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**west virginia** department of environmental protection

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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

October 15, 2015

**WELL WORK PLUGGING PERMIT**

**Plugging**

This permit, API Well Number: 47-4701998, issued to ENERVEST OPERATING L. L. C., 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: MT-1B  
Farm Name: CENTRAL WV ENERGY COMPAN  
**API Well Number: 47-4701998**  
**Permit Type: Plugging**  
Date Issued: 10/15/2015

**Promoting a healthy environment.**

## 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.

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### CONDITIONS

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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.

WW-4A  
Revised 6-07

1) Date: \_\_\_\_\_  
2) Operator's Well Number  
MT-1B \_\_\_\_\_  
3) API Well No.: 47 - 047 - 01998

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

<b>4) Surface Owner(s) to be served:</b>	<b>5) (a) Coal Operator</b>
(a) Name <u>Ecosystem Investment Partners</u>	Name <u>Central WV Energy Company</u>
Address <u>2002 Clipper Park Road, Suite 201</u>	Address <u>300 Running Right Way</u> ✓ w
<u>Baltimore, MD 21211</u> ✓ w	<u>Julian, WV 25529</u>
(b) Name _____	(b) Coal Owner(s) with Declaration
Address _____	Name <u>Central WV Energy Company</u>
(c) Name _____	Address <u>300 Running Right Way</u> ✓ w
Address _____	<u>Julian, WV 25529</u>
(c) Name _____	Name _____
Address _____	Address _____
<b>6) Inspector</b> <u>Gary Kennedy</u>	(c) Coal Lessee with Declaration
Address <u>PO Box 268</u>	Name _____
<u>Nimitz, WV 25978</u>	Address _____
Telephone <u>304-382-8402</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.

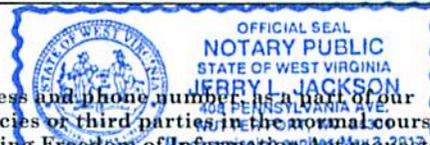
Take notice that under Chapter 22-6 of the West Virginia Code, the undersigned well operator proposes to file or has filed this Notice and Application and accompanying documents for a permit to plug and abandon a well with the Chief of the Office of Oil and Gas, West Virginia Department of Environmental 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 EnerVest Operating, L.L.C.  
 By: [Signature]  
 Its: Senior Vice President and General Manager - Appalachia East Assets  
 Address 300 Capitol Street, Suite 200  
Charleston, WV 25301  
 Telephone 304-517-1107 (Weston)

Subscribed and sworn before me this 22<sup>nd</sup> day of July, 2015  
[Signature] Notary Public  
 My Commission Expires May 3, 2017

**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](mailto:depprivacyoffier@wv.gov).



Office of Oil and Gas  
 SEP 24 2015  
 WV Department of Environmental Protection

**SURFACE OWNER WAIVER**

Operator's Well  
Number

MT-1B

**INSTRUCTIONS TO SURFACE OWNERS NAMED ON PAGE WW4-A**

The well operator named on page WW-4A is applying for a permit from the State to plug and abandon a well. (Note: If the surface tract is owned by more than three persons, then these materials were served on you because your name appeared on the Sheriff's tax ticket on the land or because you actually occupy the surface tract. In either case, you may be the only owner who will actually receive these materials.) See Chapter 22 of the West Virginia Code. Well work permits are valid for 24 months. If you do not own any interest in the surface tract, please forward these materials to the true owner immediately if you know who it is. Also, please notify the well operator and the Office of Oil and Gas.

**NOTE: YOU ARE NOT REQUIRED TO FILE ANY COMMENT.  
WHERE TO FILE COMMENTS AND OBTAIN ADDITIONAL INFORMATION:**

Chief, Office of Oil and Gas  
Department of Environmental Protection  
601 57<sup>th</sup> St. SE  
Charleston, WV 25304  
(304) 926-0450

**Time Limits and methods for filing comments.** The law requires these materials to be served on or before the date the operator files his Application. You have FIVE (5) DAYS after the filing date to file your comments. Comments must be filed in person or received in the mail by the Chief's office by the time stated above. You may call the Chief's office to be sure of the date. Check with your postmaster to ensure adequate delivery time or to arrange special expedited handling. If you have been contacted by the well operator and you have signed a "voluntary statement of no objection" to the planned work described in these materials, then the permit may be issued at any time.

**Comments must be in writing.** Your comments must include your name, address and telephone number, the well operator's name and well number and the approximate location of the proposed well site including district and county from the application. You may add other documents, such as sketches, maps or photographs to support your comments.

The Chief has the power to deny or condition a well work permit based on comments on the following grounds:

- 1) The proposed well work will constitute a hazard to the safety of persons.
- 2) The soil erosion and sediment control plan is not adequate or effective;
- 3) Damage would occur to publicly owned lands or resources;
- 4) The proposed well work fails to protect fresh water sources or supplies;
- 5) The applicant has committed a substantial violation of a previous permit or a substantial violation of one or more of the rules promulgated under Chapter 22, and has failed to abate or seek review of the violation..."

If you want a copy of the permit as it is issued or a copy of the order denying the permit, you should request a copy from the Chief.

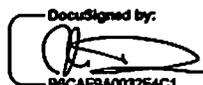
**VOLUNTARY STATEMENT OF NO OBJECTION**

I hereby state that I have read the instructions to surface owners and that I have received copies of a Notice and Application For A Permit To Plug And Abandon on Forms WW-4A and WW-4B, and a survey plat.

I further state that I have no objection to the planned work described in these materials, and I have no objection to a permit being issued on those materials.

FOR EXECUTION BY A NATURAL PERSON  
ETC.

FOR EXECUTION BY A CORPORATE CORPORATION,  
Department of Environmental Protection

_____	Date _____	Name _____	EIP West Virginia, LLC
Signature		By _____	Nick Dilks
		Its _____	_____
		Manager _____	Date _____
		Signature _____	Date _____
			7/27/2015

470 1998 P

WW-4B

API No.	<u>47-047-01998</u>
Farm Name	<u>Central WV Energy Co.</u>
Well No.	<u>MT-1B</u>

**INSTRUCTIONS TO COAL OPERATORS  
OWNERS AND LESSEE**

The well operator named on the obverse side of WW-4 (B) is about to abandon the well described in the enclosed materials and will commence the work of plugging and abandoning said well on the date the inspector is notified. Which date shall not be less than five days after the day on which this notice and application so mailed is received, or in due course should be received by the Department of Environmental Protection Office of Oil & Gas.

This notice and application is given to you in order that your respective representatives may be present at the plugging and filling of said well. You are further notified that whether you are represented or not the operator will proceed to plug and fill said well in the manner required by Section 24, Article 6, Chapter 22 of the Code and given in detail on obverse side of this application.

NOTE: If you wish this well to be plugged according to 22-6-24(d) then as per Regulation 35CSR4-13.9 you must complete and return to this office on form OB-16 "Request by Coal Operator, Owner, or Lessee for plugging" prior to the issuance of this plugging permit.

**WAIVER**

The undersigned coal operator X / owner X / lessee        / of the coal under this well location has examined this proposed plugging work order. The undersigned has no objection to the work proposed to be done at this location, provided, the well operator has complied with all applicable requirements of the West Virginia Code and the governing regulations.

