Form 3160-4
(June 2019)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
OMB NO. 1004-0137
Expires: October 31, 2021

WELL COMPLETION OR RECOMPLETION REPORT AND LOG

5. Lease Serial No.

1a. Type of Well ☐ Oil Well ☐ Gas Well ☐ Dry ☐ Other
b. Type of Competion ☐ New Well ☐ Work Over ☐ Deepen ☐ Plug Back ☐ Diff. Zones ☐ Hydraulic Fracturing
Other: _____

6. If Indian, Allottee or Tribe Name

7. Unit or CA Agreement Name and No.

2. Name of Operator

Accepted 02/01/2024 by BLM
Allison Morency
Petroleum Engineer - BLM

8. Well Name and Well No.

3. Address

3a. Phone No. *(Include area code)*

9. API Well No.

4. Location of Well *(Report location clearly and in accordance with Federal requirements)**
At surface

At top prod. interval reported below

At total depth

10. Field and Pool or Exploratory

11. Sec., T., R., M., on Block and Survey or Area

12. County or Parish

13. State

14. Date Spudded

15. Date T.D. Reached

16. Date Completed ☐ D & A ☐ Ready to Prod.

17. Elevations (DF, RKB, RT, GL)*

18. Total Depth: MD / TVD

19. Plug Back T.D.: MD / TVD

20. Depth Bridge Plug Set: MD / TVD

21. Type Electric & Other Mechanical Logs Run (Submit copy of each)

22. Was well cored? ☐ No ☐ Yes (Submit analysis)
Was DST run? ☐ No ☐ Yes (Submit report)
Directional Survey? ☐ No ☐ Yes (Submit copy)

23. Casing and Liner Record *(Report all strings set in well)*

Hole Size	Size/Grade	Wt. (#ft.)	Top (MD)	Bottom (MD)	Stage Cementer Depth	No. of Sks. & Type of Cement	Slurry Vol. (BBL)	Cement Top*	Amount Pulled

24. Tubing Record

Size	Dept Set (MD)	Packer Dept (MD)	Size	Depth Set (MD)	Packer Depth (MD)	Size	Depth Set (MD)	Packer Depth (MD)

25. Producing Intervals

Formation	Top	Bottom
A)		
B)		
C)		
D)		

26. Perforation Record

Perforated Interval	Size	No. Holes	Perf. Status

27. Acid, Fracture, Treatment, Cement Squeeze, Post hydraulic fracturing chemical disclosures on FracFocus.org when required by state or federal regulation

Depth Interval	Amount, Type of Material and Date of Chemical Disclosure upload on FracFocus.org as applicable

28. Production - Interval A

Date First Produced	Test Date	Hours Tested	Test Production →	Oil BBL	Gas MCF	Water BBL	Oil Gravity Corr. API.	Gas Gravity	Production Method

Choke Size	Tbg. Press. Flwg. SI	Csg. Press.	24 Hr. Rate →	Oil BBL	Gas MCF	Water BBL	Gas/Oil Ratio	Well Status

28a. Production - Interval B

Date First Produced	Test Date	Hours Tested	Test Production →	Oil BBL	Gas MCF	Water BBL	Oil Gravity Corr. API.	Gas Gravity	Production Method

Choke Size	Tbg. Press. Flwg. SI	Csg. Press.	24 Hr. Rate →	Oil BBL	Gas MCF	Water BBL	Gas/Oil Ratio	Well Status

*(See instructions and spaces for additional data on page 2)

28b. Production - Interval C

Date First Produced	Test Date	Hours Tested	Test Production →	Oil BBL	Gas MCF	Water BBL	Oil Gravity Corr. API.	Gas Gravity	Production Method
Choke Size	**Tbg. Press. Flwg. SI**	**Csg. Press.**	**24 Hr. Rate →**	**Oil BBL**	**Gas MCF**	**Water BBL**	**Gas/Oil Ratio**	**Well Status**	

28c. Production - Interval D

Date First Produced	Test Date	Hours Tested	Test Production →	Oil BBL	Gas MCF	Water BBL	Oil Gravity Corr. API.	Gas Gravity	Production Method
Choke Size	**Tbg. Press. Flwg. SI**	**Csg. Press.**	**24 Hr. Rate →**	**Oil BBL**	**Gas MCF**	**Water BBL**	**Gas/Oil Ratio**	**Well Status**	

29. Disposition of Gas *(Solid, used for fuel, vented, etc.)*

30. Summary of Porous Zones (Include Aquifers):

Show all important zones of porosity and contents thereof: Cored intervals and all drill-stem tests, including depth interval tested, cushion used, time tool open, flowing and shut-in pressures and recoveries.

31. Formation (Log) Markers

Formation	Top	Bottom	Descriptions, Contents, etc.	Name	Top Meas. Depth

32. Additional remarks (include plugging procedure).

33. Indicate which items have been attached by placing a check in the appropriate boxes:

☐ Electrical/Mechanical Logs (1 full set req'd.) ☐ Geologic Report ☐ DST Report ☐ Directional Survey

☐ Sundry Notice for plugging and cement verification ☐ Core Analysis ☐ Other:

34. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records (see attached instructions)*

Name *(please print)* _____ Title _____

Signature _____ Date _____

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.

(Continued on page 3)

INSTRUCTIONS

GENERAL: This form is designed for submitting a complete and correct well completion/recompletion report and log on all types of wells on Federal and Indian leases to a Federal agency, pursuant to applicable Federal laws and regulations. Any necessary special instructions concerning the use of this form and the number of copies to be submitted, particularly with regard to local, area, or regional procedures and practices, either are shown below or will be issued by, or may be obtained from, the local Federal office.
If not filed prior to the time this summary record is submitted, copies of all currently available logs (drillers, geologists, sample and core analysis, and all types electric), formation and pressure tests, and directional surveys, should be attached hereto, to the extent required by applicable Federal laws and regulations. All attachments should be listed on this form, see item 33.
ITEM 4: Locations on Federal or Indian land should be described in accordance with Federal requirements. Consult local Federal office for specific instructions.
ITEM 17: Indicate which reported elevation is used as reference (where not otherwise shown) for depth measurements given in other spaces on this form and in any attachments.
ITEM 23: Show how reported top(s) of cement were determined, i.e. circulated (CIR), or calculated (CAL), or cement bond log (CBL), or temperature survey (TS).

NOTICES

The Privacy Act of 1974 and the regulation in 43 CFR 2.48 (d) provide that you be furnished the following information in connection with information required by this application.
AUTHORITY: 30 U.S.C. 181 et seq., 351 et seq., 25 U.S.C. et seq.; 43 CFR 3160.
PRINCIPAL PURPOSE: The information is to be used to evaluate the actual operations performed in the drilling, completing and testing of a well on a Federal or Indian lease.
ROUTINE USES: (1) Evaluate the equipment and procedures used during the drilling and completing/recompleting of a well. (2) The review of geologic zones and formation encountered during drilling. (3) Analyze future applications to drill in light of data obtained and methods used. (4)(5) Information from the record and/or the record will be transferred to appropriate Federal, State, local or foreign agencies, when relevant to civil, criminal or regulatory investigations or prosecutions.
EFFECT OF NOT PROVIDING INFORMATION: Filing of this report and disclosure of the information is mandatory once a well drilled on a Federal or Indian lease is completed/recompleted.

The Paperwork Reduction Act of 1995 requires us to inform you that:
The BLM collects this information to allow evaluation of the technical, safety, and environmental factors involved with drilling and completing/recompleting wells on Federal and Indian oil and gas leases.
This information will be used to analyze operations and to compare equipment and procedures actually used with those proposed and approved.
Response to this request is mandatory only if the operator elects to initiate drilling and completing/recompleting operations on an oil and gas lease.
The BLM would like you to know that you do not have to respond to this or any other Federal agency-sponsored information collection unless it displays a currently valid OMB control number.

BURDEN HOURS STATEMENT: Public reporting burden for this form is estimated to average 8 hours per response, including the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding the burden estimate or any other aspect of this form to U.S. Department of the Interior, Bureau of Land Management (1004-0137), Bureau Information Collection Clearance Officer (WO-630), 1849 C Street, N.W., Mail Stop 401 LS, Washington, D.C. 20240.

