



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

June 28, 2013

WELL WORK PERMIT

Partial Plug Frac

This permit, API Well Number: 47-3502359, issued to HARD ROCK EXPLORATION, 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: 340
Farm Name: ROBERTS, MICHAEL, ETAL
API Well Number: 47-3502359
Permit Type: Partial Plug Frac
Date Issued: 06/28/2013

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 within 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 20 mil thickness synthetic liner.

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

1) Well Operator: Hard Rock Exploration, Inc. 494464205 Jackson Grant Liverpool, WV 7.5'
Operator ID County District Quadrangle

2) Operator's Well Number: CS-340 3) Elevation: 938'

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

5) Proposed Target Formation(s): Lower Huron Proposed Target Depth: 4280' TVD

6) Proposed Total Depth: 7520' TMD Feet Formation at Proposed Total Depth: Lower Huron

7) Approximate fresh water strata depths: 850' - N/A - Surface Casing is Set at 267' KB and Cemented to surface

8) Approximate salt water depths: 1260' - N/A - Intermediate Casing is Set at 2241'KB and Cemented to surface

9) Approximate coal seam depths: None noted in offset wells

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

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

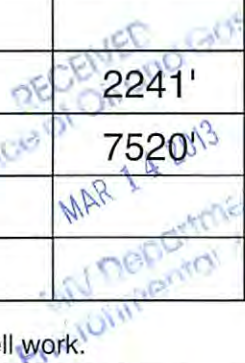
12) Describe proposed well work and fracturing methods in detail (attach additional sheets if needed)

Plug back - Horizontally Complete Up-hole Zone. See Attached Description of well work.

See Work Order on attached for partial plug proposal.
CASING AND TUBING PROGRAM
OK from well record Vertical Record Changed from CS 340 to CS 370 - Drill Horizontal well
Needs N/A's
2/28/2013

TYPE	SPECIFICATIONS			FOOTAGE INTERVALS		CEMENT
	Size	Grade	Weight per ft	For Drilling	Left in Well	
Conductor						
Fresh Water	9 5/8"	LS		267'	267' ✓	Already Set
Coal						
Intermediate	7"	LS	17#	2241'	2241' ✓	Already Set
Production	4 1/2"	N-80	11.6#	7520'	7520'	130Cu.ft
Tubing						
Liners						

Packers: Kind: See Attached description of well work.
 Sizes: _____
 Depths Set _____



New Pipe to be Run

1). Date: March 6, 2013
2.) Operator's Well Number CS-340
State 47- County 035 Permit -
3.) API Well No.:

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

4) Surface Owner(s) to be served:
(a) Name Steven M. & Amanda J. Thomas
Address 906 McGraw Run Road
Sandyville, WV 25275
(b) Name Michael Roberts
Address 1203 McGraw Run Road
Sandyville, WV 25275
(c) Name Neil Glen Thomas
Address 14470 Parkersburg Road
Sandyville, WV 25275
6) Inspector Jamie Stevens
Address HC 62 Box 1 C
Kenna, WV 25248
Telephone (304)206-7775

5) (a) Coal Operator
Name None
Address Waiver Signed
(b) Coal Owner(s) with Declaration
Name (same as 4 a, b, and c)
Address _____
Name _____
Address _____
(c) Coal Lessee with Declaration
Name None
Address _____

TO THE PERSONS NAMED ABOVE TAKE NOTICE THAT:

OR Included is the lease or leases or other continuing contract or contracts by which I hold the right to extract oil and gas

Included is the information required by Chapter 22, Article 6, Section 8(d) of the Code of West Virginia (see page 2)

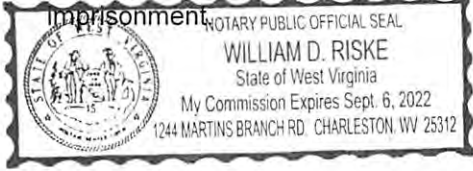
I certify that as required under Chapter 22-6 of the West Virginia Code I have served copies of this notice and application, a location plat, and accompanying documents pages 1 through ___ on the above named parties by:

- Personal Service (Affidavit attached)
- Certified Mail (Postmarked postal receipt attached)
- Publication (Notice of Publication attached)

I have read and understand Chapter 22-6 and 35 CSR 4, and I agree to the terms and conditions of any permit issued under this application.

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, 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 and



Well Operator Hard Rock Exploration, Inc.
By: [Signature]
Its: President
Address 1244 Martins Branch Road
Charleston, WV 25312
Telephone (304)984-9004

Subscribed and sworn before me this 6th day of MARCH, 2013
[Signature] Notary Public
My Commission Expires 9-6-2022

Oil and Gas Privacy Notice

The Office of Oil and Gas processes your personal information, such as name, address and phone number, as a part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use of your personal information, please contact DEP's Chief Privacy Officer at depprivacyofficer@wv.gov

06/28/2013

35 02359

WW-4A
Revised 6-07

1) Date: Feb 28, 2013
2) Operator's Well Number CS-340
3) API Well No.: 47 - 035 - 02359

NOTE: Plug back deep well for horizontal drilling operation.

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


4) Surface Owner(s) to be served:	5) (a) Coal Operator
(a) Name <u>Steven + Amanda Thomas</u>	Name <u>all surface coal owners waived signed off.</u>
Address <u>906 McGRAW Run Road</u>	Address _____
<u>Sandyville, WV 25275</u>	_____
(b) Name <u>Michael Roberts</u>	(b) Coal Owner(s) with Declaration
Address <u>1203 McGRAW Run Road</u>	Name <u>Steven + Amanda Thomas</u>
<u>Sandyville, WV 25275</u>	Address <u>906 McGRAW Run Road</u>
(c) Name _____	Name <u>Michael Roberts</u>
Address _____	Address <u>1203 McGRAW Run Road</u>
_____	<u>Sandyville, WV 25275</u>
6) Inspector <u>Jamie Stevens</u>	(c) Coal Lessee with Declaration
Address <u>HC 62 Box 1C</u>	Name <u>NONE</u>
<u>Kenna, WV 25248</u>	Address _____
Telephone _____	_____

TO THE PERSONS NAMED ABOVE: You should have received this Form and the following documents:

- (1) The application to Plug and Abandon a Well on Form WW-4B, which sets out the parties involved in the work and describes the well its and the plugging work order; and
- (2) The plat (surveyor's map) showing the well location on Form WW-6.

The reason you received these documents is that you have rights regarding the application which are summarized in the instructions on the reverses side. However, you are not required to take any action at all.

Take notice that under Chapter 22-6 of the West Virginia Code, the undersigned well operator proposes to file or has filed this Notice and Application and accompanying documents for a permit to plug and abandon a well with the Chief of the Office of Oil and Gas, West Virginia Department of Environmental Protection, with respect to the well at the location described on the attached Application and depicted on the attached Form WW-6. Copies of this Notice, the Application, and the plat have been mailed by registered or certified mail or delivered by hand to the person(s) named above (or by publication in certain circumstances) on or before the day of mailing or delivery to the Chief.

