

FILE COPY
RECEIVED
JUL 9 1985



1) Date: June 3, 19 85
2) Operator's Well No. JK-1213
3) API Well No. 47 - 017-3451
State County Permit

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

OIL & GAS DIVISION APPLICATION FOR A WELL WORK PERMIT

DEPT. OF MINES

- 4) WELL TYPE: A Oil / Gas X /
B (If "Gas", Production X / Underground storage / Deep / Shallow X /)
- 5) LOCATION: Elevation: 965' Watershed: Hugle Run
District: Central County: Doddridge Quadrangle: West Union 7.5' 70
- 6) WELL OPERATOR J & J Enterprises, Inc. 7) DESIGNATED AGENT Richard Reddecliff
Address P.O. Box 48 Address P.O. Box 48
Buckhannon, WV 26201 24150 Buckhannon, WV 26201
- 8) OIL & GAS INSPECTOR TO BE NOTIFIED 9) DRILLING CONTRACTOR:
Name Mike Underwood Name S.W. Jack Drilling Co.
Address Rt. 2 Box 114 Address P.O. Box 48
Salem, WV 26426 Buckhannon, WV 26201
- 10) PROPOSED WELL WORK: Drill X / Drill deeper / Redrill / Stimulate X /
Plug off old formation / Perforate new formation
Other physical change in well (specify)
- 11) GEOLOGICAL TARGET FORMATION, Rhine Street
- 12) Estimated depth of completed well, 5995' feet
- 13) Approximate trata depths: Fresh, 130' feet; salt, N/A feet.
- 14) Approximate coal seam depths: N/A 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	<u>11 3/4</u>	<u>H-40</u>	<u>42</u>	<u>X</u>		<u>20' 150'</u>	<u>150'</u>	<u>0 Sacks</u>	<u>CTS Kinds NEAT</u>
Fresh water	<u>8 5/8</u>	<u>ERW</u>	<u>23</u>	<u>X</u>		<u>1565'</u>	<u>1565'</u>	<u>To Surface</u>	
Coal	<u>8 5/8</u>	<u>ERW</u>	<u>23</u>	<u>X</u>		<u>1565'</u>	<u>1565'</u>	<u>To Surface</u>	Sizes
Intermediate									
Production	<u>4 1/2</u>	<u>J-55</u>	<u>10.5</u>	<u>X</u>		<u>5995'</u>	<u>5945'</u>	<u>300 Sacks</u>	Depths set
Tubing								<u>or as required by rule 15-01</u>	
Liners									Perforations:
									Top Bottom

OFFICE USE ONLY
DRILLING PERMIT

Permit number 47-017-3451

July 17 19 85

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 July 17, 1987 unless well work is commenced prior to that date and prosecuted with due diligence.

Bond: <u> </u>	Agent: <u>JJB</u>	Plat: <u>MU</u>	Casing: <u>MU</u>	Fee: <u>2000</u>
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[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

11/10/2023

OFFICE USE ONLY

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

NO.	DATE	DESCRIPTION	BY	REMARKS
1	11/10/2020	Application received		
2		Well work started		
3		Completion of the drilling process		
4		Well Record received		
5		Reclamation completed		

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: _____



IV-9
(Rev 8-81)

DATE May 10., 1985

WELL NO. JK-1213

State of West Virginia API NO. 47 - 017 - 3457

Department of Mines
Oil and Gas Division

CONSTRUCTION AND RECLAMATION PLAN

COMPANY NAME J & J ENTERPRISES, INC. DESIGNATED AGENT RICHARD M. REDDECLIFF
 Address P.O. BOX 48, BUCKHANNON, WV 26201 Address P.O. BOX 48, BUCKHANNON, WV 26201
 Telephone 472 - 9403 Telephone 472 - 9403
 LANDOWNER Virginia L. Cottrill SOIL CONS. DISTRICT West Fork
 Revegetation to be carried out by J & J ENTERPRISES, INC. (Agent)

This plan has been reviewed by West Fork SCD. All corrections and additions become a part of this plan: 5/28/85 (Date)

Kenneth E Knight
(SCD Agent)

RECEIVED
JUL 9 1985

OIL & GAS DIVISION
DEPT. OF MINES

ACCESS ROAD	LOCATION
Structure <u>Drainage Ditch</u> (A)	Structure <u>Diversion Ditch</u> (1)
Spacing <u>along inside rd. cuts</u>	Material <u>Earthen</u>
Page Ref. Manual <u>2-12</u>	Page Ref. Manual <u>2-12</u>
Structure <u>Road Culvert</u> (B)	Structure <u>Rip-Rap</u> (2)
Spacing <u>(accord. to O&G Manual) (at natural drains) One 16" with riprapped outlet</u>	Material <u>Logs &/or Brush &/or Stone</u>
Page Ref. Manual <u>2-7</u>	Page Ref. Manual <u>N/A</u>
Structure <u>Cross Drains</u> (C)	Structure <u>Sediment Barrier</u> (3)
Spacing <u>as per table 1 in manual (2-4) with riprapped outlet</u>	Material <u>Staked Hay Bales</u>
Page Ref. Manual <u>2-1</u>	Page Ref. Manual <u>2-16</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.

