



1) Date: November 3, 19 82
 2) Operator's Well No. Loughner #1
 3) API Well No. 47-79 1100
 State County Permit

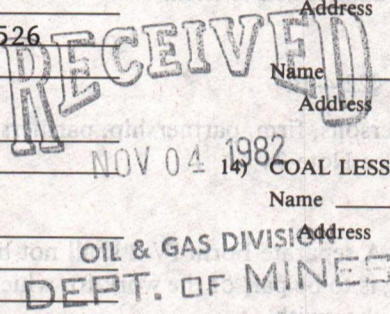
DRILLING CONTRACTOR:

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

Clint Hurt & Associates
Elkview, West Virginia

OIL AND GAS WELL PERMIT APPLICATION

- 4) WELL TYPE: A Oil / Gas X /
 B (If "Gas", Production X / Underground storage / Deep / Shallow X /)
- 5) LOCATION: Elevation: 612.96 Watershed: Big Hurricane Creek
 District: Teays Valley County: Putnam Quadrangle: Hurricane (7 1/2 Min.)
- 6) WELL OPERATOR Buffalo Resources Corp. 11) DESIGNATED AGENT John M. Foster
 Address 818 Oakwood Road Address 818 Oakwood Road
Charleston, West Virginia 25314 Charleston, WV 25314
- 7) OIL & GAS ROYALTY OWNER Eleanor Coal Company 12) COAL OPERATOR No Active Mining
 Address P.O. Box 346 Address
Scott Depot, WV 25560
- Acreage 93 Acres
- 8) SURFACE OWNER Penn Eastern Corporation 13) COAL OWNER(S) WITH DECLARATION ON RECORD:
 Name Eleanor Coal Company
 Address P.O. Box 346
Hurricane, WV 25526 Address Scott Depot, WV 25560
 Acreage 82.95 Acres Name
 Address
- 9) FIELD SALE (IF MADE) TO:
 Address
- 10) OIL & GAS INSPECTOR TO BE NOTIFIED
 Name Martin Nichols Address
 Address P.O. Box 554 Clendenin, WV 25045
- 15) PROPOSED WORK: Drill X / Drill deeper / Redrill / Fracture or stimulate
 Plug off old formation / Perforate new formation
 Other physical change in well (specify)
- 16) GEOLOGICAL TARGET FORMATION, Devonian Shale, Berea Sandstone
- 17) Estimated depth of completed well, 4225 feet Salt Sand 1050'
Injun 1650'
- 18) Approximate water strata depths: Fresh, 200 feet; salt, feet.
- 19) Approximate coal seam depths: None mineable Is coal being mined in the area? Yes / No X /



20) 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		Kinds	Sizes
Conductor	13-3/8	H	48#	X		30	30	To Surface	None	None
Fresh water	9-5/8	H40	32#	X		250	250	To Surface	None	None
Coal										
Intermediate	7	K55	20#	X		1700	1700	Back to 9-5/8 Casing	None	None
Production	4-1/2	K55	10.5	X		4225	4225	To 7" Casing	Tension	Packer
Tubing	2-3/8	K55	4.6	X		4225	4225	None	2-3/8 x 4" set at 2200	
Liners									Perforations: Devonian, Berea	
									Top	Bottom

21) 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.)

22) ROYALTY PROVISIONS

Is the right to extract, produce or market the oil or gas based upon a lease or other continuing 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.

23) Required Copies (See reverse side.)

24) Copies of this Permit Application and the enclosed plat and reclamation plan have been mailed by registered mail or delivered by hand to the above named coal operator, coal owner(s), and coal lessee on or before the day of the mailing or delivery of this Permit Application to the Department of Mines at Charleston, West Virginia.

Notary: Joyce L. Jowers
 My Commission Expires October 18, 1988

Signed: [Signature]
 Its: Designated Agent

OFFICE USE ONLY

Permit number 47-079-1100 **DRILLING PERMIT** Date November 9 19 82

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. 10) 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.)

Permit expires July 9, 1983 unless drilling is commenced prior to that date and prosecuted with due diligence.

