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**west virginia** department of environmental protection

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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

June 23, 2016

**WELL WORK PLUGGING PERMIT**

**Plugging**

This permit, API Well Number: 47-8101271, issued to EXCO RESOURCES (PA), 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.

Upon completion of the plugging well work, the above named operator will reclaim the site according to the provisions of WV Code 22-6-30. The above named operator will also file, as required in WV Code 22-6-23, an affidavit on form WR-38 by two experienced persons in the operator's employment and the Oil and Gas inspector that the work authorized under this permit was performed and a description given. Failure to abide by all statutory and regulatory provisions governing all duties and operations here under may result in suspensions or revocation of this permit and in addition may result in civil and/or criminal penalties being imposed upon the operator.

This permit will expire in two (2) years from date of issue. If there are any questions, please free to contact me at (304) 926-0499 ext. 1654.

James Martin  
Chief

Operator's Well No: NEW RIVER 32  
Farm Name: WHITE OAK LAND CO.  
**API Well Number: 47-8101271**  
**Permit Type: Plugging**  
Date Issued: 06/23/2016

## 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

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1. All pits must be lined with a minimum of 20 mil thickness synthetic liner.
2. 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.
3. Well work activities shall not constitute a hazard to the safety of persons.
4. This well is under a consent order and must be plugged under the terms of that agreement.





8101271P

WR-35  
Rev (5-01)

DATE: 11/03/2004  
API #: 47-8101271

State of West Virginia  
Department of Environmental Protection  
Office of Oil and Gas

Well Operator's Report of Well Work

*Gas*

Farm name: New River

Operator Well No: #32

LOCATION: Elevation: GL 2409

Quadrangle: Beckley 7.5'

District: Town County: Raleigh  
Latitude: 2840' Feet South of 37 Deg. 50 Min. 00 Sec.  
Longitude: 6080' Feet West of 81 Deg. 10 Min. 00 Sec.

Company: Energy Search, Inc

	Casing & Tubing	Used In drilling	Left in well	Cement fill up Cu. Ft.
Address: 88 Products Lane Marietta, Ohio 45750	13 3/8"	22'	22'	
Agent: Mike McCown	9 5/8"	512'	512'	90 sks
Inspector: Rick Campbell				
Date Permit Issued: 5/28/2002	7"	1167'	1167'	175 sks
Date Well Work Commenced: 6/13/2002				
Date Well Work Completed: 6/16/2002	4 1/2"	1823'	1823'	115 sks
Verbal Plugging:				
Date Permission granted on:	1 1/2"		1624'	
Rotary XX Cable Rig				
Total Depth (feet): 2350'				
Fresh Water Depth (ft.): 240' wet; 360' 1" stream 640' 7" stream				
Salt Water Depth (ft.):				
Is coal being mined in area (N/Y)? N				
Coal Depths (ft.): Open Mine 360'				

*Handwritten calculations:*  
 115  
 17.4  
 460  
 115  
 115  
 121 7.0  
 600'  
 175  
 2.8  
 1400  
 1225  
 13450  
 1365 7"

OPEN FLOW DATA

Producing formation Ravenc Cliff Pay zone depth (ft) 1624-1627 -10 shots  
 Gas: Initial open flow TSTM MCF/d Oil: Initial open flow \_\_\_\_\_ Bbl/d  
 Final open flow water + 60 MCF/d Final open flow \_\_\_\_\_ Bbl/d  
 Time of open flow between initial and final tests \_\_\_\_\_ Hours  
 Static rock Pressure 175 psig (surface pressure) after 14 Hours

*Handwritten initials*

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

NOTE: ON BACK OF THIS FORM 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 ALL FORMATIONS INCLUDING COAL ENCOUNTERED BY THE WELLBORE.

