



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

July 21, 2014

WELL WORK PERMIT

Horizontal Well

This permit, API Well Number: 47-10501374, issued to MOUNTAIN V OIL & GAS, INC., 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.

Please be advised that form WR-35, Well Operators Report of Well Work is to be submitted to this office within 90 days completion of permitted well work, as should form WR-34 Discharge Monitoring Report within 30 days of discharge of pits, if applicable. Failure to abide by all statutory and regulatory provisions governing all duties and operations hereunder may result in suspension or revocation of this permit and, in addition, may result in civil and/or criminal penalties being imposed upon the operators.

In addition to the applicable requirements of this permit, and the statutes and rules governing oil and gas activity in WV, this permit may contain specific conditions which must be followed. Permit conditions are attached to this cover letter.

Per 35CSR-4-5.2.g this permit will expire in two (2) years from the issue date unless permitted well work is commenced. If there are any questions, please feel free to contact me at (304) 926-0499 ext. 1654.



James Martin
Chief

Operator's Well No: ARNOLD MARKS #1H WV0462

Farm Name: KIRBY, NORENE

API Well Number: 47-10501374

Permit Type: Horizontal Well

Date Issued: 07/21/2014

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.

CONDITIONS

1. If the operator encounters an unanticipated void, or an anticipated void at an unanticipated depth, the operator shall notify the inspector within 24 hours. Modifications to the casing program may be necessary to comply with W. Va. Code §22-6-20, which requires drilling to a minimum depth of thirty feet below the bottom of the void, and installing a minimum of twenty (20) feet of casing. Under no circumstance should the operator drill more than fifty (50) feet below the bottom of the void or install less than twenty (20) feet of casing below the bottom of the void.
2. Pursuant to 35 CSR 4-19.1.a, at the request of the surface owner all water wells or springs within 1000 feet of the proposed well that are actually utilized for human consumption, domestic animals or other general use shall be sampled and analyzed.
3. Pursuant to 35 CSR 4-19.1.c, if the operator is unable to sample and analyze any water well or spring with one thousand (1,000) feet of the permitted well location, the Office of Oil and Gas requires the operator to sample, at a minimum, one water well or spring located between one thousand (1,000) feet and two thousand (2,000) feet of the permitted well location.
4. All pits must be lined with a minimum of 20 mil thickness synthetic liner.
5. 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.
6. During the surface casing and cementing process, in the event cement does not return to the surface, or any other casing string that is permitted to circulate cement to the surface and does not return to the surface, the oil and gas inspector shall be notified within twenty-four (24) hours
7. Well work activities shall not constitute a hazard to the safety of persons.
8. Operator shall provide the Office of Oil & Gas notification of the date that drilling commenced on this well. Such notice shall be provided by sending an email to DEPOOGNotify@wv.gov within 30 days of commencement of drilling.

10501374 H

CK# 45739
\$650⁰⁰

WW - 2B
(Rev. 8/10)

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
WELL WORK PERMIT APPLICATION

1 366

1) Well Operator: <u>Mountain V Oil & Gas, Inc.</u>	310020	Wirt	Burning Springs	Girta 7.5'
Operator ID	County	District	Quadrangle	

2) Operator's Well Number: Arnold Marks #1H WV0462 3) Elevation: 930'

4) Well Type: (a) Oil or Gas
(b) If Gas: Production / Underground Storage _____
Deep _____ / Shallow

5) Proposed Target Formation(s): Devonian Shale Proposed Target Depth: 5,012' TVD

6) Proposed Total Depth: 8,713' Feet Formation at Proposed Total Depth: Devonian Shale

7) Approximate fresh water strata depths: 262'

8) Approximate salt water depths: 1,100'

9) Approximate coal seam depths: None

10) Approximate void depths,(coal, Karst, other): None

11) Does land contain coal seams tributary to active mine? No

12) Describe proposed well work and fracturing methods in detail (attach additional sheets if needed)
See attached Detailed Plan

13) CASING AND TUBING PROGRAM

	TYPE			SPECIFICATIONS		FOOTAGE INTERVALS		CEMENT
	Size	Grade	Weight per ft	For Drilling	Left in Well	Fill -up (Cu. Ft.)		
Conductor	13 3/8"			42'	42'	Sand		
Fresh Water	9 5/8"			315'	315'	CTS OR 35 CSR 18 - 11.1		
Coal								
Intermediate	7"			1,250'	1,250'	CTS OR 35 CSR 18 - 11.1		
Production	4 1/2"			8,713'	8,713'			
Tubing								
Liners								

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Office of Oil and Gas

MAY 08 2014

Packers: Kind: _____
Sizes: _____
Depths Set _____

[Handwritten Signature]
5-7-14

WV Department of
Environmental Protection

Addendum to WW-2B
Arnold Marks #1H WV0462 API 47-105-0

1. Construct the drilling location.
2. Drill a 16" hole to approximately 42'.
3. Run approximately 42' of 13-3/8" casing and fill around outside of casing with cuttings.
4. Drill a 12-1/4" hole to approximately 325'.
5. Run approximately 315' of 9-5/8" casing.
6. Cement the 9-5/8" casing back to surface.
7. Drill an 8-3/4" hole to the approximate depth of 1,280'.
8. Run approximately 1,250' of 7" casing.
9. Cement the 7" casing back to surface.
10. Drill a 6-1/4" vertical hole to the estimated total depth of approximately 5,015'.
11. Run openhole logs to determine the landing point (currently estimated at 4,200' true vertical depth, 4,613 MD) for the horizontal wellbore.
12. Plug back the vertical hole to the estimated kick-off point of 3,483' MD.
13. Kick off the top of the cement plug by drilling a 6-1/4" hole and build the curve until landing the wellbore horizontally at the landing point determined in number 11 above.
14. Drill the horizontal wellbore to the estimated measured depth of approximately 8,713'.
15. Run approximately 8,713' of 4-1/2" casing and completion packers and hang casing in 7x4 casing head.
16. Run and set an isolation packer in bottom of 7" casing and pump 10 sacks of cement down the 4-1/2" x 7" annulus on top of the packer.
17. Set completion packers at specified intervals and frac the Devonian Shale formation using a variable quality foam and approximately 400,000# of frac sand. Total water used during the frac is estimated to be approximately 2,000 barrels of water.
18. Reclaim the drilling location.

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JUL 20 2014

WV Department of
Environmental Protection

Addendum

Mountain V Oil & Gas, Inc. has identified well API 105-01174 and is working with current operator of well 105-01174, and will see that during frac'ing of the Arnold Marks #1H API 105-01374, proper equipment will be placed on the surface location of well API 105-01174 in case of any communication during the frac'ing process.

MUST MONITOR WELL 105-01174 DURING FRACTURING
PROCESS, OF WELL 105-01374H.