REVEGETATION

Treatment Area I

Lime ACCORDING TO pH 3 Tons/acre
or correct to pH 6.5

Fertilizer 600 lbs/acre
(10-20-20 or equivalent)

Mulch Hay 2 Tons/acre

Seed* KY-31 30 lbs/acre

Annual Rye 10 lbs/acre

Red Clover 5 lbs/acre

Treatment Area II

Lime According To pH Test 3 Tons/acre
or correct to pH 6.5

Fertilizer 600 lbs/acre
(10-20-20 or equivalent)

Mulch Hay 3 Tons/acre

Seed* KY-31 30 lbs/acre

Annual Rye 10 lbs/acre

Red Clover 5 lbs/acre

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

PLAN PREPARED BY Smith Land Surveying Co. 11/10/2023



ADDRESS 111 South Street
Glenville, WV 26351

PHONE NO. 462 - 5634

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

ATTACH OR PHOTOCOPY SECTION
OF INVOLVED TOPOGRAPHIC MAP.
QUADRANGLE West Union 7.5'

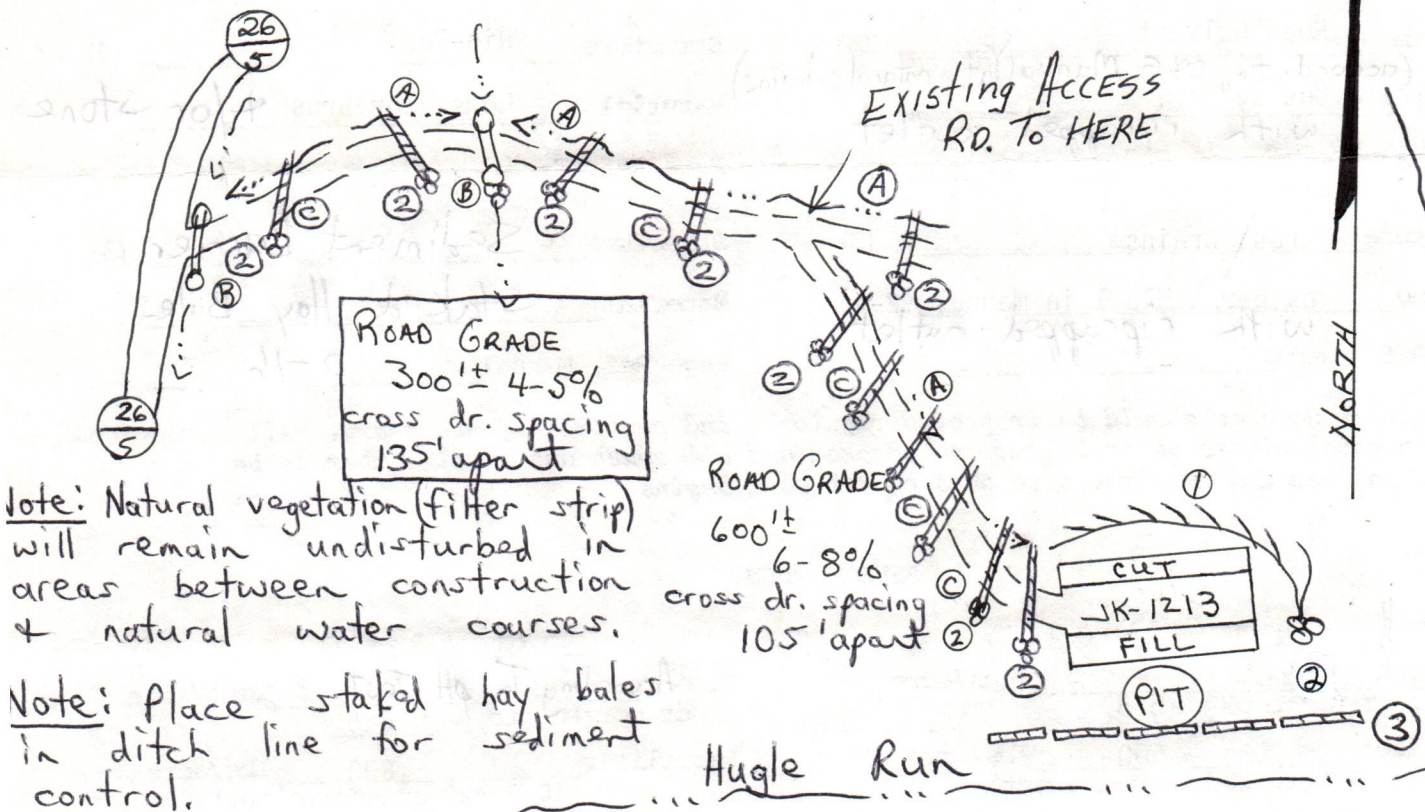
LEGEND

WELL SITE  ACCESS ROAD 



WELL SITE PLAN


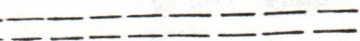


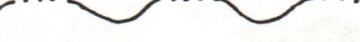

Sketch to include well location, existing access road, roads to be constructed, well site, drilling pits and necessary structures numbered or lettered to correspond with the first part of this plan. Include all natural drainage.


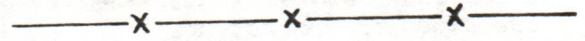
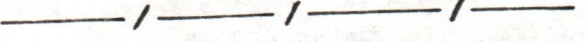





Drilling pit may vary in location other than that shown on this plan and/or other pits may be added due to soil type, newly discovered water systems, and the encounter of rock when building location.

~~Access road subject to change between company and land owner, or aquirement of right-of-way. If change is made, a revised reclamation plan will be submitted. All cuts 2:1 slope. All topsoil to be stockpiled and used in reclamation. All grades for roads and locations as well as sediment structures shown on drawing.~~

LEGEND

DRAIN PIPE 
ROAD 
DIVERSION 
WATERWAY 
STREAM 
OPEN DITCH 

PROPERTY BOUNDARY  11/10/2023
EXISTING FENCE 
PLANNED FENCE 
BUILDING 
WET SPOT 
SPRING 

SLS
SMITH LAND SURVEYING CO.
111 SOUTH ST.
GLENVILLE, WV. 26351

1) Date: June 3, 19 85
2) Operator's Well No. JK-1213
3) API Well No. 47 017-345-1
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 Virginia L. Cottrill
Address 902 Tygart Street
Parkersburg, WV 26101

(ii) Name _____
Address _____

(iii) Name _____
Address _____

5(i) COAL OPERATOR N/A
Address _____

5(ii) COAL OWNER(S) WITH DECLARATION ON RECORD:
Name N/A
Address _____

Name _____
Address _____

5(iii) COAL LESSEE WITH DECLARATION ON RECORD:
Name N/A
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.

