



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

September 27, 2013

WELL WORK PERMIT

Re-Work

This permit, API Well Number: 47-1304036, issued to PRIME OPERATING COMPANY, 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: 1166
Farm Name: MACE, DEO. D.
API Well Number: 47-1304036
Permit Type: Re-Work
Date Issued: 09/27/2013

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. All pits must be lined with a minimum of 20 mil thickness synthetic liner.
2. In the event of an accident or explosion causing loss of life or serious personal injury in or about the well or while working on the well, the well operator or its contractor shall give notice, stating the particulars of the accident or explosion, to the oil and gas inspector and the Chief within twenty-four (24) hours.
3. Well work activities shall not constitute a hazard to the safety of persons.

I
Now

13040362

WW - 2B
(Rev. 8/10)

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

C21hour 04 474

1) Well Operator: Prime Operating Company
Operator ID: 306837 County: 013 District: Sherman Quadrangle: Millstone

2) Operator's Well Number: Hall 1166 3) Elevation: 1175'

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

5) Proposed Target Formation(s): Devonian Shale Proposed Target Depth: 5500'

6) Proposed Total Depth: 5500' Feet Formation at Proposed Total Depth: 5500'

7) Approximate fresh water strata depths: 340'

8) Approximate salt water depths: 1300'

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)

Drill deeper to a depth of 5500' and frac the lower heron, gordon, rinestreet and weir with a 75 quality foam frac and test each formation.
Drill out all frac plugs, run tubing, rods and turn well in production.

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							
Fresh Water	9 5/8"	LS	38#	409'	409	Surface	Existing
Coal							
Intermediate	7"	J-55	20#	2368.75'	2368.75'	Surface	Existing
Production	4 1/2"	N-80	11.6#		5500'	3940'	
Tubing							
Liners							Received

Packers: Kind: _____
Sizes: _____
Depths Set _____

SEP 16 2013

gwm
For
EoGamer

Office of Oil and Gas
WV Dept. of Environmental Protection

09/27/2013

WR-35
Rev (9-11)

State of West Virginia
Department of Environmental Protection
Office of Oil and Gas
Well Operator's Report of Well Work

DATE: 09/09/2013
API #: 47-013-04036

Farm name: Hall Operator Well No.: 1166

LOCATION: Elevation: 1175' Quadrangle: Millstone

District: Sherman County: Calhoun
Latitude: 9758 Feet South of 38 Deg. 00 Min. 00 Sec.
Longitude 6837 Feet West of 81 Deg. 00 Min. 00 Sec.

Company: Prime Operating Company

Address:	Casing & Tubing	Used in drilling	Left in well	Cement fill up Cu. Ft.
<u>Charleston, WV</u>				
Agent: <u>Halsey M. Whitney</u>				
Inspector: <u>Eddy Gainer</u>	<u>9 5/8" LS/38#</u>		<u>409'</u>	<u>to Surface</u>
Date Permit Issued: <u>January 8, 1987</u>				
Date Well Work Commenced: <u>02/20/1987</u>	<u>7" J55/20#</u>		<u>2368.75'</u>	<u>to Surface</u>
Date Well Work Completed: <u>02/27/1987</u>	<u>2 3/8"</u>			
Verbal Plugging:				
Date Permission granted on: <u>01/08/1987</u>				
Rotary <input checked="" type="checkbox"/> Cable <input type="checkbox"/> Rig <input type="checkbox"/>				
Total Vertical Depth (ft): <u>3404'</u>				
Total Measured Depth (ft): <u>3404'</u>				
Fresh Water Depth (ft.): <u>610'</u>				
Salt Water Depth (ft.): <u>1800'</u>				
Is coal being mined in area (N/Y)?				
Coal Depths (ft.): <u>none</u>				
Void(s) encountered (N/Y) Depth(s) <u>N</u>				

OPEN FLOW DATA (If more than two producing formations please include additional data on separate sheet)

Producing formation Devonian Shale Pay zone depth (ft) 3310-3404'
Gas: Initial open flow 750 MCF/d Oil: Initial open flow 0 Bbl/d
Final open flow _____ MCF/d Final open flow _____ Bbl/d
Time of open flow between initial and final tests _____ Hours
Static rock Pressure 80 psig (surface pressure) after 24 Hours

Second producing formation _____ Pay zone depth (ft) _____
Gas: Initial open flow _____ MCF/d Oil: Initial open flow _____ Bbl/d
Final open flow _____ MCF/d Final open flow _____ Bbl/d
Time of open flow between initial and final tests _____ Hours
Static rock Pressure _____ psig (surface pressure) after _____ Hours

Received

SEP 16 2013

Office of Oil and Gas
WV Dept. of Environmental Protection

I certify under penalty of law that I have personally examined and am familiar with the information submitted on this document and all the 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.

Halsey M. Whitney
Signature

9/13/13
Date

09/27/2013

Were core samples taken? Yes _____ No X Were cuttings caught during drilling? Yes X No _____

Were Electrical, Mechanical or Geophysical logs recorded on this well? If yes, please list GR, Den, Neu, Ind

NOTE: IN THE AREA BELOW PUT THE FOLLOWING: 1). DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC. 2). THE WELL LOG WHICH IS A SYSTEMATIC DETAILED GEOLOGICAL RECORD OF THE TOPS AND BOTTOMS OF ALL FORMATIONS, INCLUDING COAL ENCOUNTERED BY THE WELLBORE FROM SURFACE TO TOTAL DEPTH.

Perforated Intervals, Fracturing, or Stimulating:

Nat/Open H

Plug Back Details Including Plug Type and Depth(s): none

Formations Encountered: Surface:	Top Depth	Bottom Depth
Salt Sand	1905'	
Little Lime	2060'	
Big Lime	2080'	
Big Injun	2219'	
Sunbury SH	2557'	
Undiff Berea/Lo Huron	2600'	
Gordon	2747'	
Fifth Sand	3006'	

Cement Data:
9 5/8"LS/38# - 100 sx RFC cement topped w/50 sx Neat, circulated to Surface.
7" J-55 20# - 220 sx 50/50 Poz, 3% CaCl2, 4% Gel followed by 115 sx Neat, 3" CaCl2, 1/4" Celloflake w/500 # Gel @ 6% ahead, circulated cement to surface.

