



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

August 30, 2013

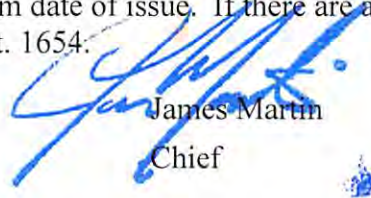
WELL WORK PLUGGING PERMIT

Plugging

This permit, API Well Number: 47-3905303, issued to EQT PRODUCTION COMPANY, 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: (COURTLAND 18) WV 215391

Farm Name: THE COURTLAND CO

API Well Number: 47-3905303

Permit Type: Plugging

Date Issued: 08/30/2013

Promoting a healthy environment.

Date: August 15, 2013
Operator's Well
Well No. 215391 (Courtland #18)
API Well No.: 47 039 - 05303

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

APPLICATION FOR A PERMIT TO PLUG AND ABANDON

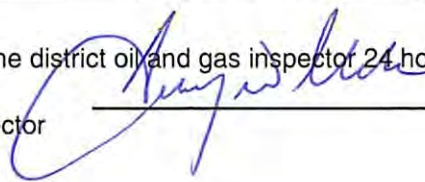
- 4) Well Type: Oil Gas X Liquid Injection Waste Disposal:
If Gas, Production X Or Underground storage Deep Shallow X
- 5) Elevation: 1101' Watershed: Davis Creek of the Great Kanawha River
Location: Loudon County: Kanawha Quadrangle: Charleston West 7.5'
District:
- 6) Well Operator EQT Production Company 7) Designated Agent: Rex C. Ray
Address: 120 Professional Place Address: 120 Professional Place
Bridgeport, WV 26330 Bridgeport, WV 26330
- 8) Oil & Gas Terry Urban 9) Plugging Contractor:
Name: P.O. Box 1207 Name: HydroCarbon Well Service
Address: Clendenin, WV 25045 Address: PO BOX 995
 Buckhannon, WV 26201

10) Work Order: The work order for the manner of plugging this well is as follows:

See Attachment for details and procedures.

OFFICE USE ONLY

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

Work order approved by inspector 

Date 8/19/13

Received

AUG 20 2013

Office of Oil and Gas
WV Dept. of Environmental Protection

PLUGGING PROGNOSIS

Courtland Land Co. #18 (215391)

Kanawha County, West Virginia

API # 47-039-05303

District: Loudon

BY: Craig Duckworth

DATE: 2/21/13

CURRENT STATUS:

9 5/8" csg @ 645' cts
4 1/2" csg @ 1977'
2 3/8" tbg @ 1841'

TD @ 2041'

Elevation @ 1101'

Fresh Water @ 490'

Salt Water @ 875' & 1200'

Salt Sand @ 784' - 1495'

Coal @ 6', 148', 450', 600'

Gas shows @ none reported

Oil Shows @ none reported

Stimulation: @ Big Injun (Perfs. @ 1830'-1840'); Big Lime (Perfs. @ 1759'-1786')

1. Notify State Inspector, Terry Urban 304-549-5915, and 24 hrs prior to commencing operations.
2. TOOH w/ 2" tbg and check condition.
3. TIH w/ tbg @ 1841'; Set 182' C1A Cement Plug @ 1841' to 1659' (Big Lime & Injun)
4. TOOH w/ tbg @ 1659'; Gel hole @ 1659' to 1150'
5. TOOH w/ tbg and attempt to pull 4 1/2"; Freepoint 4 1/2", cut/shoot 4 1/2" at freepoint. Set 100' C1A Cement Plug @ 1150' to 1050' (4 1/2" csg cut & Elevation)
6. Set a 100' C1A Cement Plug 50' In/Out of cut. Perf all FW, Coal, Oil and Gas shows below 4 1/2" cut Do not omit any plugs
7. TIH w/ tbg @ 1050'; Gel hole @ 1050' to 784'
8. TOOH w/ tbg @ 784'; Set 384' C1A Cement Plug @ 784' to 400' (Salt Sand @ 490', 9 5/8", coal @ 600', coal @ 450', FW @ 490')
9. Set a 100' C1A Cement Plug 50' In/Out of cut. Perf all FW, Coal, Oil and Gas shows below 9 5/8" cut Do not omit any plugs
10. TOOH w/ tbg @ 400'; Gel hole @ 400' to 200'
11. TOOH w/ tbg @ 200'; Set 200' C1A Cement Plug @ 200' to 0' (coal @ 148' & 6' & surface)
12. Top off as needed
13. Set Monument to WV-DEP Specifications
14. Reclaim Location & Road to WV-DEP Specifications