Bond: <u>Blanket</u>	Agent: <u>[Signature]</u>	Plat: <u>[Signature]</u>	Casing: <u>[Signature]</u>	Fee: <u>0193</u>
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[Signature]
Administrator, Office of Oil and Gas

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

Line Item Explanation

- 1) Date of Application
- 2) Your well name and number
- 3) To be filled out by office of oil & gas
- 4A) "Oil" means natural crude oil or petroleum and other hydrocarbons, regardless of gravity, which are produced at the well in liquid form by ordinary production methods and which are not the result of condensation of gas after it leaves underground reservoirs: "Gas" means all natural gas and all other fluid hydrocarbons not defined as oil.
- 4B) "Shallow well" means any well drilled and completed in a formation above the top of the uppermost member of the "Onondaga Group" or a depth less than six thousand feet, whichever is shallower.
"Deep well" means any well drilled and completed in a formation at or below the top of the uppermost member of the "Onondaga Group" or at a depth less than six thousand feet, whatever is shallower.
- 5) Where well is located
- 6) Before a permit can be issued in a corporation, company partnership, or fictitious name, the name must be registered with the Secretary of State Office
- 7) Use separate sheet if necessary
- 8) Present surface owner at time application is filed.
- 9) Optional
- 11) See Reg. 7.01 relating to code §22-4-1k
- 12) "Coal Operator" means any persons, firm, partnership, partnership association or corporation that proposes to or does operate a coal mine. See Note 24
- 13 & 14) As per §22-4-20; See Note 24
- 15) Work that will be attempted—A separate Form IV-2 shall not be required for fracturing or stimulating a well where fracturing or stimulating is to be part of the work for which a permit is sought and is noted as such on the Form IV-2 filed in connection therewith.
- 16) Anticipated formation for which well will be completed
- 17) Self explanatory
- 18) Depth to deepest freshwater, and shallowest salt water, taken from nearby wells corrected for differences in elevation
- 19) All coal seam depths
- 20) Proposed casing program and cementing refer to Code 22-4-5, 22-4-6, 22-4-7, 22-4-8, 22-4-8a Reg 9.01, 15.01, 15.02, 15.03, 15.04, 25.01, 25.02, 25.03, 25.04
- 21) Code 22-4-11(c) - In lieu of filing the lease or leases or other continuing contract or contracts, the applicant for a permit described herein may file the following:
 - (1) A brief description of the tract of land including the district and county wherein the tract is located;
 - (2) The identification of all parties to all leases or other continuing contractual agreements by which the right to extract, produce or market the oil or gas is claimed;
 - (3) The book and page number wherein each such lease or contract by which the right to extract, produce or market the oil or gas is recorded;
 - (4) A brief description of the royalty provisions of each such lease or contract.
- 22) Code 22-4-11(d) and 22-4-11(e).
- 23) Regulation 7.02 of the Department of Mines provides that the original and four copies of Form IV-2 must be filed with the Department, 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 §22-4-2, (iii) Form IV-9, "Reclamation Plan", applicable to the reclamation required by Code §22-4-12b and Regulation 23, (iv) unless previously paid on the same well, the fee required by Code §22-4-12a, and (v) if applicable, the consent required by Code §22-4-8a from the owner of any water well or dwelling within 200 feet of the proposed well.
- 24) **The above named coal operator, coal owner(s), and coal lessee are hereby notified that any objection they wish to make or are required to make by Code §22-4-3 must be filed with the Department of Mines within fifteen (15) days after the receipt of this Application by the Department.**

The following waiver must be completed by the coal operator and by any coal owner or coal lessee who has recorded a declaration under Code 22-4-20, if the permit is to be issued within fifteen (15) days of receipt thereof.

DRILLING WAIVER

The undersigned coal operator _____ / owner _____ / lessee _____ / of the coal under this well location has examined this proposed well location. If a mine map exists which covers the area of the well location, the well location has been added to the mine map. The undersigned has no objection to the work proposed to be done at this location, provided, the well operator has complied with all applicable requirements of the West Virginia Code and the governing regulations.

Date: _____, 19 _____

By _____

Its _____



IV-9
(Rev 8-81)

DATE October 28, 1982

WELL NO. Loughner #1

State of West Virginia

API NO. 47 - 079 - 1100

Department of Mines
Oil and Gas Division

CONSTRUCTION AND RECLAMATION PLAN

COMPANY NAME Buffalo Resources Corporation DESIGNATED AGENT John M. Foster
 Address Charleston, WV Address Charleston, WV
 Telephone 345-0232 Telephone 345-9232
 LANDOWNER Penn Eastern Corporation SOIL CONS. DISTRICT Western SCD
 Revegetation to be carried out by John M. Foster (Agent)

This plan has been reviewed by Western SCD. All corrections and additions become a part of this plan: 10-29-82 (Date)

Clay Edwards
(SCD Agent)

