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

33		_		
API 47 25095 0234	0 County Tyler	Distr	ict Ellsworth	
Quad	Pad Name	Field	I/Pool Name	
Farm name Holloway, Harold		Wel	I Number Pign	ut Hickory 1V-1
Operator (as registered with the		ım Corporation		
Address 4150 Belden Village Av	re. NW Suite 410 City C	Canton	State Ohio	Zip 44718-2553
As Drilled location NAD 83/0 Top hole Landing Point of Curve Bottom Hole	Northing	Easting _	•	
Elevation (ft) 1176'	GL Type of Well			□Interim <b>≜</b> Final
Permit Type   Deviated	☐ Horizontal ☐ Horizo	ontal 6A 📱 Vertical	Depth Type	□ Deep ■ Shallow
Type of Operation □ Convert	□ Deepen ■ Drill	□ Plug Back □ Redrilling	□ Rework	■ Stimulate
Well Type 🗆 Brine Disposal 🛚	⊐ CBM	econdary Recovery	on Mining 🗆 Sto	orage 🗆 Other
Drilling Media Surface hole Production hole Air DM Mud Type(s) and Additive(s) KCL - Clay Stay - Surfactar	ud Fresh Water 🗆 Bri		BAII U Mud	□ Fresh Water □ Brin
Date permit issued 1-29-	Vφ Date drilling con	nmenced 4/18/16	Date drilling	ceased 4/27/16
Date completion activities began		innerioud_	U	6/27/16
Verbal plugging (Y/N)				
Please note: Operator is require	d to submit a plugging appli			lug
Freshwater depth(s) ft	0-300'	Open mine(s) (Y/N) depths	S	N
Salt water depth(s) ft	1985'	Void(s) encountered (Y/N)	depths	N
	810'-812'	Cavern(s) encountered (Y/	N) depths	N
Is coal being mined in area (Y/N	APPR	OMED	eived	Reviewed by:
and the second s	AME: 1/25/17	JUST 1250 1982	7 3 4.0.0	02/03/20

