



1) Date: September 10, 19 84
 2) Operator's Well No. Houchin #983
 3) API Well No. 47 - 013 - 3792
 State County Permit

STATE OF WEST VIRGINIA
 DEPARTMENT OF MINES, 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: 918.39' Watershed: Cabin Run of Beech Fork LKW-15-J-2
 District: Lee County: Calhoun Quadrange: 7.5' Arnoldsburg
- 6) WELL OPERATOR Sterling Drilling & Prod. Co., Inc. DESIGNATED AGENT Harry L. Berger, Jr.
 Address 220 E. 42nd St. 33rd Floor Address 710 Virginia St., E.
New York, New York 10017 Charleston, W.V. 25301
- 8) OIL & GAS INSPECTOR TO BE NOTIFIED Name Deo Mace
 Address Rt. 1 Box 5
Sandridge, W.V. 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, BROWN SHALE
 12) Estimated depth of completed well, 5125 feet
 13) Approximate strata depths: Fresh, _____ feet; salt, _____ feet.
 14) Approximate coal seam depths: 0 - Is coal being mined in the area? Yes _____

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15) CASING AND TUBING PROGRAM

CASING OR TUBING TYPE	SPECIFICATIONS					FOOTAGE INTERVALS		CEMENT FILL-UP OR SACKS (Cubic feet)	PACKERS
	Size	Grade	Weight per ft.	New	Used	For drilling	Left in well		
Conductor									
Fresh water	9 5/8	LS	33#	X		275'	275'	To Surface	Kinds
Coal									
Intermediate	7"	J-55	20#	X		2000'	2000'	100 sks	Sizes
Production	4 1/2	ERW	10.5#	X			5125'	250 sks	Depths set
Tubing									Perforations:
Liners									Top Bottom

OFFICE USE ONLY
 DRILLING PERMIT

Permit number 47-013-3792

October 4, 19 84
 Date

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, locations 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 October 4, 1986 unless well work is commenced prior to that date and prosecuted with due diligence.

Bond: <u>148</u> BLANKET	Agent: <u>LS</u>	Plat: <u>TS</u>	Casing: <u>TS</u>	Fee: <u>77.75</u> <u>7498</u>
------------------------------------	------------------	-----------------	-------------------	----------------------------------

[Signature]
 Administrator, Office of Oil and Gas

NOTE: Keep one copy of this permit posted at the drilling location.

See the reverse side of the APPLICANT'S COPY for instructions to the well operator.

File
 10/06/2023



OFFICE USE ONLY

PERMIT MODIFICATIONS AND CONDITIONS (IF ANY) TO THE PROPOSED WELL WORK

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OIL & GAS DIVISION

OFFICE USE ONLY

This part of Form IV-2(b) is to record the dates of certain occurrences and any follow-up inspections.

	Date	Date(s)
Application received		
Well work started		
Completion of the drilling process		
Well Record received		
Reclamation completed		

OTHER INSPECTIONS

Reason: _____
Reason: _____

1) Date: September 10, 1984
2) Operator's Well No. 983
3) API Well No. 47-013-3792
State County Permit

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

4) SURFACE OWNER(S) OF RECORD TO BE SERVED
(i) Name Grover C. Houchin
Address Rt. 2 Box 92
Minnora, W.V. 25263
(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 IV-2(B) (or Form IV-4 if the well is to be plugged, 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 IV-6; and
- (3) The Construction and Reclamation Plan on Form IV-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 (FORM IV-2(B) OR FORM 4, DESIGNATED FOR YOU. HOWEVER, YOU ARE NOT REQUIRED TO TAKE ANY ACTION AT ALL.

Take notice that under Chapter 22 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 Administrator of the Office of Oil and Gas, West Virginia Department of Mines, with respect to a well at the location described on attached Application and depicted on attached Form IV-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 Administrator.

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OIL & GAS DIVISION
DEPT. OF MINES

- 6) EXTRACTION RIGHTS
Check and provide one of the following:
 Included is 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 22-4-1-(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 NoXX
- If the answer above is No, nothing additional is needed. If the answer is Yes, you may use Affidavit Form IV-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
Harry L. Berger, Jr.
this 10 day of September, 1984.
My commission expires May 10, 1989.
Notary Public, Kanawha County,
State of West Virginia

WELL
OPERATOR Sterling Drilling & Prod. Co., Inc.
By Harry L. Berger
Its Designated Agent
Address 710 Virginia St., E.
Charleston, W.V. 25301
Telephone 342 - 0121

10/06/2023

I N S T R U C T I O N S T O A P P L I C A N T

CONCERNING THE LINE ITEMS:

- 1) Date of Notice.
- 2) Your well name and number.
- 3) To be filled out by the Office of Oil & Gas.
- 4) & 5) Use separate sheet if necessary.
- 4) Surface owner(s) of record to be served with Notice and Application. However, see also Code § 22-4-1b(b) if "more than three tenants in common or other co-owners of interest described in subsection (a) of this section hold interests in such lands".
- 5(i) "Coal Operator" means any person, firm, partnership, partnership association or corporation that proposes to or does operate a coal mine.
- 5(ii, iii) See Code § 22-4-20.
- 6) See Code § 22-4-11(c). However, in lieu of filing the lease(s) or other continuing contract(s), the Applicant may fill out the information in the space provided below.
- 7) See Code § 22-4-11(d, e).

CONCERNING THE REQUIRED COPIES FOR FILING AND SERVICE:

Filing. Code § 22-4-1k and Regulation 7.02 provide that the original and required copies of the Notice and Application must be filed with the Administrator, accompanied by (i) a plat in the form prescribed by Regulation 11, (ii) a bond in one of the forms prescribed by Regulation 12, or in lieu thereof the other security allowed by Code § 22-4-1k(d) and the reclamation required by Code § 22-4-12b and Regulation 23, (iv) unless previously paid on the same well, the fees required by Code § 22-4-1a(c) and 22-3-12a, and (v) if applicable, the consent required by Code § 22-4-8a from the owner of any water well on dwelling within 200 feet of the proposed well.

Service. In addition, service must be made on the surface owner(s) and the person(s) with an interest in the coal. See Code §§ 22-4-1m, 22-4-2, 22-4-2a, and 22-4-2b.