Additional Information
Location information: 00S1

SHL: NENE / 966 FNL / 540 FEL / TWSP: 26S / RNG: 29E / SEC: 20 / LAT: 32.0329023 / LONG: -103.9999643
KOP: NENE / 92 FNL / 334 FEL / TWSP: 26S / RNG: 29E / SEC: 20 / LAT: 32.0353072 / LONG: -103.9993077
PPP: NENE / 330 FNL / 330 FEL / TWSP: 26S / RNG: 29E / SEC: 20 / LAT: 32.0346523 / LONG: -103.9992931
PPP: NESE / 2636 FSL / 321 FEL / TWSP: 26S / RNG: 29E / SEC: 20 / LAT: 32.0283125 / LONG: -103.9992648
EXIT: SESE / 330 FSL / 332 FEL / TWSP: 26S / RNG: 29E / SEC: 20 / LAT: 32.0220475 / LONG: -103.9990086
BHL: SESE / 286 FSL / 329 FEL / TWSP: 26S / RNG: 29E / SEC: 20 / LAT: 32.021801 / LONG: -103.9985137

Summary of Porous Zones Information:

Formation: BRUSHY CANYON, Descriptions, Contents, etc: null, Bottom: 4958
Formation: BONE SPRING, Descriptions, Contents, etc: null, Bottom: 6561
Formation: WOLFCAMP, Descriptions, Contents, etc: null, Bottom: 9761

Attachments: 00S1

Log Attachments:
1) Wellbore_Schematic___MAZER_RACKHAM_20_WA_FEDERAL_COM_001H_20211001092130.pdf
2) WD_MazerRackham20WAFedCom1HMudlogMD_2020_03_22_20.19.49_20211001091851.pdf
3) C102_AS_DRILLED_MAZER_RACKHAM_20_WA_FEDERAL_COM_1H_cert_06.30.2021_signed_2021100109
4) WD_QESMazerRackham20WAFedCom1HFinalSurveyRpt_2020_03_17_04.00.52_20211001092104.pdf

Marathon Oil

Wellbore Schematic

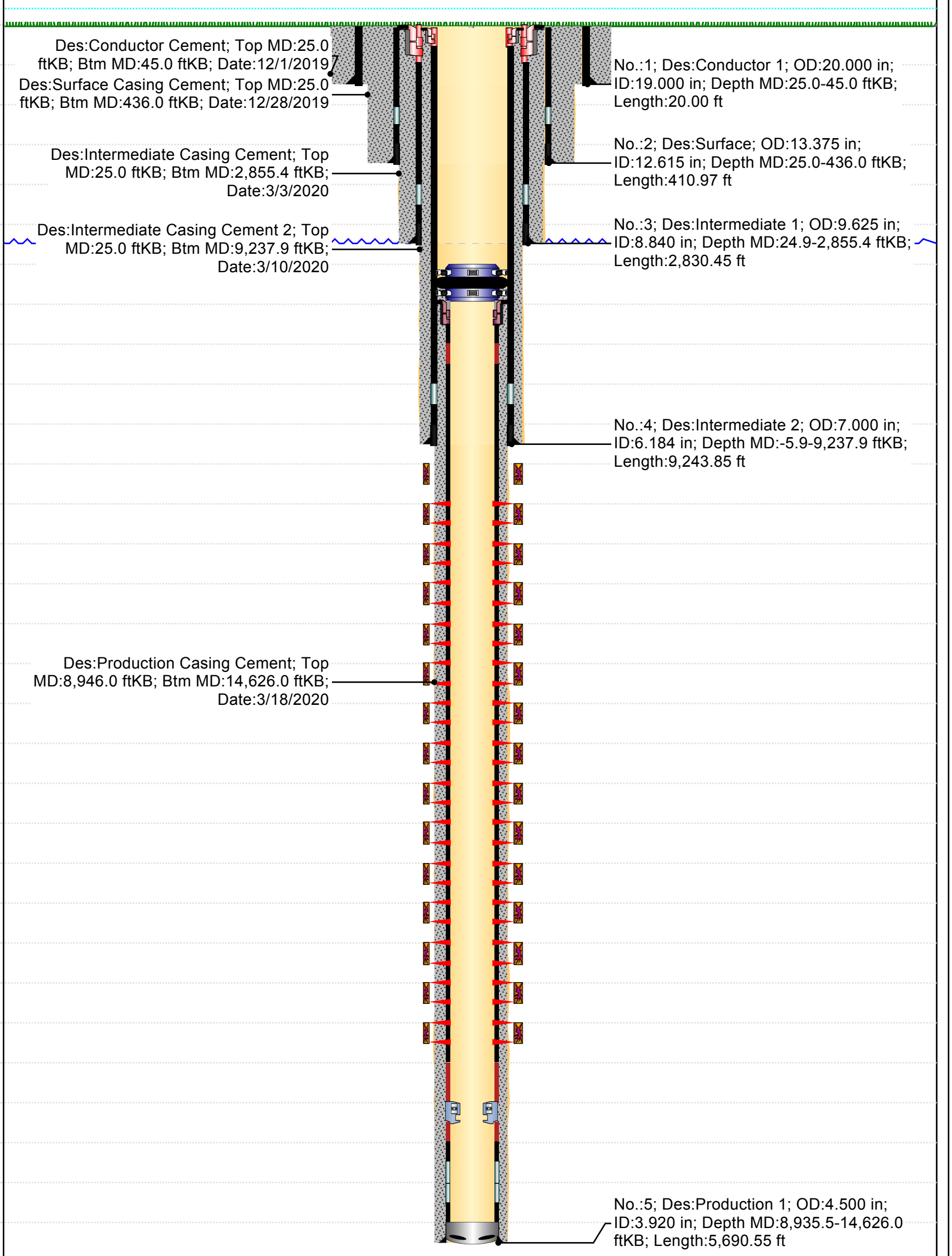
Well Name: MAZER RACKHAM 20 WA FEDERAL COM 001H

State/Province	Country	Field Name	Latitude (°)	Longitude (°)	North/South Distance (ft)	North/South Reference
NEW MEXICO	UNITED STATES	MALAGA	32.03277730	-103.99948160	966.0	FNL
API/ IPO UWI	**KB-Ground Distance (ft)**	**KB-Mud Line Distance (ft)**	**Ground Elevation (ft)**	**Drilling Rig Spud Date**	**Well Original Completion Date**	**Well First Production Date**
3001546146	25.00		2,872.00	3/1/2020	9/21/2021	

HORIZONTAL, MAZER RACKHAM 20 WA FEDERAL COM 001H, 9/28/2021 12:24:58 PM

MD (ftKB)	Incl (°)	TVD (ftKB)
24.9	1.1	25.0
26.6	1.1	26.6
395.7	1.1	395.6
434.4	1.1	434.3
2,814.0	7.5	2,802.1
2,854.0	7.8	2,841.8
8,935.4	1.4	8,869.3
8,946.5	1.4	8,880.4
8,994.4	1.4	8,928.3
9,195.9	0.9	9,129.7
9,236.5	0.7	9,170.4
10,003.9	63.3	9,840.2
10,307.1	92.0	9,884.0
10,608.9	90.3	9,877.4
10,912.1	89.3	9,879.5
11,213.9	89.7	9,880.9
11,517.1	92.7	9,879.2
11,818.9	90.0	9,867.1
12,122.0	91.8	9,869.7
12,423.9	89.7	9,877.7
12,727.0	91.2	9,870.0
13,029.9	88.9	9,864.5
13,332.0	93.1	9,857.1
13,634.8	88.6	9,845.3
13,937.0	91.2	9,850.3
14,240.2	90.2	9,845.1
14,524.9	89.4	9,844.2
14,532.5	89.2	9,844.3
14,538.4	89.0	9,844.4
14,581.4	88.0	9,845.0
14,624.0	88.0	9,846.5

Vertical schematic (actual)



