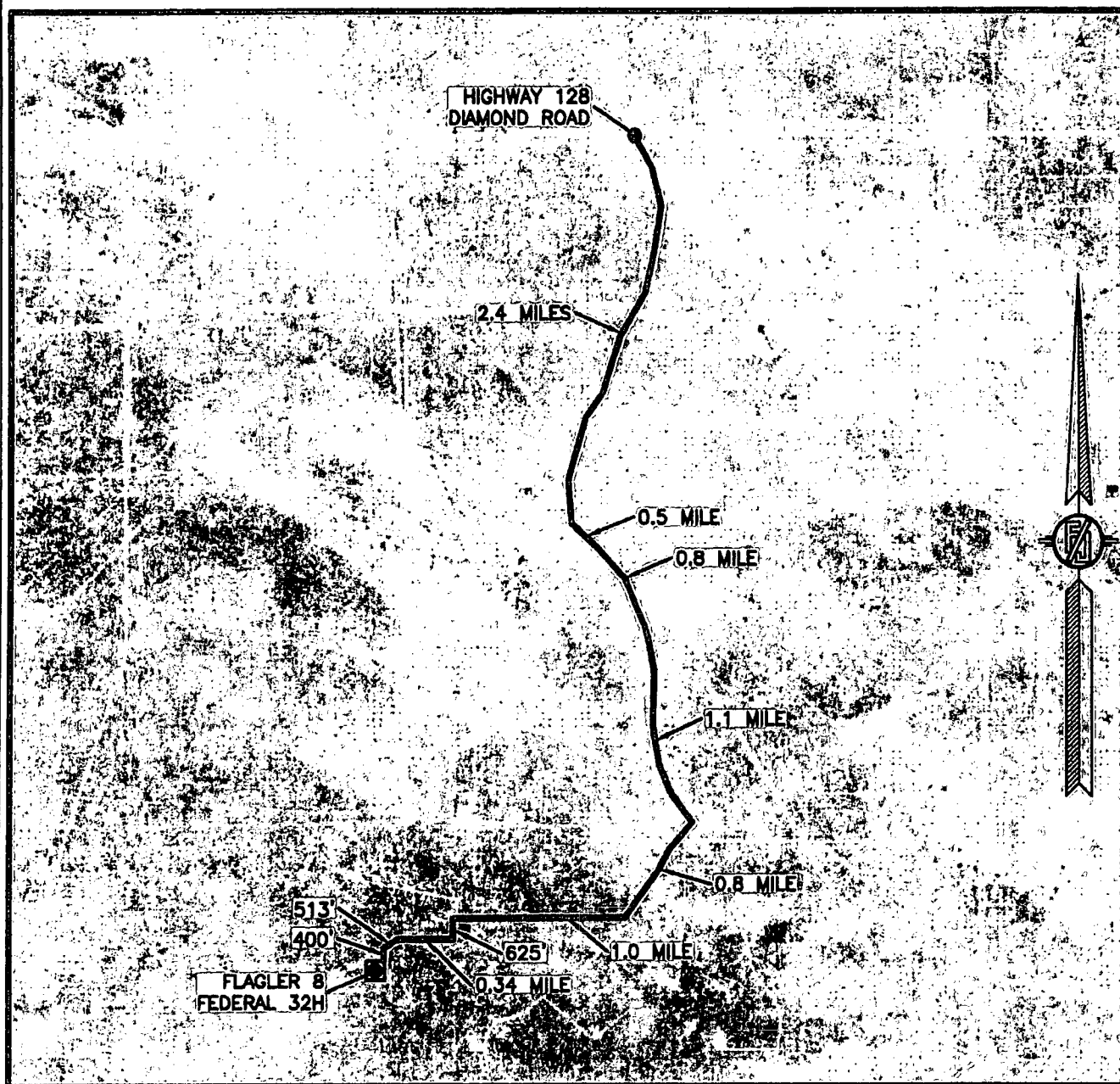
LOCATED 380 FT. FROM THE SOUTH LINE
AND 2540 FT. FROM THE WEST LINE OF
SECTION 8, TOWNSHIP 25 SOUTH,
RANGE 33 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO

OCTOBER 4, 2018

SURVEY NO. 5839B

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

SECTION 8, TOWNSHIP 25 SOUTH, RANGE 33 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO
AERIAL ACCESS ROUTE MAP



NOT TO SCALE
AERIAL PHOTO:
GOOGLE EARTH
NOV. 2017

DEVON ENERGY PRODUCTION COMPANY, L.P.
FLAGLER 8 FEDERAL 32H

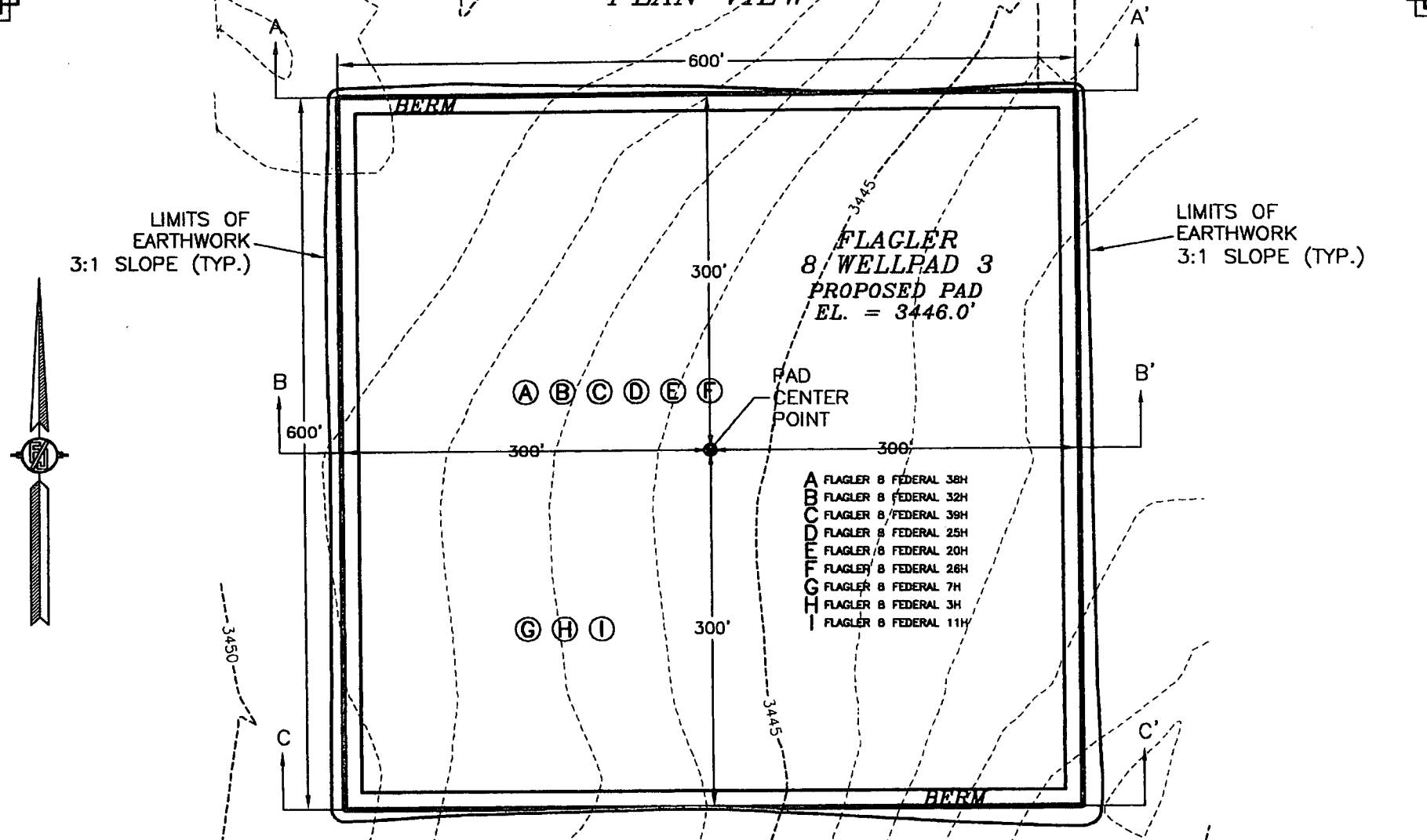
LOCATED 380 FT. FROM THE SOUTH LINE
AND 2540 FT. FROM THE WEST LINE OF
SECTION 8, TOWNSHIP 25 SOUTH,
RANGE 33 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO

OCTOBER 4, 2018

SURVEY NO. 5839B

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

PLAN VIEW



**FLAGLER
8 WELLPAD 3
PROPOSED PAD
EL. = 3446.0'**

PAD
CENTER
POINT

- A FLAGLER 8 FEDERAL 38H
- B FLAGLER 8 FEDERAL 32H
- C FLAGLER 8 FEDERAL 39H
- D FLAGLER 8 FEDERAL 25H
- E FLAGLER 8 FEDERAL 20H
- F FLAGLER 8 FEDERAL 26H
- G FLAGLER 8 FEDERAL 7H
- H FLAGLER 8 FEDERAL 3H
- I FLAGLER 8 FEDERAL 11H

012 60 120 240
SCALE 1" = 120'

**DEVON ENERGY PRODUCTION COMPANY, L.P.
PAD GRADING AND CROSS SECTIONS
FOR FLAGLER 8 FEDERAL 32H
SECTION 8, TOWNSHIP 25 SOUTH,
RANGE 33 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO**

CUT	FILL	NET
11477 CU. YD	14191 CU. YD	2714 CU. YD (FILL)