ACCESS ROAD

LOCATION

Structure <u>Road Culvert</u> (A)	Structure <u>Straw Bale Dike</u> (1)
Spacing <u>As shown on attached plans</u>	Material <u>Hay or straw bales</u>
Page Ref. Manual <u>2-7 & 2-8</u>	Page Ref. Manual <u>2-16</u>
Structure <u>Broad Based Drainage Dip</u> (B)	Structure _____ (2)
Spacing <u>As shown on attached plans</u>	Material _____
Page Ref. Manual <u>2-5</u>	Page Ref. Manual _____
Structure <u>Temporary Stream Crossing</u> (C)	Structure _____ (3)
Spacing <u>at Station 13+ 03</u>	Material _____
Page Ref. Manual <u>See attached detail sheet.</u>	Page Ref. Manual _____

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NOV 04 1982
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 4 Tons/acre
or correct to pH 5.5

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

Mulch 2 Tons/acre

Seed* Kentucky 31 20 lbs/acre
Creeping Red Fescue 20 lbs/acre
Redtop 5 lbs/acre

Treatment Area II

Lime 6 Tons/acre
or correct to pH 4.5

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

Mulch 2 Tons/acre

Seed* Kentucky 31 40 lbs/acre
Redtop 5 lbs/acre
_____ lbs/acre

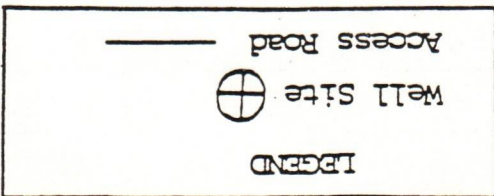
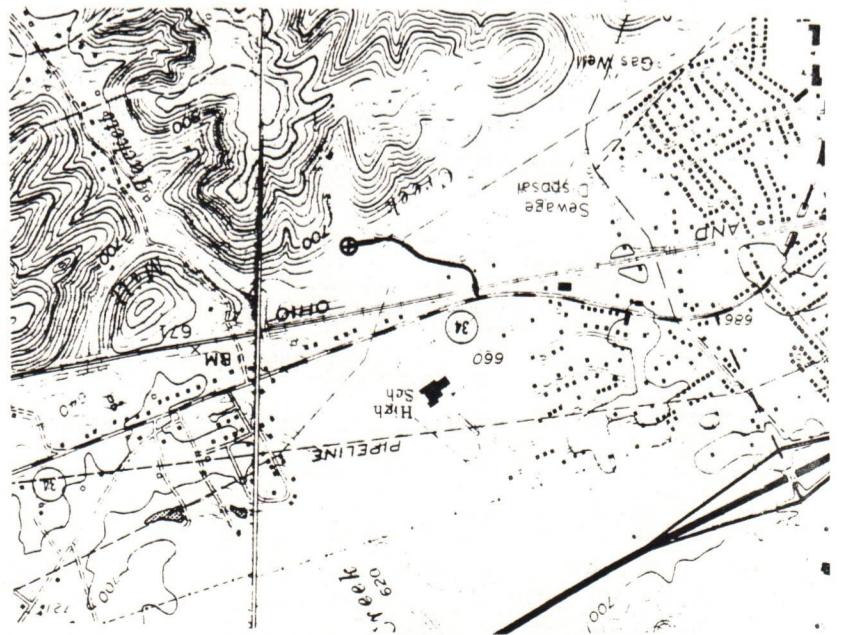
*Inoculate all legumes such as vetch, trefoil and clovers with the proper bacterium. Inoculate with 3X recommended amount.