Signed: [Signature]  
 By: \_\_\_\_\_  
 Date: 11.03.2004

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 Office of Oil & Gas  
 Office of Chief  
 JUN 09 2016  
 MAR 18 2005  
 WV Department of Environmental Protection

06/24/2016

Formation Tops (from KB 2415)

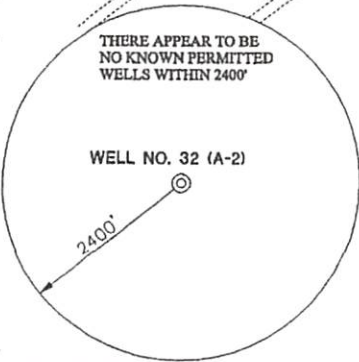
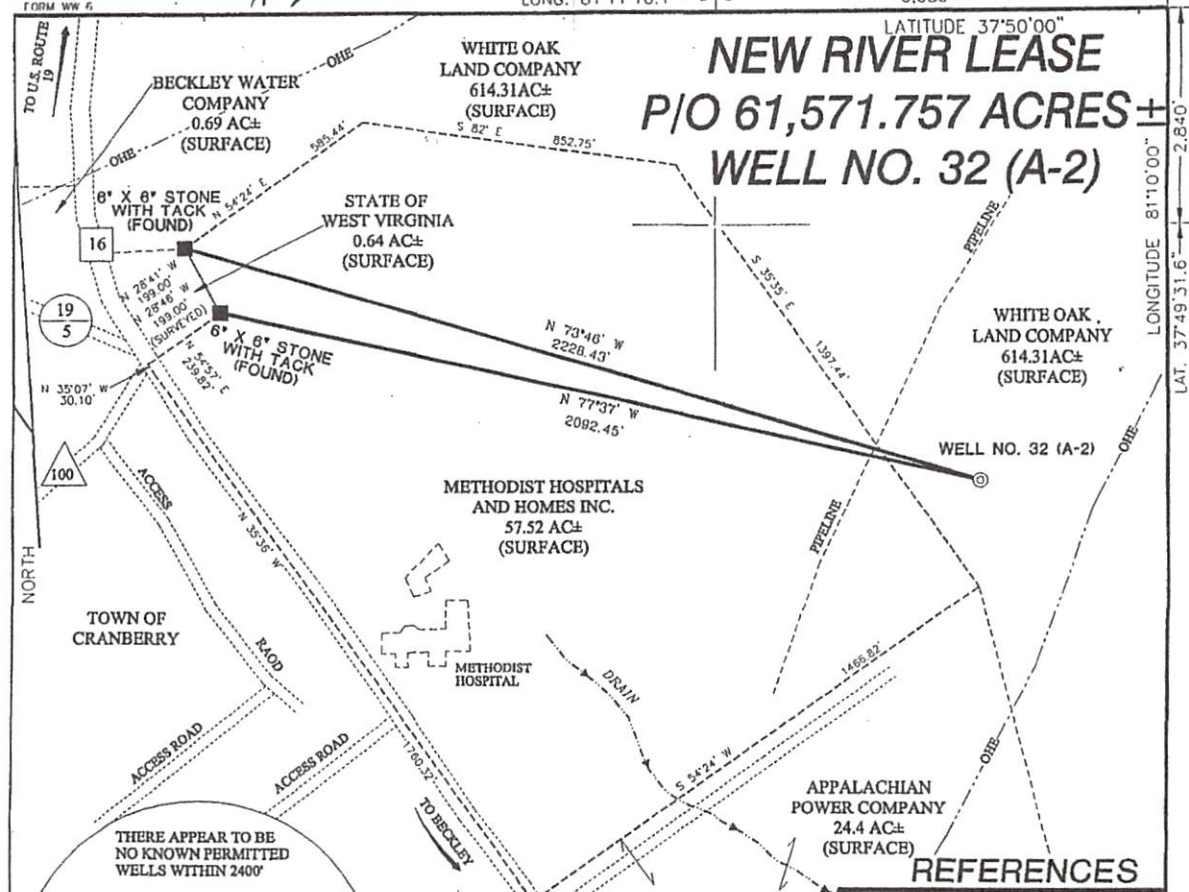
Pride Hot Shale	1541 – 1555
Ravenclyff Sand	1615 – 1659
Avis Lime	1669 – 1705
Maxton Sands	Not Present
TD	2350

Well appears to be wet with a show of gas

*JK*

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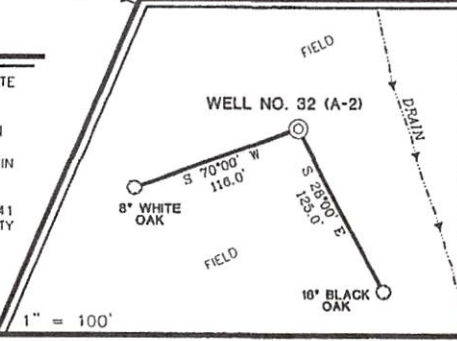
810271P  
New River  
92