g/m/m
6/20/14

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Office of Oil and Gas

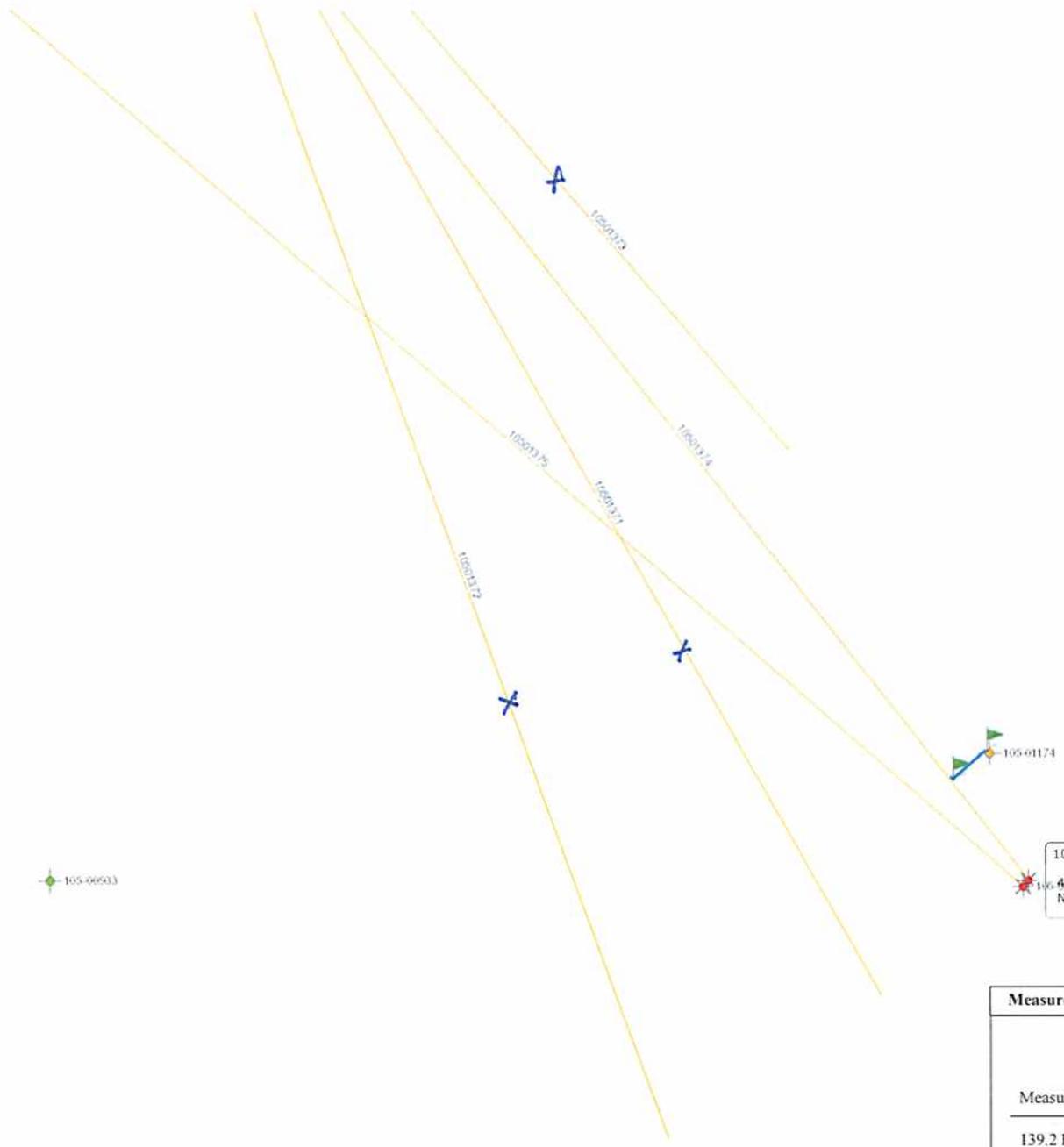
JUL 20 2014

WV Department of
Environmental Protection

10501374.H



- oil & gas permits
 - mining permits
 - underground mines
- Map Layers
- ESRI street map
 - ESRI aerial
 - simplified
 - topo
 - hillshade
 - 1996 aerial
 - 2003 aerial
 - 2007 aerial
 - 2009 aerial
 - 2011 aerial



Measurement	
	Feet
Measurement Result	
	139.2 Feet

WW-70
Rev. 7/01

Affidavit of Personal Service

State Of West Virginia
County Of Harrison

The undersigned, being first duly sworn, says that the undersigned served a true and complete copy of all sides of--

- (1) Notice on Form WW-2(A)___/ WW-3(A)___/ WW-4(A)___/ WW-5(A)___/ WW-6(A)___
- (2) Application on Form WW-2(B)___/ WW-3(B)___/ WW-4(B)___/ WW-5(B)___/ WW-6(B)___
- (3) Plat showing the well location on Form WW-6, and
- (4) Construction and Reclamation Plan on Form WW-9

--all with respect to operator's Well No. Amold Marks #1H WV0482 located in Burniny Springs District, Wirt County, West Virginia, upon the person or organization named--

Dale Kirby
--by delivering the same in Portage County, State of Ohio on the 1st day of May, 2014 in the manner specified below.

[COMPLETE THE APPROPRIATE SECTION]

For an individual:

Handing it to him x / her ___ / or, because he ___ / she ___ / refused to take it when offered it, by leaving it in his ___ / her ___ / presence.

Handing it to a member of his or her family above the age of 16 years named _____ who resides at the usual place of abode of the person to be served, and asking the family member to give it to the person to be served as soon as possible.

For a partnership:

Handing it to _____, a partner of the partnership or, because the partner refused to take it when I handed it over, by leaving it in the presence of the partner.

For a limited partnership:

Handing it to the general partner, named _____, or, because the general partner refused to take it when I tried to hand it over, by leaving it in the presence of the general partner.

For a corporation:

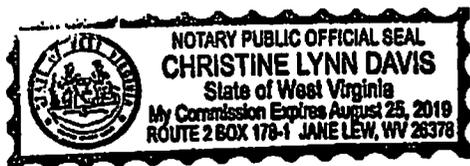
Handing it to the corporation's employee ___ / officer ___ / director ___ / attorney in fact ___ / named _____.

[Signature]
(Signature of person executing service)

Taken, subscribed and sworn before me this 1st day of May, 2014.
My commission expires August 25, 2019.

Christine Lynn Davis
Notary Public

(AFFIX SEAL IF NOTARIZED OUTSIDE THE STATE)



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MAY 08 2014
WV Department of
Environmental Protection

WW-70
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- (3) Plat showing the well location on Form WW-6, and
- (4) Construction and Reclamation Plan on Form WW-9

--all with respect to operator's Well No. Arnold Marks #1H WV0462 located in Burnington Springs District, Wirt County, West Virginia, upon the person or organization named--

Wilbur Kirby
--by delivering the same in Wood County, State of WV on the 30th day of April, 2014 in the manner specified below.

[COMPLETE THE APPROPRIATE SECTION]

For an individual:

Handing it to him K / her ___ / or, because he ___ / she ___ / refused to take it when offered it, by leaving it in his ___ / her ___ / presence.

Handing it to a member of his or her family above the age of 16 years named _____ who resides at the usual place of abode of the person to be served, and asking the family member to give it to the person to be served as soon as possible.

For a partnership:

Handing it to _____, a partner of the partnership or, because the partner refused to take it when I handed it over, by leaving it in the presence of the partner.

For a limited partnership:

Handing it to the general partner, named _____, or, because the general partner refused to take it when I tried to hand it over, by leaving it in the presence of the general partner.

For a corporation:

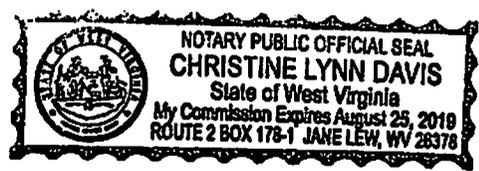
Handing it to the corporation's employee ___ / officer ___ / director ___ / attorney in fact ___ / named _____.

[Signature]
(Signature of person executing service)

Taken, subscribed and sworn before me this 1st day of May 2014.
My commission expires August 25, 2019.

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- (4) Construction and Reclamation Plan on Form WW-9

--all with respect to operator's Well No. Arnold Marks #1H WV0462 located in Burning Springs District, Wirt County, West Virginia, upon the person or organization named--

Marks & Co. Inc.
--by delivering the same in Calhoun County, State of WV on the 30th day of April, 2014 in the manner specified below.

[COMPLETE THE APPROPRIATE SECTION]

For an individual:

[] Handing it to him___/ her___/ or, because he___/ she___/ refused to take it when offered it, by leaving it in his___/ her___/ presence.

[] Handing it to a member of his or her family above the age of 16 years named _____ who resides at the usual place of abode of the person to be served, and asking the family member to give it to the person to be served as soon as possible.

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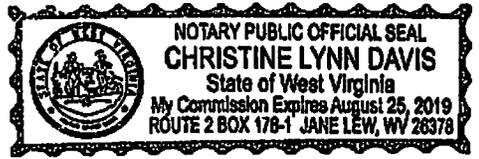
[X] Handing it to the corporation's employee___/ officer X/ director___/ attorney in fact___/ named Jack Marks.