	Well Operator <u>Hard Rock Exploration, Inc</u>
	By: <u>James L Stephens</u>
	Its: <u>President</u>
	Address <u>1244 MARTINS BRANCH ROAD</u>
	<u>Charleston, WV 25312</u>
Telephone <u>304-984-9004</u>	

Subscribed and sworn before me this 28th day of February, 2013
Joan L. Beane Notary Public
My Commission Expires Sept. 6, 2022

Oil and Gas Privacy Notice

The Office of Oil and Gas processes your personal information, such as name, address and phone number, as a part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use of your personal information, please contact DEP's Chief Privacy Officer at depprivacyofficer@wv.gov.

06/28/2013

WW-4B
Rev. 2/01

1) Date Feb 28, 2013
2) Operator's Well No. CS-340
3) API Well No. 47-035-02359

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 X / Liquid injection ___ / Waste disposal ___ /
(If "Gas, Production ___ or Underground storage ___) Deep ___ / Shallow ___
- 5) Location: Elevation 938 Watershed McGraw Run of Lfk of sandy CK
District Grant County Jackson Quadrangle Liverpool
- 6) Well Operator Hard Rock Exploration 7) Designated Agent James L. Stephens
Address 1244 Martins Branch Rd Address 1244 Martins Branch Rd
Charleston, WV 25312 Charleston, WV 25312
- 8) Oil and Gas Inspector to be notified 9) Plugging Contractor
Name Jamie Stevens Name HARD ROCK Exploration
Address HC62 Box 1C Address 1244 Martins Branch Road
Kenna, WV 25248 Charleston, WV 25312

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

- Plug natural producer from Oriskany formation. Bottom of cemented 4 1/2" is @ 5136'. Set or fill cement from 5210 - 5036'
- Gel hole to ~~3500~~ 3500'.
- Run free point or bond log. Cut 4 1/2" csg as close to estimated cement top @ 3200'. SET cement plug of at least 200' for plugging and top to be used as kick-off plug for horizontal operations.

* NOTE if unable to pull 4 1/2" below 2300' contact Jamie Stevens and plug top section of hole per his requirements.

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

Work order approved by inspector Jamie Stevens Date March 7, 2013

Office of Oil and Gas
RECEIVED
MAR 14 2013
Environmental Protection

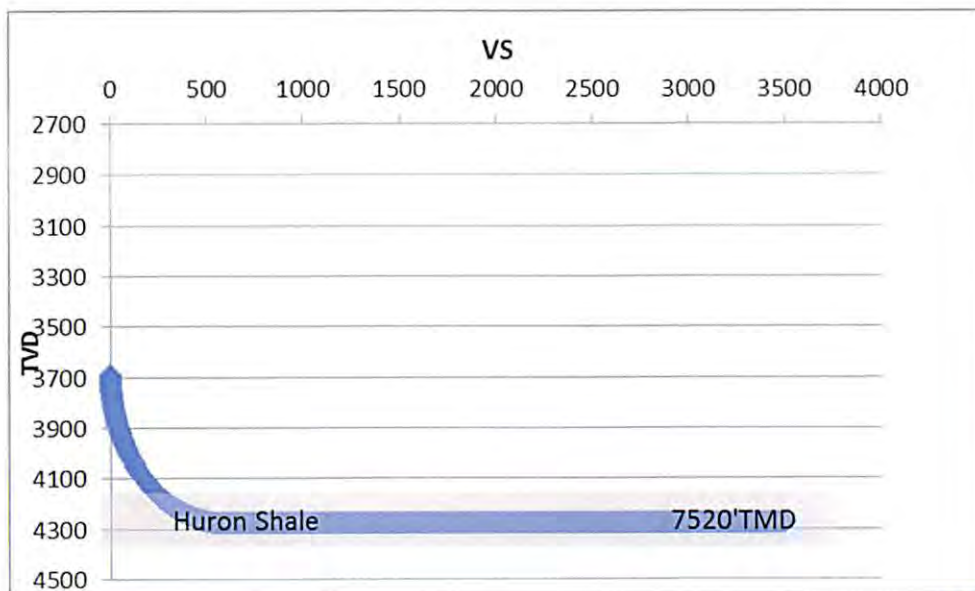
06/28/2013

CS 340

Plug Back - Drill and complete Horizontally in Up hole zone.

RIH Set Solid Bridge plug inside 4.5" casing at approx. 5100' to plug off current producing formation. Ensure hole is dry. Shoot 4.5" casing at free point and Start pulling 4.5" casing out of hole. Spot 300' cmt plug above Solid BP. Pump Gel Spacer and an additional 600'- 800' cmt plug accross top of 4.5" casing and up into 6 1/4" hole. Finish pulling 4.5" casing. Allow Cement to cure. TIH with 6 1/4" bit and dress cmt. Using directional motor, kick off of cement , exit old hole and achieve separation from old wellbore. Drill vertical to KOP of 3680'TVD. Start building angle at 9.5deg/100' and land curve at 90 degrees at depth of 4640'MD and 4280'TVD. Drill lateral in Lower Huron Shale using air as drilling medium to depth of 7520'TMD and 4280'TVD with approximately 3500' of Vertical section. Tooh. Run 4.5" casing with open hole Mechanical packer / sleeve completion. Place 14stg open hole packer system from 4370'MD- 7520'MD (225' spacing per stg) , Set Anchor packer at 2450' TVD -Set packers with Nitrogen, cement with 130 cu-ft of cement on top of anchor packer. Fracture with nitrogen gas.

NOTE: In the event that the existing 4.5" casing will not separate and pull freely at a depth that is sufficient to successfully kick off and exit existing wellbore , Hard Rock will at that time proceed in Plugging the CS 340 well to surface according to proper plugging procedures - before the service rig leaves the site.



RECEIVED
Office of Oil and Gas

MAR 14 2013

NY Department of
Environmental Protection

06/28/2013

SURFACE OWNER WAIVER

County Jackson

Operator Hard Rock Exploration, Inc.

Operator well number CS-340

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.

Michael D. Roberts Date 3/11/13
Signature

Company Name _____
By _____
Its _____ Date _____

Michael D. Roberts
Print Name



Signature _____ Date _____



06/28/2013

WW-2A Coal Waiver

COAL OPERATOR, OWNER, OR LESSEE WAIVER

County Jackson

Operator Hard Rock Exploration, Inc.

Operator's Well Number CS-340

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 X / 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.

Michael D. Roberts Signature Date 3/14/13

Company Name _____
By _____
Its _____ Date _____

✓

Signature _____ Date _____

RECEIVED
Office of Oil and Gas
MAR 14 2013
WV Department of
Environmental Protection

06/28/2013

SURFACE OWNER WAIVER

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Operator Hard Rock Exploration, Inc.

Operator well number CS-340

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FOR EXECUTION BY A NATURAL PERSON

FOR EXECUTION BY A CORPORATION, ETC.

Amanda Thomas Date 3/5/13
Signature

Amanda Thomas
Print Name

Company Name _____
By _____
Its _____

Signature Date

RECEIVED
Office of Oil and Gas
MAR 14 2013
WV Department of Environmental Protection

06/28/2013

WW-2A Coal Waiver

COAL OPERATOR, OWNER, OR LESSEE WAIVER

County Jackson
Operator Hard Rock Exploration, Inc. Operator's Well Number CS-340

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FOR EXECUTION BY A NATURAL PERSON

FOR EXECUTION BY A CORPORATION, ETC.