I N F O R M A T I O N S U P P L I E D U N D E R C O D E § 22-4-11(d)

I N L I E U O F F I L I N G L E A S E (S) A N D O T H E R C O N T I N U I N G C O N T R A C T (S)

Under the oath required to make the verification on the obverse side of this Notice, I depose and say that I am the person who signed the Notice for the Applicant, and that--

- (1) the tract of land is the same tract described in the Application to which this Notice applies, 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:

<u>Grantor, lessor, etc.</u>	<u>Grantee, lessee, etc.</u>	<u>Royalty</u>	<u>Book Page</u>
Grover C. Houchin Rt. 2 Box 92 Minnora, W.V. 25263	Sterling Drilling and Production Co., Inc.	1/8	088/390

10/06/2023



IV-9
(Rev 8-81)

DATE 7-28-84

WELL NO. Houchin # 983 ✓

State of West Virginia API NO. 47 - 013 - 3792

Department of Mines
Oil and Gas Division

CONSTRUCTION AND RECLAMATION PLAN

COMPANY NAME Sterling Drilling & Prod. CODESIGNATED AGENT Sterling Drilling & Prod

Address 360 Madison Ave.-NY, NY 10017 Address c/o H.L.Berger - Chas., WV

Telephone (212) 682-0204 Telephone (304) 342-0121

LANDOWNER Grover C. Houchin SOIL CONS. DISTRICT Little Kanawha SCD

Revegetation to be carried out by Sterling Drilling & Prod. Co.-H.L.Berger (Agent)

This plan has been reviewed by Little Kanawha SCD. All corrections and additions become a part of this plan: 7-30-84
(Date)

Garrett Newton
(SCD Agent)

ACCESS ROAD	LOCATION
Structure <u>Culvert</u> (A)	Structure <u>Diversion Ditch</u> (1)
Size <u>16"</u>	Material <u>Earthen</u>
Page Ref. Manual <u>2-8 Table 3</u>	Page Ref. Manual <u>2-12</u>
Structure <u>Drainage Ditches</u> (B)	Structure <u>Rip-Rap</u> (2)
Location <u>Roadside</u>	Material <u>Rock</u>
Page Ref. Manual <u>2-12</u>	Page Ref. Manual <u>2-9</u>
Structure <u>Cross Drains -- 1/6" pipe</u> (C)	Structure <u></u> (3)
Spacing <u>100' for 1.6-2.0% 400' for 2.5%</u>	Material <u></u>
Page Ref. Manual <u>2-8 Table 4</u>	Page Ref. Manual <u></u>

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OIL & GAS DIVISION
DEPT. OF MINES

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.

REVEGETATION

Treatment Area I

Lime <u>2</u> Tons/acre	or correct to pH <u>6.5</u>
Fertilizer <u>500</u> lbs/acre	(10-20-20 or equivalent)
Mulch <u>Hay or Straw</u> 2 Tons/acre	
Seed* <u>Ky-31</u> 40 lbs/acre	
<u>Ladino Clover</u> 4 lbs/acre	
	lbs/acre

Treatment Area II

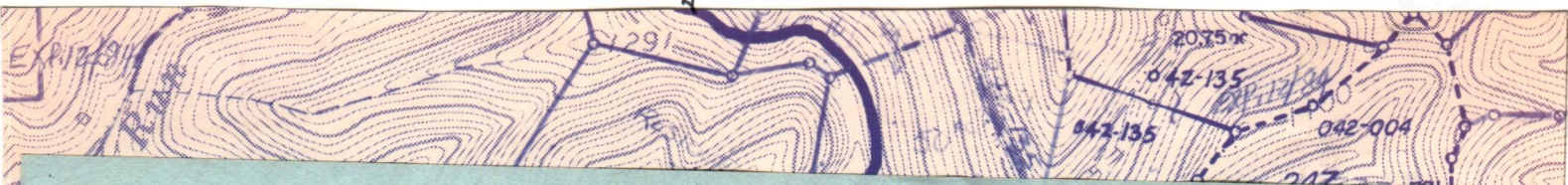
Lime <u>2</u> Tons/acre	or correct to pH <u>6.5</u>
Fertilizer <u>500</u> lbs/acre	(10-20-20 or equivalent)
Mulch <u>Hay or Straw</u> 2 Tons/acre	
Seed* <u>Ky-31</u> 40 lbs/acre	
<u>Ladino Clover</u> 4 lbs/acre	
	lbs/acre

*Inoculate all legumes such as vetch, trefoil and clovers with the proper bacterium. Inoculate with 3X recommended amount. 10/06/2023

PLAN PREPARED BY Richard A. Campbell
ADDRESS Route 1, Box 30
Duck, WV 25063
PHONE NO. (304) 364-5780

NOTES: Please request landowners' cooperation to protect new seedling for one growing season. Attach separate sheets as necessary for comments.

Well Site	⊕
Access Road	—



FORM IV-2(B)
Reverse

SURFACE OWNER'S COPY



**INSTRUCTIONS TO SURFACE OWNERS
AND
EXPLANATION OF METHODS AND TIME LIMITS TO COMMENT
ON OIL AND GAS WELL WORK PERMIT**

The well operator named in the Notice and this Application and the attached materials is applying for a permit from the State to do oil or gas well drilling or other well work. You are being served with these materials because surface owners have the right to file comments before the permit is issued. (NOTE: If the surface tract is owned by more than three persons, in multiple heirship for example, 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, Article 4 of the W. Va. Code. 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 named in the materials and the Administrator of the Office of Oil and Gas in the West Virginia Department of Mines immediately.

NOTE: You are not required to file any comment at all.

Where to file comments and obtain additional information:

Administrator of the Office of Oil and Gas
West Virginia Department of Mines
1615 Washington Street East
Charleston, West Virginia 25311
(304) 348-2057

Who may file comments? If you wish to file comments, you must be an owner of record of (1) an interest in the surface tract on which the well already is or is about to be located, or (2) an interest in any other surface tract under the same oil or gas lease which will be utilized for roads or other land disturbances.

Time limits for comments. The law requires these materials to be delivered on or before the date the operator files his Application. You have **FIFTEEN (15) DAYS** after the filing date to file your comments as provided in **Methods for Filing Comments** below. You may call the Administrator's office at the above telephone number to be sure of the date. However, if you have been contacted by the well operator, and if you have signed a "voluntary statement of no objection" to any of 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.

Methods for filing comments. Comments must be filed in person or received in the mail at the Administrator's office by the time stated above. Check with your postmaster to ensure adequate delivery time or to arrange special expedited handling.

