Form 3160-5
(June 2015)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
OMB NO. 1004-0137
Expires: January 31, 2018

Carlsbad Field Office
OCD Hobbs

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.

SUBMIT IN TRIPLICATE - Other instructions on page 2

HOBBS OCD
AUG 22 2019
RECEIVED

1. Type of Well ☒ Oil Well ☐ Gas Well ☐ Other	5. Lease Serial No. NMNM27805
	6. If Indian, Allottee or Tribe Name
	7. If Unit or CA/Agreement, Name and/or No.
	8. Well Name and No. FRIZZLE FRY F C 22 32 15 WA 2H
2. Name of Operator MARATHON OIL PERMIAN LLC Contact: JENNIFER VAN CUREN E-Mail: jvancuren@marathonoil.com	9. API Well No. 30-025-45890-00-X1
3a. Address 5555 SAN FELIPE STREET HOUSTON, TX 77056 3b. Phone No. (include area code) Ph: 713.29[illegible]	10. Field and Pool or Exploratory Area RED TANK-BONE SPRING
4. Location of Well *(Footage, Sec., T., R., M., or Survey Description)* Sec 15 T22S R32E NWNW 273FNL 792FWL 32.398205 N Lat, 103.668564 W Lon	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 to Original APD
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	
	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal	

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 recomplete 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 recompletion 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.

MARATHON OIL PERMIAN LLC RESPECTFULLY REQUESTS TO MAKE CHANGES FROM THE ORIGINAL APPROVED PERMIT:

OK NAME CHANGE
FROM FRIZZLE FRY F C 22 32 15 WA 2H
TO FRIZZLE FRY 15 WA FED COM 2H

Engineering OK DAR 8/9/19

CHANGE SHL
FROM 273' FNL & 792' FWL
TO 273' FNL & 762' FWL

No new surface disturbance. Covered DOI-BLM-NM-P020-2019-0440-EA
Same stipulations apply. CCR. 08/21/2019

OK DRILLING CHANGES:
PLEASE SEE THE ATTACHED DRILLING PLAN FOR CHANGES REQUESTED DUE TO UPDATED INFORMATION IN THIS DEVELOPMENT AREA. THERE IS A PLAN AND A CONTINGENCY PLAN.

Updated Drilling plan is attached.

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

Electronic Submission #471317 verified by the BLM Well Information System
For MARATHON OIL PERMIAN LLC, sent to the Hobbs
Committed to AFMSS for processing by PRISCILLA PEREZ on 07/01/2019 (19PP2347SE)

Name *(Printed/Typed)* JENNIFER VAN CUREN — Title SR. REGULATORY COMPLIANCE REP

Signature (Electronic Submission) — Date 07/01/2019

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved By _____ Title AFM & LM Date 08/07/2019

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 CFO

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 ****

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Additional data for EC transaction #471317 that would not fit on the form

32. Additional remarks, continued

A C-102 AND DIRECTIONAL PLAN ARE ALSO ATTACHED.

MARATHON OIL PERMIAN LLC

DRILLING AND OPERATIONS PLAN

WELL NAME / NUMBER: Frizzle Fry Federal WA 2H

STATE: NEW MEXICO **COUNTY:** ~~EDDY~~ LEA

Updated from original EC attachment 7/9/19

Application Data Report

Drilling Plan Data Report

1. GEOLOGIC FORMATIONS

Formation	True Vertical Depth (ft)	Measured Depth (ft)	Lithologies	Mineral Resources
Rustler	890.0	890.0	Salt/Anhydrite	BRINE
Salado	1190.0	1190.0	Salt/Anhydrite	BRINE
Base of Salt	2540.0	2540.8	Limy Sands	BRINE
Base of Salt/Lamar	4840.0	4875.6	Sand/Shales	NONE
Delaware	4910.0	4946.5	Sands/Shale	OIL
Bone Spring	8760.0	8798.1	Sands/Carbonates	OIL
Wolfcamp	11920.0	11975.4	Carbonates/Shales/Sands	OIL

OK

2. BLOWOUT PREVENTION

BOP installed and tested before drilling which hole?	Size?	Min. Required WP	Type	✓	Tested to:
12 ¼"	13 5/8	5000	Annular	x	100% of working pressure
		10000	BOP Stack	x	10000
8 ¾"	13 5/8	5000	Annular	x	100% of working pressure
		10000	BOP Stack	x	10000
6 1/8"	13 5/8	5000	Annular	x	100% of working pressure
		10000	BOP Stack	x	10000

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, full opening 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.	
	N	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. See attached schematic.	

