



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

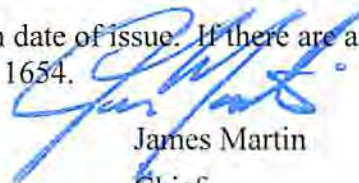
WELL WORK PLUGGING PERMIT

Plugging

This permit, API Well Number: 47-1501591, 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 #113
Farm Name: TRIAD HUNTER, LLC
API Well Number: 47-1501591
Permit Type: Plugging
Date Issued: 05/08/2014

Promoting a healthy environment.

05/09/2014

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.

1501591A

WW-4B
Rev. 2/01

1) Date January 30, 2014
2) Operator's
Well No. J.B. Casto # 113
3) API Well No. 47-015 - 01591

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 1208' 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 9) Plugging Contractor
Name Ed Gainer Name N/A
Address P.O.Box 821 Address _____
Spencer, W.V. 25276

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


(SEE ATTACHED SHEET)

See changes

6" gel between all plugs

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

RECEIVED
Office of Oil and Gas

Work order approved by inspector 

Date 2/4/14
Department of Environmental Protection

05/09/2014

(2014)

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

Well Name : J.B. Casto # 113

Permit Number: 47-015-01591

District: Henry

County: Clay

MIIRU service rig and flowback tank; blow well down.

REMOVE CASING IF POSSIBLE
* NO CEMENT RECORDS PROVIDED.

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.), 1/4 lb. flocele/sk., no CaCl.
5. Displace cement through tubing with gel water. *BHP 2155' - 1905'*
6. Pull 2 3/8" tubing OOH.
7. RIH with casing cutter tool, check depth of 1st plug and find 4 1/2" cement top (free pipe).
8. Cut-off 4 1/2" 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.), 1/4 lb. flocele/sk., no CaCl.
10. Displace cement through casing with gel water.
11. Pull 4 1/2" casing up to the subsea elevation depth.
12. (Elevation Plug) Mix/Pump 30 sacks of Class A cement, (35.4 cu. ft.), 1/4 lb. flocele/sk., no CaCl. *ELV PLUG (1258' - 1158')*
13. Displace cement through casing with gel water. *Set 100 ft plug at surface elev. 412 - 312*
14. Pull 4 1/2" casing to 100 feet below surface.
15. (Surface Plug) Mix/Pump 30 sacks of Class A cement, (35.4 cu. ft.), 1/4 lb. flocele/sk., no CaCl.
16. Circulate cement to surface.
17. Pull remaining joints of 4 1/2" 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.

Elev. 1208'



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. <i>cf</i>	Class A	30	35.4
4. Surface Plug	100 ft.	Class A	30	35.4
5. Totals:			110 sacks	129.8 cu. ft.

*110 sacks
20861 - 2102'*



RECEIVED
Office of Oil and Gas
T. J. ...
Missouri Department of
Environmental Protection

1501591P

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

Date: 1-9-80, 19

FORM IV-35
(Obverse)

Operator's
Well No. J. B. Casto 113

[08-78]

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

API Well No. 47 - 015-1591-1
State County Per

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

LOCATION: Elevation: 1177.35' 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 3-15-, 19 79

OIL & GAS INSPECTOR FOR THIS WORK:

(IF APPLICABLE: PLUGGING OF DRY HOLE ON
CONTINUOUS PROGRESSION FROM DRILLING OR
REWORKING. VERBAL PERMISSION OBTAINED
_____, 19 _____

Name Martin Nichols
Address Clendenin, WV

GEOLOGICAL TARGET FORMATION: Big Injun Depth 2130 feet
Depth of completed well, 2155 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 5-15-, 19 79, and completed 11-21-, 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		
Conductor								Kinds
Fresh water								
Coal	8-5/8					362	362	Sizes
Intermediate								
Production Tubing	4-1/2					2145	2145	
Liners								

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

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--]

RECEIVED
Office of Oil and Gas
05/09/2014

Second producing formation _____ Pay zone depth FEB 21 2014 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

WV Department of Environmental Protection

FORM IV-35
(Reverse)

[08-78]

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

Fractured 11-21-79 w/250 gals. 15% HCL,177BW,1000# 20/40 sd.