Scale 1:1200 (1"=100') Imperial
Measured Depth Log

Well Name:	Mazer Rackham 20 WA Fed Com 1H		
API:	30015461460000		
Location:	Eddy Co., New Mexico		
License Number:	325772	**Region:**	Delaware
Spud Date:	Mar 11, 2020	**Drilling Completed:**	March 17, 2020
Surface Coordinates:	Lat (NAD 83) : 32.0329023° Long (NAD 83) : -103.9999643°		
Bottom Hole Coordinates:			
Ground Elevation (ft):	2,872	**K.B. Elevation (ft):**	2,877
Logged Interval (ft):	9,253 To: 14,636	**Total Depth (ft):**	14,636
Formation:	Delaware Basin		
Type of Drilling Fluid:	OBM		

Printed by MudLog from WellSight Systems 1-800-447-1534 www.WellSight.com

OPERATOR

Company: Marathon Oil Company
Address: 4111 S TIDWELL RD, CARLSBAD, NM 88220

GEOLOGIST

Name:
Company: Marathon Oil Company
Address: 4111 S TIDWELL RD, CARLSBAD, NM 88220

Surface Logging Company

PML Exploration/Edge Systems
33502 State Highway 249
Pinehurst, TX. 77362
Office:1+(832)521-3233

ROCK TYPES

- Rdshale
- Anhy
- Bent
- Brec
- Cht
- Clyst
- Coal
- Congl
- Dol
- Gyp
- Igne
- Lmst
- Meta
- Mrlst
- Salt
- Shale
- Shcol
- Shgy
- Sltst
- Ss
- Till

ACCESSORIES

FOSSIL

- Algae
- Amph
- Belm
- Bioclst
- Brach
- Bryozoa
- Cephal
- Coral
- Crin
- Echin
- Fish
- Foram
- Fossil
- Gastro
- Oolite
- Ostra
- Pelec
- Pellet
- Pisolite
- Plant
- Strom

MINERAL

- Anhy
- Arggrn
- Arg
- Bent
- Bit
- Brecfrag
- Calc
- Carb
- Chtdk
- Chtlt
- Dol
- Feldspar
- Ferrpel
- Ferr
- Glau
- Gyp
- Hvymin
- Kaol
- Marl
- Minxl
- Nodule
- Phos
- Pyr
- Salt
- Sandy
- Silt
- Sil
- Sulphur
- Tuff

STRINGER

- Anhy
- Arg
- Bent
- Coal
- Dol
- Gyp
- Ls
- Mrst
- Sltstrg
- Ssstrg

TEXTURE

- Boundst
- Chalky
- Cryxln
- Earthy
- Finexln
- Grainst
- Lithogr
- Microxln
- Mudst
- Packst
- Wackest

OTHER SYMBOLS

OIL SHOW

- Even
- Spotted
- Ques
- Dead

SORTING

- Well
- Moderate
- Poor

ROUNDING

- Rounded
- Subrnd
- Subang
- Angular

INTERVAL

- Core
- Dst

EVENT

- Rft
- Sidewall

ROP WOB Gamma
ROP (ft/hr)
WOB (klb)
Gamma (API)

MD
Slide

% Lithology

Porosity Type

Flourecence

Oil Shows

Photos
Photo Scale (mm)

Geological Descriptions

TG, C1-C5
TG (Units)
C1 (units)
C2 (units)
C3 (units)
iC4 (units)
nC4 (units)

225 ROP (ft/hr) 0
30 WOB (klb) 0
0 Gamma (API) 150

9000

0 Photo Scale (mm) 3

0 TG (Units) 800
0 C1 (units) 800
0 C2 (units) 800
0 C3 (units) 400
0 iC4 (units) 400
0 nC4 (units) 200

Marathon Oil, INC.

Mazer Rackham 20 WA Fed Com 1H

A-20-26S-29E 966 FNL 540 FEL

LAT: 32.0329023°
LONG: 103.9999643°

Drilling Parameter interval 200'

White = Rotate
Blue = Slide

Began Hydrid Logging Services on 03/11/2019
FG: Formation Gas
CG: Connection Gas
TG: Trip Gas
OBG: Off Bottom Gas

Gas Calibration 1% = 100 units

ROP: 100-0
WOB: 100-0
GAMMA: 0-150
C = Connection

Sample Intervals: 10' - 20'
Description Interval: 50' - 100'
Mud Properties interval 200'
Picture Interval 60'

Camera is fixed @ a height where the max capture across is 30mm

9250

03/12/2020

WOB: 20
SPM: 104
RPM: 20
PP: 5221

MD 9190 TVD 9123.86
INC 0.97 AZ 167.52

SLTST: BLK-DK GY, SLT-VF GR, BLKY-SB BLKY, SL HD, CARB, CALC, TR CALC FRAC, LS: TN, MOTT DK GY, CRM, MDST, MICXL-VF XL, MASS, ARG, SDY, TR DRU PYR, NO FLUOR, SLO DL STMG BL CUT W/ BRI MLKY WHSH BL RES HALO

CG 779u
FG 83u
OBG 619u
TG 1495u

9500

MD 9480 TVD 9413.66
INC 3.65 AZ 5.01

MWI 12.8
MWO 12.8

SS: OFF WH, VF GR, VWL SRT, SB ANG, CONS, CALC CMT, FNLY LAM, SLTST: DK BRNSH GY, SLT, SB BLKY- BLKY, CARB, CALC, NO FLUOR, SLO BRI STMG BL CUT W/ BRI MLKY WHSH BL RES HALO

CG 145u

9750

FG 342u

MD 9764 TVD 9681.18
INC 33.98 AZ 182.81

SLTST: GY-DK GY, SLT-VF GR, SB RND, FRM, CALC, CARB, SS: LT GY-OFF WH, VF GR, VWL SRT, SB RND-RND, CONS, UNCONS, CALC CMT, FNLY LAM IP, NO FLUOR, FST BRI CLDY BL CUT W/ BRI MLKY WHSH BL RES HALO

FG 540u

MWI 12.8
MWO 12.8

WOB: 16
SPM: 103
RPM: 25
PP: 4338

CG 319u

10000

225 ROP (ft/hr) 0
30 WOB (klb) 0
0 Gamma (API) 150

0 TG (Units) 800
0 C1 (units) 800
0 C2 (units) 800
0 C3 (units) 400
0 iC4 (units) 400
0 nC4 (units) 200

MD 10048 TVD 9860.23
INC 69.71 AZ 177.54

FG 229u

SLTST: DK BRNSH GY- DK GY, SLT-VF GR, SB BLKY, FRM, CARB, CALC, NO FLUOR, SLO BRI STMG BL CUT W/ BRI MLKY WHSH BL RES HALO

TG 1495u

03/13/2020

10250

WOB: 24
SPM: 104
RPM: 80
PP: 5047

10500

MD 10327 TVD 9883.38
INC 92.22 AZ 180.09

SLTST: DK GY-DK BRNSH GY, SLT, SB BLKY, FRM, CARB, CALC, SS: LT GY, VF GR, VWL SRT, SB RND, CONS, CALC CMT, NO FLUOR, SLO BRI STMG BL CUT W/ BRI MLKY-SPTY WHSH BL RES HALO

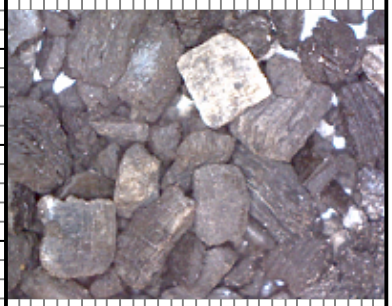
CG 653u
MG 746u
MWI 12.8
MWO 12.8

MD 10611 TVD 9877.37
INC 90.24 AZ 180.7

SLTST: DK BRNSH GY- DK GY, BLK, SLT, SB BLKY, FRM, CARB, CALC, SS: LT GY, VF GR, VWL SRT, SB RND, CONS, CALC CMT, NO FLUOR, SLO BRI STMG BL CUT W/ BRI MLKY- SPTY WHSH BL RES HALO

