

District I

1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720

District II

811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720

District III

1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170

District IV

1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

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

Form C-101
August 1, 2011

Permit 274805

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

1. Operator Name and Address MARATHON OIL PERMIAN LLC 5555 San Felipe St. Houston, TX 77056		2. OGRID Number 372098
4. Property Code 326340		3. API Number 30-025-46535
5. Property Name MEAD WEST 32 WFB STATE		6. Well No. 006H

7. Surface Location

UL - Lot N	Section 32	Township 19S	Range 35E	Lot Idn N	Feet From 274	N/S Line S	Feet From 1400	E/W Line W	County Lea
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8. Proposed Bottom Hole Location

UL - Lot C	Section 32	Township 19S	Range 35E	Lot Idn C	Feet From 100	N/S Line N	Feet From 1980	E/W Line W	County Lea
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9. Pool Information

KLEIN RANCH;WOLFCAMP	96989
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Additional Well Information

11. Work Type New Well	12. Well Type OIL	13. Cable/Rotary	14. Lease Type State	15. Ground Level Elevation 3695
16. Multiple N	17. Proposed Depth 16108	18. Formation Wolfcamp	19. Contractor	20. Spud Date 10/22/2019
Depth to Ground water		Distance from nearest fresh water well		Distance to nearest surface water

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

21. Proposed Casing and Cement Program

Type	Hole Size	Casing Size	Casing Weight/ft	Setting Depth	Sacks of Cement	Estimated TOC
Surf	17.5	13.375	54.5	1950	1986	0
Int1	12.25	9.625	36	4500	1462	0
Prod	8.75	5.5	20	16108	2487	3500

Casing/Cement Program: Additional Comments

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22. Proposed Blowout Prevention Program

Type	Working Pressure	Test Pressure	Manufacturer
Annular	5000	2500	
Double Ram	5000	5000	
Pipe	5000	5000	
Blind	5000	5000	

23. I hereby certify that the information given above is true and complete to the best of my knowledge and belief.
I further certify I have complied with 19.15.14.9 (A) NMAC ☒ and/or 19.15.14.9 (B) NMAC ☒ if applicable.

OIL CONSERVATION DIVISION

Signature:

Printed Name: Electronically filed by Melissa Szudera

Approved By: Paul F Kautz

Title: Regulatory Compliance Representative

Title: Geologist

Email Address: mszudera@marathonoil.com

Approved Date: 11/25/2019

Expiration Date: 11/25/2021

Date: 11/18/2019

Phone: 713-296-3179

Conditions of Approval Attached

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

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

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number	² Pool Code 98098	³ Pool Name WOLFBONE
⁴ Property Code	⁵ Property Name MEAD WEST 32 WFB STATE	⁶ Well Number 6H
⁷ OGRID No. 372098	⁸ Operator Name MARATHON OIL PERMIAN, LLC	⁹ Elevation 3,695'

¹⁰ Surface Location

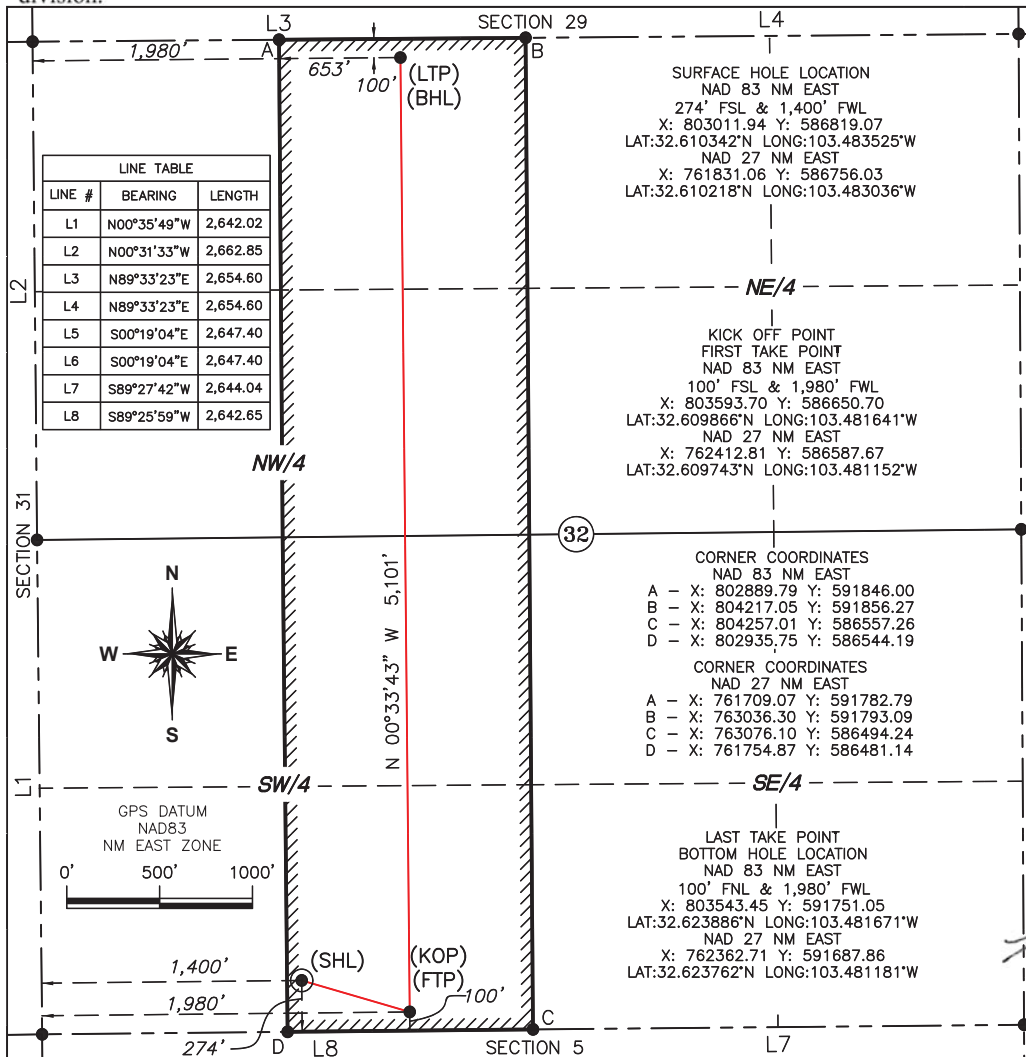
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
N	32	19-S	35-E		274'	SOUTH	1,400'	WEST	LEA

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	32	19-S	35-E		100'	NORTH	1,980'	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.



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: *Adrian Covarrubias* Date: 11/18/2019

Printed Name: Adrian Covarrubias

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.

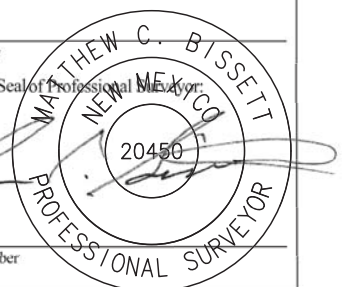
10/14/19

Date of Survey

Signature and Seal of Professional Surveyor:

20450

Certificate Number



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Energy, Minerals and Natural Resources
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GAS CAPTURE PLAN

Date: 11/25/2019

☒ Original

Operator & OGRID No.: [372098] MARATHON OIL PERMIAN LLC

☐ Amended - Reason for
Amendment: _____

This Gas Capture Plan outlines actions to be taken by the Operator to reduce well/production facility flaring/venting for new completion (new drill, recomple to new zone, re-frac) activity.