OK

3. CASING PROGRAM

Plan:

String Type	Hole Size	Csg Size	Top Set MD	Bottom Set MD	Top Set TVD	Bottom Set TVD	Top Set MSL	Bottom Set MSL	Weight (lbs/ft)	Grade	Conn.	SF Collapse	SF Burst	SF Tension
Surface	17 1/2	13 3/8	0	1050	0	1050	3790	2740	54.5	J55	STC	3.37	1.71	2.93
Intermediate I	12 1/4	9 5/8	0		0		3790	-5012	40	L80HC	BTC	1.39	1.42	1.8
Production							3790	-8124	20	P110	BTC	1.65	1.29	2.08

- Rustler top will be validated via drilling parameters (l e reduction in ROP) and surface casing setting depth revised accordingly if needed
- Int casing shoe will be selected based on drilling data / gamma, setting depth with be revised accordingly if needed

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

OK

Contingency 1:

String Type	Hole Size	Csg Size	Top Set MD	Bottom Set MD	Top Set TVD	Bottom Set TVD	Top Set MSL	Bottom Set MSL	Weight (lbs/ft)	Grade	Conn.	SF Collapse	SF Burst	SF Tension
Surface	17 1/2	13 3/8	0	1050	0	1050	3790	2740	54.5	J55	STC	5.52	2.5	2.5
Intermediate I	12 1/4	9 5/8	0				3790	-5012	40	L80HC	BTC	1.39	1.42	1.8
Production	8 3/4	7					3790	-7722	29		BTC	2.21	1.18	1.9
Production Liner	6 1/8	4 1/2					-7422	-8360	13.5	P110	BTC	1.33	1.56	1.88

- Rustler top will be validated via drilling parameters (i e reduction in ROP) and surface casing setting depth revised accordingly if needed
- Int 1 / Int 2 casing shoe will be selected based on drilling data / gamma, setting depth will be revised accordingly if needed

* 6" hole will be drilled if we use 32#, 7", P110 casing

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

	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 3rd 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 2nd 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?	

OK

4. CEMENT

Plan

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity (sks)	Yield (ft3/sks)	Density (ppg)	Slurry Volume (ft3)	Excess (%)	Cement Type	Additives
Surface	Lead	--	0	840	675	1.73	13.5	1167		Class C	LCM
Surface	Tail	--	840	1050	219	1.33	14.8	292	100	Class C	Accelerator
Intermediate I	Lead	--								Class C	Extender, Accelerator
Intermediate I	Tail	--									Retarder
Production	Lead	--							70	Class H	Viscosifier, Retarder
Production	Tail	--							30	Class H	Extender, Fluid Loss, Dispersant

If Stage tool is ran:

OK

Intermediate	Stage 2 Lead	4700	0	4400	301	3.21	11	965	70	Class C	Extender, Accelerator
Intermediate	Stage 2 Tail	4700	4400	4700	25	1.15	13.8	28	30	Class H	Retarder
Intermediate	Stage 1 Lead	4700	4700	7800	212	3.21	11.0	680	70	Class C	Extender, Accelerator
Intermediate	Stage 1 Tail	4700	7800	8840	85	1.15	13.8	98	30	Class H	Retarder

Stage tool depth(s) will be adjusted based on hole conditions and cement volumes will be adjusted proportionally. Stage tool will be set a minimum of 50 feet below previous casing and a minimum of 200 feet above current shoe. Lab reports with the 500 psi compressive strength time for the cement will be onsite for review.