EARTHWORK QUANTITIES ARE ESTIMATED

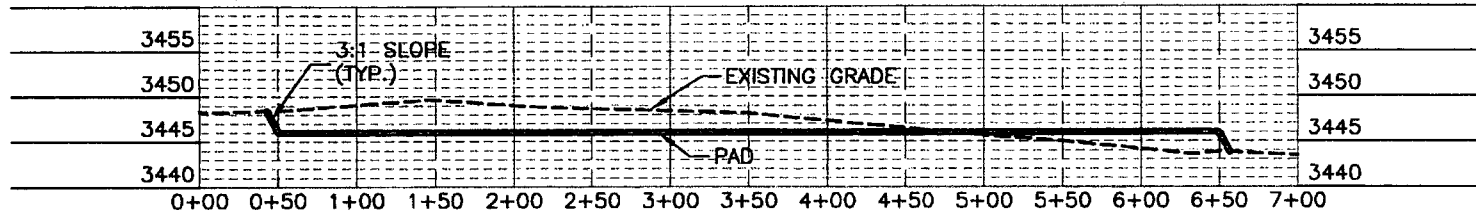
OCTOBER 4, 2018

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

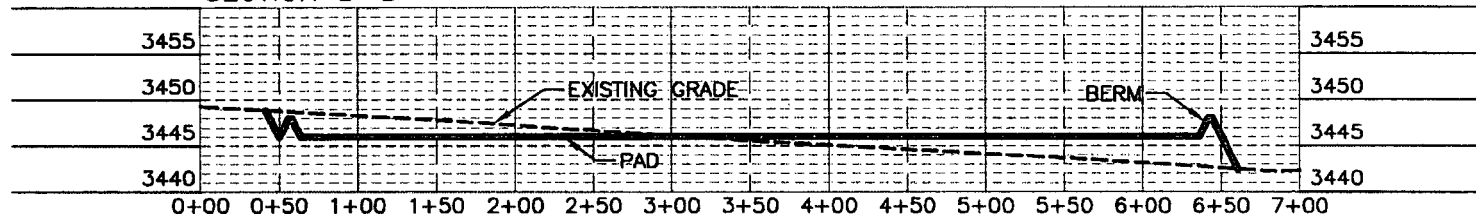
SHEET 1-2
SURVEY NO. 5839B

CROSS-SECTIONS

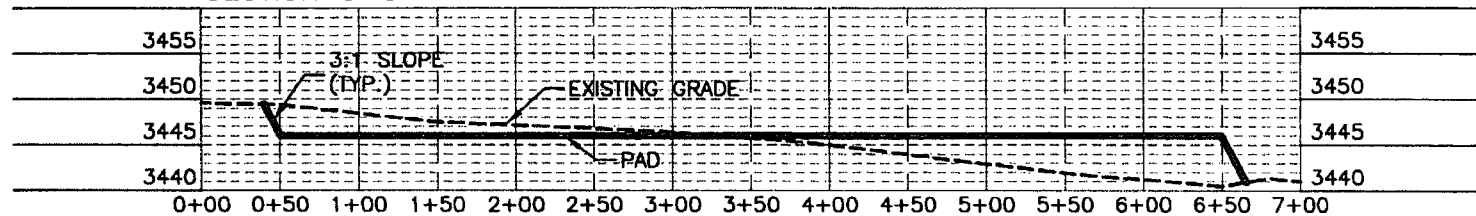
SECTION A-A'



SECTION B-B'



SECTION C-C'



0 12 60 120 240
SCALE 1" = 120' - 1" = 20' VER

DEVON ENERGY PRODUCTION COMPANY, L.P.
PAD GRADING AND CROSS SECTIONS
FOR FLAGLER 8 FEDERAL 32H
SECTION 8, TOWNSHIP 25 SOUTH,
RANGE 98 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO

CUT	FILL	NET
11477 CU. YD	14191 CU. YD	2714 CU. YD (FILL)

EARTHWORK QUANTITIES ARE ESTIMATED

OCTOBER 4, 2018

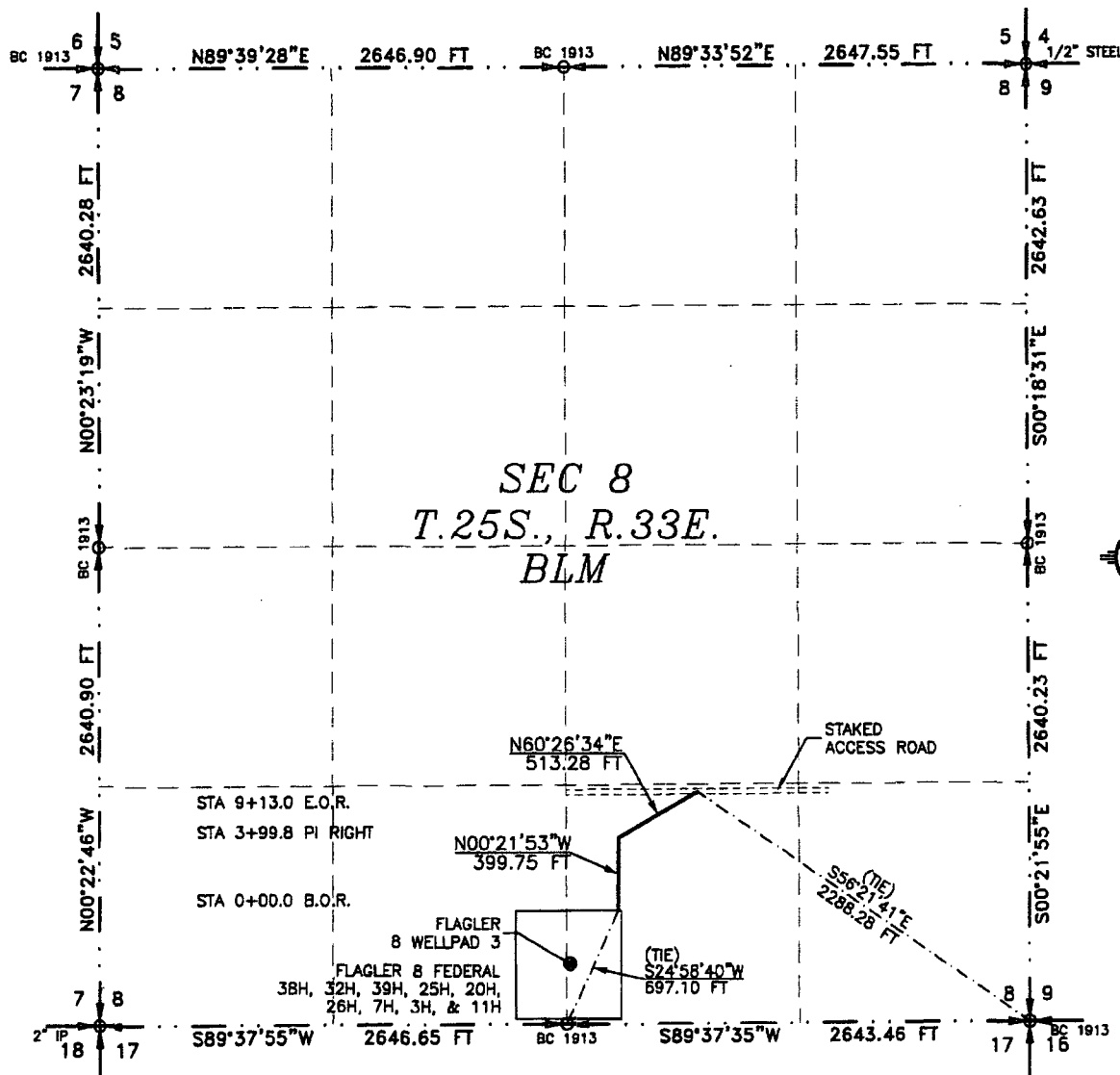
MADRON SURVEYING, INC. 301 SOUTH CANAL CARLSBAD, NEW MEXICO

SHEET 2-2
SURVEY NO. 5839B

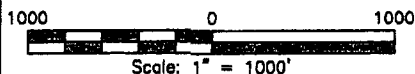
ACCESS ROAD PLAT

ACCESS ROAD FOR FLAGLER 8 WELLPAD 3
(FLAGLER 8 FEDERAL 38H, 32H, 39H, 25H, 20H, 26H, 7H, 3H, & 11H)

DEVON ENERGY PRODUCTION COMPANY, L.P.
CENTERLINE SURVEY OF AN ACCESS ROAD CROSSING
SECTION 8, TOWNSHIP 25 SOUTH, RANGE 33 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO
OCTOBER 4, 2018



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. CARLSBAD, NEW MEXICO

SURVEYOR CERTIFICATE

I, FILMON 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 DAY OF OCTOBER 2018

[Signature]
FILMON F. JARAMILLO, PLS 12797

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

SURVEY NO. 5839B

301 SOUTH CANAL
(575) 234-3341

ACCESS ROAD PLAT

ACCESS ROAD FOR FLAGLER 8 WELLPAD 3

(FLAGLER 8 FEDERAL 38H, 32H, 39H, 25H, 20H, 26H, 7H, 3H, & 11H)

DEVON ENERGY PRODUCTION COMPANY, L.P.

CENTERLINE SURVEY OF AN ACCESS ROAD CROSSING

SECTION 8, TOWNSHIP 25 SOUTH, RANGE 33 EAST, N.M.P.M.

LEA COUNTY, STATE OF NEW MEXICO

OCTOBER 4, 2018

DESCRIPTION

A STRIP OF LAND 30 FEET WIDE CROSSING BUREAU OF LAND MANAGEMENT LAND IN SECTION 8, TOWNSHIP 25 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 SW/4 SE/4 OF SAID SECTION 8, TOWNSHIP 25 SOUTH, RANGE 33 EAST, N.M.P.M., WHENCE THE SOUTH QUARTER CORNER OF SAID SECTION 8, TOWNSHIP 25 SOUTH, RANGE 33 EAST, N.M.P.M. BEARS S24°58'40"W, A DISTANCE OF 697.10 FEET;
THENCE N00°21'53"W A DISTANCE OF 399.75 FEET TO AN ANGLE POINT OF THE LINE HEREIN DESCRIBED;
THENCE N60°26'34"E A DISTANCE OF 513.28 FEET THE TERMINUS OF THIS CENTERLINE SURVEY, WHENCE THE SOUTHEAST CORNER OF SAID SECTION 8, TOWNSHIP 25 SOUTH, RANGE 33 EAST, N.M.P.M. BEARS S56°21'41"E, A DISTANCE OF 2288.28 FEET;

SAID STRIP OF LAND BEING 913.03 FEET OR 55.34 RODS IN LENGTH, CONTAINING 0.629 ACRES MORE OR LESS AND BEING ALLOCATED BY FORTIES AS FOLLOWS:

SW/4 SE/4 913.03 L.F. 55.34 RODS 0.629 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.