Received

SEP 16 2013

1304036 R

WW-2A Surface Waiver

SURFACE OWNER WAIVER

County Calhoun

Operator _____
Operator well number _____

Prime Operating Company _____
Hall 1166 _____

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.

✓ Deo Mace
Signature

Date 8-12-04

Company Name _____
By _____
Its _____ Date _____

✓ DEO MACE
Print Name

Received
Signature SEP 16 2013 Date _____

WW-2B1
(5-12)

Well No. Hall 1166

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 ALS Environmental - South Charleston, WV
Sampling Contractor _____

Well Operator Prime Operating Company
Address 714 1/2 Lee Street East
Charleston, WV 25301
Telephone 304-342-0121

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.

Received

SEP 16 2013

Office of Oil and Gas
WV Dept. of Environmental Protection

09/27/2013

WW-2A1
(Rev. 1/11)

Operator's Well Number Hall 1166

**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
Juanita Hall	Sterling Drilling / Prime (Assignment)	1/9	
Mary S. Barnes	Sterling Drilling / Prime (Assignment)	7/54	
Drexel Hall	Sterling Drilling / Prime (Assignment)	7/54	
Ralph E. Hall	Sterling Drilling / Prime (Assignment)	10/54	
Kenneth Hall	Sterling Drilling / Prime (Assignment)	7/54	
Kenneth Ferguson	Sterling Drilling / Prime (Assignment)	10/54	
Constance H. Slade	Sterling Drilling / Prime (Assignment)	7/108	
Robert Hall	Sterling Drilling / Prime (Assignment)	7/108	

**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.

Received

Well Operator:
By: Its:

Prime Operating Company _____
 Halsey Whitney SEP 16 2013 _____
 Designated Agent _____

Office of Oil and Gas
WV Dept. of Environmental Protection
09/27/2013

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 Prime Operating Company OP Code 306837

Watershed Sycamore Creek Quadrangle Millstone 7 1/2

Elevation 1175' County Calhoun District Sherman

Description of anticipated Pit Waste: Drilling cutting and Drilling fluids

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.? 40 mil 20 mil.

Proposed Disposal Method For Treated Pit Wastes:

- Land Application
- Underground Injection (UIC Permit Number 2D087-3432)
- Reuse (at API Number _____)
- Off Site Disposal (Supply form WW-9 for disposal location)
- Other (Explain _____)

Drilling medium anticipated for this well? Air, freshwater, oil based, etc. Air, soap and gell
-If oil based, what type? Synthetic, petroleum, etc. n/a

Additives to be used? soap and gell

Will closed loop system be used? no

Drill cuttings disposal method? Leave in pit, landfill, removed offsite, etc. leave in pit. Water will be taken underground injection well
-If left in pit and plan to solidify what medium will be used? Cement, lime, sawdust Cement and 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 Halsey M. Whitney

Company Official (Typed Name) Halsey Whitney

Company Official Title Designated Agent

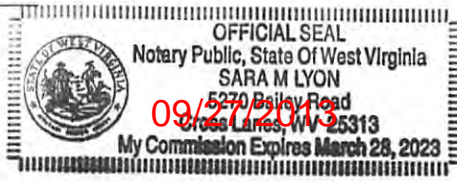
Received

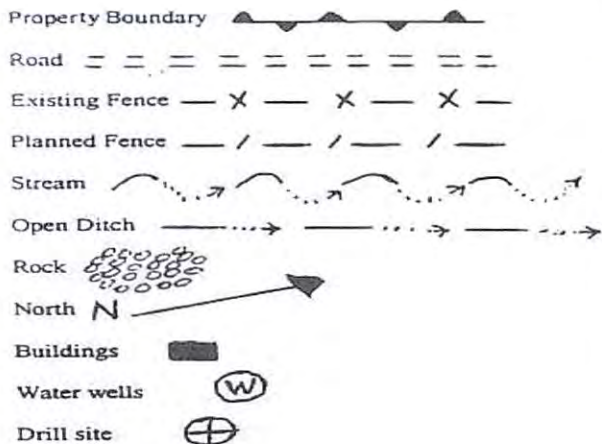
Subscribed and sworn before me this 12th day of September, 2013 SEP 16 2013

Sara M. Lyon

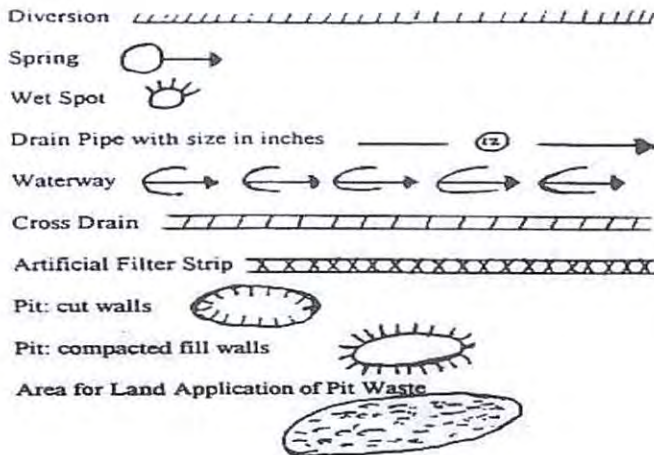
Notary Public Office of Oil and Gas
WV Dept. of Environmental Protection

My commission expires March 28, 2023





LEGEND



Proposed Revegetation Treatment: Acres Disturbed _____ Prevegetation pH _____

Lime 2-5 Tons/acre or to correct to pH 6.5

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

Mulch Hay Tons/acre

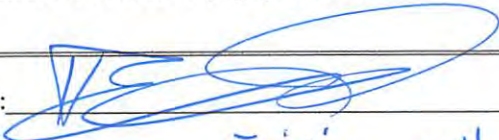
Seed Mixtures

Seed Type	Area I	lbs/acre	Seed Type	Area II	lbs/acre
Redtop clover		5	Redtop clover		5
KY 31		40	KY 31		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:

Existing well - maintain sediment control on road & location at all times

Title: Inspector

Date: 7/9/13

Received

Field Reviewed?