Note: Form C-129 must be submitted and approved prior to exceeding 60 days allowed by Rule (Subsection A of 19.15.18.12 NMAC).

Well(s)/Production Facility – Name of facility

The well(s) that will be located at the production facility are shown in the table below.

Well Name	API	Well Location (ULSTR)	Footages	Expected MCF/D	Flared or Vented	Comments
MEAD WEST 32 WFB STATE #006H	30-025-46535	N-32-19S-35E	0274S 1400W	1200	Flared	

Gathering System and Pipeline Notification

Well(s) will be connected to a production facility after flowback operations are complete, if gas transporter system is in place. The gas produced from production facility is dedicated to LUCID ENERGY DELAWARE, LLC and will be connected to LUCID ENERGY DELAWARE, LLC Low Pressure gathering system located in Lea County, New Mexico. It will require 5280' of pipeline to connect the facility to Low Pressure gathering system. MARATHON OIL PERMIAN LLC provides (periodically) to LUCID ENERGY DELAWARE, LLC a drilling, completion and estimated first production date for wells that are scheduled to be drilled in the foreseeable future. In addition, MARATHON OIL PERMIAN LLC and LUCID ENERGY DELAWARE, LLC have periodic conference calls to discuss changes to drilling and completion schedules. Gas from these wells will be processed at LUCID ENERGY DELAWARE, LLC Processing Plant located in Sec. 13, Twn. 24S, Rng. 33E, Lea County, New Mexico. The actual flow of the gas will be based on compression operating parameters and gathering system pressures.

Flowback Strategy

After the fracture treatment/completion operations, well(s) will be produced to temporary production tanks and gas will be flared or vented. During flowback, the fluids and sand content will be monitored. When the produced fluids contain minimal sand, the wells will be turned to production facilities. Gas sales should start as soon as the wells start flowing through the production facilities, unless there are operational issues on LUCID ENERGY DELAWARE, LLC system at that time. Based on current information, it is MARATHON OIL PERMIAN LLC's belief the system can take this gas upon completion of the well(s).

Safety requirements during cleanout operations from the use of underbalanced air cleanout systems may necessitate that sand and non-pipeline quality gas be vented and/or flared rather than sold on a temporary basis.

Alternatives to Reduce Flaring

Below are alternatives considered from a conceptual standpoint to reduce the amount of gas flared.

- Power Generation – On lease
 - Only a portion of gas is consumed operating the generator, remainder of gas will be flared
- Compressed Natural Gas – On lease
 - Gas flared would be minimal, but might be uneconomical to operate when gas volume declines
- NGL Removal – On lease
 - Plants are expensive, residue gas is still flared, and uneconomical to operate when gas volume declines

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Form APD Comments

Permit 274805

PERMIT COMMENTS

Operator Name and Address: MARATHON OIL PERMIAN LLC [372098] 5555 San Felipe St. Houston, TX 77056	API Number: 30-025-46535
	Well: MEAD WEST 32 WFB STATE #006H

Created By	Comment	Comment Date
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Form APD Conditions

Permit 274805

PERMIT CONDITIONS OF APPROVAL

Operator Name and Address: MARATHON OIL PERMIAN LLC [372098] 5555 San Felipe St. Houston, TX 77056	API Number: 30-025-46535
	Well: MEAD WEST 32 WFB STATE #006H

OCD Reviewer	Condition
pkautz	Will require a directional survey with the C-104
pkautz	1) SURFACE & INTERMEDIATE CASING - Cement must circulate to surface -- 2) PRODUCTION CASING - Cement must tie back into intermediate casing --
pkautz	If cement does not circulate to surface, must run temperature survey or other log to determine top of cement
pkautz	Surface casing must be set 25' below top of Rustler Anhydrite in order to seal off protectable water
pkautz	1)- The Operator is to notify NMOC by sundry (Form C-103) within ten (10) days of the well being spud 2)- Drilling Sundries Form C-103 (Casing and Cement test are to be submitted within 10 days 3)- Completion Reports & Logs are to be submitted within 45 days 4)- Deviation / Directional Drill Survey are to be filed with or prior to C-104
pkautz	It is the operator's responsibility to monitor cancellation dates of approved APDs. APD's are good for 2 years and may be extended for one year. Only one 1 year extension will be granted if submitted by C-103 before expiration date. After expiration date or after a 1 year extension must submit new APD. If an APD expires and if site construction has occurred, site remediation is required.
pkautz	Stage Tool 1) Must notify OCD Hobbs Office prior to running Stage Tool at 5753703186 2) If using Stage Tool on Surface casing, Stage Tool must be set greater than 350' from surface and a minimum of 200 feet above surface shoe. 3) When using a Stage Tool on Intermediate or Production Casing Stage must be a minimum of 50 feet below previous casing shoe.



Pro Directional Survey Report



Company:	Marathon Oil	Local Co-ordinate Reference:	Well WFB #6H
Project:	Lea County, NM	TVD Reference:	well @ 3525.00usft
Site:	Mead West 32 (5-6)	MD Reference:	well @ 3525.00usft
Well:	WFB #6H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Prelim Plan A	Database:	WellPlanner1

Project		Lea County, NM	
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		Mead West 32 (5-6)			
Site Position:		Northing:	586,756.00 usft	Latitude:	32.610219
From:	Map	Easting:	761,801.00 usft	Longitude:	-103.483134
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.46 °

Well	WFB #6H					
Well Position	+N/-S	0.00 usft	Northing:	586,756.00 usft	Latitude:	32.610218
	+E/-W	0.00 usft	Easting:	761,831.00 usft	Longitude:	-103.483037
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	3,500.00 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	11/12/2019	6.47	60.50	48,021.00

Design	Prelim Plan A			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	359.44

Survey Tool Program		Date	11/12/2019	
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.00	16,113.26	Prelim Plan A (OH)	MWD+IFR1	OWSG MWD + IFR1

Planned 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)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00



Pro Directional Survey Report



Company:	Marathon Oil	Local Co-ordinate Reference:	Well WFB #6H
Project:	Lea County, NM	TVD Reference:	well @ 3525.00usft
Site:	Mead West 32 (5-6)	MD Reference:	well @ 3525.00usft
Well:	WFB #6H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Prelim Plan A	Database:	WellPlanner1

