



west virginia department of environmental protection

Office of Oil and Gas
601 57th Street SE
Charleston, WV 25304
(304) 926-0450
(304) 926-0452 fax

Earl Ray Tomblin, Governor
Randy C. Huffman, Cabinet Secretary
www.dep.wv.gov

December 04, 2013

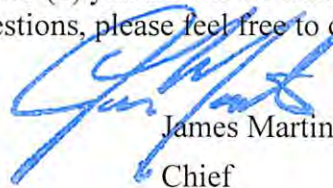
WELL WORK PERMIT
Secondary Recovery Well

This permit, API Well Number: 47-10302724, issued to HG ENERGY, LLC, is evidence of permission granted to perform the specified well work at the location described on the attached pages and located on the attached plat, subject to the provisions of Chapter 22 of the West Virginia Code of 1931, as amended, and all rules and regulations promulgated thereunder, and to all conditions and provisions outlined in the pages attached hereto. Notification shall be given by the operator to the Oil and Gas Inspector at least 24 hours prior to the construction of roads, locations, and/or pits for any permitted work. In addition, the well operator shall notify the same inspector 24 hours before any actual well work is commenced and prior to running and cementing casing. Spills or emergency discharges must be promptly reported by the operator to 1-800-642-3074 and to the Oil and Gas inspector.

Please be advised that form WR-35, Well Operators Report of Well Work is to be submitted to this office within 90 days completion of permitted well work, as should form WR-34 Discharge Monitoring Report within 30 days of discharge of pits, if applicable. Failure to abide by all statutory and regulatory provisions governing all duties and operations hereunder may result in suspension or revocation of this permit and, in addition, may result in civil and/or criminal penalties being imposed upon the operators.

In addition to the applicable requirements of this permit, and the statutes and rules governing oil and gas activity in WV, this permit may contain specific conditions which must be followed. Permit conditions are attached to this cover letter.

Per 35CSR-4-5.2.g this permit will expire in two (2) years from the issue date unless permitted well work is commenced. If there are any questions, please feel free to contact me at (304) 926-0499 ext. 1654.



James Martin
Chief

Operator's Well No: S. L. CRANE 306
Farm Name: BRIGGS, DIANA & DANNY
API Well Number: 47-10302724
Permit Type: Secondary Recovery Well
Date Issued: 12/04/2013

Promoting a healthy environment.

PERMIT CONDITIONS

West Virginia Code § 22-6-11 allows the Office of Oil and Gas to place specific conditions upon this permit. Permit conditions have the same effect as law. Failure to adhere to the specified permit conditions may result in enforcement action.

CONDITIONS

1. If the operator encounters an unanticipated void, or an anticipated void at an unanticipated depth, the operator shall notify the inspector within 24 hours. Modifications to the casing program may be necessary to comply with W. Va. Code § 22-6-20, which requires drilling to a minimum depth of thirty feet below the bottom of the void, and installing a minimum of twenty (20) feet of casing. Under no circumstance should the operator drill more than fifty (50) feet below the bottom of the void or install less than twenty (20) feet of casing below the bottom of the void.
2. Pursuant to 35 CSR § 4-19.1.a, at the request of the surface owner all water wells or springs within 1000 feet of the proposed well that are actually utilized for human consumption, domestic animals or other general use shall be sampled and analyzed.
3. Pursuant to 35 CSR § 4-19.1.c, if the operator is unable to sample and analyze any water well or spring within one thousand (1,000) feet of the permitted well location, the Office of Oil and Gas requires the operator to sample, at a minimum, one water well or spring located between one thousand (1,000) feet and two thousand (2,000) feet of the permitted well location.
4. All pits must be lined with a minimum of 20 mil thickness synthetic liner.
5. In the event of an accident or explosion causing loss of life or serious personal injury in or about the well or while working on the well, the well operator or its contractor shall give notice, stating the particulars of the accident or explosion, to the oil and gas inspector and the Chief within twenty-four (24) hours.
6. During the surface casing and cementing process, in the event cement does not return to the surface, or any other casing string that is permitted to circulate cement to the surface and does not return to the surface, the oil and gas inspector shall be notified within twenty-four (24) hours.
7. Well work activities shall not constitute a hazard to the safety of persons.
8. If well work related activities require the use of water obtained by withdrawals from waters of this state in amounts that exceed two hundred ten thousand gallons during any thirty day period, the operator is required to consult, and adhere to, the guidance provided by DEP's Water Withdrawal Guidance Tool prior to any water withdrawals.