Amanda Stumax Date 3/5/13
Signature

Company Name _____
By _____
Its _____ Date _____



Signature _____ Date _____



06/28/2013

SURFACE OWNER WAIVER

County Jackson

Operator

Hard Rock Exploration, Inc.

Operator well number

CS-340

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FOR EXECUTION BY A NATURAL PERSON

FOR EXECUTION BY A CORPORATION, ETC.

Steve Thomas Date 3-5-13
Signature

Company Name _____
By _____
Its _____
Date _____

Steve Thomas
Print Name

Signature _____
Date _____

RECEIVED
Office of Oil and Gas
MAR 14 2013
Chief, Department of Environmental Protection

06/28/2013

COAL OPERATOR, OWNER, OR LESSEE WAIVER

County Jackson
Operator Hard Rock Exploration, Inc. Operator's Well Number CS-340

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(304) 926-0499 extension 1654

WAIVER

The undersigned coal operator _____ / owner X / 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.

Alex Thomas Date 3-5-13
Signature

Company Name _____
By _____
Its _____ Date _____
Signature _____ Date _____



RECEIVED
Office of Oil and Gas
MAR 14 2013
WV Department of
Environmental Protection

SURFACE OWNER WAIVER

County Jackson

Operator

Hard Rock Exploration, Inc.

Operator well number

CS-340

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 an 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.

Neil Thomas
Signature

Date 3/5/13

Company Name
By
Its

NEIL THOMAS

Print Name



_____ Date

Signature

Date



06/28/2013

COAL OPERATOR, OWNER, OR LESSEE WAIVER

County Jackson
Operator Hard Rock Exploration, Inc. Operator's Well Number CS-340

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

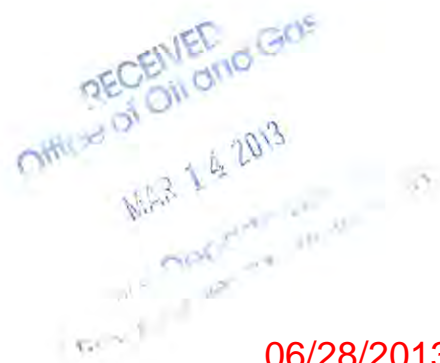
The undersigned coal operator _____ / owner X / lessee _____ / of the coal under this well location has examined this proposed well location. If a mine map exists which covers the area of well location, the well location has been added to the mine map. The undersigned has no objection to the work proposed 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.

Neil Thomas Date 3/5/13
Signature

Company Name _____
By _____
Its _____ Date _____
Signature _____ Date _____



**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
Grace T. Browder	Mountaineer State Operations, LLC	% of 1/8	269/654
Earl Thompson	Mountaineer State Operations, LLC	% of 1/8	269/657
Okey Koontz and Ruth Ann Koontz	Mountaineer State Operations, LLC	% of 1/8	269/660
Carl Thompson and Vicki Thompson	Mountaineer State Operations, LLC	% of 1/8	269/666
Donald L. Thompson and Carolyn Thompson	Mountaineer State Operations, LLC	% of 1/8	269/669
Michael Thompson and Brenda Thompson	Mountaineer State Operations, LLC	% of 1/8	269/675
David Thompson and Lisa Thompson	Mountaineer State Operations, LLC	% of 1/8	269/672
Mountaineer State Operations, LLC	Hard Rock Exploration, Inc.	Misc Assignment	CS-340

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

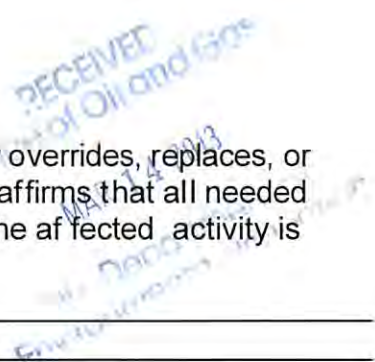
The permit applicant for the proposed well work addressed in this application hereby acknowledges the possibility of the need for permits and/or approvals from local, state, or federal entities in addition to the DEP, Office of Oil and Gas, including but not limited to the following:

- 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: _____
 President

Hard Rock Exploration, Inc.

WW-2B1
(5-12)

Well No. CS-340

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 Standard Labs or Sturm Lab
Sampling Contractor Standard Labs or Sturm Lab

Well Operator Hard Rock Exploration, Inc.
Address 1244 Martins Branch Road
Charleston, WV 25312
Telephone (304)984-9004

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.

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Environmental Protection



NOTICE

WATER TESTING
HARD ROCK EXPLORATION WELL NO. CS-340

THE FOLLOWING WATER SOURCES WERE IDENTIFIED WITHIN 2000' OF THE ABOVE PROPOSED WELL SITE:

Norma Jean Thompson
1043 McGraw Run RD.
Sandyville WV 25275

outside 2000' Testing anyway

Michael Roberts
1203 McGraw Run Rd.
Sandyville WV 25275

Testing

J.S.

TRUE LINE SURVEYING, INC.
6211 FAIRVIEW DRIVE
HUNTINGTON, WV 25705

02-11-13

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MAR 14 2013

WV Department of
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06/28/2013

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 Hard Rock Exploration, Inc. OP Code 494464205

Watershed McGraw Run of Left Fork of Sandy Creek Quadrangle Liverpool, WV 7.5'

Elevation 938' County Jackson District Grant

Description of anticipated Pit Waste: Drill Cuttings

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

Will a synthetic liner be used in the pit? Yes _____. If so, what mil.? ~~10 or greater~~ 30 MIL

Proposed Disposal Method For Treated Pit Wastes:

- Land Application
- Underground Injection (UIC Permit Number UIC2D0190460, 3416729685)
- Reuse (at API Number 8704669, 3502970, 3502987, 3502999, 8704700, 8704698, 8704703, 8704713 - Well will be noted in DMR)
- _____ Off Site Disposal (Supply form WW-9 for disposal location)
- _____ Other (Explain _____)

Drilling medium anticipated for this well? Air, freshwater, oil based, etc. Air
-If oil based, what type? Synthetic, petroleum, etc. _____

Additives to be used? Soap, KCl, or Clay Stay

Will closed loop system be used? No

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 Lime

-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]

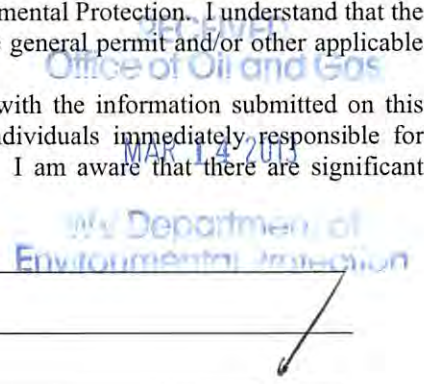
Company Official (Typed Name) James L. Stephens