[Signature]
(Signature of person executing service)

Taken, subscribed and sworn before me this 1st day of May 2014.
My commission expires August 25, 2019.

Christine Lynn Davis
Notary Public

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WW-70
Rev. 7/01

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- (3) Plat showing the well location on Form WW-6, and
- (4) Construction and Reclamation Plan on Form WW-9

--all with respect to operator's Well No. Arnold Marks #1H WV0482 located in Burning Springs District, Wet County, West Virginia, upon the person or organization named--

Arnold + Son, Inc.
--by delivering the same in Calhoun County, State of WV on the 30th day of April, 2014 in the manner specified below.

[COMPLETE THE APPROPRIATE SECTION]

For an individual:

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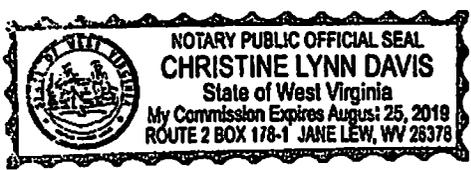
[X] Handing it to the corporation's employee___/ officer X/ director___/ attorney in fact___/ named Kenny Arnold.

[Signature]
(Signature of person executing service)

Taken, subscribed and sworn before me this 1st day of May 2014.
My commission expires August 25, 2019.

Christine Lynn Davis
Notary Public

(AFFIX SEAL IF NOTARIZED OUTSIDE THE STATE)



WW-2A Surface Waiver

SURFACE OWNER WAIVER

County Wirt

Operator
Operator well number

Mountain V Oil & Gas, Inc.
Arnold Marks #1H WV0462

INSTRUCTIONS TO SURFACE OWNERS NAMED ON PAGE WW2-A

The well operator named on page WW2A is applying for a permit from the State to do oil or gas well work. (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 57th 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 **FIFTEEN (15) 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 a 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.

List of Water Testing Laboratories. The Office maintains a list of water testing laboratories which you can hire to test your water to establish water quality prior to and after drilling. Contact the Chief to obtain a copy.

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 Well Work Permit on Form WW2-A, and attachments consisting of pages 1 through ___ including a work order on Form WW2-B, a survey plat, and a soil and erosion plan, all for proposed well work on my surface land as described therein.

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

FOR EXECUTION BY A CORPORATION, ETC.

Dale Kirby
Signature

Date 5-1-14

Company Name _____
By _____
Its _____
Date _____

Dale Kirby
Print Name

Signature _____ Date _____

WW-2A Surface Waiver

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County Wirt

Operator
Operator well number

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Arnold Marks #1H WV0462

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FOR EXECUTION BY A NATURAL PERSON

FOR EXECUTION BY A CORPORATION, ETC.

Wilbur A. Kirby
Signature

Date 4-28-14 Company Name
By
Its

Wilbur A. Kirby
Print Name

RECEIVED Date
Office of Oil and Gas

Signature MAY 08 2014 Date

WW-2A Coal Waiver

COAL OPERATOR, OWNER, OR LESSEE WAIVER

County Wirt
Operator Mountain V Oil & Gas, Inc. Operator's Well Number Arnold Marks #1H WV0462

INSTRUCTIONS TO COAL OPERATOR, OWNER, OR LESSEE

To the coal operator, owner, or lessee named on page WW2-A. You are hereby notified that any objection you wish to make or are required to make by WV Code 22-6-15, 16 or 17, must be filed with the Chief of the Office of Oil and Gas within fifteen (15) days after the receipt of this application by the Office. Mail objections to:

Chief, Office of Oil and Gas
Department of Environmental Protection
601 57th St. SE
Charleston, WV 25304
(304) 926-0499 extension 1654

WAIVER

The undersigned coal operator _____ / owner _____ / lessee _____ / of the coal under this well location has examined this proposed well location. If a mine map exists which covers the area of well location, the well location has been added to the mine map. 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.

FOR EXECUTION BY A NATURAL PERSON

FOR EXECUTION BY A CORPORATION, ETC.

_____ Signature	Date _____	Company Name By Its	<u>Arnold & Son Inc.</u> <u>Kenneth Arnold</u> <u>President</u> <u><i>[Signature]</i></u> Signature	Date <u>4-30-14</u> Date
--------------------	------------	------------------------------	---	--------------------------------

RECEIVED
Office of Oil and Gas
MAY 08 2014
WV Department of
Environmental Protection

WW-2A Coal Waiver

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County Wirt
Operator Mountain V Oil & Gas, Inc. Operator's Well Number Arnold Marks #1H WV0462

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FOR EXECUTION BY A NATURAL PERSON

FOR EXECUTION BY A CORPORATION, ETC.

	Date		Company Name	<u>Marks & Co, Inc.</u> ✓
Signature			By	<u>Jack L. Marks</u>
			Its	<u>President</u>
			Signature	<u>[Signature]</u>
			Date	<u>4-30-14</u>

RECEIVED
Office of Oil and Gas
MAY 08 2014
WV Department of
Environmental Protection

WW-2A1
(Rev. 1/11)

Operator's Well Number Arnold Marks #1H WV0462

**INFORMATION SUPPLIED UNDER WEST VIRGINIA CODE
Chapter 22, Article 6, Section 8(d)
IN LIEU OF FILING LEASE(S) AND OTHER CONTINUING CONTRACT(S)**

Under the oath required to make the verification on page 1 of this Notice and Application, I depose and say that I am the person who signed the Notice and Application for the Applicant, and that –

- (1) the tract of land is the same tract described in this Application, partly or wholly depicted in the accompanying plat, and described in the Construction and Reclamation Plan;
- (2) the parties and recordation data (if recorded) for lease(s) or other continuing contract(s) by which the Applicant claims the right to extract, produce or market the oil or gas are as follows:

Grantor, Lessor, etc.	Grantee, Lessee, etc.	Royalty	Book/Page
Arnold & Son, Inc. ET AL	M&A Well Service	1/8th	241/509
M&A Well Service	Mountain V Oil & Gas, Inc.	1/8th	241/512

**Acknowledgement of Possible Permitting/Approval
In Addition to the Office of Oil and Gas**

The permit applicant for the proposed well work addressed in this application hereby acknowledges the possibility of the need for permits and/or approvals from local, state, or federal entities in addition to the DEP, Office of Oil and Gas, including but not limited to the following:

- WV Division of Water and Waste Management
- WV Division of Natural Resources
- WV Division of Highways
- U.S. Army Corps of Engineers
- U.S. Fish and Wildlife Service
- County Floodplain Coordinator

The applicant further acknowledges that any Office of Oil and Gas permit in no way overrides, replaces, or nullifies the need for other permits/approvals that may be necessary and further affirms that all needed permits/approvals should be acquired from the appropriate authority before the affected activity is initiated.

Well Operator:
By: Its:

Mike Shaver
 RECEIVED
 Office of Oil and Gas
 Mountain V Oil & Gas, Inc.
 Mike Shaver, President
 MAY 08 2014

WV Department of
Environmental Protection

WW-2B1
(5-12)

Well No. Arnold Marks #1H WV0462

West Virginia Department of Environmental Protection
Office of Oil and Gas

NOTICE TO SURFACE OWNERS

The well operator named below is preparing to file for a permit from the state to drill a new well. Before a well work permit can be filed with the Chief of the Office of Oil and Gas, the well operator is required to have given notice of the right to request water well or spring analytical testing. This notice shall be given to the owners or occupants of land which have a water well or spring being utilized for human consumption, domestic animals, or other general use and which is located within 1000 feet of the proposed well site.

With this form, the operator is giving you notice of your right to request analytical testing. The operator is required to sample and analyze the water wells or springs of all owners or occupants who request it. Therefore, if you wish to have your water well or spring tested, contact the operator named below.

All sampling shall be completed prior to drilling. Within thirty (30) days of the receipt of such sample analyses the operator shall submit the results to the Chief of the Office of Oil and Gas and to the owners or occupants who may have requested them.

Be advised, you have the right to sample and analyze any water supply at your own expense.

Listed below is the laboratory chosen by operator to perform analysis, and contactor chosen to collect sample.