Planned 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)
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	2.00	106.22	1,599.98	-0.49	1.68	-0.50	2.00	2.00	0.00
1,700.00	4.00	106.22	1,699.84	-1.95	6.70	-2.01	2.00	2.00	0.00
1,800.00	6.00	106.22	1,799.45	-4.38	15.07	-4.53	2.00	2.00	0.00
1,900.00	8.00	106.22	1,898.70	-7.79	26.77	-8.05	2.00	2.00	0.00
2,000.00	10.00	106.22	1,997.47	-12.16	41.79	-12.56	2.00	2.00	0.00
2,100.00	10.00	106.22	2,095.95	-17.01	58.46	-17.58	0.00	0.00	0.00
2,200.00	10.00	106.22	2,194.43	-21.86	75.14	-22.59	0.00	0.00	0.00
2,300.00	10.00	106.22	2,292.91	-26.71	91.81	-27.60	0.00	0.00	0.00
2,400.00	10.00	106.22	2,391.39	-31.56	108.49	-32.61	0.00	0.00	0.00
2,500.00	10.00	106.22	2,489.87	-36.41	125.16	-37.63	0.00	0.00	0.00
2,600.00	10.00	106.22	2,588.35	-41.26	141.83	-42.64	0.00	0.00	0.00
2,700.00	10.00	106.22	2,686.83	-46.11	158.51	-47.65	0.00	0.00	0.00
2,800.00	10.00	106.22	2,785.31	-50.96	175.18	-52.67	0.00	0.00	0.00
2,900.00	10.00	106.22	2,883.79	-55.81	191.85	-57.68	0.00	0.00	0.00
3,000.00	10.00	106.22	2,982.27	-60.66	208.53	-62.69	0.00	0.00	0.00
3,100.00	10.00	106.22	3,080.75	-65.51	225.20	-67.70	0.00	0.00	0.00
3,200.00	10.00	106.22	3,179.23	-70.36	241.88	-72.72	0.00	0.00	0.00
3,300.00	10.00	106.22	3,277.72	-75.21	258.55	-77.73	0.00	0.00	0.00
3,400.00	10.00	106.22	3,376.20	-80.06	275.22	-82.74	0.00	0.00	0.00
3,500.00	10.00	106.22	3,474.68	-84.91	291.90	-87.76	0.00	0.00	0.00
3,600.00	10.00	106.22	3,573.16	-89.76	308.57	-92.77	0.00	0.00	0.00
3,700.00	10.00	106.22	3,671.64	-94.61	325.24	-97.78	0.00	0.00	0.00
3,800.00	10.00	106.22	3,770.12	-99.46	341.92	-102.79	0.00	0.00	0.00
3,900.00	10.00	106.22	3,868.60	-104.31	358.59	-107.81	0.00	0.00	0.00
4,000.00	10.00	106.22	3,967.08	-109.16	375.27	-112.82	0.00	0.00	0.00
4,100.00	10.00	106.22	4,065.56	-114.01	391.94	-117.83	0.00	0.00	0.00
4,200.00	10.00	106.22	4,164.04	-118.86	408.61	-122.84	0.00	0.00	0.00
4,300.00	10.00	106.22	4,262.52	-123.71	425.29	-127.86	0.00	0.00	0.00
4,400.00	10.00	106.22	4,361.00	-128.56	441.96	-132.87	0.00	0.00	0.00
4,500.00	10.00	106.22	4,459.48	-133.41	458.63	-137.88	0.00	0.00	0.00
4,600.00	10.00	106.22	4,557.97	-138.26	475.31	-142.90	0.00	0.00	0.00
4,700.00	10.00	106.22	4,656.45	-143.11	491.98	-147.91	0.00	0.00	0.00
4,800.00	10.00	106.22	4,754.93	-147.96	508.66	-152.92	0.00	0.00	0.00
4,900.00	10.00	106.22	4,853.41	-152.81	525.33	-157.93	0.00	0.00	0.00
4,983.24	10.00	106.22	4,935.39	-156.84	539.21	-162.11	0.00	0.00	0.00
5,000.00	9.66	106.22	4,951.90	-157.64	541.96	-162.93	2.00	-2.00	0.00
5,100.00	7.66	106.22	5,050.75	-161.85	556.42	-167.28	2.00	-2.00	0.00
5,200.00	5.66	106.22	5,150.07	-165.09	567.57	-170.63	2.00	-2.00	0.00



Pro Directional Survey Report



Company:	Marathon Oil	Local Co-ordinate Reference:	Well WFB #6H
Project:	Lea County, NM	TVD Reference:	well @ 3525.00usft
Site:	Mead West 32 (5-6)	MD Reference:	well @ 3525.00usft
Well:	WFB #6H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Prelim Plan A	Database:	WellPlanner1

Planned 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)
5,300.00	3.66	106.22	5,249.73	-167.36	575.37	-172.98	2.00	-2.00	0.00
5,400.00	1.66	106.22	5,349.62	-168.66	579.84	-174.32	2.00	-2.00	0.00
5,483.24	0.00	0.00	5,432.85	-169.00	581.00	-174.67	2.00	-2.00	0.00
5,500.00	0.00	0.00	5,449.61	-169.00	581.00	-174.67	0.00	0.00	0.00
5,600.00	0.00	0.00	5,549.61	-169.00	581.00	-174.67	0.00	0.00	0.00
5,700.00	0.00	0.00	5,649.61	-169.00	581.00	-174.67	0.00	0.00	0.00
5,800.00	0.00	0.00	5,749.61	-169.00	581.00	-174.67	0.00	0.00	0.00
5,900.00	0.00	0.00	5,849.61	-169.00	581.00	-174.67	0.00	0.00	0.00
6,000.00	0.00	0.00	5,949.61	-169.00	581.00	-174.67	0.00	0.00	0.00
6,100.00	0.00	0.00	6,049.61	-169.00	581.00	-174.67	0.00	0.00	0.00
6,200.00	0.00	0.00	6,149.61	-169.00	581.00	-174.67	0.00	0.00	0.00
6,300.00	0.00	0.00	6,249.61	-169.00	581.00	-174.67	0.00	0.00	0.00
6,400.00	0.00	0.00	6,349.61	-169.00	581.00	-174.67	0.00	0.00	0.00
6,500.00	0.00	0.00	6,449.61	-169.00	581.00	-174.67	0.00	0.00	0.00
6,600.00	0.00	0.00	6,549.61	-169.00	581.00	-174.67	0.00	0.00	0.00
6,700.00	0.00	0.00	6,649.61	-169.00	581.00	-174.67	0.00	0.00	0.00
6,800.00	0.00	0.00	6,749.61	-169.00	581.00	-174.67	0.00	0.00	0.00
6,900.00	0.00	0.00	6,849.61	-169.00	581.00	-174.67	0.00	0.00	0.00
7,000.00	0.00	0.00	6,949.61	-169.00	581.00	-174.67	0.00	0.00	0.00
7,100.00	0.00	0.00	7,049.61	-169.00	581.00	-174.67	0.00	0.00	0.00
7,200.00	0.00	0.00	7,149.61	-169.00	581.00	-174.67	0.00	0.00	0.00
7,300.00	0.00	0.00	7,249.61	-169.00	581.00	-174.67	0.00	0.00	0.00
7,400.00	0.00	0.00	7,349.61	-169.00	581.00	-174.67	0.00	0.00	0.00
7,500.00	0.00	0.00	7,449.61	-169.00	581.00	-174.67	0.00	0.00	0.00
7,600.00	0.00	0.00	7,549.61	-169.00	581.00	-174.67	0.00	0.00	0.00
7,700.00	0.00	0.00	7,649.61	-169.00	581.00	-174.67	0.00	0.00	0.00
7,800.00	0.00	0.00	7,749.61	-169.00	581.00	-174.67	0.00	0.00	0.00
7,900.00	0.00	0.00	7,849.61	-169.00	581.00	-174.67	0.00	0.00	0.00
8,000.00	0.00	0.00	7,949.61	-169.00	581.00	-174.67	0.00	0.00	0.00
8,100.00	0.00	0.00	8,049.61	-169.00	581.00	-174.67	0.00	0.00	0.00
8,200.00	0.00	0.00	8,149.61	-169.00	581.00	-174.67	0.00	0.00	0.00
8,300.00	0.00	0.00	8,249.61	-169.00	581.00	-174.67	0.00	0.00	0.00
8,400.00	0.00	0.00	8,349.61	-169.00	581.00	-174.67	0.00	0.00	0.00
8,500.00	0.00	0.00	8,449.61	-169.00	581.00	-174.67	0.00	0.00	0.00
8,600.00	0.00	0.00	8,549.61	-169.00	581.00	-174.67	0.00	0.00	0.00
8,700.00	0.00	0.00	8,649.61	-169.00	581.00	-174.67	0.00	0.00	0.00
8,800.00	0.00	0.00	8,749.61	-169.00	581.00	-174.67	0.00	0.00	0.00
8,900.00	0.00	0.00	8,849.61	-169.00	581.00	-174.67	0.00	0.00	0.00
9,000.00	0.00	0.00	8,949.61	-169.00	581.00	-174.67	0.00	0.00	0.00
9,100.00	0.00	0.00	9,049.61	-169.00	581.00	-174.67	0.00	0.00	0.00
9,200.00	0.00	0.00	9,149.61	-169.00	581.00	-174.67	0.00	0.00	0.00
9,300.00	0.00	0.00	9,249.61	-169.00	581.00	-174.67	0.00	0.00	0.00
9,400.00	0.00	0.00	9,349.61	-169.00	581.00	-174.67	0.00	0.00	0.00



