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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

September 19, 2014

**WELL WORK PLUGGING PERMIT**

**Plugging**

This permit, API Well Number: 47-8100573, 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: 4-AR  
Farm Name: NEW RIVER LAND  
**API Well Number: 47-8100573**  
**Permit Type: Plugging**  
Date Issued: 09/19/2014

Promoting a healthy environment.

09/19/2014

## 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.

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### 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.

1) Date \_\_\_\_\_, 20\_\_\_\_  
2) Operator's  
Well No. New River AR-4  
3) API Well No. 47-081 - 0573

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

APPLICATION FOR A PERMIT TO PLUG AND ABANDON

4) Well Type: Oil \_\_\_\_ / Gas X / Liquid injection \_\_\_\_ / Waste disposal \_\_\_\_ /  
(If "Gas, Production \_\_\_\_ or Underground storage \_\_\_\_ ) Deep \_\_\_\_ / Shallow X

5) Location: Elevation 2322 Watershed Cramberry Creek  
District Town 6 County Raleigh 31 Quadrangle Beckley 7.5 234

6) Well Operator Exco Resources (PA), LLC 7) Designated Agent Diana Stampler  
Address PO Box 8 Address CT Corporation Systems  
Ravenswood, WV 26164 5400 D Big Tyler Rd, Chas, WV 25301

8) Oil and Gas Inspector to be notified Name Gary Kennedy 9) Plugging Contractor Name R&R Well Service  
Address PO BOX 268 Address 4026 Clay Rd.  
Nimitz, WV 25978 Spencer, WV 25276  
304382 8402

10) Work Order: The work order for the manner of plugging this well is as follows:  
RIH check TD to +or-<sup>1440'</sup>1390' rig up tubing to TD and load hole with 6% gel. <sup>TD WAS 1440'</sup>  
Rig up and pump 35 sks Class A cement from 1390'to 960', WOC for 8hrs.  
RIH tag top of cement at 960', add and additional class A cement to achieve 960' TOC  
RIH log show TOC at 964' and cut 4 1/2 csg at +or - 950' and pull 4 1/2 casing  
RIH with tubing to +or- 950' and pump 35 sks of class A cement 950'to 788", pull tubing to 500'  
Rig up and pump <sup>?</sup>35-sks class A cement 500'to-<sup>250'</sup>332', pull tubing to 168' and pump 35 sks class A  
cement 168'to surface.

Keep gel between all cement plugs. Erect monument with API #, reclaim road and location.  
COVER COAL @ 261' WITH CLASS A CEMENT.  
GEL BETWEEN ALL PLUGS

Notification must be given to the district oil and gas inspector 2 hours before permitted work can commence.

Work order approved by inspector Gary Kennedy Date 8/11/14

RECEIVED  
Office of Oil and Gas  
AUG 13 2014  
WV Department of  
Environmental Protection



IV-35  
(Rev 8-81)

State of West Virginia  
Department of Mines  
Oil and Gas Division

Date February 23, 1982  
Operator's  
Well No. 4-AR  
Farm New River  
API No. 47 - 081 - 0573

WELL OPERATOR'S REPORT  
OF  
DRILLING, FRACTURING AND/OR STIMULATING, OR PHYSICAL CHANGE

WELL TYPE: Oil \_\_\_ / Gas x / Liquid Injection \_\_\_ / Waste Disposal \_\_\_ /  
(If "Gas," Production x / Underground Storage \_\_\_ / Deep \_\_\_ / Shallow x /)

LOCATION: Elevation: 2328' Watershed Cranberry Creek  
District: Town County Raleigh Quadrangle Beckley 7.5'

COMPANY Peake Operating Company  
ADDRESS 201 Dunbar Office Park, Dunbar, WV  
DESIGNATED AGENT Floyd B. Wilcox  
ADDRESS 201 Dunbar Office Park, Dunbar, WV  
SURFACE OWNER New River Company  
ADDRESS Box 711, Mt. Hope, WV  
MINERAL RIGHTS OWNER New River Company  
ADDRESS Box 711, Mt. Hope, WV  
OIL AND GAS INSPECTOR FOR THIS WORK D. Craig Duckworth  
ADDRESS Box 454, Mt Lookout, WV  
PERMIT ISSUED August 18, 1981  
DRILLING COMMENCED November 11, 1981  
DRILLING COMPLETED December 3, 1981  
IF APPLICABLE: PLUGGING OF DRY HOLE ON CONTINUOUS PROGRESSION FROM DRILLING OR REWORKING. VERBAL PERMISSION OBTAINED ON \_\_\_\_\_