Yes

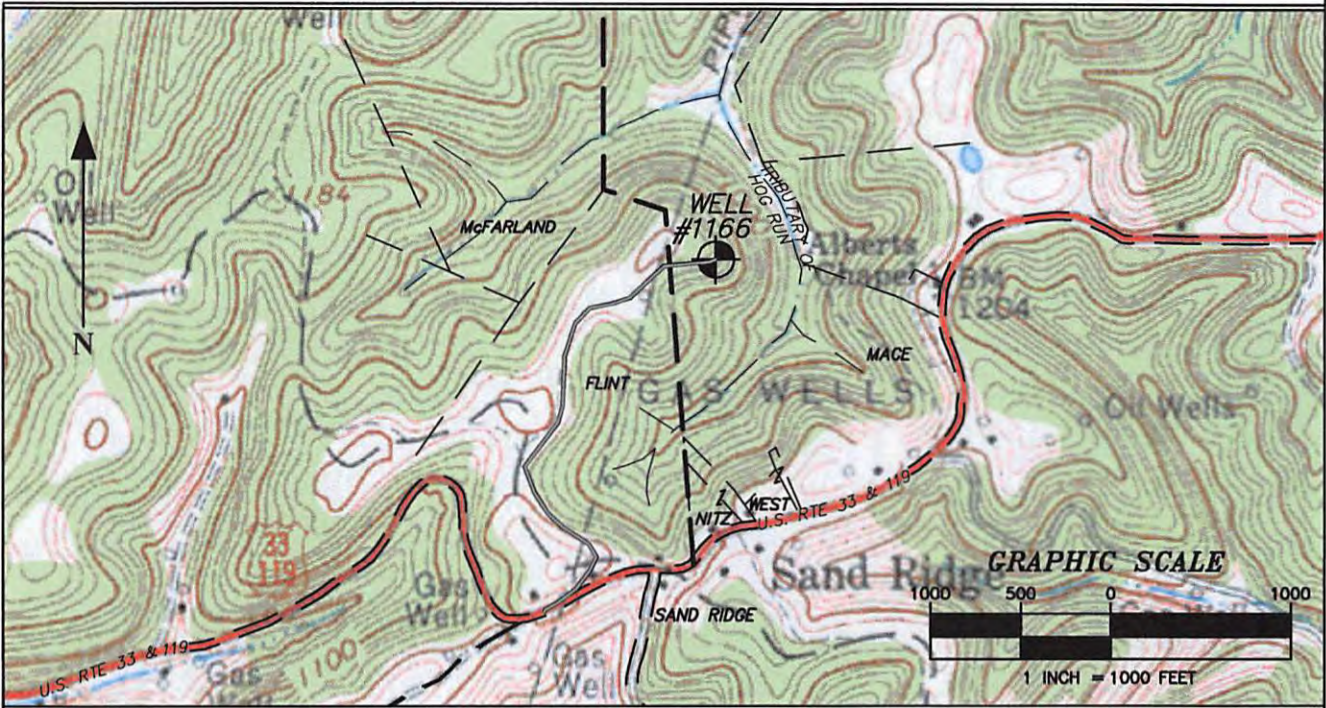
No

SEP 16 2013

Form WW-9
Attachments:
Photocopied section of involved 7.5' topographic sheet

Operator's Well No. 1166-REV

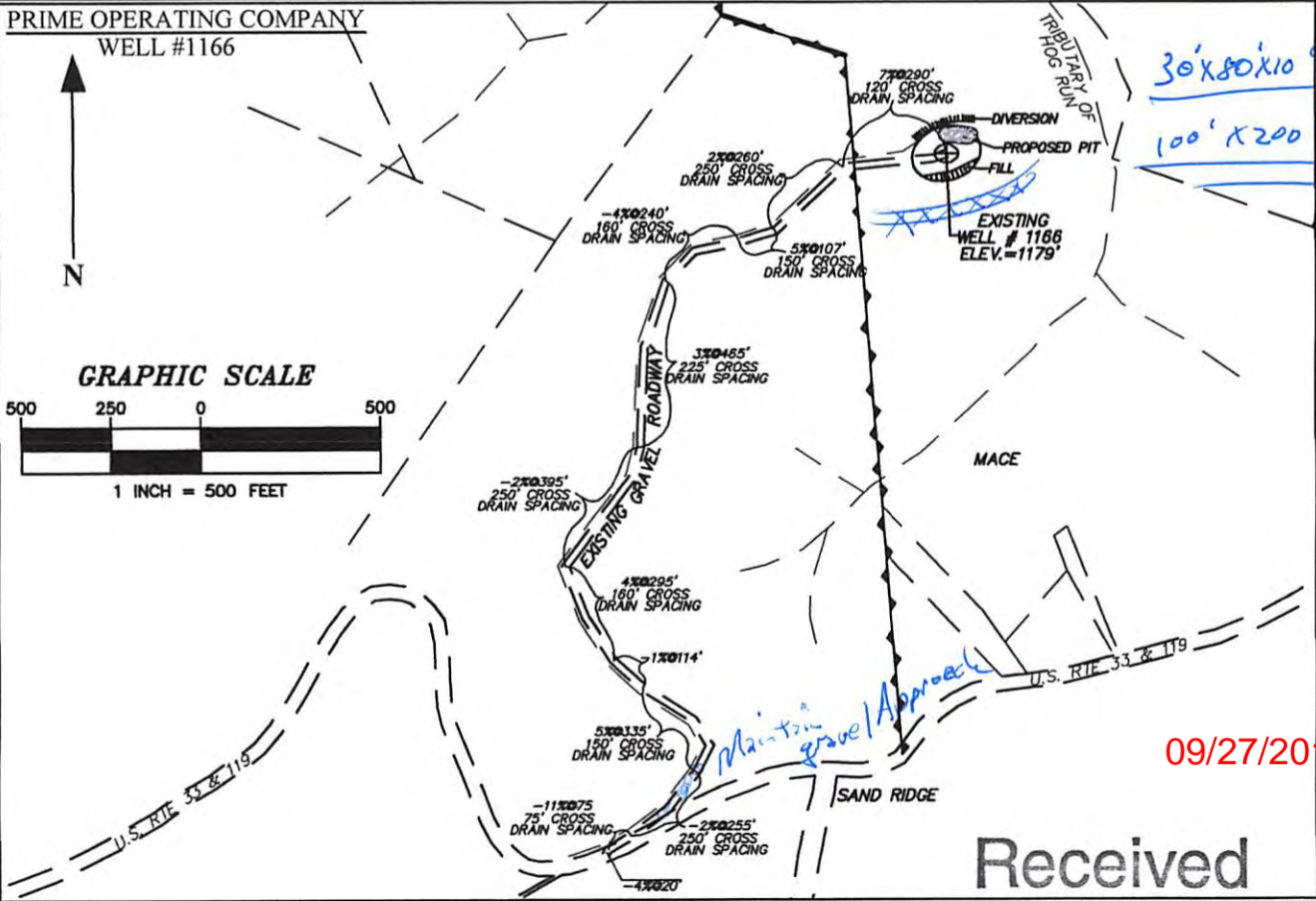
Quadrangle Name: MILLSTONE 7.5'