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 No

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
Richard Reddecliff

this 3 day of June, 19 85.
My commission expires 12/7, 19 92.

Gregory A. Smith
Notary Public, Gilmer County,
State of West Virginia

WELL OPERATOR J & J Enterprises, Inc.

By Richard Reddecliff
Its Designated Agent
Address P.O. Box 48
Buckhannon, WV 26201
Telephone 472-9403

11/10/2023

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.

INFORMATION SUPPLIED UNDER CODE § 22-4-11(d)

IN LIEU OF FILING LEASE(S) AND OTHER CONTINUING CONTRACT(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>
Virginia L. Cottrill	J & J Enterprises, Inc.	1/8	129/186



1) Date: June 3, 19 85
 2) Operator's Well No. JK-1213
 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: 965' Watershed: Hugle Run
 District: Central County: Doddridge Quadrangle: WestUnion 7.5'
- 6) WELL OPERATOR J & J Enterprises, Inc. 7) DESIGNATED AGENT Richard Reddecliff
 Address P.O. Box 48 Address P.O. Box 48
Buckhannon, WV 26201 Buckhannon, WV 26201
- 8) OIL & GAS INSPECTOR TO BE NOTIFIED 9) DRILLING CONTRACTOR:
 Name Mike Underwood Name S.W. Jack Drilling Co.
 Address Rt. 2 Box 114 Address P.O. Box 48
Salem, WV 26426 Buckhannon, WV 26201
- 10) PROPOSED WELL WORK: Drill X / Drill deeper _____ / Redrill _____ / Stimulate X /
 Plug off old formation _____ / Perforate new formation _____ /
 Other physical change in well (specify) _____
- 11) GEOLOGICAL TARGET FORMATION, Rhine Street
- 12) Estimated depth of completed well, 5995' feet
 13) Approximate strata depths: Fresh, 130' feet; salt, N/A feet.
 14) Approximate coal seam depths: N/A 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	<u>11 3/4</u>	<u>H-40</u>	<u>42</u>	<u>X</u>		<u>30'</u>	<u>0</u>	<u>Sacks</u>	Kinds
Fresh water	<u>8 5/8</u>	<u>ERW</u>	<u>23</u>	<u>X</u>		<u>1565'</u>	<u>1565'</u>	<u>To Surface</u>	
Coal	<u>8 5/8</u>	<u>ERW</u>	<u>23</u>	<u>X</u>		<u>1565'</u>	<u>1565'</u>	<u>To Surface</u>	Sizes
Intermediate									
Production	<u>4 1/2</u>	<u>J-55</u>	<u>10.5</u>	<u>X</u>		<u>5995'</u>	<u>5945'</u>	<u>100 Sacks</u>	Depths set
Tubing								<u>or as required by rule 15-01</u>	
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.)

NAME: _____
 By _____
 Its _____ Date 2002

(For execution by natural persons)

X Virginia L. Cottrill Date: 6-10-85
 (Signature)
 _____ Date: _____
 (Signature)



**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.

[Handwritten signature]

11/10/2023

Surface Owner



IV-35
(Rev 8-81)

RECEIVED
OCT 9 - 1985

DIVISION OF OIL & GAS
DEPT. OF ENERGY

State of West Virginia
Department of Mines
Oil and Gas Division

Date October 8, 1985
Operator's
Well No. JK-1213
Farm Virginia Cottrill
API No. 47 - 017 - 3451

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: 965 Watershed Hughes Run
District: Central County Doddridge Quadrangle West Union 7.5

COMPANY J&J Enterprises, Inc.
ADDRESS P.O. Box 48, Buckhannon, WV 26201
DESIGNATED AGENT Richard Reddecliff
ADDRESS P.O. Box 48, Buckhannon, WV 26201
SURFACE OWNER Virginia Cottrill
ADDRESS 102 Tygart St., Parkersburg, WV 26101
MINERAL RIGHTS OWNER Same as surface
ADDRESS _____
OIL AND GAS INSPECTOR FOR THIS WORK Mike
Rt. # 2, Box 114
Underwood ADDRESS Salem, WV 26426
PERMIT ISSUED 7/17/85
DRILLING COMMENCED 8/30/85
DRILLING COMPLETED 9/8/85

Casing & Tubing	Used in Drilling	Left in Well	Cement fill up Cu. ft.
Size 20-16 Cond.			
13-10"	164	164	75
9 5/8			
8 5/8	1769.05	1769.05	125 sks.
7			
5 1/2			
4 1/2	5230.65	5230.65	275 sks.
3			
2			
Liners used			

GEOLOGICAL TARGET FORMATION Rhine St. Depth feet
Depth of completed well 5993 feet Rotary / Cable Tools _____
Water strata depth: Fresh 55,315⁹¹⁰ feet; Salt 0 feet
Coal seam depths: None Is coal being mined in the area? No

OPEN FLOW DATA

Producing formation Alexander Pay zone depth 5113.5-27.5 feet
Gas: Initial open flow _____ Mcf/d Oil: Initial open flow _____ Bbl/d
Final open flow 492 Mcf/d Final open flow _____ Bbl/d
Time of open flow between initial and final tests 4 hours

Static rock pressure 1600 psig (surface measurement) after 96 hours shut in
(If applicable due to multiple completion--)

Second producing formation Riley Pay zone depth 4416-43 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)

DODD 3451

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

Alexander: Perforations: 5113.5-27.5 (16 holes)
 Fracturing: 400 sks. 20/40 sand: 475 Bbls. fluid.
 Riley: Perforations: 4416-43 (16 holes)
 Fracturing: 200 gal. acid: 326 Bbls. fluid.