SHEET: 2-2

MADRON SURVEYING, INC. 301 SOUTH CANAL CARLSBAD, NEW MEXICO

SURVEYOR CERTIFICATE

I, FILMON 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 4TH DAY OF OCTOBER 2018

Filmon F. Jaramillo
FILMON F. JARAMILLO, PLS. 12797

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

SURVEY NO. 5839B

WCDSC Permian NM

Lea County (NAD83 New Mexico East)

Sec 08-T25S-R33E

Flagler 8 Fed 32H

Wellbore #1

Permit Plan 2

Anticollision Report

16 October, 2018

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Flagler 8 Fed 32H
Project:	Lea County (NAD83 New Mexico East)	TVD Reference:	RKB @ 3472.20ft
Reference Site:	Sec 08-T25S-R33E	MD Reference:	RKB @ 3472.20ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Flagler 8 Fed 32H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 2	Offset TVD Reference:	Offset Datum

Reference	Permit Plan 2
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria
Interpolation Method:	MD Interval 50.00ft
Depth Range:	Unlimited
Results Limited by:	Maximum center-center distance of 1,500.00 ft
Warning Levels Evaluated at:	2.00 Sigma
Error Model:	ISCWSA
Scan Method:	Closest Approach 3D
Error Surface:	Pedal Curve
Casing Method:	Not applied

Survey Tool Program		Date	10/16/2018		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.00	15,742.56	Permit Plan 2 (Wellbore #1)	MWD+IGRF	OWSG MWD + IGRF or WMM	

Summary	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Site Name						
Offset Well - Wellbore - Design						
Sec 08-T25S-R33E						
Flagler 8 Fed Com 14H - Wellbore #1 - Permit Plan 1	10,046.15	10,041.54	1,439.79	1,368.92	20.315	CC
Flagler 8 Fed Com 14H - Wellbore #1 - Permit Plan 1	10,350.00	10,342.88	1,439.85	1,366.87	19.729	ES
Flagler 8 Fed Com 14H - Wellbore #1 - Permit Plan 1	11,200.00	10,987.43	1,499.91	1,422.42	19.357	SF
Flagler Fed #1 - Wellbore #1 - Wellbore #1	15,081.73	10,894.97	85.02	-61.95	0.578	Collision, CC, ES, SF

Offset Design												Offset Site Error:		0.00 ft
Survey Program: 0-MWD+IGRF												Offset Well Error:		0.50 ft
Reference		Offset		Semi Major Axis			Distance					Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)		Separation Factor	
9,250.00	9,219.48	9,248.00	9,239.08	34.44	32.48	14.70	-192.71	-2,079.78	1,495.52	1,430.33	65.18	22.944		
9,300.00	9,269.22	9,302.26	9,288.82	34.64	32.67	14.75	-192.71	-2,079.78	1,490.58	1,425.03	65.56	22.737		
9,350.00	9,318.96	9,347.48	9,338.56	34.84	32.83	14.80	-192.71	-2,079.78	1,485.66	1,419.76	65.90	22.544		
9,400.00	9,368.70	9,402.78	9,388.30	35.04	33.03	14.85	-192.71	-2,079.78	1,480.73	1,414.45	66.28	22.341		
9,450.00	9,418.44	9,446.96	9,438.04	35.24	33.18	14.90	-192.71	-2,079.78	1,475.80	1,409.18	66.62	22.153		
9,500.00	9,468.18	9,503.30	9,487.78	35.44	33.38	14.95	-192.71	-2,079.78	1,470.87	1,403.87	67.00	21.953		
9,550.00	9,517.92	9,546.44	9,537.52	35.64	33.54	15.00	-192.71	-2,079.78	1,465.95	1,398.61	67.34	21.770		
9,600.00	9,567.66	9,603.83	9,587.26	35.84	33.74	15.05	-192.71	-2,079.78	1,461.03	1,393.30	67.72	21.573		
9,650.00	9,617.41	9,645.93	9,637.01	36.04	33.89	15.09	-192.71	-2,079.78	1,456.22	1,388.16	68.06	21.397		
9,700.00	9,667.22	9,704.27	9,686.82	36.23	34.09	15.12	-192.71	-2,079.78	1,451.99	1,383.54	68.45	21.214		
9,750.00	9,717.08	9,745.59	9,736.68	36.42	34.24	15.14	-192.71	-2,079.78	1,448.39	1,379.61	68.77	21.061		
9,800.00	9,766.99	9,804.50	9,786.59	36.61	34.45	15.16	-192.71	-2,079.78	1,445.42	1,376.25	69.16	20.899		
9,850.00	9,816.93	9,845.44	9,836.53	36.79	34.59	15.18	-192.71	-2,079.78	1,443.08	1,373.59	69.49	20.768		
9,900.00	9,866.89	9,904.59	9,886.49	36.97	34.80	15.19	-192.71	-2,079.78	1,441.37	1,371.50	69.87	20.628		
9,950.00	9,916.88	9,945.40	9,936.48	37.15	34.95	15.20	-192.71	-2,079.78	1,440.30	1,370.10	70.20	20.518		
10,000.00	9,966.88	10,004.61	9,986.48	37.32	35.16	15.20	-192.71	-2,079.78	1,439.85	1,369.27	70.58	20.399		
10,046.15	10,013.03	10,041.54	10,032.63	37.47	35.29	15.20	-192.71	-2,079.78	1,439.79	1,368.92	70.87	20.315	CC	
10,050.00	10,016.88	10,045.39	10,036.48	37.48	35.30	-90.51	-192.71	-2,079.78	1,439.84	1,368.94	70.90	20.308		
10,100.00	10,066.88	10,104.61	10,086.48	37.65	35.51	-90.51	-192.71	-2,079.78	1,439.84	1,368.56	71.28	20.200		
10,150.00	10,116.88	10,145.39	10,136.48	37.81	35.65	-90.51	-192.71	-2,079.78	1,439.84	1,368.25	71.59	20.111		
10,200.00	10,166.88	10,204.61	10,186.48	37.97	35.86	-90.51	-192.71	-2,079.78	1,439.84	1,367.87	71.97	20.005		
10,250.00	10,216.88	10,245.39	10,236.48	38.14	36.01	-90.51	-192.71	-2,079.78	1,439.84	1,367.55	72.29	19.918		
10,300.00	10,266.88	10,295.39	10,286.48	38.30	36.19	-90.51	-192.71	-2,079.78	1,439.84	1,367.20	72.64	19.822		

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

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Flagler 8 Fed 32H
Project:	Lea County (NAD83 New Mexico East)	TVD Reference:	RKB @ 3472.20ft
Reference Site:	Sec 08-T25S-R33E	MD Reference:	RKB @ 3472.20ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Flagler 8 Fed 32H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 2	Offset TVD Reference:	Offset Datum

Offset Design Sec 08-T25S-R33E - Flagler 8 Fed Com 14H - Wellbore #1 - Permit Plan 1													Offset Site Error:	0.00 ft
Survey Program: O-MWD+IGRF													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/S (ft)	+E/W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
10,304.46	10,271.33	10,300.15	10,290.93	38.32	36.20	-90.51	-192.71	-2,079.78	1,439.84	1,367.17	72.67	19.813		
10,350.00	10,316.88	10,342.88	10,333.97	38.47	36.35	-90.50	-192.67	-2,079.79	1,439.85	1,366.87	72.98	19.729 ES		
10,400.00	10,366.85	10,379.55	10,370.59	38.63	36.48	-89.85	-191.07	-2,080.04	1,440.16	1,366.88	73.29	19.651		
10,450.00	10,416.51	10,416.20	10,407.02	38.78	36.60	-89.79	-187.17	-2,080.64	1,440.93	1,367.35	73.58	19.583		
10,500.00	10,465.50	10,450.00	10,440.34	38.93	36.72	-89.70	-181.53	-2,081.51	1,442.15	1,368.30	73.85	19.529		
10,550.00	10,513.43	10,489.56	10,478.82	39.07	36.84	-89.62	-172.48	-2,082.92	1,443.80	1,369.69	74.11	19.481		
10,600.00	10,559.94	10,526.34	10,513.94	39.20	36.95	-89.53	-161.74	-2,084.58	1,445.89	1,371.53	74.35	19.446		
10,650.00	10,604.68	10,563.22	10,548.39	39.31	37.06	-89.42	-148.75	-2,086.59	1,448.40	1,373.81	74.59	19.419		
10,700.00	10,647.30	10,600.00	10,581.84	39.41	37.16	-89.31	-133.64	-2,088.93	1,451.32	1,376.51	74.81	19.400		
10,750.00	10,687.49	10,637.42	10,614.79	39.50	37.25	-89.20	-116.12	-2,091.64	1,454.64	1,379.61	75.03	19.388		
10,800.00	10,724.93	10,674.82	10,646.49	39.58	37.35	-89.08	-96.53	-2,094.67	1,458.34	1,383.10	75.25	19.380		
10,850.00	10,759.35	10,712.47	10,677.03	39.65	37.43	-88.95	-74.79	-2,098.04	1,462.42	1,386.95	75.47	19.377		
10,900.00	10,790.48	10,750.00	10,705.98	39.72	37.51	-88.82	-51.19	-2,101.69	1,466.86	1,391.15	75.71	19.375		
10,950.00	10,818.08	10,788.69	10,734.11	39.78	37.59	-88.69	-24.95	-2,105.75	1,471.64	1,395.68	75.96	19.374		
11,000.00	10,841.94	10,827.38	10,760.39	39.84	37.69	-88.56	3.10	-2,110.10	1,476.73	1,400.51	76.22	19.373		
11,050.00	10,861.89	10,866.52	10,784.97	39.90	37.80	-88.43	33.20	-2,114.76	1,482.13	1,405.62	76.51	19.372		
11,100.00	10,877.76	10,906.19	10,807.69	39.98	37.91	-88.31	65.32	-2,119.73	1,487.81	1,411.00	76.81	19.369		
11,150.00	10,889.44	10,946.47	10,828.41	40.09	38.03	-88.19	99.44	-2,125.01	1,493.74	1,416.60	77.14	19.364		
11,200.00	10,896.84	10,987.43	10,846.94	40.21	38.16	-88.07	135.53	-2,130.60	1,499.91	1,422.42	77.48	19.357 SF		

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

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Flagler 8 Fed 32H
Project:	Lea County (NAD83 New Mexico East)	TVD Reference:	RKB @ 3472.20ft
Reference Site:	Sec 08-T25S-R33E	MD Reference:	RKB @ 3472.20ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Flagler 8 Fed 32H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 2	Offset TVD Reference:	Offset Datum