IF you pull 9 5/8" &

Handwritten signature and date: 8-19-13

Received

AUG 20 2013

Office of Oil and Gas
WV Dept. of Environmental Protection

3905303 P

WR-35

27-Sep-99
API # 47- 039-05303

State of West Virginia
Division of Environmental Protection
Section of Oil and Gas

Review: K

Well Operator's Report of Well Work

Farm Name: The Courtland Co. Operator Well No.: courtland 18
LOCATION: Elevation: 1,101.00 Quadrangle: Chaleston West
District: Loudon County: Kanawha
Latitude: 2900 Feet South of 38 Deg. 17 30
Longitude: 10470 Feet West of 81 Deg. 37 30

Office of Oil & Gas
Permitting

JAN 11 2000

WV Division of
Environmental Protection

Company: Eastern States Oil & Gas
P.O. Box 2347, 1710 Pennsylvania Avenue
Charleston, WV 25328

Casing & Tubing Size	Used In Drilling	Left In Well	Cement Fill Up Cu. Ft.
13 3/8"	27'	27'	Grouted
9 5/8"	645'	645'	206.5 IP
4 1/2"	1977'	1977'	151.2 IP
2 3/8"		1841'	

Agent: Robert Alley

Inspector: Carlos Hively
Permit Issued: 9/27/99

Well work commenced: 11/16/99
Well work completed: 12/13/99

Verbal Plugging

Permission granted on: _____

Rotary Rig Cable Rig _____
Total Depth 2041 feet
Fresh water depths (ft) 490'

Salt water depths (ft) 875', 1200'

Is coal being mined in area?
Coal Depths (ft): 6', 148', 450', 600'

OPEN FLOW DATA

Producing formation Big Injun, Big Lime Pay Zone Depth (ft): _____ See Attach for details

Gas: Initial open flow _____ odor _____ MCF/d Oil: Initial open flow _____ Bbl/d
Final open flow: 459 MCF/d Final open flow: _____
Time of open flow between initial and final tests _____ Hours
Static rock pressure 260 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: _____
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.

For: BLAZER ENERGY CORPORATION

By: Robert Alley
Date: 1/10/00

Received

JAN 19 2000

Office of Oil and Gas
WV Dept. of Environmental Protection

Charleston West 9

EASTERN STATES OIL & GAS, INC.
 WR-35 COMPLETION REPORT - Attachment
 Well Treatment Summary

Well: Courtland 18

API# 47-039-05303

Date	12/07/99	12/07/99			
Type Frac	75 Q	Acid w/N ²			
Acid, N ₂ , Foam, Water	Foam	Displacement			
Zone Treated	Big Injun	Big Lime			
# Perfs	21	22			
From - To:	1830' - 1840'	1759' - 1786'			
BD Pressure @ psi	2326	3348			
ATP psi	2150	2188			
Avg. Rate, B=B/M, S=SCF/M	20 B (foam) 8.8 B	12000 S			
Max. Treat Press psi	2336	3348			
ISIP psi	1342	1466			
Frac Gradient	1.18	1.29			
10 min S-I Pressure	1255	1611			
Material Volume					
Sand-sks	459				
Water-bbl	155				
SCF N ₂	320,000	77,000			
Acid-gal	350 gal 15.4%	2000 gal 15.4%			
NOTES:					