RECEIVED
OCT 9 1985
DEPT. OF ENERGY

BOTTOM HOLE PRESSURE $P_f = P_{we} \frac{XGLS}{1} \frac{1}{1}$
 $t = 60 + (0.0075 \times 5231) + 459.7 = 559$ $X = 53.35 \times 559 = 29823$ $= 0.000034$ $P_f = 1600 \times 2.72$ (0.000034)
 $(0.85)(4772)(0.9) = 1600 \times 2.72^{0.1} = 1600 \times 1.1$
 $P_f = 1760$ psi

WELL LOG

FORMATION	COLOR	HARD OR SOFT	TOP FEET	BOTTOM FEET	REMARKS Including indication of all fresh and salt water, coal, oil and gas.
Top Soil			0	5	
Shale & red rock			5	85	
Sand, shale & red rock			85	180	Damp @ 55'
Sand & shale			180	320	
Sand, shale & red rock			320	750	Damp @ 315'
Red rock, shale & sand			750	930	
Sand, shale & red rock			930	1170	1" stream @ 910'
Shale & sand			1170	1280	
Sand & shale			1280	1445	Gas ck @ 2329 No show
Sand & shale			1445	1640	
Sand & shale			1640	1710	Gas ck @ 3385 No show
Shale & sand			1710	1845	
Big Lime			1845	1905	Gas ck @ 4504 No show
Big Injun			1905	1980	
Sand & shale			1980	2420	Gas ck @ 4874 No show
Shale & Sand			2420	3660	
Shale & Sand			3660	4416	Gas ck @ 5185 No show
Riley			4416	4443	
Sand & shale			4443	5113.5	Gas ck @ Collars 8/10-1/2" w/water 17,600 cu.ft.
Alexander			5113.5	5127.5	
Sand & shale			5127.5	5800	
Sand & shale			5800	5993	
				T.D..	

(Attach separate sheets as necessary)

J&J Enterprises, Inc.
 Well Operator
 By:  11/10/2023
 Date: 10/8/85 Robert Dahlin - Geologist

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 coal, encountered in the drilling of a well."

DEPARTMENT OF MINES
OIL AND GAS WELLS DIVISION

INSPECTOR'S WELL REPORT

Permit No. 017-3451

Oil or Gas Well _____
(KIND)

Company <u>DEJ ENTERPRISE</u> Address _____ Farm <u>Virginia Cottrell</u> Well No. <u>JK-1213</u> District <u>Centark</u> County <u>DeKalb</u> Drilling commenced _____ 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			Kind of Packer _____
	16			
	13			Size of _____
	10			
	8 1/4			Depth set _____
	6 1/4			
	5 3/16			Perf. top _____
	3			Perf. bottom _____
	2			Perf. top _____
Liners Used			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 S.W. JACK - Rig 22 - HEAVY

Remarks: Rig Report

Visit Rig - O.D. 10 5/8 Hole at 1795' and cleaning hole getting ready to run 8 5/8 -

9-4-85
DATE

Mike Henderson
DISTRICT WELL INSPECTOR

11/10/2023

**STATE OF WEST VIRGINIA
DEPARTMENT OF MINES
OIL AND GAS WELLS DIVISION
INSPECTOR'S PLUGGING REPORT**

Permit No. _____

Well No. _____

COMPANY _____ ADDRESS _____

FARM _____ DISTRICT _____ COUNTY _____

Filling Material Used _____

Liner		Location		Amount	Packer	Location		
PLUGS USED AND DEPTH PLACED				BRIDGES		CASING AND TUBING		
CEMENT-THICKNESS	WOOD-SIZE	LEAD		CONSTRUCTION-LOCATION	RECOVERED	SIZE	LOST	

Drillers' Names _____

Remarks:

_____ I hereby certify I visited the above well on this date.
DATE

DISTRICT WELL INSPECTOR 11/10/2023

DEPARTMENT OF ENERGY
OIL AND GAS WELLS DIVISION

RECEIVED
SEP 17 1985

INSPECTOR'S WELL REPORT

Permit No. 017-3451

DIVISION OF OIL & GAS
DEPARTMENT OF ENERGY
(KIND)

Company <u>JEJ</u>	CASING AND TUBING	USED IN DRILLING	LEFT IN WELL	PACKERS
	Address _____	Size		
Farm <u>Virginia Cottick</u>	16			Kind of Packer _____
Well No. <u>JK-1213</u>	13			
District <u>CENTRAL</u> County <u>Dodd</u>	10			Size of _____
Drilling commenced _____	8 1/4			
Drilling completed _____ Total depth _____	6 1/2			Depth set _____
Date shot _____ Depth of shot _____	5 3/16			
Initial open flow _____ /10ths Water in _____ Inch	3			Perf. top _____
Open flow after tubing _____ /10ths Merc. in _____ Inch	2			Perf. bottom _____
Volume _____ Cu. Ft.	Liners Used			Perf. top _____
Rock pressure _____ lbs. _____ hrs.				Perf. bottom _____
Oil _____ bbls., 1st 24 hrs.				
Fresh water <u>1/2"</u> <u>at</u> <u>1070'</u> feet feet				
Salt water _____ feet feet				