WELL LOG

FORMATION	Color	Hard or Soft	Top Feet	Bottom Feet	Remarks
					Including indication of all fresh and salt water, coal, oil and gas
Shale			0	120	
Sand			120	140	
Shale			140	242	
Sand			242	276	
Shale			276	366	
Sand			366	492	
Shale			492	508	
Sand			508	542	
Shale			542	580	
Sand			580	630	
Shale			630	652	
Sand			652	708	
Shale			708	764	
Sand			764	800	
Shale			800	816	
Sand			816	936	
Siltstone			936	964	
Sand			964	980	
Shale			980	1020	
Sand			1020	1046	
Siltstone			1046	1078	
Sand			1078	1112	
Shale			1112	1164	
Sand			1164	1222	
Shale			1222	1312	
Sand			1312	1346	
Shale			1346	1424	
Sand			1424	1460	
Shale			1460	1480	
Sand			1480	1616	
Shale			1616	1636	
Siltstone			1636	1666	
Shale			1666	1676	
Sand			1676	1698	
Shale			1698	1704	
Siltstone			1704	1742	
Sand			1742	1794	

(Attach separate sheets to complete as necessary)

Well Operator _____

By _____

05/09/2014

Its _____

RECEIVED
Office of Oil and Gas

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
Shale			1794	1854	
Sand			1854	1888	
Little Lime			1888	1934	
Pencil Cave			1934	1950	
Big Lime			1950	1994	
Loyalhanna			1994	2060	
Keener			2060	2086	
Big Injun			2086	2102	
Shale			2102	2132	
Squaw			2132	2142	
Shale			2142	2155	
Total Depth				2155	

(Attach separate sheets to complete as necessary)