Date: 8-19-15

Alpha Natural Resources  
 By: A. Scott Krstyn  
 Its VP Land & Gas

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 Environmental Protection



ENERVEST

**EnerVest Operating, L.L.C.**

**Eastern Division**

1064 Old Route 33, Weston, WV 26452-7722  
Phone (304) 517-1102 Fax (304) 517-1107

VIA UPS DELIVERY

July 22, 2015

Central WV Energy Company  
300 Running Right Way  
Julian, WV 25529

Re: Plugging Permits MT-Wells 1A; 1B & 1C  
API Nos. 47-047-01997; 47-047-01998; 47-047-01999  
Browns Creek District, McDowell County, WV

Dear Coal Owner/Operator:

Pursuant to Chapter 22 of the West Virginia Code, enclosed please find copies of the following documents for the proposed plugging of each of the subject wells:

- Form WW-7 Well Location Form: GPS
- Form WW-9 Construction and Reclamation Plan and Site Registration Application
- Form WW-4A Notice of Application to Plug and Abandon a Well
- Form WW-4B Application for a Permit to Plug and Abandon
- Coal Owner/Lessee Waiver (2 copies)

These applications are being filed by EnerVest with the Administrator of the Office of Oil and Gas of the West Virginia Department of Environmental Protection. If you have no objections to the proposed process for the plugging of these wells, please sign the Voluntary Statement of No Objection on the Coal Owner/Lessee Waiver for each well and return one copy to our office in the enclosed envelope.

Comments as to the location construction or the proposed well work may, pursuant to West Virginia Code, be filed by you with the said Administrator within five (5) days after the Application is filed by EnerVest. The address of the Administrator for the purpose of filing comments and obtaining additional information is:

Permit Administrator  
West Virginia Division of Environmental Protection  
Office of Oil and Gas  
601 57<sup>th</sup> Street, SE  
Charleston, WV 25304

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SEP 24 2015  
WV Department of  
Environmental Protection

470198 P

Persons who may file such comments are: (i) the owners of record of the surface of the tract on which the well is or is to be located, and (ii) the owners of record of the surface tract or tracts overlying the oil and gas leasehold being developed by the proposed well work, if such surface tract is to be utilized for road or other land disturbance described in the Erosion and Sediment Control Plan referred to above; and (iii) except as and when not required by the laws of West Virginia and the rules of the West Virginia Department of Mines, any coal operator operating coal seams beneath the oil and gas leasehold upon which said well is or is to be located as well as the owner(s) and lessee(s), if any of such coal seams.

Sincerely,  
EnerVest Operating, L.L.C.



Jerry L. Jackson  
Senior District Landman

Enclosures

cc: File

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SEP 24 2015  
Department of  
Energy and Mineral Production



ENERVEST

EnerVest Operating, L.L.C.  
Eastern Division

1064 Old Route 33, Weston, WV 26452-7722  
Phone (304) 517-1102 Fax (304) 517-1107

VIA UPS DELIVERY

July 22, 2015

Ecosystem Investment Partners  
2002 Clipper Park Road, Suite 201  
Baltimore, MD 21211

Re: Plugging Permits MT-Wells 1A; 1B & 1C  
API Nos. 47-047-01997; 47-047-01998; 47-047-01999  
Browns Creek District, McDowell County, WV

Dear Surface Owner:

Pursuant to Chapter 22 of the West Virginia Code, enclosed please find copies of the following documents for the proposed plugging of each of the subject wells:

- Form WW-7 Well Location Form: GPS
- Form WW-9 Construction and Reclamation Plan and Site Registration Application
- Form WW-4A Notice of Application to Plug and Abandon a Well
- Form WW-4B Application for a Permit to Plug and Abandon
- Surface Owner Waiver (2 copies)

These applications are being filed by EnerVest with the Administrator of the Office of Oil and Gas of the West Virginia Department of Environmental Protection. If you have no objections to the proposed process for the plugging of this well, please sign the Voluntary Statement of No Objection on the waivers for each well and return one copy of each to our office in the enclosed envelope.

Comments as to the location construction or the proposed well work may, pursuant to West Virginia Code, be filed by you with the said Administrator within five (5) days after the Application is filed by EnerVest. The address of the Administrator for the purpose of filing comments and obtaining additional information is:

Permit Administrator  
West Virginia Division of Environmental Protection  
Office of Oil and Gas  
601 57<sup>th</sup> Street, SE  
Charleston, WV 25304

4701998P

Persons who may file such comments are: (i) the owners of record of the surface of the tract on which the well is or is to be located, and (ii) the owners of record of the surface tract or tracts overlying the oil and gas leasehold being developed by the proposed well work, if such surface tract is to be utilized for road or other land disturbance described in the Erosion and Sediment Control Plan referred to above; and (iii) except as and when not required by the laws of West Virginia and the rules of the West Virginia Department of Mines, any coal operator operating coal seams beneath the oil and gas leasehold upon which said well is or is to be located as well as the owner(s) and lessee(s), if any of such coal seams.

Sincerely,  
EnerVest Operating, L.L.C.



Jerry L. Jackson  
Senior District Landman

Enclosures

cc: File

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Environmental Protection

4701998P

WW-4B  
Rev. 2/01

1) Date \_\_\_\_\_, 20\_\_\_\_  
2) Operator's  
Well No. MT-1B  
3) API Well No. 47-047-01998

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 CBM/ Liquid injection \_\_\_\_/ Waste disposal \_\_\_\_/  
(If "Gas, Production \_\_\_\_ or Underground storage \_\_\_\_ ) Deep \_\_\_\_/ Shallow \_\_\_\_
- 5) Location: Elevation 1569 Watershed Tug  
District Browns Creek County McDowell Quadrangle Davy (7.5)
- 6) Well Operator EnerVest Operating, L.L.C. 7) Designated Agent James D. McKinney  
Address 300 Capitol Street, Suite 200 Address Same  
Charleston, WV 25301
- 8) Oil and Gas Inspector to be notified Name Gary Kennedy  
Address P.O. Box 268  
Nimitz, WV 25978
- 9) Plugging Contractor Name R.L. Wharton Enterprises, Ltd.  
Address 261 Shiloh Lane  
Buckhannon, WV 26201

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

See Attached Procedure

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

Work order approved by inspector *Gary Kasmaly* Date 7/21/15

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MT-1A / MT-1B / MT-1C  
API# 47-047- 01997/ 01998/ 01999  
McDowell County, WV

MT-1A Well Data

Casing: 7" set at 480' GL (19 BBls)  
Tubing: N/A  
6-1/4" Open Hole: 480' GL to 560' MD (3 BBls) to KOP  
560' GL to 974' MD (16 BBls) to MT-1C

MT-1B Well Data

Casing: 7" set at 664' GL (27 BBls)  
Tubing: 2-7/8" tbg set at 733' GL  
6-1/4" Open Hole: 664' GL to 812' GL (6 BBls)  
And 560' GL in A well to 896' MD from A (13 BBls) to MT- 1B  
4-1/2" Open Hole: 896' MD from A to 8,251' MD from A (145 BBls)