Casing & Tubing	Used in Drilling	Left in Well	Cement fill up Cu. ft.
Size 20-16 Cond.			
13 3/8" 13-10"	30'	30'	
9 5/8	905'	905'	300 sks.
8 5/8			
7			
5 1/2			
4 1/2	1414'	1414'	50 sks.
3			
2			
Liners used			

GEOLOGICAL TARGET FORMATION Ravencliff Depth 1320 feet  
Depth of completed well 1440 feet Rotary x / Cable Tools \_\_\_\_\_  
Water strata depth: Fresh N/A feet; Salt N/A feet  
Coal seam depths: Beckley 261' Is coal being mined in the area? No

OPEN FLOW DATA

Producing formation Ravencliff Pay zone depth 1313'-1357' feet  
Gas: Initial open flow 207 Mcf/d Oil: Initial open flow \_\_\_\_\_ Bbl/d  
Final open flow 452 Mcf/d Oil: Final open flow \_\_\_\_\_ Bbl/d  
Time of open flow between initial and final tests 4 hours  
Static rock pressure 170 psig (surface measurement) after 72 hours shut in  
(If applicable due to multiple completion--)  
Second producing formation \_\_\_\_\_ Pay zone depth \_\_\_\_\_ feet  
Gas: Initial open flow \_\_\_\_\_ Mcf/d Oil: Initial open flow \_\_\_\_\_ Bbl/d  
Final open flow \_\_\_\_\_ Mcf/d Oil: Final open flow \_\_\_\_\_ Bbl/d  
Time of open flow between initial and final tests \_\_\_\_\_ hours  
Static rock pressure \_\_\_\_\_ psig (surface measurement) after \_\_\_\_\_ hours shut in

*JK* (Continue on reverse side)

AUG 13 09/19/2014  
Office of Oil and Gas  
WV Dept. of Environmental Protection

DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC.

Perforated Ravencliff 1313'-1321' (24 holes); 1334'-1342' (22 holes); 1351'-1357' (16 holes).  
 Waterfrac with 1000 gals. 15% acid; 75,000# 20/40 sand; 15,000# 80/100; 800# J-266; 44# J-218. Used 75 perf balls; 55 gals. L-53; 50 gals. F-75; 100# L-41. Breakdown pressure 950 lbs. Average treating pressure 1,324 lbs. ISIP 1000 lbs; 909 hydraulic hp. Average rate BTM - 28.

WELL LOG

FORMATION	COLOR	HARD OR SOFT	TOP FEET	BOTTOM FEET	REMARKS
					Including indication of all fresh and salt water, coal, oil and gas
Sand and shale			0	184	
Sandy shale			184	272	
Shale			272	306	
Sandy shale			306	354	
Shale			354	432	
Sand			432	474	
Sandy shale			474	920	
Shale			920	984	
Sand			984	1012	
Shale			1012	1061	
Princeton Sand			1061	1131	
Shale			1131	1261	
Ravencliff sand			1261	1360	
Red shale			1360	1440	Gas check 1440' - 207 MCF
T.D.			1440		

(Attach separate sheets as necessary)

Peake Operating Company  
Well Operator

By: David B. Nelson

Date: Feb. 26, 1982

09/19/2014

Received

AUG 13 2014

Office of Oil and Gas  
WV Dept. of Environmental Protection

Note: Regulation 2.02(i) provides as follows:  
 "The term 'log' or 'well log' shall mean a systematic detailed geological record of all formations, including coal, encountered in the drilling of a well."