Office of Oil & Gas
 Pennsylvania

JAN 11 2000

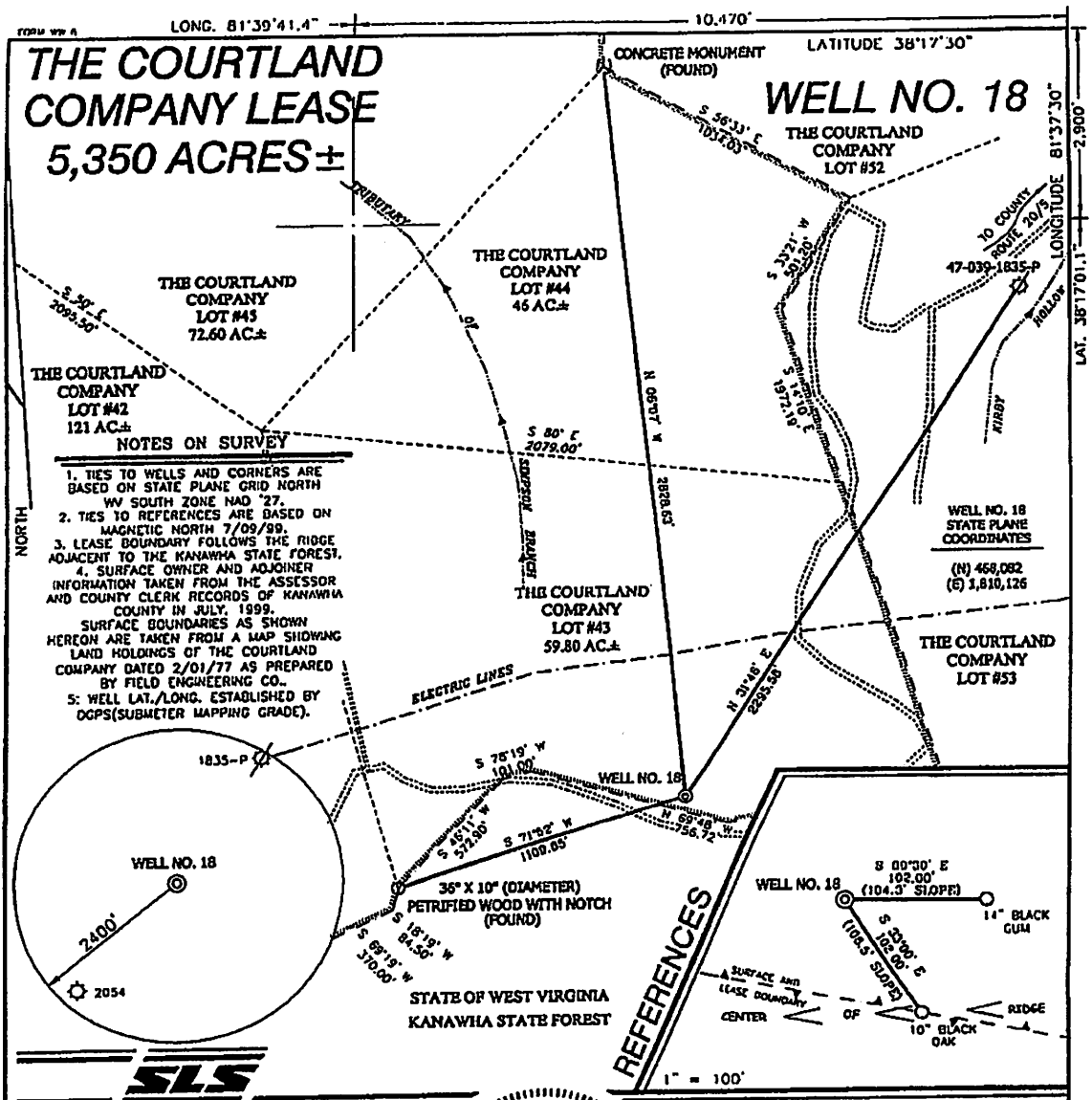
Office of Oil & Gas
 Pennsylvania

TOP	BOTTOM	FORMATION	REMARKS
0	0	Platform - GL	
6	7	Coal	
7	14	Sand	
14	22	Shale	
22	148	Sand	
148	150	Coal	
150	165	Shale	
165	240	Sand	
240	295	Shale	
295	355	Sand	
355	450	Shale	
450	453	Coal	
453	600	Shale	Water @ 490'
600	603	Coal	
603	615	Shale	
615	635	Sand	
635	785	Shale	
784	1495	Salt Sand	Water @ 875', 1200'
1578	1646	Little Lime	GT @ 1506', 1631 = NS
1646	1650	Pencil Cave	
1650	1812	Big Lime	GT @ 1661', 1724', 1756 = NS
1814	1844	Big Injun	
	2040	TD	GT @ 2040' = odor

Received

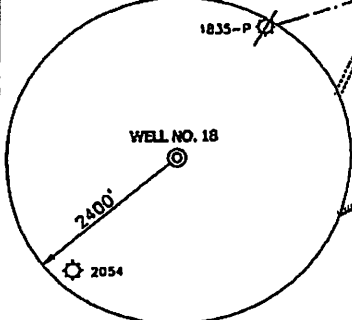
JAN 19 2000

Office of Oil and Gas
 WV Dept. of Environmental Protection



NOTES ON SURVEY

1. TIES TO WELLS AND CORNERS ARE BASED ON STATE PLANE GRID NORTH WV SOUTH ZONE NAD '27.
2. TIES TO REFERENCES ARE BASED ON MAGNETIC NORTH 7/09/99.
3. LEASE BOUNDARY FOLLOWS THE RIDGE ADJACENT TO THE KANAWHA STATE FOREST.
4. SURFACE OWNER AND ADJOINER INFORMATION TAKEN FROM THE ASSESSOR AND COUNTY CLERK RECORDS OF KANAWHA COUNTY IN JULY, 1999. SURFACE BOUNDARIES AS SHOWN HEREON ARE TAKEN FROM A MAP SHOWING LAND HOLDINGS OF THE COURTLAND COMPANY DATED 2/01/77 AS PREPARED BY FIELD ENGINEERING CO..
- 5: WELL LAT./LONG. ESTABLISHED BY DGPS(SUBMETER MAPPING GRADE).

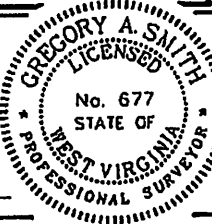


