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: 47-1501593, 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 penalities 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 #116
Farm Name: TRIAD HUNTER, LLC
API Well Number: 47-1501593
Permit Type: Plugging
Date Issued: 05/08/2014

Promoting a healthy environment.

1501593P

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.

1501593P

WW-4B
Rev. 2/01

1) Date January 30, 2014
2) Operator's Well No. J.B. Casto # 116
3) API Well No. 47- 015 - 01593

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 1190' GPS Watershed Grannys Creek
District Henry 2 County Clay 15 Quadrangle Newton 512

6) Well Operator Triad Hunter, LLC
Address 125 Putnam Street
Marietta, Ohio 45750

7) Designated Agent Kim Arnold
Address P.O. Box 154
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% gel Between all plugs

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

Work order approved by inspector [signature] Date 2/4/14

1501593P

(2014)

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

Well Name : J.B. Casto # 116 Permit Number: 47-015-01593

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 - (2142' - 1892')
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. ELEV 1190' **(Elevation Plug)** Mix/Pump **30** sacks of Class A cement,(35.4 cu. ft.), ¼ lb. flocele/sk., no CaCl. ELEV. PLUG (1240' - 1140')
13. Displace cement through casing with gel water.
14. Set 100 ft bottom of surface pipe 375 - 275 Pull 4 ½" casing to 100 feet below surface.
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.

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	35.4
4.	Set 100 ft Surface Plug	100 ft.	Class A	30	35.4
5.	**Totals:**			**110 sacks**	**129.8 cu. ft.**

INJUN 2046' - 2072'

140

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FORM IV-35
(Obverse)

[08-78]

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

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

Date 1-9-80, 19

Operator's Well No. J. B. Casto 116

API Well No. 47 - 015-1593-P
State County Per

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

LOCATION: Elevation: 1157.64 Watershed: Granny's Creek
District: Henry County: Clay Quadrangle: Newton 7.5'

WELL OPERATOR Pennzoil Company
Address P. O. Box 1588
Parkersburg, WV 26101

DESIGNATED AGENT James A. Crews
Address P. O. Box 1588
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, 1979

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

OIL & GAS INSPECTOR FOR THIS WORK:
Name Martin Nichols
Address Clendenin, WV

GEOLOGICAL TARGET FORMATION: Big Injun Depth 2110 feet

Depth of completed well, 2142 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 5-11, 19 79, and completed 5-15, 19 79

CASING AND TUBING PROGRAM

CASING OR TUBING TYPE	SPECIFICATIONS Size	Grade	Weight per ft	New	Used	FOOTAGE INTERVALS For drilling	Left in well	CEMENT FILL-UP OR SACKS (Cubic feet)	PACKERS
Conductor									Kinds
Fresh water									
Coal	8-5/8					323	323	205 sks.	Sizes
Intermediate									
Production	4-1/2					2133	2133	50 sks	Depths set
Tubing									
Liners									
									Perforations:
									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

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FORM IV-35
(Reverse)

[08-78]

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

Fractured 11-20-79 w/250 gals. 15% HCL, 150 BW, 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
Sand & Shale			0	96	
Sand			96	114	
Shale			114	148	
Sand			148	160	
Shale			160	224	
Sand			224	246	
Shale			246	338	
Sand			338	460	
Shale			460	492	
Sand			492	504	
Shale			504	546	
Sand			546	682	
Shale			682	742	
Sand			742	776	
Shale			776	792	
Sand			792	842	
Shaley Sand			842	870	
Sand			870	888	
Shale			888	898	
Sand			898	938	
Shale			938	994	
Sand			994	1008	
Shale			1008	1076	
Sand			1076	1084	
Shale			1084	1134	
Sand			1134	1188	
Shale			1188	1296	
Sand			1296	1322	
Shale			1322	1396	
Sand			1396	1554	
Shale			1554	1558	
Sand			1558	1562	
Shale			1562	1568	
Sand			1568	1602	
Shale			1602	1610	
Sand			1610	1642	
Sandy Shale			1642	1654	

(Attach separate sheets to complete as necessary)

Well Operator

By

Its

Noted 4-15-81 [illegible]

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NOTE: Regulation 2.02(i) provides as follows:

"The term 'log' or 'well log' shall mean a systematic, detailed geologial record of all formations, including coal, encountered in the drilling of a well."

1501593p.

FORM IV-35
(Reverse)

[08-78]

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

Fractured 11-20-79 w/250 gals. 15% HCL, 150 BW, 1000# 20/40 sd.