LATITUDE 37°50'

81 00 573P

LONGITUDE 81°10'

NEW RIVER LAND Co.  
BECKLEY CORPORATION  
DISTRICT 1 MAP 75 PARCEL 1

PROPOSED GAS WELL  
No. 4-AR

NEW RIVER LAND Co.  
BECKLEY CORPORATION  
DISTRICT 1 MAP 75 PARCEL 1

T-RAIL FOUND  
NEW RIVER MON. No. 1976

T-RAIL FOUND  
NEW RIVER MON. No. 1977

TOPOGRAPHIC  
LEAD PLUG IN STONE FOUND  
NEW RIVER MON. No. 1983

- A. N25°02'E 1439.23'
- B. N12°58'W 544.99'
- C. N05°04'W 592.87'
- D. S49°37'W 91.78'
- E. N42°55'E 968.10'

NEW RIVER COAL CO. COORDINATES  
N 11250.00  
E 8000.00

NORTH

FILE NO. \_\_\_\_\_  
 DRAWING NO. \_\_\_\_\_  
 SCALE 1-2000  
 MINIMUM DEGREE OF ACCURACY 1-2500  
 PROVEN SOURCE OF ELEVATION B.M. 2363 EAST OF LOCATION

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) Bryant W. Cowman  
 R.P.E. \_\_\_\_\_ L.L.S. 736



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



DATE SEPT 12, 19 81  
 OPERATOR'S WELL NO. 4-AR  
 API WELL NO. \_\_\_\_\_  
47 \_\_\_\_\_  
 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 2322' WATER SHED CRANBERRY CREEK  
 DISTRICT BECKLEY COUNTY RALEIGH  
 QUADRANGLE BECKLEY 7 1/2'  
 SURFACE OWNER NEW RIVER LAND ACREAGE 300 ±  
 OIL & GAS ROYALTY OWNER NEW RIVER LAND LEASE ACREAGE 61,571.759  
 LEASE NO. 31/143  
 PROPOSED WORK: DRILL  CONVERT \_\_\_ DRILL DEEPER \_\_\_ REDRILL \_\_\_ FRACTURE OR STIMULATE \_\_\_ PLUG OFF OLD FORMATION \_\_\_ PERFORATE NEW FORMATION \_\_\_ OTHER PHYSICAL CHANGE IN WELL (SPECIFY) \_\_\_\_\_  
 PLUG AND ABANDON \_\_\_ CLEAN OUT AND REPLUG \_\_\_  
 TARGET FORMATION RAVENCLIFF ESTIMATED DEPTH 2000  
 WELL OPERATOR PERKE OPERATING CO. DESIGNATED AGENT FLOYD WILCOX  
 ADDRESS 201 DUNBAR OFFICE PARK DUNBAR, W.VA. ADDRESS 201 DUNBAR OFFICE PARK DUNBAR, W.VA.

Received  
 AUG 13 2014  
 09/19/2014

WW-4A  
Revised 6-07

1) Date: \_\_\_\_\_  
2) Operator's Well Number \_\_\_\_\_  
NEW RIVER AR-4  
3) API Well No.: 47 - 081 - 0573

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

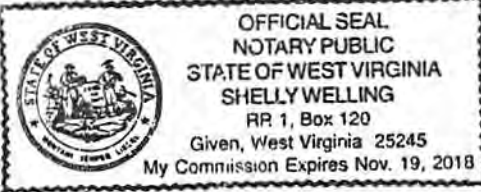
4) Surface Owner(s) to be served:	<input checked="" type="checkbox"/> 5) (a) Coal Operator
(a) Name <u>Walmart</u>	Name _____
Address <u>2001 Southeast 10th. street</u>	Address _____
<u>Brentonville, Arkansas, 72716</u>	
(b) Name <u>LFB INC.</u>	(b) Coal Owner(s) with Declaration <input checked="" type="checkbox"/>
Address <u>PO Box 854</u>	Name <u>Boone East Development Co</u>
<u>Beckley WV 25802</u>	Address <u>Po Box 261</u>
(c) Name _____	Name _____
Address _____	Address _____
6) Inspector <u>Gary Kennedy</u>	(c) Coal Lessee with Declaration
Address <u>PO Box 268</u>	Name _____
<u>Nimiyz, WV 25978</u>	Address _____
Telephone <u>304 382 8402</u>	

**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 <u>Exco Resources (PA), LLC</u>
	By: <u>[Signature]</u>
	Its: <u>Production Superintendent</u>
	Address <u>PO, Box 8</u>
	Telephone <u>304 273 5371</u>

Subscribed and sworn before me this 7 day of Aug 2014  
[Signature] Notary Public  
My Commission Expires 11/19/18

**Received**  
AUG 13 2014

**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).

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Certified Fee	3.30
Return Receipt Fee (Endorsement Required)	2.70
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	\$ 6.90



Sent To  
 Street, Apt. No., or PO Box No. LT6, INC.  
PO Box 856  
 City, State, ZIP+4 Beckley WV 25802 **AR4**

