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> - <u>2254</u> County _	MINGO District MAGNOLIA	
Quad MATEWAN Pad Name	e Field/Pool Name	
Farm name LOGAN COAL & TIMBER CORP.	ET AL Well Number 2363	
Operator (as registered with the OOG)QUALITY	Y NATURAL GAS, LLC	
Address P.O. BOX 480	CityALLEN StateKY Zip41601	
Top hole Northing Landing Point of Curve Northing	as-drilled plat, profile view, and deviation survey Easting Easting Easting	-
	of Well New Existing Type of Report Interim Sinal	•
Permit Type Deviated Horizontal	Horizontal 6A ■ Vertical Depth Type □ Deep ■ Sha	llow
Type of Operation □ Convert □ Deepen ■ Dr	rill □ Plug Back □ Redrilling □ Rework □ Stimulate	
Well Type $\ \square$ Brine Disposal $\ \square$ CBM $\ \blacksquare$ Gas $\ \square$ O	il □ Secondary Recovery □ Solution Mining □ Storage □ Other	
Drilled with □ Cable ■ Rotary Drilling Media Surface hole ■ Air □ Mud □ F	Gresh Water Intermediate hole Air Mud Fresh Water	Brine
Production hole Air Mud Fresh Water Mud Type(s) and Additive(s) N/A	□ Brine	
	ing commenced 6/03/2015 Date drilling ceased 6/10/201	5
	Date completion activities ceased 6/17/2015	
Verbal plugging (Y/N) N Date permissio	n granted Granted by	_
Please note: Operator is required to submit a pluggir	ng application within 5 days of verbal permission to plug	
Freshwater depth(s) ftN	Open mine(s) (Y/N) depths	
Salt water depth(s) ft 1740'	Void(s) encountered (Y/N) depths Oil & G	as
Coal depth(s) ft N	Cavern(s) encountered (Y/N) depths Office ON	
Is coal being mined in area (Y/N)N	Void(s) encountered (Y/N) depths Cavern(s) encountered (Y/N) depths Office ON 3 2015	

WR-35 Rev. 8/23/13

CASING STRINGS	Hole Size	Casing Size	Donath	New or Used	Grade		Basket		nt circulate (Y/ N e details below*
Conductor	17 1/2"	13 3/8"	Depth 42'	New			Depth(s)	Provide	details below*
Surface	12 1/4"	9 5/8"	470'	New	LS		426', 88'	6 b	bls to surface
Coal	12 1/4	3 3/0	470	1464		-	420, 00	- 00	DIS to Surface
Intermediate 1	8 7/8"	7"	2162'	New		LS	NONE	101	bls to surface
Intermediate 2	0 7/0		2102	IVOW			NONE	101	obis to surface
Intermediate 3									
Production	6 3/8"	4 1/2"	4344'	New	1	-65		5	00' up in 7"
Tubing	0 0.0	7.7.2		1,1911			300		о ор
Packer type and de	epth set								
Comment Details									
CEMENT DATA	Class/Type of Cement	Number of Sack			Yield t ³ /sks)	Volume (ft 3)	Cem Top (I		WOC (hrs)
Conductor	Class A								
Surface	Class A	150	15	.5	1.18	177	Surf	ace	8
Coal									
ntermediate 1	Class A	100, 1	65 15.6,	12.3 1.18	3, 1.84	118, 304	Surf	ace	8
ntermediate 2									
Intermediate 3						2302	5551		
Production	Class A	165	13	.6	1.90	313.5	500' uj	o in 7"	8
Tubing									
) 4370 tion penetrated _ cedure			Loggers T Plug back					
Kick off depth	(ft)								
Check all wire	line logs run	■ caliper ■ neutron	■ density■ resistivit		ed/directi a ray		nduction emperature	■sonic	
Well cored		□ Conventi						or drilling purp	
DESCRIBE T 3509', 3342', 3175', 3008'	HE CENTRALI , 2841' and 2674	ZER PLACEM	ENT USED F	OR EACH C	ASING S	TRING 41	77', 4010', 3843', 3	3676',	
WAS WELL O	COMPLETED A	AS SHOT HOL	E □ Yes	No D	ETAILS				

API 47- <u>590</u> - <u>2254</u>

Farm name LOGAN COAL & TIMBER CORP. ET AL Well number 2363

PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
1	6/16/2015	4018'	4242'	52	SHALE
2	6/17/2015	3073'	3083'	26	BEREA
3	6/17/2015	2329'	2362'	11	LIME
	<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	6/17/15	82	2493	2588	1289	NONE	NONE	797scf N2/12bbl 15% HCL
2	6/17/15	81	2692	2910	1362	NONE	NONE	799scf N2/12bbl 15% HCL
3	6/17/15	31	2619	3408	1221	NONE	NONE	500 scf N2/143 bbl 20%HCL
							-	
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Please insert additional pages as applicable.