The Administrator for Oil and Gas has the power to deny or condition a well work permit based on your comments on the following grounds:

- "(1) The proposed well work will constitute a hazard to the safety of persons; or
- "(2) The plan for soil erosion and sediment control is not adequate or effective; or
- "(3) Damage would occur to publicly owned lands or resources; or
- "(4) The proposed well work fails to protect fresh water sources or supplies."

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

List of Water Testing Laboratories. The Administrator 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 Administrator's office or an Oil and Gas Inspector to obtain a copy of the list.

DEPT OF MINES
OIL & GAS
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10/06/2023

Surface Owner

Handwritten signature and initials

983
P 522 051 907

RECEIPT FOR CERTIFIED MAIL

NO INSURANCE COVERAGE PROVIDED
NOT FOR INTERNATIONAL MAIL

[See Reverse]

PS Form 3800, Feb. 1982

Sent to	GROVER C. HOUGHIN
Street and No.	RT. 2 BOX 92
P.O., State and ZIP Code	MINNORA, W. V. 25263
Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to whom and Date Delivered	
Return Receipt Showing to whom, Date, and Address of Party	
TOTAL Postage and Fees	
Postmark or date	CHARLES TOWN, WV 9/13/84 25201

RECEIVED

SEP 13 1984

OIL & GAS DIVISION
DEPT. OF MINES

10/06/2023

FERC

WR-35



Date October 16, 1985
Operator's Well No. 983
Farm Houchin
API No. 47 - 013 - 3792

State of West Virginia

DEPARTMENT OF ENERGY
Oil and Gas Division

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

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

LOCATION: Elevation: 918.39' Watershed Cabin Run of Beech Fork
District: Lee County Calhoun Quadrangle Arnoldsburg 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 Grover C. Houchin

ADDRESS Rt. 2 Box 92, Minnora, WV 25263

MINERAL RIGHTS OWNER Same

ADDRESS Same

OIL AND GAS INSPECTOR FOR THIS WORK Deo

Mace ADDRESS Rt.1 Box 5 Sandridge, WV 25274

PERMIT ISSUED October 4, 1984

DRILLING COMMENCED December 12, 1984

DRILLING COMPLETED December 19, 1984

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	361'	361'	135 sks.
8 5/8			
7	2387'	2387'	190 sks.
5 1/2			
4 1/2		5088'	270 sks.
3			
2			
Liners used			

GEOLOGICAL TARGET FORMATION Devonian Shale Depth 5125' feet

Depth of completed well 5100'KB feet Rotary X / Cable Tools

Water strata depth: Fresh not reported feet; Salt 1551' feet

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

OPEN FLOW DATA

Producing formation Devonian Shale Pay zone depth 3379'-4468' feet

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

Final open flow 239 Mcf/d Final open flow Bbl/d

Time of open flow between initial and final tests 19 hours

Static rock pressure 1000 psig (surface measurement) after 72 hours shut in
(If applicable due to multiple completion--)

10/06/2023

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

(Continue on reverse side)

CAL 3792

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

PERFORATIONS

1st Stage: 6/21/85 24 holes 3918'-4468'
 2nd Stage: 6/24/85 22 holes 3379'-3814'

TREATMENT

1st Stage: 6/21/85 800 gals. 15% HCl; 1,500 MSCF N₂
 2nd Stage: 6/24/85 700 gals. 15% HCl; 1,400 MSCF N₂

WELL LOG
 Houchin # 983

FORMATION	COLOR	HARD OR SOFT	TOP FEET	BOTTOM FEET	REMARKS Including indication of all free and salt water, coal, oil and gas
Sandstone and Shale			0	776	All depths from 10'KB
Sandstone			776	851	
Shale			851	919	
Sandstone			919	947	
Shale			947	962	
Sandstone			962	1002	
Shale			1002	1015	
Sandstone			1015	1094	
Siltstone and Shale			1094	1470	
Salt Sand			1470	1531	Gas @ 1521'
Shale			1531	1538	
Salt Sand			1538	1566	Salt water @ 1551'
Shale			1566	1574	
Salt Sand			1574	1642	
Sandstone and Shale			1642	1729	
Little Lime			1729	1754	
Blue Monday			1754	1770	
Pencil Cave			1770	1779	
Big Lime			1779	1908	
Big Injun			1908	1940	
Silty Shale			1940	2258	
Sunbury Shale			2258	2274	
Siltstone and Shale			2274	2586	
Gordon			2586	2613	
Shale			2613	4604	Top of Java Formation @ 4438'
Benson			4604	4634	
Shale			4634	4730	Top of Angola Shale @ 4648'
Alexander			4730	4846	
Shale			4846	5110	Top of Rhinestreet Shale @ 4943'
Total Depth				5110	

(Attach separate sheets as necessary)

Sterling Drilling & Production Co., Inc.

Well Operator

By: *William E. Slover*

10/06/2023

Date: *October 16, 1985*

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 all, encountered in the drilling of a well."

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

RECEIVED
DEC 1 8 1984

OIL & GAS DIVISION

INSPECTOR'S WELL REPORT DEPT. OF MINES

Permit No. 13-3792

Oil or Gas Well
(KIND)

Company Sterling
 Address _____
 Farm Houchin
 Well No. 983
 District See County Cal.
 Drilling commenced 12-12-84
 Drilling completed _____ Total depth _____
 Date shot _____ Depth of shot _____
 Initial open flow _____ /10ths Water in _____ Inch
 Open flow after tubing _____ /10ths Merc. in _____ Inch
 Volume _____ Cu. Ft.
 Rock pressure _____ lbs. _____ hrs.
 Oil _____ bbls., 1st 24 hrs.
 Fresh water _____ feet _____ feet
 Salt water _____ feet _____ feet

CASING AND TUBING	USED IN DRILLING	LEFT IN WELL	PACKERS
Size			
16			Kind of Packer _____
13			
10			Size of _____
8 1/4			
6 3/4			Depth set _____
5 3/16			
3			Perf. top _____
2			Perf. bottom _____
Liners Used			Perf. top _____
			Perf. bottom _____

CASING CEMENTED _____ SIZE _____ No. FT. _____ Date _____
 NAME OF SERVICE COMPANY _____
 COAL WAS ENCOUNTERED AT _____ FEET _____ INCHES
 _____ FEET _____ INCHES FEET _____ INCHES
 _____ FEET _____ INCHES FEET _____ INCHES