PS Form 3800, August 2006 See Reverse for Instructions

3100573P

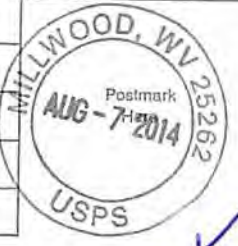
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Return Receipt Fee (Endorsement Required)	2.70
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	\$ 8.45



Sent To  
 Street, Apt. No., or PO Box No. Boone East Development Co  
PO Box 261  
 City, State, ZIP+4 Sealton WV 25529 **AR9**  
**AR22**

PS Form 3800, August 2006 See Reverse for Instructions

7006 2760 0005 3354 4561

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Return Receipt Fee (Endorsement Required)	2.70
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	\$ 6.90



Sent To  
 Street, Apt. No., or PO Box No. Walmart  
2001 Southeast 10th St.  
 City, State, ZIP+4 Bentonville Arkansas 72716 **AR4**

PS Form 3800, August 2006 See Reverse for Instructions

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AUG 13 2014

Office of Oil and Gas  
WV Dept. of Environmental Protection

09/19/2014



8100573P

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

CONSTRUCTION AND RECLAMATION PLAN AND SITE REGISTRATION APPLICATION FORM  
GENERAL PERMIT FOR OIL AND GAS PIT WASTE DISCHARGE

Operator Name EXCO Resources (PA), LLC OP Code 307860

Watershed Cranberry Creek Quadrangle Beckley 7 1/2

Elevation 2322' County Raleigh District Town

Description of anticipated Pit Waste: Cement, Gel, H2O

Will a synthetic liner be used in the pit? Steel Pit *JSK*

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)  
 Other (Explain Haul by EPC to Marietta, OH *Steel pit*)

Proposed Work For Which Pit Will Be Used:  
 Drilling  Swabbing  
 Workover  Plugging  
 Other (Explain \_\_\_\_\_)

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) Randall Sheets

Company Official Title Production Superintendent

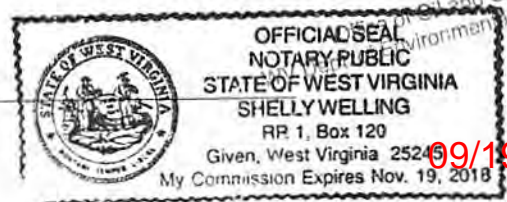
Subscribed and sworn before me this 7 day of Aug, 2018