API 47- 590	_ 2254	Farm	name LOGAN Co	OAL & TIME	BER CORP. ET	AL Well n	umber	2363
PRODUCING	FORMATION(<u>S)</u>	<u>DEPTHS</u>					
BIG LIME BEREA DEVONIAN SHALE (BROWN)			2329-2362'	TVD		MD		
			3073-3083'					
			4018-4242'					
Please insert ac	lditional pages a	s applicable.		-				
GAS TEST	□ Build up □	Drawdown	■ Open Flow		OIL TEST 🗆	Flow	Pump	
SHUT-IN PRE	SSURE Surf	ace 540	_psi Botto	m Hole	psi	DURAT	ION (OF TEST 120 hrs
OPEN FLOW	Gas 283 mcf	Oil pd	NGL bpd		Water bpd			JRED BY ■ Orifice □ Pilot
LITHOLOGY/ FORMATION	TOP DEPTH IN FT NAME TVD	BOTTOM DEPTH IN FT TVD	TOP DEPTH IN FT MD	BOTTOM DEPTH IN I	FT DESCRIBE			RECORD QUANTITYAND TER, BRINE, OIL, GAS, H ₂ S, ETC)
SEE ATTACHED	0		0					
	1							
Please insert ac	lditional pages a	s applicable.						
Drilling Contra	actor MOUNTAIN	NRIDGE						
Address 72 OLI			City	BARBOUR	RVILLE	State	KY	Zip 40906
Logging Comr	any WEATHER	FORD						
Address			City	LONDON		State	KY	Zip 40741
Camanting Co.	mpany C&JEN	ERGY SERVIC	CES					
Address 580 H	AWTHORN DR		City	NORTON		State	VA	Zip 24273
	ompany C&JE	NERGY SERV						
Address 580 H	AWTHORN DR	THE ROT SERV	City	NORTON		State	VA	Zip 24273
	dditional pages a	as applicable.		-				77
Completed L.	Darrell Fluharty	i			Talanhan	606-874	-8041	Cell 606-548-1915
Signature \	-		Title Fi	eld Supervise	or			7-21-2015
							MIN X	

WELL #2363 API#47-5902254

WELL #2363			API#47-59022	254	
	TOD	DOTTONA	TOD	DOTTONA	DESCRIBE ROCK TYPE AND RECORD
	TOP DEPTH IN FT	BOTTOM DEPTH IN FT	TOP DEPTH IN FT	BOTTOM DEPTH IN FT	QUANTITY AND TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H2S,
LITHOLOGY/ FORMATION	NAME TVD	TVD	MD	MD	ETC)
FILL	0	25			
SAND	25	150			
SAND/SHALE	150	270			
SAND	270	330			
SAND/SHALE	330	390			
SAND	390	570			
SAND/SHALE	570	630			
SAND	630	690			
SAND/SHALE	690	1170			
SAND	1170	1290			
SAND/SHALE	1290	1410			
SAND	1410	1500			
SAND/SHALE	1500	1590			
SAND/SHALE/RED ROCK	1590	1650			
SAND/RED ROCK	1650	1710			
SAND/SHALE/RED ROCK	1710	1800			
SAND/SHALE	1800	1875			
SAND	1875	1920	,		
SAND/SHALE	1920	1980			
SAND/SLATE/RED ROCK	1980	2085			
LITTLE LIME	2085	2145			
BIG LIME	2145	2390			
מטנמו	2390	2480			
WEIR	2480	2997			
COFFEE SHALE	2997	3054			,
BEREA	3054	3215			
BROWN SHALE	3215	4254			
HARRELL SHALE	4254	4370			
					Received Ras
					Received Office of Oil & Gas JUL 2 3 2015
					JUL 2 2 2013