



September 17, 2020

Melodie Sanjari Marathon Oil 4111 S. Tidwell Carlsbad, NM 88220

Re: Groundwater determination for HF7, Eddy County, New Mexico

Mrs. Sanjari:

Atkins Engineering Associates, Inc. (AEA) submits this report of a groundwater determination for the HF7 site located at approximately 32.317898° -104.030269° in the SW Lot 3 of Section 07, Township 23 South, Range 29 East, N.M.P.M. Eddy County, New Mexico.

Drilling Operations

On August 20, 2020, the New Mexico Office of the State Engineer (OSE) approved a *Permit to Drill a Well with No Water Right* under file C-4470 POD1 (attached).

On September 03, 2020, AEA advanced a boring using 4.25" hollow stem augers (HSA) to approximately 55 feet below ground surface (bgs). Temporary well materials consisting of 20 feet of 0.020" slotted 2" Sch 40 PVC screen were set at 35-55 feet bgs with riser to above ground surface. A water level probe was lowered within well to total depth and no groundwater was detected.

Plugging Operations

On September 8, 2020, AEA re-mobilized to site. A water level probe was lowered within well to total depth and no water was detected. The temporary well materials were removed from boring then backed filled with drill cutting from total depth to 10' bgs. A slurry of Portland Type I/II Neat cement mixed at 5.20 gallons per 94 lb. sack was landed from 10' bgs to surface. A total of two sacks were mixed and landed, checked for drops, and covered with native fill. AEA filed a well record of the plugged boring to the D2 OSE (attached).

Summary

No water was encountered to 55' below ground surface at Marathons HF7 location.

If you have any questions, please contact me at <u>lucas@atkinseng.com</u> or 575.499.9244. Sincerely

Lucas Middleton- Staff Geoscientist

Spream Micheleth





09/14/2020

DII-NMOSE 1900 W 2nd Street Roswell, NM 88201

Hand Delivered to the DII Office of the State Engineer

Re: Well Record C-4470 Pod1 and Plugging Record

To whom it may concern:

Attached please find a Well Record and Plugging Record, in duplicate, for C-4470 POD1, a boring that did not encountered water, was not converted permanently and plugged.

If you have any questions, please contact me at 575.499.9244 or lucas@atkinseng.com.

Sincerely,

Lucas Middleton

Enclosures: as noted above

Groon Middle



FILE NO.

LOCATION

WELL RECORD & LOG

OFFICE OF THE STATE ENGINEER

www.ose.state.nm.us

DSE	DIT	14	2001	PMI (R)	-
		-	then the second	market and the	

										0		
	OSE POD NO)		WELL TAG ID NO.		OSE FILE NO	(S).	4N	4		
NO.	PODI(SB	OD1(SB-1) n/a				C-4470						
GENERAL AND WELL LOCATION	WELL OWNER NAME(S)					PHONE (OPTIONAL)						
	Marathon	Marathon Oil										
	WELL OWNER MAILING ADDRESS 4111 S. Tidwell						CITY					
	4111 5. 11	aweii					Carlsbad		NM 88220			
	WELL		DI	EGREES		SECONDS						
K	LOCATIO	N LAT	TITUDE	32°	19"	4.43' N	* ACCURACY	REQUIRED: ONE TEN	TH OF A SECOND			
ER.	(FROM GF	PS) LON	GITUDE	-1 0 4°	1"	48.97' W	* DATUM RE	* DATUM REQUIRED: WGS 84				
GEN	DESCRIPTION RELATING WELL LOCATION TO STREET ADDRESS AND COMMON LANDMARKS – PLSS (SECTION, TOWNSHIP, RANGE) WHERE AVAILABLE											
-	SW L3 Sec	c. 07 T23S	R29E, NMPM									
			· · · · · · · · · · · · · · · · · · ·									
	LICENSE NO		NAME OF LICENSED		Jackie D. Atkins			NAME OF WELL DR Atkins Eng	ILLING COMPANY gineering Associates, l	Inc.		
	DRILLING S	TADTEN	DRILLING ENDED		MPLETED WELL (FT)	DODE U	OI E DEDTU (ET)					
	09/03/		09/03/2020		orary-Removed	BOKE	±55	ble depth (FT) Depth water first encounte ±55 none				
CASING INFORMATION							STATIC WATER LEV	VEL IN COMPLETED WE	ELL (FT)			
	COMPLETED WELL IS: ARTESIAN 7 DRY HOLE SHALLOW (UNCONFINED)							none	(,			
	DRILLING F	LUID:	☐ AIR	MUD	ADDITIVES -	- SPECIFY:						
	DRILLING METHOD: ROTARY HAMMER CABLE TOOL OTHER					IER – SPECIFY:	R – SPECIFY: Hollow Stem Auger					
	DEPTH (feet bgl) BORE HOLE		CASING	MATERIAL AND/O	R (CASING	CASING	CASING WALL	SLOT			
	FROM TO DIAM		(include	GRADE each casing string, and	CO	NECTION	INSIDE DIAM.	THICKNESS	SIZE			
			(inches)		note sections of screen)		TYPE pling diameter)	(inches)	(inches)	(inches)		
3	0	35	±8.5	2" Sch. 40 PVC Riser			Thread 2 TPI	2.067	0.154			
S	35	55	±8.5	2" Sch. 40 PVC Screen		Flush	Thread 2 TPI	2.067	0.154	.020		
2. DRILLING &												
DR			1									
4			_			-				ļ		
			+			_				 		
						-				-		
							= -					
	DEPTH (feet bgl) BORE HOLE LIST ANNULAR SEAL MATERIAL				AND AMOUNT METHOD OF							
V	FROM TO DIAM. (inches)		GRAVEL PACK SIZE-RANGE BY INTERVAL					MENT				
ERI			-									
TAT												
R												
ANNULAR MATERIAL												
Z												
3.7												
FOR	OSE INTER	NAL USE					WR-2	0 WELL RECORD	& LOG (Version 06/3	0/17)		