REFERENCES

1" = 100'

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.

P.S. *Gregory A. Smith*
677



(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS.
DATE AUGUST 25, 19 99
OPERATORS WELL NO. COURTLAND CO. #18
API WELL NO. 47-039-05303
STATE COUNTY PERMIT

MINIMUM DEGREE OF ACCURACY 1 / 2500 FILE NO. 423BP17 (78-65)
PROVEN SOURCE OF ELEVATION JUNCTION OF ROADS ELEVATION 676' SCALE 1" = 500'

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 1101' WATERSHED TRIBUTARY OF SIMPSON BRANCH
DISTRICT LOUDON COUNTY KANAWHA QUADRANGLE CHARLESTON WEST 7.5'

SURFACE OWNER THE COURTLAND COMPANY ACREAGE 59.80
ROYALTY OWNER THE COURTLAND COMPANY LEASE ACREAGE 5.350
PROPOSED WORK : LEASE NO. 80597
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 BIG INJUN
ESTIMATED DEPTH 2500'

WELL OPERATOR BLAZER ENERGY CORPORATION DESIGNATED AGENT RICHARD SMELTZER
ADDRESS P.O. BOX 2347 CHARLESTON, WV 25328 ADDRESS P.O. BOX 2347 CHARLESTON, WV 25328

Received

19 99

Office of Oil and Gas
WV Dept. of Environmental Protection

3905303P

WW-4-A
Revised 6/07

1) Date: August 15, 2013
2) Operator's Well Number
215391 (Courtland #18)
3) API Well No.: 47 039 - 05303
State County Permit

STATE OF WEST VIRGINIA - BUREAU OF ENVIRONMENT
DIVISION OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL & GAS
NOTICE AND APPLICATION TO PLUG AND ABANDON WELL