OK

Contingency 1:

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity (sks)	Yield (ft3/sks)	Density (ppg)	Slurry Volume (ft3)	Excess (%)	Cement Type	Additives
Surface	Lead	--	0	840	675	1.73	13.5	1167	100	Class C	LCM
Surface	Tail	--	840	1050	219	1.33	14.8	292	100	Class C	N/A
Intermediate I	Lead	--	[redacted]						75	Class C	Extender, Accelerator
Intermediate I	Tail	--							50	Class C	Retarder
Production	Lead	--							70	Class C	Viscosifier, Retarder
Production	Tail	--							30	Class H	Extender, Fluid Loss, Dispersant
Production Liner	Tail	--							30	Class H	Retarder, Extender, Fluid Loss, Dispersant

OK [redacted]

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity (sks)	Yield (ft3/sks)	Density (ppg)	Slurry Volume (ft3)	Excess (%)	Cement Type	Additives
Intermediate	Stage 2 Lead	4700	0	4400	301	3.21	11	965	70	Class C	Extender, Accelerator
Intermediate	Stage 2 Tail	4700	4400	4700	25	1.15	13.8	28	30	Class H	Retarder
Intermediate	Stage 1 Lead	4700	4700	7800	212	3.21	11.0	680	70	Class C	Extender, Accelerator
Intermediate	Stage 1 Tail	4700	7800	8840	85	1.15	13.8	98	30	Class H	Retarder

Pilot hole depth: N/A TVD/MD
KOP: N/A TVD/MD

Plug top	Plug Bottom	Excess (%)	Quantity (sx)	Density (ppg)	Yield (ft3/sx)	Water gal/sk	Slurry Description and Cement Type

Attach plugging procedure for pilot hole: N/A

5. CIRCULATING MEDIUM

OK Plan:

Top Depth	Bottom Depth	Mud Type	Min. Weight (ppg)	Max. Weight (ppg)
0	1050	Water Based Mud	8.4	8.8
[redacted]				

Losses or gains in the mud system will be monitored visually/manually as well as with an electronic PVT. The necessary mud products for additional weight and fluid loss control will be on location at all times.

OK Contingency 1:

Top Depth	Bottom Depth	Mud Type	Min. Weight (ppg)	Max. Weight (ppg)
0	1050	Water Based Mud	8.4	8.8
[redacted]				

Losses or gains in the mud system will be monitored visually/manually as well as with an electronic PVT. The necessary mud products for additional weight and fluid loss control will be on location at all times.

6. **TEST, LOGGING, CORING**

7. **PRESSURE**

OK **ANTICIPATED BOTTOM HOLE PRESSURE:** 8,213 psi MASP = 5540 psi

ANTICIPATED BOTTOM HOLE TEMPERATURE: 195°F

ANTICIPATED ABNORMAL PRESSURE: N

ANTICIPATED ABNORMAL TEMPERATURE: N

POTENTIAL HAZARDS:

A. H2S detection equipment will be in operation after drilling out the surface casing shoe until the production casing has been cemented. Breathing equipment will be on location from drilling out the surface shoe until production casing is cemented. If H2S is encountered the operator will comply with Onshore Order #6.

B. No abnormal temperatures or pressures are anticipated. All personnel will be familiar with all aspects of safe operation of equipment being used to drill this well. Adequate flare lines will be installed off the mud/gas separator where gas may be flared safely.

C. No losses are anticipated at this time.

D. All personnel will be familiar with all aspects of safe operation of equipment being used to drill this well.

E. Adequate flare lines will be installed off the mud/gas separator where gas may be flared safely.

8. **OTHER**

Other Well Information

1. **AUXILIARY WELL CONTROL AND MONITORING EQUIPMENT**

   a. A Kelly cock will be in the drill string at all times.

   b. A full opening drill pipe stabbing valve having the appropriate connections will be on the rig floor unobstructed and readily accessible at all times.

   c. Hydrogen Sulfide detection equipment will be in operation after drilling out the surface casing shoe until the production casing is cemented. Breathing equipment will be on location upon drilling the surface casing shoe until total depth is reached. **If Hydrogen Sulfide is encountered , measured amounts and formations will be reported to the BLM**

2. **ANTICIPATED STARTING DATE AND DURATION OF OPERATIONS**

Road and location construction will begin after the BLM has approved the APD. Anticipated spud date will be as soon as possible after BLM approval and as soon as a rig will be available. Move in operations and drilling is expected to take 30 days.