		LATI	TUDE 56:30:00" 39:5	
GRAPHIC SCALE 6	WELL NO		495	
	NUT HICKORY 1 V-1		De au	
1" = 400" NAD'85 (380 (00 MM'85 35") N 38 (8145" ~ 2 80' 50' 06"			Conditude	
NADISC DECIMAL DESPREES A 39 48583 W 63 834661 NADISCUIM MI ZOME 17 NORTH M 437 67047 E 316/316.7			9	
NAD SES P.C. PHEV. NORTH ZONE- USET) N. 31/35/75/35 & 1. 159/4877/95				
LOCATION REFERENCES	N/F	N/F		
\$ 94" 47 25" E 191,8" 24 OAK "RE!! PY	LES, RICHARD D & CATHY J	EDDY DAVID L	· · · · · · · · · · · · · · · · · · ·	
LEGEND PA	RCEL ID 02-16-44	ESTELLA M ET A PARCEL ID 02-16-		
FOUND INON PIN OR PAYS		/		
MEET NO PIGNOT HICKORY I AN INVESTIGATION OF COMMENTS OF COMMENTS OF COMMENTS.	7			
EXISTING WATER LOCAL	FOUND 2 5" CONCRETE			
LEASE LINE SUPFACE LINE	POST N 87° 52' 08'	114/		
N/F	345 76	WELL NO PIGNUT HICKORY : V-1		
WILLIAM S NASH, OPAL MARIE NASH, ROGER B NASH	. 68	1		
PARCEL ID 02-15-32	1134			
PARCEL ID 02-15-32  FORRESTER NIE  PARCEL ID 02-22-13	1134 5B	1		
PARCEL ID 02-22-1 3		1		
V-22-13-17V	N/F	1		
HOLLAWAY	, HAROLD L JR &	^		
N/F PARCE PARCE	IORAH C IL ID 05-22-3			
REED. ROBERT O & PLAT GERALDINE (LIFE)	1			
PARCEL ID 02-22-1		NF		
N/F <sup>J</sup> FORRESTER GARY & PATTY		DUNTHORN, STEPHEN H & BARBARA J		
PARCEL ID 02-22-2		PARCEL ID 02-22-4		
N/F				
REED, ROBERT I & COREY I				
PARCEL ID				
02-22-1.1				
NOTES ON SURVEY				
SLAINE SURVEYING PLLC SISS REDMOND SIDGE ROAD				
GALLIPOLIS FERTY VOLUSETE  LEASE BOUNDARY SHOWN HEREON TAKEN SHOW  DEED HOOK 287 PAGE 665		THE UNDERSIGNED, HEREBY CER	TIFY THAT THIS	
O THIS IS NOT A BOUNDARY SURVEY SURFACE OWNER AND ADJIGNER INFORMATION TAKEN FROM	-07777770-	PLAT IS CORRECT TO THE BEST OF AND BELIEF AND SHOWS ALL THE R	NEORMATION	
THE ASSESSOP AND COUNT? CLERK RECORDS OF TYLER COUNTY IN NOVEMBER 2015	THAN BY	REQUIRED BY LAW AND THE REGUL AND PRESCRIBED BY THE DEPARTS		
OPERATORS WELL NO PIGNUT HICKORY 1 V.	CENSE TO B	ENVIRONMENTAL PROTECTION	¥ _	
SCALE **= 100 MINIMUM DEGREE	No 2220 + B	Signed	145,28 m	
OF ACCUPACY SUB-METER PROVEN SOURCE	STATE OF	LLS TRACE DATE	12/22/15	
OF SLEVATION CORS NETWORK & WV VRS	VING!	WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL	ON SEAT WA	
UNITED STATES TOPOGRAPHIC MAPS	ONAL SUR	PROTECTION		
47 095		CIFFICE OF OIL AND GAS 601 57TH ST		
APIWELL NO STATE CUINTY PERMIT		CHARLESTON, WV 25304	ASS. PR.	
WELL TYPE ☐ OIL ☐ WASTE DISPOSAL ☒ PRODUG  ☐ GAS ☐ LIQUID INJECTION ☐ STORAG	_			
	E SHALLOW		SUATION ASTE	4
WATERSHED. OUTLET MIDDLE ISLAND GREEK COUNTY	TYLER		LEVATION 1175	Jedra
DISTRICT ELLSWORTH COUNTY  SURFACE OVINER HOLLAWAY, HAROLD J JR & DEBOR			REAGE 22.95 +/-	R
OR & GAS ROYALTY OWNER BOUNTY MINERALS, LLC E			REAGE 22.95% (CT 2	2.4
DRILL OCONVERT DRILL DE				7 🛣
PLUG OFF OLD FORMATION D PE				
CLEAN OUT & REPLUG   OTHER				
TARGET FORMATION RHINESTREET		ESTIMATED DE	PTH <u>TYD 5910</u>	
WELL OPERATOR: ALLIANCE PETROLEUM CORPORATION		GNATED AGENT JEFFREY SAYGE		
4DDRESS 4150 BELDEN VILLAGE AVE NW SUITE - CANTON OH 44718-2553	AU	ADDRESS 16 FOX HILL TERM PARKERSBURG V		, o o