CASING CEMENTED 4 1/2 SIZE 5230' No. FT. 9-9-85 Date

NAME OF SERVICE COMPANY HALLIBURTON 175-515

COAL WAS ENCOUNTERED AT NO FEET _____ INCHES

_____ FEET _____ INCHES _____ FEET _____ INCHES

_____ FEET _____ INCHES _____ FEET _____ INCHES

Drillers' Names S. W. JACK - Big 22 - Heavy

Remarks: Big Report

Visit site, ? T.O. 5993' AND MOVEN -
RAN 4 1/2 -

9-9-85
DATE

M. J. Underwood
DISTRICT WELL INSPECTOR

11/10/2023

STATE OF WEST VIRGINIA
DEPARTMENT OF ENERGY
OIL AND GAS WELLS DIVISION
INSPECTOR'S PLUGGING REPORT

RECEIVED
DIVISION OF OIL & GAS
DEPARTMENT OF ENERGY

Permit No. _____ Well No. _____

COMPANY _____ ADDRESS _____

FARM _____ DISTRICT _____ COUNTY _____

Filling Material Used _____

Liner		Location		Amount	Packer	Location		
PLUGS USED AND DEPTH PLACED				BRIDGES		CASING AND TUBING		
CEMENT-THICKNESS	WOOD-SIZE	LEAD	CONSTRUCTION-LOCATION	RECOVERED	SIZE	LOST		

Drillers' Names _____

Remarks:
[Faint handwritten notes and signatures]

_____ I hereby certify I visited the above well on this date.
DATE

DISTRICT WELL INSPECTOR 11/10/2023

✓
IR-26
Obverse

INSPECTOR'S PERMIT SUMMARY FORM

7-17-85

WELL TYPE Shallow GAS
ELEVATION 965'
DISTRICT CENTRAL
QUADRANGLE WEST UNION
COUNTY Dodd

API# 47-017--3451
OPERATOR J&J
TELEPHONE _____
FARM Virginia Cottrell
WELL # JK 123

RECEIVED
DEPARTMENT OF ENERGY
OIL AND GAS

SURFACE OWNER _____ COMMENTS _____ TELEPHONE _____ JUN 3 1986
TARGET FORMATION _____ DATE APPLICATION RECEIVED _____

DATE STARTED _____
LOCATION 8-14-85 NOTIFIED YES DRILLING COMMENCED 8-30-85

WATER DEPTHS 1" stream, at 910', maybe salt water
COAL DEPTHS NO

CASING
Ran _____ feet of 11 3/4 "pipe on 8-31-85 with _____ fill up
Ran 1785' feet of 8 5/8' "pipe on 9-4-85 with _____ fill up
Ran _____ feet of _____ "pipe on _____ with _____ fill up
Ran 5230' feet of 4 1/2 "pipe on 9-9-85 with 175-ski fill up H.B.
TD 5993' feet on 9-9-85

PLUGGING

Type	From	To	Pipe Removed

Pit Discharge date: _____ Type _____

Field analysis ph _____ fe _____ cl _____

Well Record received _____

Date Released 5-29-86

Mike Underwood
Inspector's signature

11/10/2023

X

API# 47 017 - 3451

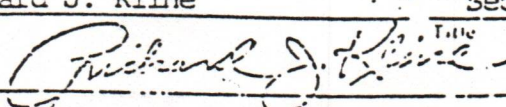
LIST ALL VISITS FOR THIS PERMIT

	DATE	TIME	PURPOSE	COMMENTS
1	8-14-85			Visit Site Location made - o.k.
2	8-30-85			= = MOVEN on Rig.
3				Running 11 ³² ABOUT DARK -
4	9-4-85			Visit Site, Just T.D. 10 ³² 's Hole
5				At - 1795' gave To Run 8 ³²
6	9-9-85			Visit Site, Hole T.D. Running 4 ^{1/2} .
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				

Notes

O.k TO REC

FERC-121

1.0 API well number: (If not available, leave blank. 11 digits.)	<u>47-017-3451</u>			
2.0 Type of determination being sought (Use the codes found on the front of this form.)	<u>103</u> Section of NGPA	<u>n/a</u> Category Code		
3.0 Depth of the deepest completion location. (Only one for sections 103 or 107 in 2.0 above.)	<u>5127.5</u> feet			
4.0 Name, address and code number of applicant. (35 letters per line maximum. If code number not available, leave blank.)	<u>J & J Enterprises, Inc.</u> Name <u>P.O. Box 697</u> Street <u>Indiana</u> Pa. <u>15701</u> City State Zip Code		<u>009480</u> Section Code	
5.0 Location of this well. (Complete (a) or (b).) (a) For onshore wells (35 letters maximum for field name.) (b) For OCS wells:	<u>Central</u> Field Name <u>Doddridge</u> WV County State <u>n/a</u> Area Name Block Number Date of Lease: _____ Mo. Day Yr. OCS Lease Number			
(c) Name and identification number of this well. (35 letters and digits maximum.)	<u>JK-1213</u>			
(d) If code 4 or 5 in 2.0 above, name of the reservoir. (35 letters maximum.)	<u>n/a</u>			
6.0 (a) Name and code number of the purchaser. (35 letters and digits maximum. If code number not available, leave blank.) (b) Date of the contract. (c) Estimated annual production:	<u>Purchaser not yet designated</u> Name Section Code _____ Mo. Day Yr. _____ MMBbl			
	(a) Base Price (\$/MMBTU)	(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.)	<u>3.565</u>	<u>.278</u>	_____	<u>3.843</u>
8.0 Maximum level rate (As of filing date. Complete to 3 decimal places.)	<u>3.565</u>	<u>.278</u>	_____	<u>3.843</u>
9.0 Person responsible for this application	<u>Richard J. Kline</u> Secretary Name Title  Date of application is completed: <u>10-10-85</u> (412) 349-6900 File # Number			

Agency Use Only
 Date filed with the Joint Agency
OCT 11 1985
 Date received by FERC

11/10/2023

OCT 30 1985

COVER SHEET, STATE APPLICATION FOR WELL CLASSIFICATION

Date: Oct. 10, 1985 24150

AGENCY USE ONLY

Applicant's Name: J & J ENTERPRISES, INC.