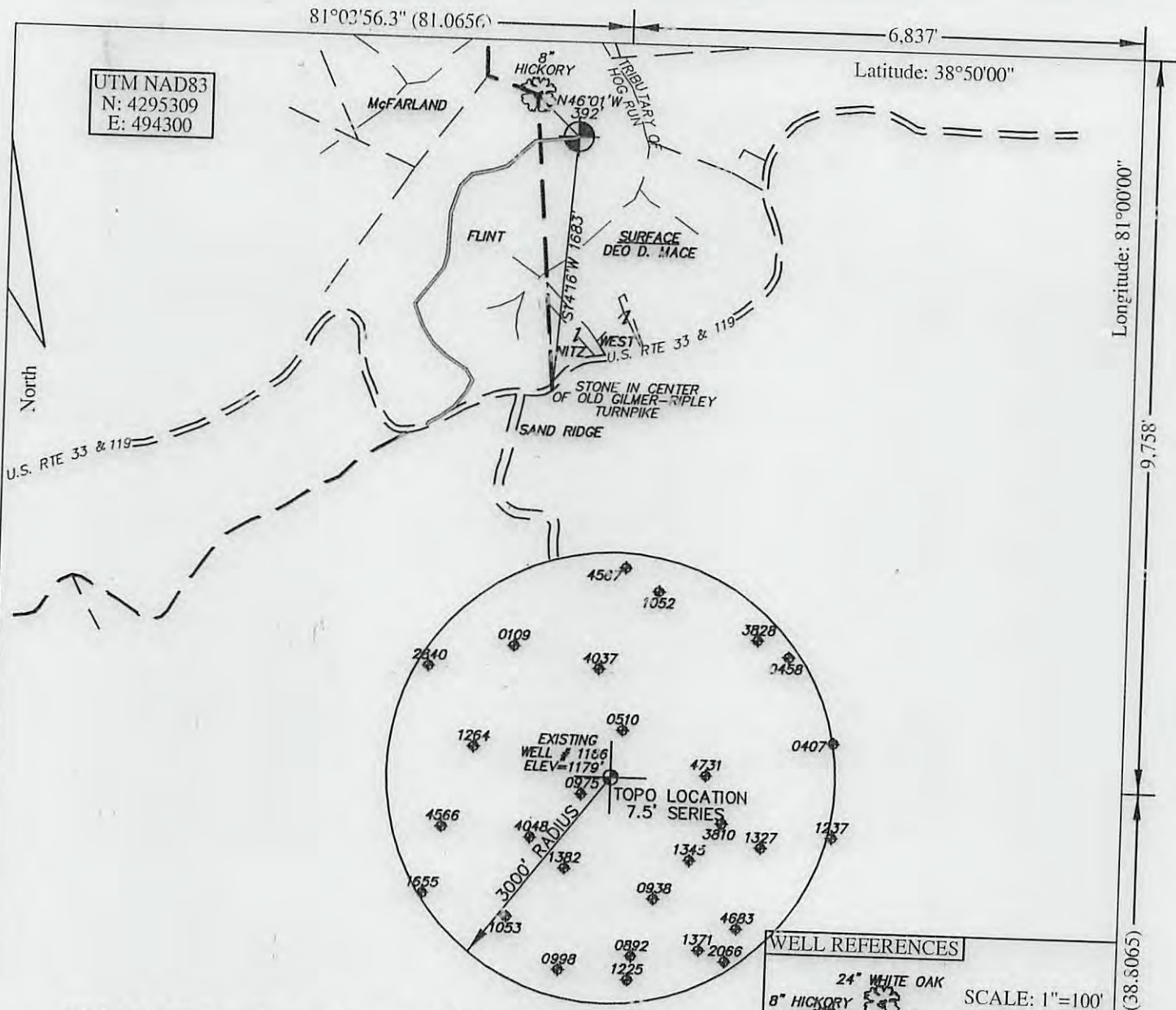
LEGEND

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

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



SEP 16 2013



JUANITA HALL 73 ACRE LEASE
WELL # 1166

FILE # 13-021
DRAWING # WELL-1166
SCALE 1"=1000'
MINIMUM DEGREE OF ACCURACY 1 / 200
PROVEN SOURCE OF ELEVATION SUBMETER 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: *Brian W. Lawrence*
BRIAN W. LAWRENCE
R.P.E.: _____ L.L.S.: 2056