POD NO.

TRN NO.

WELL TAG ID NO.

PAGE 1 OF 2

											10 21
	DEPTH (feet bgl)			COLOR AND TYPE OF MATERIAL ENCOUNTERED -			WAT	ER 5	ESTIMATED YIELD FOR		
	EDOM	TO	THICKNESS (feet)	INCLUDE WATE	R-BEARING CAVITIES	R FRAC	TURE ZONE	s	BEAR	ING?	WATER-
	FROM	то	(1eet)	(attach supplemental sheets to fully describe all units)				(YES	NO)	BEARING /ZONES (gpm)	
l i	0 4 4 Caliche with fine-grained sand, Pink (7.5 yr 7/5)							Y	√N		
	4 14 10 Sand, fine-grained, poorly graded with caliche layers, Pink (7.5 yr 7/5)							Y	√N		
	14 19 5 Sand, fine-grained, poorly graded with clay, Pink (7.5 yr 7/5)								Y	√N	
	19	34	15	Sand, fine-grained, 1	poorly graded with increasing	ig clay, E	Brown (7.5 yr 5	i/8)	Y	√N	
	34	49	15		Clay, Hard , Brown (5 yr	4/6)			Y	√N	,
3	49	55	6	Sand, Fine grain	ned, poorly graded, cemente	d , Brow	n (7.5 yr 5/6)		Y	√N	
4. HYDROGEOLOGIC LOG OF WELL		V.							Y	N	
t									Y	N	
၂ ဗို ၂									Y	N	
[달									Y	N	
8									Y	N	
									Y	N	
&									Y	N	
									Y	N	
4									Y	N	
									Y	N	
									Y	N	
									Y	N	
li									Y	N	
									Y	N	
									Y	N	
	METHOD USED TO ESTIMATE YIELD OF WATER-BEARING STRATA: TOTAL ESTIMATED										
	PUMP AIR LIFT BAILER OTHER - SPECIFY: WELL YIELD (gpm): 0.00								0.00		
NO	WELL TEST TEST RESULTS - ATTACH A COPY OF DATA COLLECTED DURING WELL TESTING, INCLUDING DISCHARGE METHOD,										
VISION	MISCELLA	NEOUS INF	ORMATION: R	emoved well materials	s,abandoned boring by u	sino dril	l cutting from	n total	denth to	10' has t	hen landed a
TEST; RIG SUPER			SI	irry of Portland 1 YP	E I/II Neat cement 5.2 ga	llons of	water per 94	lb. sa	ck from 1	0' bgs to	land surface.
S			N	o pump test.							
ži											
EST	PRINT NAM	Œ(S) OF DI	RILL RIG SUPER	VISOR(S) THAT PRO	VIDED ONSITE SUPERV	ISION O	F WELL CON	STRU	CTION OT	THER TH	IAN LICENSEE:
S. T											
URE	THE UNDERSIGNED HEREBY CERTIFIES THAT, TO THE BEST OF HIS OR HER KNOWLEDGE AND BELIEF, THE FOREGOING IS A TRUE AND CORRECT RECORD OF THE ABOVE DESCRIBED HOLE AND THAT HE OR SHE WILL FILE THIS WELL RECORD WITH THE STATE ENGINEER AND THE PERMIT HOLDER WITHIN 30 DAYS AFTER COMPLETION OF WELL DRILLING:										
CORRECT RECORD OF THE ABOVE DESCRIBED HOLE AND THAT HE OR SHE WILL FILE THIS WELL RECORD WITH AND THE PERMIT HOLDER WITHIN 30 DAYS AFTER COMPLETION OF WELL DRILLING: Jacke Atkins Jackie D. Atkins 09						09/11/2020					
9.0	0	SIGNAT	URE OF DRILLE	R / PRINT SIGNEE	NAME		2:			DATE	
	OGE PARES	MAY TISE					WD 20 ND	II DE	CODD & 1	OG W	raion 06/20/2017
	R OSE INTERI E NO.	NAL USE			POD NO.		TRN NO.	LL KE	COKD &	LUU (VEI	rsion 06/30/2017)
_	CATION					WELL	TAGIDNO				PAGE 2 OF 2