MT-1C Well Data

Casing: 7" set at 633' GL (26 BBls)  
Tubing: 2-7/8" tbg set at 757' GL  
6-1/4" Open Hole: 633' GL to 932' GL (11 BBls)  
4-1/2" Open Hole: 979' MD from A to 14,418' MD from A (264 BBls)

MT-1C Procedure:

1. Prep MT-1C location.
2. Gravity feed FW or CBM Production water into well, up to a maximum of 150% of total hole volume (455 BBls).
3. MIRU Service Rig.
4. RIH w/ 6-1/2" tri-cone bit to 600' on 2-3/8" 4.7 ppf EUE tbg.
5. TOOH w/ 2-3/8" tbg.
6. RIH w/ 7" CIBP, followed by 600' of 2-3/8" 4.7 ppf tbg.
7. Set CIBP @ 600' GL.
8. MIRU Cementers
9. Break circulation and set 100' cement plug F/ 600' T/ 500'
10. TOOH to set bottom of tubing at 100' GL.
11. Break circulation and set 100' cement plug F/ 100' T/ GL
12. Erect a monument with API number attached.
13. Reclaim location

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## MT-1A Procedure:

1. Prep MT-1A location.
2. Gravity feed FW or CBM Production water into well, up to a maximum of 150% of total hole volume (57 BBls).
3. MIRU Service Rig.
4. RIH w/ 6-1/2" tri-cone bit to 450' on 2-3/8" 4.7 ppf EUE tbg.
5. TOOH w/ 2-3/8" tbg.
6. RIH w/ 7" CIBP, followed by 450' of 2-3/8" 4.7 ppf tbg.
7. Set CIBP @ 450' GL.
8. MIRU Cementers
9. Break circulation and set 100' cement plug F/ 450' T/ 350'
10. TOOH to set bottom of tubing at 100' GL.
11. Break circulation and set 100' cement plug F/ 100' T/ GL
12. Erect a monument with API number attached.
13. Reclaim location

## MT-1B Procedure:

1. Prep MT-1B location.
2. Gravity feed FW or CBM Production water into well, up to a maximum of 150% of total hole volume (290 BBls).
3. MIRU Service Rig.
4. RIH w/ 6-1/2" tri-cone bit to 625' on 2-3/8" 4.7 ppf EUE tbg.
5. TOOH w/ 2-3/8" tbg.
6. RIH w/ 7" CIBP, followed by 625' of 2-3/8" 4.7 ppf tbg.
7. Set CIBP @ 625' GL.
8. MIRU Cementers
9. Break circulation and set 100' cement plug F/ 625' T/ 525'
10. TOOH to set bottom of tubing at 100' GL.
11. Break circulation and set 100' cement plug F/ 100' T/ GL
12. Erect a monument with API number attached.
13. Reclaim location

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4701998P



Select County: (047) McDowell    Select datatypes:  (Check All)

Enter Permit #: 01998

Location     Production     Plugging

Owner/Completion     Stratigraphy     Sample

Pay/ShowWater     Logs     Btm Hole Loc

- Table Descriptions
- County Code Translations
- Permit Numbering Series
- Usage Notes
- Contact Information
- Disclaimer
- WVGES Main
- "Pipeline-Plus" New

WV Geological & Economic Survey:

Well: County = 47 Permit = 01998

Report Time: Monday, June 08, 2015 2:26:29 PM

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LONG_DD	UTME	UTMN
4704701998	McDowell	1998	Browns Creek	Davy	Welch	37.455255	-81.650123	442501	4145575.6

There is no Bottom Hole Location data for this well

Owner Information:

API	CMP_DT	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR	PROP_VD	PROP_TRGT_FM	TFM_EST_PR
4704701998	4/14/2005	Original Loc	Completed	Central WV Energy Co		MTI-00B, MT-1B			Central WV Energy Co	Penn Virginia Oil & Gas Corp.			

Completion Information:

API	CMP_DT	SPUD_DT	ELEV DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FTG	G_BEF	G_AFT	O
4704701998	4/14/2005	-/-	1569	Ground Level	Unnamed	Pocahontas No.3 coal	Development Well	Development Well	Methane (CBM)	Rotary	Nat/Open H	812					812

Pay/ShowWater Information:

API	CMP_DT	ACTIVITY	PRODUCT	SECTION	DEPTH_TOP	FM_TOP	DEPTH_BOT	FM_BOT	G_BEF	G_AFT	O_BEF	O_AFT	WATER_QNTY
4704701998	4/14/2005	Methane Pay	Gas	Vertical	732	Pocahontas No.4 coal	736	Pocahontas No.4 coal					

Production Gas Information: (Volumes in Mcf)

API	OPERATOR	PRD_YEAR	ANN_GAS	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DCM	
4704701998	Penn Virginia Oil & Gas Corp.	2005	7,556	0	0	0	0	0	0	0	0	0	0	3,203	3,217	1,136
4704701998	Penn Virginia Oil & Gas Corp.	2006	11,709	1,595	1,361	1,098	1,473	980	959	831	886	722	768	340	696	
4704701998	Penn Virginia Oil & Gas Corp.	2007	7,084	465	650	536	630	246	64	748	599	608	657	531	750	
4704701998	Penn Virginia Oil & Gas Corp.	2008	9,259	1,000	983	865	473	859	957	594	726	666	757	647	732	
4704701998	Penn Virginia Oil & Gas Corp.	2009	9,266	812	806	813	882	534	895	656	400	114	1,602	864	888	
4704701998	Penn Virginia Oil & Gas Corp.	2010	6,675	658	505	834	398	555	402	470	390	541	336	1,068	518	
4704701998	Penn Virginia Oil & Gas Corp.	2011	6,158	279	619	612	549	640	565	567	505	378	432	490	522	

Production Oil Information: (Volumes in Bbl) \*\* some operators may have reported NGL under Oil

API	OPERATOR	PRD_YEAR	ANN_OIL	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DCM
4704701998	Penn Virginia Oil & Gas Corp.	2005	0	0	0	0	0	0	0	0	0	0	0	0	0
4704701998	Penn Virginia Oil & Gas Corp.	2006	0	0	0	0	0	0	0	0	0	0	0	0	0
4704701998	Penn Virginia Oil & Gas Corp.	2007	0	0	0	0	0	0	0	0	0	0	0	0	0
4704701998	Penn Virginia Oil & Gas Corp.	2008	0	0	0	0	0	0	0	0	0	0	0	0	0
4704701998	Penn Virginia Oil & Gas Corp.	2009	0	0	0	0	0	0	0	0	0	0	0	0	0
4704701998	Penn Virginia Oil & Gas Corp.	2010	0	0	0	0	0	0	0	0	0	0	0	0	0
4704701998	Penn Virginia Oil & Gas Corp.	2011	0	0	0	0	0	0	0	0	0	0	0	0	0

There is no Production NGL data for this well \*\* some operators may have reported NGL under Oil

Stratigraphy Information:

API	SUFFIX	FM	FM_QUALITY	DEPTH_TOP	DEPTH_QUALITY	THICKNESS	THICKNESS_QUALITY	ELEV	DATUM
4704701998	Original Loc	unidentified coal	Well Record	452	Reasonable	2	Reasonable	1569	Ground Level
4704701998	Original Loc	unidentified coal	Well Record	516	Reasonable	2	Reasonable	1569	Ground Level
4704701998	Original Loc	Pocahontas No.4 coal	Well Record	732	Reasonable	4	Reasonable	1569	Ground Level
4704701998	Original Loc	Pocahontas No.3 coal	Well Record	783	Reasonable	2	Reasonable	1569	Ground Level

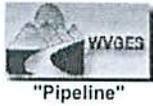
There is no Wireline (E-Log) data for this well

There is no Plugging data for this well

There is no Sample data for this well

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SEP 24 2015  
WV Department of  
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47019987



Select County: (047) McDowell    Select datatypes:  (Check All)

Enter Permit #: 01998

Location     Production     Plugging

Owner/Completion     Stratigraphy     Sample

Pay/ShowWater     Logs     Btm Hole Loc

Table Descriptions  
 County Code Translations  
 Permit Numbering Series  
 Usage Notes  
 Contact Information  
 Disclaimer  
 WVGES Main  
 "Pipeline-Plus" New

WV Geological & Economic Survey:

Well: County = 47 Permit = 01998

Report Time: Friday, July 17, 2015 4:20:58 PM

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LONG_DD	UTME	UTMN
4704701998	McDowell	1998	Browns Creek	Davy	Weich	37.455255	-81.650123	442501	4145575.6

There is no Bottom Hole Location data for this well

Owner Information:

API	CMP_DT	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR	PROP_VD	PROP_TRGT_FM	TFM_EST_PR
4704701998	4/14/2005	Original Loc	Completed	Central WV Energy Co	MT1-00B, MT-1B		Central WV Energy Co			Penn Virginia Oil & Gas Corp.			

Completion Information:

API	CMP_DT	SPUD_DT	ELEV DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FTG	G_BEFO	G_AFTO
4704701998	4/14/2005	--	1569	Ground Level	Unnamed	Pocahontas Fm	Pocahontas No 3 coal	Development Well	Development Well	Methane (CBM)	Rotary	Nat/Open H	812			812

Pay/ShowWater Information:

API	CMP_DT	ACTIVITY	PRODUCT	SECTION	DEPTH_TOP	FM_TOP	DEPTH_BOT	FM_BOT	G_BEFO	G_AFTO	O_BEFO	O_AFTO	WATER_QNTY
4704701998	4/14/2005	Methane Pay	Gas	Vertical	732	Pocahontas No 4 coal	736	Pocahontas No 4 coal					

Production Gas Information: (Volumes in Mcf)

API	OPERATOR	PRD_YEAR	ANN_GAS	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DCM
4704701998	Penn Virginia Oil & Gas Corp.	2005	7,556	0	0	0	0	0	0	0	0	0	3,203	3,217	1,136
4704701998	Penn Virginia Oil & Gas Corp.	2006	11,709	1,595	1,361	1,098	1,473	980	959	831	886	722	768	340	696
4704701998	Penn Virginia Oil & Gas Corp.	2007	7,084	465	650	536	630	246	64	748	599	608	857	931	750
4704701998	Penn Virginia Oil & Gas Corp.	2008	9,259	1,000	983	865	473	859	957	594	726	666	757	647	732
4704701998	Penn Virginia Oil & Gas Corp.	2009	9,266	812	806	813	882	534	895	656	400	114	1,602	864	888
4704701998	Penn Virginia Oil & Gas Corp.	2010	6,675	658	505	834	398	555	402	470	390	541	336	1,068	518
4704701998	Penn Virginia Oil & Gas Corp.	2011	9,158	279	619	612	549	640	565	567	505	378	432	490	522
4704701998	Enervest Operating, L. L. C.	2014	0	0	0	0	0	0	0	0	0	0	0	0	0

Production Oil Information: (Volumes in Bbl) \*\* some operators may have reported NGL under Oil

API	OPERATOR	PRD_YEAR	ANN_OIL	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DCM
4704701998	Penn Virginia Oil & Gas Corp.	2005	0	0	0	0	0	0	0	0	0	0	0	0	0
4704701998	Penn Virginia Oil & Gas Corp.	2006	0	0	0	0	0	0	0	0	0	0	0	0	0
4704701998	Penn Virginia Oil & Gas Corp.	2007	0	0	0	0	0	0	0	0	0	0	0	0	0
4704701998	Penn Virginia Oil & Gas Corp.	2008	0	0	0	0	0	0	0	0	0	0	0	0	0
4704701998	Penn Virginia Oil & Gas Corp.	2009	0	0	0	0	0	0	0	0	0	0	0	0	0
4704701998	Penn Virginia Oil & Gas Corp.	2010	0	0	0	0	0	0	0	0	0	0	0	0	0
4704701998	Penn Virginia Oil & Gas Corp.	2011	0	0	0	0	0	0	0	0	0	0	0	0	0
4704701998	Enervest Operating, L. L. C.	2014	0	0	0	0	0	0	0	0	0	0	0	0	0

Production NGL Information: (Volumes in Bbl) \*\* some operators may have reported NGL under Oil

API	OPERATOR	PRD_YEAR	ANN_NGL	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DCM
4704701998	Enervest Operating, L. L. C.	2014	0	0	0	0	0	0	0	0	0	0	0	0	0

Stratigraphy Information:

API	SUFFIX	FM	FM_QUALITY	DEPTH_TOP	DEPTH_QUALITY	THICKNESS	THICKNESS_QUALITY	ELEV DATUM
4704701998	Original Loc	unidentified coal	Well Record	452	Reasonable	2	Reasonable	1569 Ground Level
4704701998	Original Loc	unidentified coal	Well Record	516	Reasonable	2	Reasonable	1569 Ground Level
4704701998	Original Loc	Pocahontas No 4 coal	Well Record	732	Reasonable	4	Reasonable	1569 Ground Level
4704701998	Original Loc	Pocahontas No 3 coal	Well Record	783	Reasonable	2	Reasonable	1569 Ground Level

There is no Wireline (E-Log) data for this well

There is no Plugging data for this well

There is no Sample data for this well

State of West Virginia  
Division of Environmental Production  
Section of Oil and Gas  
Well Operator's Report of Well Work

Farm Name Central West Virginia Energy Operator Well No.: MT-1B  
LOCATION: Elevation: 1568.53 Quadrangle: Davy, WV

District: Browns Creek County: McDowell  
Latitude: 1160 Feet South of 37 Deg. 47 Min. 30 Sec.  
Longitude: 7330 Feet West of 81 Deg. 27 Min. 30 Sec.