Offset Design													Sec 08-T25S-R33E - Flagler Fed #1 - Wellbore #1 - Wellbore #1		Offset Site Error: 0.00 ft	
Survey Program: 50-NS-Gyro-DP													Offset Well Error: 0.50 ft			
Reference		Offset		Semi Major Axis			Distance		Minimum		Separation		Warning			
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Separation (ft)	Factor				
13,600.00	10,900.00	10,905.07	10,903.53	66.10	57.05	96.53	4,215.10	-600.82	1,484.13	1,385.95	98.19	15.116				
13,650.00	10,900.00	10,904.75	10,903.21	66.88	57.04	96.32	4,215.11	-600.83	1,434.22	1,335.97	98.25	14.598				
13,700.00	10,900.00	10,904.44	10,902.90	67.65	57.04	96.10	4,215.11	-600.83	1,384.31	1,285.99	98.31	14.080				
13,750.00	10,900.00	10,904.12	10,902.58	68.43	57.04	95.89	4,215.11	-600.83	1,334.41	1,236.02	98.39	13.563				
13,800.00	10,900.00	10,903.79	10,902.25	69.22	57.04	95.68	4,215.11	-600.83	1,284.51	1,186.05	98.46	13.046				
13,850.00	10,900.00	10,903.47	10,901.93	70.01	57.04	95.46	4,215.12	-600.83	1,234.63	1,136.08	98.55	12.528				
13,900.00	10,900.00	10,903.15	10,901.61	70.80	57.04	95.24	4,215.12	-600.83	1,184.76	1,086.12	98.64	12.011				
13,950.00	10,900.00	10,902.82	10,901.28	71.60	57.03	95.03	4,215.12	-600.83	1,134.89	1,036.15	98.74	11.494				
14,000.00	10,900.00	10,902.49	10,900.95	72.40	57.03	94.81	4,215.12	-600.84	1,085.04	986.19	98.84	10.977				
14,050.00	10,900.00	10,902.16	10,900.62	73.21	57.03	94.59	4,215.12	-600.84	1,035.20	936.24	98.96	10.460				
14,100.00	10,900.00	10,901.83	10,900.29	74.02	57.03	94.37	4,215.13	-600.84	985.38	886.28	99.10	9.944				
14,150.00	10,900.00	10,901.50	10,899.96	74.83	57.03	94.14	4,215.13	-600.84	935.58	836.33	99.24	9.427				
14,200.00	10,900.00	10,901.16	10,899.62	75.64	57.02	93.92	4,215.13	-600.84	885.80	786.39	99.41	8.911				
14,250.00	10,900.00	10,900.84	10,899.30	76.47	57.02	93.70	4,215.13	-600.84	836.04	736.45	99.60	8.394				
14,300.00	10,900.00	10,900.49	10,898.95	77.29	57.02	93.47	4,215.14	-600.84	786.32	686.51	99.81	7.878				
14,350.00	10,900.00	10,900.15	10,898.61	78.11	57.02	93.24	4,215.14	-600.84	736.63	636.58	100.06	7.362				
14,400.00	10,900.00	10,899.80	10,898.27	78.94	57.02	93.01	4,215.14	-600.85	686.99	586.65	100.34	6.846				
14,450.00	10,900.00	10,899.46	10,897.92	79.78	57.02	92.77	4,215.14	-600.85	637.41	536.73	100.68	6.331				
14,500.00	10,900.00	10,899.11	10,897.57	80.61	57.01	92.54	4,215.15	-600.85	587.90	486.80	101.09	5.816				
14,550.00	10,900.00	10,898.76	10,897.22	81.45	57.01	92.30	4,215.15	-600.85	538.47	436.88	101.59	5.301				
14,600.00	10,900.00	10,898.41	10,896.87	82.29	57.01	92.07	4,215.15	-600.85	489.16	386.96	102.20	4.786	Alert			
14,650.00	10,900.00	10,898.06	10,896.52	83.13	57.01	91.83	4,215.15	-600.85	440.01	337.02	102.99	4.273	Alert			
14,700.00	10,900.00	10,897.71	10,896.17	83.98	57.01	91.59	4,215.16	-600.86	391.07	287.07	104.01	3.760	Alert			
14,750.00	10,900.00	10,897.35	10,895.81	84.82	57.00	91.36	4,215.16	-600.86	342.44	237.06	105.38	3.250	Alert			
14,800.00	10,900.00	10,897.00	10,895.46	85.67	57.00	91.12	4,215.16	-600.86	294.27	186.97	107.30	2.743	Alert			
14,850.00	10,900.00	10,896.64	10,895.10	86.53	57.00	90.88	4,215.16	-600.86	246.83	136.73	110.10	2.242	Minor Risk			
14,900.00	10,900.00	10,896.28	10,894.74	87.38	57.00	90.63	4,215.17	-600.86	200.63	86.25	114.38	1.754	Minor Risk			
14,950.00	10,900.00	10,895.92	10,894.38	88.24	57.00	90.39	4,215.17	-600.86	156.78	35.54	121.24	1.293	Major Risk			
15,000.00	10,900.00	10,895.56	10,894.02	89.10	57.00	90.15	4,215.17	-600.86	117.93	-14.18	132.11	0.893	Collision			
15,050.00	10,900.00	10,895.20	10,893.66	89.96	56.99	89.90	4,215.17	-600.87	90.75	-54.17	144.92	0.626	Collision			
15,081.73	10,900.00	10,894.97	10,893.43	90.51	56.99	89.75	4,215.18	-600.87	85.02	-61.95	146.97	0.578	Collision, CC, ES, SF			
15,100.00	10,900.00	10,894.83	10,893.29	90.82	56.99	89.66	4,215.18	-600.87	86.96	-56.89	143.85	0.605	Collision			
15,150.00	10,900.00	10,894.47	10,892.93	91.69	56.99	89.41	4,215.18	-600.87	109.04	-18.19	127.23	0.857	Collision			
15,200.00	10,900.00	10,894.10	10,892.56	92.55	56.99	89.17	4,215.18	-600.87	145.66	31.85	113.80	1.280	Major Risk			
15,250.00	10,900.00	10,893.73	10,892.20	93.42	56.99	88.92	4,215.18	-600.87	188.52	82.18	106.35	1.773	Minor Risk			
15,300.00	10,900.00	10,893.37	10,891.83	94.29	56.98	88.67	4,215.19	-600.87	234.24	131.87	102.37	2.288	Minor Risk			
15,350.00	10,900.00	10,893.00	10,891.46	95.17	56.98	88.42	4,215.19	-600.88	281.41	181.24	100.18	2.809	Alert			
15,400.00	10,900.00	10,892.62	10,891.08	96.04	56.98	88.17	4,215.19	-600.88	329.42	230.51	98.92	3.330	Alert			
15,450.00	10,900.00	10,892.25	10,890.71	96.92	56.98	87.92	4,215.19	-600.88	377.95	279.78	98.17	3.850	Alert			
15,500.00	10,900.00	10,891.88	10,890.34	97.79	56.98	87.67	4,215.20	-600.88	426.81	329.10	97.71	4.368	Alert			
15,550.00	10,900.00	10,891.50	10,889.96	98.67	56.97	87.41	4,215.20	-600.88	475.91	378.49	97.43	4.885	Alert			
15,600.00	10,900.00	10,891.13	10,889.59	99.55	56.97	87.16	4,215.20	-600.88	525.18	427.93	97.25	5.400				
15,650.00	10,900.00	10,890.75	10,889.21	100.43	56.97	86.91	4,215.21	-600.89	574.58	477.44	97.14	5.915				
15,700.00	10,900.00	10,890.37	10,888.83	101.32	56.97	86.65	4,215.21	-600.89	624.07	526.99	97.08	6.428				
15,742.56	10,900.00	10,890.04	10,888.50	102.07	56.97	86.43	4,215.21	-600.89	666.26	569.20	97.06	6.865				

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

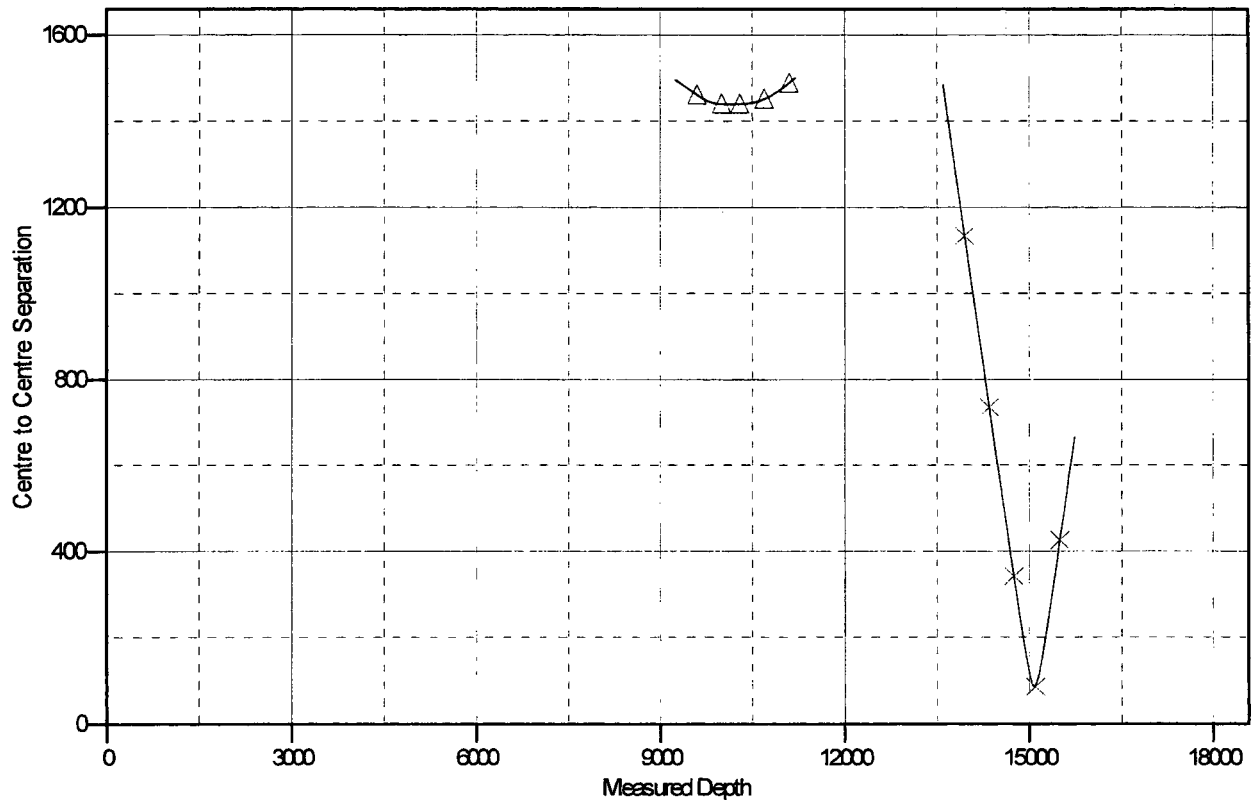
Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Flagler 8 Fed 32H
Project:	Lea County (NAD83 New Mexico East)	TVD Reference:	RKB @ 3472.20ft
Reference Site:	Sec 08-T25S-R33E	MD Reference:	RKB @ 3472.20ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Flagler 8 Fed 32H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore:	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 2	Offset TVD Reference:	Offset Datum