WELL LOG

FORMATION	Color	Hard or Soft	Top Feet	Bottom Feet	Remarks Including indication of all fre and salt water, coal, oil and g
Sand			1654	1774	
Shale			1774	1846	
Sand			1846	1850	
Little Lime			1850	1916	
Pencil Cave			1916	1928	
Big Lime			1928	1970	
Loyalhanna			1970	2032	
Keener			2032	2046	
Big Injun			2046	2072	
Shale			2072	2102	
Squaw			2102	2118	
Shale			2118	2142	
Total Depth				2142	
PBD				2120	

(Attach separate sheets to complete as necessary)

Pennzoil Company
Well Operator

By Curtis A. Lyons

Its Civil Engineering Dept.

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Noted 4-15-8 Rp

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."

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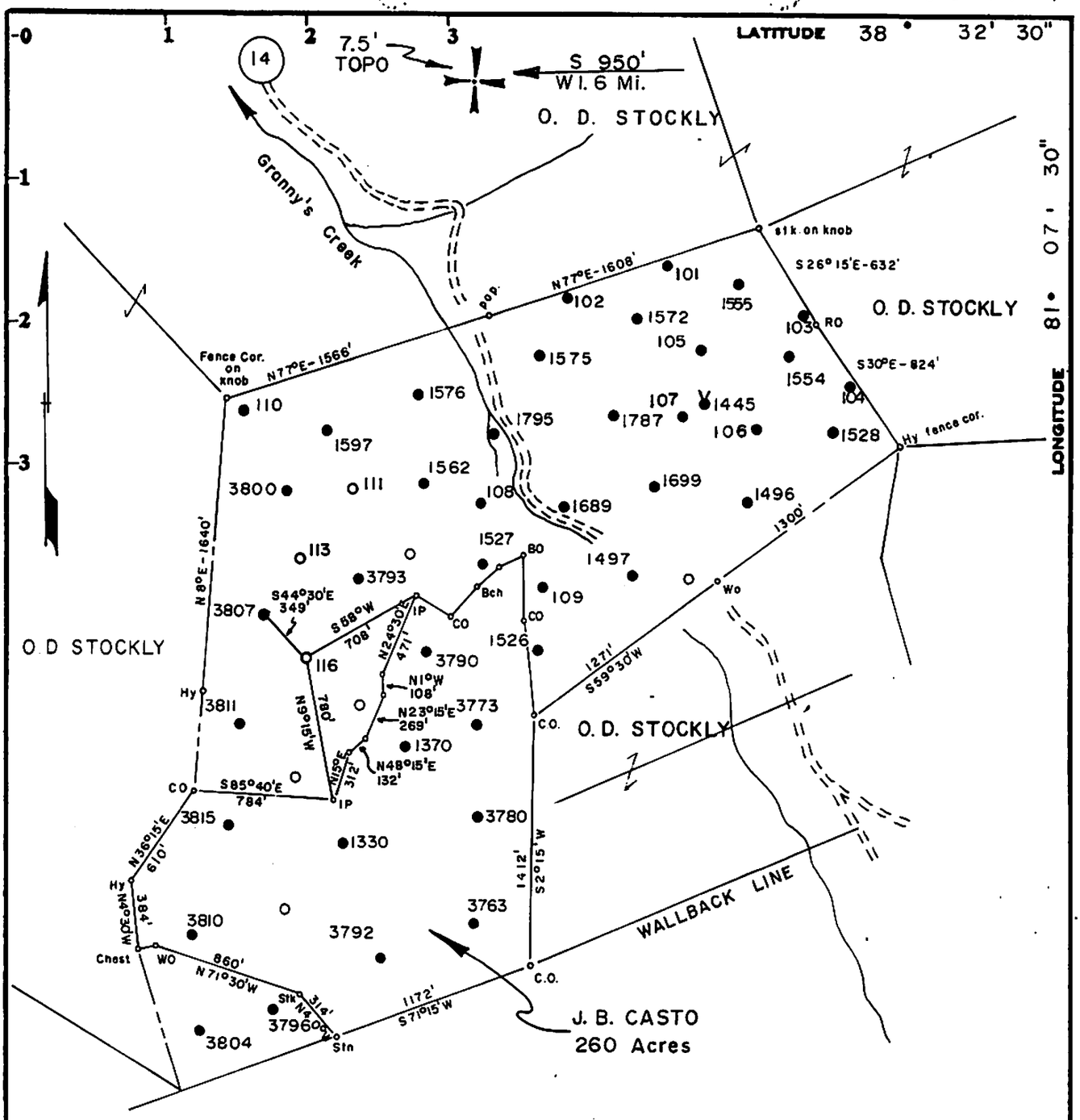

SURFACE- Charles Tucker
Ovapa, WV

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. 116 Serial No. ____
Elevation (Spirit Level) 1157.64
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. ____

+ 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.