State of West Virginia
Division of Environmental Protection
Section of Oil and Gas
Well Operator's Report of Well Work

COPY

103 027245

Farm name: BRIGGS, DIANA & DANNY Operator Well No.: S.L. CRANE 306
LOCATION: Elevation: 939' Quadrangle: BIG RUN 7.5'
District: CENTER County: WETZEL
Latitude: 1,315 Feet south of 39 Deg 37 Min 30 Sec.
Longitude: 9,115 Feet west of 80 Deg 35 Min 0 Sec.

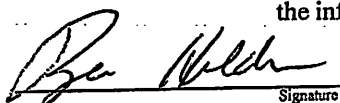
Company Address:	HG Energy PO Box 5519 Vienna, WV 26105	Casing & Tubing	Used in Drilling	Left in Well	Cement Fill Up Cu. Ft.
Inspector:	Derek Haught				
Date Permit Issued:	12/09/2011				
Date Well Work Commenced:	12/27/2011				
Date Well Work Completed:	02/10/2012				
Verbal Plugging:					
Date Permission Granted On:					
Rotary X Cable Rig		7"	933'	933'	190 sks
Total vertical Depth (ft):	3150'				
Total Measured Depth (ft):	3312'				
Fresh Water Depth (ft):	none	4 1/2"	3218.9'	3218.9'	200 sks
Salt Water Depth (ft):	none				
Is Coal being mined in ares (Y/N)?	No				
Coal Depths (ft): x	924'-931'				
Void(s) encountered (Y/N) depth(s):	NONE				

OPEN FLOW DATA

This well drilled directionally 6.8 degrees NE a distance of 606.37'.

3024'-3030'
3155.5'-3160.5'
Producing formation Gordon Pay zone (ft) _____
Gas: Initial open flow 23 MCF/d Oil: Initial open flow 4 Bbl/d
Final open flow * MCF/d Final open flow * Bbl/d
Time of open flow between initial and final tests * Hours
Static rock pressure * psig (surface pressure) after * Hours
Second producing formation _____ Pay zone depth (ft) _____
Gas: Initial open flow _____ MCF/d Oil: Initial open flow _____ Bbl/d
Final open flow _____ MCF/d Final open flow _____ Bbl/d
Time of open flow between initial and final tests _____ Hours
Static rock pressure _____ psig (surface pressure) after _____ Hours

I certify under penalty of law that I have personally examined and am familiar with the information submitted on this document and all the attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete.


Signature

5/23/12
Date

Received
NOV 13 2011
WV Dept. of Environmental Protection
Section of Oil and Gas

Were core samples taken? No
 Were Y Electrical, N Mechanical, N or Geophysical logs recorded on this well?
 Y/N Y/N

Were cuttings caught during drilling? No
 N or Geophysical logs recorded on this well?
 Y/N

103027245

NOTE: IN THE AREA BELOW PUT THE FOLLOWING: 1). DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC. 2). THE WELL LOG WHICH IS A SYSTEMATIC DETAILED GEOLOGICAL RECORD OF THE TOPS AND BOTTOMS OF ALL FORMATIONS, INCLUDING COAL ENCOUNTERED BY THE WELLBORE FROM SURFACE TO TOTAL DEPTH.

Treatment : Treated perms 3155.5'-3160.5' w/ 200 bbls x linked gel and 6,000# 20/40 sand.
 Treated perms 3024'-3030' w/500 gals 15%HCL, 298bbls Crosslink gel, & 20,000# 20/40 sand.