REFERENCES

NOTES ON SURVEY

1. TIES TO CORNERS ARE BASED ON STATE PLANE GRID NORTH WV SOUTH ZONE NAD '27.
2. TIES TO REFERENCES ARE BASED ON MAGNETIC NORTH 11/14/01.
3. LEASE BOUNDARY IS NOT SHOWN WITHIN THE PARAMETERS OF THIS PLAT.
4. SURFACE OWNER AND ADJOINER INFORMATION TAKEN FROM ROLL BOOK 141 PAGE 2255 IN THE ASSESSOR AND COUNTY CLERKS OFFICE OF RALEIGH COUNTY IN NOVEMBER, 2001.
5. WELL LAT./LONG. ESTABLISHED BY DGPS(SUBMETER 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 DIVISION OF ENVIRONMENTAL PROTECTION.

P.S. 677 Gregory A. Smith



(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS.  
 DATE NOVEMBER 27, 20 01  
 OPERATORS WELL NO. 32 (A-2)  
 API WELL NO. 47 - 81 - 01271  
 STATE COUNTY PERMIT

MINIMUM DEGREE OF ACCURACY 1 / 2500 FILE NO. 4143P32(107-72)  
 PROVEN SOURCE OF ELEVATION JUNCTION OF ROADS ELEVATION 2472'  
 SCALE 1"=400'

STATE OF WEST VIRGINIA  
 DIVISION OF ENVIRONMENTAL PROTECTION  
 OFFICE OF OIL AND GAS

WELL TYPE : OIL  GAS  LIQUID INJECTION  WASTE DISPOSAL  IF "GAS" PRODUCTION  STORAGE  DEEP  SHALLOW

LOCATION : ELEVATION 2409' WATERSHED TRIBUTARY OF CRANBERRY CREEK  
 DISTRICT TOWN COUNTY RALEIGH QUADRANGLE BECKLEY 7.5

SURFACE OWNER WHITE OAK LAND COMPANY ACREAGE 614.31±  
 ROYALTY OWNER NEW RIVER COMPANY LEASE ACREAGE P/O 61,571.757±

PROPOSED WORK : LEASE NO. JUN 09 2016  
 DRILL  CONVERT  DRILL DEEPER  REDRILL  FRACTURE OR STIMULATE  PLUG OFF OLD FORMATION  PERFORATE NEW FORMATION  PLUG AND ABANDON  CLEAN OUT AND REPLUG  OTHER

PHYSICAL CHANGE IN WELL (SPECIFY) \_\_\_\_\_ TARGET FORMATION \_\_\_\_\_ ESTIMATED DEPTH 3000

WELL OPERATOR ENERGY SEARCH, INC. DESIGNATED AGENT FRANK ROTUNDA  
 ADDRESS 280 SANDERS W. BLVD. SUITE 209 ADDRESS 1608 GREENMONT HILLS DR.  
 KNOXVILLE, TN 37922 VIENNA, WV 26105

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 Environmental Protection

06/24/2016



8101271P

WW-4A  
Revised 6-07

1) Date: 5/1/2016  
2) Operator's Well Number  
New River 32  
3) API Well No.: 47 - 081-01271

**STATE OF WEST VIRGINIA**  
**DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS**  
**NOTICE OF APPLICATION TO PLUG AND ABANDON A WELL**

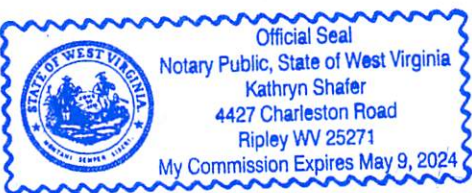
4) Surface Owner(s) to be served:  (a) Coal Operator  
(a) Name White Oak Land Company Name Beaver Coal co.  
Address 63 White Oak Road, Beckley, WV 25801 Address 115 1/2 Kanawha St. Beckley, WV 25801  
  