Company Official Title President

Subscribed and sworn before me this 27th day of FEBRUARY, 2013

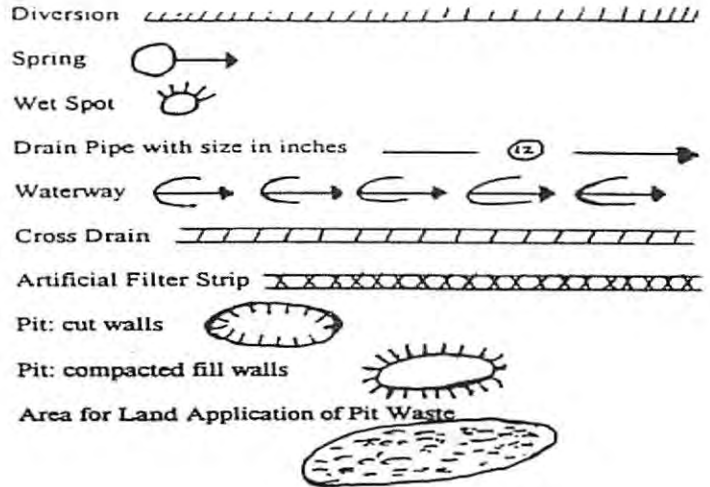
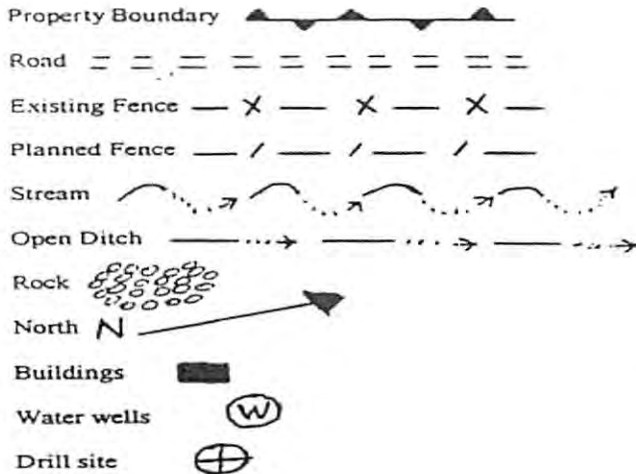
William D. Riske
Notary Public

My commission expires 9-6-2022



06/28/2013

LEGEND



Proposed Revegetation Treatment: Acres Disturbed 1.38 Prevegetation pH 5.5
 Lime 3 Tons/acre or to correct to pH 6.5
 Fertilizer (10-20-20 or equivalent) 500 lbs/acre (500 lbs minimum)
 Mulch Hay/Straw/Paper (Paper at 1600 lbs/acre) Tons/acre

Seed Mixtures

Seed Type	Area I lbs/acre	Area II lbs/acre
Red Top	15	15
Orchard Grass	25	25
Perennial Rye/Crimson Red Clover	25 Each	25 Each
Annual Rye	40	40

Attach:
 Drawing(s) of road, location, pit and proposed area for land application.

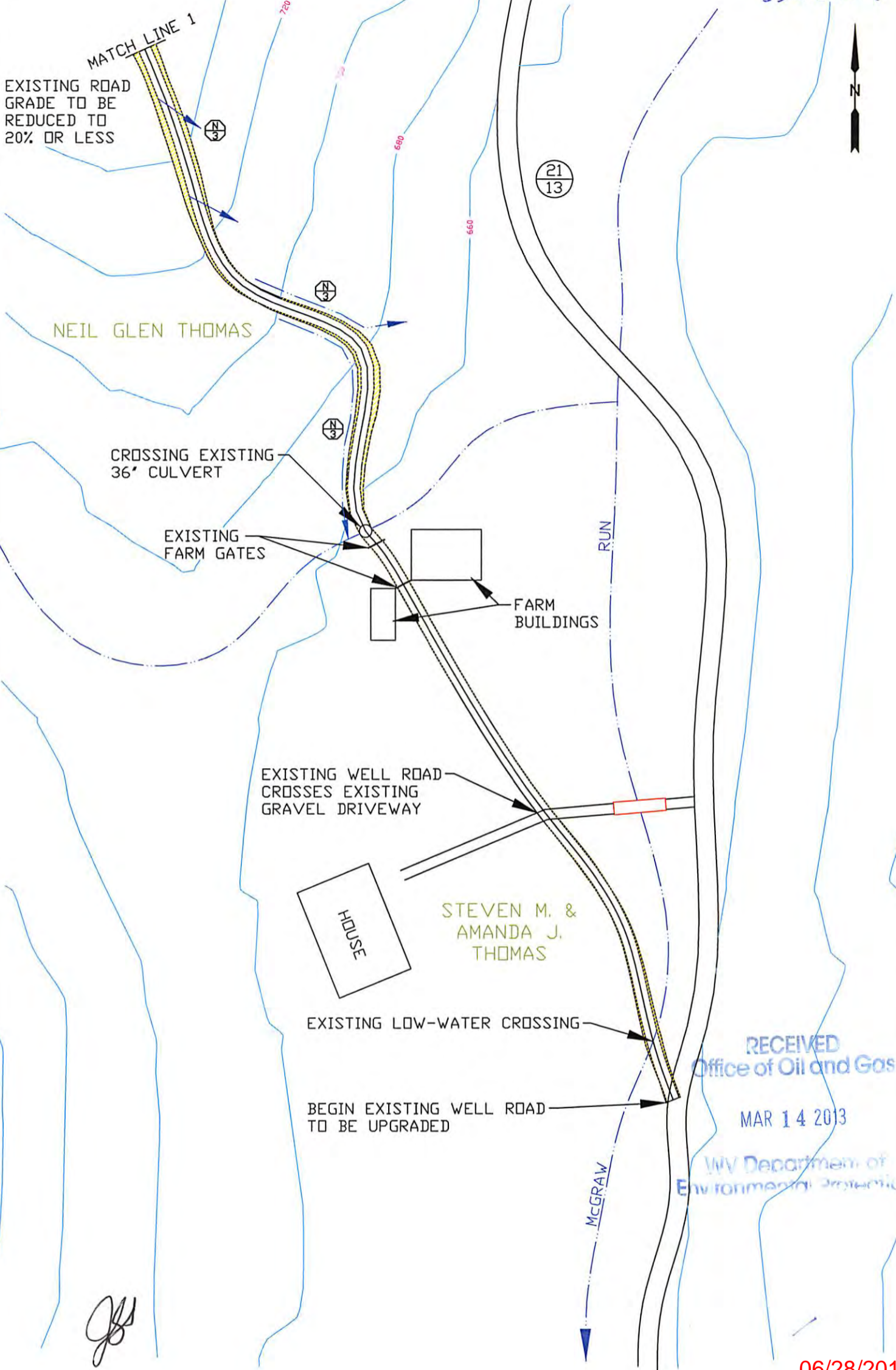
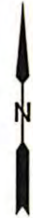
Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: *Jamie Stevens*
 Comments: _____