PECOS DISTRICT
DRILLING OPERATIONS
CONDITIONS OF APPROVAL
EC471317

OPERATOR'S NAME:	**Marathon Oil Permian LLC**
LEASE NO.:	**NMNM27805**
WELL NAME & NO.:	**Frizzle Fry 15 WA Fed Com 2H**
SURFACE HOLE FOOTAGE:	**273' FNL & 762' FWL**
BOTTOM HOLE FOOTAGE	**100' FSL & 330' FWL**
LOCATION:	**Section 15, T 22S, R 32E, NMPM**
COUNTY:	**Lea County, New Mexico**

H2S	◉ Yes	○ No	
Potash	◉ None	○ Secretary	○ R-111-P
Cave/Karst Potential	◉ Low	○ Medium	○ High
Variance	○ None	◉ Flex Hose	○ Other
Wellhead	○ Conventional	◉ Multibowl	○ Both
Other	☐ 4 String Area	☐ Capitan Reef	☐ WIPP
Other	☐ Fluid Filled	☐ Cement Squeeze	☐ Pilot Hole
Special Requirements	☐ Water Disposal	☑ COM	☐ Unit

A. CASING

1. The **13-3/8"** surface casing shall be set at approximately **1050'** (a minimum of 25' into the Rustler Anhydrite and above the salt) and cemented to surface.
   a. **If cement does not circulate to surface,** the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of **6 hours** after pumping cement, ideally between 8-10 hours after completing the cement job.
   b. WOC time for a primary cement job will be a minimum of **8 hours** or **500 psi** compressive strength, whichever is greater. This is to include the lead cement.
   c. If cement falls back, remedial cementing will be done prior to drilling out that string.
   d. WOC time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 psi compressive strength, whichever is greater.
2. The **9-5/8"** intermediate casing shall be cemented to surface. **This casing must be kept at least 2/3 full in order to meet BLM collapse requirements.**
   a. **If cement does not circulate to surface,** see B.1.a, c & d.
   b. Operator has proposed a DV tool, the depth may be adjusted as long as the cement is changed proportionally. The DV tool may be cancelled if cement circulates to surface on the first stage.

i. First stage to DV tool: Cement to circulate. If cement does not circulate off the DV tool, contact the appropriate BLM office before proceeding with the second stage.

ii. Second stage via DV tool: Cement to surface. If cement does not circulate, contact the appropriate BLM office.

3. The **5-1/2"** production casing shall be cemented with at least 200' tie-back into the previous casing. Operator shall provide method of verification.

Proposed Contingency Design:

4. The **9-5/8"** intermediate casing shall be cemented to surface. **This casing must be kept at least 2/3 full in order to meet BLM collapse requirements.**
   a. **If cement does not circulate to surface,** see B.1.a, c & d.
5. The **7"** production casing shall be cemented with at least 200' tie-back into the previous casing. Operator shall provide method of verification.
6. The **4-1/2"** production liner shall be cemented with at least 100' tie-back into the previous casing. Operator shall provide method of verification.

B. SPECIAL REQUIREMENTS

1. The operator will submit a Communitization Agreement to the Carlsbad Field Office, 620 E Greene St. Carlsbad, New Mexico 88220, at least 90 days before the anticipated date of first production from a well subject to a spacing order issued by the New Mexico Oil Conservation Division. The Communitization Agreement will include the signatures of all working interest owners in all Federal and Indian leases subject to the Communitization Agreement (i.e., operating rights owners and lessees of record), or certification that the operator has obtained the written signatures of all such owners and will make those signatures available to the BLM immediately upon request.
2. The well sign on location shall include the surface and bottom hole lease numbers. When the Communitization Agreement number is known, it shall also be on the sign.

All other previous Conditions of Approval still apply.

DR 7/9/2019