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## State of West Virginia Department of Environmental Protection - Office of Oil and Gas Well Operator's Report of Well Work

API <u>47</u> - <u>590</u>	2253	County <u>MING(</u>	)	District _	MAGNOL	.IA				
Quad _MATEWAN	nd MATEWAN Pad Name Field/Pool Name									
Farm name_LOGAN_C	OAL & TIMBE	R CORP		Well Nu	ımber <u>236</u>	2				
Operator (as registered										
Address P.O. BOX							41601			
As Drilled location N		Attach an as-drille		-	-					
Landing Point	op hole No	rthing rthing		Easting		· · · · · · · · · · · · · · · · · · ·				
~		rthing		Easting		<del></del>	<del></del>			
Elevation (ft) 797.0'  Permit Type										
Type of Operation $\square$ C	onvert 🗆 Dee	pen ■ Drill 🗆	Plug Back □ R	edrilling	□ Rework	□ Stimul	ate			
Well Type □ Brine Dis	posal 🗆 CBM	■ Gas □ Oil □ Sec	ondary Recovery	□ Solution M	Ining □ St	orage □(	Other			
Type of Completion ■  Drilled with □ Cable  Drilling Media Surfac	Rotary  e hole Air	□ Mud □Fresh Wa	ter Intermedi			_	Water □ Brine			
Production hole Air Mud Type(s) and Addit N/A		resh Water □ Brine								
Date permit issued  Date completion activiti		Date drilling comm			-	ceased				
Verbal plugging (Y/N)	Dat	te permission granted		Gran	ted by					
Please note: Operator is	required to subn	nit a plugging applica	ation within 5 days	of verbal per	mission to p	olug				
Freshwater depth(s) ft		N	Open mine(s) (Y/	N) depths _		N				
Salt water depth(s) ft	179	00'	Void(s) encounter	red (Y/N) de	pths	, N	J			
Coal depth(s) ft	N		Cavern(s) encoun	tered (Y/N)	lepths #1	Heceive	`			
Is coal being mined in a	rea (Y/N)	N				໑ <b>໑</b> ∫໑(	& Gas			

CASING	Hole	Casing		New or	Grade		Basket	Didce	ment circulate (Y/ N)
STRINGS	Size	Size	Depth	Used	wt/ft		Depth(s)		ride details below*
Conductor	17 1/2"	13 3/8"	42'	New		LS	•		-
Surface	12 1/4"	9 5/8"	365'	New		LS	323', 84'		YES, 3bbls
Coal									
Intermediate 1	8 7/8"	7"	2121'	New		LS	NONE		YES, 6 bbls
Intermediate 2									
Intermediate 3									
Production	6 3/8"	4 1/2"	4256'	New	L	-65	NONE		500' up in 7"
Tubing									
Packer type and d	lepth set								
Comment Details									
CEMENT DATA	Class/Type of Cement	Numbe of Sack		•	Yield t ³/sks)	Volume (ft <sup>2</sup> )		Cement Top (MD)	
Conductor	Class A								
Surface	Class A	130	15	.5	1.18	153	Sı	urface	8
Coal					_		_		
Intermediate 1	Class A	130, 13	20 15.6,	12.3 1.1	8, 1.84	153, 2	21   S	urface	8
Intermediate 2 Intermediate 3						<u> </u>			
Production					4.05			1	
Tubing	Class A	165	13	.6	1.90	313.5	500	' up in 7"	8
- uonig									<u> </u>
Drillers TD (f	t) 4260			_ Loggers 7	TD (ft) 426	66			
	ation penetrated	HARRELL SHALE		_ Plug back	to (ft)				
Plug back pro	ocedure	· · · · · · · -							
Kick off depth		a caliper	■ density		ted/directi		induction temperature	e <b>a</b> son	ic
Well cored	□ Yes ■ No	□ Conventi			·		gs collected	□ Yes	
DESCRIBE T 3441', 3274', 3107', 294		IZER PLACEM	ENT USED F	OR EACH C	ASING S	TRING _	1109', 3942', 377		o.posos dray.
		·- · · · · · · · · · · · · · · · · · ·							
WASWELL	COMDI ETED	I IOU TOUS 2A	. DVac -	אא די	L I A !! .				
WAS WELL	COMPLETED	AS SHOT HOLE	E □ Yes E	No D	EIAILS			· · · · · · · · · · · · · · · · · · ·	-

API 47- 590 - 2253 Farm name LOGAN COAL & TIMBER CORP Well number 2362

## PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
1	6/9/2015	3875	4171	46	SHALE
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	<u> </u>				
				!	