Certified Laboratory Name Reliance Laboratories
Sampling Contractor Angle Right Land Surveying, LLC

Well Operator Mountain V Oil & Gas, Inc.
Address PO Box 470
Bridgeport, WV 26330
Telephone 304-842-6320

FOR OPERATOR'S USE ONLY: Below, or on an attached page, list those persons which were given this notice. Place an asterisk beside the one(s) that contacted you and requested sampling and analyses. If there were no requests made, indicate by underling which one you have selected to sample and analyze. If there are no water wells or springs within 1000 feet of the proposed site, the Chief may require the operator to test wells up to 2000 feet from the proposed site.

SEE WW9

MUST SAMPLE AT LEAST ONE.

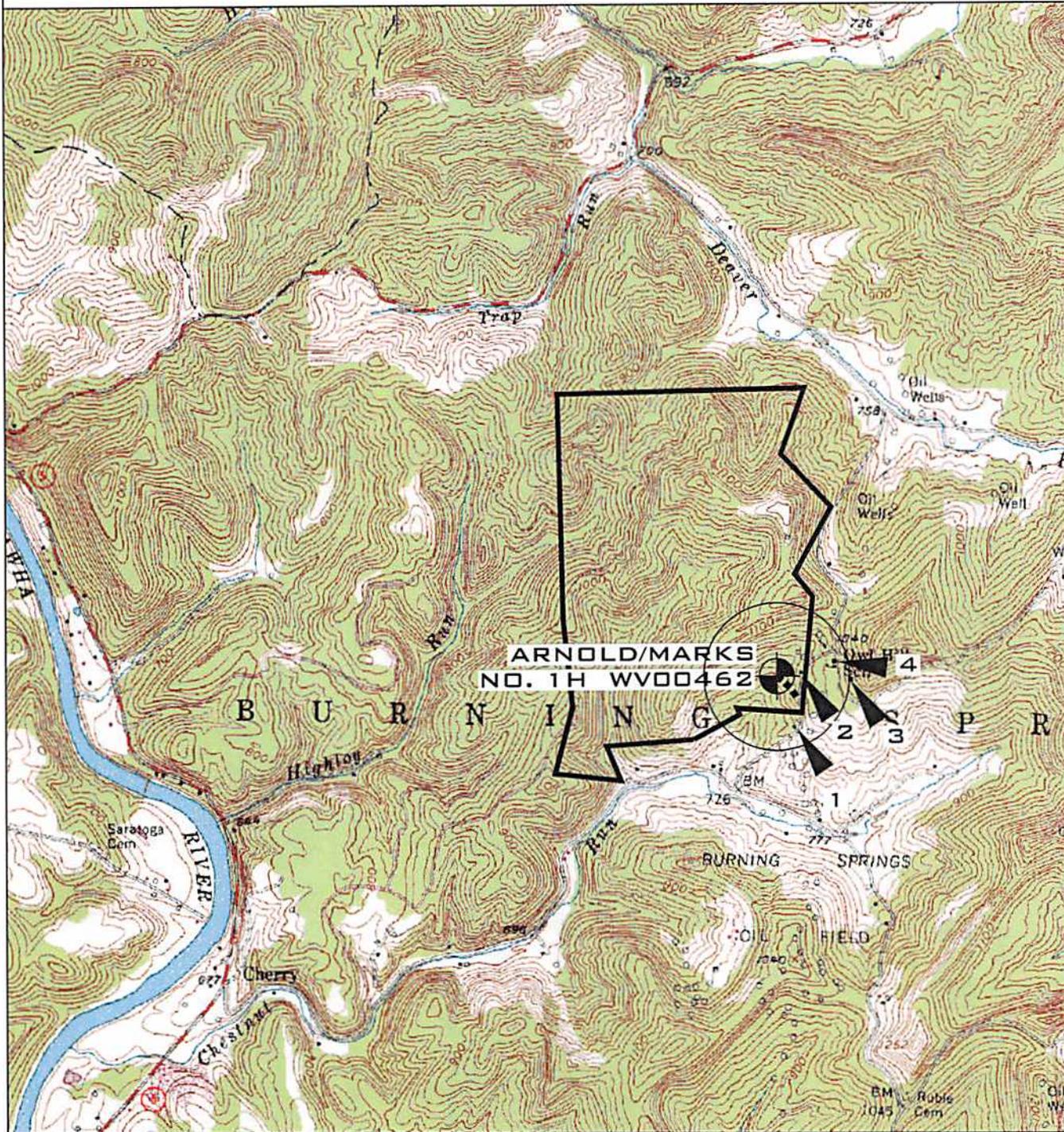
RECEIVED
Office of Oil and Gas
MAY 08 2014
WV Department of
Environmental Protection

WW9

ARNOLD/MARKS #1H WV 0462

PAGE OF

POSSIBLE WATER SAMPLE SITES



ANGLE RIGHT LAND SURVEYING, LLC PO BOX 681 GRANTSVILLE, WV 26147 (304) 354-0065 130605	OPERATOR MOUNTAIN V OIL & GAS, INC. P.O. BOX 470 BRIDGEPORT, WV 26330	TOPO SECTION GIRTA 7.5	WELL NAME ARNOLD/MARKS 1H WV 0462
		SCALE: 1"=2000'	DATE: 04/29/2014

- 1 - Wilbur A. and Donnie L Kirby, 2520 Capital Drive, Parkersburg, WV 26101
- 2 - Norene Kirby, 1018 Norwood Street, Kent, OH 44240
- 3 - James and Loretta DeWeese, 142 Copen Hill, Elizabeth, WV 26143
- 4 - Roy H. and Donna Jean Copen, 56 Copen Hill, Elizabeth, WV 26143

SAMPLE & TEST AT LEAST ONE

RECEIVED
 Office of Oil and Gas
 MAY 08 2014
 WV Department of
 Environmental Protection

WW-9
(5/13)

Page _____ of _____
API Number 47 - 105 - _____
Operator's Well No. Arnold Marks #1H WV0462

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

FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

Operator Name Mountain V Oil & Gas, Inc. OP Code 310020

Watershed (HUC 10) Chestnut Run Quadrangle Girta 7.5'

Elevation 930' County Wirt District Burning Springs

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

Will a pit be used for drill cuttings? Yes X No _____

If so, please describe anticipated pit waste: Drill Cuttings and Frac Flowback Water

Will a synthetic liner be used in the pit? Yes X No _____ If so, what ml.? 30 Mil

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 _____)

Will closed loop system be used? N/A

Drilling medium anticipated for this well? Air, freshwater, oil based, etc. Air

-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. Leave in Pit

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

-Landfill or offsite name/permit number? _____

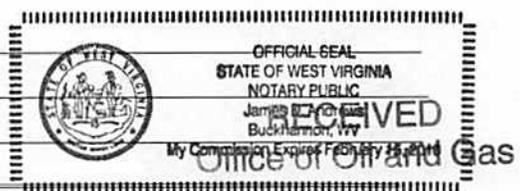
I certify that I understand and agree to the terms and conditions of the GENERAL WATER POLLUTION PERMIT issued on August 1, 2005, by the Office of Oil and Gas of the West Virginia Department of Environmental Protection. I understand that the provisions of the permit are enforceable by law. Violations 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) Mike Shaver

Company Official Title President



Subscribed and sworn before me this 28th day of April, 20 14 MAY 08 2014

[Signature]

Notary Public WV Department of Environmental Protection

My commission expires 2-15-2018

Form WW-9

Operator's Well No. Arnold Marks #1H WV0462

Proposed Revegetation Treatment: Acres Disturbed 2.0 Prevegetation pH _____

Lime 3 Tons/acre or to correct to pH 6.5

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

Mulch Hay 2 Tons/acre

Seed Mixtures

Area I		Area II	
Seed Type	lbs/acre	Seed Type	lbs/acre
Medow Mix	40	Orchard Grass	40
Alsike Clover	40	Alsike Clover	40
Annual Rye	40		