Reference Depths are relative to RKB @ 3472.20ft
Offset Depths are relative to Offset Datum
Central Meridian is -104.333334

Coordinates are relative to: Flagler 8 Fed 32H
Coordinate System is US State Plane 1983, New Mexico Eastern Zone
Grid Convergence at Surface is: 0.39°

Ladder Plot



LEGEND

Flagler 8 Fed Com 14H, Wellbore #1, Permit Plan 1 V0
 Flagler Fed #1, Wellbore #1, Wellbore #1 V0

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

Anticollision Report

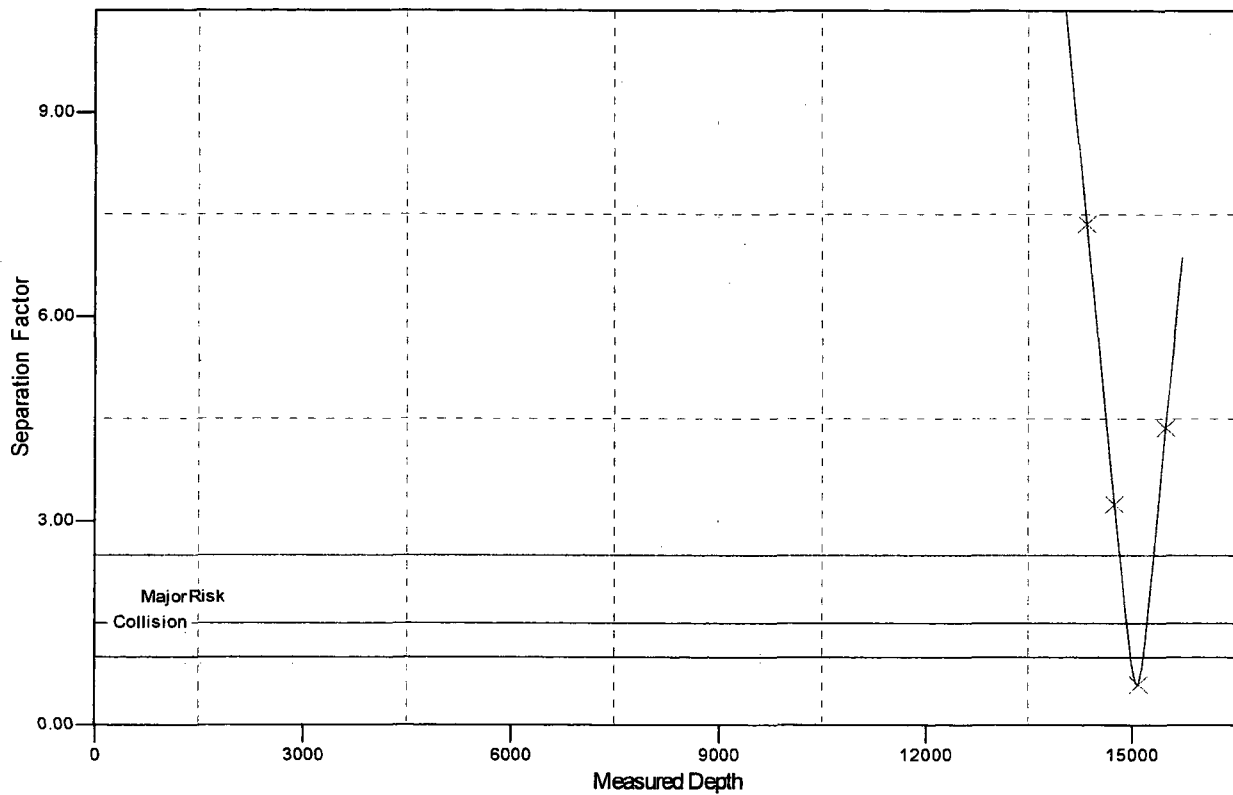
Company: WCDSC Permian NM
Project: Lea County (NAD83 New Mexico East)
Reference Site: Sec 08-T25S-R33E
Site Error: 0.00 ft
Reference Well: Flagler 8 Fed 32H
Well Error: 0.50 ft
Reference Wellbore: Wellbore #1
Reference Design: Permit Plan 2

Local Co-ordinate Reference: Well Flagler 8 Fed 32H
TVD Reference: RKB @ 3472.20ft
MD Reference: RKB @ 3472.20ft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: EDM r5000.141_Prod US
Offset TVD Reference: Offset Datum

Reference Depths are relative to RKB @ 3472.20ft
 Offset Depths are relative to Offset Datum
 Central Meridian is -104.333334

Coordinates are relative to: Flagler 8 Fed 32H
 Coordinate System is US State Plane 1983, New Mexico Eastern Zone
 Grid Convergence at Surface is: 0.39°

Separation Factor Plot



LEGEND

+ Flagler 8 Fed 32H, Wellbore #1, Permit Plan 1 VO x Flagler 8 Fed 14H, Wellbore #1, Wellbore #1 VO

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

WCDSC Permian NM

Lea County (NAD83 New Mexico East)

Sec 08-T25S-R33E

Flagler 8 Fed 32H

Wellbore #1

Plan: Permit Plan 2

Standard Planning Report - Geographic

16 October, 2018

Planning Report - Geographic

Database:	EDM r5000.141_Prod US	Local Co-ordinate Reference:	Well Flagler 8 Fed 32H
Company:	WCDSC Permian NM	TVD Reference:	RKB @ 3472.20ft
Project:	Lea County (NAD83 New Mexico East)	MD Reference:	RKB @ 3472.20ft
Site:	Sec 08-T25S-R33E	North Reference:	Grid
Well:	Flagler 8 Fed 32H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Permit Plan 2		

Project	Lea County (NAD83 New Mexico East)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site	Sec 08-T25S-R33E			
Site Position:	Northing:	419,281.82 usft	Latitude:	32.150539
From: Map	Easting:	769,381.69 usft	Longitude:	-103.596481
Position Uncertainty:	0.00 ft	Spot Radius:	13-3/16 "	Grid Convergence:
				0.39 °

Well	Flagler 8 Fed 32H			
Well Position	+N-S	0.00 ft	Northing:	415,051.28 usft
	+E-W	0.00 ft	Easting:	769,982.60 usft
Position Uncertainty		0.50 ft	Wellhead Elevation:	Ground Level:
				3,447.20 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
			(°)	(°)	(nT)
	IGRF2015	2/27/2018	6.88	59.97	47,813.17142964

Design	Permit Plan 2			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD)	+N-S	+E-W	Direction
	(ft)	(ft)	(ft)	(°)
	0.00	0.00	0.00	351.91

Plan Survey Tool Program	Date	10/16/2018		
Depth From	Depth To	Survey (Wellbore)	Tool Name	Remarks
(ft)	(ft)			
1	0.00	15,742.56 Permit Plan 2 (Wellbore #1)	MWD+IGRF	
			OWSG MWD + IGRF or WMM	

Plan Sections										
Measured	Inclination	Azimuth	Vertical	+N-S	+E-W	Dogleg	Build	Turn	TFD	Target
Depth	(°)	(°)	Depth	(ft)	(ft)	Rate	Rate	Rate	(°)	
(ft)			(ft)			(°/100usft)	(°/100usft)	(°/100usft)		
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
3,000.00	0.00	0.00	3,000.00	0.00	0.00	0.00	0.00	0.00	0.00	
3,584.98	5.85	254.29	3,583.96	-8.08	-28.72	1.00	1.00	0.00	254.29	
9,620.14	5.85	254.29	9,587.69	-174.61	-620.85	0.00	0.00	0.00	0.00	
10,010.12	0.00	0.00	9,977.00	-180.00	-640.00	1.50	-1.50	0.00	180.00	
10,360.16	0.00	0.00	10,327.04	-180.00	-640.00	0.00	0.00	0.00	0.00	
11,260.16	90.00	359.40	10,900.00	392.93	-645.98	10.00	10.00	0.00	359.40	PBHL - Flagler 32H (1
15,742.56	90.00	359.40	10,900.00	4,875.08	-692.78	0.00	0.00	0.00	0.00	PBHL - Flagler 32H (1

Planning Report - Geographic

Database: EDM r5000.141_Prod US
Company: WCDSC Permian NM
Project: Lea County (NAD83 New Mexico East)
Site: Sec 08-T25S-R33E
Well: Flagler 8 Fed 32H
Wellbore: Wellbore #1
Design: Permit Plan 2

Local Co-ordinate Reference: Well Flagler 8 Fed 32H
TVD Reference: RKB @ 3472.20ft
MD Reference: RKB @ 3472.20ft
North Reference: Grid
Survey Calculation Method: Minimum Curvature

