



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

May 08, 2014

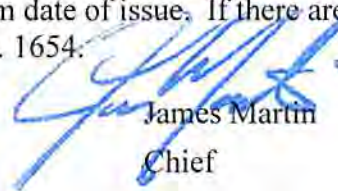
WELL WORK PLUGGING PERMIT

Plugging

This permit, API Well Number: 47-1501597, issued to TRIAD HUNTER, 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: J.B. CASTO #118
Farm Name: TRIAD HUNTER, LLC
API Well Number: 47-1501597
Permit Type: Plugging
Date Issued: 05/08/2014

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.

1501597 P

WW-4B
Rev. 2/01

1) Date January 30, 2014
2) Operator's
Well No. J.B. Casto # 118
3) API Well No. 47-015 - 01597

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 ___ / Liquid injection X / Waste disposal ___ /
(If "Gas, Production X or Underground storage ___) Deep ___ / Shallow X

5) Location: Elevation 1201' GPS Watershed Grannys Creek
District Henry 02 County Clay 15 Quadrangle Newton 512

6) Well Operator Triad Hunter, LLC 7) Designated Agent Kim Arnold
Address 125 Putnam Street Address P.O. Box 154
Marietta, Ohio 45750 Waverly, W.V. 26184

8) Oil and Gas Inspector to be notified Name Ed Gainer
Address P.O.Box 821
Spencer, W.V. 25276
9) Plugging Contractor Name N/A
Address _____

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

(SEE ATTACHED SHEET) See changes!
6 1/2 gal gel between all plugs

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

Work order approved by inspector 

RECEIVED
Office of Oil and Gas
Date FEB 24 2014

WV Department of
Environmental Protection
05/09/2014

(2014)

Plugging Procedure Attachment (Wells with 8 5/8" Casing)

Well Name : J.B. Casto # 118

Permit Number: 47-015-01597

District: Henry

County: Clay

MIIRU service rig and flowback tank; blow well down.

1. Pull tubing and rods OOH.
2. Check total depth with sandpump; clean out hole below bottom perforation.
3. Run 2 3/8" tubing below bottom perforation.
4. (Bottom Hole Plug) Mix/Pump 20 sacks Class A cement,(23.6 cu. ft.), ¼ lb.flocele/sk., no CaCl.
5. Displace cement through tubing with gel water. *BHP 2134' - 1884'*
6. Pull 2 3/8" tubing OOH.
7. RIH with casing cutter tool, check depth of 1st plug and find 4 ½" cement top (free pipe).
8. Cut-off 4 ½" casing just above the cement top, break circulation, and pull one jt. of casing OOH.
9. (Cut Plug) Mix/Pump 30 sacks Class A cement, (35.4 cu. ft.), ¼ lb. flocele/sk.,no CaCl.
10. Displace cement through casing with gel water.
11. Pull 4 ½" casing up to the subsea elevation depth.
12. (Elevation Plug) Mix/Pump 30 sacks of Class A cement,(35.4 cu. ft.), ¼ lb. flocele/sk., no CaCl. *(ELEV. PLUG) 1251' - 1151'*
13. Displace cement through casing with gel water. *at bottom of surface rig - 417 - 317*
14. Pull 4 ½" casing to 100 feet below surface. *Set 100 ft plug*
15. (Surface Plug) Mix/Pump 30 sacks of Class A cement,(35.4 cu. ft.), ¼ lb. flocele/sk., no CaCl.
16. Circulate cement to surface.
17. Pull remaining joints of 4 ½" casing OOH. Top load annulus with Class A cement to surface.
18. Weld a three foot monument pipe on to the existing casing. Fill monument pipe with cement and attach identification plate to monument pipe.
19. RDMO service rig and supporting equipment.
20. Reclaim well site and lease road.