(b) Name \_\_\_\_\_ (b) Coal Owner(s) with Declaration Beaver Coal Co LTD  
Address \_\_\_\_\_ Name \_\_\_\_\_  
P.O. \_\_\_\_\_  
  
(c) Name \_\_\_\_\_ Address \_\_\_\_\_  
  
6) Inspector Gary Kennedy (c) Coal Lessee with Declaration  
Address P.O. Box 268 Name \_\_\_\_\_  
Nimitz, WV 25978 Address \_\_\_\_\_  
Telephone Ph. (304) 382 8402

**TO THE PERSONS NAMED ABOVE: You should have received this Form and the following documents:**

- (1) The application to Plug and Abandon a Well on Form WW-4B, which sets out the parties involved in the work and describes the well its and the plugging work order; and
- (2) The plat (surveyor's map) showing the well location on Form WW-6.

The reason you received these documents is that you have rights regarding the application which are summarized in the instructions on the reverses side. However, you are not required to take any action at all.

Take notice that under Chapter 22-6 of the West Virginia Code, the undersigned well operator proposes to file or has filed this Notice and Application and accompanying documents for a permit to plug and abandon a well with the Chief of the Office of Oil and Gas, West Virginia Department of Environmental Protection, with respect to the well at the location described on the attached Application and depicted on the attached Form WW-6. Copies of this Notice, the Application, and the plat have been mailed by registered or certified mail or delivered by hand to the person(s) named above (or by publication in certain circumstances) on or before the day of mailing or delivery to the Chief



Well Operator EXCO RESOURCES (PA), LLC  
By: Randall Sheets  
Its: S. Perisier  
Address P O BOX 8  
RAVENSWOOD, WV 26164  
Telephone 304-273-5371

Subscribed and sworn before me this 17th day of June 2016  
5/9/24 Kathryn Shafer Notary Public  
My Commission Expires \_\_\_\_\_

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Office of Oil and Gas  
JUN 09 2016

**Oil and Gas Privacy Notice**

The Office of Oil and Gas processes your personal information, such as name, address and phone number, as a part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use of your personal information, please contact DEP's Chief Privacy Officer at [depprivacyofficer@wv.gov](mailto:depprivacyofficer@wv.gov).

06/24/2016

8101371P

WW-9  
(2/15)

API Number 47 - 081 - 1271  
Operator's Well No. New River 32

STATE OF WEST VIRGINIA DEPARTMENT OF  
ENVIRONMENTAL PROTECTION OFFICE OF OIL  
AND GAS

FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

Operator Name \_\_\_\_\_ OP Code \_\_\_\_\_

Watershed (HUC 10) \_\_\_\_\_ Quadrangle \_\_\_\_\_

Do you anticipate using more than 5,000 bbls of water to complete the proposed well work? Yes \_\_\_\_\_ No \_\_\_\_\_

Will a pit be used? Yes \_\_\_\_\_ No   X     X  

If so, please describe anticipated pit waste: \_\_\_\_\_

Will a synthetic liner be used in the pit? Yes \_\_\_\_\_ No \_\_\_\_\_ If so, what ml.? \_\_\_\_\_

Proposed Disposal Method For Treated Pit Wastes:

- \_\_\_\_\_ Land Application
- \_\_\_\_\_ Underground Injection ( UIC Permit Number \_\_\_\_\_ )
- \_\_\_\_\_ Reuse (at API Number \_\_\_\_\_ )
- \_\_\_\_\_ Off Site Disposal (Supply form WW-9 for disposal location)
- X   Other (Explain NO FLUIDS EXPECTED ON RETURN \_\_\_\_\_ )

*ANY WELL EFFLUENT MUST  
BE PUT IN TANKS & DISPOSED  
OF PROPERLY. 2/11/11*

Will closed loop system be used? If so, describe: \_\_\_\_\_

Drilling medium anticipated for this well (vertical and horizontal)? Air, freshwater, oil based, etc. \_\_\_\_\_

-If oil based, what type? Synthetic, petroleum, etc. \_\_\_\_\_

Additives to be used in drilling medium? \_\_\_\_\_

Drill cuttings disposal method? Leave in pit, landfill, removed offsite, etc. \_\_\_\_\_

-If left in pit and plan to solidify what medium will be used? (cement, lime, sawdust) \_\_\_\_\_

-Landfill or offsite name/permit number? \_\_\_\_\_

Permittee shall provide written notice to the Office of Oil and Gas of any load of drill cuttings or associated waste rejected at any West Virginia solid waste facility. The notice shall be provided within 24 hours of rejection and the permittee shall also disclose where it was properly disposed.