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	415,051.28	769,982.60	32.138899	-103.594634
100.00	0.00	0.00	100.00	0.00	0.00	415,051.28	769,982.60	32.138899	-103.594634
200.00	0.00	0.00	200.00	0.00	0.00	415,051.28	769,982.60	32.138899	-103.594634
300.00	0.00	0.00	300.00	0.00	0.00	415,051.28	769,982.60	32.138899	-103.594634
400.00	0.00	0.00	400.00	0.00	0.00	415,051.28	769,982.60	32.138899	-103.594634
500.00	0.00	0.00	500.00	0.00	0.00	415,051.28	769,982.60	32.138899	-103.594634
600.00	0.00	0.00	600.00	0.00	0.00	415,051.28	769,982.60	32.138899	-103.594634
700.00	0.00	0.00	700.00	0.00	0.00	415,051.28	769,982.60	32.138899	-103.594634
800.00	0.00	0.00	800.00	0.00	0.00	415,051.28	769,982.60	32.138899	-103.594634
900.00	0.00	0.00	900.00	0.00	0.00	415,051.28	769,982.60	32.138899	-103.594634
1,000.00	0.00	0.00	1,000.00	0.00	0.00	415,051.28	769,982.60	32.138899	-103.594634
1,100.00	0.00	0.00	1,100.00	0.00	0.00	415,051.28	769,982.60	32.138899	-103.594634
1,200.00	0.00	0.00	1,200.00	0.00	0.00	415,051.28	769,982.60	32.138899	-103.594634
1,300.00	0.00	0.00	1,300.00	0.00	0.00	415,051.28	769,982.60	32.138899	-103.594634
1,400.00	0.00	0.00	1,400.00	0.00	0.00	415,051.28	769,982.60	32.138899	-103.594634
1,500.00	0.00	0.00	1,500.00	0.00	0.00	415,051.28	769,982.60	32.138899	-103.594634
1,600.00	0.00	0.00	1,600.00	0.00	0.00	415,051.28	769,982.60	32.138899	-103.594634
1,700.00	0.00	0.00	1,700.00	0.00	0.00	415,051.28	769,982.60	32.138899	-103.594634
1,800.00	0.00	0.00	1,800.00	0.00	0.00	415,051.28	769,982.60	32.138899	-103.594634
1,900.00	0.00	0.00	1,900.00	0.00	0.00	415,051.28	769,982.60	32.138899	-103.594634
2,000.00	0.00	0.00	2,000.00	0.00	0.00	415,051.28	769,982.60	32.138899	-103.594634
2,100.00	0.00	0.00	2,100.00	0.00	0.00	415,051.28	769,982.60	32.138899	-103.594634
2,200.00	0.00	0.00	2,200.00	0.00	0.00	415,051.28	769,982.60	32.138899	-103.594634
2,300.00	0.00	0.00	2,300.00	0.00	0.00	415,051.28	769,982.60	32.138899	-103.594634
2,400.00	0.00	0.00	2,400.00	0.00	0.00	415,051.28	769,982.60	32.138899	-103.594634
2,500.00	0.00	0.00	2,500.00	0.00	0.00	415,051.28	769,982.60	32.138899	-103.594634
2,600.00	0.00	0.00	2,600.00	0.00	0.00	415,051.28	769,982.60	32.138899	-103.594634
2,700.00	0.00	0.00	2,700.00	0.00	0.00	415,051.28	769,982.60	32.138899	-103.594634
2,800.00	0.00	0.00	2,800.00	0.00	0.00	415,051.28	769,982.60	32.138899	-103.594634
2,900.00	0.00	0.00	2,900.00	0.00	0.00	415,051.28	769,982.60	32.138899	-103.594634
3,000.00	0.00	0.00	3,000.00	0.00	0.00	415,051.28	769,982.60	32.138899	-103.594634
3,100.00	1.00	254.29	3,099.99	-0.24	-0.84	415,051.04	769,981.76	32.138899	-103.594636
3,200.00	2.00	254.29	3,199.96	-0.94	-3.36	415,050.33	769,979.24	32.138897	-103.594644
3,300.00	3.00	254.29	3,299.86	-2.13	-7.56	415,049.15	769,975.04	32.138894	-103.594658
3,400.00	4.00	254.29	3,399.68	-3.78	-13.44	415,047.50	769,969.16	32.138889	-103.594677
3,500.00	5.00	254.29	3,499.37	-5.90	-20.99	415,045.38	769,961.61	32.138883	-103.594701
3,584.98	5.85	254.29	3,583.96	-8.08	-28.72	415,043.20	769,953.88	32.138878	-103.594726
3,600.00	5.85	254.29	3,598.91	-8.49	-30.20	415,042.79	769,952.40	32.138876	-103.594731
3,700.00	5.85	254.29	3,698.39	-11.25	-40.01	415,040.03	769,942.59	32.138869	-103.594763
3,800.00	5.85	254.29	3,797.86	-14.01	-49.82	415,037.27	769,932.78	32.138862	-103.594795
3,900.00	5.85	254.29	3,897.34	-16.77	-59.63	415,034.51	769,922.97	32.138854	-103.594827
4,000.00	5.85	254.29	3,996.82	-19.53	-69.44	415,031.75	769,913.16	32.138847	-103.594858
4,100.00	5.85	254.29	4,096.30	-22.29	-79.25	415,028.99	769,903.34	32.138839	-103.594890
4,200.00	5.85	254.29	4,195.78	-25.05	-89.06	415,026.23	769,893.53	32.138832	-103.594922
4,300.00	5.85	254.29	4,295.26	-27.81	-98.88	415,023.47	769,883.72	32.138825	-103.594954
4,400.00	5.85	254.29	4,394.74	-30.57	-108.69	415,020.71	769,873.91	32.138817	-103.594985
4,500.00	5.85	254.29	4,494.22	-33.33	-118.50	415,017.95	769,864.10	32.138810	-103.595017
4,600.00	5.85	254.29	4,593.70	-36.09	-128.31	415,015.19	769,854.29	32.138802	-103.595049
4,700.00	5.85	254.29	4,693.18	-38.85	-138.12	415,012.43	769,844.48	32.138795	-103.595081
4,800.00	5.85	254.29	4,792.66	-41.61	-147.93	415,009.67	769,834.67	32.138788	-103.595112
4,900.00	5.85	254.29	4,892.14	-44.37	-157.74	415,006.91	769,824.85	32.138780	-103.595144
5,000.00	5.85	254.29	4,991.62	-47.12	-167.55	415,004.15	769,815.04	32.138773	-103.595176
5,100.00	5.85	254.29	5,091.10	-49.88	-177.37	415,001.40	769,805.23	32.138765	-103.595208
5,200.00	5.85	254.29	5,190.57	-52.64	-187.18	414,998.64	769,795.42	32.138758	-103.595239
5,300.00	5.85	254.29	5,290.05	-55.40	-196.99	414,995.88	769,785.61	32.138751	-103.595271

Planning Report - Geographic

Database:	EDM r5000.141_Prod US	Local Co-ordinate Reference:	Well Flagler 8 Fed 32H
Company:	WCDSC Permian NM	TVD Reference:	RKB @ 3472.20ft
Project:	Lea County (NAD83 New Mexico East)	MD Reference:	RKB @ 3472.20ft
Site:	Sec 08-T25S-R33E	North Reference:	Grid
Well:	Flagler 8 Fed 32H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Permit Plan 2		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
5,400.00	5.85	254.29	5,389.53	-58.16	-206.80	414,993.12	769,775.80	32.138743	-103.595303	
5,500.00	5.85	254.29	5,489.01	-60.92	-216.61	414,990.36	769,765.99	32.138736	-103.595335	
5,600.00	5.85	254.29	5,588.49	-63.68	-226.42	414,987.60	769,756.17	32.138728	-103.595366	
5,700.00	5.85	254.29	5,687.97	-66.44	-236.23	414,984.84	769,746.36	32.138721	-103.595398	
5,800.00	5.85	254.29	5,787.45	-69.20	-246.05	414,982.08	769,736.55	32.138714	-103.595430	
5,900.00	5.85	254.29	5,886.93	-71.96	-255.86	414,979.32	769,726.74	32.138706	-103.595462	
6,000.00	5.85	254.29	5,986.41	-74.72	-265.67	414,976.56	769,716.93	32.138699	-103.595493	
6,100.00	5.85	254.29	6,085.89	-77.48	-275.48	414,973.80	769,707.12	32.138691	-103.595525	
6,200.00	5.85	254.29	6,185.37	-80.24	-285.29	414,971.04	769,697.31	32.138684	-103.595557	
6,300.00	5.85	254.29	6,284.85	-83.00	-295.10	414,968.28	769,687.50	32.138677	-103.595589	
6,400.00	5.85	254.29	6,384.33	-85.76	-304.91	414,965.52	769,677.68	32.138669	-103.595620	
6,500.00	5.85	254.29	6,483.80	-88.52	-314.72	414,962.76	769,667.87	32.138662	-103.595652	
6,600.00	5.85	254.29	6,583.28	-91.28	-324.54	414,960.00	769,658.06	32.138654	-103.595684	
6,700.00	5.85	254.29	6,682.76	-94.04	-334.35	414,957.24	769,648.25	32.138647	-103.595716	
6,800.00	5.85	254.29	6,782.24	-96.79	-344.16	414,954.48	769,638.44	32.138640	-103.595747	
6,900.00	5.85	254.29	6,881.72	-99.55	-353.97	414,951.73	769,628.63	32.138632	-103.595779	
7,000.00	5.85	254.29	6,981.20	-102.31	-363.78	414,948.97	769,618.82	32.138625	-103.595811	
7,100.00	5.85	254.29	7,080.68	-105.07	-373.59	414,946.21	769,609.01	32.138617	-103.595843	
7,200.00	5.85	254.29	7,180.16	-107.83	-383.40	414,943.45	769,599.19	32.138610	-103.595875	
7,300.00	5.85	254.29	7,279.64	-110.59	-393.22	414,940.69	769,589.38	32.138603	-103.595906	
7,400.00	5.85	254.29	7,379.12	-113.35	-403.03	414,937.93	769,579.57	32.138595	-103.595938	
7,500.00	5.85	254.29	7,478.60	-116.11	-412.84	414,935.17	769,569.76	32.138588	-103.595970	
7,600.00	5.85	254.29	7,578.08	-118.87	-422.65	414,932.41	769,559.95	32.138580	-103.596002	
7,700.00	5.85	254.29	7,677.56	-121.63	-432.46	414,929.65	769,550.14	32.138573	-103.596033	
7,800.00	5.85	254.29	7,777.04	-124.39	-442.27	414,926.89	769,540.33	32.138566	-103.596065	
7,900.00	5.85	254.29	7,876.51	-127.15	-452.08	414,924.13	769,530.51	32.138558	-103.596097	
8,000.00	5.85	254.29	7,975.99	-129.91	-461.89	414,921.37	769,520.70	32.138551	-103.596129	
8,100.00	5.85	254.29	8,075.47	-132.67	-471.71	414,918.61	769,510.89	32.138543	-103.596160	
8,200.00	5.85	254.29	8,174.95	-135.43	-481.52	414,915.85	769,501.08	32.138536	-103.596192	
8,300.00	5.85	254.29	8,274.43	-138.19	-491.33	414,913.09	769,491.27	32.138529	-103.596224	
8,400.00	5.85	254.29	8,373.91	-140.95	-501.14	414,910.33	769,481.46	32.138521	-103.596256	
8,500.00	5.85	254.29	8,473.39	-143.71	-510.95	414,907.57	769,471.65	32.138514	-103.596287	
8,600.00	5.85	254.29	8,572.87	-146.46	-520.76	414,904.81	769,461.84	32.138506	-103.596319	
8,700.00	5.85	254.29	8,672.35	-149.22	-530.57	414,902.06	769,452.02	32.138499	-103.596351	
8,800.00	5.85	254.29	8,771.83	-151.98	-540.39	414,899.30	769,442.21	32.138492	-103.596383	
8,900.00	5.85	254.29	8,871.31	-154.74	-550.20	414,896.54	769,432.40	32.138484	-103.596414	
9,000.00	5.85	254.29	8,970.79	-157.50	-560.01	414,893.78	769,422.59	32.138477	-103.596446	
9,100.00	5.85	254.29	9,070.27	-160.26	-569.82	414,891.02	769,412.78	32.138469	-103.596478	
9,200.00	5.85	254.29	9,169.74	-163.02	-579.63	414,888.26	769,402.97	32.138462	-103.596510	
9,300.00	5.85	254.29	9,269.22	-165.78	-589.44	414,885.50	769,393.16	32.138455	-103.596541	
9,400.00	5.85	254.29	9,368.70	-168.54	-599.25	414,882.74	769,383.34	32.138447	-103.596573	
9,500.00	5.85	254.29	9,468.18	-171.30	-609.07	414,879.98	769,373.53	32.138440	-103.596605	
9,600.00	5.85	254.29	9,567.66	-174.06	-618.88	414,877.22	769,363.72	32.138432	-103.596637	
9,620.14	5.85	254.29	9,587.69	-174.61	-620.85	414,876.66	769,361.75	32.138431	-103.596643	
9,700.00	4.65	254.29	9,667.22	-176.59	-627.89	414,874.69	769,354.71	32.138426	-103.596666	
9,800.00	3.15	254.29	9,766.99	-178.44	-634.44	414,872.84	769,348.16	32.138421	-103.596687	
9,900.00	1.65	254.29	9,866.89	-179.57	-638.47	414,871.71	769,344.13	32.138418	-103.596700	
10,000.00	0.15	254.29	9,966.88	-180.00	-639.99	414,871.28	769,342.61	32.138417	-103.596705	
10,010.12	0.00	0.00	9,977.00	-180.00	-640.00	414,871.28	769,342.60	32.138417	-103.596705	
10,100.00	0.00	0.00	10,066.88	-180.00	-640.00	414,871.28	769,342.60	32.138417	-103.596705	
10,200.00	0.00	0.00	10,166.88	-180.00	-640.00	414,871.28	769,342.60	32.138417	-103.596705	
10,300.00	0.00	0.00	10,266.88	-180.00	-640.00	414,871.28	769,342.60	32.138417	-103.596705	
10,360.16	0.00	0.00	10,327.04	-180.00	-640.00	414,871.28	769,342.60	32.138417	-103.596705	