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: _____

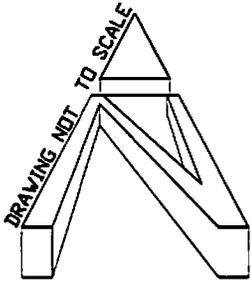
Title: CEG Inspector Date: 5-7-14

Field Reviewed? Yes No

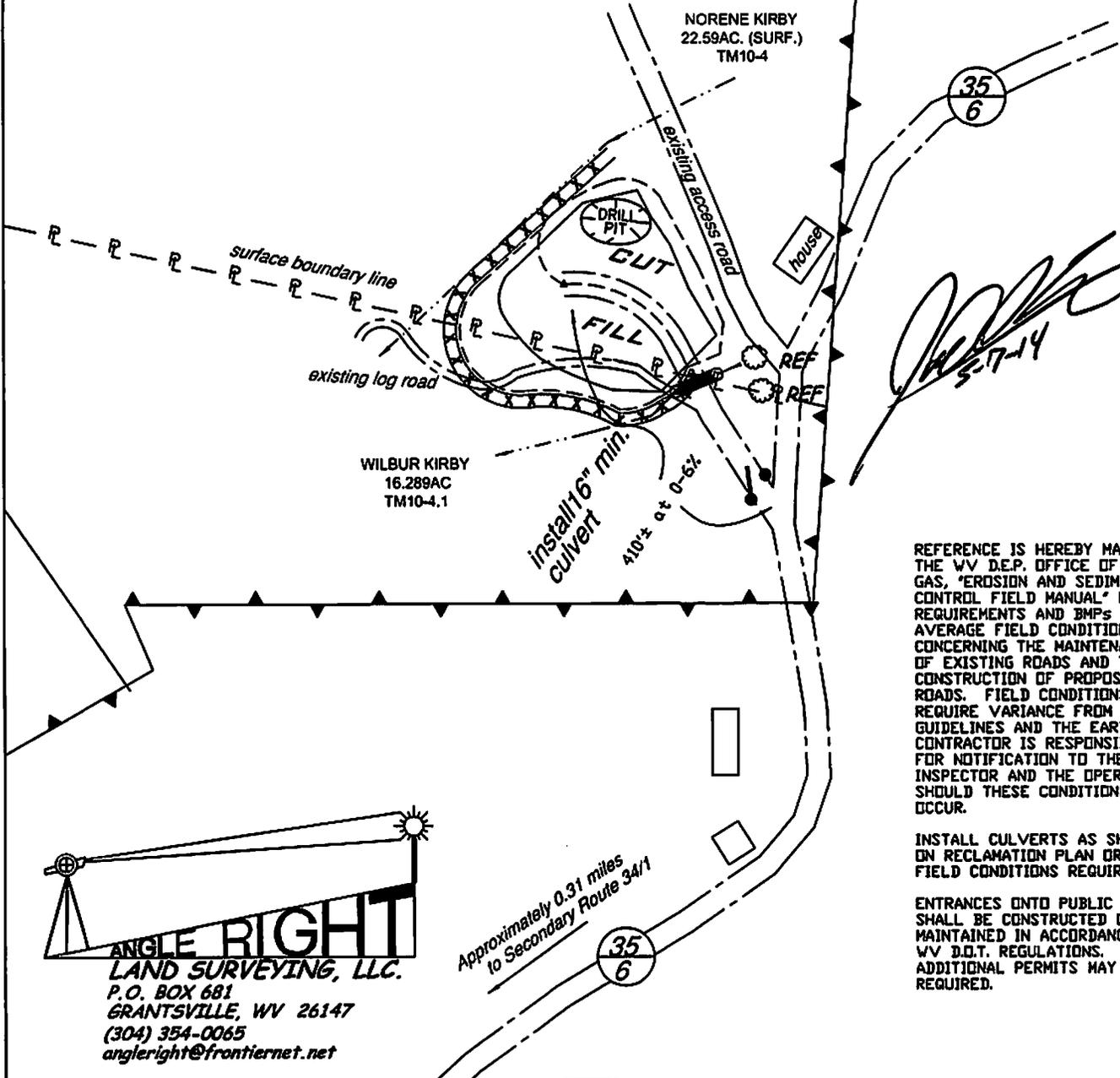
WW-9

ARNOLD/MARKS LEASE WELL NO. 1 WVO462

PAGE 0F



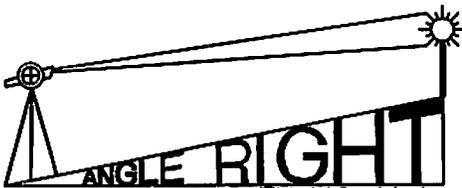
ALL TREES 6-INCHES AND ABOVE ARE TO BE CUT AND STACKED. BRUSH SLASHINGS ARE TO UTILIZED DOWN SLOPE OF SITE AND STRUCTURES TO ACT AS A CONTROL BARRIER IF AVAILABLE.



REFERENCE IS HEREBY MADE TO THE WV D.E.P. OFFICE OF OIL & GAS, 'EROSION AND SEDIMENT CONTROL FIELD MANUAL' FOR REQUIREMENTS AND BMPs FOR AVERAGE FIELD CONDITIONS CONCERNING THE MAINTENANCE OF EXISTING ROADS AND THE CONSTRUCTION OF PROPOSED ROADS. FIELD CONDITIONS MAY REQUIRE VARIANCE FROM THESE GUIDELINES AND THE EARTHWORK CONTRACTOR IS RESPONSIBLE FOR NOTIFICATION TO THE INSPECTOR AND THE OPERATOR SHOULD THESE CONDITIONS OCCUR.

INSTALL CULVERTS AS SHOWN ON RECLAMATION PLAN OR AS FIELD CONDITIONS REQUIRE.

ENTRANCES ONTO PUBLIC ROADS SHALL BE CONSTRUCTED OR MAINTAINED IN ACCORDANCE WITH WV D.O.T. REGULATIONS. ADDITIONAL PERMITS MAY BE REQUIRED.



ANGLE RIGHT
LAND SURVEYING, LLC.
P.O. BOX 681
GRANTSVILLE, WV 26147
(304) 354-0065
angleright@frontiernet.net