Drillers' Names Hunt 1

Remarks:
361' of 9 5/8" casing, 135 SKS cement, Doneill 12-13-84
cement circulated,

12-13-84
DATE

D. J. Moore 10/06/2023
DISTRICT WELL INSPECTOR

STATE OF WEST VIRGINIA
DEPARTMENT OF MINES
OIL AND GAS DIVISION

JAN 14 1986

FINAL INSPECTION REQUEST
INSPECTOR'S COMPLIANCE REPORT

Permit No. 13-3792 (10-04-86) County See 1 Colfax
 Company Starby Farm Hawthorn
 Inspector _____ Well No. 983
 Date _____

RULE	DESCRIPTION	IN COMPLIANCE	
		Yes	No
23.06	Notification Prior to starting Work	_____	_____
25.04	Prepared before Drilling to prevent waste	_____	_____
25.03	High-Pressure Drilling	_____	_____
16.01	Required Permits at wellsite	_____	_____
15.03	Adequate Fresh Water Casing	_____	_____
15.02	Adequate Coal Casing	_____	_____
15.01	Adequate Production Casing	_____	_____
15.04	Adequate Cement Strength	_____	_____
23.02	Maintained Access Roads	_____	_____
25.01	Necessary Equipment to prevent Waste	_____	_____
23.03	Reclaimed Drilling Site	_____	_____
23.04	Reclaimed Drilling Pits	_____	_____
23.05	No surface or underground Pollution	_____	_____
7.03	Identification Markings	_____	_____

COMMENTS: Release Declaration

I have inspected the above well and (HAVE/HAVE NOT) found it to be in compliance with all of the rules and regulations of the Office of Oil and Gas Department of Mines of the State of West Virginia.

SIGNED: Dow Mace
 DATE: 1-10-86

10/06/2023

APPLICATION FOR DETERMINATION OF THE MAXIMUM LAWFUL PRICE UNDER THE NATURAL GAS POLICY ACT (NGPA)

RECEIVED
OCT 18 1985

1.0 API well number: 47 - 013 - 3792
(If not assigned, leave blank. 14 digits.)

2.0 Type of determination being sought: 107
(Use the codes found on the front of this form.)
Section of NGPA

3.0 Depth of the deepest completion location: (Only needed if sections 103 or 107 in 2.0 above.) 5100 feet

4.0 Name, address and code number of applicant: (25 letters per line maximum. If code number not available, leave blank.)
Sterling Drilling and Production Co. Inc. 018084
Name Seller Code
710 Virginia St. East, Arcade Building
City State Zip Code
Charleston, WV 25301

5.0 Location of this well: (Complete (a) or (b).)
(a) For onshore wells (25 letters maximum for field name.)
Lee
Field Name
Calhoun
County State WV

(b) For OCS wells:
Area Name Block Number
Date of Lease:
Mo. Day Yr. OCS Lease Number

(c) Name and identification number of this well: (25 letters and digits maximum.)
Houchin #983

(d) If code 4 or 5 in 2.0 above, name of the reservoir: (25 letters maximum.)

6.0 (a) Name and code number of the purchaser: (25 letters and digits maximum. If code number not available, leave blank.)
Brooklyn Union
Name Buyer Code

(b) Date of the contract:
Mo. Day Yr.

(c) Estimated total annual production from the well: 7.17 Million Cubic Feet

	(a) Base Price	(b) Tax	(c) All Other Prices (Indicate (+) or (-).)	(d) Total of (a), (b) and (c)
7.0 Contract price: (As of filing date. Complete to 3 decimal places.)	S/MMBTU 6.076	---	---	---
8.0 Maximum levelized rate: (As of filing date. Complete to 3 decimal places.)	S/MMBTU 6.076	---	---	---

9.0 Person responsible for this application:
William E. Stover Designated Agent
Name Title
Signature
October 16, 1985
Date Application is Completed
304-342-0121
Phone Number

Agency Use Only
Date Received by Juris. Agency
OCT 18 1985
Date Received by FERC

10/06/2023

DEPARTMENT OF ENERGY, OIL AND GAS DIVISION

COVER SHEET, STATE APPLICATION FOR WELL CLASSIFICATION

NOV 15 1985

Date: October 16, 19 85

47550

AGENCY USE ONLY

Applicant's Name: Sterling Drilling & Production Co.

Inc. WELL DETERMINATION FILE NUMBER

Address: 710 Virginia St., E., Arcade Bldg.
Charleston, WV 25301

851018-1073-013-3792

Gas Purchaser Contract No. _____

Use Above File Number on all Communications Relating to This Well

Date of Contract _____
(Month, day and year)

SDP #983

First Purchaser: Brooklyn Union Gas

Designated Agent: William E. Stover

Address: 195 Montague Street
(Street or P.O. Box)
Brooklyn NY 11201
(City) (State) (Zip Code)

Address: 710 Virginia St., E, Arcade B
Charleston, WV 25301

FERC Seller Code _____

FERC Buyer Code _____

NAME AND TITLE OF PERSON TO WHOM QUESTIONS CONCERNING THIS APPLICATION SHALL BE ADDRESSED:

Name: William E. Stover
(Print)

Vice President/Drilling Super
(Title)

Signature: *William E. Stover*

Address: 710 Virginia St., E., Arcade Bldg.
(Street or P.O. Box)
Charleston, WV 25301
(City) (State) (Zip Code)

Telephone: (304) 342-0121
(Area Code) (Phone Number)

(Certificate of Proof of Service to Purchaser)

NGPA Category Applied For

NGPA SECTION/SUBSECTION

- 102 New Natural Gas
- 102-2 2.5 Mile Test
- 102-3 1000 Foot Deeper Test
- 102-4 New Onshore Reservoir

- 108 Stripper Well Natural Gas
- 108- Stripper Well
- 108-1 Seasonally Affected
- 108-2 Enhanced Recovery
- 108-3 Temporary Pressure Buil

- 103 New Onshore Production Well
- 103 New Onshore Production Well

- 107 High Cost Natural Gas
- 107-0 Deep (more than 15,000 feet)
- 107-1 Geopressured Brine
- 107-2 Coal Seams
- x 107-3 Devonian Shale
- 107-5 Production enhancement
- 107-6 New Tight Formation
- 107-7 Recompletion Tight Formation

AGENCY USE ONLY

QUALIFIED

10/06/2023

RECEIVED
OCT 18 1985

DIVISION OF OIL & GAS
DEPARTMENT OF ENERGY

Date Received

Determination Date

APPLICATION FOR DETERMINATION OF THE MAXIMUM LAWFUL
PRICE UNDER THE NATURAL GAS POLICY ACT

Operator: Sterling Drilling & Production Co. Agent: William E. Stover

Type Determination being sought - 107 (Devonian Shale)

API Well No.: 47-013-3792 Well Name: Houchin (983)

West Virginia Office of Oil and Gas County: Calhoun

References: SJA File No.

