



**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

September 19, 2014

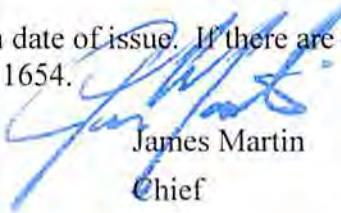
**WELL WORK PLUGGING PERMIT**

**Plugging**

This permit, API Well Number: 47-8100770, 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 22-AR  
Farm Name: MOUNTAIN LAUREL RESOURCE  
**API Well Number: 47-8100770**  
**Permit Type: Plugging**  
Date Issued: 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.

---

### CONDITIONS

---

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-22  
3) API Well No. 47-081 - 0770

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 2323 Watershed Cramberry Creek  
District Town 6 County Raleigh 8 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  
Address PO BOX 268  
Nimitz, WV 25978  
9) Plugging Contractor Name R&R Well Service  
Address 4026 Clay Rd.  
Spencer, WV 25276

10) Work Order: The work order for the manner of plugging this well is as follows:  
Plugged back to +or\_ 1480' RIH check TD to +or-1480' rig up tubing to TD and fill with 6% gel.  
Rig up and pump 35 sks Class A cement from 1480' to 1050', WOC for 8 hrs.  
RIH tag top of cement at 1050', add and additional class A cement to achieve 1050' TOC  
Pull tubing. RIH and cut 4 1/2 csg at +or - 850' (bond log shows TOC at 850')  
RIH with tubing to +or- 850' and pump 35 sks of class A cement 850' to 678", pull tubing to 500'  
Rig up and pump 35 sks class A cement 500' to 328', pull tubing to 175' and pump 35 sks class A  
cement 175' to surface.  
Keep gel between all cement plugs. Erect monument with API #, reclaim road and location.

RECEIVED  
Office of Oil and Gas  
AUG 13 2014  
WV Department of  
Environmental Protection  
310'  
OPEN MINE 215' - 219'  
BOTTOM OF 9 5/8" IS 200'  
Received  
AUG 13 2014

Notification must be given to the district oil and gas inspector 24 hours before permitted work can commence.

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



R-35

Date September 17, 1987  
Operator's Well No. New River #22-AR  
Farm \_\_\_\_\_  
API No. 47 - 081 - 770

State of West Virginia  
DEPARTMENT OF ENERGY  
Oil and Gas Division

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: 2327' Watershed Cranberry Creek of Piney Creek  
District: Town County Raleigh Quadrangle Beckley 7.5

COMPANY Peake Operating Company  
ADDRESS 423 Charleston National Plaza  
Charleston, WV 25301  
IGNATED AGENT Timothy K. Wilcox  
ADDRESS 423 Charleston National Plaza  
Charleston, WV 25301  
SURFACE OWNER Mt. Laurel Resources  
ADDRESS Box 711, Mt. Hope, WV 25880  
MINERAL RIGHTS OWNER Same  
ADDRESS \_\_\_\_\_  
OIL AND GAS INSPECTOR FOR THIS WORK \_\_\_\_\_  
Rodney Dillon ADDRESS Box 1526, Sophia, WV  
PERMIT ISSUED 6/22/87  
DRILLING COMMENCED 6/22/87  
DRILLING COMPLETED 7/3/87  
IF APPLICABLE: PLUGGING OF DRY HOLE ON  
CONTINUOUS PROGRESSION FROM DRILLING OR  
REWORKING. VERBAL PERMISSION OBTAINED  
ON NA

Casing & Tubing	Used in Drilling	Left in Well	Cement fill up Cu. ft.
Size 20-16 Cood.	16	16	2 sks.
13-10"			
9 5/8	260	260	110 sks.
8 5/8			
7	1020	1020	175 sks.
5 1/2			
4 1/2		1503	52 sks.
3			
2			
Liners used			

GEOLOGICAL TARGET FORMATION Weir Depth 3225 feet  
Depth of completed well 2898 feet Rotary x / Cable Tools \_\_\_\_\_  
Water strata depth: Fresh None feet; Salt 2820 feet  
Coal seam depths: 215 (open) Is coal being mined in the area? No.