(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS WVDOP
OFFICE OF OIL & GAS
601 57TH STREET
CHARLESTON, WV 25304



DATE: MARCH 19TH, 2013
OPERATORS WELL #: 1166-REV
API WELL # 47 013 04036 R
STATE COUNTY PERMIT

Well Type: Oil Waste Disposal Production Deep
 Gas Liquid Injection Storage Shallow

WATERSHED HOG RUN, TRIBUTARY OF SYCAMORE CREEK ELEVATION: 1179'
COUNTY/DISTRICT CALHOUN / SHERMAN QUADRANGLE: MILLSTONE 7.5'
SURFACE OWNER DEO D. MACE ACREAGE 71.46
OIL & GAS ROYALTY OWNER: JUANITA HALL ACPEAGE 73

DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE
PLUG OFF OLD FORMATION PERFORATE NEW FORMATION PLUG & ABANDON
CLEAN OUT & REPLUG OTHER CHANGE (SPECIFY): _____

TARGET FORMATION: DEVONIAN MARCELLUS SHALE ESTIMATED DEPTH: 6000'
WELL OPERATOR PRIME OPERATING DESIGNATED AGENT HALSEY WHITNEY
Address 714 1/2 LEE ST. EAST Address 714 1/2 LEE ST. EAST
City CHARLESTON State WV Zip Code 25301 City CHARLESTON State WV Zip Code 25301

09/27/2013

1304036 R

Prime Operating Company

a subsidiary of Prime Energy Corporation

Eastern Oil Well Service Company

714-1/2 Lee Street East • Charleston, WV 25301
(304) 342-0121 • FAX (304) 343-7019

September 13, 2013

Mr. Gene Smith
Assistant Chief
Office of Oil and Gas
601 57th Street, SE
Charleston, WV 25304

OK # 0630822

RE: Permit Applications

Dear Mr. Smith,

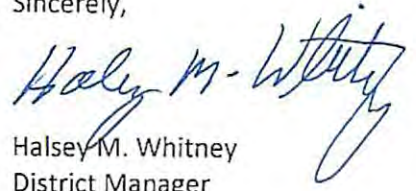
Enclosed please find the following Applications:

- 1.) A request for Modification of a Well Work Permit for the Hall 495 UIC well. The permit has been modified to include a Pit and the cement sqz of the casing annulus at 360'. (1st Priority)
- 2.) A Well Work Permit for the Hall 1166 well (1st Priority of the producing well re-works).
- 3.) A Well Work Permit for the Godfrey 1202 well (2nd Priority of the producing well re-works).

Included is a check for \$1400 broken down as follows:
 \$100 for the Pit Permit for the Hall 495
 \$650 for the well work permit for the Hall 1166
 \$650 for the well work permit for the Godfrey 1202

I would appreciate your earliest consideration of these applications. Thank you in advance and please let me know if you have any question or required changes.

Sincerely,


 Halsey M. Whitney
 District Manager

Received

SEP 16 2013

Office of Oil and Gas
WV Dept. of Environmental Protection

09/27/2013

IV-35
(Rev 8-81)



Date March 3, 1987
Operator's
Well No. 1166
Farm Hall
API No. 47 - 013 - 4036

RECEIVED
SEP 1 1987

State of West Virginia
Department of Mines
Oil and Gas Division

DIVISION OF OIL & GAS
DEPT. OF ENERGY

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

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

LOCATION: Elevation: 1175' Watershed Sycamore Creek
District: Sherman County Calhoun Quadrangle Millstone 7 1/2'

COMPANY Sterling Drilling & Production Co., Inc.

ADDRESS 710 Va. St. E., Charleston, WV 25301

DESIGNATED AGENT William E. Stover

ADDRESS 710 Va. St. E., Charleston, WV 25301

SURFACE OWNER Ralph Mace

ADDRESS Rt. 1 Box 5, Sand Ridge, WV 25274

MINERAL RIGHTS OWNER Juanita Hall, et al

ADDRESS Rt. 1 Box 106, Millstone, WV 25261

OIL AND GAS INSPECTOR FOR THIS WORK Deo

Mace ADDRESS Sand Ridge, WV 25274

PERMIT ISSUED January 8, 1987

DRILLING COMMENCED February 21, 1987

DRILLING COMPLETED February 27, 1987

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

Casing Tubing	Used in Drilling	Left in Well	Cement fill up Cu. ft.
Size 20-16 Cond.			
13-10"			
9 5/8	409'	409'	100 sks.
8 5/8			
7	2369'	2369'	335 sks.
5 1/2			
4 1/2		to surface	
3			
2			
Liners used			

GEOLOGICAL TARGET FORMATION Riley-Benson Depth 4750' feet

Depth of completed well 3404' feet Rotary / Cable Tools _____

Water strata depth: Fresh 610' feet; Salt N/A feet

Coal seam depths: None Is coal being mined in the area? No

OPEN FLOW DATA

Producing formation Brown Shale Pay zone depth 3310'-3404' feet

Gas: Initial open flow _____ Mcf/d Oil: Initial open flow _____ Bbl/d

Final open flow 750 Mcf/d Final open flow _____ Bbl/d

Time of open flow between initial and final tests _____ hours

Static rock pressure 80 psig (surface measurement) after 24 hours shut in.

(If applicable due to multiple completion--)

09/27/2013

Second producing formation _____ Pay zone depth _____ feet

Gas: Initial open flow _____ Mcf/d Oil: Initial open flow _____ Bbl/d

Final open flow _____ Mcf/d Oil: Final open flow _____ Bbl/d

Time of open flow between initial and final tests _____ hours

Static rock pressure _____ psig (surface measurement) after _____ hours shut in.