Vol. Page Line

I. NOTE: A Gamma Ray Log has been marked with the (a) Shale Base Line, (b) a line representing 0.7 x (Shale Base Line), (c) intervals with Gamma Ray units less than 0.7 x (Shale Base Line) and that log is included with this analysis.

II. Gamma Ray elevation indices:

A. Shale Base Line (API Units)

1. GR Value at Base Line = 165 * API Units
2. Remarks:

Note: Behind casing and cement (2274' - 2397') Shale Base Line shifts to 110 API Units.

B. Gamma Ray Log Value at 0.7 x Value at Base Line

1. GR Value = 115.5 * API Units
2. Calculation: $0.7 \text{ (GR Value at Base Line)}$
 $0.7 \text{ (165 *)} = \underline{115.5}$ API Units
 $0.7 \text{ (110*)} = 77$ API Units

III. Intervals with GR index less than 0.7 x (Value at Base Line):

<u>Interval</u>		<u>Thickness of Interval Feet</u>	<u>Feet of less than* 0.7 (Shale Base Line) Feet</u>
<u>From**</u>	<u>To***</u>		
2274	5100	2826	112

Total Devonian Interval 2826

Total Less Than 0.7 (Shale Base) 112

% Less Than 0.7 (Shale Base Line) = $\frac{0.0396}{1} \times 100 = \underline{\underline{4.0}}\%$

*Marked on log included with analysis.

**Top of Devonian Section Recorded on First Interval in this Column.

***Lesser of TD or Bottom of Devonian Section Recorded as last Interval in this Column.

10/06/2023

DEPARTMENT OF ENERGY, OIL AND GAS DIVISION

Operator's Well No. 983

API Well No.

47 - 013 - 3792
State County Permit

WELL CLASSIFICATION FORM
HIGH COST GAS WELL - DEVONIAN SHALE
NGPA Section 107

DESIGNATED AGENT William E. Stover

ADDRESS 710 Virginia St., E., Arcade Bldg.
Charleston, WV 25301

LOCATION Elevation 918.39'

WELL OPERATOR Sterling Drilling & Prod. Co., Inc. Watershed Cabin Run of Beech Fork

ADDRESS 710 Virginia St., E., Arcade Bldg.
Charleston, WV 25301

Dist. Lee County Calhoun Quad. Arnoldsbu

Gas Purchase Contract No. _____

GAS PURCHASER Brooklyn Union Gas

Meter Chart Code _____

ADDRESS 195 Montague Street

Date of Contract _____

Brooklyn, NY 11201

* * * * *

Date surface drilling began: December 12, 1984

Indicate the bottom hole pressure of the well and explain how this was calculated.

Bottom Hole Pressure. PSIA -- Pf = Pwe XLGS

$$t = 60 + (0.0075 \times \underline{5110}) + 459.67 = \underline{557.995} \cdot X = \frac{1}{53.34} / \frac{557.995}{0.0000336} = \underline{0.0000336}$$

$$Pf \underline{1000} \times 2.7183 \underline{0.00003360} \times \underline{0.690} \times \underline{1.08} \times \underline{3923.5} = \underline{1103.2} \text{ PSI}$$

AFFIDAVIT

I, William E. Stover, having been first sworn according to law, state that I have calculated the percentage of footage of the producing interval which is not Devonian Shale as indicated by a Gamma Ray index of less than 0.7 if a Gamma Ray log described in subparagraph (3)(i) or (3)(ii)(A) has been filed, or as indicated by the report described in subparagraph (3)(ii)(B); I have demonstrated that the percentage of potentially disqualifying non-shale footage is equal to or less than five (5) percent of the gross Devonian age interval; and I have no knowledge of any information not described in the application which is inconsistent with a conclusion that the well qualifies as a high-cost natural gas well.

William E. Stover

STATE OF WEST VIRGINIA

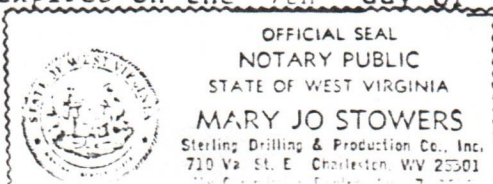
COUNTY OF Kanawha, TO-WIT:

I, Mary Jo Stowers, a Notary Public in and for the state and county aforesaid, do certify that William E. Stover, whose name is signed to the writing above, bearing date the 16th day of October, 1910/06/2023 acknowledged the same before me, in my county aforesaid.

Given under my hand and official seal this 16th day of October, 1985.

My term of office expires on the 7th day of August, 1995.

(NOTARIAL SEAL)



Mary Jo Stowers
Notary Public

IV-27
9-83

47550



STATE OF WEST VIRGINIA
DEPARTMENT OF MINES

Date: Jan. 5, 1985
Well No: Mace 1007
API NO: 47 - 13 - 3797
State County Permit

813

Oil and Gas Division NOTICE OF VIOLATION

WELL TYPE: Oil X / Gas X / Liquid Injection / Waste Disposal /
Of "Gas" - Production X / Storage / Deep / Shallow X /
LOCATION: Elevation: Watershed: W of Run of Sept 7th
District: Sherman County: Calhoun Quadrangle:
WELL OPERATOR Sturley Drilling & Prod DESIGNATED AGENT Kenny Berger
Address Address 710 Virginia St E
Charleston WV 25301

The above well is being posted this 5 day of Jan, 1985, for a violation of Code 22-4-14 and/or Regulation , set forth in detail as follows:
(USE REVERSE SIDE OF THIS NOTICE IF NECESSARY)

NATURAL GAS SHALL NOT BE WASTED WHILE WELL IS IN PROCESS OF PRODUCING OIL.

A copy of this notice has been posted at the well site and sent by certified or registered mail to the indicated well operator or his designated agent.