Well Log : All depths are measured relative to KB (8' AGL).

Shale w/ sand streaks	0	-	924
Coal	924	-	931
Shale	931	-	934
Sand	934	-	1012
shale	1012	-	1132
sand	1132	-	1150
shale	1150	-	1266
sand	1266	-	1280
shale	1280	-	1304
sand	1304	-	1324
shale	1324	-	1443
sand	1443	-	1494
shale	1494	-	1536
sand	1536	-	1594
shale	1594	-	1660
sand	1660	-	1698
shale	1698	-	1712
sand	1712	-	1727
shale	1727	-	1768
sand	1768	-	1782
shale	1782	-	1800
sand	1800	-	1860
shale	1860	-	1950
sand	1950	-	1963
shale	1963	-	1978
sand	1978	-	1985
shale	1985	-	1988
Big Lime	1988	-	2080
Big Linjun	2080	-	2313
shale	2313	-	2984
Gordon Stray	2984	-	3008
shale	3008	-	3114
Gordon	3114	-	3038
shale	3038	-	3044
sand	3044	-	3056
shale	3056	-	3155
sand	3155	-	3161
shale	3161	-	3312
TD	3312		
T.D. -Logger	3311	KB	
T.D. -Driller	3312	KB	

Received

NOV 13 1983

Office of Oil and Gas
 U.S. Dept. of Environmental Protection

WW-2B1

Well No. s. L. Crane No. 306

West Virginia Department of Environmental Protection
Office of Oil and Gas

NOTICE TO SURFACE OWNERS

The well operator named below is preparing to file for a permit from the state to drill a new well. Before a well work permit can be filed with the Chief of the Office of Oil and Gas, the well operator is required to have given notice of the right to request water well or spring analytical testing. This notice shall be given to the owners or occupants of land which have a water well or spring being utilized for human consumption, domestic animals, or other general use and which is located within 1000 feet of the proposed well site.

With this form, the operator is giving you notice of your right to request analytical testing, The operator is required to sample and analyze the water wells or springs of all owners or occupants who request it. Therefore if you wish to have your water well or spring tested, contact the operator named below.

All sampling shall be completed prior to drilling. Within thirty (30) days of the receipt of such sample analyses the operator shall submit the results to the Chief of the Office of Oil and Gas and to the owners or occupants who may have requested them.

If no water well or spring is located within 1000 feet, the Chief may require the operator to sample and analyze water from a water well or spring within 2000 feet of the proposed well site.

Be advised, you have the right to sample and analyze any water supply at your own expense.

The laboratory used by the operator to analyze the samples will be approved by the Chief. The operator named below has decided to use the following laboratory to analyze the water samples:

Contractor Name Sturm Environmental Services
 Well operator's private laboratory

Well Operator HG Energy, LLC
Address 5260 Dupont Road
Parkersburg, WV 26101
Telephone 304-420-1119

