

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

API 47 - 087 - 02538 County ROANE District REEDY  
Quad LIVERPOOL Pad Name \_\_\_\_\_ Field/Pool Name Liverpool  
Farm name JERRY VANCE Well Number E. L. FLEMING #2(re-work)  
Operator (as registered with the OOG) KRAKROW, INC.  
Address P. O. BOX 1007 City SPENCER State WV Zip 25276

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey  
Top hole Northing 692,815 Easting 1,823,503  
Landing Point of Curve Northing N/A Easting N/A  
Bottom Hole Northing \_\_\_\_\_ Easting \_\_\_\_\_

Elevation (ft) 982' GL Type of Well  New  Existing Type of Report  Interim  Final  
Permit Type  Deviated  Horizontal  Horizontal 6A  Vertical Depth Type  Deep  Shallow  
Type of Operation  Convert  Deepen  Drill  Plug Back  Redrilling  Rework  Stimulate  
Well Type  Brine Disposal  CBM  Gas  Oil  Secondary Recovery  Solution Mining  Storage  Other \_\_\_\_\_  
Type of Completion  Single  Multiple Fluids Produced  Brine  Gas  NGL  Oil  Other \_\_\_\_\_  
Drilled with  Cable  Rotary

Drilling Media Surface hole  Air  Mud  Fresh Water Intermediate hole  Air  Mud  Fresh Water  Brine  
Production hole  Air  Mud  Fresh Water  Brine  
Mud Type(s) and Additive(s)  
NONE

Date permit issued 10/3/2012 Date drilling commenced 9/6/2012 RE-WORK Date drilling ceased N/A  
Date completion activities began 11/1/2013 Date completion activities ceased 2/18/2015  
Verbal plugging (Y/N) N/A Date permission granted N/A Granted by N/A

Please note: Operator is required to submit a plugging application within 5 days of verbal permission to plug.

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Freshwater depth(s) ft EST. BEHIND 7'- 90' & PITTSBURG 720' Open mine(s) (Y/N) depths JUL 06 2015  
Salt water depth(s) ft SALT SAND 1975' & BIG DUNKARD 1400' Void(s) encountered (Y/N) depths NO  
Coal depth(s) ft NO Cavern(s) encountered (Y/N) depths NO  
Is coal being mined in area (Y/N) NO

Reviewed by:  
JK 7/24/15  
E 08/14/2015

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CASING STRINGS	Hole Size	Casing Size	Depth	New or Used	Grade wt/ft	Basket Depth(s)	Did cement circulate (Y/ N) * Provide details below*
Conductor							
Surface							
Coal							
Intermediate 1		7"	2220'		20#		EXISTING
Intermediate 2							
Intermediate 3							
Production		4 1/2"	2600'	NEW	J-55 10.5#		N
Tubing							
Packer type and depth set		4 1/2" ANCHOR PACKER SET 2,357' W/DISC., 4 SQUEEZE HOLES @ 2,298'					

Comment Details 4 1/2" WAS SQUEEZE CEMENTED UP INTO 7", 4 1/2 " WAS RAN TO TD BELOW PACKER AND PERFERD IN BEREA

CEMENT DATA	Class/Type of Cement	Number of Sacks	Slurry wt (ppg)	Yield (ft <sup>3</sup> /sks)	Volume (ft <sup>3</sup> )	Cement Top (MD)	WOC (hrs)
Conductor							
Surface							
Coal							
Intermediate 1							
Intermediate 2							
Intermediate 3							
Production	TYPE I, CLASS A	65	15.6	1.18	77	1554'	72 HRS
Tubing							

Drillers TD (ft) 2616' Loggers TD (ft) 2514'  
 Deepest formation penetrated BEREA Plug back to (ft) \_\_\_\_\_  
 Plug back procedure \_\_\_\_\_

Kick off depth (ft) \_\_\_\_\_

Check all wireline logs run  caliper  density  deviated/directional  induction  
 neutron  resistivity  gamma ray  temperature  sonic

Well cored  Yes  No Conventional Sidewall Were cuttings collected  Yes  No

DESCRIBE THE CENTRALIZER PLACEMENT USED FOR EACH CASING STRING CBL/CCLVDL RECEIVED

4 1/2" - 2122', 1830'

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WAS WELL COMPLETED AS SHOT HOLE  Yes  No DETAILS FRACKED SHOT HOLE

WAS WELL COMPLETED OPEN HOLE?  Yes  No DETAILS 4 1/2" RAN THRU SHOT HOLE

WERE TRACERS USED  Yes  No TYPE OF TRACER(S) USED \_\_\_\_\_

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PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
1	11/1/2013	2590	2605	25	BEREA

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	12/11/13	10.3	1512	1483	960	5600	141	NONE

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Please insert additional pages as applicable.