AL-
1035

FORM IV-35
(REVERSE)

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

Natural

WELL LOG
Well # 1166

FORMATION	COLOR	HARD OR SOFT	TOP FEET	BOTTOM FEET	REMARKS
					Including indication of all fresh water, coal, oil and gas
Sand and Shale			0	540	
Sand and Shale			540	1905	Fresh water @ 610'
Salt Sand			1905	2040	
Shale			2040	2060	
Little Lime			2060	2080	
Big Lime			2080	2219	
Big Injun			2219	2260	
Shale			2260	3404	
Total Depth				3404	

(Attach separate sheets as necessary)

Sterling Drilling & Production Co., Inc.

Well Operator

By: *[Signature]*

09/27/2013

Date: 8/27/87

Note: Regulation 2.02(i) provides as follows:
 "The term 'log' or 'well log' shall mean a systematic detailed geological record of all formations, including ... encountered in the drilling of a well"

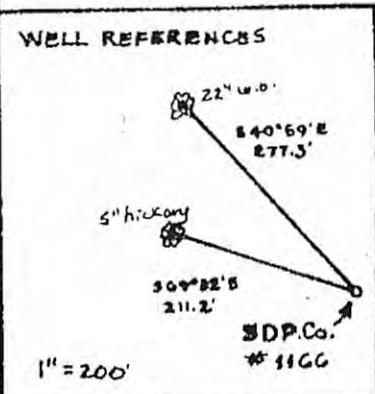
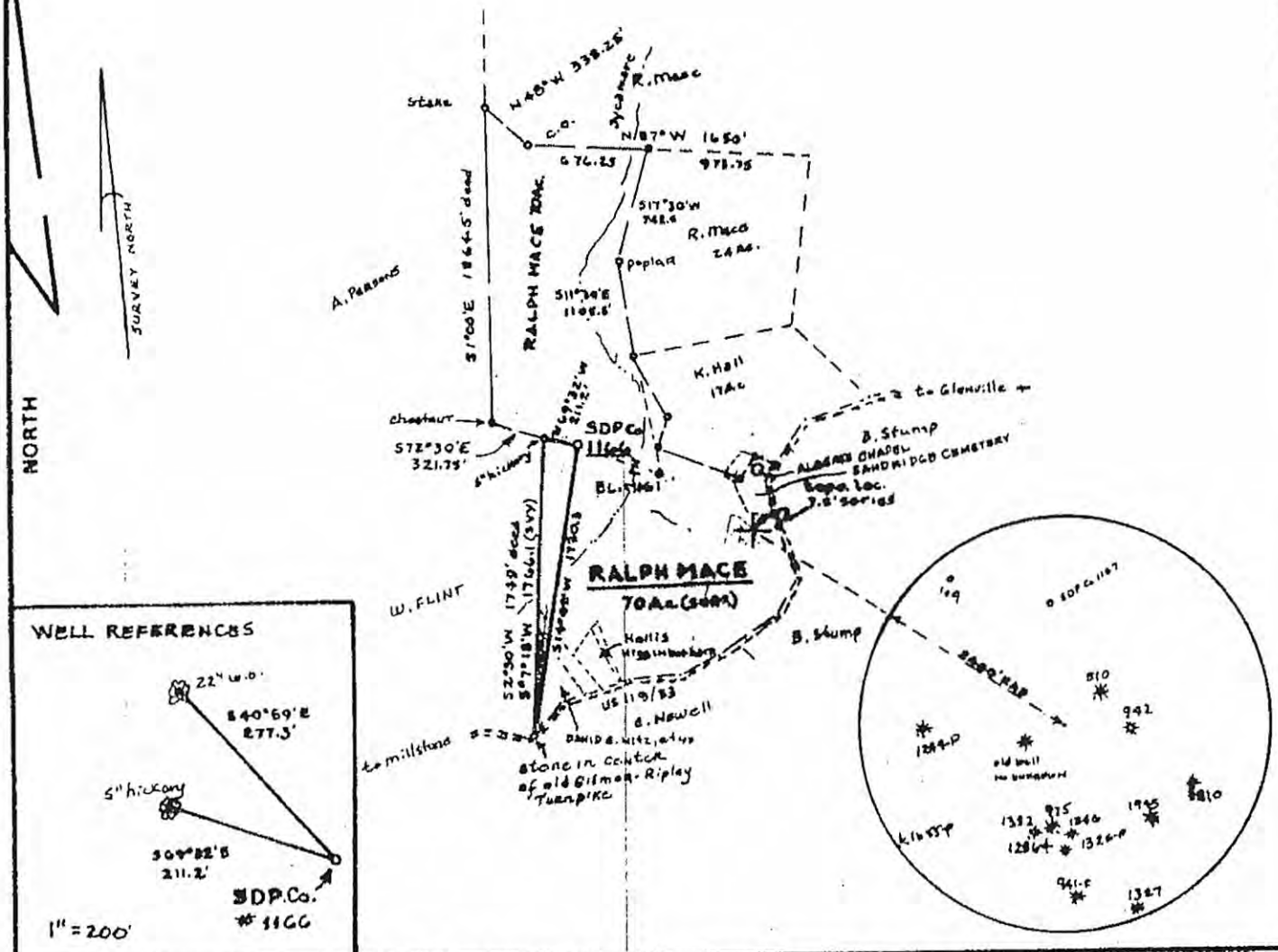
4378

12/23/86

6780'W
LATITUDE 38°50'00"

WHITE HALL 73 Acre Lease
SDP Co. # 1166

LONGITUDE 81°02'50"
9785'S



FILE NO. 044-034
 DRAWING NO. _____
 SCALE 1" = 1000'
 MINIMUM DEGREE OF ACCURACY 1/200
 PROVEN SOURCE OF ELEVATION USGS BM 44119/13
SE LOC. 1200' BL. 1204'

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 MINES.