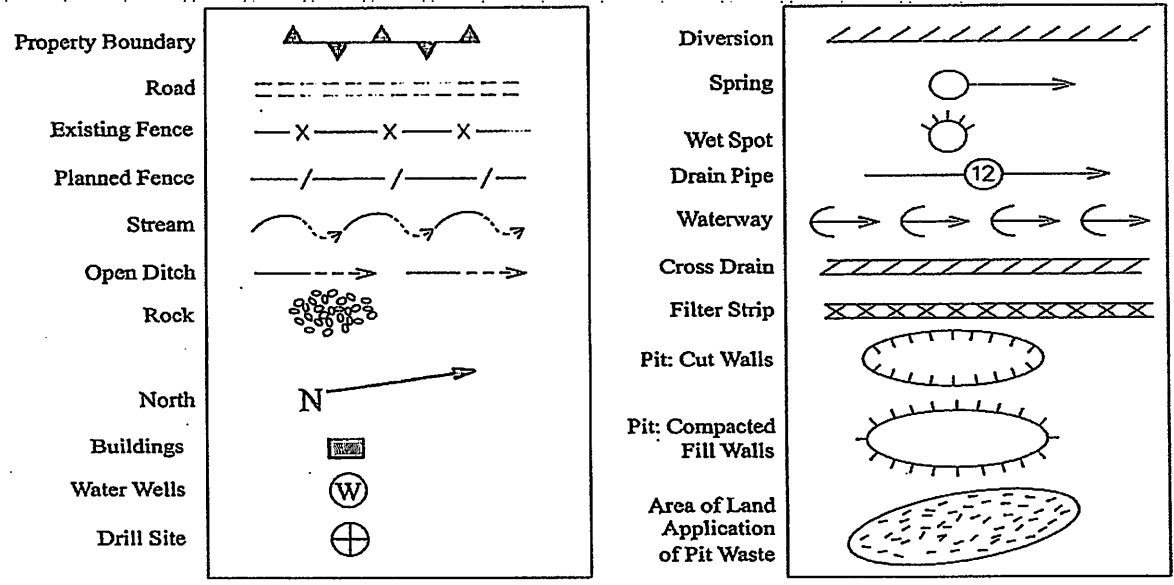
FOR OPERATOR'S USE ONLY: Below, or on an attached page, list those persons which were given this notice. Place an asterisk beside the one(s) that contacted you and requested sampling and analyses. If there were no requests made, indicate by underlining which one you have selected to sample and analyze. If there are no water wells or springs within 1000 feet of the proposed site please indicate such.

No known Water Supply Sources are located within 2000' of proposed well.

RECEIVED
OFFICE OF OIL AND GAS
NOV 20 2013
11:11 AM

WW9-Rack

Legend



Area I

Proposed Revegetation Treatment: Acres Disturbed Approx. 0.2 Ac. Prevegetation pH

Area II

Approx. 0.1 Ac.

Lime 2 Tons/Acre or Correct to pH 6.5

Fertilizer (10-20-20 or Equivalent) 500 Lbs./Acre (500 lbs. Minimum)

Mulch Straw 2 Tons/Acre

SEED MIXTURES

<u>Area I (Location)</u>		<u>Area II (Road)</u>	
Seed Type	Lbs./Ac.	Seed Type	Lbs./Ac.
Tall Fescue	40	Tall Fescue	40
Ladino Clover	5	Ladino Clover	5

Attach:
 Drawing(s) of road, location, pit and proposed area for land application
 Photocopied section of involved 7.5' topographic sheet.

Plan approved by:
 Comments:

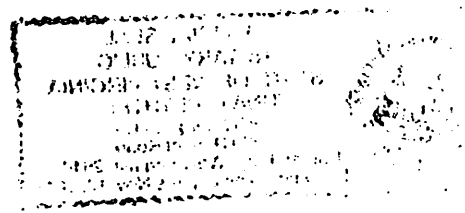
Title: Oil + Gas Inspector Date: 10-28-17