10750

CG 618u
FG 828u



MD 10895 TVD 9879.41
INC 89.05 AZ 181.67

03/14/2020

WOB: 24
SPM: 104
RPM: 80
PP: 5314

SLTST: DK BRNSH GY-BLK, SLT, SB BLKY, FRM, CARB, CALC, SS: LT GY-TN, VF GR, VWL SRT, SB ANG, CONS, CALC CMT, NO FLUOR, FST BRI STMG BL CUT W/ BRI SPTY BL RES HALO

MWI 12.8
MWO 12.8

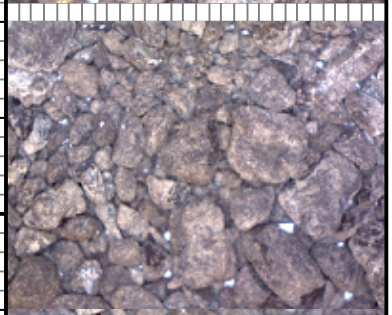
225 ROP (ft/hr) 0
30 WOB (klb) 0
0 Gamma (API) 150

6 TG (Units) 800
0 C1 (units) 800
0 C2 (units) 800
0 C3 (units) 400
0 iC4 (units) 400
0 nC4 (units) 200

11000

CG 641u

FG 1015u



MD 11177 TVD 9880.46
INC 90.73 AZ 178.15

SLTST: BLK-DK BRNSH GY, SLT, SB BLKY, FRM, CARB, CALC, SS: LT GY, VF GR, VWL SRT, SB RND, CONS, CALC CMT, ARG, NO FLUOR, SLO DL STMG BL CUT W/ BRI MLKY WHSH BL RES HALO

11250

FG 875u

CG 196u

WOB: 24
SPM: 104
RPM: 80
PP: 5314

11500

WOB: 30
SPM: 96
RPM: 80
PP: 4706

225 ROP (ft/hr) 0
30 WOB (klb) 0
0 Gamma (API) 150

12000

03/15/2020

12250

RES HALO

SLTST: DK BRNSH GY- DK GY-BLK, SLT, SB BLKY, FRM-SL HD, CARB, CALC, TR CALC FRAC, NO FLUOR, SLO BRI STMG BL CUT W/ BRI MLKY BL RES HALO

MD 11555 TVD 9877.43
INC 92.66 AZ 180.35

SLTST: DK BRN, DK GY-BLK, SLT, SB BLKY, FRM, CARB, CALC, NO FLUOR, SLO DL STMG BL CUT W/ BRI MLKY WHSH BL RES HALO

CG 478u

FG 618u

MD 11743 TVD 9868.53
INC 92.79 AZ 180.17

SLTST: DK GY-DK BRNSH GY, BLK, SLT, PLTY, SB BLKY, CARB, CALC, NO FLUOR, SLO DL STMG BL CUT W/ BRI MLKY WHSH BL RES HALO

CG 595u

MD 11931 TVD 9868.46
INC 88.53 AZ 178.06

SLTST: DK GY-BLK, SLT, SB BLKY, FRM, CARB, CALC, SS: LT GY-TN, STN DK GY, VF GR- SLT, VWL SRT, SB RND- RND, CONS, CALC CMT, ARG, NO FLUOR, SLO BRI CLDY BL CUT W/ BRI SPTY BL RES HALO

0 TG (Units) 800
0 C1 (units) 800
0 C2 (units) 800
0 C3 (units) 400
0 iC4 (units) 400
0 nC4 (units) 200

CG 314u

MD 12215 TVD 9870.17
INC 87.56 AZ 178.86

FG 770u

SLTST: DK GY- DK BRNSH GY- BLK, SLT- VF GR, SB BLKY, FRM, CARB, CALC, SS: LT GY-TN, VF GR, VWL SRT, SB RND, CONS, CALC CMT, ARG, NO FLUOR, SLO DL STMG BL CUT W/ BRI SPTY WHSH BL RES HALO

CG 314u

FG 688u

WOB: 20

SPM: 97
RPM:
PP: 4735

12500
12750
13000
13250
13500

WOB: 27
SPM: 96
RPM: 44
PP: 4020

225 ROP (ft/hr) 0
30 WOB (klb) 0
0 Gamma (API) 150

03/16/2020

WOB: 20
SPM: 97
RPM: 80
PP: 5083

MD 12499 TVD 9876.85
INC 92.31 AZ 178.68

SLTST: DK GY-DK BRN- BLK, SLT, SB BLKY, FRM, CARB, CALC, SS: LT GY-TN, VF GR, VWL SRT, SB RND, CONS, CALC CMT, ARG, NO FLUOR, SLO BRI STMG BL CUT W/ BRI MLKY WHSH BL RES HALO

MD 12782 TVD 9868.89
INC 90.77 AZ 177.19

SLTST: DK GY-BLK, SLT- VF GR, SB BLKY- BLKY, FRM, CARB, CALC, SS: LT GY-OFF WH, STN TN, VF GR- SLT, VWL SRT, SB ANG, CONS, CALC CMT, ARG, NO FLUOR, SLO BRI STMG BL CUT W/ BRI SPTY WHSH BL RES HALO

MD 13065 TVD 9865.14
INC 88.79 AZ 178.77

SLTST: DK GY- BLK, SLT- VF GR, SB BLKY, CARB, CALC, NO FLUOR, SLO BRI STMG BL CUT W/ BRI MLKY WHSH BL RES HALO

MD 13253 TVD 9861.38
INC 93.19 AZ 178.59

SLTST: DK GY- DK BRNSH GY, SLT- VF GR, SB BLKY, CARB, CALC, NO FLUOR, SLO BRI STMG BL CUT W/ BRI MLKY SPTY BL RES HALO

MD 13443 TVD 9850.83
INC 93.45 AZ 177.71

MD 13538 TVD 9845.98
INC 92.4 AZ 178.42

FG 256u
CG 348u
FG 338u
CG 305u
CG 184u
FG 211u
CG 851u

0 TG (Units) 800
0 C1 (units) 800
0 C2 (units) 800
0 C3 (units) 400
0 iC4 (units) 400
0 nC4 (units) 200

WOB: 25
SPM: 100
RPM: 80
PP: 5125

225 ROP (ft/hr) 0
30 WOB (klb) 0
0 Gamma (API) 150

13750
14000
14250
14500

WOB: 22
SPM: 97
RPM: 80
PP: 5021

03/17/2020

SLTST: DK BRNSH GY- BLK, SLT, SB BLKY, FRM, CARB, CALC, NO FLUOR, FST BRI STMG BL CUT W/ BRI MLKY WHSH BL RES HALO

MD 13727 TVD 9847.37
INC 88.79 AZ 178.15

SLTST: DK GY- BLK, SLT- VF GR, SB BLKY- BLKY, CARB, CALC, NO FLUOR, SLO BRI STMG BL CUT W/ BRI MLKY WHSH BL RES HALO

MD 13915 TVD 9850.82
INC 91.08 AZ 177.27

SLTST: DK GY- BLK, SLT- VF GR, SB BLKY, FRM- SL HD, CARB, CALC, SS: LT GY-OFF WHT, STN TN-DK GY, VF GR-SLT, SB RND, CONS, CALC CMT, SL ARG, NO FLUOR, SLO BRI STMG BL CUT W/ BRI MLKY- SPTY WHSH BL RES HALO

MD 14198 TVD 9845.17
INC 91.12 AZ 178.06

SLTST: GY-DK GY, SLT- VF GR, SB BLKY, FRM- SL HD, CARB, CALC, NO FLUOR, FST DL STMG YELSH BL CUT W/ BRI MLKY- SPTY WHSH BL RES HALO

MD 14389 TVD 9844.85
INC 91.25 AZ 177.54

SLTST: BLK- DK GY, SLT, SB BLKY, CARB, CALC, SS: LT GY- OFF WH, STN TN, VF GR-SLT, SB RND, CONS, CALC CMT, ARG, NO FLUOR, FST BRI STMG BL CUT W/ BRI MLKY- SPTY WHSH BL RES HALO