You are hereby granted until Jan. 5, 1985, to abate this violation. Failure to abate the violation may result in action by the Department under Code 22-4-17 or Code 22-4-18.

H W Mace
Oil and Gas Inspector
Address

Telephone: **10/06/2023**

15' LATITUDE 38° 50'

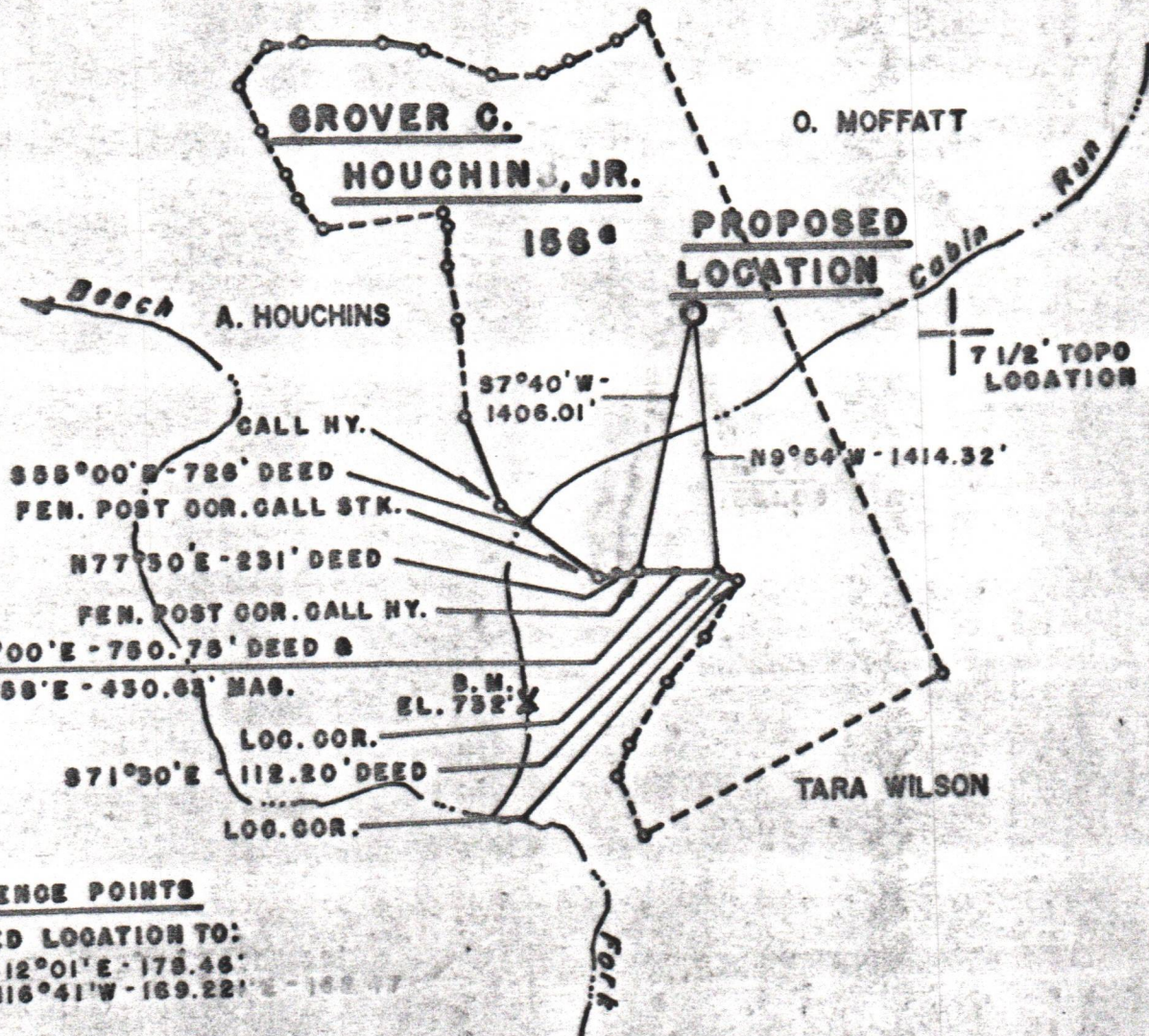
3450'

7 1/2' LATITUDE 38° 47' 30"

AMOS WALLBROWN HRS.

MAGNETIC NORTH

7 1/2' LONGITUDE 81° 10'
15' LONGITUDE 81° 10'
6650'



REFERENCE POINTS

PROPOSED LOCATION TO:
 6" WAL. - S12°01'E - 178.46'
 6" POP. - N16°41'W - 169.22'

N. B. N-26, Pg. 64

FILE NO 042-199 NO. 2
 MAP NO. 58-C
 SCALE 1" = 1000'
 MINIMUM DEGREE OF ACCURACY 1:200
 PROVEN SOURCE OF ELEVATION U.S.G.S. D.M.
 SHOWN EL. 732'

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) Harry L. Berger, Jr. L.L.S. 748
 HARRY L. BERGER, JR.



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



DATE JUNE 14, 1984
 OPERATOR'S WELL NO. 993
 API WELL NO. 47-013-3792
 STATE COUNTY PERMIT

STATE OF WEST VIRGINIA
 DEPARTMENT OF MINES
 OIL AND GAS DIVISION

WELL TYPE: OIL ___ GAS X LIQUID INJECTION ___ WASTE DISPOSAL ___
 (IF "GAS.") PRODUCTION X STORAGE ___ DEEP ___ SHALLOW X
 LOCATION ELEVATION 918.39' WATER SHED CABIN RUN OF BERCH FORK
 DISTRICT LEE COUNTY CALHOUN
 QUADRANGLE 7 1/2' ARNOLDSBURG (ARNOLDSBURG S.W.)
 SURFACE OWNER GROVER C. HOUCHIN, JR. ACREAGE 186
 OIL & GAS ROYALTY OWNER GROVER C. HOUCHIN, JR. LEASE ACREAGE 186
 LEASE NO. 042-199

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

10/06/2023

PLUG AND ABANDON ___ CLEAN OUT AND REPLUG ___
 TARGET FORMATION BROWN SHALE ESTIMATED DEPTH 5125'
 OPERATOR STERLING DRILLING & PRODUCTION CO. INC. AGENT HARRY L. BERGER, JR.
 ADDRESS 360 MADISON AVE. - 5TH FLOOR ADDRESS 710 VIRGINIA ST., E.
NEW YORK, N.Y. 10017 CHARLESTON, W.V. 25301