KOP & FTP @ 10360' MD, 200' FSL, 1880' FWL

Planning Report - Geographic

Database: EDM r5000.141_Prod US
 Company: WCDSC Permian NM
 Project: Lea County (NAD83 New Mexico East)
 Site: Sec 08-T25S-R33E
 Well: Flagler 8 Fed 32H
 Wellbore: Wellbore #1
 Design: Permit Plan 2

Local Co-ordinate Reference: Well Flagler 8 Fed 32H
 TVD Reference: RKB @ 3472.20ft
 MD Reference: RKB @ 3472.20ft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
10,400.00	3.98	359.40	10,366.85	-178.62	-640.01	414,872.66	769,342.58	32.138420	-103.596705	
10,500.00	13.98	359.40	10,465.50	-163.02	-640.18	414,888.26	769,342.42	32.138463	-103.596705	
10,600.00	23.98	359.40	10,559.94	-130.53	-640.52	414,920.75	769,342.08	32.138552	-103.596706	
10,700.00	33.98	359.40	10,647.30	-82.14	-641.02	414,969.14	769,341.58	32.138686	-103.596706	
10,800.00	43.98	359.40	10,724.93	-19.31	-641.68	415,031.97	769,340.92	32.138858	-103.596707	
10,900.00	53.98	359.40	10,790.48	56.04	-642.46	415,107.32	769,340.13	32.139065	-103.596708	
11,000.00	63.98	359.40	10,841.94	141.63	-643.36	415,192.91	769,339.24	32.139301	-103.596709	
11,100.00	73.98	359.40	10,877.76	234.85	-644.33	415,286.13	769,338.27	32.139557	-103.596710	
11,200.00	83.98	359.40	10,896.84	332.88	-645.36	415,384.16	769,337.24	32.139826	-103.596711	
11,260.16	90.00	359.40	10,900.00	392.93	-645.98	415,444.21	769,336.62	32.139991	-103.596712	
11,300.00	90.00	359.40	10,900.00	432.76	-646.40	415,484.04	769,336.20	32.140101	-103.596712	
11,400.00	90.00	359.40	10,900.00	532.76	-647.44	415,584.04	769,335.16	32.140376	-103.596713	
11,500.00	90.00	359.40	10,900.00	632.75	-648.49	415,684.03	769,334.11	32.140651	-103.596714	
11,600.00	90.00	359.40	10,900.00	732.75	-649.53	415,784.02	769,333.07	32.140926	-103.596716	
11,700.00	90.00	359.40	10,900.00	832.74	-650.57	415,884.02	769,332.02	32.141200	-103.596717	
11,800.00	90.00	359.40	10,900.00	932.74	-651.62	415,984.01	769,330.98	32.141475	-103.596718	
11,900.00	90.00	359.40	10,900.00	1,032.73	-652.66	416,084.01	769,329.94	32.141750	-103.596719	
12,000.00	90.00	359.40	10,900.00	1,132.73	-653.71	416,184.00	769,328.89	32.142025	-103.596720	
12,100.00	90.00	359.40	10,900.00	1,232.72	-654.75	416,284.00	769,327.85	32.142300	-103.596721	
12,200.00	90.00	359.40	10,900.00	1,332.71	-655.79	416,383.99	769,326.80	32.142575	-103.596723	
12,300.00	90.00	359.40	10,900.00	1,432.71	-656.84	416,483.99	769,325.76	32.142850	-103.596724	
12,400.00	90.00	359.40	10,900.00	1,532.70	-657.88	416,583.98	769,324.72	32.143125	-103.596725	
12,500.00	90.00	359.40	10,900.00	1,632.70	-658.93	416,683.97	769,323.67	32.143399	-103.596726	
12,600.00	90.00	359.40	10,900.00	1,732.69	-659.97	416,783.97	769,322.63	32.143674	-103.596727	
12,700.00	90.00	359.40	10,900.00	1,832.69	-661.01	416,883.96	769,321.58	32.143949	-103.596728	
12,800.00	90.00	359.40	10,900.00	1,932.68	-662.06	416,983.96	769,320.54	32.144224	-103.596730	
12,900.00	90.00	359.40	10,900.00	2,032.68	-663.10	417,083.95	769,319.50	32.144499	-103.596731	
13,000.00	90.00	359.40	10,900.00	2,132.67	-664.15	417,183.95	769,318.45	32.144774	-103.596732	
13,100.00	90.00	359.40	10,900.00	2,232.67	-665.19	417,283.94	769,317.41	32.145049	-103.596733	
13,200.00	90.00	359.40	10,900.00	2,332.66	-666.24	417,383.93	769,316.36	32.145324	-103.596734	
13,300.00	90.00	359.40	10,900.00	2,432.65	-667.28	417,483.93	769,315.32	32.145598	-103.596735	
13,400.00	90.00	359.40	10,900.00	2,532.65	-668.32	417,583.92	769,314.28	32.145873	-103.596737	
13,500.00	90.00	359.40	10,900.00	2,632.64	-669.37	417,683.92	769,313.23	32.146148	-103.596738	
13,600.00	90.00	359.40	10,900.00	2,732.64	-670.41	417,783.91	769,312.19	32.146423	-103.596739	
13,700.00	90.00	359.40	10,900.00	2,832.63	-671.46	417,883.91	769,311.14	32.146698	-103.596740	
13,800.00	90.00	359.40	10,900.00	2,932.63	-672.50	417,983.90	769,310.10	32.146973	-103.596741	
13,900.00	90.00	359.40	10,900.00	3,032.62	-673.54	418,083.89	769,309.05	32.147248	-103.596742	
14,000.00	90.00	359.40	10,900.00	3,132.62	-674.59	418,183.89	769,308.01	32.147523	-103.596744	
14,100.00	90.00	359.40	10,900.00	3,232.61	-675.63	418,283.88	769,306.97	32.147797	-103.596745	
14,200.00	90.00	359.40	10,900.00	3,332.61	-676.68	418,383.88	769,305.92	32.148072	-103.596746	
14,300.00	90.00	359.40	10,900.00	3,432.60	-677.72	418,483.87	769,304.88	32.148347	-103.596747	
14,400.00	90.00	359.40	10,900.00	3,532.59	-678.76	418,583.87	769,303.83	32.148622	-103.596748	
14,500.00	90.00	359.40	10,900.00	3,632.59	-679.81	418,683.86	769,302.79	32.148897	-103.596749	
14,600.00	90.00	359.40	10,900.00	3,732.58	-680.85	418,783.86	769,301.75	32.149172	-103.596751	
14,700.00	90.00	359.40	10,900.00	3,832.58	-681.90	418,883.85	769,300.70	32.149447	-103.596752	
14,800.00	90.00	359.40	10,900.00	3,932.57	-682.94	418,983.84	769,299.66	32.149722	-103.596753	
14,900.00	90.00	359.40	10,900.00	4,032.57	-683.98	419,083.84	769,298.61	32.149996	-103.596754	
15,000.00	90.00	359.40	10,900.00	4,132.56	-685.03	419,183.83	769,297.57	32.150271	-103.596755	
15,100.00	90.00	359.40	10,900.00	4,232.56	-686.07	419,283.83	769,296.53	32.150546	-103.596756	
15,200.00	90.00	359.40	10,900.00	4,332.55	-687.12	419,383.82	769,295.48	32.150821	-103.596758	
15,300.00	90.00	359.40	10,900.00	4,432.55	-688.16	419,483.82	769,294.44	32.151096	-103.596759	
15,400.00	90.00	359.40	10,900.00	4,532.54	-689.20	419,583.81	769,293.39	32.151371	-103.596760	
15,500.00	90.00	359.40	10,900.00	4,632.53	-690.25	419,683.80	769,292.35	32.151646	-103.596761	
15,600.00	90.00	359.40	10,900.00	4,732.53	-691.29	419,783.80	769,291.31	32.151921	-103.596762	