Pennzoil Company
Well Operator

By Curtis Q. Lucas 05/09/2014

Its Civil Engineering Dept. RECEIVED

Office of Oil and Gas

FEB 21 2014

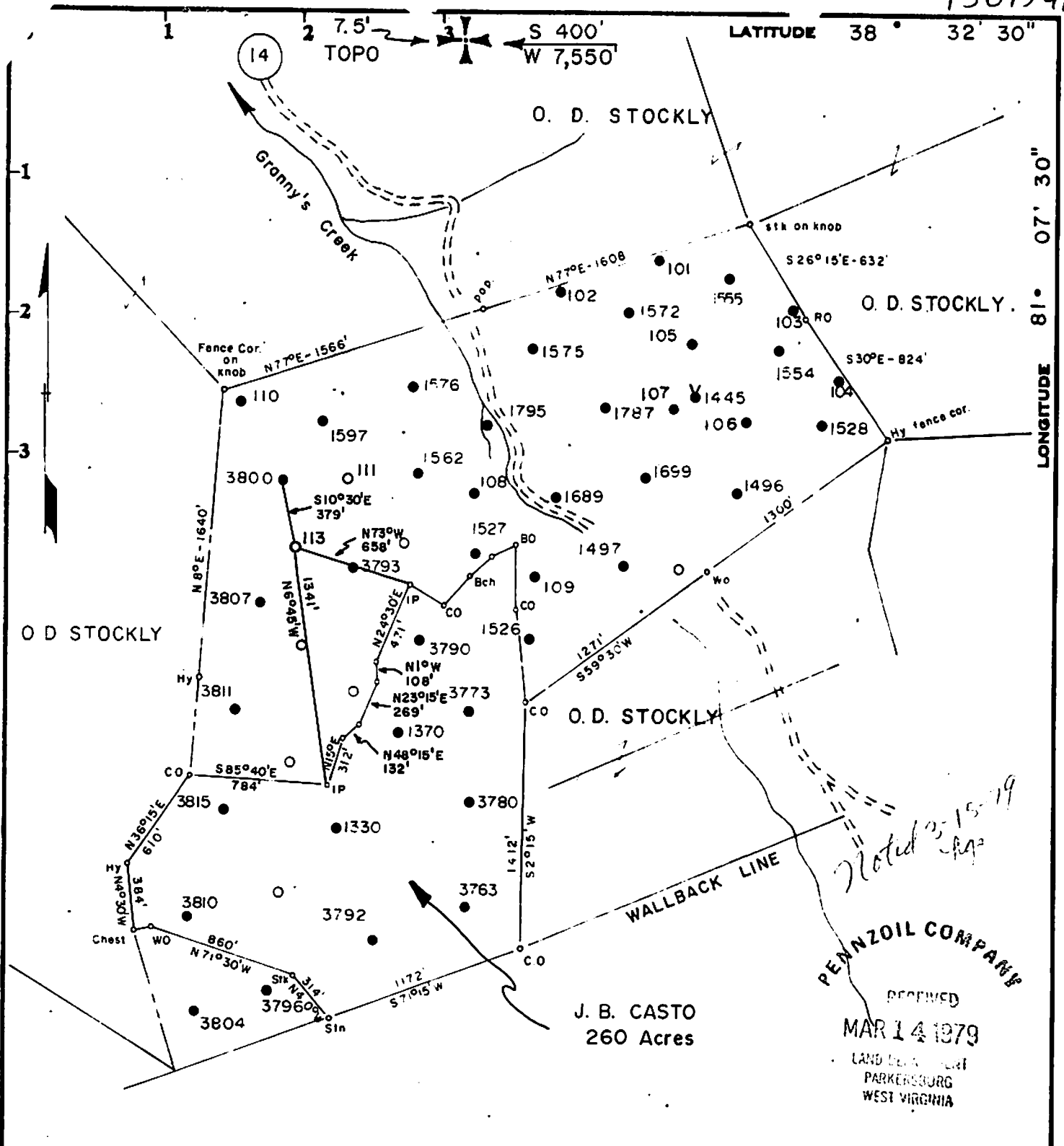
WV Department of
Environmental Protection

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."

1501591A

1501591A



SURFACE - Charles Tucker
Ovapa, WV

Minimum Error of Closure 1 in 200

Sources 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.	113	Serial No.	
Elevation (Spirit Level)	1177.35		
Quadrangle	NEWTON 7.5		
County	CLAY	District	HENRY
Surveyor	CURTIS A. LUCAS		
Surveyor's Registration No.	275		
File No.	1626	Drawing No.	
Date	3/12/79	Scale	1" = 800'

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

WELL LOCATION MAP

FILE NO. 05/09/2014

RECEIVED
Office of Oil and Gas
and longitude lines being represented by
border lines as shown. FEB 21 2014

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

BRUNING 44-131 27198

1501591P

NL McCullough

BOND CEMENT AND/OR SONIC SEISMOGRAM LOG
GAMMA RAY

FILING NO.
HBC-GR-SS-100118

COMPANY PENNZOIL COMPANY

WELL J.B. CASTO #113

FIELD GRANNY'S CREEK

COUNTY CLAY STATE WEST VIRGINIA

LOCATION
HENRY DISTRICT
NEWTON 7-1/2 QUAD.