Field Reviewed? Yes No

Received

NOV 13 2017

Office of Oil and Gas
 WV Dept. of Environmental Protection



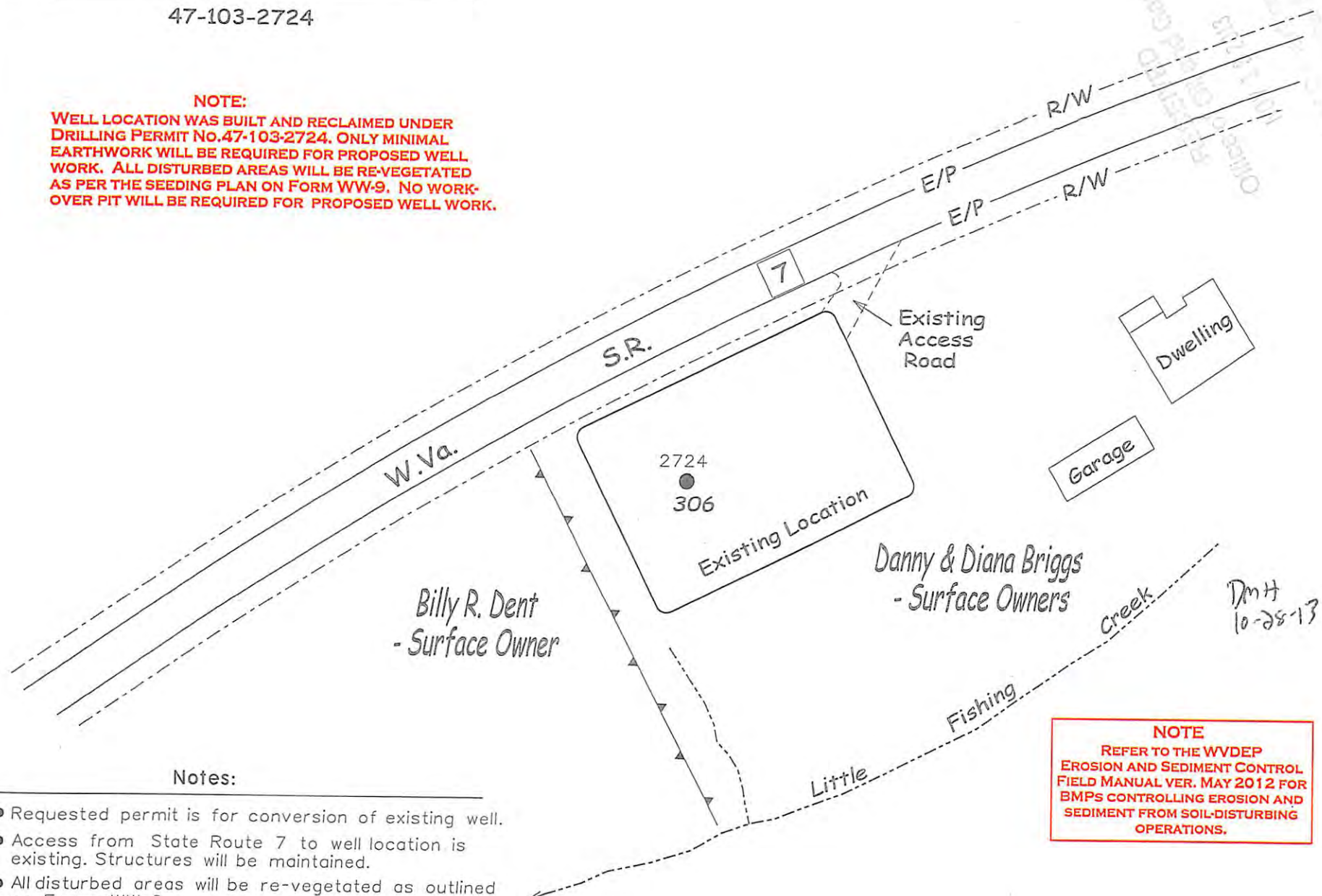
103027245

Reclamation Plan For: S.L. Crane No.306

47-103-2724

NOTE:

WELL LOCATION WAS BUILT AND RECLAIMED UNDER DRILLING PERMIT NO.47-103-2724. ONLY MINIMAL EARTHWORK WILL BE REQUIRED FOR PROPOSED WELL WORK. ALL DISTURBED AREAS WILL BE RE-VEGETATED AS PER THE SEEDING PLAN ON FORM WW-9. NO WORK-OVER PIT WILL BE REQUIRED FOR PROPOSED WELL WORK.