Title: _____ Date: 2/28/2013

Field Reviewed? Yes No

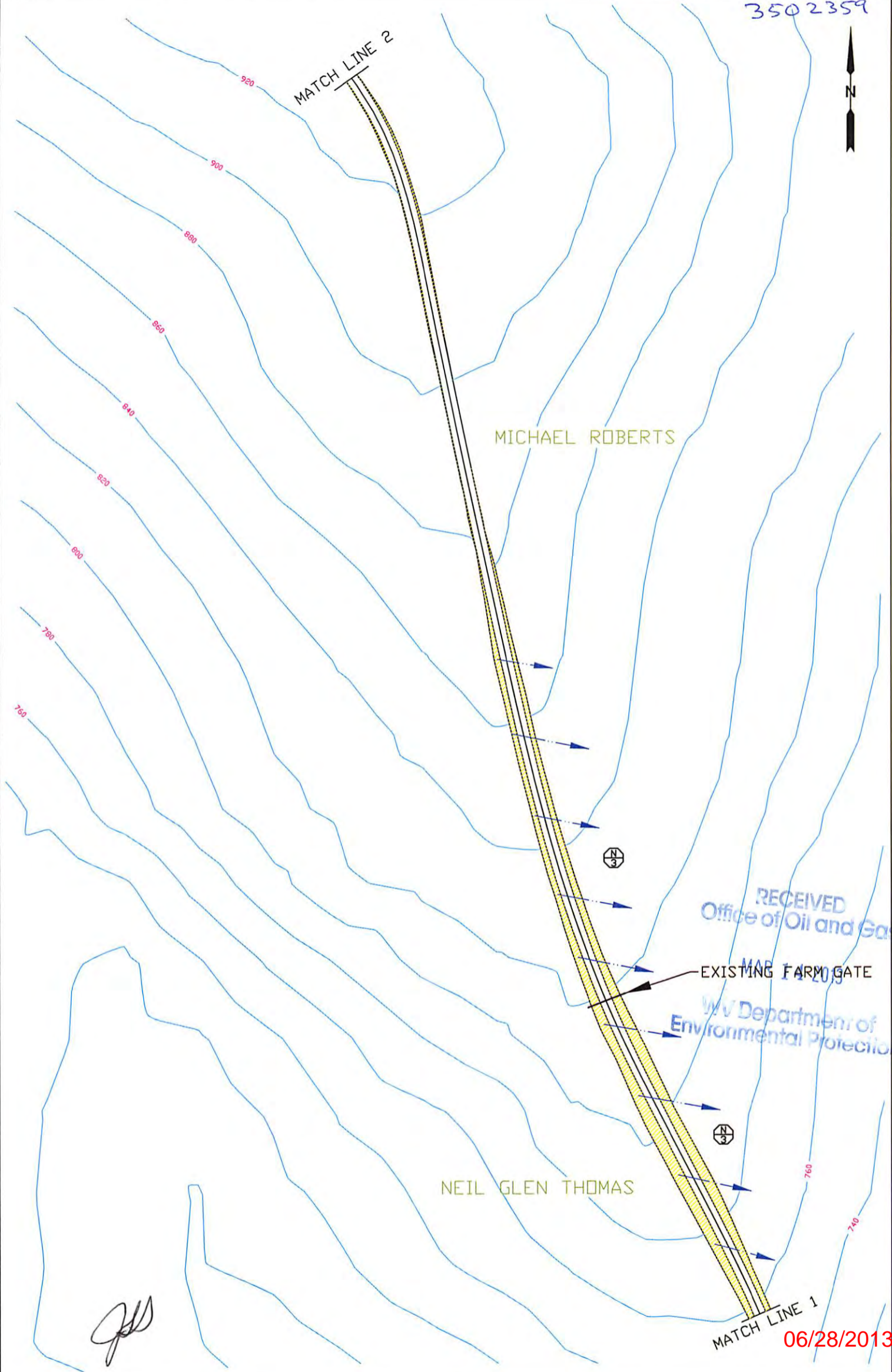
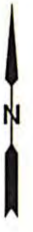
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 MAR 14 2013
 Department
 Environmental Protection



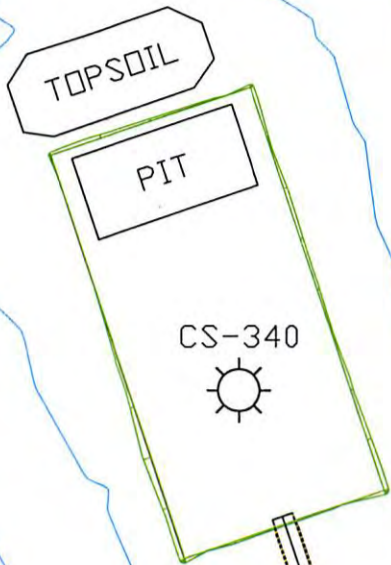
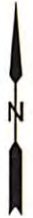
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WV Department of
Environmental Protection

06/28/2013

LEGEND		EROSION AND SEDIMENT CONTROL PLAN	
	PROVIDE FLEXTERRA HIGH PERFORMANCE FLEXIBLE GROWTH MEDIUM (HP-FLM) ON CUT AND FILL SLOPES		STREAM
	LEVEL SPREADER		PROPERTY LINE
	DIVERSION DITCH		SLOPE AREA
	BERM OUTLET		WETLAND
			24" COMPOST FILTER SOCK AS REQUIRED
		HARD ROCK EXPLORATION PROPOSED DRILL-DEEPER WELL # CS-340 GRANT DISTRICT, JACKSON COUNTY LIVERPOOL QUAD, WV 7.5'	
		MARCH 06, 2013	
		TRUE LINE SURVEYING 6211 FAIRVIEW DR. HUNTINGTON, WV 25705	
		PAGE <u>1</u> OF <u>3</u>	



LEGEND		EROSION AND SEDIMENT CONTROL PLAN	
	PROVIDE FLEXTERRA HIGH PERFORMAMCE FLEXABLE GROWTH MEDIUM (HP-FLM) ON CUT AND FILL SLOPES		STREAM
	LEVEL SPREADER		PROPERTY LINE
	DIVERSION DITCH		SLOPE AREA
	BERM OUTLET		WETLAND
			24' COMPOST FILTER SOCK AS REQUIRED
			FS24
		HARD ROCK EXPLORATION PROPOSED DRILL-DEEPER WELL # CS-340 GRANT DISTRICT, JACKSON COUNTY LIVERPOOL QUAD, WV 7.5'	
		MARCH 06, 2013	
		TRUE LINE SURVEYING 6211 FAIRVIEW DR, HUNTINGTON, WV 25705	
		PAGE 2 OF 3	



MICHAEL ROBERTS

CROSSING EXISTING FARM GATE

PIPELINE MARKER
TENNESSEE GAS PIPELINE

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Office of Oil and Gas

MAR 14 2013

MICHAEL ROBERTS

WV Department of
Environmental Protection

WITCH LINE 2
06/28/2013

LEGEND

- PROVIDE FLEXTERRA HIGH PERFORMANCE FLEXABLE GROWTH MEDIUM (HP-FLM) ON CUT AND FILL SLOPES
- LEVEL SPREADER
- DIVERSION DITCH
- BERM OUTLET