Pro Directional Survey Report



Company:	Marathon Oil	Local Co-ordinate Reference:	Well WFB #6H
Project:	Lea County, NM	TVD Reference:	well @ 3525.00usft
Site:	Mead West 32 (5-6)	MD Reference:	well @ 3525.00usft
Well:	WFB #6H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Prelim Plan A	Database:	WellPlanner1

Planned 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)
9,500.00	0.00	0.00	9,449.61	-169.00	581.00	-174.67	0.00	0.00	0.00
9,600.00	0.00	0.00	9,549.61	-169.00	581.00	-174.67	0.00	0.00	0.00
9,700.00	0.00	0.00	9,649.61	-169.00	581.00	-174.67	0.00	0.00	0.00
9,800.00	0.00	0.00	9,749.61	-169.00	581.00	-174.67	0.00	0.00	0.00
9,900.00	0.00	0.00	9,849.61	-169.00	581.00	-174.67	0.00	0.00	0.00
10,000.00	0.00	0.00	9,949.61	-169.00	581.00	-174.67	0.00	0.00	0.00
10,100.00	0.00	0.00	10,049.61	-169.00	581.00	-174.67	0.00	0.00	0.00
10,200.00	0.00	0.00	10,149.61	-169.00	581.00	-174.67	0.00	0.00	0.00
10,300.00	0.00	0.00	10,249.61	-169.00	581.00	-174.67	0.00	0.00	0.00
10,400.00	0.00	0.00	10,349.61	-169.00	581.00	-174.67	0.00	0.00	0.00
10,500.00	0.00	0.00	10,449.61	-169.00	581.00	-174.67	0.00	0.00	0.00
10,600.00	0.00	0.00	10,549.61	-169.00	581.00	-174.67	0.00	0.00	0.00
10,700.00	0.00	0.00	10,649.61	-169.00	581.00	-174.67	0.00	0.00	0.00
10,737.89	0.00	0.00	10,687.50	-169.00	581.00	-174.67	0.00	0.00	0.00
[MeadW32#6H]PP/FTP									
10,750.00	1.45	359.44	10,699.61	-168.85	581.00	-174.52	12.00	12.00	0.00
10,775.00	4.45	359.44	10,724.57	-167.56	580.99	-173.23	12.00	12.00	0.00
10,800.00	7.45	359.44	10,749.43	-164.97	580.96	-170.64	12.00	12.00	0.00
10,825.00	10.45	359.44	10,774.13	-161.08	580.92	-166.75	12.00	12.00	0.00
10,850.00	13.45	359.44	10,798.58	-155.90	580.87	-161.57	12.00	12.00	0.00
10,875.00	16.45	359.44	10,822.73	-149.45	580.81	-155.12	12.00	12.00	0.00
10,900.00	19.45	359.44	10,846.51	-141.75	580.73	-147.41	12.00	12.00	0.00
10,925.00	22.45	359.44	10,869.86	-132.81	580.65	-138.48	12.00	12.00	0.00
10,950.00	25.45	359.44	10,892.70	-122.66	580.55	-128.33	12.00	12.00	0.00
10,975.00	28.45	359.44	10,914.98	-111.33	580.43	-117.00	12.00	12.00	0.00
11,000.00	31.45	359.44	10,936.64	-98.85	580.31	-104.52	12.00	12.00	0.00
11,025.00	34.45	359.44	10,957.62	-85.25	580.18	-90.92	12.00	12.00	0.00
11,050.00	37.45	359.44	10,977.85	-70.58	580.04	-76.24	12.00	12.00	0.00
11,075.00	40.45	359.44	10,997.29	-54.86	579.88	-60.53	12.00	12.00	0.00
11,100.00	43.45	359.44	11,015.88	-38.15	579.72	-43.82	12.00	12.00	0.00
11,125.00	46.45	359.44	11,033.57	-20.49	579.54	-26.15	12.00	12.00	0.00
11,150.00	49.45	359.44	11,050.31	-1.93	579.36	-7.59	12.00	12.00	0.00
11,175.00	52.45	359.44	11,066.06	17.48	579.17	11.82	12.00	12.00	0.00
11,200.00	55.45	359.44	11,080.77	37.69	578.97	32.03	12.00	12.00	0.00
11,225.00	58.45	359.44	11,094.40	58.65	578.77	52.99	12.00	12.00	0.00
11,250.00	61.45	359.44	11,106.92	80.28	578.56	74.62	12.00	12.00	0.00
11,275.00	64.45	359.44	11,118.28	102.54	578.34	96.89	12.00	12.00	0.00
11,300.00	67.45	359.44	11,128.47	125.37	578.11	119.71	12.00	12.00	0.00
11,325.00	70.45	359.44	11,137.45	148.70	577.89	143.04	12.00	12.00	0.00
11,350.00	73.45	359.44	11,145.19	172.47	577.65	166.81	12.00	12.00	0.00
11,375.00	76.45	359.44	11,151.68	196.60	577.42	190.95	12.00	12.00	0.00
11,400.00	79.45	359.44	11,156.90	221.05	577.18	215.40	12.00	12.00	0.00
11,425.00	82.45	359.44	11,160.83	245.74	576.93	240.08	12.00	12.00	0.00
11,450.00	85.45	359.44	11,163.46	270.59	576.69	264.94	12.00	12.00	0.00



Pro Directional Survey Report



Company:	Marathon Oil	Local Co-ordinate Reference:	Well WFB #6H
Project:	Lea County, NM	TVD Reference:	well @ 3525.00usft
Site:	Mead West 32 (5-6)	MD Reference:	well @ 3525.00usft
Well:	WFB #6H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Prelim Plan A	Database:	WellPlanner1