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BRUNING 44-131 27198

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NL McCullough

BOND CEMENT AND/OR SONIC SEISMOGRAM LOG

GAMMA RAY

FILING NO.

HBC-GR-SS-98775

PENNZOIL CO.
PETROLEUM ENGR. DEPT.
FILE COPY

COMPANY PENNZOIL COMPANY

WELL J.B. CASTO #116

FIELD HENRY DISTRICT

COUNTY CLAY STATE WEST VIRGINIA

LOCATION

GRANNY'S CREEK
NEWTON 7-1/2 QUAD.

SEC. TWP. RGE.

OTHER SERVICES:

ELEVATIONS:
KB 1165.64'
DF 1164.64'
GL 1157.64'

PERMANENT DATUM	GL	ELEV. 1157.64'	
LOG MEASURED FROM	KB		
DRILLING MEASURED FROM	KB		
DATE	8-7-79		
RUN NO.	ONE		
TYPE LOG	BOND CEMENT-GAMMA RAY-SONIC SEISMOGRAM		
DEPTH - DRILLER	2145'		
DEPTH - LOGGER	2114'		
BOTTOM LOGGED INTERVAL	2110'		
TOP LOGGED INTERVAL	1650'		
TYPE FLUID IN HOLE	WATER		
SALINITY PPM CL.			
DENSITY LB./GAL.			
LEVEL	FULL		
MAX. REC. TEMP. DEG. F.			
OPR. RIG TIME	1-1/2 HOURS		
RECORDED BY	MAYFIELD		
WITNESSED BY	MR. HELDMAN		

RUN	BORE HOLE RECORD			CASING RECORD			
NO.	BIT	FROM	TO	SIZE	WGT.	FROM	TO
1	7-7/8"	334'	1415'	8-5/8"		0	322'
	6-3/4"	1415'	TD	4-1/2"		0	TD

FOLD HERE

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

LOGGING AND EQUIPMENT DATA / BOND CEMENT LOG

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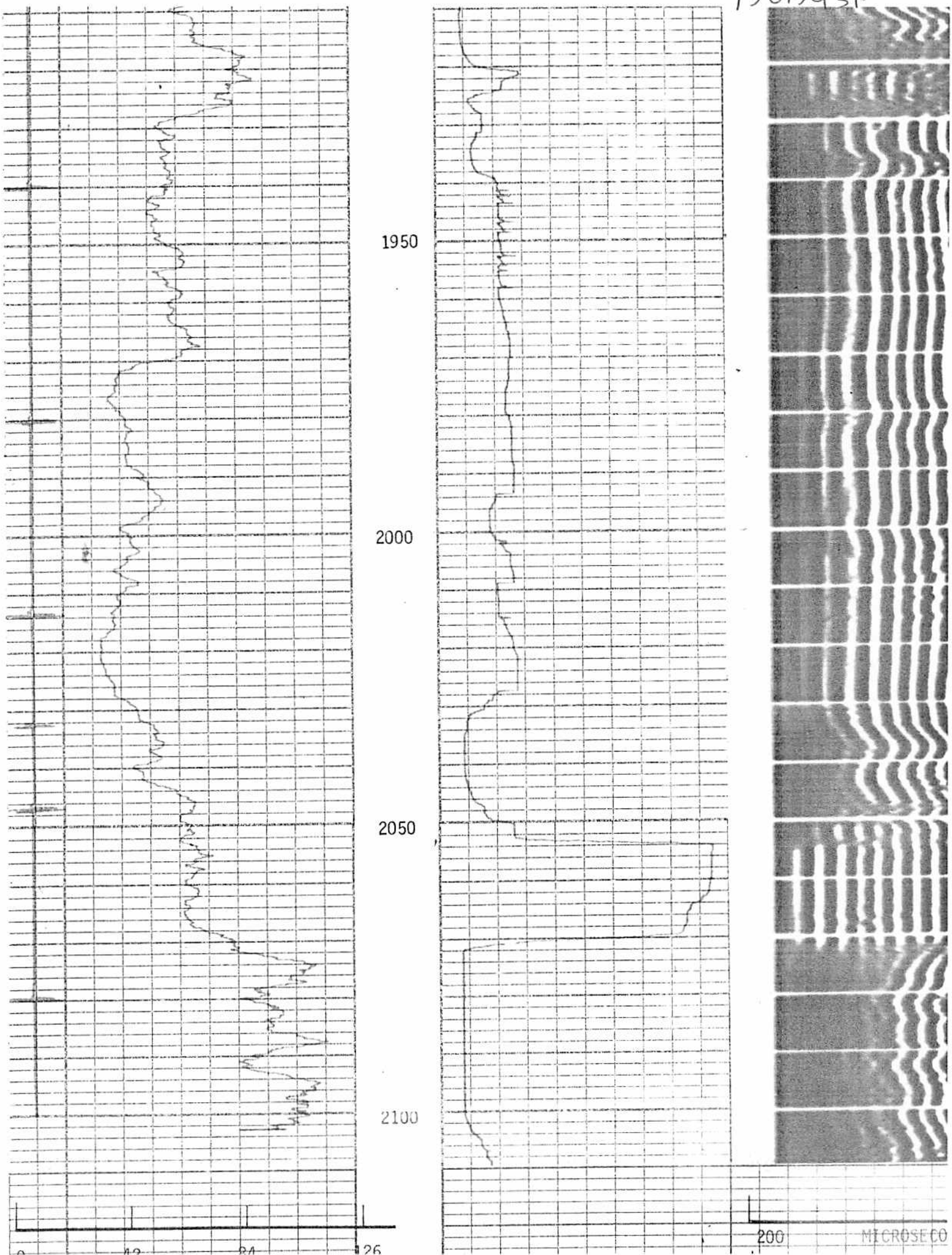
1501543P