I certify that I understand and agree to the terms and conditions of the GENERAL WATER POLLUTION PERMIT issued on August 1, 2005, by the Office of Oil and Gas of the West Virginia Department of Environmental Protection. I understand that the provisions of the permit are enforceable by law. Violations of any term or condition of the general permit and/or other applicable law or regulation can lead to enforcement action.

I certify under penalty of law that I have personally examined and am familiar with the information submitted on this application form and all attachments thereto 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. I am aware that there are significant penalties for submitting false information, including the possibility of fine or imprisonment.

Company Official Signature Randall Sheets

Company Official (Typed Name) RENDALL SHEETS

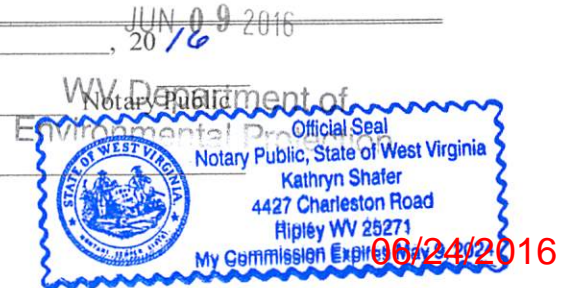
Company Official Title Supervisor

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Subscribed and sworn before me this 7th day of June, 2016

Kathryn Shafer

My commission expires 5/9/24





Proposed Revegetation Treatment: Acres Disturbed  
0.5

Prevegetation Ph 6.0

Lime \_\_\_\_\_ 2Tons/acre or to correct to pH \_\_\_\_\_

Fertilizer type \_\_\_\_\_ 10-20-20 \_\_\_\_\_

Fertilizer amount \_\_\_\_\_ 500 lbs/acre

Mulch \_\_\_\_\_ 2 Tons/acre

Seed Mixtures

**Temporary**

**Permanent**

Seed Type	lbs/acre
KENTUCKY FESCUE	4
ALSIKE CLOVER	5
ANNUAL RYE	16

Seed Type	lbs/acre
SAME	

Attach:

Drawing(s) of road, location, pit and proposed area for land application (unless engineered plans including this info have been provided)