Planned 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)
11,475.00	88.45	359.44	11,164.79	295.55	576.45	289.90	12.00	12.00	0.00
11,500.40	91.50	359.44	11,164.80	320.95	576.20	315.30	12.00	12.00	0.00
11,600.00	91.50	359.44	11,162.19	420.51	575.22	414.87	0.00	0.00	0.00
11,700.00	91.50	359.44	11,159.57	520.47	574.24	514.83	0.00	0.00	0.00
11,800.00	91.50	359.44	11,156.95	620.43	573.26	614.80	0.00	0.00	0.00
11,900.00	91.50	359.44	11,154.34	720.39	572.28	714.76	0.00	0.00	0.00
12,000.00	91.50	359.44	11,151.72	820.35	571.30	814.73	0.00	0.00	0.00
12,100.00	91.50	359.44	11,149.10	920.31	570.32	914.70	0.00	0.00	0.00
12,200.00	91.50	359.44	11,146.48	1,020.27	569.34	1,014.66	0.00	0.00	0.00
12,300.00	91.50	359.44	11,143.86	1,120.24	568.36	1,114.63	0.00	0.00	0.00
12,400.00	91.50	359.44	11,141.24	1,220.20	567.38	1,214.59	0.00	0.00	0.00
12,500.00	91.50	359.44	11,138.62	1,320.16	566.40	1,314.56	0.00	0.00	0.00
12,600.00	91.50	359.44	11,136.00	1,420.12	565.42	1,414.52	0.00	0.00	0.00
12,700.00	91.50	359.44	11,133.38	1,520.08	564.44	1,514.49	0.00	0.00	0.00
12,800.00	91.50	359.44	11,130.76	1,620.04	563.46	1,614.46	0.00	0.00	0.00
12,900.00	91.50	359.44	11,128.15	1,720.00	562.48	1,714.42	0.00	0.00	0.00
13,000.00	91.50	359.44	11,125.53	1,819.96	561.50	1,814.39	0.00	0.00	0.00
13,100.00	91.50	359.44	11,122.91	1,919.92	560.52	1,914.35	0.00	0.00	0.00
13,200.00	91.50	359.44	11,120.29	2,019.88	559.54	2,014.32	0.00	0.00	0.00
13,300.00	91.50	359.44	11,117.67	2,119.84	558.56	2,114.28	0.00	0.00	0.00
13,400.00	91.50	359.44	11,115.05	2,219.81	557.58	2,214.25	0.00	0.00	0.00
13,500.00	91.50	359.44	11,112.43	2,319.77	556.61	2,314.22	0.00	0.00	0.00
13,600.00	91.50	359.44	11,109.81	2,419.73	555.63	2,414.18	0.00	0.00	0.00
13,700.00	91.50	359.44	11,107.19	2,519.69	554.65	2,514.15	0.00	0.00	0.00
13,800.00	91.50	359.44	11,104.57	2,619.65	553.67	2,614.11	0.00	0.00	0.00
13,900.00	91.50	359.44	11,101.96	2,719.61	552.69	2,714.08	0.00	0.00	0.00
14,000.00	91.50	359.44	11,099.34	2,819.57	551.71	2,814.04	0.00	0.00	0.00
14,100.00	91.50	359.44	11,096.72	2,919.53	550.73	2,914.01	0.00	0.00	0.00
14,200.00	91.50	359.44	11,094.10	3,019.49	549.75	3,013.98	0.00	0.00	0.00
14,300.00	91.50	359.44	11,091.48	3,119.45	548.77	3,113.94	0.00	0.00	0.00
14,400.00	91.50	359.44	11,088.86	3,219.41	547.79	3,213.91	0.00	0.00	0.00
14,500.00	91.50	359.44	11,086.24	3,319.38	546.81	3,313.87	0.00	0.00	0.00
14,600.00	91.50	359.44	11,083.62	3,419.34	545.83	3,413.84	0.00	0.00	0.00
14,700.00	91.50	359.44	11,081.00	3,519.30	544.85	3,513.80	0.00	0.00	0.00
14,800.00	91.50	359.44	11,078.38	3,619.26	543.87	3,613.77	0.00	0.00	0.00
14,900.00	91.50	359.44	11,075.77	3,719.22	542.89	3,713.74	0.00	0.00	0.00
15,000.00	91.50	359.44	11,073.15	3,819.18	541.91	3,813.70	0.00	0.00	0.00
15,100.00	91.50	359.44	11,070.53	3,919.14	540.93	3,913.67	0.00	0.00	0.00
15,200.00	91.50	359.44	11,067.91	4,019.10	539.95	4,013.63	0.00	0.00	0.00
15,300.00	91.50	359.44	11,065.29	4,119.06	538.97	4,113.60	0.00	0.00	0.00
15,400.00	91.50	359.44	11,062.67	4,219.02	537.99	4,213.56	0.00	0.00	0.00
15,500.00	91.50	359.44	11,060.05	4,318.98	537.01	4,313.53	0.00	0.00	0.00
15,600.00	91.50	359.44	11,057.43	4,418.95	536.03	4,413.50	0.00	0.00	0.00



Pro Directional Survey Report



Company:	Marathon Oil	Local Co-ordinate Reference:	Well WFB #6H
Project:	Lea County, NM	TVD Reference:	well @ 3525.00usft
Site:	Mead West 32 (5-6)	MD Reference:	well @ 3525.00usft
Well:	WFB #6H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Prelim Plan A	Database:	WellPlanner1

Planned 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)	
15,700.00	91.50	359.44	11,054.81	4,518.91	535.05	4,513.46	0.00	0.00	0.00	
15,800.00	91.50	359.44	11,052.19	4,618.87	534.07	4,613.43	0.00	0.00	0.00	
15,900.00	91.50	359.44	11,049.58	4,718.83	533.09	4,713.39	0.00	0.00	0.00	
16,000.00	91.50	359.44	11,046.96	4,818.79	532.11	4,813.36	0.00	0.00	0.00	
16,100.00	91.50	359.44	11,044.34	4,918.75	531.13	4,913.32	0.00	0.00	0.00	
16,113.26	91.50	359.44	11,043.99	4,932.00	531.00	4,926.57	0.00	0.00	0.00	
[MeadW32#6H]LTP/BHL										

Design Targets										
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
[MeadW32#6H]PP/FTP	0.00	0.00	10,687.5 0	-169.00	581.00	586,587.00	762,412.00	32.609741	-103.481155	
- plan hits target center										
- Point										
[MeadW32#6H]LTP/BHL	0.00	0.00	11,043.99	4,932.00	531.00	591,688.00	762,362.00	32.623762	-103.481184	
- plan hits target center										
- Point										

Checked By: _____ Approved By: _____ Date: _____



Pro Directional Survey Report



Company:	Marathon Oil	Local Co-ordinate Reference:	Well WFB #6H
Project:	Lea County, NM	TVD Reference:	well @ 3525.00usft
Site:	Mead West 32 (5-6)	MD Reference:	well @ 3525.00usft
Well:	WFB #6H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Prelim Plan A	Database:	WellPlanner1

Project	Lea County, NM		
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		Mead West 32 (5-6)			
Site Position:		Northing:	586,756.00 usft	Latitude:	32.610219
From:	Map	Easting:	761,801.00 usft	Longitude:	-103.483134
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.46 °

Well	WFB #6H					
Well Position	+N/-S	0.00 usft	Northing:	586,756.00 usft	Latitude:	32.610218
	+E/-W	0.00 usft	Easting:	761,831.00 usft	Longitude:	-103.483037
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	3,500.00 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	11/12/2019	6.47	60.50	48,021.00

Design	Prelim Plan A				
Audit Notes:					
Version:	Phase:	PLAN	Tie On Depth:	0.00	
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.00	0.00	0.00	359.44	

Survey Tool Program	Date	11/12/2019			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
0.00	16,113.26	Prelim Plan A (OH)	MWD+IFR1	OWSG MWD + IFR1	

Planned 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)	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00	
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00	
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00	
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00	
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00	
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00	
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00	