Elevation 1201'

*Big Insur
20 80' - 2100'*

Plug Summary

(Plug Name)	(Thickness)	(Cement Type)	(Sacks)	(Cubic Feet)
1. Bottom Hole	250 ft.	Class A	20	23.6
2. Cut Plug	100 ft.	Class A	30	35.4
3. Elevation Plug	100 ft.	Class A	30	
4. Surface Plug	100 ft.	Class A	30	
5. Totals:			<u>110 sacks</u>	<u>129.8 cu. ft.</u>

RECEIVED
Office of Oil and Gas
FEB 21 2014

WV Department of
Environmental Protection

05/09/2014

1501597P

STATE OF WEST VIRGINIA
DEPARTMENT OF MINES, OIL AND GAS DIVISION

Date 1-10-80, 19

FORM IV-35
(Obverse)

Operator's
Well No. J. B. Casto 118

[08-78]

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

API Well No. 47 -015-1597-V
State County Per

WELL TYPE: Oil ___ / Gas ___ / Liquid Injection X / Waste Disposal ___
(If "Gas", Production ___ / Underground storage ___ / Deep ___ / Shallow ___)

LOCATION: Elevation: 1186.71' Watershed: Granny's Creek
District: Henry County: Clay Quadrangle: Newton 7.5'

WELL OPERATOR Pennzoil Company DESIGNATED AGENT James A. Crews
Address P. O. Box 1588 Address P. O. Box 1588
Parkersburg, WV 26101 Parkersburg, WV 26101

PERMITTED WORK: Drill X / Convert ___ / Drill deeper ___ / Redrill ___ / Fracture or stimulate ___
Plug off old formation ___ / Perforate new formation ___
Other physical change in well (specify) _____

PERMIT ISSUED ON 3-19-, 19 79 OIL & GAS INSPECTOR FOR THIS WORK:
(IF APPLICABLE: PLUGGING OF DRY HOLE ON CONTINUOUS PROGRESSION FROM DRILLING OR REWORKING. VERBAL PERMISSION OBTAINED) Name Martin Nichols
Address Clendenin, WV

GEOLOGICAL TARGET FORMATION: Big Injun Depth 2136 feet
Depth of completed well, 2160 feet Rotary X / Cable Tools ___
Water strata depth: Fresh, ___ feet; salt, ___ feet.
Coal seam depths: _____ Is coal being mined in the area? No
Work was commenced 5-2-, 19 79, and completed 5-6-, 19 79

CASING AND TUBING PROGRAM

CASING OR TUBING TYPE	SPECIFICATIONS					FOOTAGE INTERVALS		CEMENT FILL-UP OR SACKS (Cubic feet)	PACKERS
	Size	Grade	Weight per ft	New	Used	For drilling	Left in well		
Conductor									Kinds
Fresh water									Sizes
Coal	8-5/8					367	367	230 sks.	Depths set
Intermediate									
Production	4-1/2					2135	2135	50 sks.	
Tubing									Perforations:
Liners									Top Bottom

OPEN FLOW DATA

Producing formation Injun Pay zone depth _____ feet
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 measurement) after _____ 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 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

05/09/2014
RECEIVED
Office of Oil and Gas
FEB 21 2014
WV Department of Environmental Protection

150597A

FORM IV-35
(Reverse)

[08-78]

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

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 & Shale			0	226	
Sand			226	302	
Shaley Sand			302	370	
Shale			370	394	
Shaley Sand			394	500	
Sandy Shale			500	530	
Shale			530	566	
Sand			566	710	
Shale			710	776	
Sand			776	800	
Shale			800	836	
Sand			836	876	
Shale			876	886	
Sand			886	948	
Sandy Shale			948	994	
Sand			994	1010	
Sandy Shale			1010	1172	
Sand			1172	1216	
Shale			1216	1304	
Shaley Sand			1304	1332	
Shale			1332	1344	
Sand			1344	1364	
Sandy Shale			1364	1444	
Sand			1444	1594	
Shale			1594	1598	
Sand			1598	1618	
Shale			1618	1650	
Sand			1650	1668	
Shale			1668	1684	
Sand			1684	1764	
Shale			1764	1768	
Sand			1768	1806	
Shale			1806	1866	
Sand			1866	1884	
Little Lime			1884	1948	
Pencil Cave			1948	1960	
Big Lime			1960	2004	

(Attach separate sheets to complete as necessary)

Well Operator _____

By _____

Its _____

RECEIVED
Office of Oil and Gas

05/09/2014
FEB 21 2014

WV Department 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."