OPEN FLOW DATA  
Producing formation Ravencliff Pay zone depth 1308-1338 feet  
Gas: Initial open flow 36 Mcf/d Oil: Initial open flow -- Bbl/d  
Final open flow 223 Mcf/d Final open flow -- Bbl/d  
Time of open flow between initial and final tests 4 hours  
Static rock pressure 125 psig (surface measurement) after 48 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

Received  
09/19/2014

Office of Oil and Gas  
WV Dept. of Environmental Protection

(Continue on reverse side)

*[Handwritten signature]*

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

9/8/87 - Perforated Ravencliff from 1308'-1338' (40 holes)  
75 Q Foam fraced Ravencliff using 500 gal. 15% HCL, 60,000# 20/50 sand,  
335,000 SCFN<sub>2</sub>, 250 bbl. gelled fluid, BDP 1500#, ATP 1750#, ISIP 1450#,  
15-min. SIP 1400#.

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			0	300	
Shale			300	392	Salt water @ 2820 - ± 1 gpm
and			392	690	
and and Shale			690	1030	
Princeton Sand			1030	1120	
Shale			1120	1274	
Ravencliff Sand			1274	1344	
Shale			1344	1350	Gas checks:
Avis Lime			1350	1388	1290' - N/S
Sand and Shale			1388	2254	1333' - .036
Little Lime			2254	2368	1423' - .033
Shale			2368	2435	1875' - .041
Big Lime			2435	TD	2410' - .034
					2620' - .033
				DTD - 2880	
				LTD - 2899	

(Attach separate sheets as necessary)

PEAKE OPERATING COMPANY  
Well Operator

By: \_\_\_\_\_  
Date: \_\_\_\_\_

Received 09/19/2014

AUG 19 2014

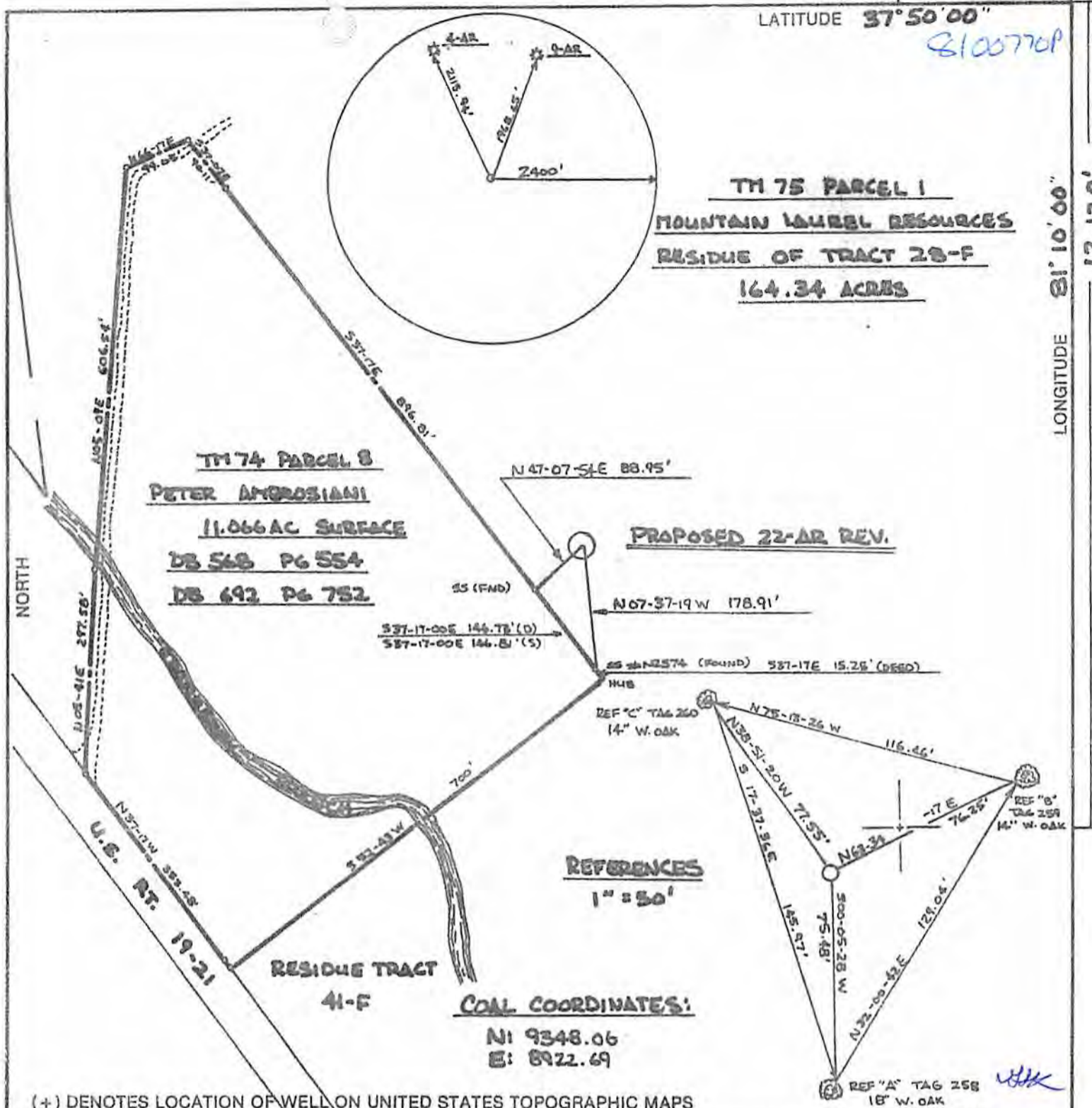
Office of Oil and Gas  
Dept. of Environmental Protection