Pro Directional Survey Report



Company:	Marathon Oil	Local Co-ordinate Reference:	Well WFB #6H
Project:	Lea County, NM	TVD Reference:	well @ 3525.00usft
Site:	Mead West 32 (5-6)	MD Reference:	well @ 3525.00usft
Well:	WFB #6H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Prelim Plan A	Database:	WellPlanner1

Planned 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)
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	2.00	106.22	1,599.98	-0.49	1.68	-0.50	2.00	2.00	0.00
1,700.00	4.00	106.22	1,699.84	-1.95	6.70	-2.01	2.00	2.00	0.00
1,800.00	6.00	106.22	1,799.45	-4.38	15.07	-4.53	2.00	2.00	0.00
1,900.00	8.00	106.22	1,898.70	-7.79	26.77	-8.05	2.00	2.00	0.00
2,000.00	10.00	106.22	1,997.47	-12.16	41.79	-12.56	2.00	2.00	0.00
2,100.00	10.00	106.22	2,095.95	-17.01	58.46	-17.58	0.00	0.00	0.00
2,200.00	10.00	106.22	2,194.43	-21.86	75.14	-22.59	0.00	0.00	0.00
2,300.00	10.00	106.22	2,292.91	-26.71	91.81	-27.60	0.00	0.00	0.00
2,400.00	10.00	106.22	2,391.39	-31.56	108.49	-32.61	0.00	0.00	0.00
2,500.00	10.00	106.22	2,489.87	-36.41	125.16	-37.63	0.00	0.00	0.00
2,600.00	10.00	106.22	2,588.35	-41.26	141.83	-42.64	0.00	0.00	0.00
2,700.00	10.00	106.22	2,686.83	-46.11	158.51	-47.65	0.00	0.00	0.00
2,800.00	10.00	106.22	2,785.31	-50.96	175.18	-52.67	0.00	0.00	0.00
2,900.00	10.00	106.22	2,883.79	-55.81	191.85	-57.68	0.00	0.00	0.00
3,000.00	10.00	106.22	2,982.27	-60.66	208.53	-62.69	0.00	0.00	0.00
3,100.00	10.00	106.22	3,080.75	-65.51	225.20	-67.70	0.00	0.00	0.00
3,200.00	10.00	106.22	3,179.23	-70.36	241.88	-72.72	0.00	0.00	0.00
3,300.00	10.00	106.22	3,277.72	-75.21	258.55	-77.73	0.00	0.00	0.00
3,400.00	10.00	106.22	3,376.20	-80.06	275.22	-82.74	0.00	0.00	0.00
3,500.00	10.00	106.22	3,474.68	-84.91	291.90	-87.76	0.00	0.00	0.00
3,600.00	10.00	106.22	3,573.16	-89.76	308.57	-92.77	0.00	0.00	0.00
3,700.00	10.00	106.22	3,671.64	-94.61	325.24	-97.78	0.00	0.00	0.00
3,800.00	10.00	106.22	3,770.12	-99.46	341.92	-102.79	0.00	0.00	0.00
3,900.00	10.00	106.22	3,868.60	-104.31	358.59	-107.81	0.00	0.00	0.00
4,000.00	10.00	106.22	3,967.08	-109.16	375.27	-112.82	0.00	0.00	0.00
4,100.00	10.00	106.22	4,065.56	-114.01	391.94	-117.83	0.00	0.00	0.00
4,200.00	10.00	106.22	4,164.04	-118.86	408.61	-122.84	0.00	0.00	0.00
4,300.00	10.00	106.22	4,262.52	-123.71	425.29	-127.86	0.00	0.00	0.00
4,400.00	10.00	106.22	4,361.00	-128.56	441.96	-132.87	0.00	0.00	0.00
4,500.00	10.00	106.22	4,459.48	-133.41	458.63	-137.88	0.00	0.00	0.00
4,600.00	10.00	106.22	4,557.97	-138.26	475.31	-142.90	0.00	0.00	0.00
4,700.00	10.00	106.22	4,656.45	-143.11	491.98	-147.91	0.00	0.00	0.00
4,800.00	10.00	106.22	4,754.93	-147.96	508.66	-152.92	0.00	0.00	0.00
4,900.00	10.00	106.22	4,853.41	-152.81	525.33	-157.93	0.00	0.00	0.00
4,983.24	10.00	106.22	4,935.39	-156.84	539.21	-162.11	0.00	0.00	0.00
5,000.00	9.66	106.22	4,951.90	-157.64	541.96	-162.93	2.00	-2.00	0.00
5,100.00	7.66	106.22	5,050.75	-161.85	556.42	-167.28	2.00	-2.00	0.00
5,200.00	5.66	106.22	5,150.07	-165.09	567.57	-170.63	2.00	-2.00	0.00



Pro Directional Survey Report



Company:	Marathon Oil	Local Co-ordinate Reference:	Well WFB #6H
Project:	Lea County, NM	TVD Reference:	well @ 3525.00usft
Site:	Mead West 32 (5-6)	MD Reference:	well @ 3525.00usft
Well:	WFB #6H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Prelim Plan A	Database:	WellPlanner1