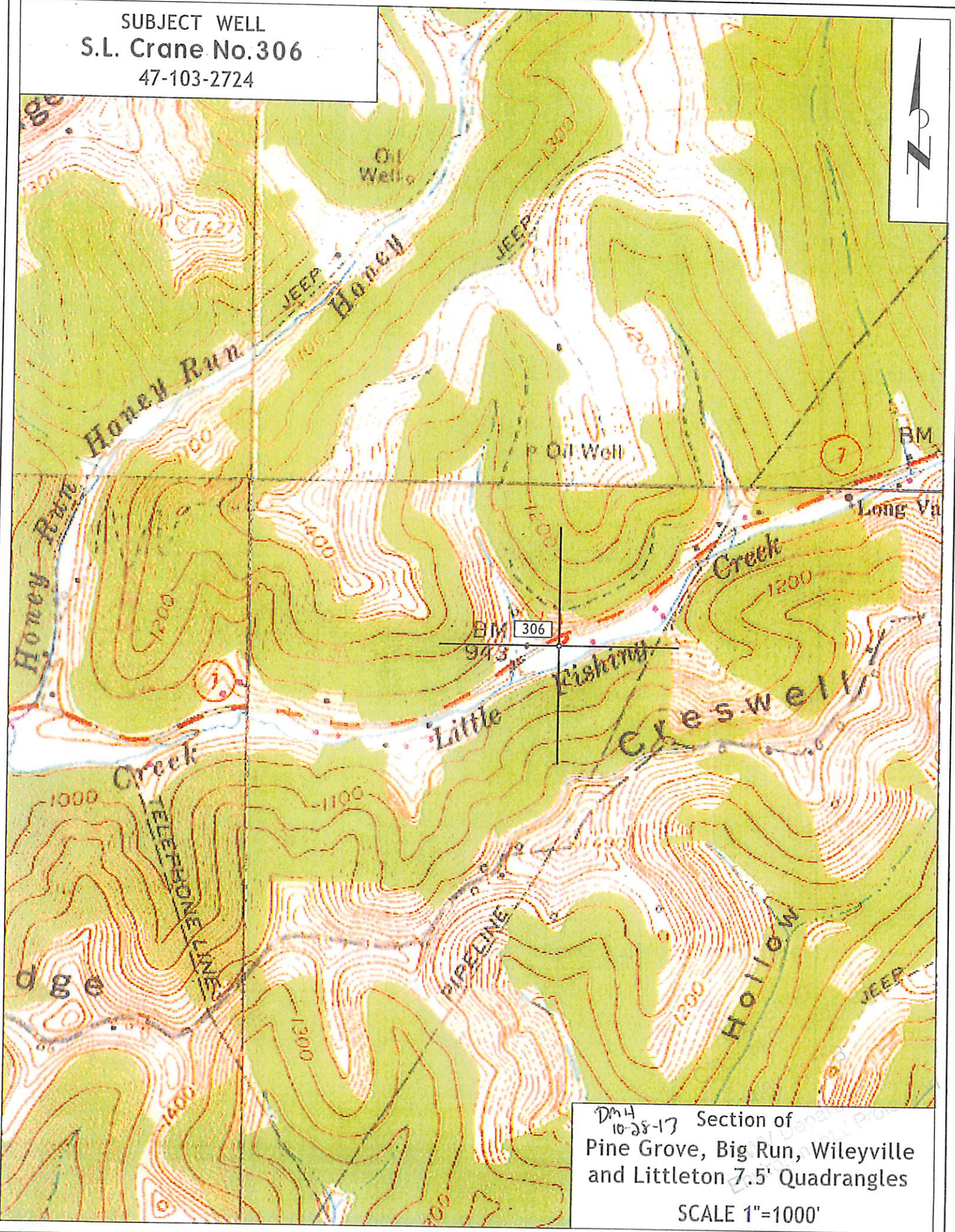
Notes:

- Requested permit is for conversion of existing well.
- Access from State Route 7 to well location is existing. Structures will be maintained.
- All disturbed areas will be re-vegetated as outlined on Form WW-9.
- Maintain sediment barriers and drainage structures.
- All road grades <5% except as noted.

NOTE
REFER TO THE WVDEP
EROSION AND SEDIMENT CONTROL
FIELD MANUAL VER. MAY 2012 FOR
BMPs CONTROLLING EROSION AND
SEDIMENT FROM SOIL-DISTURBING
OPERATIONS.