PLAN PREPARED BY STAGG ENGINEERING SERVICES

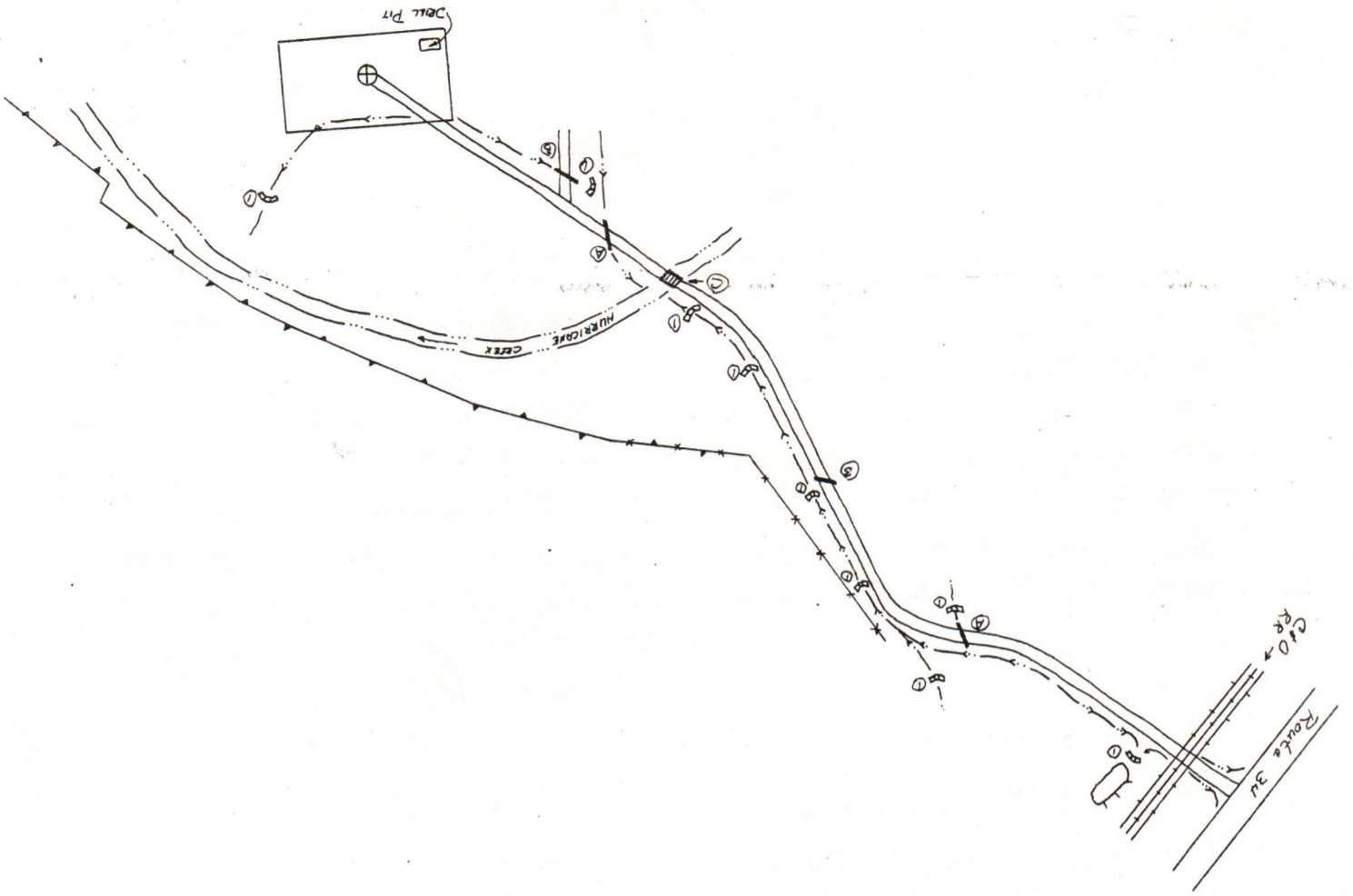
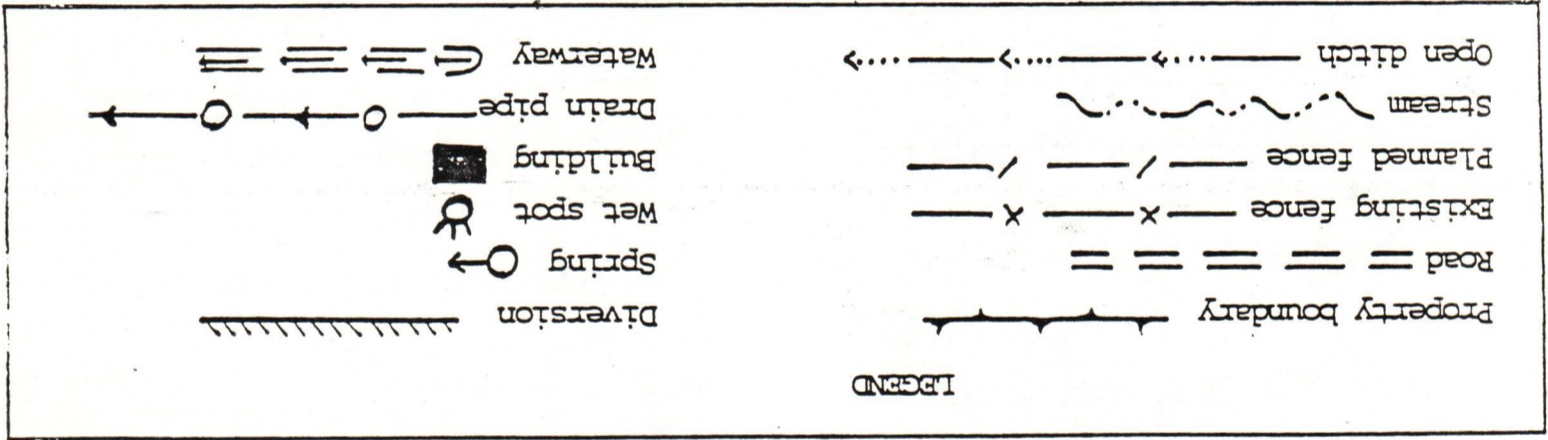
NOTES: Please request landowner's cooperation to protect new seedling for one growing season. Attach separate sheets as necessary for comments.