Planned 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)
5,300.00	3.66	106.22	5,249.73	-167.36	575.37	-172.98	2.00	-2.00	0.00
5,400.00	1.66	106.22	5,349.62	-168.66	579.84	-174.32	2.00	-2.00	0.00
5,483.24	0.00	0.00	5,432.85	-169.00	581.00	-174.67	2.00	-2.00	0.00
5,500.00	0.00	0.00	5,449.61	-169.00	581.00	-174.67	0.00	0.00	0.00
5,600.00	0.00	0.00	5,549.61	-169.00	581.00	-174.67	0.00	0.00	0.00
5,700.00	0.00	0.00	5,649.61	-169.00	581.00	-174.67	0.00	0.00	0.00
5,800.00	0.00	0.00	5,749.61	-169.00	581.00	-174.67	0.00	0.00	0.00
5,900.00	0.00	0.00	5,849.61	-169.00	581.00	-174.67	0.00	0.00	0.00
6,000.00	0.00	0.00	5,949.61	-169.00	581.00	-174.67	0.00	0.00	0.00
6,100.00	0.00	0.00	6,049.61	-169.00	581.00	-174.67	0.00	0.00	0.00
6,200.00	0.00	0.00	6,149.61	-169.00	581.00	-174.67	0.00	0.00	0.00
6,300.00	0.00	0.00	6,249.61	-169.00	581.00	-174.67	0.00	0.00	0.00
6,400.00	0.00	0.00	6,349.61	-169.00	581.00	-174.67	0.00	0.00	0.00
6,500.00	0.00	0.00	6,449.61	-169.00	581.00	-174.67	0.00	0.00	0.00
6,600.00	0.00	0.00	6,549.61	-169.00	581.00	-174.67	0.00	0.00	0.00
6,700.00	0.00	0.00	6,649.61	-169.00	581.00	-174.67	0.00	0.00	0.00
6,800.00	0.00	0.00	6,749.61	-169.00	581.00	-174.67	0.00	0.00	0.00
6,900.00	0.00	0.00	6,849.61	-169.00	581.00	-174.67	0.00	0.00	0.00
7,000.00	0.00	0.00	6,949.61	-169.00	581.00	-174.67	0.00	0.00	0.00
7,100.00	0.00	0.00	7,049.61	-169.00	581.00	-174.67	0.00	0.00	0.00
7,200.00	0.00	0.00	7,149.61	-169.00	581.00	-174.67	0.00	0.00	0.00
7,300.00	0.00	0.00	7,249.61	-169.00	581.00	-174.67	0.00	0.00	0.00
7,400.00	0.00	0.00	7,349.61	-169.00	581.00	-174.67	0.00	0.00	0.00
7,500.00	0.00	0.00	7,449.61	-169.00	581.00	-174.67	0.00	0.00	0.00
7,600.00	0.00	0.00	7,549.61	-169.00	581.00	-174.67	0.00	0.00	0.00
7,700.00	0.00	0.00	7,649.61	-169.00	581.00	-174.67	0.00	0.00	0.00
7,800.00	0.00	0.00	7,749.61	-169.00	581.00	-174.67	0.00	0.00	0.00
7,900.00	0.00	0.00	7,849.61	-169.00	581.00	-174.67	0.00	0.00	0.00
8,000.00	0.00	0.00	7,949.61	-169.00	581.00	-174.67	0.00	0.00	0.00
8,100.00	0.00	0.00	8,049.61	-169.00	581.00	-174.67	0.00	0.00	0.00
8,200.00	0.00	0.00	8,149.61	-169.00	581.00	-174.67	0.00	0.00	0.00
8,300.00	0.00	0.00	8,249.61	-169.00	581.00	-174.67	0.00	0.00	0.00
8,400.00	0.00	0.00	8,349.61	-169.00	581.00	-174.67	0.00	0.00	0.00
8,500.00	0.00	0.00	8,449.61	-169.00	581.00	-174.67	0.00	0.00	0.00
8,600.00	0.00	0.00	8,549.61	-169.00	581.00	-174.67	0.00	0.00	0.00
8,700.00	0.00	0.00	8,649.61	-169.00	581.00	-174.67	0.00	0.00	0.00
8,800.00	0.00	0.00	8,749.61	-169.00	581.00	-174.67	0.00	0.00	0.00
8,900.00	0.00	0.00	8,849.61	-169.00	581.00	-174.67	0.00	0.00	0.00
9,000.00	0.00	0.00	8,949.61	-169.00	581.00	-174.67	0.00	0.00	0.00
9,100.00	0.00	0.00	9,049.61	-169.00	581.00	-174.67	0.00	0.00	0.00
9,200.00	0.00	0.00	9,149.61	-169.00	581.00	-174.67	0.00	0.00	0.00
9,300.00	0.00	0.00	9,249.61	-169.00	581.00	-174.67	0.00	0.00	0.00
9,400.00	0.00	0.00	9,349.61	-169.00	581.00	-174.67	0.00	0.00	0.00



Pro Directional Survey Report



Company:	Marathon Oil	Local Co-ordinate Reference:	Well WFB #6H
Project:	Lea County, NM	TVD Reference:	well @ 3525.00usft
Site:	Mead West 32 (5-6)	MD Reference:	well @ 3525.00usft
Well:	WFB #6H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Prelim Plan A	Database:	WellPlanner1

Planned 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)
9,500.00	0.00	0.00	9,449.61	-169.00	581.00	-174.67	0.00	0.00	0.00
9,600.00	0.00	0.00	9,549.61	-169.00	581.00	-174.67	0.00	0.00	0.00
9,700.00	0.00	0.00	9,649.61	-169.00	581.00	-174.67	0.00	0.00	0.00
9,800.00	0.00	0.00	9,749.61	-169.00	581.00	-174.67	0.00	0.00	0.00
9,900.00	0.00	0.00	9,849.61	-169.00	581.00	-174.67	0.00	0.00	0.00
10,000.00	0.00	0.00	9,949.61	-169.00	581.00	-174.67	0.00	0.00	0.00
10,100.00	0.00	0.00	10,049.61	-169.00	581.00	-174.67	0.00	0.00	0.00
10,200.00	0.00	0.00	10,149.61	-169.00	581.00	-174.67	0.00	0.00	0.00
10,300.00	0.00	0.00	10,249.61	-169.00	581.00	-174.67	0.00	0.00	0.00
10,400.00	0.00	0.00	10,349.61	-169.00	581.00	-174.67	0.00	0.00	0.00
10,500.00	0.00	0.00	10,449.61	-169.00	581.00	-174.67	0.00	0.00	0.00
10,600.00	0.00	0.00	10,549.61	-169.00	581.00	-174.67	0.00	0.00	0.00
10,700.00	0.00	0.00	10,649.61	-169.00	581.00	-174.67	0.00	0.00	0.00
10,737.89	0.00	0.00	10,687.50	-169.00	581.00	-174.67	0.00	0.00	0.00
[MeadW32#6H]PP/FTP									
10,750.00	1.45	359.44	10,699.61	-168.85	581.00	-174.52	12.00	12.00	0.00
10,775.00	4.45	359.44	10,724.57	-167.56	580.99	-173.23	12.00	12.00	0.00
10,800.00	7.45	359.44	10,749.43	-164.97	580.96	-170.64	12.00	12.00	0.00
10,825.00	10.45	359.44	10,774.13	-161.08	580.92	-166.75	12.00	12.00	0.00
10,850.00	13.45	359.44	10,798.58	-155.90	580.87	-161.57	12.00	12.00	0.00
10,875.00	16.45	359.44	10,822.73	-149.45	580.81	-155.12	12.00	12.00	0.00
10,900.00	19.45	359.44	10,846.51	-141.75	580.73	-147.41	12.00	12.00	0.00
10,925.00	22.45	359.44	10,869.86	-132.81	580.65	-138.48	12.00	12.00	0.00
10,950.00	25.45	359.44	10,892.70	-122.66	580.55	-128.33	12.00	12.00	0.00
10,975.00	28.45	359.44	10,914.98	-111.33	580.43	-117.00	12.00	12.00	0.00
11,000.00	31.45	359.44	10,936.64	-98.85	580.31	-104.52	12.00	12.00	0.00
11,025.00	34.45	359.44	10,957.62	-85.25	580.18	-90.92	12.00	12.00	0.00
11,050.00	37.45	359.44	10,977.85	-70.58	580.04	-76.24	12.00	12.00	0.00
11,075.00	40.45	359.44	10,997.29	-54.86	579.88	-60.53	12.00	12.00	0.00
11,100.00	43.45	359.44	11,015.88	-38.15	579.72	-43.82	12.00	12.00	0.00
11,125.00	46.45	359.44	11,033.57	-20.49	579.54	-26.15	12.00	12.00	0.00
11,150.00	49.45	359.44	11,050.31	-1.93	579.36	-7.59	12.00	12.00	0.00
11,175.00	52.45	359.44	11,066.06	17.48	579.17	11.82	12.00	12.00	0.00
11,200.00	55.45	359.44	11,080.77	37.69	578.97	32.03	12.00	12.00	0.00
11,225.00	58.45	359.44	11,094.40	58.65	578.77	52.99	12.00	12.00	0.00
11,250.00	61.45	359.44	11,106.92	80.28	578.56	74.62	12.00	12.00	0.00
11,275.00	64.45	359.44	11,118.28	102.54	578.34	96.89	12.00	12.00	0.00
11,300.00	67.45	359.44	11,128.47	125.37	578.11	119.71	12.00	12.00	0.00
11,325.00	70.45	359.44	11,137.45	148.70	577.89	143.04	12.00	12.00	0.00
11,350.00	73.45	359.44	11,145.19	172.47	577.65	166.81	12.00	12.00	0.00
11,375.00	76.45	359.44	11,151.68	196.60	577.42	190.95	12.00	12.00	0.00
11,400.00	79.45	359.44	11,156.90	221.05	577.18	215.40	12.00	12.00	0.00
11,425.00	82.45	359.44	11,160.83	245.74	576.93	240.08	12.00	12.00	0.00
11,450.00	85.45	359.44	11,163.46	270.59	576.69	264.94	12.00	12.00	0.00