FG 828u
CG 688u
FG 699u
CG 258u
CG 443u
FG 342u

0 TG (Units) 800
0 C1 (units) 800
0 C2 (units) 800
0 C3 (units) 400
0 iC4 (units) 400
0 nC4 (units) 200

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 AS-DRILLED PLAT

[1] API Number	[2] Pool Code	[3] Pool Name
30-015-46146	98220	PURPLE SAGE; WOLFCAMP (GAS)

[4] Property Code	Property Name	[6] Well Number
325772	MAZER RACKHAM 20 WA FEDERAL COM	1H

[7] OGRID No.	[8] Operator Name	[9] Elevation
372098	MARATHON OIL PERMIAN LLC	2872'

[10] Surface Location

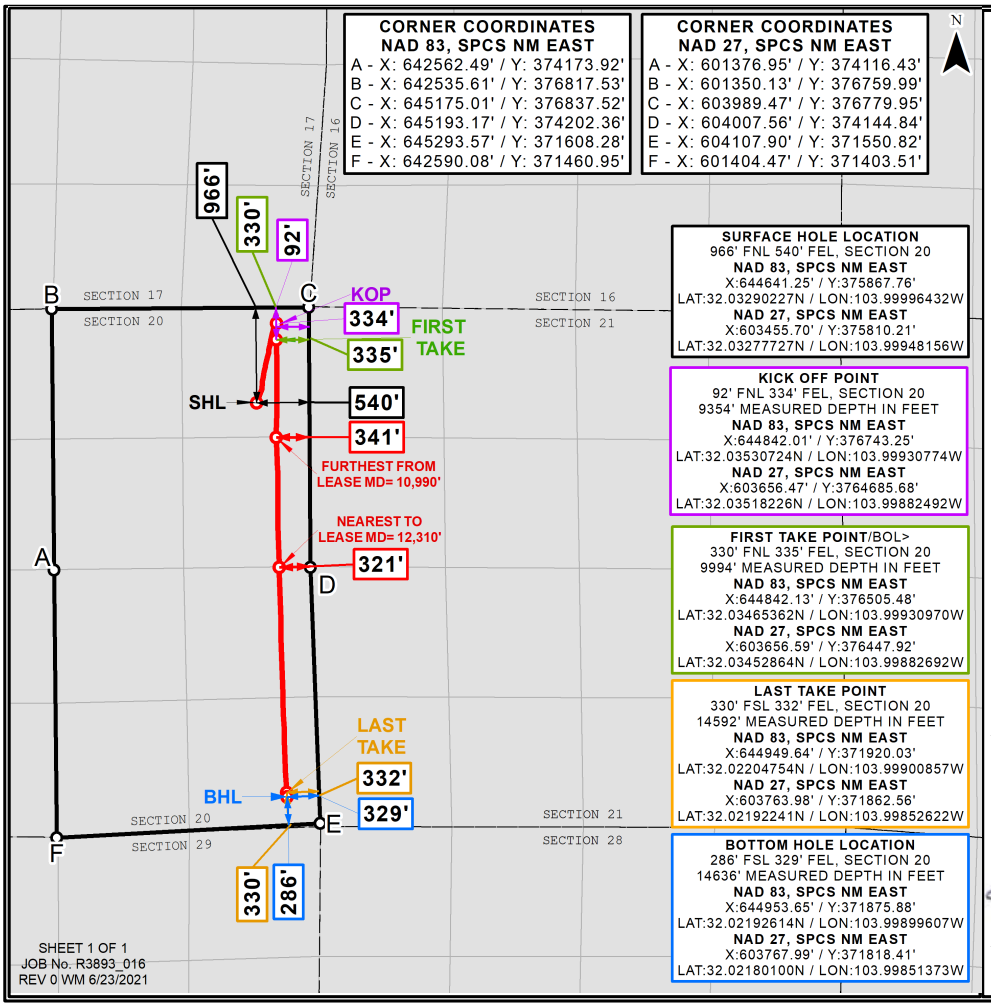
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
A	20	26S	29E		966	NORTH	540	EAST	EDDY

[11] Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
P	20	26S	29E		286	SOUTH	329	EAST	EDDY

[12] Dedicated Acres	[13] Joint or Infill	[14] Consolidation Code	[15] Order No.
320.0			

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.



[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.

Signature — Date: 10/1/2021

Adrian Covarrubias
Printed Name

E-mail Address

[18] SURVEYOR CERTIFICATION

I hereby certify that the well surface location shown on this plat was plotted from field notes of the as-staked surveys made by me or under my supervision, and that the same is true and correct to the best of my belief. Data used for underground measurements were provided by others for reference only and does not constitute field measurements performed by R-Squared Global.

JUNE 30, 2021
Date of Survey

Signature and Seal of Professional Surveyor:

DAVID W. MYERS NEW MEXICO 11403 PROFESSIONAL SURVEYOR

Certificate Number
DAVID W. MYERS 11403

Distances/areas relative to NAD 83 Combined Scale Factor: 0.99978647 Convergence Angle: 00°10'32.39608"

☐ Horizontal Spacing Unit

Marathon Oil Permian LLC

Eddy County, New Mexico (NAD 27)
Sec 20, T26S, R29E
Mazer Rackham 20 WA Fed Com #1H

Wellbore #1

Design: Wellbore #1

QES Survey Report

17 March, 2020

QUINTANA ENERGY SERVICES

Marathon Oil

QES
Survey Report

QES QUINTANA ENERGY SERVICES

Company:	Marathon Oil Permian LLC	**Local Co-ordinate Reference:**	Well Mazer Rackham 20 WA Fed Com #1H
Project:	Eddy County, New Mexico (NAD 27)	**TVD Reference:**	WELL @ 2896.8usft (PD #101)
Site:	Sec 20, T26S, R29E	**MD Reference:**	WELL @ 2896.8usft (PD #101)
Well:	Mazer Rackham 20 WA Fed Com #1H	**North Reference:**	Grid
Wellbore:	Wellbore #1	**Survey Calculation Method:**	Minimum Curvature
Design:	Wellbore #1	**Database:**	EDM 5000.1 Single User Db

Project Eddy County, New Mexico (NAD 27)

Map System:	US State Plane 1927 (Exact solution)	**System Datum:**	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Site Sec 20, T26S, R29E

Site Position:		**Northing:**	375,810.09 usft	**Latitude:**	32° 1' 57.998 N
From:	Map	**Easting:**	603,425.73 usft	**Longitude:**	103° 59' 58.482 W
Position Uncertainty:	0.0 usft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	0.18 °

Well Mazer Rackham 20 WA Fed Com #1H

Well Position	**+N/-S**	0.0 usft	**Northing:**	375,810.21 usft	**Latitude:**	32° 1' 57.998 N
	+E/-W	0.0 usft	**Easting:**	603,455.70 usft	**Longitude:**	103° 59' 58.134 W
Position Uncertainty		0.0 usft	**Wellhead Elevation:**	usft	**Ground Level:**	2,871.8 usft

Wellbore Wellbore #1

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM2020	2/29/2020	6.77	59.65	47,731.70000000

Design Wellbore #1

Audit Notes:

Version:	1.0	**Phase:**	ACTUAL	**Tie On Depth:**	0.0

Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	175.54

Survey Program **Date** 3/17/2020

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
76.0	406.0	Surface Surveys (Wellbore #1)	MWD	OWSG MWD - Standard
488.0	14,636.0	QES MWD Surveys (Wellbore #1)	MWD	OWSG MWD - Standard

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
76.0	0.80	227.30	76.0	-0.4	-0.4	0.3	1.05	1.05	0.00
161.0	0.90	291.00	161.0	-0.5	-1.4	0.4	1.06	0.12	74.94
217.0	1.00	268.30	217.0	-0.4	-2.3	0.2	0.69	0.18	-40.54
305.0	1.30	279.40	305.0	-0.2	-4.1	-0.1	0.42	0.34	12.61
Tie In @ 406.0'MD / 405.9' TVD									
406.0	1.10	257.60	405.9	-0.3	-6.2	-0.2	0.49	-0.20	-21.58
488.0	1.01	248.03	487.9	-0.7	-7.6	0.1	0.24	-0.11	-11.67
582.0	1.14	148.01	581.9	-1.8	-7.9	1.2	1.75	0.14	-106.40
645.0	2.07	122.69	644.9	-2.9	-6.6	2.4	1.82	1.48	-40.19