Company:

Penn Virginia Oil & Gas Corporation

	Casing and Tubing	Used in drilling	Left in well	Cement fill up Cu. Ft.
Address: <u>2550 East Stone Drive, Suite 110</u>	<u>13 3/8</u>	<u>33</u>	<u>33</u>	
<u>Kingsport, TN 37660</u>	<u>9 5/8</u>	<u>100</u>	<u>100</u>	<u>35 cuft 30 sks</u>
Agent: <u>Jim Burns</u>	<u>7"</u>	<u>66 3/4</u>	<u>66 3/4</u>	<u>17 cuft 150 sks</u>
Inspector:				
Date Permit Issued: <u>12/28/2004</u>				
Date Well Work Commenced: <u>3-6-05</u>				
Date Well Work Completed: <u>4-14-05</u>				
Verbal Plugging:				
Date Permission granted on:				
Rotary X Cable Rig				
Total Depth (feet): <u>812</u>				
Fresh Water Depth (ft):				
Salt Water Depth (ft): <u>None Reported</u>				
Is coal being mined in area (N/Y)? <u>N</u>				
Coal Depths (ft): <u>452-454, 516-518</u> <u>732-736, 783-785</u>				

OPEN FLOW DATA

Producing formation Pocahontas #4 Coal Pay zone depth (ft) \_\_\_\_\_  
 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 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 \_\_\_\_\_ Bbl/d  
 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 CHANE, TEC. 2). THE WELL LOG WHICH IS A SYSTEMATIC DETAILED GEOLOGICAL RECORD OF ALL FORMATIONS, INCLUDING COAL ENCOUNTERED BY THE WELLBORE.

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

*[Handwritten signature]*

DETAILS OF PERFORATIONS, FRACTURING, OR PHYSICAL CHANGE, ETC.

<u>FORMATIONS</u>	<u>TOP</u>	<u>BOTTOM</u>	<u>REMARKS</u>
Sand + shale	0	452	
COAL	452	454	
Sand + shale	454	516	
COAL	516	518	
Sand + shale	518	732	
Pocah coal	732	736	CUT cavity in Pocah 4 coal.
Shale	736	783	
Pocah 3 coal	783	785	
Shale	785	T.D.	

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Environmental Protection

WW-9  
(2/15)

API Number 47 - 047 - 01998

Operator's Well No. MT-1B

STATE OF WEST VIRGINIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
OFFICE OF OIL AND GAS

FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

Operator Name EnerVest Operating, L.L.C. OP Code 309999

Watershed (HUC 10) Tug Quadrangle Davy (7.5)

Do you anticipate using more than 5,000 bbls of water to complete the proposed well work? Yes  No

Will a pit be used? Yes  No

If so, please describe anticipated pit waste: \_\_\_\_\_

Will a synthetic liner be used in the pit? Yes  No  If so, what ml.? \_\_\_\_\_

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 TANK see)

Will closed loop system be used? If so, describe: \_\_\_\_\_

Drilling medium anticipated for this well (vertical and horizontal)? Air, freshwater, oil based, etc. \_\_\_\_\_

-If oil based, what type? Synthetic, petroleum, etc. \_\_\_\_\_

Additives to be used in drilling medium? \_\_\_\_\_

Drill cuttings disposal method? Leave in pit, landfill, removed offsite, etc. \_\_\_\_\_

-If left in pit and plan to solidify what medium will be used? (cement, lime, sawdust) \_\_\_\_\_

-Landfill or offsite name/permit number? \_\_\_\_\_

Permittee shall provide written notice to the Office of Oil and Gas of any load of drill cuttings or associated waste rejected at any West Virginia solid waste facility. The notice shall be provided within 24 hours of rejection and the permittee shall also disclose where it was properly disposed.

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.

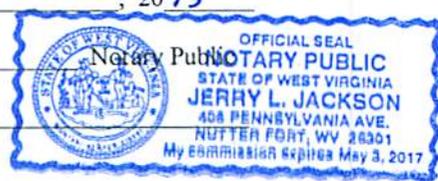
Company Official Signature [Signature]

Company Official (Typed Name) James D. McKinney

Company Official Title Senior Vice President and General Manager - Appalachia East Assets

Subscribed and sworn before me this 22<sup>nd</sup> day of July, 2015

[Signature]  
My commission expires May 3, 2017



Office of Oil and Gas  
SEP 24 2015  
WV Department of Environmental Protection

**EnerVest Operating, L.L.C.**

Proposed Revegetation Treatment: Acres Disturbed 2.00 Prevegetation pH 6.5

Lime according to PH Test Tons/acre or to correct to pH 7.0

Fertilizer type 10-20-20 or equivalent

Fertilizer amount 500 lbs/acre

Mulch Hay or Straw 2 Tons/acre

Seed Mixtures

Temporary		Permanent	
Seed Type	lbs/acre	Seed Type	lbs/acre
Orchard Grass	25	Orchard Grass	25
Birdsfoot Trefoil	15	Birdsfoot Trefoil	15
Ladino Clover	10	Ladino Clover	10

Attach:

Drawing(s) of road, location, pit and proposed area for land application (unless engineered plans including this info have been provided)

Photocopied section of involved 7.5' topographic sheet.

See attached GPS Well Location Form: GPS WW-7

Plan Approved by: [Signature]