ADDRESS P. O. Box 5217
Charleston, WV 25311
PHONE NO. 304-343-4519

ATTACH OR PHOTOCOPY SECTION OF INVOLVED TOPOGRAPHIC MAP. QUADRANGLE Hurricane, WV



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



OIL AND GAS LEASE

RECEIVED

AGREEMENT, made and entered into this 11th day of November NOV 04 1982 A. D. 19 81
by and between James W. Loughner, Sr.

OIL & GAS DIVISION
DEPT. OF MINES

of Hurricane, West Virginia, party of the first part, hereinafter called Lessor (whether one or more),
and Buffalo Resources Corporation, party of the second part, hereinafter called Lessee

1. WITNESSETH: That the Lessor, in consideration of the sum of One Dollar, the receipt of which is hereby acknowledged, and the covenants and agreements hereinafter contained, does hereby grant unto the Lessee all of the oil and gas and all of the constituents of either in and under the land hereinafter described, together with the exclusive right to drill for, produce and market oil and gas and their constituents and of storing gas of any kind in any formation underlying the land, and also the right to enter thereon at all times for the purpose of drilling and operating for oil, gas and water, laying pipe lines, erecting tanks, machinery, powers and structures, and to possess, use, and occupy so much of said premises as is necessary and convenient for said purposes and to convey

the above named products therefrom or thereto by pipe lines or otherwise; said land being situate in _____ District,
County of Putnam, State of West Virginia, and described as follows, to-wit: Bounded on the

NORTH by lands of C & O Railroad

EAST by lands of Thacker

SOUTH by lands of Martin

WEST by lands of Graham

Containing ninety (90) acres, more or less and being a part of _____
Earl Workman et ux by deed dated October 7, 1977

recorded in said county records in Deed Book No. 227 Page 561

2. It is agreed that this lease shall remain in force for a primary term of _____ months ~~xxx~~ from this date and as long thereafter as operations for oil or gas are being conducted on the premises, or oil or gas is found in paying quantities thereon, ~~xxx~~

3. The Lessee shall deliver to the credit of the Lessor free of cost, in the pipe line to which he may connect his wells, the equal one-eighth ($\frac{1}{8}$) part of all oil produced and saved from the leased premises, and shall pay Lessor one-eighth (1/8) part

for all gas and casing head gas produced and sold from the premises, payable monthly; provided, Lessee shall pay Lessor a royalty at the rate of Fifty Dollars per year on each gas well while, through lack of market, gas therefrom is not sold or used off the premises, and while said royalty is so paid said well shall be held to be a paying well under paragraph 2 hereof.

4. The Lessee shall commence operations for a well on the premises on or before January 1, 19 83 ~~xxxx~~

~~xxxx~~ The consideration first recited herein, the down payment, shall cover not only the privilege granted to the date when first said rental is payable as aforesaid, but also the Lessee's option of extending that period as aforesaid, and any and all other rights conferred. The drilling of a non-productive well shall be accepted by the Lessor in lieu of delay rental for a period of one year after its completion, and following the exhaustion or abandonment of all wells the Lessee shall have the right for a period of one year to resume the payment of delay rental or commence operations for another well. Upon the resumption of payment of rentals the provisions hereof governing such payment and the effect thereof shall continue in force as though they had not been interrupted.

5. All moneys coming due hereunder shall be paid or tendered to James W. Loughner, Sr.

direct, or by check payable to his (or her) order mailed to _____ and no default shall be declared against the Lessee by the Lessor for failure of the Lessee to make any payment or perform any conditions provided for herein unless the Lessee shall refuse or neglect to pay or perform the same for ten days after having received written notice by registered mail from the Lessor of his intention to declare such default.