WELL DETERMINATION FILE NUMBER

Address: P.O. Box 697

851011 -1030 -017 - 3451

Indiana, PA. 15701

Use Above File Number on all
Communications Relating to This Well

Gas Purchaser Contract No. _____

Date of Contract _____
(Month, day and year)

Designated Agent: Richard Reddecliff

First Purchaser: Purchaser not yet designated

Address: P.O. Box 48

Address: _____
(Street or P.O. Box)

Buckhannon, WA 26201

(City) (State) (Zip Code)

FERC Seller Code 009480

FERC Buyer Code _____

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

Name: Vicki Vanderberg _____ (Title)

Signature: *Vicki Vanderberg*

Address: P.O. Box 697

(Street or P.O. Box)
Indiana, PA. 15701

Telephone: 412 349-6800

(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
- 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 Geopressed Brine
 - 107-2 Coal Seams
 - 107-3 Devonian Shale
 - 107-5 Production enhancement
 - 107-6 New Tight Formation
 - 107-7 Recompletion Tight Formation

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

AGENCY USE ONLY

QUALIFIED

11/10/2023

RECEIVED
OCT 11 1985

DIVISION OF OIL & GAS
DEPARTMENT OF ENERGY

Date Received

Determination Date

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

Date Oct, 10 1985

Operator's Well No. JK-1213

API Well No. 47 - 017 - 3451
State County Permit

WELL CLASSIFICATION FORM
NEW ONSHORE PRODUCTION WELL
NGPA Section 103

DESIGNATED AGENT James R. Willett
ADDRESS S.W. Jack Drilling Company
Box 48 Buckhannon, W. VA. 26201

WELL OPERATOR J & J Enterprises, Inc.
ADDRESS P. O. Box 697
Indiana, PA 15701

LOCATION: Elevation 965
Watershed Hughes Run
Dist. Central County Doddridge Quad West Union

GAS PURCHASER Purchaser not yet designated
ADDRESS _____

Gas Purchase Contract No. _____
Meter Chart Code _____
Date of Contract _____

* * * * *

Date surface drilling was begun: August 30, 1985

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

Rock Pressure: Well was shut in several days after treatment and pressure was measured

BOTTOM HOLE PRESSURE $Pf = Pwe^{XGLS} \frac{1}{1}$
 $t = 60 + (0.0075 \times 5231) + 459.7 = 559$ $X = 53.35 \times 559 = 29823$ $= 0.000034$ $Pf = 1600 \times 2.72^{(0.000034)}$
 $(0.85)(4772)(0.9) = 1600 \times 2.72^{0.1} = 1600 \times 1.1$
Pf=1760 psi

I, James H. McElwain, having been first sworn according to law state that surface drilling of the well for which this determination is sought was begun on or after February 19, 1977; the well satisfies applicable state or federal well spacing requirements and the well is not within a proration unit, in existence at the time surface drilling began, which was applicable to the reservoir from which gas is or will be produced and which applied to any other well producing gas in commercial quantities or on which surface drilling began on or after February 19, 1977, and which was capable of producing gas in commercial quantities. I state, further, that I have concluded, to the best of my information, knowledge and belief, that the well for which this determination is sought is a new onshore production well and that I am not aware of any information not described in the application which is inconsistent with this conclusion.

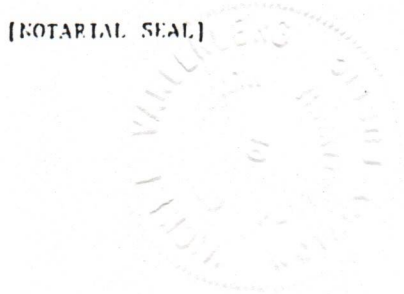
James H. McElwain

STATE OF WEST VIRGINIA, PA
COUNTY OF Indiana, TO WIT:

I, Vicki Vanderberg a Notary Public in and for the state and county aforesaid, do certify that J.H. McElwain, whose name is signed to the writing above, bearing date the 10 day of Oct, 1985, has acknowledged the same before me, in my county aforesaid.

Given under my hand and official seal this 10 day of Oct, 1985
My ~~XXXXXX~~ expires on the 23 day of January, 1984.88
Commission

Vicki L. Vanderberg 11/10/2023
Notary Public



VICKI L. VANDERBERG, NOTARY PUBLIC
INDIANA
MY COMMISSION EXPIRES 1988
Member, National Association of Notaries

FERC-121

1.0 API well number (If not available, leave blank. 11 digits.) 47-017-3451

2.0 Type of determination being sought (Use the codes found on the front of this form.)
107 Section of NGPA n/a Category Code

3.0 Depth of the deepest completion location (Only enter if sections 103 or 107 in 2.0 above.)
5127.5 feet

4.0 Name, address and code number of applicant (35 letters per line maximum. If code number not available, leave blank.)
 Name J & J Enterprises, Inc. 009480 Section Code
 Street P.O. Box 697
 City Indiana, State Pa. Zip Code 15701

5.0 Location of this well (Complete (a) or (b).)
 (a) For onshore wells (35 letters maximum for field name.)
 Field Name Central
 County Doddridge State WV

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

(c) Name and identification number of this well (35 letters and digits maximum)
JK-1213

(d) If code 4 or 5 in 2.0 above, name of the reservoir (35 letters maximum)
n/a

6.0 (a) Name and code number of the purchaser (35 letters and digits maximum. If code number not available, leave blank.)
Purchaser not yet designated Section Code _____

(b) Date of the contract.

 Mo. Day Yr.