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."

2650

LATITUDE 37° 50' 00"

8100770P

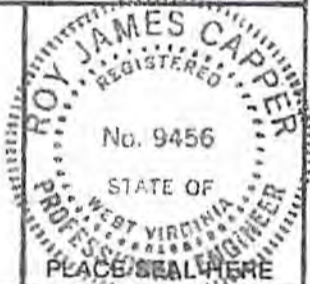


LONGITUDE 81° 10' 00" 12,120'

(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS

FILE NO. PE-081-020  
 DRAWING NO. \_\_\_\_\_  
 SCALE 1" = 200'  
 MINIMUM DEGREE OF ACCURACY 1 IN 10000  
 PROVEN SOURCE OF ELEVATION EXISTING WELL  
4-AR

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 ENERGY.  
 (SIGNED) Roy James Capper  
 R.P.E. 9456 L.L.S.



**STATE OF WEST VIRGINIA**  
 DEPARTMENT OF ENERGY  
 OIL AND GAS DIVISION

DATE 10 JUNE, 19 87  
 OPERATOR'S WELL NO. 22-AR REV.  
 API WELL NO. 47

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

LOCATION: ELEVATION 2323' WATER SHED CRANBERRY BRANCH OF PINEY CREEK  
 DISTRICT BECKLEY TOWN BECKLEY COUNTY RALEIGH  
 QUADRANGLE BECKLEY 7.5'

SURFACE OWNER MOUNTAIN LAUREL RESOURCES, INC. ACREAGE 164.34  
 OIL & GAS ROYALTY OWNER CSX MINERALS, INC. LEASE ACREAGE 61,571.757  
 LEASE NO. 31/195

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 1400'  
 WELL OPERATOR PEAKE OPERATING COMPANY DESIGNATED AGENT TIMOTHY K. WILCOX  
 ADDRESS 423 CNB PLAZA ADDRESS 423 CNB PLAZA  
CHARLESTON, W.VA. 25301 CHARLESTON, W.VA. 25301

Office of Oil and Gas Environmental Protection

Received 09/19/2014

0-344 (REV. 7-77) 3/83

COUNTY NAME PERMIT

# Peake Operating Company

3100770870  
Suite 423  
Charleston National Plaza  
Charleston, WV 25301  
Tel: (304) 342-6970

## DRILLING REPORT

New River #22-AR  
Raleigh County, WV

SPUD DATE: 7:30 p.m., on June 22, 1987.

June 23 - Drilled 16' with 14-3/4" bit on 6/22/87. Set 16' of 13-3/8" conductor pipe. On 6/23/87 drilling at 150' with 12-1/4" bit.

June 24 - Drilled to 260' with 12-1/4" bit (6/23). Hit open mine at 215-219. Set 9-5/8" to 260'. Used 110 sacks of Neat cement. Used:

2 centralizers  
1 basket

June 30 - Began drilling at 965'. Drilled to 1027' with 7" bit. At 1020' used 175 sacks of Neat cement. Used:

3 centralizers  
1 basket  
1 insert  
1 guideshoe

July 1 - Drilling out of 7".