OTHER SERVICES:

PENNZOIL CO.
PETROLEUM ENGR. DEPT.
FILE COPY

PERMANENT DATUM	GL	ELEV. 1177.35'	ELEVATIONS: KB 1185.35'
LOG MEASURED FROM	KB		DF 1184.35'
DRILLING MEASURED FROM	KB		GL 1177.35'

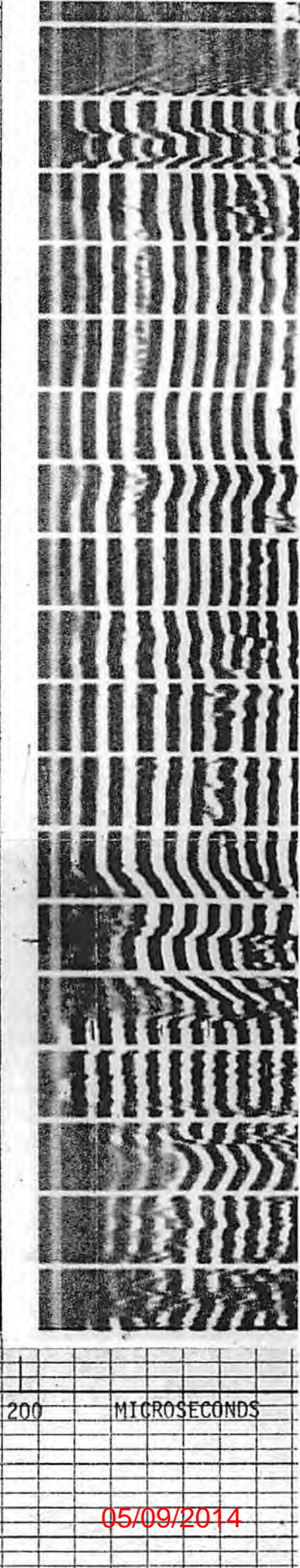
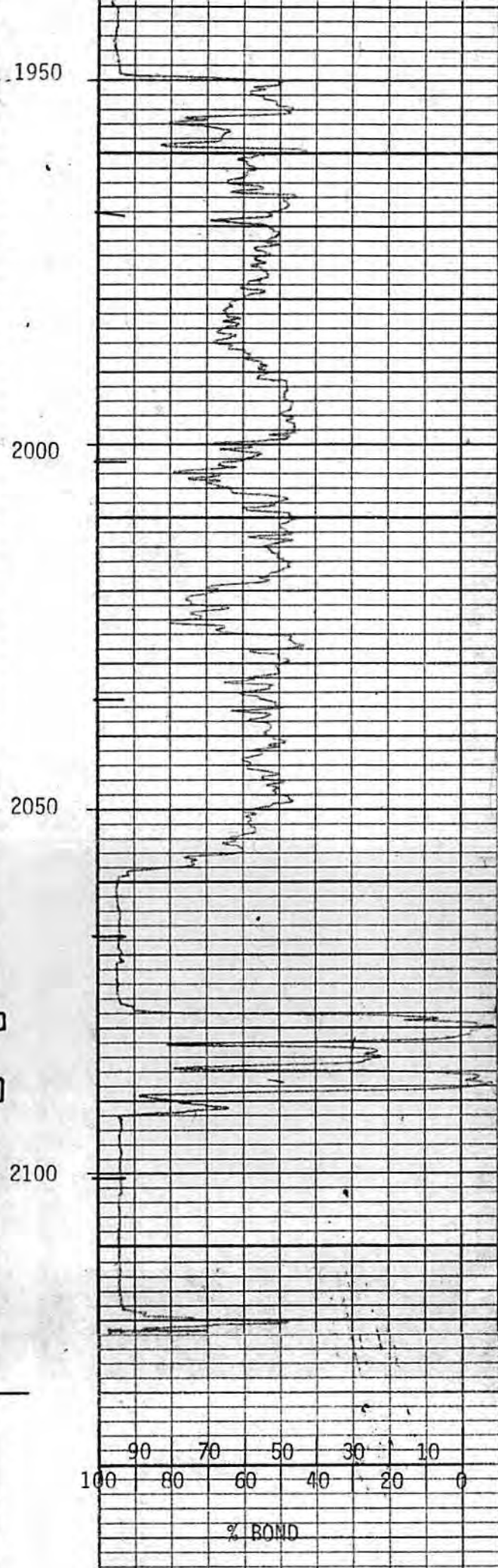
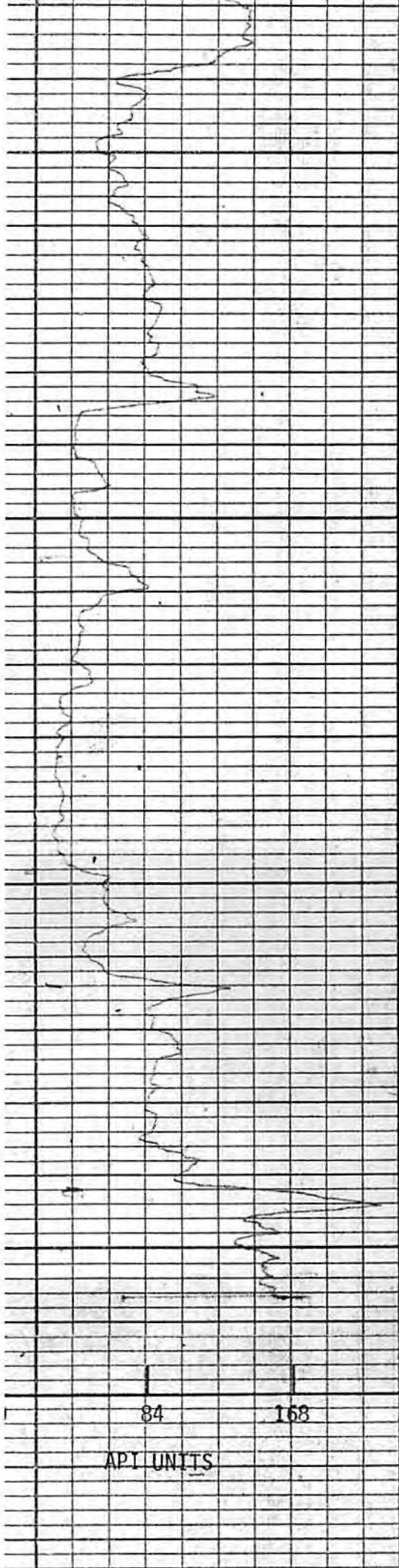
DATE	10-12-79		
RUN NO.	ONE		
TYPE LOG	BOND CEMENT-GAMMA RAY-SONIC SEISMOGRAM		
DEPTH-DRILLER	2155'		
DEPTH-LOGGER	2125'		
BOTTOM LOGGED INTERVAL	2121'		
TOP LOGGED INTERVAL	1600'		
TYPE FLUID IN HOLE	WATER		
SALINITY PPM CL.			
DENSITY LB./GAL.			
LEVEL	FULL		
MAX. REC. TEMP. DEG. F.			
OPR. RIG TIME	2 HOURS		
RECORDED BY	MONDAY		
WITNESSED BY	MR. HELDMAN		