(SIGNED) Mark C. Echard
 MARK C. ECHARD
 R.P.E. _____ L.L.S. 490



(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS
 FORM IV-6 (8-78)



DATE DECEMBER 8, 1986
 OPERATOR'S WELL NO. 1166
 API WELL NO. 47-013-4036
 STATE COUNTY PERMIT

STATE OF WEST VIRGINIA
 DEPARTMENT OF MINES
 OIL AND GAS DIVISION

WELL TYPE: OIL ___ GAS LIQUID INJECTION ___ WASTE DISPOSAL ___
 (IF "GAS,") PRODUCTION STORAGE ___ DEEP ___ SHALLOW
 LOCATION: ELEVATION 1161 WATER SHED SYCAMORE CREEK (HOG RUN BRANCH)
 DISTRICT SHERMAN COUNTY CALHOUN
 QUADRANGLE MILLSTONE
 SURFACE OWNER RALPH MACE ACREAGE 70
 OIL & GAS ROYALTY OWNER JUANITA HALL, et al LEASE ACREAGE 73
 LEASE NO. 044-034 09/27/2013
 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 Riley-Benson ESTIMATED DEPTH 4,500'
 WELL OPERATOR STEERING DRILLING AND SERVICE Co. Inc. DESIGNATED AGENT WILLIAM E. STOVER
 ADDRESS 130 GRAND ST. - 4th FLOOR ADDRESS 710 VIRGINIA ST - EAST
WHITE PLAINS, N.Y. 10601 CHARLESTON, WVA 25301

7/85

RECEIVED
DEC 23 1986



1) Date: December 10 1986
2) Operator's Well No. Hall #1166
3) API Well No. 47 State 013-4036 County Permit

STATE OF WEST VIRGINIA
DIVISION OF OIL & GAS DEPARTMENT OF ENERGY
DEPARTMENT OF ENERGY, OIL AND GAS DIVISION
APPLICATION FOR A WELL WORK PERMIT

- 4) WELL TYPE: A Oil / Gas B (If "Gas", Production / Underground storage Deep Shallow
- 5) LOCATION: Elevation: 1175' Watershed: Sycamore Creek
District: Sherman 4 County: Calhoun 013 Quadrangle: Millstone 7.5' 4794
- 6) WELL OPERATOR Starling Drilling COMPANY 7) DESIGNATED AGENT William E. Storer
Address 150 Grand Street 4th Floor 47550 Address 710 Virginia Street West Charleston, WV 25301
- 8) OIL & GAS INSPECTOR TO BE NOTIFIED Name Dao Mace Address Route 1 Box 5 Sand Ridge, WV 25274
- 9) DRILLING CONTRACTOR: Name Unknown at this time Address
- 10) PROPOSED WELL WORK: Drill / Drill deeper / Redrill / Stimulate / Plug off old formation / Perforate new formation / Other physical change in well (specify)
- 11) GEOLOGICAL TARGET FORMATION, Riley-Benson
12) Estimated depth of completed well, 4750 feet
13) Approximate trata depths: Fresh, 4340 feet; salt, feet.
14) Approximate coal seam depths: 0 Is coal being mined in the area? Yes No
- 15) CASING AND TUBING PROGRAM See 013-1264

CASING OR TUBING TYPE	SPECIFICATIONS					FOOTAGE INTERVALS		CEMENT FILLUP OR SACS (Cubic feet)	PACKERS
	Size	Grade	Weight per ft.	New	Used	For drilling	Left in well		
Conductor									Kind
Fresh water	9 5/8	LS	33#	x		380	380	to surface	Rule 15.05
Coal									Size
Intermediate	7	J-55	20#	x		2400	2400	100 sbs	
Production	4 1/2	ERW	10.5#	x			4750	430 sbs	Depth set
Tubing									OR AS REQUIRED BY RULES
Linch									Performances
									Top

OFFICE USE ONLY
DRILLING PERMIT

Permit number 47-013-4036 Date January 8 1987

This permit covering the well operator and well location shown below is evidence of permission granted to drill in accordance with the pertinent legal requirements subject to the conditions contained herein and on the reverse hereof. Notification must be given to the District Oil and Gas Inspector. (Refer to No. 8) Prior to the construction of roads, location and pits for any permitted work. In addition, the well operator or his contractor shall notify the proper district oil and gas inspector 24 hours before actual permitted work has commenced.)

The permitted work is as described in the Notice and Application, plat, and reclamation plan, subject to any modifications and conditions specified on the reverse hereof.
Permit expires January 8, 1989 unless well work is commenced prior to that date and prosecuted with due diligence.

Bond:	Agent: RD	Casing: AS	Fee: 34887	Other: AS
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John H. Johnston
Director, Division of Oil and Gas
See the reverse side of the APPLICANT'S COPY for instructions to the well operator.

Received

SEP 16 2013

09/27/2013

RECEIVED
DEC 23 1986

1) Date: December 10, 19 86
Operator's
2) Well No. 1166
3) API Well No. 47 - 013 - 4036
State County Permi

STATE OF WEST VIRGINIA
DEPARTMENT OF ENERGY, DIVISION OF OIL & GAS
NOTICE OF APPLICATION FOR A WELL WORK PERMIT

DIVISION OF OIL & GAS
DEPARTMENT OF ENERGY

- 4) SURFACE OWNER(S) OF RECORD TO BE SERVED
- (i) Name Ralph Mace
Address Route 1 Box 5
Sand Ridge, WV 25274
- (ii) Name _____
Address _____
- (iii) Name _____
Address _____
- 5 (i) COAL OPERATOR Unoperated
Address _____
- 5 (ii) COAL OWNER(S) WITH DECLARATION ON RECORD:
Name Unknown
Address _____
Name _____
Address _____
- 5 (iii) COAL LESSEE WITH DECLARATION ON RECORD:
Name _____
Address _____

TO THE PERSON(S) NAMED ABOVE: You should have received this Form and the following documents:

- (1) The Application for a Well Work Permit on Form WV-2(B) which sets out the parties involved in the drilling or other work, and describes the well and its location and, if applicable, the proposed casing and cementing program;
- (2) The plat (surveyor's map) showing the well location on Form WV-6, and
- (3) The Construction and Reclamation Plan on Form WV-9 (unless the well work is only to plug a well), which sets out the plan for erosion and sediment control and for reclamation for the site and access road.