July 2 - At 7:00 a.m. drilling at 2168' with 6-1/2" bit. Samples showed Ravencliff from 1260' to 1350'. Gas checks as follows:

1290 - No Gas  
1333 - 12/10 1" W = 36,000 (bit trip)  
1423 - 10/10 1" W = 33,000  
1875 - 15/10 1" W = 41,000

July 3 - At 8:00 a.m. drilling at 2,800' with 6-1/8" hammer bit. Bit trip at 2438'. Samples showed the top of the Big Lime at 2425'. Gas checks:

1875 - 15/10 1" W = 40,000 CFG  
2410 - 11/10 1" W = 34,000 CFG  
2620 - 10/10 1" W = 33,000 CFG

Drilled to 2899' by 5:00 p.m. Picked up moisture at 2820'. Went to foam to clean hole and hole condition deteriorated. Decided to cut well short due to hole condition. Allegheny Nuclear logged well. Logger got TD at 2898'. Logs showed the Big Lime to be wet. Ran 46 Jts. of 4-1/2" for total of 1,503.47' with the insert at 1470.82'. Used 4 centralizers, 1 latchdown, 1 guide shoe and 1 basket. Gelled bottom of hole with 54 bbls. 6% Gel. Used 52 sacks RFC cement.

plug back

Office of Oil and Gas  
WV Dept of Environmental Protection

8/11/87

09/19/2014

8100770A

WW-4A  
Revised 6-07

1) Date: \_\_\_\_\_  
2) Operator's Well Number \_\_\_\_\_  
NEW RIVER AR-22

3) API Well No.: 47 - 081 - 0770

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

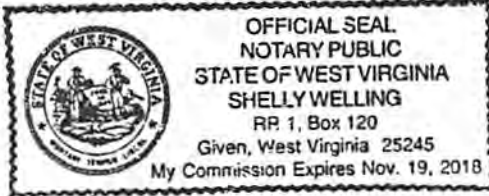
4) Surface Owner(s) to be served:	<input checked="" type="checkbox"/> 5) (a) Coal Operator
(a) Name	Cramberry Creek Partners, Inc.
Address	263 Whiteoak Drive Beckley, WV 25801
(b) Name	Attn: Doug Knell
Address	
(c) Name	
Address	
6) Inspector	Gary Kennedy
Address	PO Box 268 Nimiyz, WV 25978
Telephone	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: [Signature]  
 Title: Production Superintendent  
 Address: PO. BOX 8  
 Ravenswood WV 26164  
 Telephone: 304 273 5371

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

**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).

09/19/2014



7006 2760 0005 3354 4592

U.S. Postal Service™  
**CERTIFIED MAIL™ RECEIPT**  
(Domestic Mail Only; No Insurance Coverage Provided)

For delivery information visit our website at [www.usps.com](http://www.usps.com)

OFFICIAL USE	
Postage	\$ 1.90
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. Crowberry Creek Partners, Inc AR22  
263 Whiteoak Drive  
 City, State, ZIP+4 Berkley WV 25805

PS Form 3800, August 2006 See Reverse for Instructions

7006 2760 0005 3354 4202

U.S. Postal Service™  
**CERTIFIED MAIL™ RECEIPT**  
(Domestic Mail Only; No Insurance Coverage Provided)

For delivery information visit our website at [www.usps.com](http://www.usps.com)

OFFICIAL USE	
Postage	\$ 2.45
Certified Fee	3.30
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. Booke East Development Co AR9  
PO Box 261  
 City, State, ZIP+4 Sealton WV 25529 AA AR22

PS Form 3800, August 2006 See Reverse for Instructions

Received

Office of Oil and Gas  
 Attention: [unclear]

09/19/2014

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 2323' County Raleigh District Town

Description of anticipated Pit Waste: Cement, Gel, H2O

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

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
- Workover
- Other (Explain \_\_\_\_\_)
- Swabbing
- Plugging

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

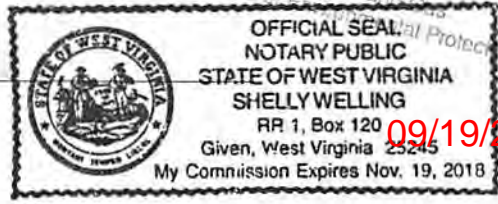
Subscribed and sworn before me this 7 day of Aug, 20 14