DATE: 04/29/2014

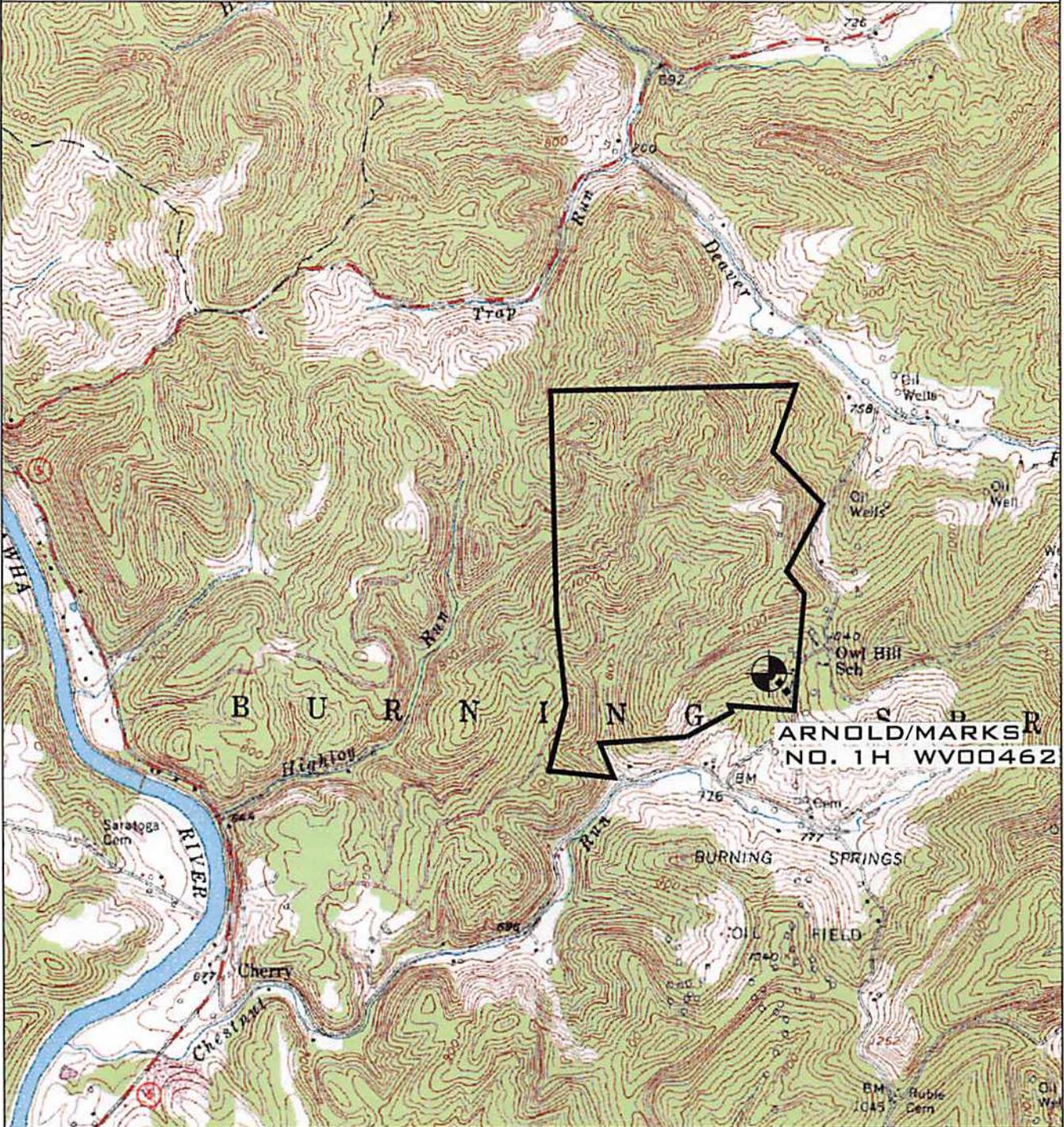
PROJECT NO: 130605

DRAWN BY: T.A.S.

WW9

ARNOLD/MARKS #1H WV 0462

PAGE OF



ANGLE RIGHT LAND SURVEYING, LLC PO BOX 681 GRANTSVILLE, WV 26147 (304) 354-0065 130605	OPERATOR MOUNTAIN V OIL & GAS, INC. P.O. BOX 470 BRIDGEPORT, WV 26330	TOPO SECTION GIRTA 7.5	WELL NAME ARNOLD/MARKS 1H WV 0462
		SCALE: 1"=2000'	DATE: 04/29/2014

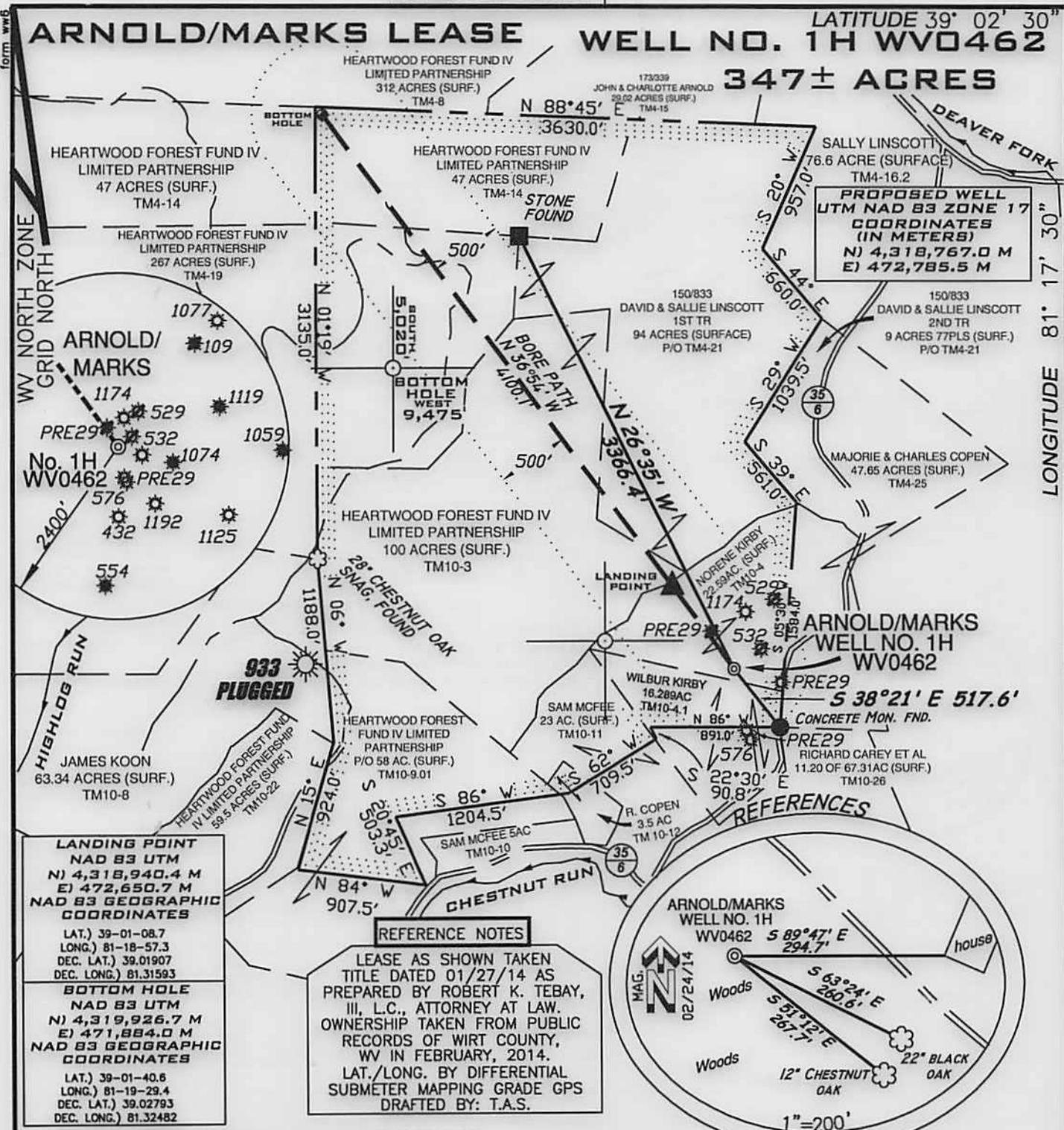
NAD 83 LAT:39°01'03.0"
DECIMAL LAT:39.01751

6,500'

ARNOLD/MARKS LEASE WELL NO. 1H WV0462

LATITUDE 39° 02' 30"

347± ACRES



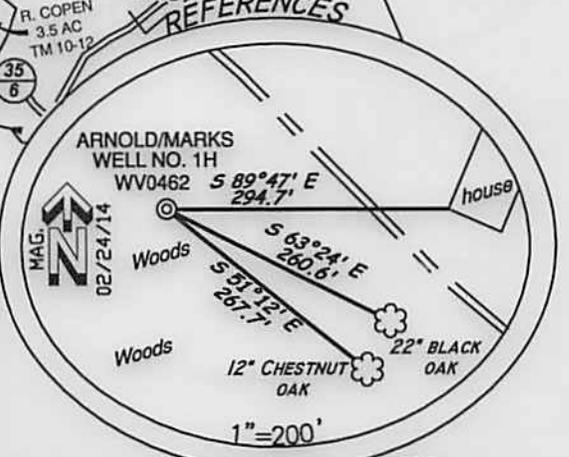
PROPOSED WELL UTM NAD 83 ZONE 17 COORDINATES (IN METERS)
N) 4,318,767.0 M
E) 472,785.5 M

LANDING POINT
NAD 83 UTM
N) 4,318,940.4 M
E) 472,650.7 M
NAD 83 GEOGRAPHIC COORDINATES
LAT.) 39-01-08.7
LONG.) 81-18-57.3
DEC. LAT.) 39.01907
DEC. LONG.) 81.31593

BOTTOM HOLE
NAD 83 UTM
N) 4,319,926.7 M
E) 471,884.0 M
NAD 83 GEOGRAPHIC COORDINATES
LAT.) 39-01-40.6
LONG.) 81-19-29.4
DEC. LAT.) 39.02793
DEC. LONG.) 81.32482

REFERENCE NOTES

LEASE AS SHOWN TAKEN TITLE DATED 01/27/14 AS PREPARED BY ROBERT K. TEBAY, III, L.C., ATTORNEY AT LAW. OWNERSHIP TAKEN FROM PUBLIC RECORDS OF WIRT COUNTY, WV IN FEBRUARY, 2014. LAT./LONG. BY DIFFERENTIAL SUBMETER MAPPING GRADE GPS DRAFTED BY: T.A.S.