THE REASON YOU RECEIVED THESE DOCUMENTS IS THAT YOU HAVE RIGHTS REGARDING THE APPLICATION WHICH ARE SUMMARIZED IN THE "INSTRUCTIONS" ON THE REVERSE SIDE OF THE COPY OF THE APPLICATION WV-2(B) DESIGNATED FOR YOU. HOWEVER, YOU ARE NOT REQUIRED TO TAKE ANY ACTION AT ALL.

Take notice that under Chapter 22B of the West Virginia Code, the undersigned well operator proposes to file or has filed this Notice and Application and accompanying documents for a Well Work Permit with the Director of the Division of Oil and Gas, with respect to a well at the location described on attached Application and depicted on attached Form WV-6. Copies of this Notice, the Application, the plat, and the Construction and Reclamation Plan 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 Director of the Division of Oil and Gas.

6) EXTRACTION RIGHTS

Check and provide one of the following:

- Included in the lease or leases or other continuing contract or contracts by which I hold the right to extract oil or gas.
- The requirement of Code 22B-1-8(c)(1) through (4). (see reverse side for specifics.)

7) ROYALTY PROVISIONS

Is the right to extract, produce or market the oil or gas based upon a lease or leases or other contract or contracts providing for flat well royalty or any similar provision for compensation to the owner of the oil or gas in place which is not inherently related to the volume of oil or gas so extracted, produced or marketed? Yes No

If the answer above is No, nothing additional is needed. If the answer is Yes, you may use Affidavit Form WV-60.

See the reverse side for line item instructions, and for instructions concerning the required copies of the Notice and Application, plat, and Construction and Reclamation Plan.

The truth of the information on the Notice and Application is verified and sworn to and the Notice is signed on behalf of the Well Operator in my County and State by
William E. Stover

this 10 day of December, 1986,

My commission expires Aug. 7, 1995.

May J. Stover
Notary Public, Kanawha County,
State of West Virginia

WELL OPERATOR Sterling Drilling & Pro. Co., Inc.

By W. E. Stover
Its Designated Agent
Address 710 Virginia Street East Arcade Bldg.
Charleston, WV 25301
Telephone (304) 342-0121

Received

09/27/2013

SEP 16 2013



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DEC 29 1986

DIVISION OF OIL & GAS
DEPARTMENT OF ENERGY

12/23
Department of ENERGY
Oil and Gas Division

DATE DECEMBER 8, 1986
FILE ID. S.D.P.G. # 1166
APP NO. 47 - 013 - 4036

COPY

CONSTRUCTION AND REPAIR PLAN

Sterling Drilling & Prod. Co.
150 GRAND ST. - 4th FLOOR
WHITE PLAINS, NY 10601
Telephone (914) - 684 - 5830
OWNER: RALPH MACE

WILLIAM E. STOVER
710 VIRGINIA ST. EAST
CHARLESTON, W. VA. 25301
Telephone (304) 342-0121
SOIL CON. DISTRICT: LITTLE KAWA WHA

Revisions to be carried out by STERLING DRILLING & PROD. CO - W.E. STOVER

This plan has been reviewed by Dept. of Energy. All corrections and additions become a part of this plan: 12-24-86 (Date)

Ralph Mace
(Owner)

ADDRESS ROAD	LOCATION
<u>STRUCTURE DRAINAGE DITCH (A)</u>	<u>STRUCTURE DIVERSION DITCH (1)</u>
<u>MATERIAL EARTHEN</u>	<u>MATERIAL EARTHEN</u>
<u>Page Ref. Manual (2-12)</u>	<u>Page Ref. Manual (2-12)</u>
<u>STRUCTURE CROSS DRAINS (B)</u>	<u>STRUCTURE ROCK-RIP-RAP (2)</u>
<u>2% EVERY 250'; 10% EVERY 50'</u>	<u>MATERIAL ROCK</u>
<u>15% EVERY 60'; 20% EVERY 45'</u>	<u>Page Ref. Manual (2-16)(C-4)</u>
<u>Page Ref. Manual (2-4)</u>	
<u>STRUCTURE CULVERT (C)</u>	<u>STRUCTURE Pit (3)</u>
<u>Spacing AS PER O&G. MAN. (AT NATURAL BENCH)</u>	<u>MATERIAL EARTHEN</u>
<u>Page Ref. Manual</u>	<u>Page Ref. Manual N/A</u>

All structures should be inspected regularly and repaired if necessary. All commercial timber is to be cut and stacked and all brush and small timber to be cut and removed from the site before dirt work begins.

RECOMMENDATIONS:

Treatment Area I

Line	<u>2-5*</u> Tons/acre
or correct to <u>6.5</u>	
Fertilizer	<u>500 ± lbs/acre</u> (10-20-20 or equivalent)
Mulch	<u>HAY 2 Tons/acre</u>
Seed*	<u>Redtop clover 5 ± lbs/acre</u>
	<u>Ky 31 40 lbs/acre</u>
	<u>lbs/acre</u>

Treatment Area II

Line	<u>2-5*</u> Tons/acre
or correct to <u>6.5</u>	
Fertilizer	<u>500 ± lbs/acre</u> (10-20-20 or equivalent)
Mulch	<u>HAY 2 Tons/acre</u>
Seed*	<u>REDTOP CLOVER 5 ± lbs/acre</u>
	<u>Ky 31 40 lbs/acre</u>
	<u>lbs/acre</u>

Inoculate all legumes such as vetch, trefoil and clovers with the proper bacterium. Inoculate with 3% recommended amount. * depending on existing soil PH

NOTES: Please return to the Office of Oil and Gas...
Office of Oil and Gas
WV Dept. of Environmental Protection

Received

SEP 16 2013

PLAN PREPARED BY MARK C. ECHARD, LLS
Rte. 71, Box 6
Glenville, W. VA. 2635
PHONE NO. (304) 462-5565

09/27/2013