FORM IV-35
(Reverse)

[08-78]

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

WELL LOG

FORMATION	Color	Hard or Soft	Top Feet	Bottom Feet	Remarks Including indication of all fresh and salt water, coal, oil and gas
Loyalhanna			2004	2064	
Keener			2064	2080	
Big Injun			2080	2108	
Shale			2108	2136	
Squaw			2136	2150	
Shale			2150	2160	
Total Depth				2160	
PBD				2134	

(Attach separate sheets to complete as necessary)

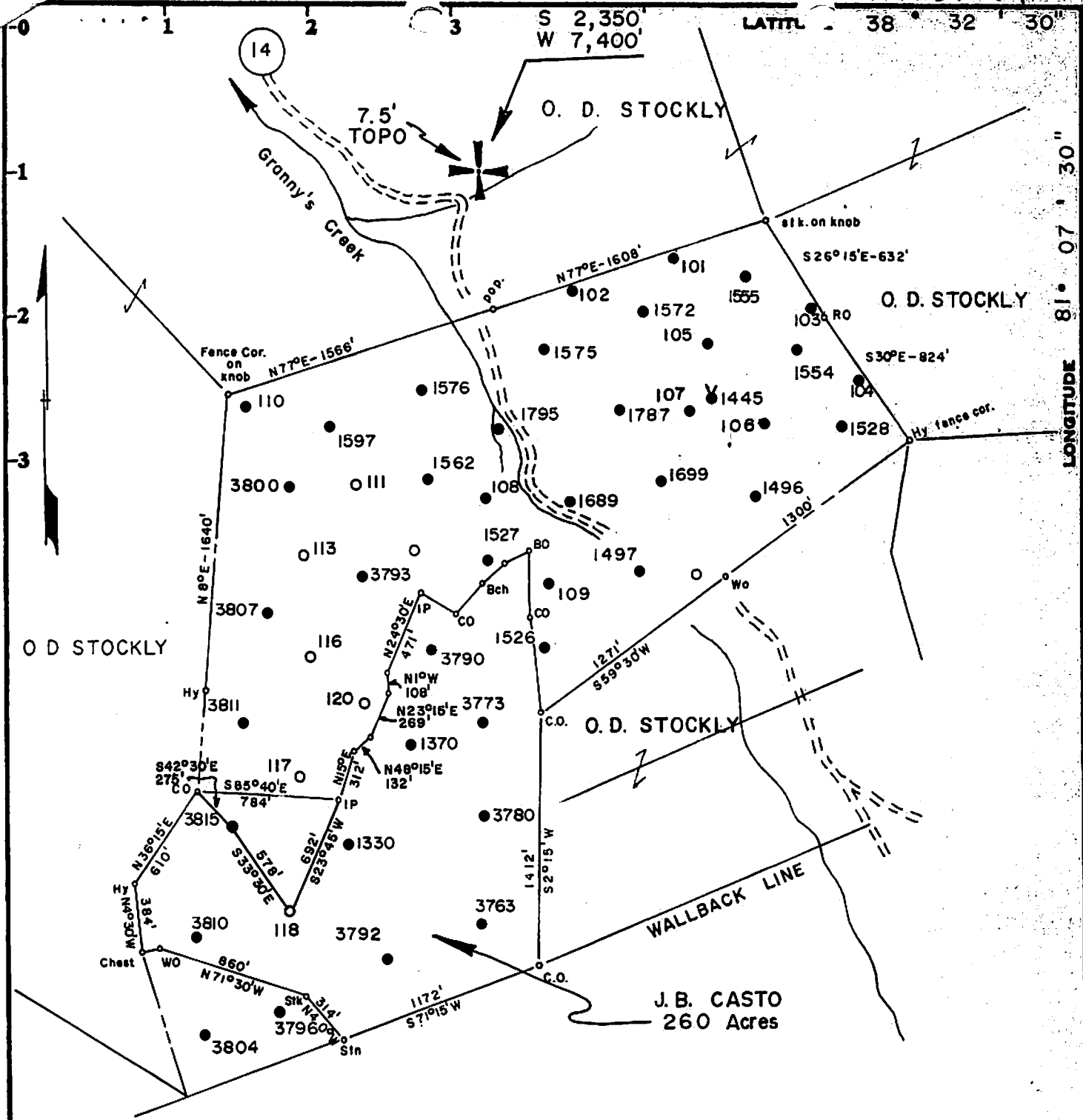
Pennzoil Company
Well Operator

By Curtis A. Lewis
Its Civil Engineering Dept. 05/09/2014

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."