4) Surface Owner(s) to be served:
(a) Name The Courtland Company ✓
Address 114 Monongalia Street
Charleston, WV 25302
(b) Name Kanawha State Forest ✓
Address 7500 Kanawha State Forest Drive
Charleston, WV 25314
(c) Name _____
Address _____
6) Inspector Terry Urban ✓
Address P.O. Box 1207
Clendenin, WV 25045
Telephone 304-549-5915

5) (a) Coal Operator:
Name None
Address _____
(b) Coal Owner(s) with Declaration
Name The Courtland Company ✓
114 Monongalia Street
Address Charleston, WV 25302
Name _____
Address _____
(c) Coal Lessee with Declaration
Name None
Address _____

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 Division 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:
By: _____
Its: _____
Address: _____
Telephone: _____

EQT Production Company
Victoria J. Roark ✓
Permitting Supervisor
PO Box 280
Bridgeport, WV 26330
(304) 848-0076

Subscribed and sworn before me this

15 day of Aug, 2013
Notary Public

My Commission Expires: 8-24-22

The Office of Oil & Gas processes your personal information, such as name, address and phone number, as 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.

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL & GAS
CONSTRUCTION AND RECLAMATION PLAN AND SITE REGISTRATION APPLICATION FORM
GENERAL PERMIT FOR OIL AND GAS PIT WASTE DISCHARGE

Operator Name: EQT PRODUCTION COMPANY OP ID: _____
Watershed: Davis Creek of the Great Kanawha River Quadrangle: Charleston West 7.5'
Elevation: 1101' County: Kanawha District: Loudon

Description of anticipated Pit Waste: Formation Fluids

Do you anticipate using more than 5,000 bbls of water to complete the proposed well work? Yes ___ No X
Will synthetic liner be used in the pit? Yes Is so, what ml.? 30 ml

Proposed Disposal Method for Treated Pit Wastes:

- Land Application
- Underground Injection - UIC Permit Number _____
- Reuse (at API Number) _____
- Offsite Disposal Permit #. _____
- Other: Explain _____

Drilling medium anticipated for this well? Air, freshwater, oil based, etc. _____
If oil based, what type? Synthetic, petroleum, etc. _____

Additives to be used? _____

Will closed loop system be used? _____

Drill Cuttings disposal method? Leave in pit, landfill, remove offsite, etc. _____
If left in pit and plan to solidify what medium will be used? Cement, Lime, sawdust _____
Landfill or offsite name/permit number? _____

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 Division of Environmental Protection. I understand that the provisions of the permit are enforceable by law. Violations of any terms 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 *Victoria Roark*

Company Official (Typed or Printed) Victoria Roark

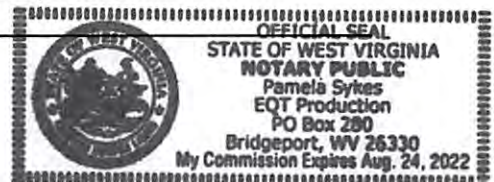
Company Official Title Permitting Supervisor-WV

Subscribed and sworn before me this 15 day of Aug, 2013 of Oil and Gas
WV Dept. of Environmental Protection