RUN NO.	BORE HOLE RECORD			CASING RECORD			
	BIT	FROM	TO	SIZE	WGT.	FROM	TO
1	7-7/8'	369'	1380'	8-5/8'		0	369'
	6-3/8'	1380'	TD	4-1/2'		0	TD

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

FOLD HERE

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



05/09/2014

15015910

WW-4A
Revised 6-07

1) Date: January 30, 2014
2) Operator's Well Number
J.B. Casto # 113

3) API Well No.: 47 - 015 - 01591

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 Triad Hunter, LLC

By: Rocky Roberts *Rocky Roberts*

Its: Senior V.P. Appalachian Operations

Address 125 Putnam Street

Marietta, Ohio 45750

Telephone (740) 374-2940

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

Elizabeth R. Sebby Notary Public

My Commission Expires 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 depprivacyofficer@wv.gov.

Office of Oil and Gas
Environmental Protection

05/09/2014

1501591A

WW-9
Rev. 5/08

Page 1 of 2
API Number 47-015 - 01591
Operator's Well No. J.B. Casto # 113

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 1208' 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 Rocky Roberts

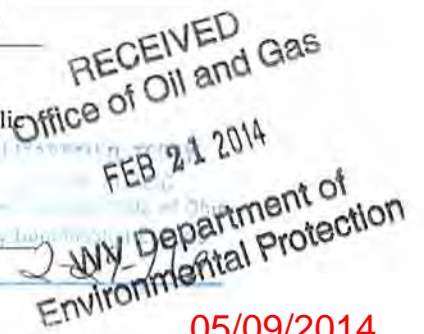
Company Official (Typed Name) Rocky Roberts

Company Official Title Senior V.P. Appalachian Operations

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

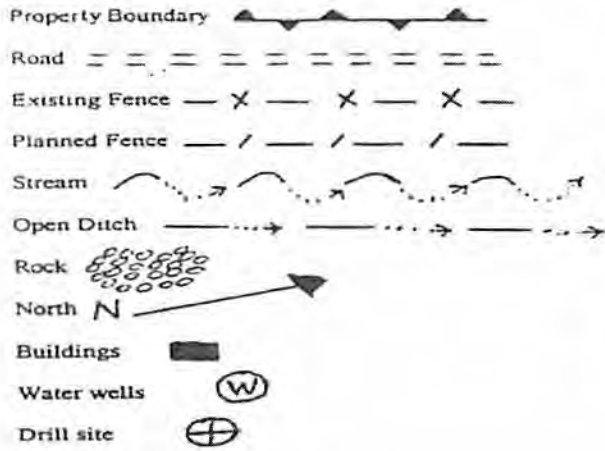
Elizabeth R Seby

Notary Public

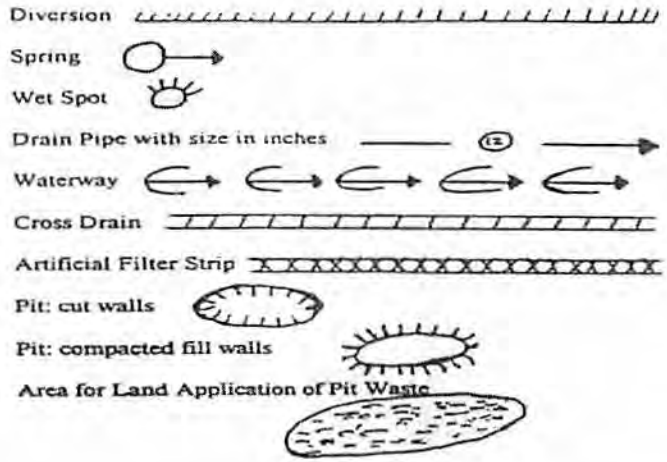


My commission expires 2-29-16

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

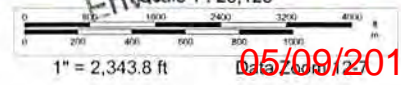
Field Reviewed? () Yes (X) No

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



Data use subject to license.
 © DeLorme, XMap® 7.
 www.delorme.com

TN
 MN (7.5°W)



Scale 1 : 28,125
 RECEIVED
 Office of Oil and Gas
 FEB 5 2014
 Tennessee Department of Environment
 05/09/2014

1501591A

WW-7
8-30-06



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

API: 47-015-01591 WELL NO.: 113

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: 4265794

UTM GPS EASTING: 0486495 GPS ELEVATION: 1208'

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.

Ben Smith
Signature

Geologist
Title

RECEIVED
Office of Oil and Gas
1/16/14
FEB 21 2014
Date
West Virginia Department of Environmental Protection

05/09/2014

1501591 P



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 -81.154964307088	[>>]	x (easting) 0486495
lat 38.540457062839	[<<]	y (northing) 4265794
		zone 17
		hemisphere <input checked="" type="radio"/> N <input type="radio"/> S

J. B. Casto # 113

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