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: \_\_\_\_\_

*Greg Kennedy*

Comments: \_\_\_\_\_

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Office of Oil and Gas

JUN 09 2016

Title: Inspector

Date: 6/7/2016

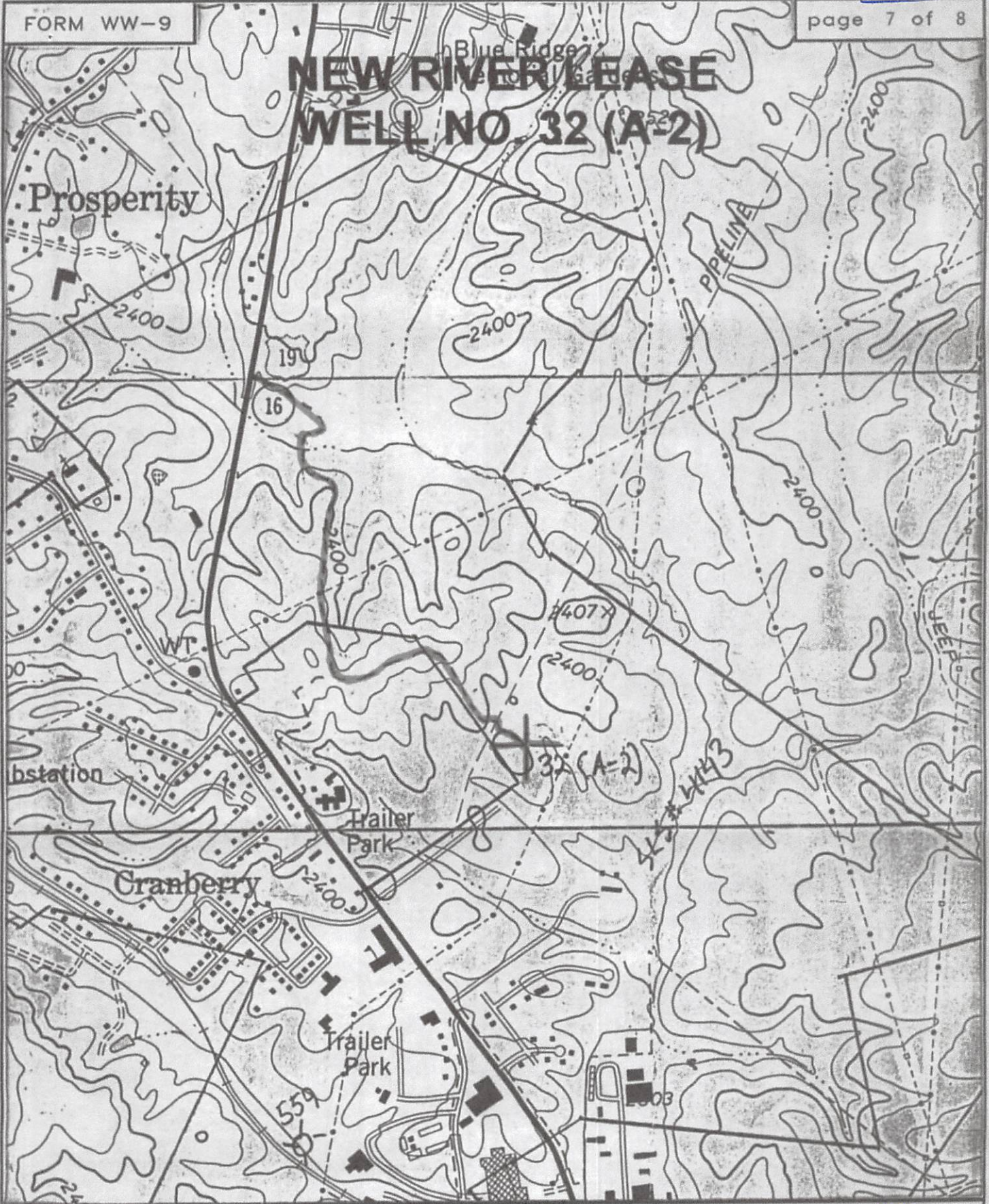
Field Reviewed? (  ) Yes

(  ) No

WV Department of  
Environmental Protection



# NEW RIVER LEASE WELL NO. 32 (A-2)



SMITH LAND SURVEYING  
P.O. BOX 150 GLENVILLE, WV. 26351

TOPO SECTION OF Beckley 7.5'

*Handwritten signature*

FILE NO. 4143 DATE 4/26/02 SCALE 1" = 400'

06/24/2016



WW-7  
8-30-06



West Virginia Department of Environmental Protection  
Office of Oil and Gas

**WELL LOCATION FORM: GPS**

API: 47 081 01271 WELL NO.: New River 32

FARM NAME: Western Pocahontas Properties

RESPONSIBLE PARTY NAME: Exco Resources (PA), LLC

COUNTY: Releigh DISTRICT: Trap Hill

QUADRANGLE: Lester 7.5

SURFACE OWNER: White Oak Land

ROYALTY OWNER: Beaver Coal

UTM GPS NORTHING: 4186483.4

UTM GPS EASTING: 483497.4 GPS ELEVATION: 2409

The Responsible Party named above has chosen to submit GPS coordinates in lieu of preparing a new well location plat for a plugging permit or assigned API number on the above well. The Office of Oil and Gas will not accept GPS coordinates that do not meet the following requirements:

1. Datum: NAD 1983, Zone: 17 North, Coordinate Units: meters, Altitude: height above mean sea level (MSL) – meters.
2. Accuracy to Datum – 3.05 meters
3. Data Collection Method:

Survey grade GPS  : Post Processed Differential

Real-Time Differential

Mapping Grade GPS  : Post Processed Differential

Real-Time Differential

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4. Letter size copy of the topography map showing the well location. I the undersigned, hereby certify this data is correct to the best of my knowledge and belief and shows all the information required by law and the regulations prescribed by the Office of Oil and Gas.

Randall D. [Signature]  
Signature

Supervisor  
Title

WV Department of  
6/7/16  
Date