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<u>PRODUCING FORMATION(S)</u>	<u>DEPTHS</u>	
<u>BEREA</u>	<u>2590</u> TVD	<u>        </u> MD
<u>        </u>	<u>        </u>	<u>        </u>
<u>        </u>	<u>        </u>	<u>        </u>
<u>        </u>	<u>        </u>	<u>        </u>

Please insert additional pages as applicable.

GAS TEST  Build up  Drawdown  Open Flow OIL TEST  Flow  Pump

SHUT-IN PRESSURE Surface          psi Bottom Hole          psi DURATION OF TEST          hrs

OPEN FLOW Gas          mcfpd Oil 5 bpd NGL          bpd Water 5 bpd GAS MEASURED BY  Estimated  Orifice  Pilot

LITHOLOGY/ FORMATION	TOP	BOTTOM	TOP	BOTTOM	DESCRIBE ROCK TYPE AND RECORD QUANTITY AND TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H <sub>2</sub> S, ETC)
	DEPTH IN FT NAME TVD	DEPTH IN FT TVD	DEPTH IN FT MD	DEPTH IN FT MD	
	<u>0</u>		<u>0</u>		
					SEE WELL LOG ATTACHED

Please insert additional pages as applicable.

Drilling Contractor ROY G. HILDRETH AND SON, INC  
Address P O BOX 1007 City SPENCER State WV Zip 25276

Logging Company NABORS COMPLETION & PRODUCTION SERVICES CO.-AND GRAY WIRE LINE  
Address P O BOX 975682 City DALLAS State TX Zip 75397-5682

Cementing Company ROY G. HILDRETH AND SON, INC.  
Address P O BOX 1007 City SPENCER State WV Zip 25276

Stimulating Company UNIVERAL WELL SERVICES, INC.  
Address P O BOX 200969 City DALLAS State TX Zip 75320

Please insert additional pages as applicable.

Completed by JON R. HILDRETH Telephone 304-927-2130  
Signature *Jon R. Hildreth* Title PRESIDENT Date 6/15/2015

Submittal of Hydraulic Fracturing Chemical Disclosure Information Attach copy of FRACFOCUS Registry

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**JUL 06 2015**

Well No. 2 *E. L. Fleming* Farm 76 Acres  
 Lease No. 99677 *Rusty* *Thomas* *Horne* County *H. Val.* State  
*Hick Oil Co.* Contractor *Hick Oil Co.* Contractor  
 Drilling Commenced 9-20-1920 Drilling Completed 11-1-1920  
 N. 8. 36 E. W. 50 Elevation 976.5 *FLOOR*

Rock Formation	Top	Bottom	Steel Line Measurement	Remarks
1st Pale.	694	797		
Water	735			
Little Sandhard	1174	1204		
Big Sandhard	1315	1395		
Sand	1504	1628		
Oil Show		1600		
Water	1600			
Water + sand	1728	2120		
Big Sand	2120	2146		
Big Sand	2146	2175		
Slate	2175	2180		
Sand	2180	2210		
Lime	2213	2244		
Slate + shells	2244	2570		Shot 15-70-40. So. 26 C 2601-2608 Hill Bridge
Brown shale	2570	2585		
Barren	2585	2608		
Oil Pay	2591	2593		
Oil Pay	2599	2606		
Total Depth		2616		