Note: Drawing not to Scale

SUBJECT WELL
S.L. Crane No.306
47-103-2724



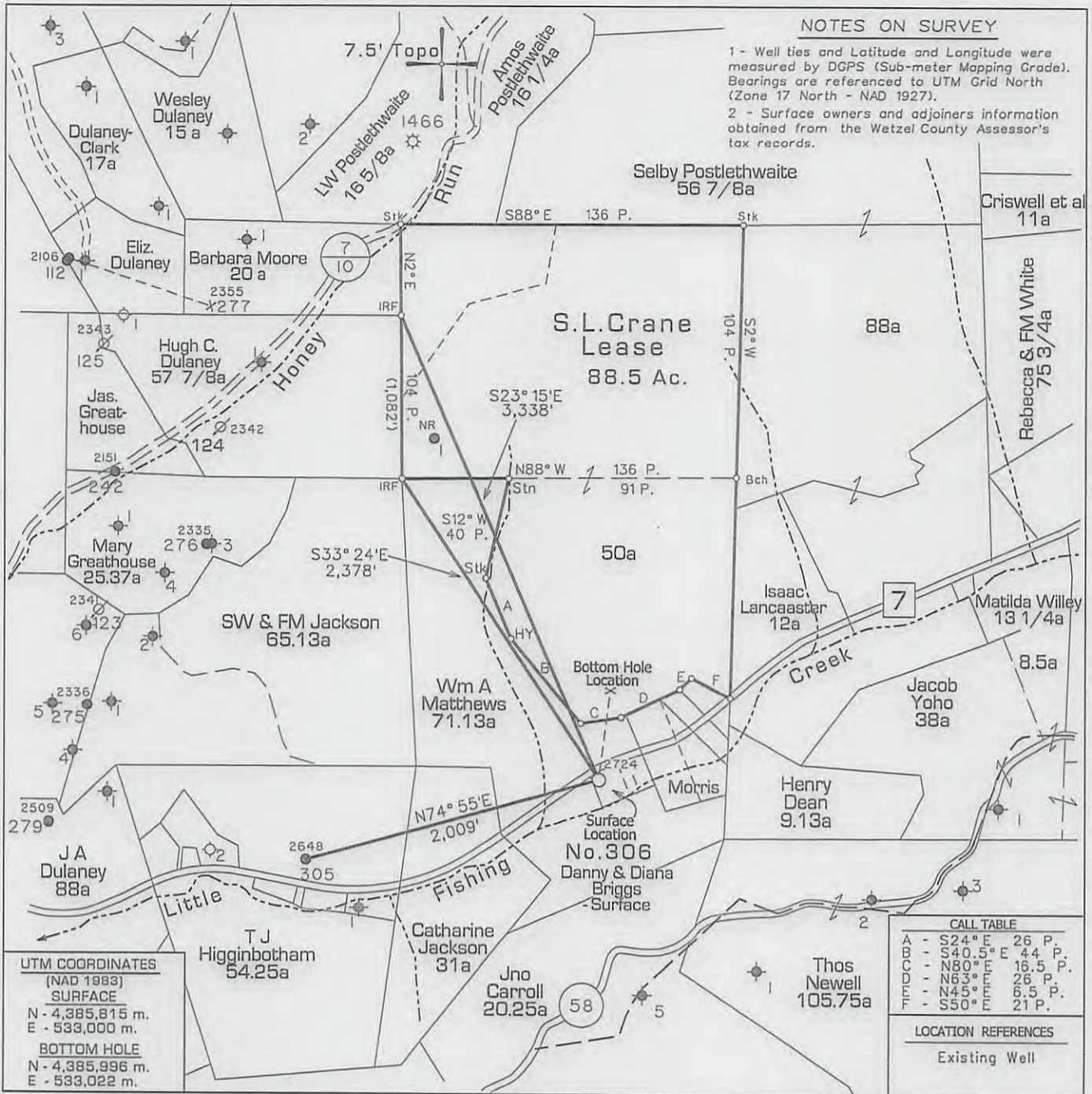
Dm 4
10-28-17 Section of
Pine Grove, Big Run, Wileyville
and Littleton 7.5' Quadrangles
SCALE 1"=1000'

Longitude - 80° 36' 56.55"

9,115'

Bottom Hole Longitude - 80° 36' 55.6"

LATITUDE 39° 37' 30"



NOTES ON SURVEY

1 - Well ties and Latitude and Longitude were measured by DGPS (Sub-meter Mapping Grade). Bearings are referenced to UTM Grid North (Zone 17 North - NAD 1927).