(+) DENOTES LOCATION ON UNITED STATES TOPOGRAPHIC MAPS

FILE NUMBER	G130605(WB17-27)
DRAWING NUMBER	G130605_WP1
SCALE	1" = 1000'
MINIMUM DEGREE OF ACCURACY	1/200
PROVEN SOURCE OF ELEVATION	SUBMETER MAPPING GRADE GPS

I THE UNDERSIGNED HEREBY CERTIFY THAT THIS PLAT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND THE REGULATIONS ISSUED AND PRESCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION

P.S. 1006 *Terry A. Shreve*

LAND SURVEYING, LLC
GRANTSVILLE, WV 26147
(304) 354-0065



WVDEP
OFFICE OF OIL & GAS
601 57TH STREET
CHARLESTON, WV 25304

DATE: APRIL 29, 2014
ARNOLD/MARKS
OPERATORS WELL NO. NO. 1H / WV0462

WELL TYPE: OIL ___ GAS LIQUID INJECTION ___ WASTE DISPOSAL ___
(IF "GAS") PRODUCTION STORAGE ___ DEEP ___ SHALLOW

LOCATION ELEVATION 930' WATERSHED CHESTNUT RUN

DISTRICT BURNING SPRINGS COUNTY WIRT

QUADRANGLE GIRTA 7.5' LEASE NUMBER

SURFACE OWNER NORENE KIRBY ACREAGE 22.59±

OIL & GAS ROYALTY OWNER ARNOLD & SON, INC., MARKS & CO. INC. LEASE ACREAGE 347±

PROPOSED WORK: DRILL CONVERT ___ DRILL DEEPER ___ REDRILL ___ FRACTURE OR STIMULATE PLUG OFF OLD FORMATION ___
PERFORATE NEW FORMATION ___ OTHER PHYSICAL CHANGE (SPECIFY) ___

TARGET FORMATION DEVONIAN SHALE ESTIMATED DEPTH 5,015' TVD

WELL OPERATOR MOUNTAIN V OIL & GAS, INC. DESIGNATED AGENT MIKE SHAVER

ADDRESS P.O. BOX 470, BRIDGEPORT, WV 26330 ADDRESS P.O. BOX 470, BRIDGEPORT, WV 26330

COUNTY NAME
PERMIT

form wwb
A.R.L.B.

LONGITUDE 81° 17' 30"
NAD 83 LON:81°18'51.7"
DECIMAL LON:81.31436

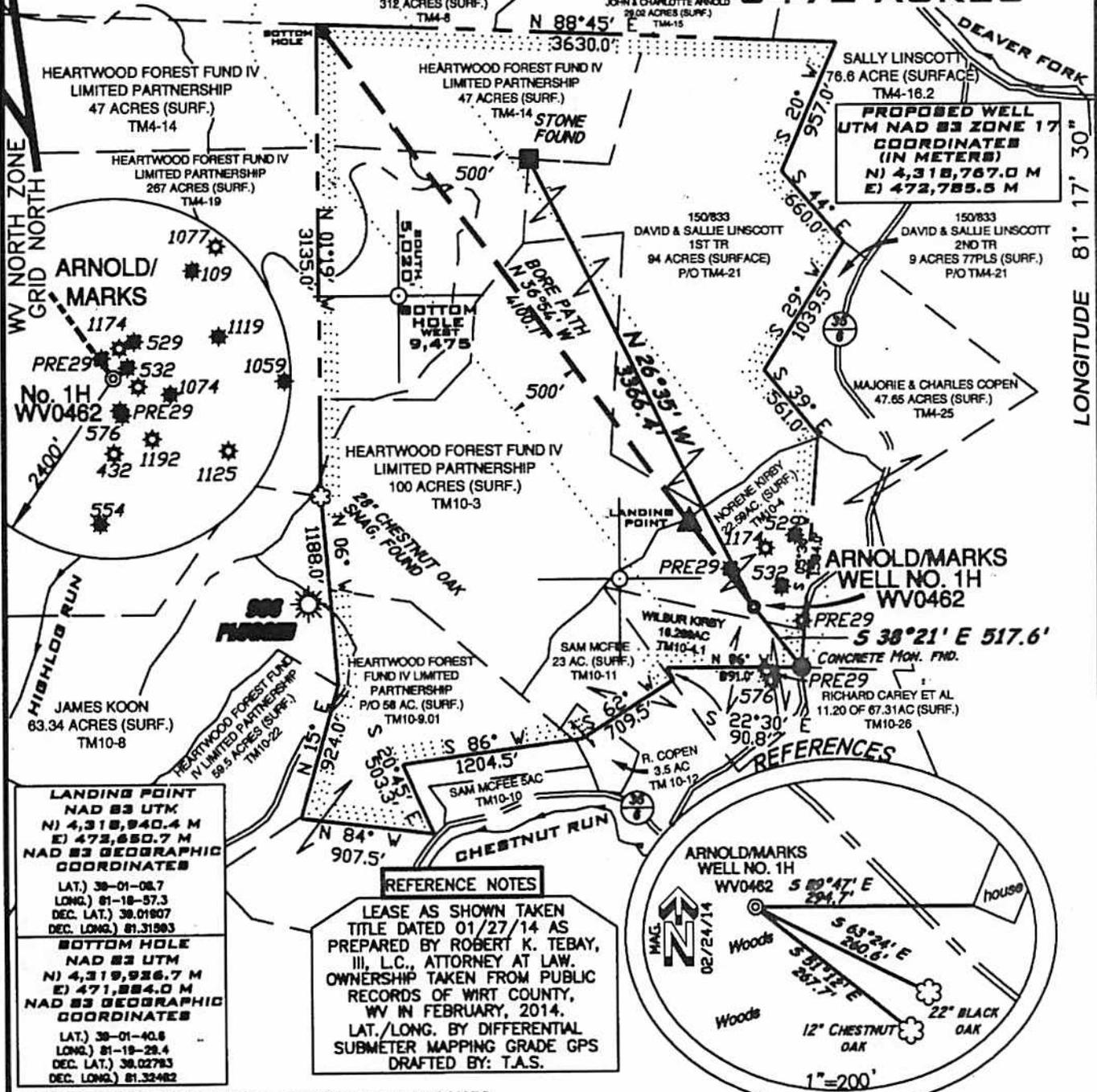
NAD 83 LAT:39°01'03.0"
DECIMAL LAT:39.01751

6,500'

LATITUDE 39° 02' 30"

ARNOLD/MARKS LEASE WELL NO. 1H WV0462

347± ACRES



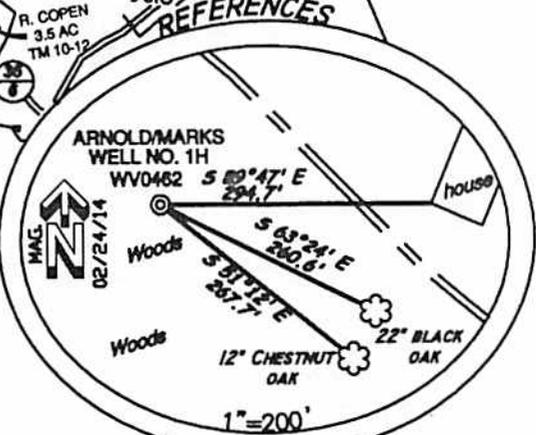
LONGITUDE 81° 17' 30"

NAD 83 LON:81°18'51.7"
DECIMAL LON:81.31436

LANDING POINT
NAD 83 UTM
N) 4,318,940.4 M
E) 472,650.7 M
NAD 83 GEOGRAPHIC COORDINATES
LAT.) 39-01-08.7
LONG.) 81-18-57.3
DEC. LAT.) 39.01807
DEC. LONG.) 81.31593

BOTTOM HOLE
NAD 83 UTM
N) 4,319,926.7 M
E) 471,884.0 M
NAD 83 GEOGRAPHIC COORDINATES
LAT.) 39-01-40.8
LONG.) 81-18-28.4
DEC. LAT.) 39.02783
DEC. LONG.) 81.32482

REFERENCE NOTES
LEASE AS SHOWN TAKEN
TITLE DATED 01/27/14 AS
PREPARED BY ROBERT K. TEBAY,
III, L.C., ATTORNEY AT LAW.
OWNERSHIP TAKEN FROM PUBLIC
RECORDS OF WIRT COUNTY,
WV IN FEBRUARY, 2014.
LAT./LONG. BY DIFFERENTIAL
SUBMETER MAPPING GRADE GPS
DRAFTED BY: T.A.S.