Marathon Oil

QES

Survey Report

QES QUINTANA ENERGY SERVICES

Company:	Marathon Oil Permian LLC	**Local Co-ordinate Reference:**	Well Mazer Rackham 20 WA Fed Com #1H
Project:	Eddy County, New Mexico (NAD 27)	**TVD Reference:**	WELL @ 2896.8usft (PD #101)
Site:	Sec 20, T26S, R29E	**MD Reference:**	WELL @ 2896.8usft (PD #101)
Well:	Mazer Rackham 20 WA Fed Com #1H	**North Reference:**	Grid
Wellbore:	Wellbore #1	**Survey Calculation Method:**	Minimum Curvature
Design:	Wellbore #1	**Database:**	EDM 5000.1 Single User Db

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
707.0	3.60	105.38	706.8	-4.1	-3.8	3.8	2.80	2.47	-27.92
801.0	2.15	135.97	800.7	-6.1	0.3	6.1	2.19	-1.54	32.54
895.0	0.62	60.73	894.7	-7.1	2.0	7.3	2.21	-1.63	-80.04
989.0	0.53	31.90	988.7	-6.5	2.6	6.7	0.32	-0.10	-30.67
1,083.0	0.31	49.47	1,082.7	-6.0	3.1	6.2	0.27	-0.23	18.69
1,177.0	0.22	55.72	1,176.7	-5.7	3.4	6.0	0.10	-0.10	6.65
1,270.0	0.26	82.70	1,269.7	-5.6	3.8	5.9	0.13	0.04	29.01
1,364.0	0.22	130.96	1,363.7	-5.7	4.1	6.0	0.21	-0.04	51.34
1,458.0	0.40	160.84	1,457.7	-6.1	4.3	6.4	0.25	0.19	31.79
1,552.0	1.10	8.70	1,551.7	-5.5	4.6	5.9	1.56	0.74	-161.85
1,642.0	3.82	16.17	1,641.6	-1.8	5.6	2.2	3.04	3.02	8.30
1,732.0	6.15	15.12	1,731.2	5.7	7.7	-5.1	2.59	2.59	-1.17
1,821.0	7.91	14.59	1,819.6	16.3	10.4	-15.4	1.98	1.98	-0.60
1,911.0	8.35	15.99	1,908.6	28.5	13.8	-27.4	0.54	0.49	1.56
2,000.0	7.52	14.68	1,996.8	40.4	17.1	-38.9	0.95	-0.93	-1.47
2,090.0	7.34	13.62	2,086.0	51.7	19.9	-50.0	0.25	-0.20	-1.18
2,179.0	8.75	17.49	2,174.2	63.7	23.3	-61.7	1.70	1.58	4.35
2,269.0	9.85	17.66	2,263.0	77.5	27.7	-75.1	1.22	1.22	0.19
2,359.0	9.41	20.04	2,351.7	91.8	32.5	-89.0	0.66	-0.49	2.64
2,448.0	9.19	26.37	2,439.5	105.0	38.2	-101.7	1.18	-0.25	7.11
2,538.0	8.22	27.07	2,528.5	117.1	44.3	-113.3	1.08	-1.08	0.78
2,628.0	7.47	17.75	2,617.7	128.4	49.0	-124.2	1.64	-0.83	-10.36
2,717.0	7.25	9.14	2,705.9	139.5	51.7	-135.1	1.26	-0.25	-9.67
2,803.0	7.43	8.96	2,791.2	150.3	53.4	-145.7	0.21	0.21	-0.21
2,891.0	8.13	6.33	2,878.4	162.2	55.0	-157.4	0.89	0.80	-2.99
2,981.0	8.04	4.30	2,967.5	174.8	56.1	-169.9	0.33	-0.10	-2.26
3,070.0	7.91	3.34	3,055.7	187.1	57.0	-182.1	0.21	-0.15	-1.08
3,160.0	8.04	1.40	3,144.8	199.5	57.5	-194.5	0.33	0.14	-2.16
3,249.0	8.00	1.14	3,232.9	212.0	57.7	-206.8	0.06	-0.04	-0.29
3,339.0	9.10	12.13	3,321.9	225.2	59.4	-219.9	2.18	1.22	12.21
3,429.0	8.97	11.51	3,410.8	239.0	62.3	-233.4	0.18	-0.14	-0.69
3,518.0	8.97	10.81	3,498.7	252.6	64.9	-246.8	0.12	0.00	-0.79
3,607.0	8.48	10.02	3,586.7	265.9	67.4	-259.9	0.57	-0.55	-0.89
3,697.0	7.69	7.91	3,675.8	278.4	69.4	-272.2	0.94	-0.88	-2.34
3,787.0	7.74	5.54	3,765.0	290.4	70.8	-284.0	0.36	0.06	-2.63
3,876.0	9.23	13.97	3,853.0	303.3	73.1	-296.7	2.18	1.67	9.47
3,966.0	9.36	14.76	3,941.8	317.4	76.7	-310.5	0.20	0.14	0.88
4,056.0	9.19	13.18	4,030.6	331.5	80.2	-324.2	0.34	-0.19	-1.76
4,145.0	8.92	11.60	4,118.5	345.1	83.2	-337.6	0.41	-0.30	-1.78
4,235.0	8.75	10.81	4,207.5	358.7	85.9	-350.9	0.23	-0.19	-0.88
4,325.0	8.57	8.70	4,296.4	372.0	88.2	-364.1	0.41	-0.20	-2.34
4,415.0	9.36	11.42	4,385.3	385.8	90.7	-377.6	1.00	0.88	3.02
4,504.0	9.45	12.83	4,473.2	400.1	93.7	-391.6	0.28	0.10	1.58

Marathon Oil

QES

Survey Report

QES QUINTANA ENERGY SERVICES

Company:	Marathon Oil Permian LLC	**Local Co-ordinate Reference:**	Well Mazer Rackham 20 WA Fed Com #1H
Project:	Eddy County, New Mexico (NAD 27)	**TVD Reference:**	WELL @ 2896.8usft (PD #101)
Site:	Sec 20, T26S, R29E	**MD Reference:**	WELL @ 2896.8usft (PD #101)
Well:	Mazer Rackham 20 WA Fed Com #1H	**North Reference:**	Grid
Wellbore:	Wellbore #1	**Survey Calculation Method:**	Minimum Curvature
Design:	Wellbore #1	**Database:**	EDM 5000.1 Single User Db