1) Date: September 10, 1984
 2) Operator's Well No. Houchin #983
 3) API Well No. 47
 State _____ County _____ Permit _____

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

- 4) WELL TYPE: A Oil _____ / Gas X /
 B (If "Gas", Production X / Underground storage _____ / Deep _____ / Shallow X /)
- 5) LOCATION: Elevation: 918.39' / Watershed: Cabin Run of Beech Fork
 District: Lee / County: Calhoun / Quadrangle: 7.5' Arnoldsburg
- 6) WELL OPERATOR Sterling Drilling & Prod. Co., Inc. / 7) DESIGNATED AGENT Harry L. Berger, Jr.
 Address 220 E. 42nd St. 33rd Floor / Address 710 Virginia St., E.
New York, New York 10017 / Charleston, W.V. 25301
- 8) OIL & GAS INSPECTOR TO BE NOTIFIED / 9) DRILLING CONTRACTOR:
 Name Deo Mace / Name UNKNOWN AT THIS TIME
 Address Rt. 1 Box 5 / Address _____
Sandridge, W.V. 25274 / _____
- 10) PROPOSED WELL WORK: Drill X / Drill deeper _____ / Redrill _____ / Stimulate _____
 Plug off old formation _____ / Perforate new formation _____
 Other physical change in well (specify) _____
- 11) GEOLOGICAL TARGET FORMATION, BROWN SHALE
 12) Estimated depth of completed well, 5125 feet
 13) Approximate strata depths: Fresh, _____ feet; salt, _____ feet.
 14) Approximate coal seam depths: 0- Is coal being mined in the area? Yes _____ / No X /
- 15) CASING AND TUBING PROGRAM

CASING OR TUBING TYPE	SPECIFICATIONS					FOOTAGE INTERVALS		CEMENT FILL-UP OR SACKS (Cubic feet)	PACKERS
	Size	Grade	Weight per ft.	New	Used	For drilling	Left in well		
Conductor									Kinds
Fresh water	<u>9 5/8</u>	<u>LS</u>	<u>33#</u>	<u>X</u>		<u>275'</u>	<u>275'</u>	<u>To Surface</u>	
Coal									Sizes
Intermediate	<u>7"</u>	<u>J-55</u>	<u>20#</u>	<u>X</u>		<u>2000'</u>	<u>2000'</u>	<u>100 sks</u>	
Production	<u>4 1/2</u>	<u>CRW</u>	<u>10.5#</u>	<u>X</u>			<u>5125'</u>	<u>250 sks</u>	Depths set
Tubing									
Liners									Perforations: Top Bottom

The law requires a comment period for surface owners. However, the permit can be issued in less than 15 days from the filing of the Application if the surface owner(s) of record sign(s) the following "Voluntary Statement of No Objection" on a facsimile of this surface owner's copy of the Application.

VOLUNTARY STATEMENT OF NO OBJECTION

I hereby state that I have read the instructions to surface owners on the reverse side of this Application for a Well Work Permit, and that I have received copies of (1) a Notice of Application for a Well Work Permit on Form IV-2(A), (2) an Application for a Well Work Permit on Form IV-2(B), (3) a survey plat on Form IV-6, and (4) a Construction and Reclamation Plan on Form IV-9, 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 based on those materials.

(For execution by corporation, partnership, etc.)

(For execution by natural persons)

NAME: _____
 By _____
 Its _____ Date _____

St. Crow Houchin Jr. Date: _____
 (Signature)
 _____ Date: _____
 (Signature)

RECEIVED
 DEPT. OF MINES
 OIL & GAS DIVISION
 SEP 15 1984



**INSTRUCTIONS TO SURFACE OWNERS
AND
EXPLANATION OF METHODS AND TIME LIMITS TO COMMENT
ON OIL AND GAS WELL WORK PERMIT**

The well operator named in the Notice and this Application and the attached materials is applying for a permit from the State to do oil or gas well drilling or other well work. You are being served with these materials because surface owners have the right to file comments before the permit is issued. (NOTE: If the surface tract is owned by more than three persons, in multiple heirship for example, 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, Article 4 of the W. Va. Code. 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 named in the materials and the Administrator of the Office of Oil and Gas in the West Virginia Department of Mines immediately.

NOTE: You are not required to file any comment at all.

Where to file comments and obtain additional information:

Administrator of the Office of Oil and Gas
West Virginia Department of Mines
1615 Washington Street East
Charleston, West Virginia 25311
(304) 348-2057

Who may file comments? If you wish to file comments, you must be an owner of record of (1) an interest in the surface tract on which the well already is or is about to be located, or (2) an interest in any other surface tract under the same oil or gas lease which will be utilized for roads or other land disturbances.

Time limits for comments. The law requires these materials to be delivered on or before the date the operator files his Application. You have **FIFTEEN (15) DAYS** after the filing date to file your comments as provided in **Methods for Filing Comments** below. You may call the Administrator's office at the above telephone number to be sure of the date. However, if you have been contacted by the well operator, and if you have signed a "voluntary statement of no objection" to any of 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.

Methods for filing comments. Comments must be filed in person or received in the mail at the Administrator's office by the time stated above. Check with your postmaster to ensure adequate delivery time or to arrange special expedited handling.

The Administrator for Oil and Gas has the power to deny or condition a well work permit based on your comments on the following grounds:

- “(1) The proposed well work will constitute a hazard to the safety of persons; or
- “(2) The plan for soil erosion and sediment control is not adequate or effective; or
- “(3) Damage would occur to publicly owned lands or resources; or
- “(4) The proposed well work fails to protect fresh water sources or supplies.”

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

List of Water Testing Laboratories. The Administrator 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 Administrator's office or an Oil and Gas Inspector to obtain a copy of the list.

DEPT. OF MINES
OIL & GAS DIVISION
FEB 13 1981
RECEIVED



IV-9
(Rev 8-81)

DATE 7-28-84

WELL NO. Houchin # 983 ✓

State of West Virginia API NO. 47 - 013 - 3792

Department of Mines
Oil and Gas Division

CONSTRUCTION AND RECLAMATION PLAN

COMPANY NAME Sterling Drilling & Prod. CODESIGNATED AGENT Sterling Drilling & Prod.