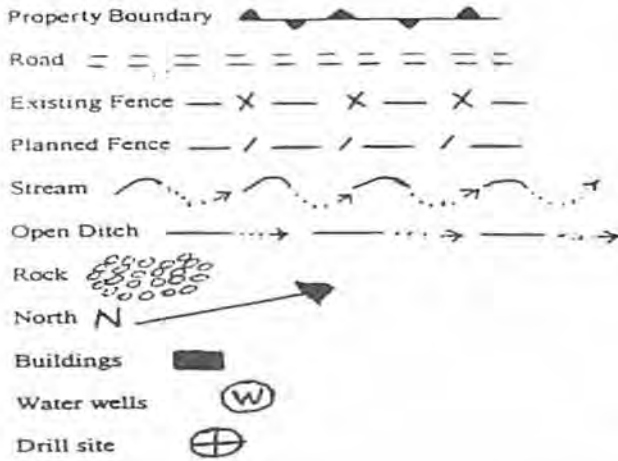
*Shelly Welling*

Received  
AUG 13 2014

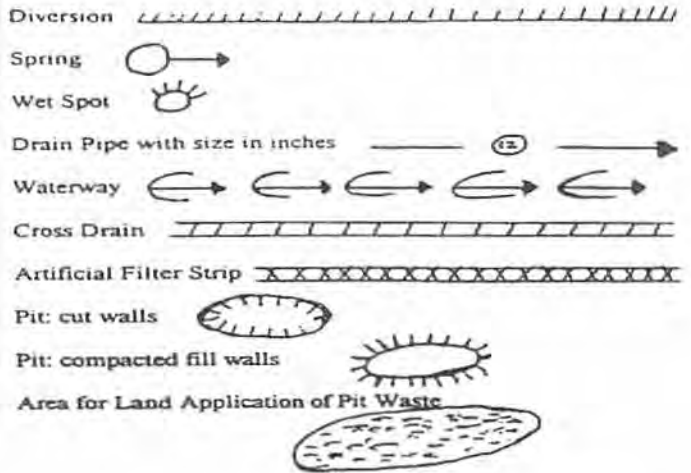
Notary Public  
Office of Oil and Gas  
WV Dept. of Environmental Protection

My commission expires 11/19/18





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 lbs/acre	Area II 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

Received

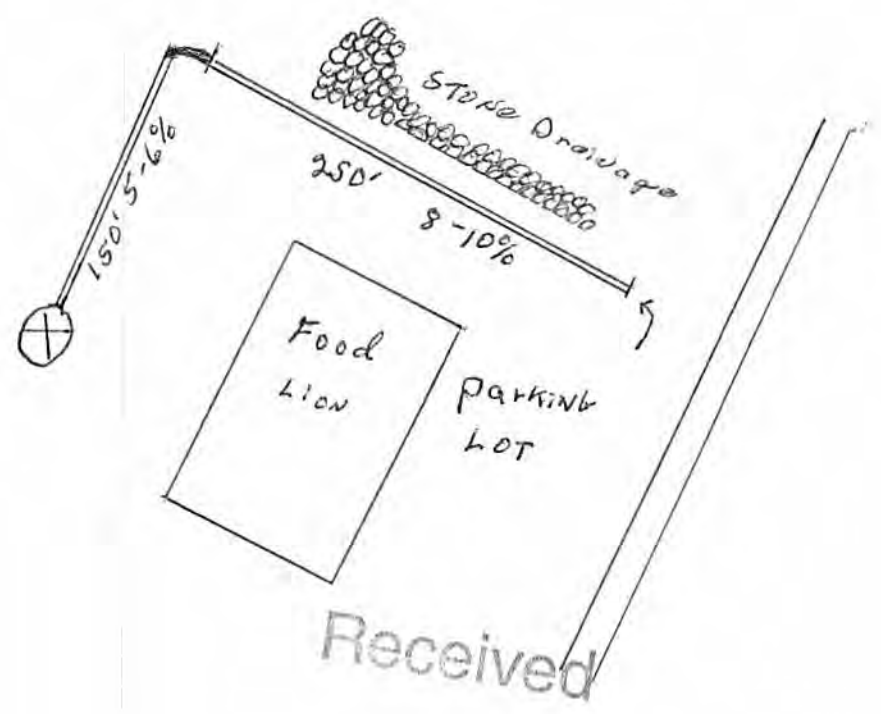
Office of Oil and Gas  
WV Dept. of Environmental Protection

WW 9

New River AR 22

47 081 0770

AR-22



Office of Oil and Gas  
WV Dept. of Environmental Protection

*WJK*

09/19/2014



WW-7  
8-30-06



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

API: 47-081-0770 WELL NO.: AR-22  
FARM NAME: New River  
RESPONSIBLE PARTY NAME: Syco Resources  
COUNTY: Baleish DISTRICT: Town  
QUADRANGLE: Beckley 7.5  
SURFACE OWNER: Cranberry Creek Partners Inc  
ROYALTY OWNER: \_\_\_\_\_  
UTM GPS NORTHING: 4183669.4  
UTM GPS EASTING: 484549.6 GPS ELEVATION: 2327'

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.

Wendell D. Sluts Production Superintendent 8/7/14  
Signature Title Date

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