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

API 47 - 95 _ 0	02267 County TY	LER D	District ELLSWORT	⁻ H
Quad PORTERS FALLS Pad Name			Field/Pool Name ELI	LSWORTH
Farm name CHRISTOPH	IER INVESTMENTS		Well Number HARF	RIS 4V
		ETROLEUM CORPORAT y CANTON	ION	_{Zip} _44718
Landing Point of Bottom Elevation (ft) 1315 Permit Type	hole Northing Curve Northing Hole Northing Hole Northing GL Type of Yed	Eastin Well New Existing orizontal 6A Vertical Plug Back Redrill Secondary Recovery Sol Produced Brine Gas	ngngngngngngng Type of Report to Depth Type ling Rework Rework Stor Stor NGL Oil to Dil to	□Interim
				WED
Data parmit issued 5/2	29/2015 Date drilling	commenced 6/15/2015	Date drilling	EIVED Gas Oil and 6/23/2015
Date completion activities	hegan 7/28/2015	Date completion activ	ities ceased Office	3/1(2g 1£)\5
Verbal plugging (Y/N)	Date permission	g commenced 6/15/2015 Date completion active granted application within 5 days of ve Open mine(s) (Y/N) de Void(s) encountered (Y	Granted by 00	Department of Department of
Please note: Operator is re	equired to submit a plugging	application within 5 days of ve	rbal permission to pla	BWellia.
Freshwater depth(s) ft	50'	Open mine(s) (Y/N) de	epths	N/A
Salt water depth(s) ft	1937'	Void(s) encountered ((/N) depths	N/A
Coal depth(s) ft	9061	Cavern(s) encountered	(Y/N) depths	N/A
Is coal being mined in area	NO			Reviewed by:

Page 2 of 4 WR-35 Rev. 8/23/13 CHRISTOPHER INVESTMENTS Well number HARRIS 4V API 47-95 02267 **CASING** Hole Casing New or Grade Basket Did cement circulate (Y/N) **STRINGS** Size Size Depth Used wt/ft Depth(s) * Provide details below* Conductor 15" 32' H-40 57# N/A 13-3/4 NEW N/A Surface 12-3/4 9-5/8 620 **NEW** H-40 26# YES Coal Intermediate I 8-3/4 SLIGHT HEAVY GEL-SOME CEMENT 1609 **NEW** J-55 17# Intermediate 2 Intermediate 3 Production NO 6-1/2 4-1/2 3343' NEW J-55 10.5# Tubing Packer type and depth set Comment Details INTERMEDIATE STRING - 100' CEMENT LEFT IN PIPE - PRESSURED UP CEMENT Volume WOC Class/Type Number Slurry Yield Cement (ft 3/sks) (\mathbf{r}, \mathbf{T}) Top (MD) (hrs) DATA of Cement of Sacks wt (ppg) Conductor N/A Surface **CTS** 8HRS. **CLASS A** 185 Coal Intermediate 1 **CTS CLASS A** 216 8HRS. Intermediate 2 Intermediate 3 Production 1508 50/50 POZ 165 Tubing Drillers TD (ft) ____ Loggers TD (ft) Deepest formation penetrated BAYARD Plug back to (ft) Plug back procedure Kick off depth (ft) □ deviated/directional induction Check all wireline logs run **■** caliper ■ density ■ neutron □ resistivity 🖪 gamma ray **l** temperature □sonic Were cuttings collected ■ Yes □ No Well cored □ Yes ■ No Conventional Sidewall Office of Oil and Gas DESCRIBE THE CENTRALIZER PLACEMENT USED FOR EACH CASING STRING 7" - 7 TOTAL EVERY 200" 4-1/2 - 6 TOTAL EVERY 100' OFF BOTTOM WAS WELL COMPLETED AS SHOT HOLE □ Yes ■ No WAS WELL COMPLETED OPEN HOLE? □ Yes ■ No