(+) DENOTES LOCATION ON UNITED STATES TOPOGRAPHIC MAPS

FILE NUMBER G130605(WB17-27)

DRAWING NUMBER G130605_WP1

SCALE 1" = 1000'

MINIMUM DEGREE OF ACCURACY 1/200

PROVEN SOURCE OF ELEVATION SUBMETER MAPPING GRADE GPS

I THE UNDERSIGNED HEREBY CERTIFY THAT THIS PLAN IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND THE REGULATIONS ISSUED AND PRESCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION

P.R. 1008 *Terry A. Shreve*



LAND SURVEYORS, L.L.C.
GRANTSVILLE, WV 26147
(304) 384-0068

WVDEP
OFFICE OF OIL & GAS
601 57TH STREET
CHARLESTON, WV 25304

DATE: APRIL 29, 2014

ARNOLD/MARKS
OPERATORS WELL NO. NO. 1H / WV0462

API WELL NO. 47-105-01374H
STATE COUNTY PERMIT

WELL TYPE: OIL GAS LIQUID INJECTION WASTE DISPOSAL
(IF "GAS") PRODUCTION STORAGE DEEP SHALLOW

LOCATION ELEVATION 930' WATERSHED CHESTNUT RUN

DISTRICT BURNING SPRINGS COUNTY WIRT

QUADRANGLE GIRTA 7.5' LEASE NUMBER _____

SURFACE OWNER NORENE KIRBY ACREAGE 22.59±

OIL & GAS ROYALTY OWNER ARNOLD & SON, INC., MARKS & CO. INC. LEASE ACREAGE 347±

PROPOSED WORK: DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE PLUG OFF OLD FORMATION
PERFORATE NEW FORMATION OTHER PHYSICAL CHANGE (SPECIFY) _____

TARGET FORMATION DEVONIAN SHALE PLUG & ABANDON CLEAN OUT & REPLUG

WELL OPERATOR MOUNTAIN V OIL & GAS, INC. ESTIMATED DEPTH 5,015' TVD

DESIGNATED AGENT MIKE SHREVE

ADDRESS P.O. BOX 470, BRIDGEPORT, WV 26330 ADDRESS P.O. BOX 470, BRIDGEPORT, WV 26330

COUNTY NAME
PERMIT NO. 8204

Department of Environmental Protection



State of West Virginia

DEPARTMENT OF ENERGY
Oil and Gas Division

Date March 4, 1986
Operator's Well No. #299
Farm Smith (Kirby)
API No. 47 - 105 - 1174

MAR 11 1986
WELL OPERATOR'S REPORT
OF
DRILLING, FRACTURING AND/OR STIMULATING, OR PHYSICAL CHANGE

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

LOCATION: Elevation: 958 Watershed Chestnut Run
District: Burning Springs County Wirt Quadrangle Girta 7.5'

COMPANY Carl E. Smith Petroleum, Inc.

ADDRESS P.O. Box 4; Sandyville, WV 25275-0004

DESIGNATED AGENT Carl E. Smith

ADDRESS P.O. Box 4; Sandyville, WV 25275-0004

SURFACE OWNER Fred Kirby

ADDRESS Elizabeth, WV 26143

MINERAL RIGHTS OWNER Carl E. Smith Petroleum, Inc.

ADDRESS P.O. Box 4; Sandyville, WV 25275-0004

OIL AND GAS INSPECTOR FOR THIS WORK Homer Dougherty
ADDRESS Linden Route, Box 3-A
Looneyville, WV 25239

PERMIT ISSUED April 12, 1985

DRILLING COMMENCED April 22, 1985

DRILLING COMPLETED April 30, 1985

IF APPLICABLE: PLUGGING OF DRY HOLE ON CONTINUOUS PROGRESSION FROM DRILLING OR REWORKING. VERBAL PERMISSION OBTAINED
ON April 30, 1985

Casing Tubing	Used in Drilling	Left in Well	Cement fill up Cu. ft.
Size 20-16 Cond.			
13-10"			
9 5/8	350'	350'	125 sks.
8 5/8			
7	1978'	1978'	190 sks.
5 1/2			
4 1/2	4618'	4618'	265 sks.
3			
2			
Liners used			

GEOLOGICAL TARGET FORMATION Marcellus Depth 5200 feet

Depth of completed well 4618 feet Rotary X / Cable Tools

Water strata depth: Fresh 290 feet; Salt feet

Coal seam depths: Is coal being mined in the area? No

OPEN FLOW DATA

Producing formation Devonian Shale Pay zone depth 2007-4569 feet

Gas: Initial open flow 10 Mcf/d Oil: Initial open flow --9-- Bbl/d

Final open flow 30 Mcf/d Final open flow 2 Bbl/d

Time of open flow between initial and final tests ---- hours

Static rock pressure 830 psig (surface measurement) after 24 hours shut in

(If applicable due to multiple completion--)

Second producing formation Pay zone depth feet

WIRT 1174

- 1st Stage: Perforated from 4569-3873 with 24 shots. Treated with 1,200,000 SCF of Nitrogen.
- 2nd Stage: Perforated from 3250-3090 with 39 shots. Treated with 1,200,000 SCF of Nitrogen.
- 3rd Stage: Perforated from 3020-2770 with 40 shots. Treated with 1,200,000 SCF of Nitrogen.
- 4th Stage: Perforated from 2550-2007 with 37 shots. Treated with 1,100,000 SCF of Nitrogen.

WELL LOG

FORMATION	COLOR	HARD OR SOFT	TOP FEET	BOTTOM FEET	REMARKS
					Including indication of all fresh and salt water, coal, oil and gas
"TOP INTERVAL NOT LOGGED"					
Salt Sand			1076	1153	
Maxon			1153	1163	
Big Injun			1250	1276	
Keener			1300	1340	
Berea			1746	1750	
Devonian Shale			1751	5195	
Brown Shale			4580	4914	
Marcellus			5050	5195 T.D.	(Plug Back T.D. 4618')

(Attach separate sheets as necessary)

Carl E. Smith Petroleum, Inc.
Well Operator

By: Jack E. Sutherland
Date: March 4, 1986

GRANTSVILLE OFFICE

PO Box 681
Grantsville, WV 26147
PH: 304-354-0065 Fax: 304-354-9464
angleright@frontier.net

**Directions to Proposed Arnold/Marks 1H**

- From exit 170 (Mineral Wells) off I-77 proceed south on State Route 14 for approximately 13.8 miles.
- Take left onto State Route 5 east towards Grantsville.
- Travel approximately 15.6 miles.
- Turn left on County Route 35/6 (Chestnut Run Road) and follow for approximately 1.9 miles.
- Turn left on County Route 35/6 Owl Hill Road at the intersection of County Route 34/1.
- Travel approximately 0.31 miles to an existing red gate and access road on the left.
- Turn left, on proposed well access road and follow for approximately 0.08 miles to proposed Arnold/Marks Well No.1H / WV0462.

Surface Owner: Wilbur Kirby and Donnie L. Kirby and Norene Kirby

RECEIVED
Office of Oil and Gas

MAY 08 2014

WV Department of
Environmental Protection