~~xxxx~~ Lessor reserves 200,000 cubic feet of gas per annum for domestic use, to be taken through his own appliances at any producing well, and agrees to pay Lessee a fair domestic rate for any gas used to excess thereof. Lessor further covenants and agrees that his taking and use of gas shall be wholly at his own risk, the Lessee not to be held liable for any accident or damage caused thereby, and Lessee shall be liable for any shortage or failure in the supply of gas for said domestic use.

~~xxxx~~ Lessor further grants to the Lessee, his heirs and assigns, the right to unitize this lease with other leases to form a drilling unit or units according to the rules and regulations which may be adopted for the proper development and conservation of the field. In the event this lease is so unitized, the Lessor agrees to accept, in lieu of the royalty hereinbefore recited, such proportion of the royalty above provided, as the acreage covered by this lease bears to the total acreage comprising the unit.

8. Lessor further grants to the Lessee, his heirs and assigns, the right to unitize this lease with other leases to form a drilling unit or units according to the rules and regulations which may be adopted for the proper development and conservation of the field. In the event this lease is so unitized, the Lessor agrees to accept, in lieu of the royalty hereinbefore recited, such proportion of the royalty above provided, as the acreage covered by this lease bears to the total acreage comprising the unit.

9. If said Lessor owns a less interest in the above described land than the undivided fee simple estate therein, then the royalties and rentals herein provided shall be paid the Lessor only in the proportion which his interest bears to the whole and undivided fee.

10. No well may be drilled nearer than 200 feet to the house or barn now on said premises without the written consent of Lessor. Lessee shall have and enjoy all rights and privileges necessary and convenient for the proper use and development of this lease, and shall have the right to use, free of cost, gas, oil and water produced on said land for its operations thereon, except water from wells of Lessor. Lessee shall also have the right at any time to remove all or any part of the machinery, fixtures or structures placed on said premises, including the right to draw and remove casing. Lessee shall pay for damages caused by its operations to growing crops on said lands, and, when requested by Lessor, shall bury its pipe lines below plow depth.

11. The interest or estate of either party hereto may be assigned, the privilege of assigning in whole or in part being expressly allowed. In event this lease shall be assigned as to any part or parts of the above described land and the assignee or assignees of such part or parts shall fail or make default in the payment of the proportionate part of the rents due from him or them, such default shall not operate to defeat or affect this lease insofar as it covers a part or parts of said land upon which the said Lessee or any assignee thereof shall make due payment of said rental. No change of ownership in the land or in the rentals or royalties shall be binding on the Lessee until after notice to the Lessee and it has been furnished with a written transfer or assignment or a certified copy thereof.

12. At any time, Lessee, its successors or assigns, shall have the right to surrender this lease or any part thereof for cancellation, after which all payments and liabilities hereunder thereafter shall cease and determine, and if the whole is surrendered, then this lease shall become absolutely null and void. This surrender may be made to the Lessor, or if more than one Lessor, then to any one of them, or to the heirs or assigns of any one of them by delivery of a duly executed surrender thereof in person or by mail addressed to the post office address of such person, or by recording a duly executed surrender thereof in the Recorder's office of the County in which the land is located.

13. Lessor hereby warrants and agrees to defend the title to the land hereto described and agrees that the Lessee at its option may pay, discharge or redeem any taxes, mortgages, or other liens existing, levied, or assessed on or against the above described lands, and in event it exercises such option, it shall be subrogated to the rights of any holder or holders thereof and may reimburse itself by applying any royalty or rentals accruing hereunder to the discharge of any such taxes, mortgages or other liens.

14. It is expressly agreed that if the Lessee shall commence drilling operations at any time while this lease is in force, it shall remain in force and its terms continue so long as such operations are prosecuted, and if production results therefrom, then as long as production continues. If after the expiration of the term of this lease production from the leased premises shall cease from any cause, this lease shall not terminate provided Lessee resumes operations within sixty days from such cessation, and this lease shall remain in force during the prosecution of such operations, and, if production results therefrom, then as long as oil or gas is produced in paying quantities.

and the Amendment thereto attached and made a part hereof
15. This lease/embodies the entire contract and agreement between Lessor and Lessee, and no warranties, representations, promises or inducements not herein expressed have been made or relied upon by either party. The terms, conditions and stipulations hereof shall extend to the respective heirs, executors, administrators, successors and assigns of the parties hereto.

Witness the hands and seals of the parties hereto the day and year first above written.