- STREAM
- PROPERTY LINE
- SLOPE AREA
- WETLAND
- 24" COMPOST FILTER SOCK AS REQUIRED

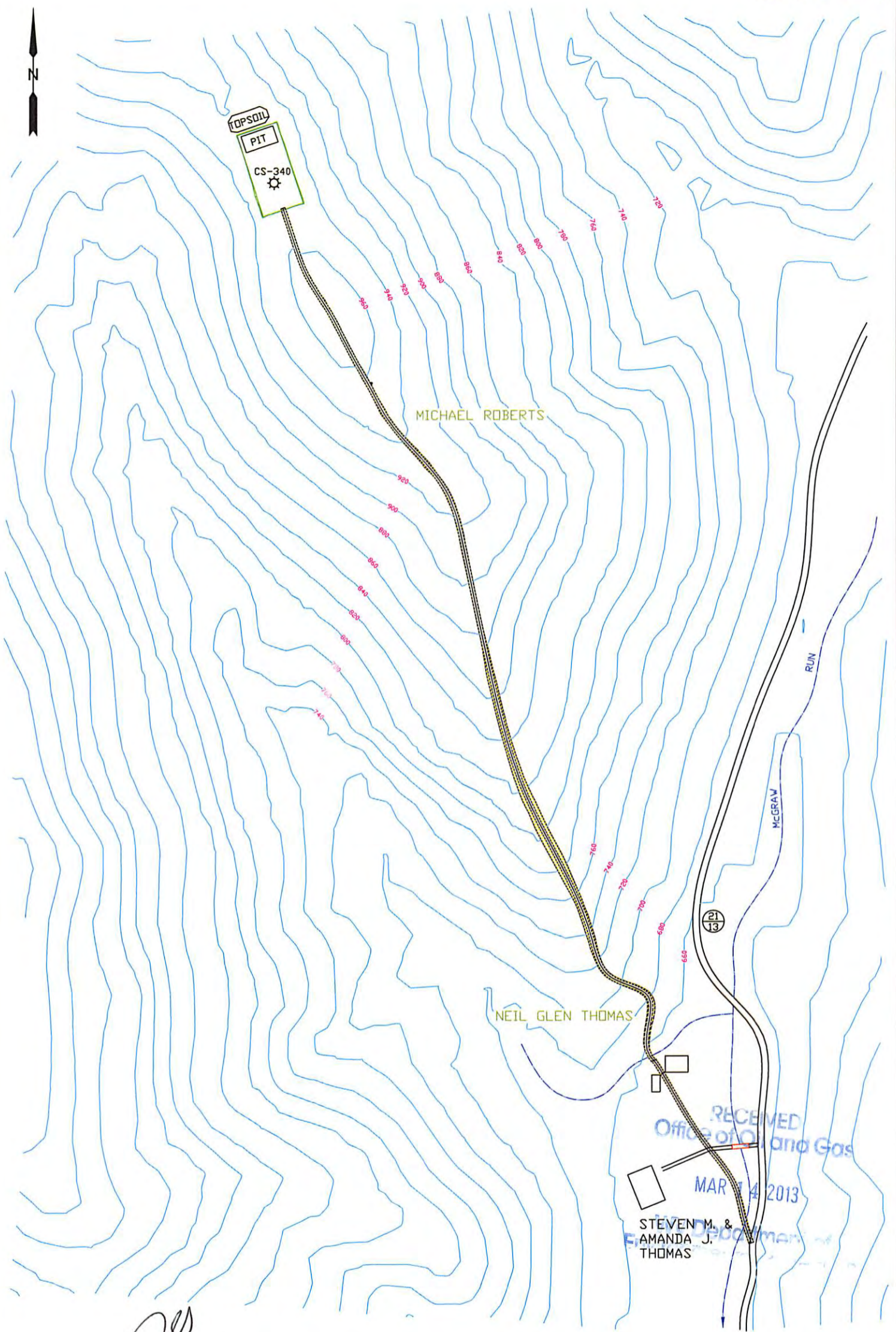
EROSION AND SEDIMENT CONTROL PLAN

HARD ROCK EXPLORATION
PROPOSED DRILL-DEEPER WELL # CS-340
GRANT DISTRICT, JACKSON COUNTY
LIVERPOOL QUAD, WV 7.5'

MARCH 06, 2013

TRUE LINE SURVEYING
6211 FAIRVIEW DR.
HUNTINGTON, WV 25705

PAGE 3 OF 3

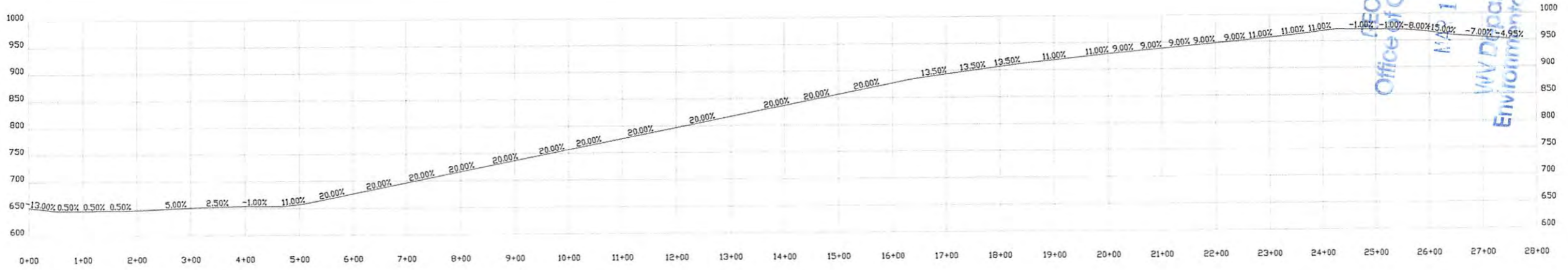


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06/28/2013

DISTURBED AREAS		LEGEND		SITE PLAN	
WELL PAD CONSTRUCTION	0.48 AC.		STREAM	HARD ROCK EXPLORATION PROPOSED DRILL-DEEPER WELL # CS-340 GRANT DISTRICT, JACKSON COUNTY LIVERPOOL QUAD, WV 7.5'	
EXISTING ACCESS ROAD CONSTRUCTION	0.90 AC.		PROPERTY LINE	MARCH 06, 2013	
ADDITIONAL CLEARING			SLOPE AREA	TRUE LINE SURVEYING 6211 FAIRVIEW DR. HUNTINGTON, WV 25705	
TOTAL DISTURBED AREA	1.38 AC		WETLAND	PAGE <u>1</u> OF <u>1</u>	
			BUFFER AREA		