Purchased from the Hick Oil Company on 11-14-25

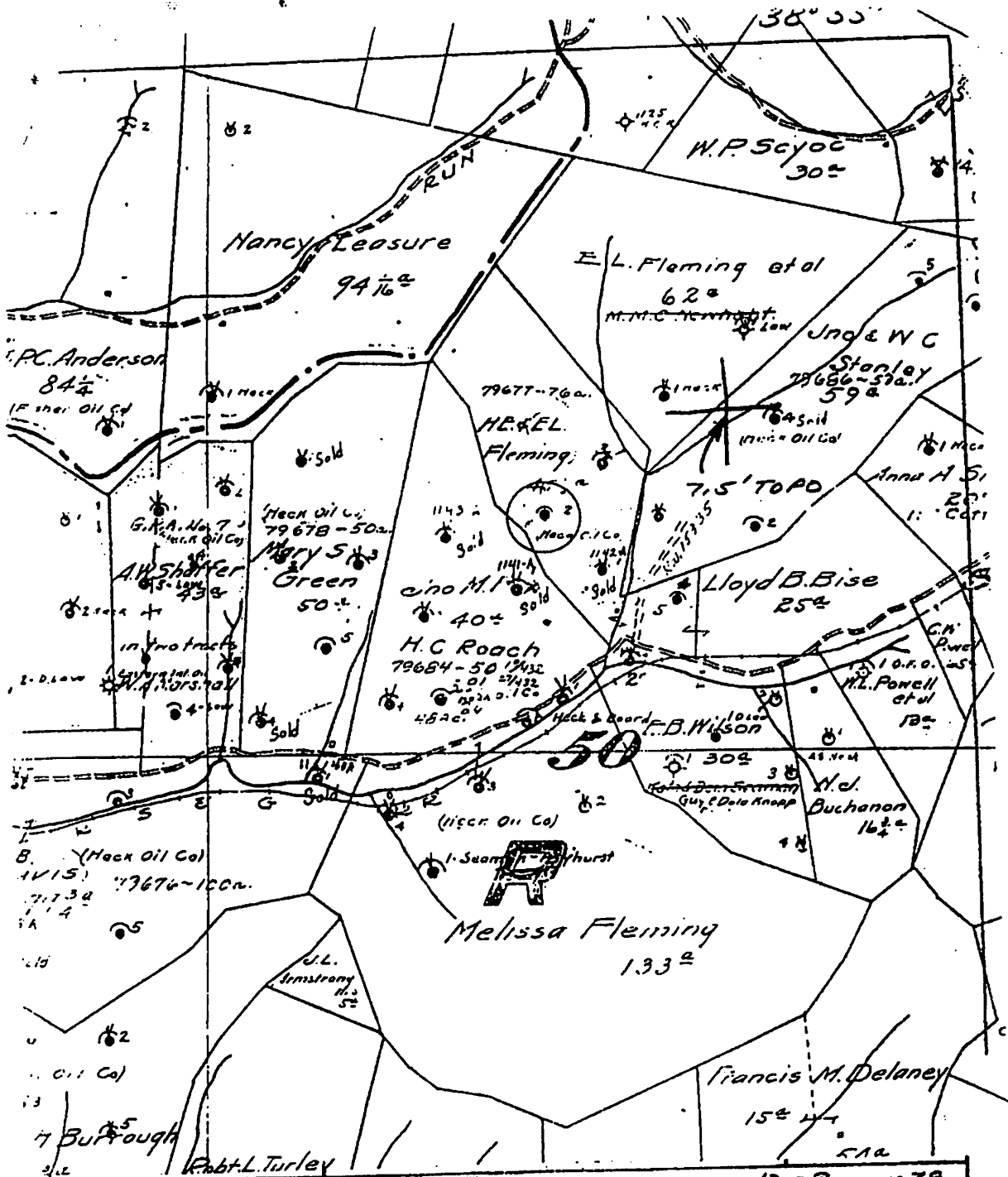
CASING RECORD AS TALLIED. NOT STEEL LINE MEASUREMENT.

Size	Put in Well		Pulled Out		Left in Well		Shot Date 11-1-20	Amount 60 lbs.	Sand 2589	Result	
	Feet	In	Feet	In	Feet	In					
10"	960		960							6-22-37 6.0 lbs. 2608 36. Hill Bridge	
8 1/4"	1265		1265								
6 7/8"	2214										
6 7/8"	Sand show on 6 7/8" log.										
										Packer Size	
										Depth Set	

Production First 24 Hours..... Bbls. Gas Test.....  
 Approved by..... Superintendent

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(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS  
 FORM IV-6  
 (8-78)  
 30 S36 W50



DATE 12-8-, 1978  
 OPERATOR'S WELL NO 2  
 API WELL NO. 47-087-2538  
 STATE COUNTY PERMIT

STATE OF WEST VIRGINIA  
 DEPARTMENT OF MINES  
 OIL AND GAS DIVISION

WELL TYPE: OIL  GAS  LIQUID INJECTION  WASTE DISPOSAL   
 (IF "GAS", PRODUCTION STORAGE DEEP SHALLOW   
 LOCATION: ELEVATION N/A WATER SHED BRUSHY CR SANDY CR  
 DISTRICT REEDY COUNTY ROANE  
 QUADRANGLE LIVERPOOL 7.5'  
 SURFACE OWNER \_\_\_\_\_ ACREAGE \_\_\_\_\_  
 OIL & GAS ROYALTY OWNER \_\_\_\_\_ LEASE ACREAGE \_\_\_\_\_  
 LEASE NO. \_\_\_\_\_  
 PROPOSED WORK: DRILL  CONVERT  DRILL DEEPER  REDRILL  FRACTURE OR  
 STIMULATE  PLUS OFF OLD FORMATION  PERFORATE NEW  
 FORMATION  OTHER PHYSICAL CHANGE IN WELL (SPECIFY) \_\_\_\_\_

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PLUG AND ABANDON  CLEAN OUT AND REPLUG   
 TARGET FORMATION \_\_\_\_\_ ESTIMATED DEPTH \_\_\_\_\_  
 WELL OPERATOR Pennzoil Company DESIGNATED AGENT James A. Crews  
 ADDRESS P. O. Box 1588 ADDRESS P. O. Box 1588  
Parkersburg, WV 26101 Parkersburg, WV 26101

08/14/2015