Noted 4-15-13
RECEIVED
Office of Oil and Gas
FEB 21 2014
WV Department of Environmental Protection

1501597P



SURFACE - Pennzoil Co.
P.O. Box 1588
Parkersburg, WV

Minimum Error of Closure 1 in 200
Source of Elevation O.D. STOCKLY #22, elev. 1238.35

Fracture.....
New Location..... Water Injection
Drill Deeper.....
Abandonment.....

I, the undersigned, hereby certify that this map is correct to the best of my knowledge and belief and shows all the information required by paragraph 6 of the rules and regulations of the oil and gas section of the mining laws of West Virginia.

Signed: *Curtis A. Lucas*

Map No. 83 Squares: N S 62 E W 31, 32

Company	PENNZOIL COMPANY		
Address	P. O. Box 1588, Parkersburg, W. Va. 26101		
Farm	J. B. CASTO		
Tract	Acres	260	Lease No. 46485-up
Well (Farm) No.	118	Serial No.	
Elevation (Spirit Level)	1186.71		
Quadrangle	NEWTON 7.5'		
County	CLAY	District	HENRY
Surveyor	CURTIS A. LUCAS		
Surveyor's Registration No.	275		
File No.	1626	Drawing No.	
Date	3/13/79	Scale	1" = 800'

STATE OF WEST VIRGINIA
DEPARTMENT OF MINES
OIL AND GAS DIVISION
CHARLESTON

WELL LOCATION MAP

FILE NO. _____ RECEIVED 05/09/2014

+ Denotes location of well on United States Topographic Maps, scale 1 to 62,500, latitude and longitude lines being represented by border lines as shown.

- Denotes one inch spaces on border line of original tracing. WV Department of Environmental Protection

BRUNING 44-131 27198

1501597P

NL McCullough

BOND CEMENT AND/OR SONIC SEISMOGRAM LOG

GAMMA RAY

FILING NO.

FIELD
COPIE
P. E. Z. L. CO.
PETROLEUM ENGR. DEPT.
FILE COPY

COMPANY PENN OIL COMPANY

WELL J. B. CASTO #118

FIELD HENRY DISTRICT

COUNTY CLAY STATE W. VA.

LOCATION
S. 62 W-31-32
QUAD. - NEWTON 7.5

OTHER SERVICES:
PERFS

PERMANENT DATUM	<u>G.L.</u>	ELEV.	<u>1186.71</u>
LOG MEASURED FROM	<u>CORRECTED TO OPEN HOLE</u>		
DRILLING MEASURED FROM	<u>KB</u>		

ELEVATIONS:
KB <u>1194.71</u>
DF <u>1193.71</u>
GL <u>1186.71</u>

DATE	<u>3 AUG 79</u>
RUN NO.	<u>ONE</u>
TYPE LOG	<u>GAMMA RAY SONIC SEISMOGRAM</u>
DEPTH - DRILLER	<u>2160</u>
DEPTH - LOGGER	<u>2129</u>
BOTTOM LOGGED INTERVAL	<u>2125</u>
TOP LOGGED INTERVAL	<u>1700</u>
TYPE FLUID IN HOLE	<u>WATER</u>
SALINITY PPM CL.	
DENSITY LB./GAL.	
LEVEL	<u>FULL</u>
MAX. REC. TEMP. DEG. F.	
OPR. RIG TIME	<u>1.5 HRS</u>
RECORDED BY	<u>MAYFIELD</u>
WITNESSED BY	<u>MR. HELDMAN</u>