3502359

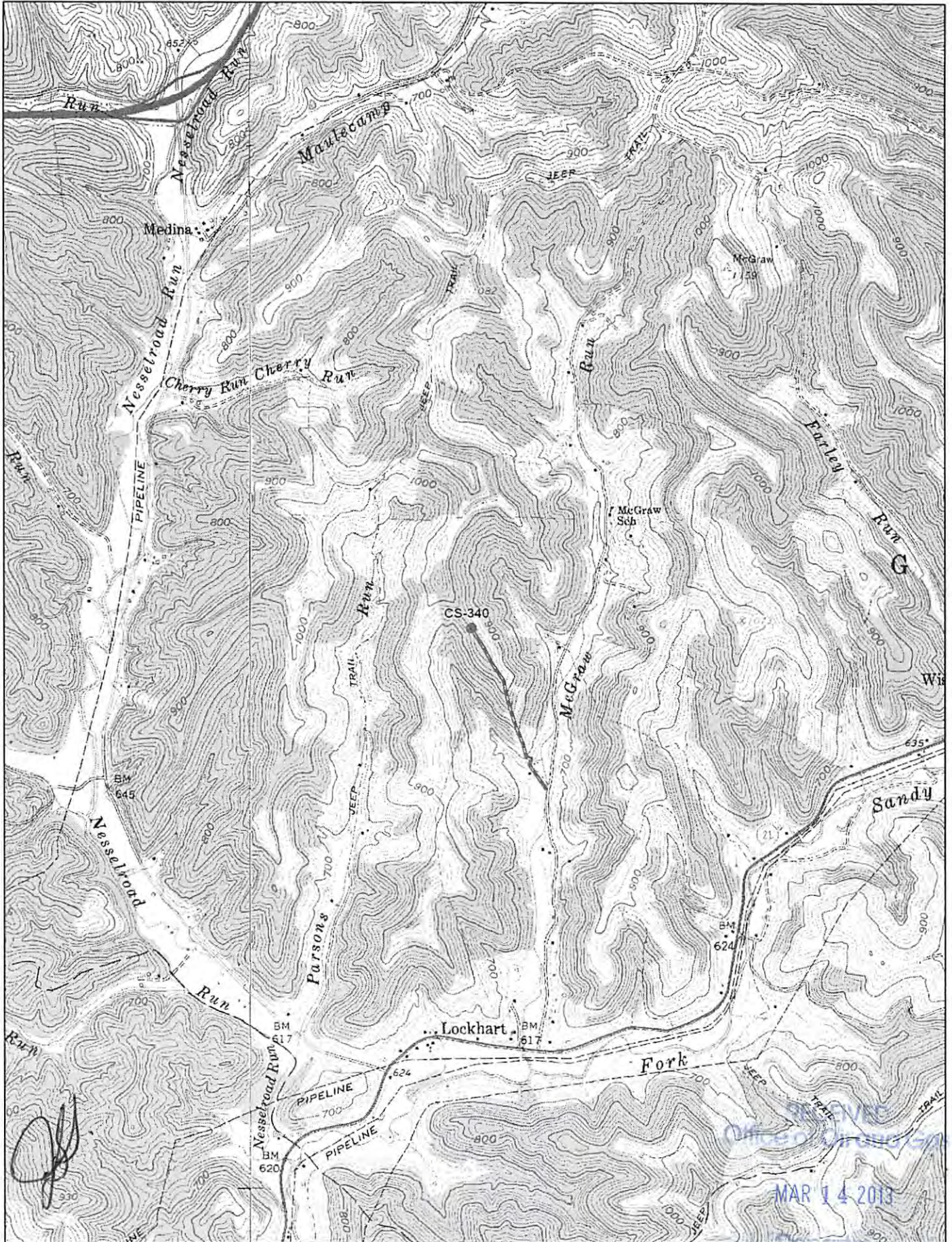


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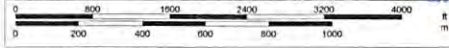
ROAD PROFILE
HARD ROCK EXPLORATION PROPOSED DRILL-DEEPER WELL # CS-340
GRANT DISTRICT, JACKSON COUNTY LIVERPOOL QUAD, WV 7.5'
FEBRUARY 11, 2013
TRUE LINE SURVEYING 6211 FAIRVIEW DR. HUNTINGTON, WV 25705
PAGE <u>1</u> OF <u>1</u>



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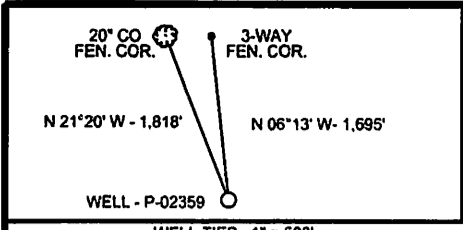
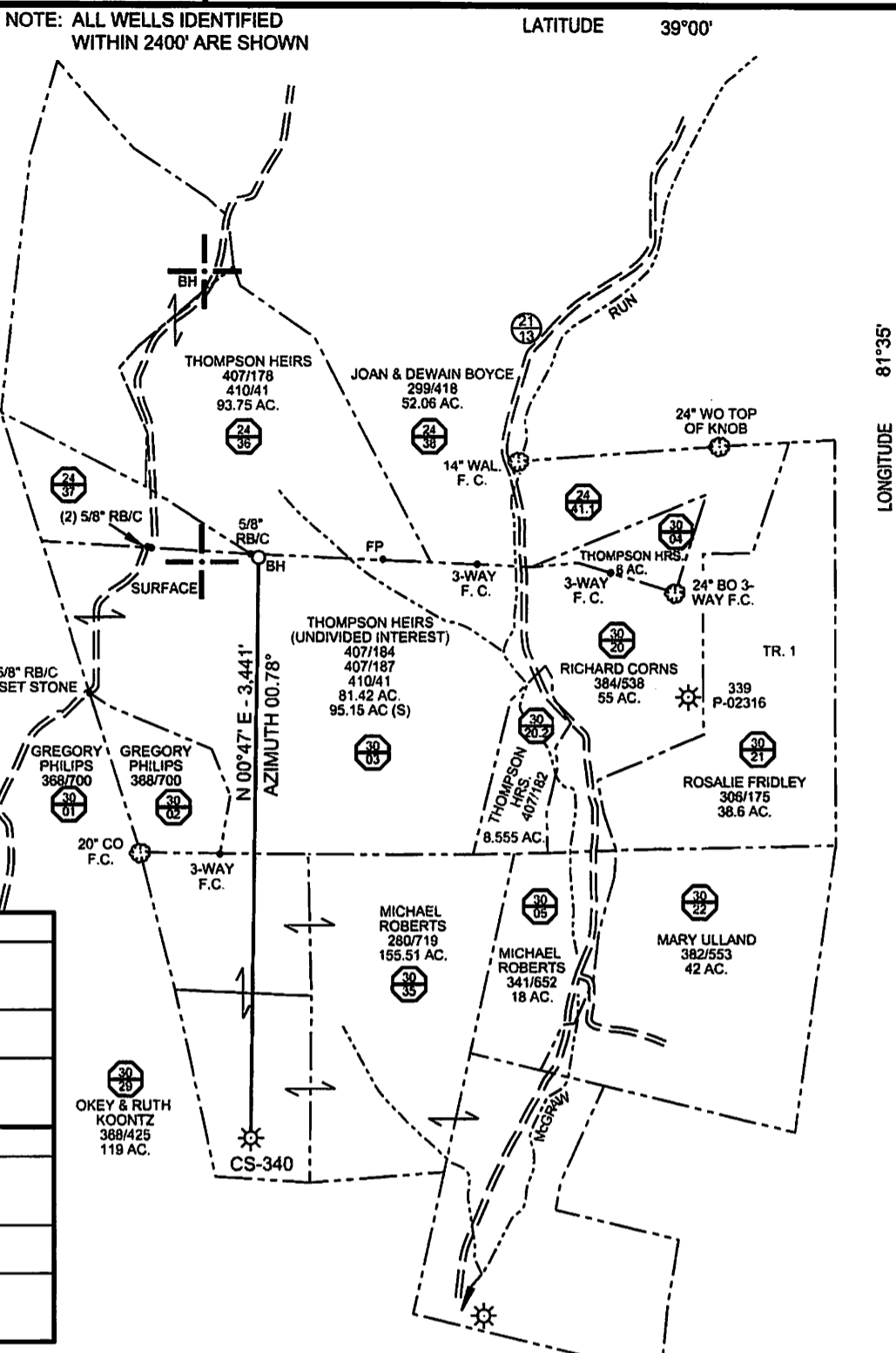
© 2001 DeLorme, XMap®. Data copyright of content owner. Zoom Level: 14-0 Datum: NAD27