<del>-02</del>/03/2017

\_Well number\_Pignut Hickory 1V-1 Farm name\_Holloway, Harold & DE API 47- 045 02340 Basket Did cement circulate (Y/N) Grade New or Casing CASING Hole \* Provide details below\* Used wt/ft Depth(s) Depth Size Size STRINGS H-40 36# N/A N/A Driven New 321 Conductor 15" 13-3/8" Yes H-40 26# New 426 Surface 9-5/8" 12-1/4" Coal Yes J-55 17# 2371 Intermediate 1 8-3/4" Intermediate 2 Intermediate 3 J-55 10.5# Production 5960' New 4-1/2 6-1/2" N/A N/A J-55 7.75# Tubing 5450 used 1-1/2" Packer type and depth set WOC Volume Cement Yield Number Slurry Class/Type CEMENT Top (MD) (hrs) (ft ?) (ft <sup>3</sup>/sks) wt (ppg) of Sacks DATA of Cement Conductor None CTS 8 Hrs. Surface 131 Class A Coal CTS 8 Hrs. Intermediate 1 121 Class A Intermediate 2 Intermediate 3 3400' 138 Production 50/50 Doz Tubing Loggers TD (ft) Drillers TD (ft) 5989' Plug back to (ft) N/A Deepest formation penetrated Rhinestreet Plug back procedure \_ Kick off depth (ft) N/A □ deviated/directional ■ induction acaliper = density Check all wireline logs run □sonic 🛢 gamma ray □ temperature □ resistivity neutron Were cuttings collected ■ Yes ■ No Sidewall Conventional Well cored □ Yes ■ No DESCRIBE THE CENTRALIZER PLACEMENT USED FOR EACH CASING STRING \_\_ 6 - Total on production casing - 4-1/2" every 100" off bottom DETAILS □ Yes 📱 No WAS WELL COMPLETED AS SHOT HOLE OCT 24 2016 DETAILS WAS WELL COMPLETED OPEN HOLE? 🗆 Yes 💄 No TYPE OF TRACER(S) USED \_\_ WERE TRACERS USED | Yes | No

API 47- 045 - 02340 Farm name Holloway, Harold & DE Well number Pignut Hickory 1V-1

### PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
1	6/20/16	5480'	5051'	26	Alexander/Benson
				<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 (PS!)	Max Breakdown Pressure (PSI)	ISIP (PSI)	Amount of Proppant (lbs)	Amount of Water (bbls)	Amount of Nitrogen/other (units)
1	6/21/16	22.3	2776	1840	2178	306 Sks.	253	330 MSCF
						1		
-								
								· · · · · · · · · · · · · · · · · · ·
					5			
		9						
-						1.5		

Please insert additional pages as applicable.

OCT 2 4 2016

0 0 \*\*\*\*SEE ATTACHED GEOLOGIST REPORT

Drilling Contractor Nexus Drilling					
Address P.O. Box 903	City	Jane Lew	State	WV	_ Zip <u>26378</u>
Logging Company Appalachian Well Surveys					
Address 10291 Ohio Avenue	City	Cambridge	State	OH	Zip 43725
Cementing Company _ Universal Well Services		Rec	CHIN Interv	HAY	-
Address P.O. Box 2437	City	Buckhannon ()	State	WV	Zip 26201
Stimulating Company C&J Services	. •	Buckhannon Off South	4 2016	ð	
Address 8300 Rt. 119 North	City	Black Lick	State	PA	Zip 15716
Please insert additional pages as applicable.					
Completed by Martin L. Miller Signature	itle Sr.	Telephone VP of Operations		73-8771 Date /	0-10-16

Submittal of Hydraulic Fracturing Chemical Disclosure Information

Attach copy of FRACFOCUS Registry

12956 Claylick Road Newark, Ohio 43056-9146 Office 740-763-2758 Home 740-763-2758 Mobile 330-763-0479

## National Minerals Corporation

ALLIANCE PETROLEUM CORPORATION

PIGNUT HICKORY 1 V-1

ELLSWORTH DISTRICT

TYLER COUNTY, WEST VIRGINIA

Office 24 25 6

Oil, Gas & Mineral Exploration WELL: Alliance Petroleum Corporation 1 V-1 Pignut Hickory

LOCATION: Ellsworth District, Tyler County, West Virginia.

PERMIT NUMBER: 47-095-02340.

ELEVATION: 1176' Ground 1186'KB.

STATUS: Preparing to complete as a gas producer.

CASING: 7" @ 2365'.

TOTAL DEPTH: 5989' Driller 6000' Logger.

CONTRACTOR: Nexus Drilling Co.

TOOLS: Rotary.

COMPLETED DRILLING: 4/27/2016.

FORMATION AT TOTAL DEPTH: Devonian shale.

ELECTRICAL SURVEYS: Gamma Ray-Compensated Density-Neutron-Caliper-Induction by Appalachian Well Surveys.