WITNESS:

James W. Leugner, Sr. (SEAL)

BUFFALO RESOURCES CORPORATION (SEAL)
BY: *[Signature]* (SEAL)
Area Manager, Eastern Region (SEAL)

_____ (SEAL)

WEST VIRGINIA ACKNOWLEDGMENT

STATE OF WEST VIRGINIA

COUNTY OF Putnam

To-wit:

I, Dana L. Walters a Notary Public of said County, do hereby certify that

James W. Leugner, Sr.

whose name W signed to the within writing bearing date the 11th day of November, 1981
has S this day acknowledged the same before me in my said County.

Given under my hand this 11th day of November, 1981
Dana L. Walters
Notary Public

My Commission expires August 30, 1984

WEST VIRGINIA ACKNOWLEDGMENT

STATE OF WEST VIRGINIA

COUNTY OF Kanawha

To-wit:

I, Karen Carr a Notary Public of said County, do hereby certify that

John M. Foster, Area Manager, Eastern Region

whose name _____ signed to the within writing bearing date the 11th day of November, 1981
has S this day acknowledged the same before me in my said County.

Given under my hand this 30th day of November, 1981
Karen Carr
Notary Public

My Commission expires October 6, 1991

OHIO ACKNOWLEDGMENT

STATE OF OHIO,

COUNTY OF _____

SS.

Before me, a Notary Public in and for said county, personally appeared the above named _____

_____ who acknowledged
that _____ he _____ did sign the foregoing instrument, and that the same is _____ free act and deed. In testimony
whereof I have hereunto subscribed my name at _____, this _____
day of _____, 19____.

My Commission expires _____

Notary Public

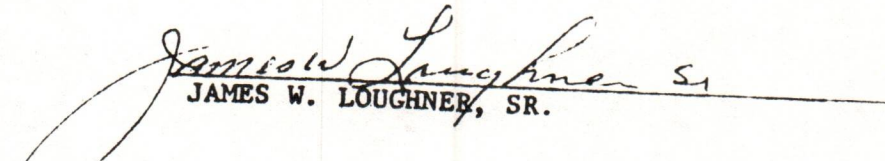
Globe Form 100 - Rev.
(Standard Ohio & W. Va.)
Oil and Gas Lease

TO _____
Date _____, 19____
Acres _____
Location _____
County _____ State _____
Terms _____
RECORDING DATA:

AMENDMENT TO OIL AND GAS LEASE

1. Lessee shall pay Lessor rental at the rate of Five Dollars (\$5.00) per acre per year from the date of this agreement until Lessee commences operations for a well.

2. Lessor reserves Three Hundred Thousand (300,000) cubic feet of gas per annum for either domestic or commercial use and for the use and benefit of himself, his heirs, assigns and successors in title, to be taken at any producing gas well situate on the above described property. Lessor agrees to pay Lessee a fair and reasonable rate for any gas used in excess of 300,000 cubic feet per annum. Lessor covenants and agrees that his taking and use of said gas shall be wholly at his own risk, the Lessee not to be held liable for any accident or damages caused thereby, nor shall Lessee be liable for any shortage or failure in the supply of gas for said use.



JAMES W. LOUGHNER, SR.

BUFFALO RESOURCES CORPORATION

BY: 

ITS: _____



IV-35
(Rev 8-81)

RECEIVED

JAN 24 1984

OIL & GAS DIVISION

DEPT. OF MINES WELL OPERATOR'S REPORT

OF

DRILLING, FRACTURING AND/OR STIMULATING, OR PHYSICAL CHANGE

Date Feb. 3, 1983
Operator's
Well No. #1
Farm Loughner
API No. 47 - 079 - 1100

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

LOCATION: Elevation: 612.96 Watershed Big Hurricane Creek
District: Teays Valley County Putnam Quadrangle Hurricane

COMPANY Buffalo Resources Corp.

ADDRESS 818 Oakwood Rd., Charleston, WV

DESIGNATED AGENT John M. Foster

ADDRESS SAME

SURFACE OWNER Penn Eastern Corporation

ADDRESS P. O. Box 166, Hurricane, WV

MINERAL RIGHTS OWNER Eleanor Coal Co.