*Shelly Welling* Notary Public

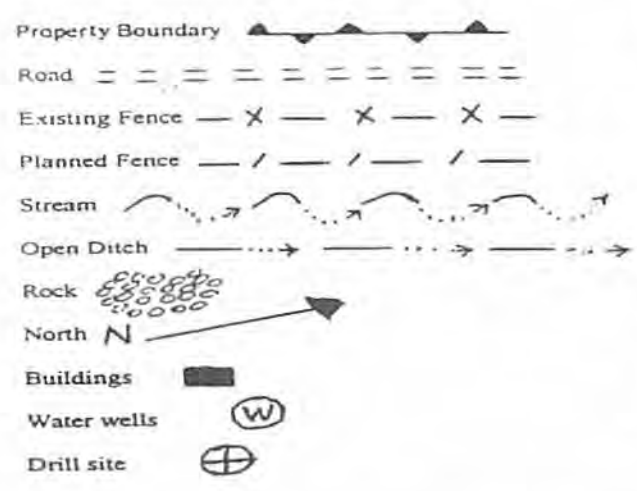
My commission expires 11/19/18

Received

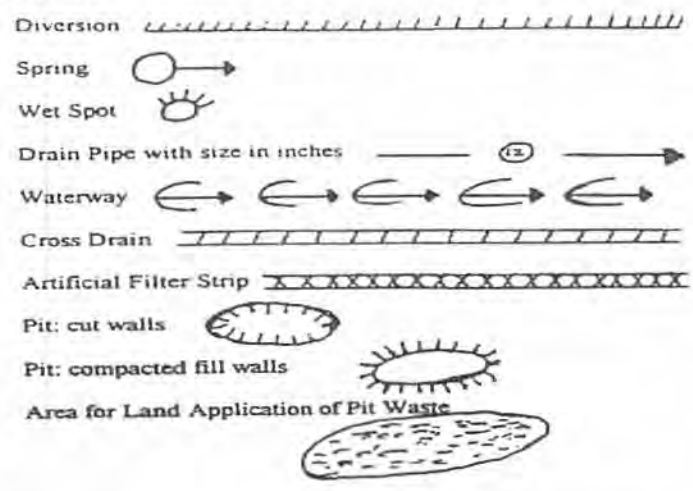
AUG 13 2018



09/19/2014



LEGEND



Proposed Revegetation Treatment: Acres Disturbed 1 Prevegetation pH \_\_\_\_\_

Lime 2 Tons/acre or to correct to pH 6.5

Fertilizer (10-20-20 or equivalent) 500 lbs/acre (500 lbs minimum)

Mulch 2 Tons/acre

Seed Mixtures

Seed Type	Area I		Seed Type	Area II	
		lbs/acre			lbs/acre
KY 31 fescue		40	Same as area one		
Alsike Clover		5			
Annual Ryed		16			

Attach: Drawing(s) of road, location, pit and proposed area for land application.

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: [Signature]

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

Title: Inspector

Date: 8/11/14

Field Reviewed?  Yes  No

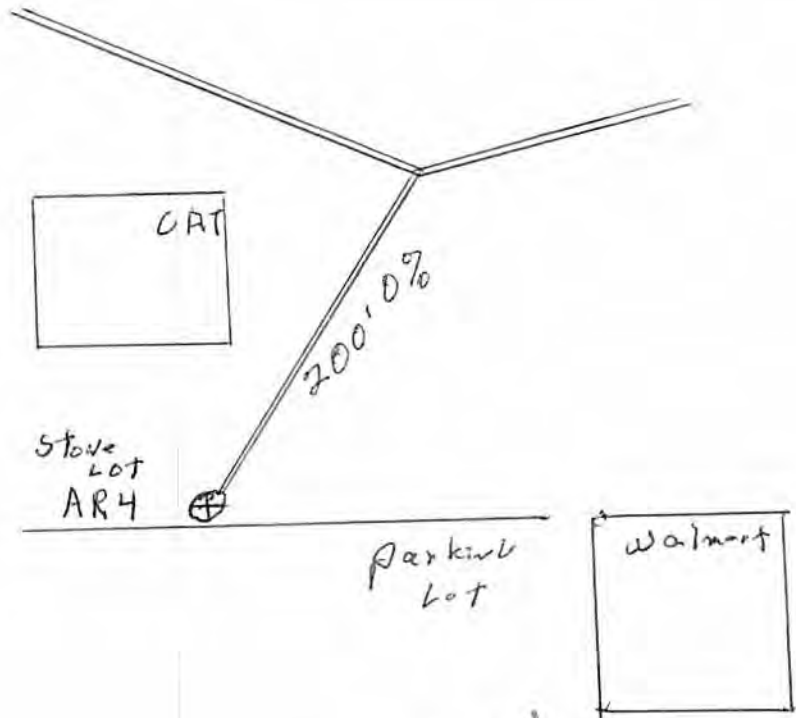
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Office of Oil and Gas  
WV Dept. of Environmental Protection  
09/19/2014