Please insert additional pages as applicable.

## STIMULATION INFORMATION PER STAGE

Complete a separate record for each stimulation stage.

Stage No.	Stimulations Date	Ave Pump Rate (BPM)	Ave Treatment Pressure (PSI)	Max Breakdown Pressure (PSI)	ISIP (PSI)	Amount of Proppant (lbs)	Amount of Water (bbls)	Amount of Nitrogen/other (units)
1	6/10/15	84	3008	3103	1348	NONE	NONE	1.55 mmscf N2/12 bbl Acid
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Please insert additional pages as applicable.

JUL 23 2015

WR-35 Rev. 8/23/13

API 47- <u>590</u>	2253	_ Farm	name LOGAN Co	OAL & TIM	IBER CORP	Well n	umber_	2362		
PRODUCING F	ORMATION(S)		<u>DEPTHS</u>							
DEVONIAN SHA	LE (BROWN)		3875-4171'	_TVD	,	MD	_ MD			
		-		-	,					
Please insert add	ditional pages as a	pplicable.								
GAS TEST	□ Build up □ D	rawdown	■ Open Flow		OIL TEST	□ Flow □	Pump			
SHUT-IN PRES	SSURE Surface	750	_psi Botto	m Hole_	psi	DURAT	ION O	F TEST	192 hrs	
OPEN FLOW	Gas 531 mcfpd	Oil	NGL bpd	bpd	Water bpo	GAS M		RED BY ■ Orifice	e □ Pilot	
LITHOLOGY/ FORMATION		BOTTOM DEPTH IN FT	TOP DEPTH IN FT MD	BOTTO DEPTH IN MD	FT DESCRIB				UANTITYAND OIL, GAS, H <sub>2</sub> S, ETC)	
SEE ATTACHED	0		0							
	ditional pages as a	You have			,				•	
Drilling Contract Address 72 OLD	ctor MOUNTAIN R	IDGE	City	BARBOU	RVILLE	State	KY	Zip 40	906	
	any WEATHERFO	RD	City	-		State		_ z.ip		
Address	any WEATHER O	TKD	City	LONDON		State	KY	Zip _40	741	
Cementing Con	npany C & J ENER	RGY SERVI	CES							
Address 580 HA	WTHORN DR		City	NORTON		State	VA	Zip _24	273	
Stimulating Con		ERGY SER		NODTO		Variable	\/A	E. 04	272	
Address 580 HA Please insert ad	ditional pages as a	pplicable.	City	NORTON		State	VA	Zip _24	-213	
Completed by	Dame areth				Talanho	ne 606-874	-8041	Cell 606-	548-1915	
Signature	13to		Title Fi	eld Supervi				7-21-2		

**WELL #2362** 

API#47-5902253

					DESCRIBE ROCK TYPE AND RECORD
	TOP DEPTH IN FT	BOTTOM DEPTH IN FT	TOP DEPTH IN FT	BOTTOM	QUANTITY AND TYPE OF FLUID
LITHOLOGY/ FORMATION	NAME TVD	TVD	MD	DEPTH IN FT MD	(FRESHWATER, BRINE, OIL, GAS, H2S, ETC)
FILL	0	3			2.0,
SAND	3	60	-		1,24
SAND/SHALE	60	120		<del></del>	
SAND	120	180			
SAND/SHALE	180	240			
SAND	240	390			
SAND/SHALE	390	450	ĺ	<u></u>	
SAND	450	510			
SAND/SHALE	510	660			
SHALE	660	720			
SAND/SHALE	720	750			
SAND	750	1170			
SAND/SHALE	1170	1320			
SAND	1320	1410			
SAND/SHALE	1410	1470			1
SAND/SHALE/RED ROCK	1470	1605			
SAND	1605	1650			
SAND/SHALE	1650	1740			
SAND	1740	1830			
SAND/SHALE	1830	1912			
RED ROCK	1912	1950			
SAND/SHALE	1950	1995			
LITTLE LIME	1995	2098			
BIG LIME	2098	2330			
INJUN	2330	2398		,,,	
WEIR	2398	2895			hau
COFFEE SHALE	2895	2950			Housives & Gas
BEREA	2950	3095			Heceived Office of Oil & Gas JUL 28 2015
BROWN SHALE	3095	4138		-	JUL 2 3
HARRELL SHALE	4138	4266			
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