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,594.0	9.14	13.45	4,562.0	414.2	97.0	-405.4	0.36	-0.34	0.69
4,684.0	9.27	12.92	4,650.8	428.2	100.3	-419.1	0.17	0.14	-0.59
4,773.0	8.84	11.25	4,738.7	441.9	103.2	-432.6	0.57	-0.48	-1.88
4,863.0	8.26	10.63	4,827.7	455.1	105.8	-445.5	0.65	-0.64	-0.69
4,953.0	8.70	20.04	4,916.7	467.8	109.3	-457.9	1.62	0.49	10.46
5,042.0	8.22	18.46	5,004.8	480.2	113.6	-469.9	0.60	-0.54	-1.78
5,132.0	7.38	17.66	5,093.9	491.8	117.4	-481.2	0.94	-0.93	-0.89
5,222.0	7.16	19.25	5,183.2	502.6	121.0	-491.7	0.33	-0.24	1.77
5,312.0	7.34	6.24	5,272.5	513.6	123.5	-502.4	1.83	0.20	-14.46
5,401.0	6.55	2.02	5,360.8	524.3	124.3	-513.1	1.06	-0.89	-4.74
5,491.0	7.38	5.36	5,450.2	535.2	125.0	-523.9	1.03	0.92	3.71
5,580.0	7.47	3.69	5,538.4	546.7	125.9	-535.2	0.26	0.10	-1.88
5,670.0	8.48	14.06	5,627.6	559.0	127.9	-547.3	1.95	1.12	11.52
5,760.0	8.75	14.41	5,716.5	572.0	131.2	-560.1	0.31	0.30	0.39
5,849.0	7.91	13.09	5,804.6	584.5	134.3	-572.3	0.97	-0.94	-1.48
5,939.0	7.65	10.28	5,893.8	596.5	136.8	-584.0	0.51	-0.29	-3.12
6,028.0	7.16	9.67	5,982.0	607.8	138.8	-595.1	0.56	-0.55	-0.69
6,118.0	8.62	11.86	6,071.2	619.9	141.1	-607.0	1.66	1.62	2.43
6,207.0	7.78	11.69	6,159.3	632.3	143.7	-619.2	0.94	-0.94	-0.19
Cross 330' HL@ 6240.0' MD / 6191.9' TVD									
6,240.0	8.24	13.63	6,191.9	636.8	144.7	-623.6	1.61	1.39	5.89
6,297.0	9.05	16.52	6,248.3	645.1	146.9	-631.7	1.61	1.42	5.07
6,386.0	9.05	14.24	6,336.2	658.6	150.6	-644.9	0.40	0.00	-2.56
6,476.0	8.40	11.42	6,425.1	671.9	153.7	-657.9	0.86	-0.72	-3.13
6,566.0	10.02	14.32	6,514.0	685.9	156.9	-671.6	1.87	1.80	3.22
6,655.0	9.36	13.80	6,601.7	700.4	160.6	-685.8	0.75	-0.74	-0.58
6,745.0	8.09	10.02	6,690.7	713.8	163.4	-698.9	1.55	-1.41	-4.20
6,834.0	8.70	14.32	6,778.7	726.5	166.2	-711.3	0.98	0.69	4.83
6,923.0	8.31	10.55	6,866.7	739.3	169.0	-723.9	0.76	-0.44	-4.24
7,013.0	9.10	12.83	6,955.7	752.6	171.8	-737.0	0.96	0.88	2.53
7,102.0	7.30	12.57	7,043.8	765.0	174.6	-749.1	2.02	-2.02	-0.29
7,191.0	8.09	11.69	7,132.0	776.7	177.1	-760.6	0.90	0.89	-0.99
7,281.0	7.25	6.77	7,221.2	788.5	179.0	-772.2	1.18	-0.93	-5.47
7,371.0	7.12	9.23	7,310.5	799.7	180.6	-783.2	0.37	-0.14	2.73
7,460.0	7.52	18.54	7,398.7	810.6	183.3	-793.9	1.40	0.45	10.46
7,549.0	9.19	9.93	7,486.8	823.2	186.4	-806.2	2.34	1.88	-9.67
7,639.0	9.19	4.66	7,575.6	837.4	188.2	-820.2	0.93	0.00	-5.86
7,728.0	7.87	3.69	7,663.7	850.6	189.2	-833.3	1.49	-1.48	-1.09
7,817.0	6.20	5.10	7,752.0	861.4	190.0	-844.0	1.89	-1.88	1.58
7,907.0	3.91	21.97	7,841.6	869.1	191.6	-851.6	3.01	-2.54	18.74
7,997.0	3.30	29.18	7,931.5	874.2	194.0	-856.5	0.84	-0.68	8.01
8,086.0	2.86	19.69	8,020.3	878.6	196.0	-860.7	0.76	-0.49	-10.66
8,176.0	2.46	8.44	8,110.2	882.6	197.0	-864.6	0.73	-0.44	-12.50
8,265.0	2.37	2.11	8,199.2	886.3	197.4	-868.3	0.32	-0.10	-7.11

Marathon Oil

QES

Survey Report

QES QUINTANA ENERGY SERVICES

Company:	Marathon Oil Permian LLC	**Local Co-ordinate Reference:**	Well Mazer Rackham 20 WA Fed Com #1H
Project:	Eddy County, New Mexico (NAD 27)	**TVD Reference:**	WELL @ 2896.8usft (PD #101)
Site:	Sec 20, T26S, R29E	**MD Reference:**	WELL @ 2896.8usft (PD #101)
Well:	Mazer Rackham 20 WA Fed Com #1H	**North Reference:**	Grid
Wellbore:	Wellbore #1	**Survey Calculation Method:**	Minimum Curvature
Design:	Wellbore #1	**Database:**	EDM 5000.1 Single User Db

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
8,355.0	2.51	353.58	8,289.1	890.1	197.2	-872.1	0.43	0.16	-9.48
8,444.0	0.79	140.62	8,378.1	891.6	197.4	-873.5	3.60	-1.93	165.21
8,534.0	1.67	160.93	8,468.0	889.9	198.2	-871.8	1.08	0.98	22.57
8,623.0	1.41	170.42	8,557.0	887.6	198.8	-869.4	0.41	-0.29	10.66
8,713.0	1.27	184.13	8,647.0	885.5	198.9	-867.3	0.39	-0.16	15.23
8,802.0	1.23	185.80	8,736.0	883.5	198.8	-865.4	0.06	-0.04	1.88
8,892.0	1.32	179.56	8,825.9	881.5	198.7	-863.4	0.18	0.10	-6.93
8,981.0	1.41	168.84	8,914.9	879.4	198.9	-861.3	0.30	0.10	-12.04
9,071.0	1.10	170.15	9,004.9	877.5	199.3	-859.4	0.35	-0.34	1.46
9,160.0	1.01	172.00	9,093.9	875.9	199.5	-857.7	0.11	-0.10	2.08
9,190.0	0.97	167.52	9,123.9	875.4	199.6	-857.2	0.29	-0.13	-14.93
9,287.0	0.48	153.10	9,220.9	874.2	200.0	-856.0	0.54	-0.51	-14.87
9,382.0	2.90	22.59	9,315.8	876.1	201.1	-857.8	3.40	2.55	-137.38
9,480.0	3.65	5.01	9,413.7	881.5	202.3	-863.1	1.27	0.77	-17.94
9,575.0	10.55	181.93	9,508.2	875.8	202.3	-857.4	14.94	7.26	186.23
9,670.0	23.52	182.02	9,598.9	848.0	201.3	-829.8	13.65	13.65	0.09
9,764.0	33.98	182.81	9,681.2	802.9	199.4	-785.0	11.13	11.13	0.84
9,858.0	42.37	179.12	9,755.0	744.9	198.6	-727.2	9.25	8.93	-3.93
9,954.0	56.13	178.94	9,817.5	672.3	199.8	-654.8	14.33	14.33	-0.19
Cross 330' HL@ 9995.0' MD / 9838.6' TVD									
9,995.0	62.05	178.29	9,838.6	637.2	200.7	-619.7	14.51	14.44	-1.59
10,048.0	69.71	177.54	9,860.2	588.9	202.4	-571.4	14.51	14.45	-1.41
10,142.0	83.38	178.68	9,882.1	497.7	205.4	-480.3	14.59	14.54	1.21
10,233.0	91.30	179.47	9,886.3	406.9	206.9	-389.6	8.75	8.70	0.87
10,327.0	92.22	180.09	9,883.4	313.0	207.2	-295.9	1.18	0.98	0.66
10,422.0	91.60	179.38	9,880.2	218.0	207.7	-201.2	0.99	-0.65	-0.75
10,516.0	90.81	178.86	9,878.2	124.1	209.1	-107.4	1.01	-0.84	-0.55
10,611.0	90.24	180.70	9,877.4	29.1	209.5	-12.7	2.03	-0.60	1.94
10,706.0	89.76	181.32	9,877.4	-65.9	207.8	81.9	0.83	-0.51	0.65
10,800.0	89.36	182.11	9,878.1	-159.9	205.0	175.3	0.94	-0.43	0.84
10,895.0	89.05	181.67	9,879.4	-254.8	201.9	269.7	0.57	-0.33	-0.46
10,990.0	90.33	178.42	9,879.9	-349.8	201.8	364.4	3.68	1.35	-3.42
11,084.0	89.14	177.63	9,880.4	-443.7	205.0	458.3	1.52	-1.27	-0.84
11,177.0	90.73	178.15	9,880.5	-536.7	208.4	551.3	1.80	1.71	0.56
11,272.0	87.96	176.75	9,881.5	-631.6	212.7	646.2	3.27	-2.92	-1.47
11,367.0	89.54	178.42	9,883.6	-726.4	216.7	741.1	2.42	1.66	1.76
11,460.0	92.66	180.26	9,881.8	-819.4	217.7	833.9	3.89	3.35	1.98
11,555.0	92.66	180.35	9,877.4	-914.3	217.2	928.4	0.09	0.00	0.09
11,648.0	92.70	180.17	9,873.1	-1,007.2	216.8	1,021.0	0.20	0.04	-0.19
11,743.0	92.79	180.17	9,868.5	-1,102.1	216.5	1,115.6	0.09	0.09	0.00
11,838.0	89.36	178.86	9,866.7	-1,197.1	217.3	1,210.3	3.86	-3.61	-1.38
11,931.0	88.53	178.06	9,868.5	-1,290.0	219.8	1,303.2	1.24	-0.89	-0.86
12,026.0	89.05	178.15	9,870.5	-1,384.9	223.0	1,398.1	0.56	0.55	0.09