RUN NO.	BORE HOLE RECORD			CASING RECORD		
	BIT	FROM	TO	SIZE	WGT.	FROM TO
	<u>7/8</u>	<u>367</u>	<u>1080</u>	<u>8 7/8</u>		<u>SURF</u> <u>367</u>
	<u>6 3/4</u>	<u>1080</u>	<u>TD</u>	<u>4 1/2</u>		<u>SURF</u> <u>TD</u>

RECEIVED
Office of Oil and Gas
FEB 21 2014
WV Department of Environmental Protection

THIS HEADING AND LOG CONFORMS TO API RECOMMENDED STANDARD PRACTICE RP-33 (P)

FOLD HERE

05/09/2014

15015970

1939

50

1972

2000

2054

2052

50

2070

2087

2100

2104

GAMMA RAY CURVE

FR 2125

FD 2129

05/09/2014

1501597A

WW-4A
Revised 6-07

1) Date: January 30, 2014
2) Operator's Well Number
J.B. Casto # 118

3) API Well No.: 47 - 015 - 01597

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:	5) (a) Coal Operator
(a) Name <u>Triad Hunter, LLC</u>	Name <u>N/A</u>
Address <u>125 Putnam Street</u>	Address _____
<u>Marietta, Ohio 45750</u>	_____
(b) Name _____	(b) Coal Owner(s) with Declaration
Address _____	Name <u>N/A</u>
_____	Address _____
(c) Name _____	Name _____
Address _____	Address _____
_____	_____
6) Inspector <u>Ed Gainer</u>	(c) Coal Lessee with Declaration
Address <u>P.O. Box 821</u>	Name <u>N/A</u>
<u>Spencer, W.V. 25276</u>	Address _____
Telephone <u>(304) 389-7582</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>Triad Hunter, LLC</u>
By:	<u>Rocky Roberts</u> <i>Rocky Roberts</i>
Its:	<u>Senior V.P. Appalachian Operations</u>
Address	<u>125 Putnam Street</u>
	<u>Marietta, Ohio 45750</u>
Telephone	<u>(740) 374-2940</u>

RECEIVED
Office of Oil and Gas

Subscribed and sworn before me this 30th day of January, 2014
Elizabeth R. Dubay Notary Public
My Commission Expires 2-29-16

RECEIVED
FEB 21 2014
WV Department of
Environmental Protection
2-29-16

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 depprivacyoffier@wv.gov.

05/09/2014

1501597A

WW-9
Rev. 5/08

Page 1 of 2
API Number 47-015 - 01597
Operator's Well No. J.B. Casto # 118

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 Triad Hunter, LLC OP Code _____

Watershed Grannys Creek Quadrangle Newton

Elevation 1201' GPS County Clay District Henry

Description of anticipated Pit Waste: No Pit; fluids will be separated at Ovapa Facility; oil stored and salt water re-injected.

Will a synthetic liner be used in the pit? "No Pit"

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 _____)

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 [Signature]

Company Official (Typed Name) Rocky Roberts

Company Official Title Senior V.P. Appalachian Operations

Subscribed and sworn before me this 30th day of January, 2014

[Signature]