Comments: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Title: Inspector

Date: 7/21/15

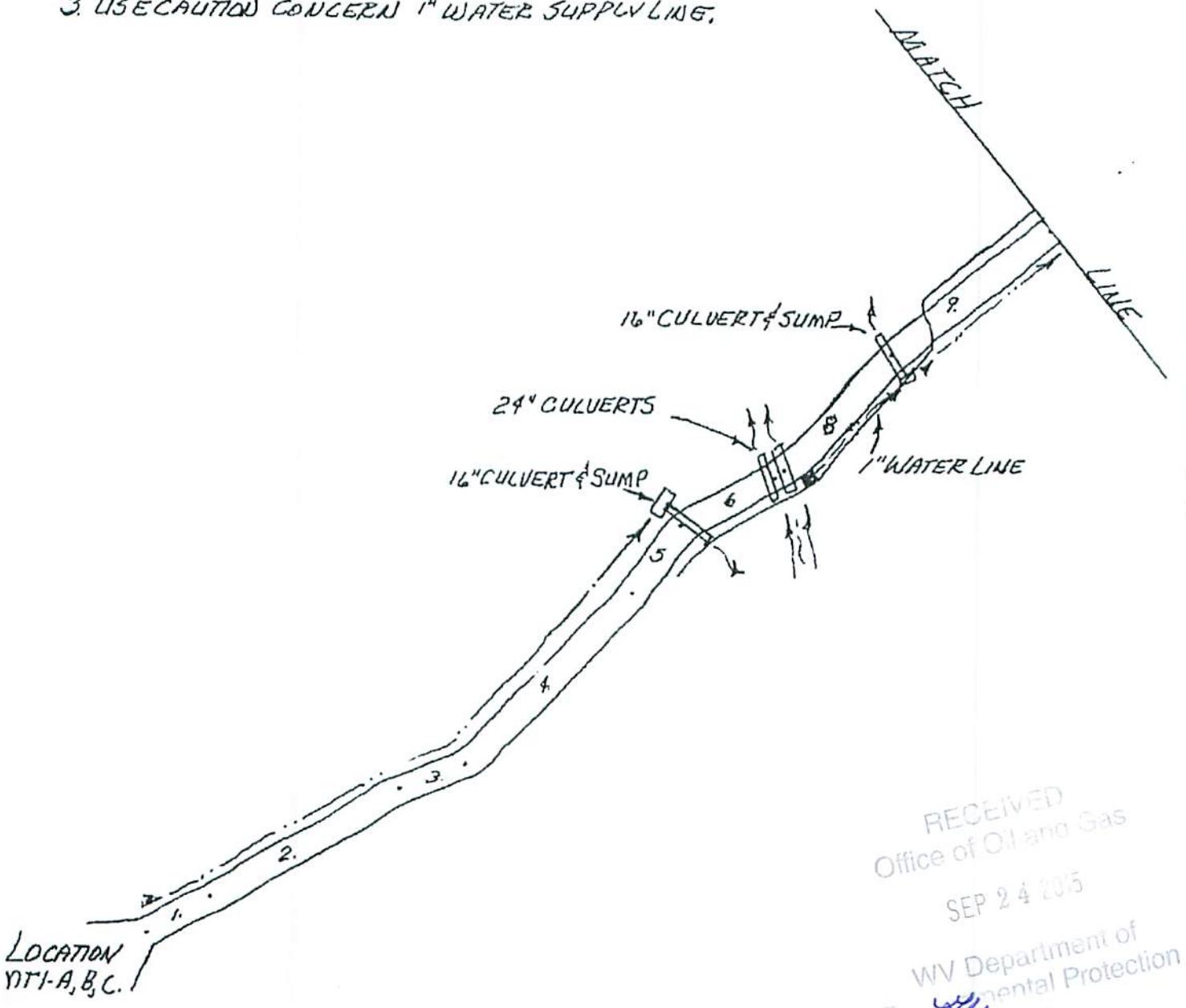
Field Reviewed? ( ) Yes ( ) No

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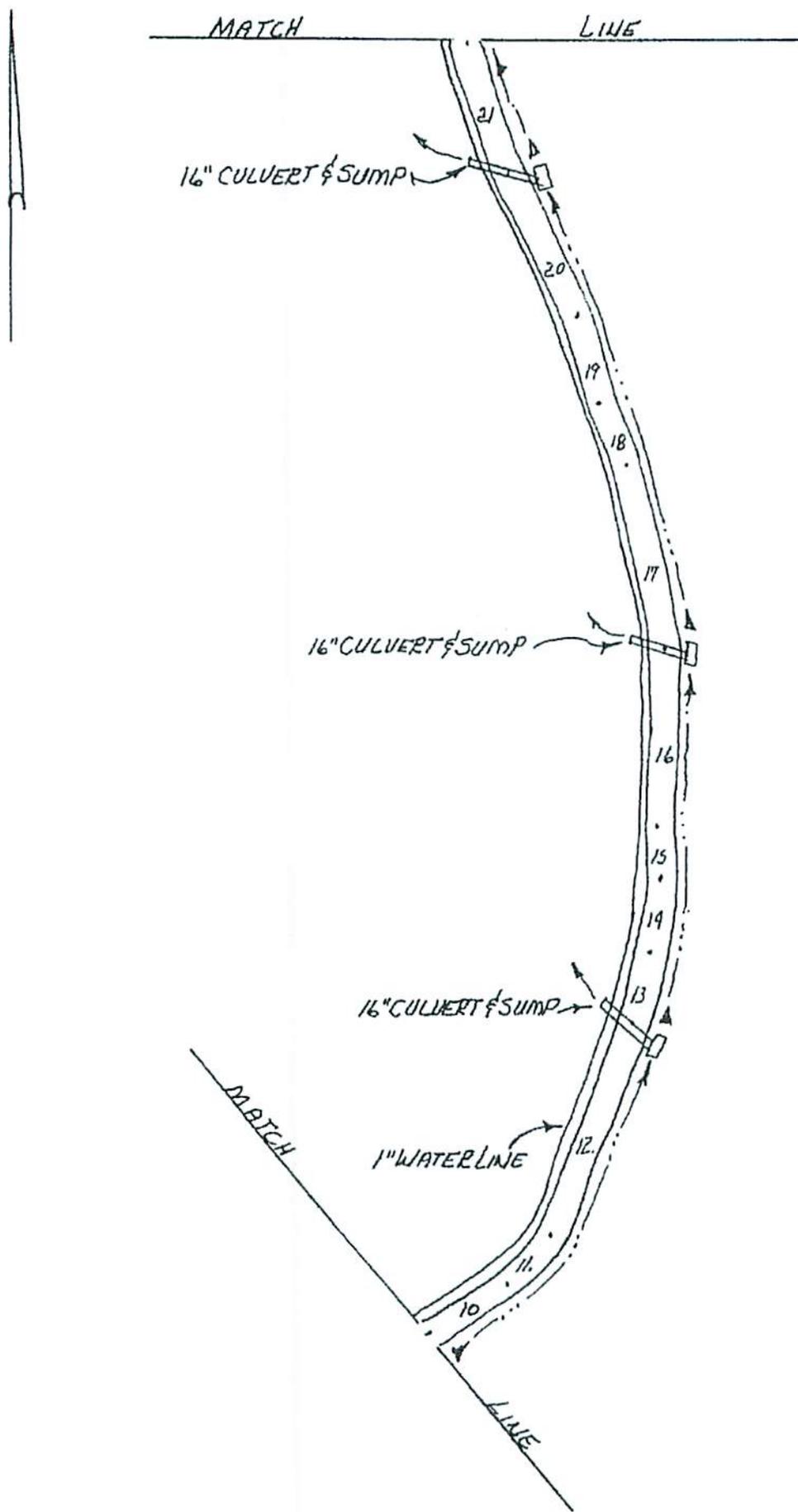
ATTACHMENTS WJ-9  
PROPOSED WELLS MTI-A, B, C  
PROPOSED ACCESS

NOTES:

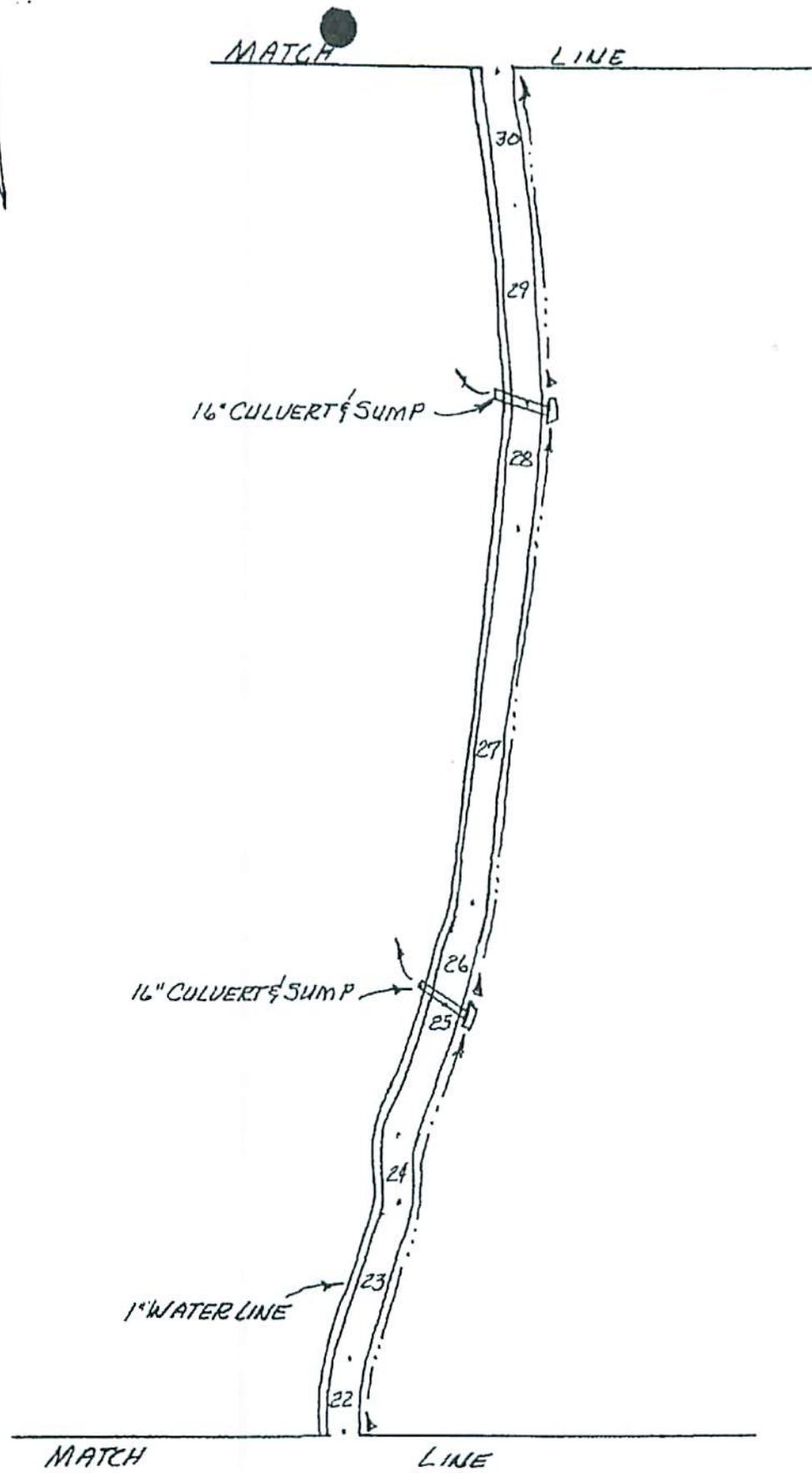
- 1. LOCATE EXISTING UTILITIES BEFORE CONSTRUCTION.
- 2. SEED DISTURBED AREAS AS SOON AS POSSIBLE.
- 3. USE CAUTION CONCERN 1" WATER SUPPLY LINE.



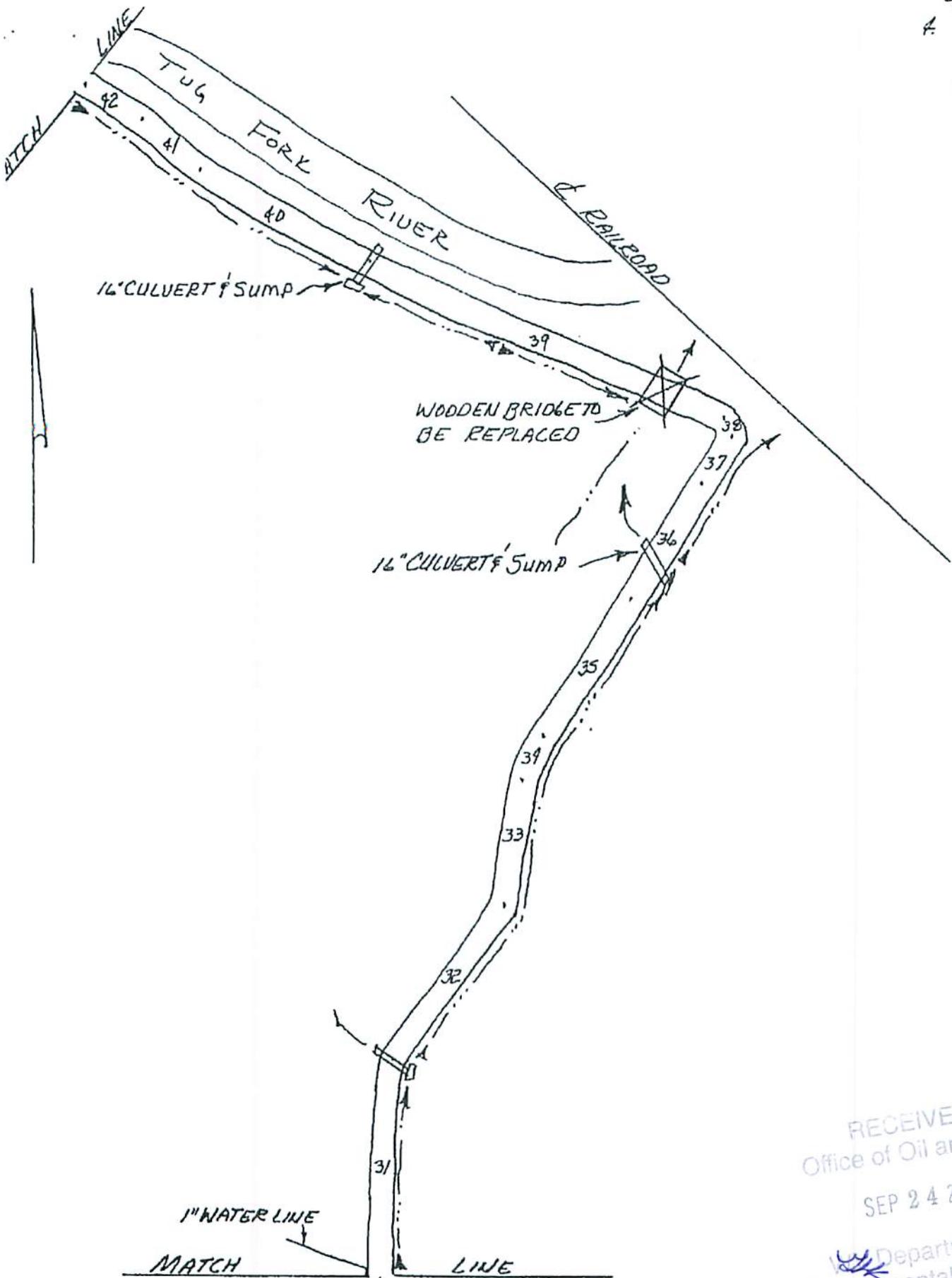
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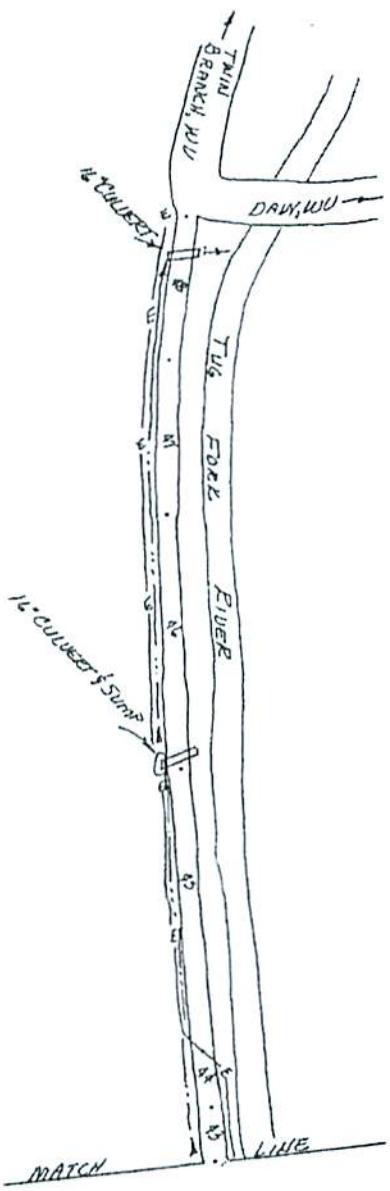