Pamela Sykes Notary Public

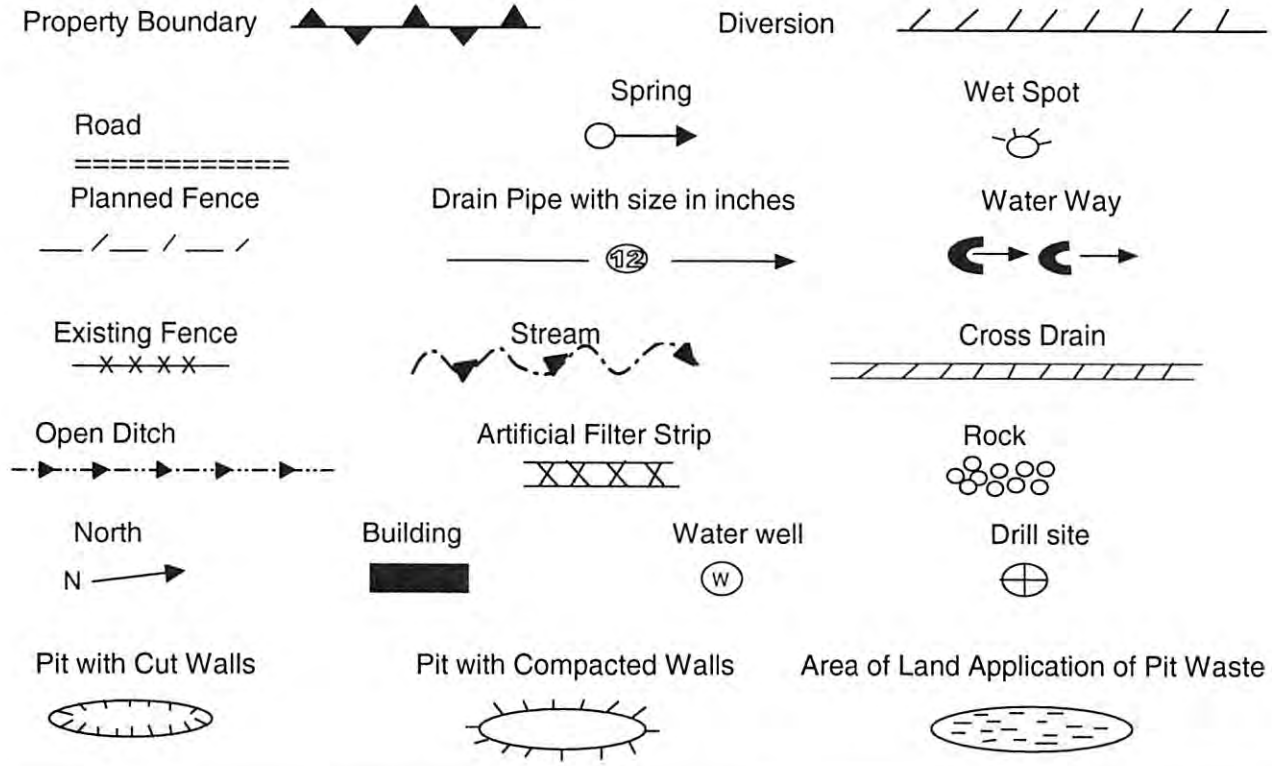
My Commission Expires 8-24-22

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OPERATOR'S WELL NO.:
215391 (Courtland #18)

LEGEND



Proposed Revegetation Treatment: Acres Disturbed: 1± Prevegetation pH 5.8

Lime 3 Tons/acre or to correct to pH 6.5

Fertilizer (10-20-20) or equivalent 1/3 ton lbs/acre (500 lbs minimum)

Mulch 2 Tons/acre or hydroseed.

SEED MIXTURES

Area I		Area II	
Seed Type	lbs/acre	Seed Type	lbs/acre
KY-31	40	Orchard Grass	15
Alsike Clover	5	Alsike Clover	5
Annual Rye	15		

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

Plan approved by: *[Signature]*

Comments: _____

Title: *Inspector* Date: *8-19-13*

Field Reviewed? Yes No

Received
 AUG 20 2013
 Office of Oil and Gas
 WV Dept. of Environmental Protection

3905303 P

Topo Quad: Charleston West 7.5'

Scale: 1" = 2000'