WW 9

New River AR 4

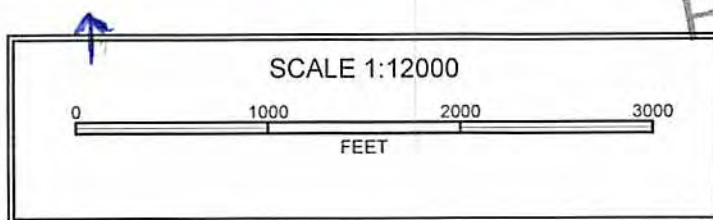
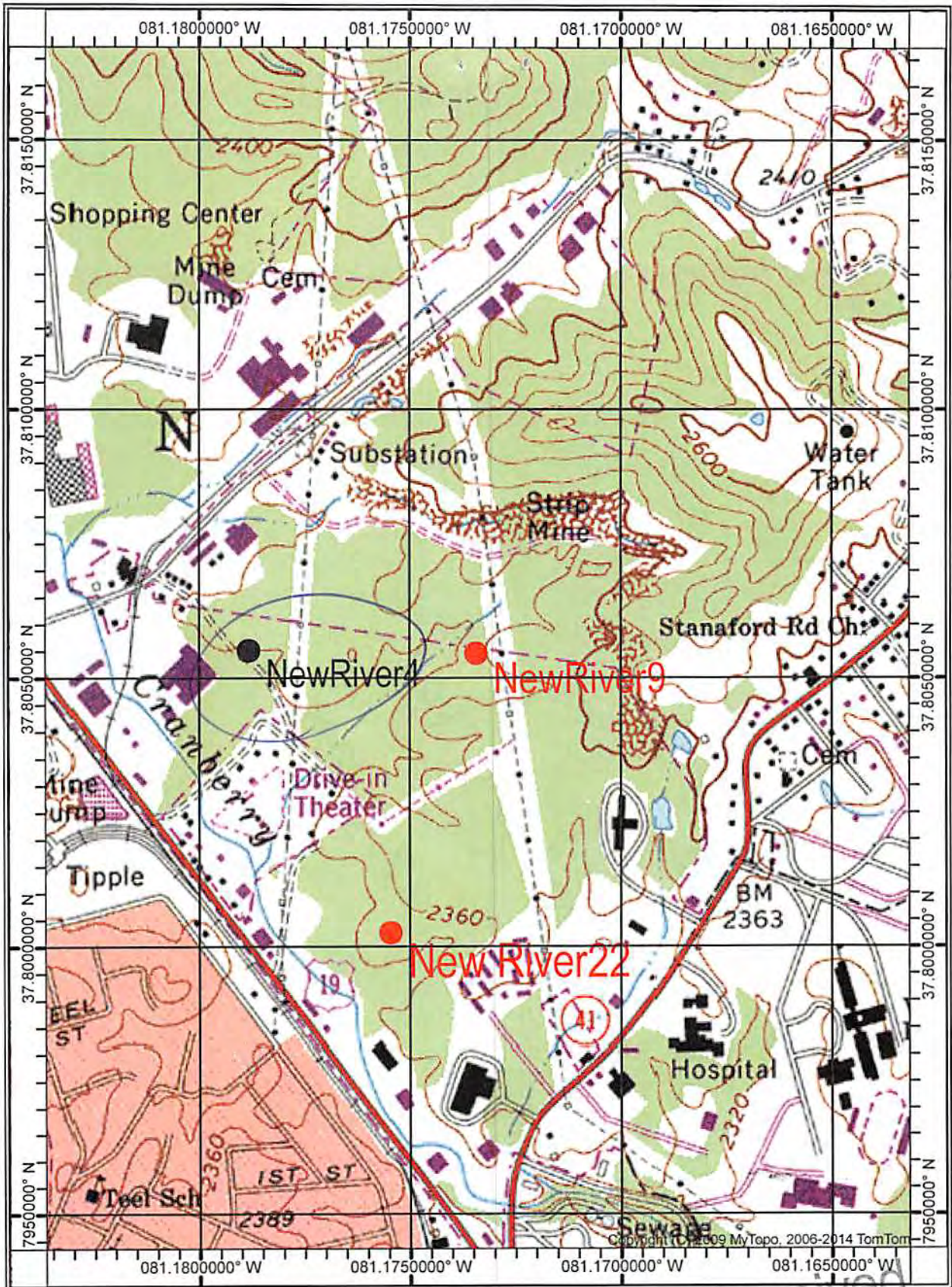


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WV Dept. of Environmental Protection

*[Handwritten signature]*



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 AUG 13 2014  
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 WV Dept. of Environmental Protection  
 09/19/2014

WW-7  
8-30-06



West Virginia Department of Environmental Protection  
Office of Oil and Gas  
WELL LOCATION FORM: GPS

API: 47-081-0573 WELL NO.: AR-4  
FARM NAME: New River  
RESPONSIBLE PARTY NAME: Exco Resources  
COUNTY: Raleigh DISTRICT: Town  
QUADRANGLE: Beckley  
SURFACE OWNER: Walmart  
ROYALTY OWNER: \_\_\_\_\_  
UTM GPS NORTHING 4184252.7  
UTM GPS EASTING: 484260.7 GPS ELEVATION: 2322'

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 \_\_\_\_\_

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 issued and prescribed by the Office of Oil and Gas.

Randall Stettin Production Superintendent 8/7/14  
Signature Title Date

Received  
SEP 18 2014  
Office of Oil and Gas  
WV Dept. of Environmental Protection