SHOWS: Fair shows of gas were noted in the Alexander & Benson. Additional shows of gas were noted on the mud log in the Rhinestreet, Riley, Warren, Bayard, Gordon Stray, Weir and Big Injun.

FORMATION TOPS:	1 <sup>st</sup> Salt Sand	1617'	- 431
	2 <sup>nd</sup> Salt Sand	1836'	- 650
	3 <sup>rd</sup> Salt Sand	1985'	- 799
	Maxon Sandstone	2018'	- 832
	Big Lime	2064'	- 878
	Keener Sandstone	2130'	- 944
	Big Injun Sandstone	2154'	- 968
	Weir Sandstone	2465'	-1279
	Gantz Sandstone	2711'	-1525
	Thirty-foot Sandstone	2806'	-1620
	Gordon Stray Sandstone	2901'	-1715

Gordon Sandstone 2944' -1758 4<sup>th</sup> Sand 3006' -1820 5<sup>th</sup> Sand 3066' -1880 Bayard Sandstone 3147' -1961 3629' 3886' Warren Sandstone -2443 OCT 2 4 2016-2700 Speechley Sandstone

Balltown Sandstone	4090'	-2904
Bradford Sandstone	4377'	-3191
Riley Sandstone	<b>48</b> 18'	-3632
Benson Sandstone	5238'	-4052
Alexander Sandstone	5467'	-4281
Rhinestreet Shale	5600'	-4414

### STRUCTURAL COMPARISON:

	Alliance Petroleum	Alliance Petroleum
	Pignut Hickory 1 V-1	Parr 1V North
Big Lime	- 878	- 854
Gordon Sandstone	-1758	-1726
Warren Sandstone	-2443	-2426
Benson Sandstone	<del>-4</del> 052	-4058

#### **GEOLOGY:**

I would first recommend completion of the Alexander & Benson Sandstones. The Rhinestreet Shale recorded some small gas shows on the mud log, but did not have the porosity development seen in the Parr 1 V North. The Alexander (5472 to 5480') is better developed in this well, compared with the Parr 1 V North. It has fair to good porosities and low water saturations. The mud log recorded a small show of gas in this zone and a fair show of gas (background of 10 units to a maximum of 214 units) just above the Alexander at 5455'. The Benson development (5238 to 5246') is very similar to that seen in the Parr 1 V North, with fair to good porosities and low water saturations. A fair show of gas (background of 13 units to a maximum of 338 units) was noted in this zone.

If a second stage is needed, I would recommend the Riley (4818 to 4840'), Balltown (4035 to 4116') and the Warren (3657 to 3732'). The Riley, which is not as well developed as in the Parr 1 V North, has fair to poor porosities and low water saturations. The mud log indicated a small show of gas (background of 30 units to a maximum of 114 units). The Balltown has fair porosities and low water saturations. The mud log indicated small shows of gas in this zone (background of 20 units to a maximum of 110 units). The Warren has fair porosities and low water saturations. The mud log indicated small shows of gas in this zone (background of 13 units to a maximum of 127 units).

After depletion of the lower zones, addition production may be obtained from the Bayard, Gordon Stray, Weir & Big Injun. The Bayard, 3148 to 3161', has fair porosities and low water saturations. The mud log indicated a small show of gas in this zone. The Gordon Stray, 2908 to 2912', is very thin with fair porosity and good gas effect on the neutron log. The mud log indicated a small show of gas in this zone. The Weir from 2522 to 2611' has fair to good

- 62°F

porosities. However, the water saturations in the upper portion are very high. A small show of gas was noted in the lower portion 2572 to 2580', which has much lower water saturations. A fair show of gas was noted in the Big Injun Sandstone at 2210'. Since this is behind the 7" casing, the only logs we have are the gamma ray and neutron. Based upon these logs, there appears to be a zone with high gas saturations from 2208 to 2219'. Ten feet below this zone the fluid saturations rise dramatically, indicating potential water in close proximity to this zone. Any treatment, other than perforating in acid, would not be recommended for this interval.

Respectfully submitted,

NATIONAL MINERALS CORPORATION

By: Douglas L. Core, President

April 28, 2016

Off 2 4 2016