NOTE: A Well Plugging Plan of Operations shall be approved by the State Engineer prior to plugging - 19.27.4 NMAC

	NERAL / WELL OWNERSHIP:			
State 1	Engineer Well Number: C-4470-PC	<i>D</i> 1(3B-1)		575_988_8753
Well	owner: Marathon Oil	4-7	Phone No.:	575-988-8753
Mailir	ng address: 4111 S. Tidwell			00000
City:	Carlsbad	State	: NM	Zip code:
II. W	ELL PLUGGING INFORMATION	ON:		
1)	Name of well drilling company t	hat plugged well:	Jackie D. Atkins (Atkins Engine	ering Associates, Inc.)
2)	New Mexico Well Driller Licens	se No.: 1249	I	Expiration Date: 04/30/2021
3)	Well plugging activities were sup Shane Eldridge	pervised by the foll	lowing well driller(s)/rig superv	isor(s):
4)	Date well plugging began: 09/0	08/2020	Date well plugging conclu	uded: 09/08/2020
5)		de: 32 tude: 104		8.97 sec, WGS 84
6)	Depth of well confirmed at initia by the following manner: weight		55 ft below ground l	evel (bgl),
7)	Static water level measured at in	itiation of plugging	g:none ft bgl	
8)	Date well plugging plan of opera	tions was approve	d by the State Engineer:08/1	9/20
9)	Were all plugging activities cons differences between the approve	istent with an appr d plugging plan an	oved plugging plan? No d the well as it was plugged (att	If not, please describe ach additional pages as needed):
Used	Portland TYPE I/II Neat cement (5.2	? gallons of water p	er 94 lb. sack) in place of hydra	ted bentonite

COPM

Log of Plugging Activities - Label vertical scale with depths, and indicate separate plugging intervals with horizontal lines as necessary to illustrate material or methodology changes. Attach additional pages if necessary.

For each interval plugged, describe within the following columns:

Depth (ft bgl)	Plugging <u>Material Used</u> (include any additives used)	Volume of <u>Material Placed</u> (gallons)	Theoretical Volume of Borehole/ Casing (gallons)	Placement Method (tremie pipe, other)	Comments ("casing perforated first", "open annular space also plugged", etc.)
	0'-10' Portland TYPE I/II Neat cement (5.2 gallons of water per 94 lb. sack)	18 gallons	17 gallons	Auger as tremie	
	10'-55' Drill Cuttings		77 gallons AND OBTAIN	Boring	
		cubic feet x 7.4 cubic yards x 201.9	1805 = gallons		

III. SIGNATURE:

I, Jackie D. Atkins , say that I am familiar with the rules of th	e Office of the State
Engineer pertaining to the plugging of wells and that each and all of the statements in this Plugging R	ecord and attachments
are true to the best of my knowledge and belief.	
Jack Atkins	09/11/2020
<i>/</i>	
Signature of Well Driller	Date