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*[Signature]*



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*[Handwritten signature]*

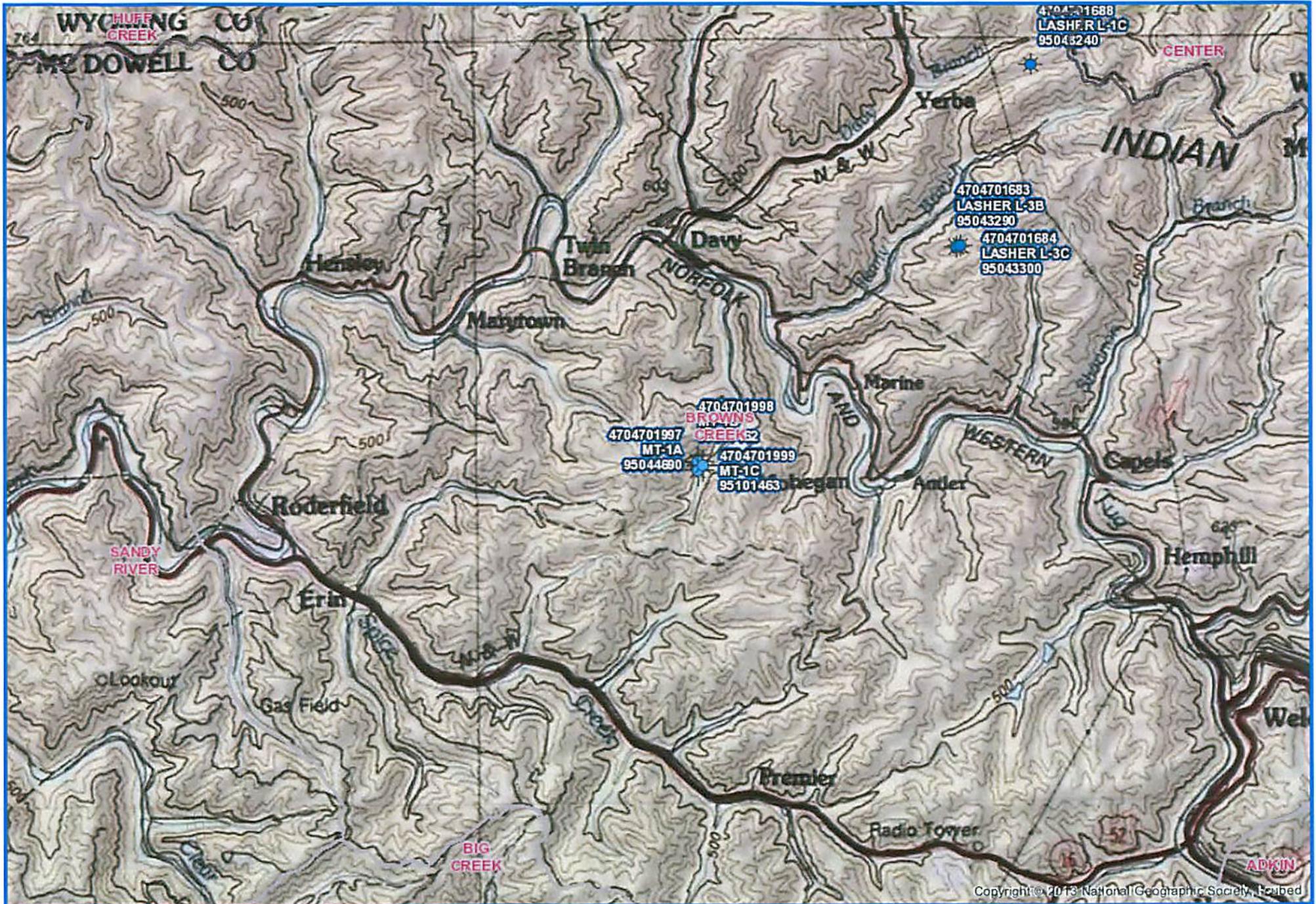
ATTACHMENT WW-9  
 PROPOSED WELL NO. MT1A,B,C

COURSE	BEARING	DISTANCE	PERCENT GRADE
1.	N58E	100'	00%
2.	N57E	300	-08
3.	N68E	100	-05
4.	N42E	330	-08
5.	N32E	120	-08
6.	N60E	156	-08
7.	N55E	21	00
8.	N38E	200	-03
9.	N49E	270	00
10.	N55E	135	+01
11.	N40E	90	-02
12.	N19E	300	-05
13.	N12E	100	-03
14.	N06E	100	-05
15.	N09W	66	00
16.	N01E	240	-05
17.	N14W	252	-04
18.	N25W	90	-02
19.	N17W	120	-06
20.	N29W	210	-03
21.	N20W	180	-02
22.	N03E	100	-03
23.	N16E	220	-03
24.	N02W	90	-01
25.	N19E	174	-05
26.	N12E	150	-06
27.	N05E	500	-03
28.	N04E	160	-05
29.	N05W	258	-05
30.	N10W	180	-08
31.	N01E	350	-08
32.	N34E	300	-05
33.	N07E	200	-11
34.	N23E	75	-06
35.	N31E	250	-07
36.	N29E	210	-15
37.	N30E	90	-05

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38.	N32W	30	-03
39.	N68W	600	00
40.	N64W	300	+03
41.	N50W	120	+05
42.	N61W	105	+02
43.	N49W	100	+01
44.	N54W	100	00
45.	N50W	500	-05
46.	N49W	450	00
47.	N45W	270	00
48.	N38W	260	-03

# MT WELLS



\*Any attached map/plat reflects only the approximate location of the depicted natural gas well and/or facilities (including wells, property and property lines, lease and lease boundary lines, etc.). EnerVest Operating, LLC does not warrant the accuracy or completeness of the depiction. Furthermore, this map/plat is the property of EnerVest Operating, LLC and may contain confidential and/or proprietary information. It may not be copied or otherwise made available to any other party without prior written consent from EnerVest Operating, LLC. EnerVest Operating, LLC expressly disclaims responsibility for any action, inaction, or decision by a third party on the basis of the information depicted on this map/plat.



4701998P

4701998P

WW-7  
8-30-06



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

API: 47-047-01998 WELL NO.: MT-1B

FARM NAME: Central WV Energy Co.

RESPONSIBLE PARTY NAME: Jerry Jackson

COUNTY: McDowell DISTRICT: Browns Creek

QUADRANGLE: Davy (7.5) Welch (15)

SURFACE OWNER: Ecosystem Investment Partners

ROYALTY OWNER: Central WV Energy Co.

UTM GPS NORTHING: 4145575.6

UTM GPS EASTING: 442501 GPS ELEVATION: 1569

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 [Handwritten Signature]

Sr. Division Landman  
Title

7/22/2015  
Date

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