Marathon Oil

QES

Survey Report

QES QUINTANA ENERGY SERVICES

Company:	Marathon Oil Permian LLC	**Local Co-ordinate Reference:**	Well Mazer Rackham 20 WA Fed Com #1H
Project:	Eddy County, New Mexico (NAD 27)	**TVD Reference:**	WELL @ 2896.8usft (PD #101)
Site:	Sec 20, T26S, R29E	**MD Reference:**	WELL @ 2896.8usft (PD #101)
Well:	Mazer Rackham 20 WA Fed Com #1H	**North Reference:**	Grid
Wellbore:	Wellbore #1	**Survey Calculation Method:**	Minimum Curvature
Design:	Wellbore #1	**Database:**	EDM 5000.1 Single User Db

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
12,121.0	91.87	178.42	9,869.7	-1,479.9	225.8	1,493.0	2.98	2.97	0.28
12,215.0	87.56	178.86	9,870.2	-1,573.8	228.1	1,586.8	4.61	-4.59	0.47
12,310.0	87.03	178.15	9,874.7	-1,668.7	230.5	1,681.6	0.93	-0.56	-0.75
12,405.0	89.01	178.42	9,877.9	-1,763.6	233.4	1,776.4	2.10	2.08	0.28
12,499.0	92.31	178.68	9,876.9	-1,857.5	235.7	1,870.2	3.52	3.51	0.28
12,594.0	91.82	178.42	9,873.4	-1,952.4	238.1	1,965.0	0.58	-0.52	-0.27
12,688.0	91.47	177.71	9,870.7	-2,046.3	241.3	2,058.9	0.84	-0.37	-0.76
12,782.0	90.77	177.19	9,868.9	-2,140.2	245.5	2,152.8	0.93	-0.74	-0.55
12,877.0	93.41	179.30	9,865.4	-2,235.1	248.4	2,247.7	3.56	2.78	2.22
12,970.0	89.10	180.00	9,863.4	-2,328.1	249.0	2,340.4	4.70	-4.63	0.75
13,065.0	88.79	178.77	9,865.1	-2,423.0	250.0	2,435.1	1.34	-0.33	-1.29
13,159.0	91.30	177.10	9,865.1	-2,517.0	253.4	2,529.1	3.21	2.67	-1.78
13,253.0	93.19	178.59	9,861.4	-2,610.8	256.9	2,622.9	2.56	2.01	1.59
13,348.0	93.05	178.06	9,856.2	-2,705.6	259.7	2,717.6	0.58	-0.15	-0.56
13,443.0	93.45	177.71	9,850.8	-2,800.4	263.2	2,812.4	0.56	0.42	-0.37
13,538.0	92.40	178.42	9,846.0	-2,895.2	266.4	2,907.2	1.33	-1.11	0.75
13,632.0	88.57	178.50	9,845.2	-2,989.2	268.9	3,001.1	4.08	-4.07	0.09
13,727.0	88.79	178.15	9,847.4	-3,084.1	271.7	3,095.9	0.44	0.23	-0.37
13,821.0	87.96	177.36	9,850.0	-3,178.0	275.4	3,189.8	1.22	-0.88	-0.84
13,915.0	91.08	177.27	9,850.8	-3,271.9	279.8	3,283.7	3.32	3.32	-0.10
14,010.0	91.60	178.68	9,848.6	-3,366.8	283.1	3,378.6	1.58	0.55	1.48
14,104.0	90.73	178.42	9,846.7	-3,460.8	285.5	3,472.5	0.97	-0.93	-0.28
14,198.0	91.12	178.06	9,845.2	-3,554.7	288.4	3,566.4	0.56	0.41	-0.38
14,294.0	89.01	177.80	9,845.1	-3,650.6	291.9	3,662.3	2.21	-2.20	-0.27
14,389.0	91.25	177.54	9,844.9	-3,745.5	295.7	3,757.2	2.37	2.36	-0.27
14,484.0	90.33	176.83	9,843.5	-3,840.4	300.4	3,852.2	1.22	-0.97	-0.75
14,583.0	87.96	174.81	9,845.0	-3,939.1	307.6	3,951.1	3.15	-2.39	-2.04
Cross 330' HL@ 14591.5' MD / 9845.3' TVD									
14,591.5	87.96	174.81	9,845.3	-3,947.6	308.4	3,959.6	0.00	0.00	0.00
TD @ 14636.0' MD / 9846.9' TVD									
14,636.0	87.96	174.81	9,846.9	-3,991.9	312.4	4,004.1	0.00	0.00	0.00

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
406.0	405.9	-0.3	-6.2	Tie In @ 406.0'MD / 405.9' TVD
6,240.0	6,191.9	636.8	144.7	Cross 330' HL@ 6240.0' MD / 6191.9' TVD
9,995.0	9,838.6	637.2	200.7	Cross 330' HL@ 9995.0' MD / 9838.6' TVD
14,591.5	9,845.3	-3,947.6	308.4	Cross 330' HL@ 14591.5' MD / 9845.3' TVD
14,636.0	9,846.9	-3,991.9	312.4	TD @ 14636.0' MD / 9846.9' TVD

Marathon Oil

QES

Survey Report

QES QUINTANA ENERGY SERVICES

Company:	Marathon Oil Permian LLC	**Local Co-ordinate Reference:**	Well Mazer Rackham 20 WA Fed Com #1H
Project:	Eddy County, New Mexico (NAD 27)	**TVD Reference:**	WELL @ 2896.8usft (PD #101)
Site:	Sec 20, T26S, R29E	**MD Reference:**	WELL @ 2896.8usft (PD #101)
Well:	Mazer Rackham 20 WA Fed Com #1H	**North Reference:**	Grid
Wellbore:	Wellbore #1	**Survey Calculation Method:**	Minimum Curvature
Design:	Wellbore #1	**Database:**	EDM 5000.1 Single User Db

Sante Fe Main Office
Phone: (505) 476-3441

General Information
Phone: (505) 629-6116

Online Phone Directory
https://www.emnrd.nm.gov/ocd/contact-us

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

ACKNOWLEDGMENTS

Operator: MARATHON OIL PERMIAN LLC 990 Town & Country Blvd. Houston, TX 77024	OGRID: 372098
	Action Number: 311420
	Action Type: [C-105] Well (Re)Completion (C-105)

ACKNOWLEDGMENTS

☑	I hereby certify that the required Water Use Report has been, or will be, submitted for this wells completion.
☑	I hereby certify that the required FracFocus disclosure has been, or will be, submitted for this wells completion.
☐	I hereby certify that the rules of the Oil Conservation Division have been complied with and that the information given above is true and complete to the best of my knowledge and belief.

Sante Fe Main Office
Phone: (505) 476-3441

General Information
Phone: (505) 629-6116

Online Phone Directory
https://www.emnrd.nm.gov/ocd/contact-us

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

CONDITIONS

Action 311420

CONDITIONS

Operator: MARATHON OIL PERMIAN LLC 990 Town & Country Blvd. Houston, TX 77024	OGRID: 372098
	Action Number: 311420
	Action Type: [C-105] Well (Re)Completion (C-105)

CONDITIONS

Created By	Condition	Condition Date
plmartinez	None	5/6/2025