Scale 1 : 24,000
1" = 2,000 ft



MAR 14 2013
 Environmental Protection
 TN
 MN
 7.1°W
 06/28/2013

SURFACE BH ← 8,404' ← 8,378' →



NOTE: ALL WELLS IDENTIFIED WITHIN 2400' ARE SHOWN

NOTE: NO BUILDING STRUCTURES IDENTIFIED WITHIN 200'

SURFACE HOLE	
STATE PLANE WV NORTH/SOUTH ZONE NAD 1927 N - 722,279.76 : E - 1,825,749.59	
LATITUDE: (N) 38.9819091 LONGITUDE: (W) 81.6129302	
UTM, NAD83 17 - 84W TO 78W, METERS N - 4,314,956.547 : E - 446,924.756	
BOTTOM HOLE	
STATE PLANE WV NORTH/SOUTH ZONE NAD 1927 N - 725,720.76 : E - 1,825,796.70	
LATITUDE: (N) 38.9913572 LONGITUDE: (W) 81.6128445	
UTM, NAD83 17 - 84W TO 78W, METERS N - 4,316,004.947 : E - 446,939.232	

(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS

FILE NO. CS-340_REV.DGN

DRAWING NO. CS-340 REV.

SCALE 1" = 1000'

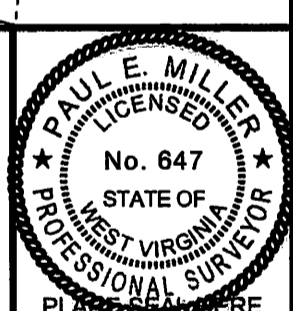
MINIMUM DEGREE OF ACCURACY 1:200

PROVEN SOURCE OF ELEVATION 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.

(SIGNED) Paul E. Miller

R.P.E. _____ L.L.S. 647



STATE OF WEST VIRGINIA
DIVISION OF ENVIRONMENTAL PROTECTION
OIL AND GAS DIVISION

DATE FEBRUARY 20, 20 2013

OPERATOR'S WELL NO. CS-340

API WELL NO. 47 035 02359

STATE 47 COUNTY 035 PERMIT 02359

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

LOCATION: ELEVATION 938' WATER SHED McGRAW RUN OF LEFT FORK OF SANDY CREEK

DISTRICT GRANT COUNTY JACKSON

QUADRANGLE LIVERPOOL, WV 7.5'

SURFACE OWNER MICHAEL ROBERTS ACREAGE VARIOUS 155.51

OIL & GAS ROYALTY OWNER Brewer, Koontz, Thompson, et al LEASE ACREAGE 235.93 LEASE NO. 06/28/2013

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

PLUG AND ABANDON CLEAN OUT AND REPLUG

TARGET FORMATION LOWER HURON ESTIMATED DEPTH 7520' MD, 4240' TVD

WELL OPERATOR HARD ROCK EXPLORATION, INC. DESIGNATED AGENT JAMES L. STEPHENS

ADDRESS 1244 MARTINS BR. RD., CHARLESTON, WV 25312 ADDRESS SAME

FORM WW-6

COUNTY NAME
PERMIT

3502359



Hard Rock Consulting, LLC

Hard Rock Land Services, LLC

February 27, 2013

Mr. Gene Smith
West Virginia Department of Environmental Protection
601 57th Street SE
Charleston, West Virginia 25304

RE: Permit for well CS-340

Dear Gene:

I am writing regarding fresh water casing protection for the above referenced well. Hard Rock Exploration respectfully request this permit be issued allowing a deeper string of fresh water protection.

The new emergency rules act as a blanket policy and does not take several factors into consideration. The primary issue is that a lot of wells in the state of West Virginia are drilled on air, and the majority of operators with air drilling operations work diligently to reduce the amount of water in their operations. The new guidelines appear to be focused on fluid drilling and do not take into account wells being drilled on air. Our request is based on what we consider to be better engineering practices for air drilling operations.

The proper placement of the casing shoe must be considered; Hard Rock wants the ability to place the casing shoe in a rock, which has the mechanical integrity to ensure a proper seal at the casing shoe. If we follow the "new guidelines" most of the wells in our operational area would have the casing shoe placed in a red rock section and we would run casing 100 feet below the Pittsburgh Sand. Red rock has been proven to be a formation that is not stable with drilling operations; the rock is sensitive to time and the fluids that are produced from the intermediate hole. When the red rock is not covered we have seen sloughing and wash-outs during drilling operations.

Our proposed fresh water protection string set just above elevation does three things to ensure protection of fresh water and the minimization of pit fluids:

- (1) It limits the time exposure on the fresh water aquifer and adds only a few hours of air drilling to the well.
- (2) With the minimal time exposed and a casing shoe located in a mechanically sound rock it will ensure the cement will seal and form a good compressive barrier to future drilling operations.

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MAR 14 2013
WV Department of
Environmental Protection

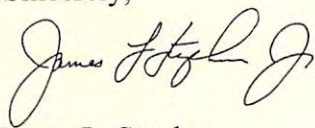
06/28/2013

- (3) The last item, which is overlooked by the new standards, is pit volumes. The proposed fresh water casing placement will allow the majority of the 8 ¼ hole to be drilled on air. Using this method will permit Hard Rock to reduce fluids for drilling and decrease pit water volumes.

We also request that a cement record log from a cement service company be filed with our WR-35. We think that failure of either the cement quality or circulation should be a good measure of when to require additional logging and most fresh water protection strings are witnessed by the State Oil and Gas inspector for verification of a good cement job. Running a bond log under pressure should only be done if a known problem exists; the pressuring up of the casing string is detrimental to the newly established cement and could cause a micro-annulus problem. In addition, bond logs ran at the shallow depths with large internal diameter casings are very inaccurate if not ran under pressure. I think that the cement record log and the circulation of cement at surface will satisfy the "new guidelines".

I hope this request is considered and permits are issued in the very near future.

Sincerely,



James L. Stephens
President

Cc: Monica Stephens
Bryan Tanner

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Office of Oil and Gas
MAR 14 2013
WV Department of
Environmental Protection

06/28/2013