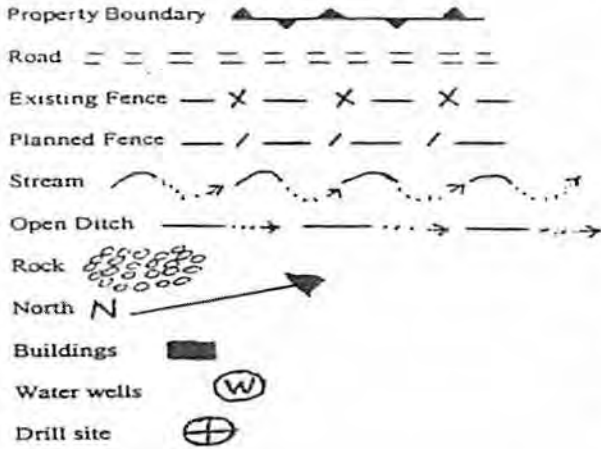


RECEIVED
Office of Oil and Gas

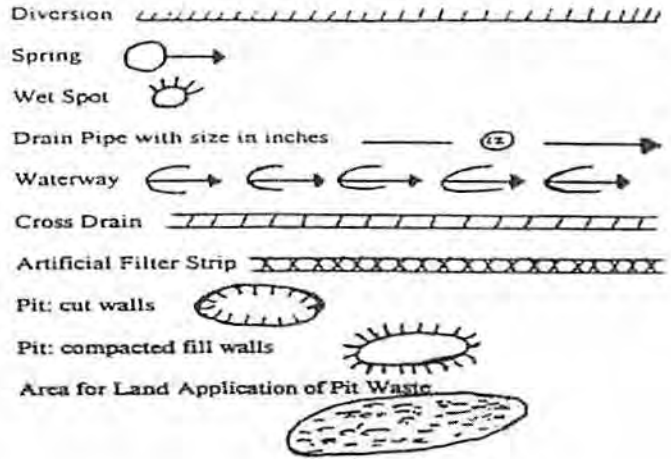
My commission expires 2-29-14

FEB 21 2014

WV Department of Environmental Protection
05/09/2014



LEGEND



Proposed Revegetation Treatment: Acres Disturbed One (1) Prevegetation pH 5.5

Lime Two (2) Tons/acre or to correct to pH 6.5

Fertilizer (10-20-20 or equivalent) 600 lbs/acre (500 lbs minimum)

Mulch 90 - 100 bales/acre Tons/acre

Seed Mixtures

Seed Type	Area I lbs/acre	Seed Type	Area II lbs/acre
Orchard Grass	30%		
Rye (Annual & BT)	35%		
Timothy (Climax)	25%		
Clover Med. Red)	10%		

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: 2/4/14

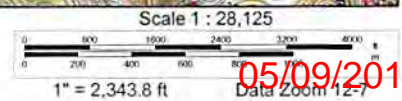
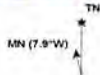
Field Reviewed? () Yes () No



Data use subject to license.

© DeLorme. XMap® 7.

www.delorme.com



05/09/2014

1501597A

WW-7
8-30-06



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

API: 47-015-01597 WELL NO.: 118

FARM NAME: J.B. Casto

RESPONSIBLE PARTY NAME: Triad Hunter, LLC

COUNTY: Clay DISTRICT: Henry

QUADRANGLE: Newton

SURFACE OWNER: Triad Hunter, LLC

ROYALTY OWNER: Kanawha Banking and Trust Co. et al

UTM GPS NORTHING: 4265186

UTM GPS EASTING: 0486500 GPS ELEVATION: 1201'

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.

[Signature]
Signature

Geologist
Title

RECEIVED
Office of Oil and Gas
1/16/14
FEB 21 2014
Date

WV Department of Environmental Protection
05/09/2014

1501597A



Chuck Taylor Toolbox

Geographic/UTM Coordinate Converter

You can convert between geographic coordinates and Universal Transverse Mercator (UTM) coordinates using this form.

Note: This is a JavaScript-powered form. If you have difficulties using this form, check your browser's settings to make sure you have enabled JavaScript.

Programmers: The JavaScript source code in this document may be copied and reused without restriction.

If you have a Java 1.1-compliant browser, and especially if you need to use an ellipsoid model other than WGS84, you may want to try the [Coordinate and Datum Transformations tool](#).

Geographic (degrees decimal)	To/From	UTM
lon -81.154895183629	>>	x (easting) 0486500
lat 38.534977819038	<<	y (northing) 4265186
		zone 17
		hemisphere <input checked="" type="radio"/> N <input type="radio"/> S

J.B. Casto # 118

Geographic coordinates are entered and displayed in decimal degrees. Negative numbers indicate West longitudes and South latitudes. UTM coordinates are entered and displayed in meters. The ellipsoid model used for computations is WGS84.

Chuck Taylor -- ([Copyright](#)) -- ([Contact](#))

RECEIVED
Office of Oil and Gas

FEB 21 2014

WV Department of
Environmental Protection

05/09/2014

1/10/2014