1501593P

WW-4A
Revised 6-07

1) Date: January 30, 2014
2) Operator's Well Number
J.B. Casto # 116

3) API Well No.: 47 - 015 - 01593

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
NOTICE 0F APPLICATION TO PLUG AND ABANDON A WELL

4) Surface Owner(s) to be served:
(a) Name: Triad Hunter, LLC
Address: 125 Putnam Street
Marietta, Ohio 45750

(b) Name
Address

(c) Name
Address

6) Inspector: Ed Gainer
Address: P.O. Box 821
Spencer, W.V. 25276
Telephone: (304) 389-7582

5) (a) Coal Operator
Name: N/A
Address

(b) Coal Owner(s) with Declaration
Name: N/A
Address

Name
Address

(c) Coal Lessee with Declaration
Name: N/A
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 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
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. Seth, Notary Public
My Commission Expires 2-29-16

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WV Department of Environmental Protection

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.

1501593P

WW-9
Rev. 5/08

API Number 47 - 015 - 01593
Operator's Well No. J.B. Casto # 116

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 1190' 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 Dispposal (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

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FEB 21 2014
WV Department of
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Subscribed and sworn before me this 30th day of January, 2014

Elizabeth R. Libby Notory Public

ELIZABETH R. TERRY
NOTARY PUBLIC
In and For State of Ohio
My Comm. Exp. 2-29-16

My commission expires 2-29-16

1501593P

Form WW-9

Operator's Well No. J.B. Casto # 116

LEGEND

Property Boundary
Road
Existing Fence
Planned Fence
Stream
Open Ditch
Rock
North N
Buildings
Water wells
Drill site
Diversion
Spring
Wet Spot
Drain Pipe with size in inches
Waterway
Cross Drain
Artificial Filter Strip
Pit: cut walls
Pit: compacted fill walls
Area for Land Application of Pit Waste

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

Area I Seed Type	lbs/acre	Area II Seed Type	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:

Comments:

Title: Inspector Date: 2/4/14

Field Reviewed? ( ) Yes (X) No

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1501593P

DeLORME

XMap® 7

Data use subject to license.

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www.delorme.com

TN

MN (7.9°W)

Scale 1 : 28,125

1" = 2,343.8 ft

Data Zoom 12-7

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1501593P

WW-7
8-30-06

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

API: 47-015-01593 WELL NO.: 116

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: 4265625

UTM GPS EASTING: 0486515 GPS ELEVATION: 1190'

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 X : Post Processed Differential _____

Real-Time Differential X

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.

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Signature	Title	Date
Ben Smelter	Geologist	1/16/14

1501593P

Site Map

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 theCoordinate and Datum Transformations tool.

Geographic (*degrees decimal*)		To/From		UTM
lon	-81.154731553184	>>	x (easting)	0486515
lat	38.5389343322620	<<	y (northing)	4265625
			zone	17
			hemisphere	N S

J.B. Casto #116

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)

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