TYPE OF TRACER(S) USED _

WERE TRACERS USED Yes No

API 47- 95 - 02267 Farm name CHRISTOPHER INVESTMENTS Well number HARRIS 4V	
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PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
1	7/28/15	3008	3002	10	GORDON STRAY
1	7/28/15	2965	2961	10	GORDON STRAY
					-
				<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	7/29/15	18	2133	2087	1674	25,000	1250	N/A
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Please	insert additio	nal pages as ap	plicable.				EUNILO	
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API 47- 95	_ 02267	Farm	_{name} CHRIST	OPHER IN	VESTMENT	S Well n	umbe	_r HARRIS 4V	
RODUCING	FORMATION	(S)	<u>DEPTHS</u>						
SORDON STR	AY	 .	3008	_TVD _2	961	MD			
		 -							
									
lease insert ac	dditional pages	as applicable.							
AS TEST	Build up	□ Drawdown	□ Open Flow	0	IL TEST 🗂 I	Flow 🗆	Pump	o	
HUT-IN PRE	SSURE Sur	face 1235	_psi Botto	m Hole	psi	DURAT	ION (OF TEST 48 hrs	
PEN FLOW	Gas 70 mc	Oil fpd <u>.5</u> l	NGL bpd <u>0</u>	bpd _ <u>.5</u>	Vater bpd	GAS M	EASI nated	JRED BY Orifice Pilot	
ITHOLOGY/ ORMATION	TOP DEPTH IN FT NAME TVD		TOP DEPTH IN FT MD	BOTTOM DEPTH IN FT MD				D RECORD QUANTITYAND FER, BRINE, OIL, GAS, H₂S, E	ETC)
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		/	10		Talanhana	OFFICE -	(740)-3	73-8771 CELL- (330)-904-7022	
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95.62267

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

HARRIS 4V SOUTH

ELLSWORTH DISTRICT

TYLER COUNTY, WEST VIRGINIA

Office of Oil and Gas

Office of Oil and Gas

OV Department of Environmental Protection

Oil, Gas & Mineral Exploration WELL: Alliance Petroleum Corporation #4V South

LOCATION: Ellsworth District, Tyler County, West Virginia.

PERMIT NUMBER: 47-095-02267.

ELEVATION: 1315' Ground 1323'KB.

STATUS: Preparing to complete as a gas producer.

CASING: 7" (20#) @ 1620'.

TOTAL DEPTH: 3424' Driller 3415' Logger.

CONTRACTOR: Nexus Drilling Co.

TOOLS: Rotary.

COMPLETED DRILLING: 6/23/2015.

FORMATION AT TOTAL DEPTH: Devonian shale.

ELECTRICAL SURVEYS: Gamma Ray- Compensated Density- Neutron-Caliper- Temperature- Induction- Gas Detector by Weatherford

SHOWS: An excellent show of gas (background of 200 units to a maximum of 1550+ units) was recorded on the mud log in the lower portion of the Gordon Stray Sandstone at 3010'. Good shows of gas were recorded in the upper portion of the Gordon Stray Sandstone (background of 90 units to a maximum of 358 units @ 2970') and the Big Injun Sandstone (background of 16 units to a maximum of 183 units @ 2324'). A fair show of gas (background of 5 units to 150 units) was noted in the Maxon Sandstone at 2105'. Small shows of gas were noted in the Gantz and Weir Sandstones. The only fluorescence noted on the mud log was a minor amount in the Big Injun and a moderate amount at the base of the Gordon.

FORM	$I \wedge TI$	UNI -	$r \cap p \circ \cdot$
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1 st Salt Sand	1730'	RECOL 4155
2 nd Salt Sand	1888'	Office of Or 415% Office of Or 415% To 28 To 28
3 rd Salt Sand	1941'	Om OCT 626 Ment oction
Maxon Sandstone	2092'	- 7727th Prote
Big Lime	2162'	"1 D84 4:01,
Keener Sandstone	2222'	WY 57887
Big Injun Sandstone	2274'	- Niko 959
Weir Sandstone	2621'	-1306
Gantz Sandstone	2816'	-1501
Thirty-foot Sandstone	2912'	-1597