Address 360 Madison Ave.-NY, NY 10017 Address c/o H.L. Berger - Chas., WV

Telephone (212) 682-0204 Telephone (304) 342-0121

LANDOWNER Grover C. Houchin SOIL CONS. DISTRICT Little Kanawha SCD

Revegetation to be carried out by Sterling Drilling & Prod. Co.-H.L. Berger (Agent)

This plan has been reviewed by Little Kanawha SCD. All corrections and additions become a part of this plan: 7-30-84
(Date)

Garrett Newton
(SCD Agent)

ACCESS ROAD

LOCATION

Structure Culvert (A)

Size 16"

Page Ref. Manual 2-8 Table 3

Structure Drainage Ditches (B)

Location Roadside

Page Ref. Manual 2-12

Structure Cross Drains -- 1/6" pipe (C)

Spacing 100' for 16-20% 400' for 2-5%

Page Ref. Manual 2-8 Table 4

Structure Diversion Ditch (1)

Material Earthen

Page Ref. Manual 2-12

Structure Rip-Rap (2)

Material Rock

Page Ref. Manual 2-9

Structure _____ (3)

Material _____

Page Ref. Manual _____

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SEP 13 1984
OIL & GAS DIVISION
DEPT. OF MINES

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.

REVEGETATION

Treatment Area I

Lime 2 Tons/acre
or correct to pH 6.5

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

Mulch Hay or Straw 2 Tons/acre

Seed* Ky-31 40 lbs/acre

Ladino Clover 4 lbs/acre

_____ lbs/acre

Treatment Area II

Lime 2 Tons/acre
or correct to pH 6.5

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

Mulch Hay or Straw 2 Tons/acre

Seed* Ky-31 40 lbs/acre

Ladino Clover 4 lbs/acre

_____ lbs/acre

*Inoculate all legumes such as vetch, trefoil and clovers with the proper bacterium. Inoculate with 3X recommended amount. 10/06/2023

PLAN PREPARED BY Richard A. Campbell

ADDRESS Route 1, Box 30

Duck, WV 25063

PHONE NO. (304) 364-5780

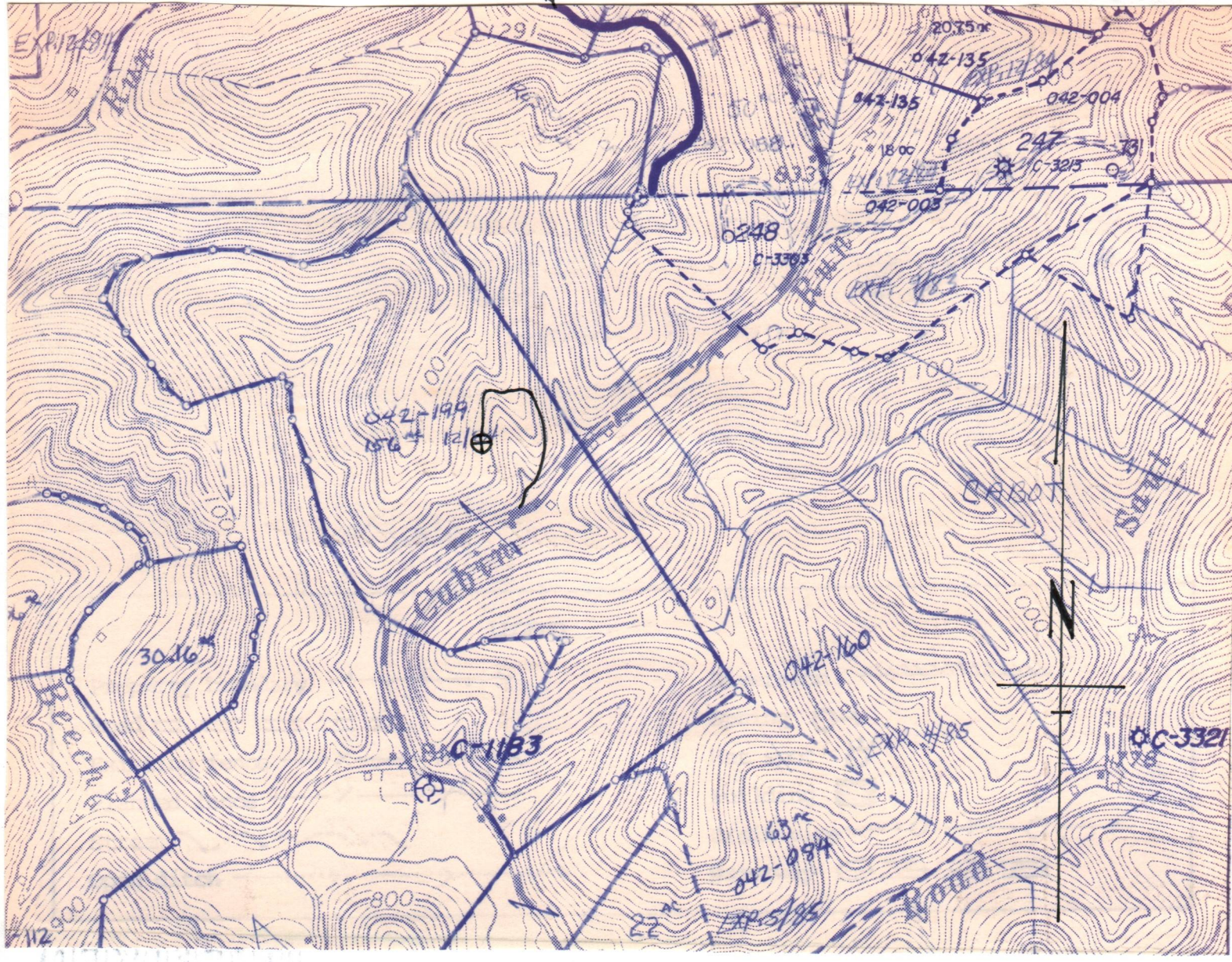
NOTES: Please request landowners' cooperation to protect new seedling for one growing season. Attach separate sheets as necessary for comments.

IV-9 REVERSE
(FEV 6-81)

INVOLVED TOPOGRAPHIC MAP
QUADRANGLE 7 1/2' Arnoldsburg
Arnoldsburg SW

LEGEND

Well Site	⊕
Access Road	—



DEPT. OF MINES
303 MIAMI ST. S.W.
TALLAHASSEE, FLA. 32303