County: Kanawha

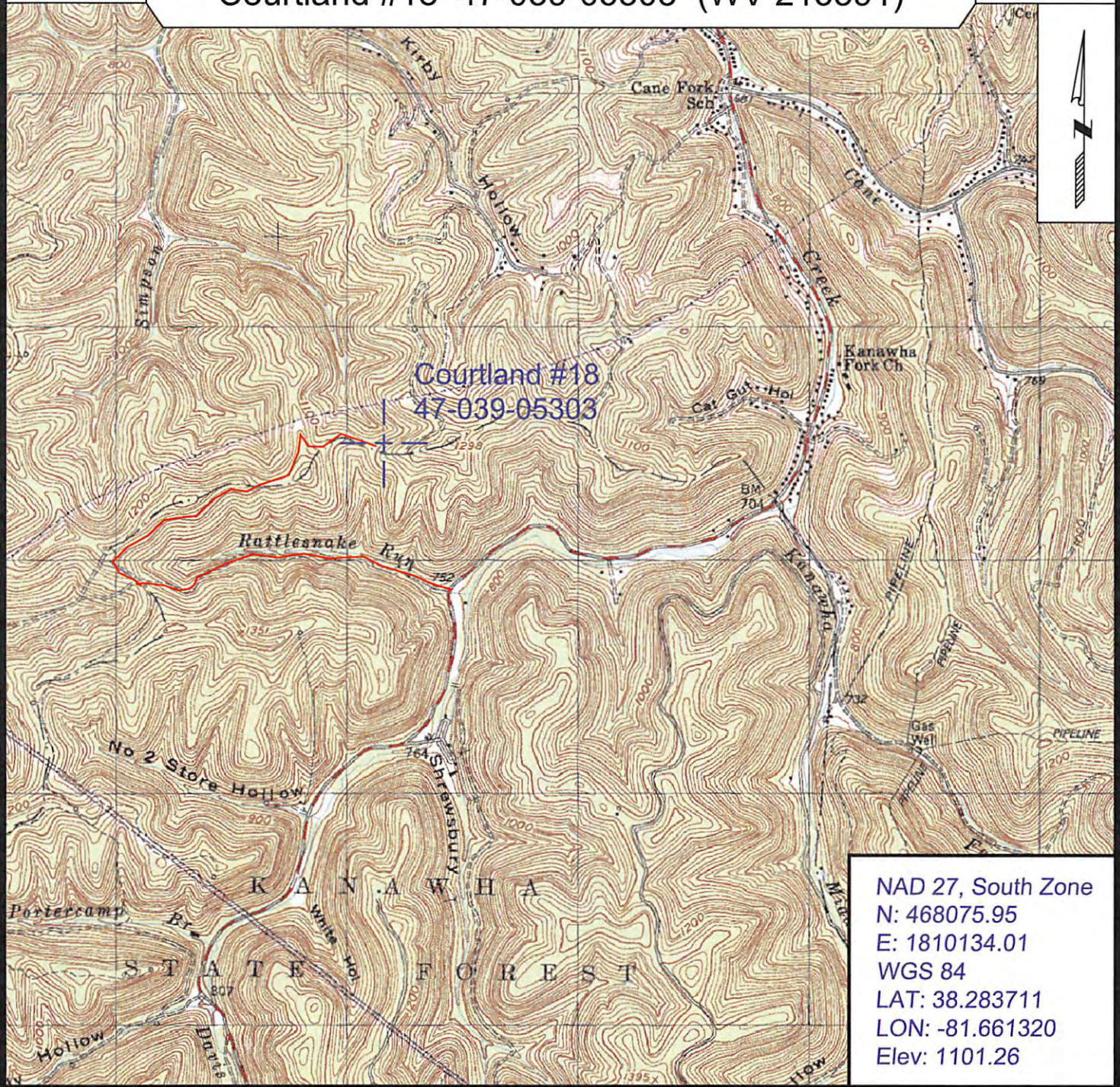
Date: June 7, 2013

District: Loudon

Project No: 52-14-00-07

Courtland #18 47-039-05303 (WV 215391)

Topo



Courtland #18
47-039-05303

NAD 27, South Zone
 N: 468075.95
 E: 1810134.01
 WGS 84
 LAT: 38.283711
 LON: -81.661320
 Elev: 1101.26



SURVEYING AND MAPPING SERVICES PERFORMED BY:
ALLEGHENY SURVEYS, INC.
 1-800-482-8606
 P.O. BOX 438
 BIRCH RIVER, WV 26610
 PH: (304) 649-8606
 FAX: (304) 649-8608

PREPARED FOR:

EQT Production Company
 P.O. Box 280
 Bridgeport, WV 26330

Received

JUN 19 2013