Harris 4V South			Page 2
	Gordon Stray Sandstone	2963'	-1648
	Gordon Sandstone	3055'	-1740
*	4 th Sand	3112'	-1797
	5 th Sand	3160'	-1845
	Bayard Sandstone	3258'	-1943

STRUCTURAL COMPARISON:

	Alliance Petroleum	Alliance Petroleum
	Harris 4V South	Yurigan #1V
Big Lime	- 847	- 839
Gordon Sandstone	-1740	-1719

GEOLOGY

I would first recommend completion of the Gordon Stray Sandstone. An upper and lower section was noted in this zone. The upper zone, 2963 to 2968', may, by some, be considered a portion of the Thirty-Foot Sandstone. However, given its proximity to the top of the Gordon, I would place it in the Gordon Stray interval. The upper zone has very good to excellent porosity, low water saturations and excellent gas effect, as noted by the neutron log. The lower section, 3004 to 3014', also has very good to excellent porosity, low water saturations and excellent gas effect on the neutron log. A good show of gas was indicated on the temperature log in the lower zone. Prior to drilling the upper zone, the gas detector indicated a background of 90 units. After drilling the upper zone, the gas increased to 358 units, dropping back to 200 units before the lower zone was drilled. In the lower zone, the gas detector indicated 1550 units before the connection gas at 3013' raised the gas to 3097 units. The gas then fell back and stabilized at a background of 500 units for the rest of the drilling. Both of these zones were very poorly developed in the Yurigan #1V. They may be somewhat limited in area and are therefore, not seriously depleted. Although no offset production is available from these zones, production of 50 to 70 MCF a day may be possible. No oil would be expected.

Additional potential zones in this well are the Gordon, Gantz, Weit, Big Gas Injun and Maxon Sandstones. The Gordon (3055 to 3080'), in this area is highly depleted. A small of gas was noted on the gas detector. There is an anomaly on the temperature log, but I believe it is due to the Gordon taking fluid and not due to gas. The temperature log was run going in the hole and the fluid level was at 2186'. When the density-neutron was logged coming out of the hole and the fluid level was at 2373'. During the hour or two it took to log back to that point the Gordon had taken approximately 8 barrels of water. The Gordon has not excellent porosity, but appears to have a high fluid saturation due to water invasion. Based upon what we have seen in the Yurigan, I would not attempt

Harris 4V South Page 3

completion of the Gordon. It appears to be too depleted in this area.

The Gantz, (2816 to 2833') consists of 2 thin zones with good porosity. low water saturations and good gas effect on the neutron log. However, I believe these zones are too thin to be produced commercially by themselves. A completion with the Weir and Big Injun may be possible. The Weir, 2621 to 2712', is a thick, silty sandstone with good to very good porosity, low to moderate water saturations and numerous small gas shows on the mud log. This zone is an important producer in southern West Virginia, but has typically been hard to treat in the central West Virginia area. Several wells produce from the Weir in Tyler County, but the production is comingled with other zones. Therefore, the production from the Weir alone is unknown. Due to its relatively low permeability, depletion may not be serious. The Big Injun, 2316 to 2348', has good to excellent porosity, but relatively high water saturations. It is probably pressure depleted in this area. Numerous shows of gas were noted from 2315 to 2345'. I would not recommend completion of this zone until the lower zones are depleted. I would then recommend perforating only the upper 8' from 2316 to 2324' in an effort to limit water production. A small acid job to clean up the perforations should be the only treatment.

The Maxon, 2092 to 2150', may also be pressure depleted. Because of the potential for water production, this zone should only be completed after depletion of the lower zones. Like the Big Injun, perforations should be limited to the upper 8' from 2092 to 2100', and the only treatment should be a small acid job.

Respectfully submitted,

NATIONAL MINERALS CORPORATION

By: Douglas L. Core, President

glas L. Core

July 6, 2015

Office of Oil and Gas
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OVI 19 2015
OVI Departmental Protection