(c) Estimated annual production:
MMcf

	(a) Base Price (\$/MMBTU)	(b) Tax	(c) All Other Prices (Indicate (+) or (-).)	(d) Total of (a), (b) and (c)
7.0 Contract price (Actual filing date. Complete in 3 decimal places.)	<u>3 5 8 2</u>	<u>2 7 8</u>	_____	<u>3 8 6 0</u>
8.0 Maximum levelized rate (Actual filing date. Complete in 3 decimal places.)	<u>3 5 8 2</u>	<u>2 7 8</u>	_____	<u>3 8 6 0</u>

9.0 Person responsible for this application
 Agency Use Only
 Date filed and by what agency
NOV 25 1985
 Filed electronically by FERC

Name J. H. McElwain Title Exec. V. President
James H. McElwain
 Date registration is completed 11-22-85 File # Number (612) 349-6800
 Date registration is completed

11/10/2023

DEC 15 1985

COVER SHEET, STATE APPLICATION FOR WELL CLASSIFICATION

Date: Nov 22, 1985 24150

Applicant's Name: J & J ENTERPRISES, INC.

Address: P.O. Box 697
Indiana, PA. 15701

Gas Purchaser Contract No. _____

Date of Contract _____
(Month, day and year)

First Purchaser: Purchaser to be Determined

Address: _____
(Street or P.O. Box)

(City) (State) (Zip Code)
FERC Seller Code 009480

AGENCY USE ONLY
WELL DETERMINATION FILE NUMBER
851125 -1073-017 - 3451
Use Above File Number on all
Communications Relating to This Well

Designated Agent: Richard Reddcliff
Address: P.O. Box 48
Buckhannon, WA 26201

FERC Buyer Code _____

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

Name: Vicki Vanderberg
(Print) _____ (Title)
Signature: Vicki Vanderberg
Address: P.O. Box 697
(Street or P.O. Box)
Indiana, PA. 15701
(City) (State) (Zip Code)
Telephone: 412 349-6800
(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
- 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 Geopressed Brine
 - 107-2 Coal Seams
 - 107-3 Devonian Shale
 - 107-5 Production enhancement
 - 107-6 New Tight Formation
 - 107-7 Recompletion Tight Formation

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

AGENCY USE ONLY
QUALIFIED
11/10/2023

RECEIVED
NOV 25 1985
DIVISION OF OIL & GAS
DEPARTMENT OF ENERGY

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

DESIGNATED AGENT Richard Reddecliff

ADDRESS P.O. Box 48
Buckhannon, West Virginia, 26201

LOCATION Elevation 965

Watershed Hughes Run
Dist. Central County Doddridge Quad. West Un

WELL OPERATOR J & J Enterprises, Inc.

ADDRESS P.O. Box 697
Indiana, PA 15701

Gas Purchase
Contract No. _____

GAS PURCHASER Not Yet Designated

Meter Chart Code _____

ADDRESS _____

Date of Contract _____

* * * * *

Date surface drilling began: August 30, 1985

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

BOTTOM HOLE PRESSURE $Pf = Pwe^{XGLS} \frac{1}{1}$
 $t = 60 + (0.0075 \times 5231) + 459.7 = 559$ $X = 53.35 \times 559 = 29823$ $= 0.000034$ $Pf = 1600 \times 2.72^{(0.000034)}$
 $(0.85)(4772)(0.9) = 1600 \times 2.72^{0.1} = 1600 \times 1.1$
Pf = 1760 psi

AFFIDAVIT

I, James H. McElwain, 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)(1) or (3)(11)(A) has been filed, or as indicated by the report described in subparagraph (3)(11)(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.

James H. McElwain

STATE OF WEST VIRGINIA

COUNTY OF Indiana, TO-WIT:

I, Vicki L. Vanderberg, a Notary Public in and for the state and county aforesaid, do certify that James H. McElwain, whose name is signed to the writing above, bearing date the 22 day of Nov, 1985, has acknowledged the same before me, in my county aforesaid.

Given under my hand and official seal this 22 day of Nov, 1985.

My term of office expires on the 23 day of January, 1984.

11/10/2023

(NOTARIAL SEAL)

Vicki L. Vanderberg
VICKI L. VANDERBERG, NOTARY PUBLIC
INDIANA COUNTY, INDIANA COUNTY
MY COMMISSION EXPIRES JAN. 23, 1988
Member, Pennsylvania Association of Notaries

1982-83
181-181
101-101

Central
Hudson River
West

August 30 1982

MICHAEL J. VANDERKAM, Notary Public
Indiana Board of Notaries
Commission Expires Jan. 23, 1988



11/10/2023

DEVONIAN SHALE GAMMA RAY LOG ANALYSIS
APPLICATION FOR DETERMINATION OF THE MAXIMUM LAWFUL
PRICE UNDER THE NATURAL GAS POLICY ACT

Operator: J & J Enterprises, Inc.

Agent: Richard Reddecliff

Type Determination being sought - 107 (Devonian Shale)

API Well No.: 47-017-3451

Well Name: v. Cottrill (JK-1213)

West Virginia Office of Oil and Gas

County: Doddridge

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 = $\frac{170}{110}$ * API Units
2. Remarks: Fluid level caused a shift in the GR Value from 170 API Units to 110 API Units @ 5818'

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

1. GR Value = $\frac{119}{77}$ * API Units
2. Calculation: 0.7 (GR Value at Base Line)
 0.7 ($\frac{170}{*}$) = $\frac{119}{*}$ API Units
 0.7 ($\frac{110}{*}$) = $\frac{77}{*}$ API Units

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

Interval		Thickness of Interval Feet	Feet of less than* 0.7 (Shale Base Line) Feet
From**	To***		
2343'	5818'	3475'	57.5'
5818'	5922'	104'	0.0'