Planning Report - Geographic

Database: EDM r5000.141_Prod US
 Company: WCDSC Permian NM
 Project: Lea County (NAD83 New Mexico East)
 Site: Sec 08-T25S-R33E
 Well: Flagler 8 Fed 32H
 Wellbore: Wellbore #1
 Design: Permit Plan 2

Local Co-ordinate Reference: Well Flagler 8 Fed 32H
 TVD Reference: RKB @ 3472.20ft
 MD Reference: RKB @ 3472.20ft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
15,662.55	90.00	359.40	10,900.00	4,795.08	-691.95	419,846.35	769,290.65	32.152093	-103.596763
LTP @ 15663' MD, 100' FNL, 1880' FWL									
15,700.00	90.00	359.40	10,900.00	4,832.52	-692.34	419,883.79	769,290.26	32.152195	-103.596763
15,742.55	90.00	359.40	10,900.00	4,875.07	-692.78	419,926.34	769,289.82	32.152312	-103.596764
PBHL; 20' FNL, 1880' FWL									
15,742.56	90.00	359.40	10,900.00	4,875.08	-692.78	419,926.35	769,289.82	32.152312	-103.596764

Design Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
PBHL - Flagler 32H (15'	0.00	0.00	0.00	4,875.08	-692.78	419,926.35	769,289.82	32.152312	-103.596764
- plan misses target center by 4924.06ft at 0.00ft MD (0.00 TVD, 0.00 N, 0.00 E)									
- Point									
Original PBHL - Flagler 8	0.00	0.00	0.00	4,568.47	-135.77	419,619.74	769,846.83	32.151459	-103.594971
- plan misses target center by 4570.49ft at 0.00ft MD (0.00 TVD, 0.00 N, 0.00 E)									
- Point									
Vertical Point - Flagler 8	0.00	0.00	8,300.00	-180.48	-103.53	414,870.80	769,879.07	32.138405	-103.594972
- plan misses target center by 390.77ft at 8288.55ft MD (8263.05 TVD, -137.87 N, -490.21 E)									
- Point									

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
10,360.16	10,327.04	-180.00	-640.00	KOP & FTP @ 10360' MD, 200' FSL, 1880' FWL
15,662.55	10,900.00	4,795.08	-691.95	LTP @ 15663' MD, 100' FNL, 1880' FWL
15,742.55	10,900.00	4,875.07	-692.78	PBHL; 20' FNL, 1880' FWL

Devon Energy, Flagler 8 Fed 32H

1. Geologic Formations

TVD of target	10,900	Pilot hole depth	N/A
MD at TD:	15,742'	Deepest expected fresh water:	

Basin

Formation	Depth (TVD) from KB	Water/Mineral Bearing/ Target Zone?	Hazards*
RUSTLER	1145		
TOP SALT	1508		
BASE OF SALT	5000		
BELL CANYON	5000		
CHERRY CANYON	6040		
BRUSHY CANYON	7690		
BONE SPRING	9110		
BONE SPRING 1ST	10016		
BONE SPRING 2ND	10610		

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

Devon Energy, Flagler 8 Fed 32H

2. Casing Program

Hole Size	Casing Interval		Csg. Size	Weight (lbs)	Grade	Conn.	SF Collapse	SF Burst	SF Tension
	From	To							
17.5"	0	1,150'	13.375"	48	H40	STC	1.125	1.25	1.6
12.25"	0	5,000'	9.625"	40	J55	LTC	1.125	1.25	1.6
8.75"	0	15,742'	5.5"	17	P110	BTC	1.125	1.25	1.6
BLM Minimum Safety Factor							1.125	1.25	1.6 Dry 1.8 Wet

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

Must have table for contingency casing

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

Devon Energy, Flagler 8 Fed 32H

3. Cementing Program

Casing	# Sks	Wt. lb/gal	Yld ft ³ /sack	H ₂ O gal/sk	500# Comp. Strength (hours)	Slurry Description
Surf.	901	14.8	1.33	6.32	6	Lead: Class C Cement + 0.125 lbs/sack Poly-F-Flake
Inter.	511	10.3	3.65	22.06	24	Lead: (50:50) Poz (Silica) 3 lbm/sk Kol-Seal, .125 lbm/sk Poly-E-Flake
	306	14.8	1.33	6.32	6	Tail: Class C Cement + 0.125 lbs/sack Poly-F-Flake
Prod.	446	9	3.27	13.5	21	Lead: Tuned Light Cement
	1221	14.5	1.2	5.31	25	Tail: (50:50) Clas H Cement: Poz (Fly Ash) + 0.5% bwoc HALAD-344 + 0.4% bwoc CFR-3 + 0.2% BWOC HR-601 + 2% bwoc Bentonite

Casing String	TOC	% Excess
13-3/8" Surface	0'	50%
9-5/8" Intermediate	0'	30%
5-1/2" Production	4800'	25%

4. Pressure Control Equipment

N	A variance is requested for the use of a diverter on the surface casing. See attached for schematic.
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BOP installed and tested before drilling which hole?	Size?	Min. Required WP	Type	✓	Tested to:
12-1/4"	13-5/8"	3M	Annular	x	50% of working pressure 3M
			Blind Ram		
			Pipe Ram		
			Double Ram	x	
			Other*		
8-3/4"	13-5/8"	3M	Annular	x	50% of working pressure 3M
			Blind Ram		
			Pipe Ram		
			Double Ram	x	
			Other*		
			Annular		
			Blind Ram		

Devon Energy, Flagler 8 Fed 32H

			Pipe Ram		
			Double Ram		
			Other *		

*Specify if additional ram is utilized.

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

Pipe rams will be operationally checked each 24 hour period. Blind rams will be operationally checked on each trip out of the hole. These checks will be noted on the daily tour sheets. Other accessories to the BOP equipment will include a Kelly cock and floor safety valve (inside BOP) and choke lines and choke manifold. See attached schematics.

Y	Formation integrity test will be performed per Onshore Order #2. On Exploratory wells or on that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.i.
Y	A variance is requested for the use of a flexible choke line from the BOP to Choke Manifold. See attached for specs and hydrostatic test chart.
Y	Are anchors required by manufacturer?
Y	A multibowl wellhead is being used. The BOP will be tested per Onshore Order #2 after installation on the surface casing which will cover testing requirements for a maximum of 30 days. If any seal subject to test pressure is broken the system must be tested. Devon proposes using a multi-bowl wellhead assembly. This assembly will only be tested when installed on the surface casing. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be 3000 (3M) psi. ○ Wellhead will be installed by wellhead representatives. ○ If the welding is performed by a third party, the wellhead representative will monitor the temperature to verify that it does not exceed the maximum temperature of the seal. ○ Wellhead representative will install the test plug for the initial BOP test. ○ Wellhead company will install a solid steel body pack-off to completely isolate the lower head after cementing intermediate casing. After installation of the packoff, the pack-off and the lower flange will be tested to 3M, as shown on the attached schematic. Everything above the pack-off will not have been altered whatsoever from the initial nipple up. Therefore the BOP components will not be retested at that time.

Devon Energy, Flagler 8 Fed 32H

	○ If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head will be cut and top out operations will be conducted. ○ Devon will pressure test all seals above and below the mandrel (but still above the casing) to full working pressure rating. ○ Devon will test the casing to 0.22 psi/ft or 1500 psi, whichever is greater, as per Onshore Order #2. After running the 13-3/8" surface casing, a 13-5/8" BOP/BOPE system with a minimum rating of 3M will be installed on the wellhead system and will undergo a 250 psi low pressure test followed by a 3,000 psi high pressure test. The 3,000 psi high and 250 psi. Low test will cover testing requirements a maximum of 30 days, as per Onshore Order #2. If the well is not complete within 30 days of this BOP test, another full BOP test will be conducted, as per Onshore Order #2. After running the 9-5/8' intermediate casing with a mandrel hanger, the 13-5/8" BOP/BOPE system with a minimum rating of 3M will already be installed on the wellhead. The pipe rams will be operated and checked each 24 hour period and each time the drill pipe is out of the hole. These tests will be logged in the daily driller's log. A 2" kill line and 3" choke line will be incorporated into the drilling spool below the ram BOP. In addition to the rams and annular preventer, additional BOP accessories include a Kelly cock, floor safety valve, choke lines, and choke manifold rated at 3,000 psi WP. Devon's proposed wellhead manufactures will be EMC Technologies, Cactus Wellhead, or Cameron. The pipe rams will be operated and checked each 24 hour period and each time the drill pipe is out of the hole. These tests will be logged in the daily driller's log. A 2" kill line and 3" choke line will be incorporated into the drilling spool below the ram BOP. In addition to the rams and annular preventer, additional BOP accessories include a kelly cock, floor safety valve, choke lines, and choke manifold rated at 3,000 psi WP.
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5. Mud Program

Depth		Type	Weight (ppg)	Viscosity	Water Loss
From	To				
0	1150	FW Gel	8.5-9.0	28-34	N/C
1150	5,000	Saturated Brine	10.0-11.0	28-34	N/C
5,000	15,742'	Cut Brine	8.5-9.3	28-34	N/C

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
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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	KOP to TD
	PEX	

7. Drilling Conditions

Condition	Specify what type and where?
BH Pressure at deepest TVD	4720 psi
Abnormal Temperature	No

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

Hydrogen Sulfide (H2S) monitors will be installed prior to drilling out the surface shoe. If H2S is detected in concentrations greater than 100 ppm, the operator will comply with the provisions of Onshore Oil and Gas Order #6. If Hydrogen Sulfide is encountered, measured values and formations will be provided to the BLM.	
N	H2S is present
Y	H2S Plan attached

8. Other facets of operation

Is this a walking operation? No.

Will be pre-setting casing? No.

Attachments

☒ Directional Plan

☐ Other, describe