2 - Surface owners and adjoiners information obtained from the Wetzel County Assessor's tax records.

UTM COORDINATES (NAD 1983)

SURFACE
 N - 4,385,815 m.
 E - 533,000 m.

BOTTOM HOLE
 N - 4,385,996 m.
 E - 533,022 m.

CALL TABLE

A	- S24° E	26 P.
B	- S40.5° E	44 P.
C	- N80° E	16.5 P.
D	- N63° E	26 P.
E	- N45° E	6.5 P.
F	- S50° E	21 P.

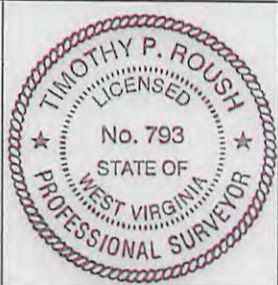
LOCATION REFERENCES
Existing Well

— DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS. ◆ - DENOTES A POSSIBLE WATER SUPPLY SOURCE LOCATED FROM CIRCA 2003 AERIAL PHOTOGRAPHY - NOT BY SURVEY. OTHER SOURCES MAY BE PRESENT.

FILE NO. 1046-25
 MAP NO. N S E W
 SCALE 1" = 1,000'
 MINIMUM DEGREE OF ACCURACY Sub-Meter
 PROVEN SOURCE OF ELEVATION DGPS Survey
 (Sub-Meter Mapping Grade)

I THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND THE REGULATIONS ISSUED AND PRESCRIBED BY THE DEPARTMENT OF MINES.

(SIGNED) *Timothy P. Roush*
 TIMOTHY P. ROUSH PS 793



WEST VIRGINIA
 Division of Environmental Protection
 Office of Oil and Gas
 601 57th Street
 Charleston, West Virginia 25304



DATE October 21, 2013
 FARM S.L. Crane No.306
 API WELL NO. 47-103-02724S

WELL TYPE: OIL GAS LIQUID INJECTION X WASTE DISPOSAL HORIZONTAL
 (IF "GAS") PRODUCTION STORAGE DEEP SHALLOW X CBM
 LOCATION: ELEVATION 939' WATERSHED Little Fishing Creek
 DISTRICT Center COUNTY Wetzel
 QUADRANGLE Big Run 7.5'
 SURFACE OWNER Danny & Diana Briggs ACREAGE 1.23 Ac.
 OIL & GAS ROYALTY OWNER James E. Ashcroft et al. LEASE ACREAGE 142.5 Ac.
 LEASE NO. 107764-00
 PROPOSED WORK: DRILL CONVERT X DRILL DEEPER REDRILL FRACTURE OR STIMULATE PLUG OFF OLD FORMATION PERFORATE NEW FORMATION OTHER PHYSICAL CHANGE IN WELL (SPECIFY) CONVERT TO LIQUID INJECTION
 PLUG AND ABANDON CLEAN OUT AND REPLUG
 TARGET FORMATION Gordon ESTIMATED DEPTH 3,312' MD
 WELL OPERATOR HG Energy, LLC DESIGNATED AGENT Mike Kirsch
 ADDRESS 5260 Dupont Road ADDRESS 5260 Dupont Road
Parkersburg, WV 26101 Parkersburg, WV 26101

FORM IV-6

Longitude 80° 37' 22.8" Bottom Hole Latitude 39° 37' 22.8"

Latitude 39° 37' 16.98" Longitude 80° 35' 00"

Longitude 80° 35' 00" Bottom Hole Latitude 39° 37' 22.8"

Latitude 39° 37' 16.98" Longitude 80° 35' 00"