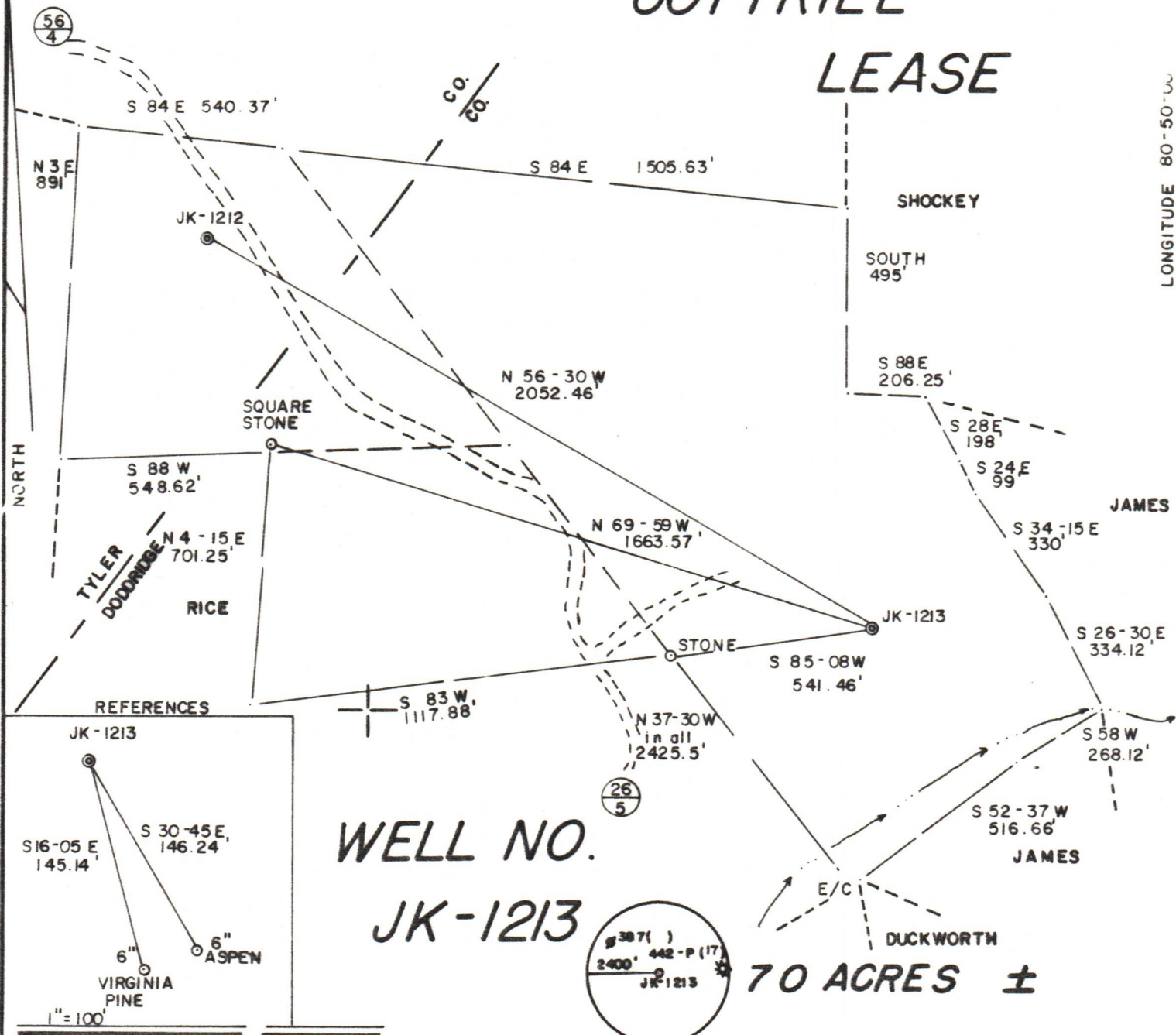
Total Devonian Interval 3579'

Total Less Than 0.7 (Shale Base) 57.5'

Less Than 0.7 (Shale Base Line) = $\frac{0.0160}{*} \times 100 = \frac{1.60}{*}$ 7. 11/10/2023

*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.

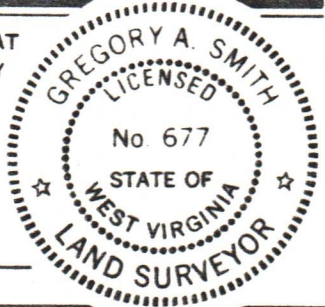
COTTRILL LEASE



SLS SMITH LAND SURVEYING

(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS
 DATE MAY 29, 1985
 OPERATORS WELL NO. JK-1213
 API WELL NO.
47 - 017 - 3451
 STATE COUNTY PERMIT

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.
 L.L.S. 677 Gregory A Smith



MINIMUM DEGREE OF ACCURACY 1 / 200 FILE NO. 18-21
 PROVEN SOURCE OF ELEVATION TOP OF KNOB ELEV. = 1310' SCALE 1" = 400'



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 965' WATERSHED HUGLE RUN
 DISTRICT CENTRAL COUNTY DODDRIDGE QUADRANGLE WEST UNION 7.5'
 SURFACE OWNER VIRGINIA L. COTTRILL ACREAGE 70
 OIL & GAS ROYALTY OWNER VIRGINIA L. COTTRILL LEASE ACREAGE 70 11/10/2023
 PROPOSED WORK: DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE PLUG OFF
 OLD FORMATION PERFORATE NEW FORMATION PLUG AND ABANDON CLEAN OUT AND REPLUG
 OTHER PHYSICAL CHANGE IN WELL (SPECIFY) _____ TARGET FORMATION RHINE STREET
 ESTIMATED DEPTH 5995'

WELL OPERATOR J&J ENTERPRISES, INC. DESIGNATED AGENT RICHARD REDDECLIFF
 ADDRESS P.O. BOX 48, BUCKHANNON, WV 26201 ADDRESS P.O. BOX 48, BUCKHANNON, WV 26201

COUNTY NAME PERMIT

575