Pro Directional Survey Report



Company:	Marathon Oil	Local Co-ordinate Reference:	Well WFB #6H
Project:	Lea County, NM	TVD Reference:	well @ 3525.00usft
Site:	Mead West 32 (5-6)	MD Reference:	well @ 3525.00usft
Well:	WFB #6H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Prelim Plan A	Database:	WellPlanner1

Planned 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)
11,475.00	88.45	359.44	11,164.79	295.55	576.45	289.90	12.00	12.00	0.00
11,500.40	91.50	359.44	11,164.80	320.95	576.20	315.30	12.00	12.00	0.00
11,600.00	91.50	359.44	11,162.19	420.51	575.22	414.87	0.00	0.00	0.00
11,700.00	91.50	359.44	11,159.57	520.47	574.24	514.83	0.00	0.00	0.00
11,800.00	91.50	359.44	11,156.95	620.43	573.26	614.80	0.00	0.00	0.00
11,900.00	91.50	359.44	11,154.34	720.39	572.28	714.76	0.00	0.00	0.00
12,000.00	91.50	359.44	11,151.72	820.35	571.30	814.73	0.00	0.00	0.00
12,100.00	91.50	359.44	11,149.10	920.31	570.32	914.70	0.00	0.00	0.00
12,200.00	91.50	359.44	11,146.48	1,020.27	569.34	1,014.66	0.00	0.00	0.00
12,300.00	91.50	359.44	11,143.86	1,120.24	568.36	1,114.63	0.00	0.00	0.00
12,400.00	91.50	359.44	11,141.24	1,220.20	567.38	1,214.59	0.00	0.00	0.00
12,500.00	91.50	359.44	11,138.62	1,320.16	566.40	1,314.56	0.00	0.00	0.00
12,600.00	91.50	359.44	11,136.00	1,420.12	565.42	1,414.52	0.00	0.00	0.00
12,700.00	91.50	359.44	11,133.38	1,520.08	564.44	1,514.49	0.00	0.00	0.00
12,800.00	91.50	359.44	11,130.76	1,620.04	563.46	1,614.46	0.00	0.00	0.00
12,900.00	91.50	359.44	11,128.15	1,720.00	562.48	1,714.42	0.00	0.00	0.00
13,000.00	91.50	359.44	11,125.53	1,819.96	561.50	1,814.39	0.00	0.00	0.00
13,100.00	91.50	359.44	11,122.91	1,919.92	560.52	1,914.35	0.00	0.00	0.00
13,200.00	91.50	359.44	11,120.29	2,019.88	559.54	2,014.32	0.00	0.00	0.00
13,300.00	91.50	359.44	11,117.67	2,119.84	558.56	2,114.28	0.00	0.00	0.00
13,400.00	91.50	359.44	11,115.05	2,219.81	557.58	2,214.25	0.00	0.00	0.00
13,500.00	91.50	359.44	11,112.43	2,319.77	556.61	2,314.22	0.00	0.00	0.00
13,600.00	91.50	359.44	11,109.81	2,419.73	555.63	2,414.18	0.00	0.00	0.00
13,700.00	91.50	359.44	11,107.19	2,519.69	554.65	2,514.15	0.00	0.00	0.00
13,800.00	91.50	359.44	11,104.57	2,619.65	553.67	2,614.11	0.00	0.00	0.00
13,900.00	91.50	359.44	11,101.96	2,719.61	552.69	2,714.08	0.00	0.00	0.00
14,000.00	91.50	359.44	11,099.34	2,819.57	551.71	2,814.04	0.00	0.00	0.00
14,100.00	91.50	359.44	11,096.72	2,919.53	550.73	2,914.01	0.00	0.00	0.00
14,200.00	91.50	359.44	11,094.10	3,019.49	549.75	3,013.98	0.00	0.00	0.00
14,300.00	91.50	359.44	11,091.48	3,119.45	548.77	3,113.94	0.00	0.00	0.00
14,400.00	91.50	359.44	11,088.86	3,219.41	547.79	3,213.91	0.00	0.00	0.00
14,500.00	91.50	359.44	11,086.24	3,319.38	546.81	3,313.87	0.00	0.00	0.00
14,600.00	91.50	359.44	11,083.62	3,419.34	545.83	3,413.84	0.00	0.00	0.00
14,700.00	91.50	359.44	11,081.00	3,519.30	544.85	3,513.80	0.00	0.00	0.00
14,800.00	91.50	359.44	11,078.38	3,619.26	543.87	3,613.77	0.00	0.00	0.00
14,900.00	91.50	359.44	11,075.77	3,719.22	542.89	3,713.74	0.00	0.00	0.00
15,000.00	91.50	359.44	11,073.15	3,819.18	541.91	3,813.70	0.00	0.00	0.00
15,100.00	91.50	359.44	11,070.53	3,919.14	540.93	3,913.67	0.00	0.00	0.00
15,200.00	91.50	359.44	11,067.91	4,019.10	539.95	4,013.63	0.00	0.00	0.00
15,300.00	91.50	359.44	11,065.29	4,119.06	538.97	4,113.60	0.00	0.00	0.00
15,400.00	91.50	359.44	11,062.67	4,219.02	537.99	4,213.56	0.00	0.00	0.00
15,500.00	91.50	359.44	11,060.05	4,318.98	537.01	4,313.53	0.00	0.00	0.00
15,600.00	91.50	359.44	11,057.43	4,418.95	536.03	4,413.50	0.00	0.00	0.00



Pro Directional Survey Report



Company:	Marathon Oil	Local Co-ordinate Reference:	Well WFB #6H
Project:	Lea County, NM	TVD Reference:	well @ 3525.00usft
Site:	Mead West 32 (5-6)	MD Reference:	well @ 3525.00usft
Well:	WFB #6H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Prelim Plan A	Database:	WellPlanner1

Planned 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)	
15,700.00	91.50	359.44	11,054.81	4,518.91	535.05	4,513.46	0.00	0.00	0.00	
15,800.00	91.50	359.44	11,052.19	4,618.87	534.07	4,613.43	0.00	0.00	0.00	
15,900.00	91.50	359.44	11,049.58	4,718.83	533.09	4,713.39	0.00	0.00	0.00	
16,000.00	91.50	359.44	11,046.96	4,818.79	532.11	4,813.36	0.00	0.00	0.00	
16,100.00	91.50	359.44	11,044.34	4,918.75	531.13	4,913.32	0.00	0.00	0.00	
16,113.26	91.50	359.44	11,043.99	4,932.00	531.00	4,926.57	0.00	0.00	0.00	
[MeadW32#6H]LTP/BHL										

Design Targets										
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
[MeadW32#6H]PP/FTP	0.00	0.00	10,687.50	-169.00	581.00	586,587.00	762,412.00	32.609741	-103.481155	
- plan hits target center										
- Point										
[MeadW32#6H]LTP/BHL	0.00	0.00	11,043.99	4,932.00	531.00	591,688.00	762,362.00	32.623762	-103.481184	
- plan hits target center										
- Point										

Checked By: _____ Approved By: _____ Date: _____