ADDRESS P. O. Box 346, Scott Depot, WV

OIL AND GAS INSPECTOR FOR THIS WORK Martin

Nichols ADDRESS Clendenin, WV

PERMIT ISSUED November 9, 1982

DRILLING COMMENCED 12-1-82

DRILLING COMPLETED 12-6-82

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	350	350	To Surface
8 5/8			
7	1806	1806	Back to 9 5/8 casing
5 1/2			
4 1/2	4093	4093	To 7" casing
3			
2			
Liners used			

GEOLOGICAL TARGET FORMATION Devonian Shale, Berea Sand- Depth 4141 feet

Depth of completed well 4141 feet Rotary X^{stone} Cable Tools -

Water strata depth: Fresh 250 feet; Salt 1700 feet

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

OPEN FLOW DATA

Producing formation Devonian Shale Pay zone depth 3308-4032 feet

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

Final open flow 54,000 Mcf/d Final open flow _____ Bbl/d

Time of open flow between initial and final tests 6 hours

Static rock pressure 465 psig (surface measurement) after 48 hours shut in

(If applicable due to multiple completion--)

Second producing formation Berea Pay zone depth 2150-2176 feet

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

Final open flow 21 Mcf/d Oil: Final open flow _____ Bbl/d

Time of open flow between initial and final tests 6 hours

Static rock pressure 425 psig (surface measurement) after 24 hours shut in

(Continue on reverse side)

Part. 1100

DETAILS OF PERFORATION INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC.
 Perforated Shale with 20 holes (.41" diameter) as follows: 3311, 3323, 3325, 3340, 3342, 3441, 3493, 3695, 3607, 3621, 3623, 3769, 3779, 3870, 3880, 3952, 3994, 3996, 4000, 4652. Fractured with 1000 barrels 80% quality foam using 15,000 lbs. 20-100 mesh sand and 25,000 lbs. 20-40 mesh sand.

Perforated Berea from 2156-2170 with 20 holes (.36" diameter) .
 Fractured with 600 barrels 80% quality foam with 10,000 lb. 80-100 mesh sand and 20,000 lbs. 20-40 mesh sand.

WELL LOG

FORMATION	COLOR	HARD OR SOFT	TOP FEET	BOTTOM FEET	REMARKS Including indication of all fresh and salt water, coal, oil and gas
SEE ATTACHED GEOLOGIC LOG					

(Attach separate sheets as necessary)

BUFFALO RESOURCES CORPORATION
 Well Operator

By:  John M. Foster

Date: December 29, 1982

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."

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

WELL LOG LOUGHNER #1 47-079-1100

FORMATION	COLOR	HARD OR SOFT	TOP FEET	BOTTOM FEET	REMARKS
					Including indication of all fresh and salt water, coal, oil and gas
Soil and Rock			0	20	
Sandy Shale			20	90	
Silty Shale			90	310	
Shale			310	380	
Sandy Shale			380	480	Water flow noted
Shale and Silt			480	560	
Sand			560	660	
Shale			660	720	
Silty Shale			720	1100	
Lime			1100	1180	
Shale w/Lime			1180	1240	
Limestone			1240	1640	Big Lime Formation - Show of gas at 1400
Shale			1640	1720	
Sandstone			1720	1800	Big Injun Formation
Shale			1800	1940	

Fut. 1100

(Attach separate sheets as necessary)

Well Operator _____

By: _____

Date: _____

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."



IV-35
(Rev 8-81)

State of West Virginia
Department of Mines
Oil and Gas Division

Date _____
Operator's _____
Well No. _____
Farm _____
API No. _____

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: _____ Watershed _____
District: _____ County _____ Quadrangle _____

COMPANY _____

ADDRESS _____

DESIGNATED AGENT _____

ADDRESS _____

SURFACE OWNER _____

ADDRESS _____

MINERAL RIGHTS OWNER _____

ADDRESS _____

OIL AND GAS INSPECTOR FOR THIS WORK _____

ADDRESS _____

PERMIT ISSUED _____

DRILLING COMMENCED _____

DRILLING COMPLETED _____

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			
8 5/8			
7			
5 1/2			
4 1/2			
3			
2			
Liners used			

GEOLOGICAL TARGET FORMATION _____ Depth _____ feet

Depth of completed well _____ feet Rotary ___ / Cable Tools _____

Water strata depth: Fresh _____ feet; Salt _____ feet

Coal seam depths: _____ Is coal being mined in the area? ___

OPEN FLOW DATA

Producing formation _____ Pay zone depth _____ feet

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

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

Time of open flow between initial and final tests _____ hours

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

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)

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

WELL LOG Loughner #1 47-079-1100

FORMATION	COLOR	HARD OR SOFT	TOP FEET	BOTTOM FEET	REMARKS
					Including indication of all fresh and salt water, coal, oil and gas
Shale			2136	2150	Coffee Shale
Sandstone			2150	2176	Berea Formation - Show of gas
Shale			2176	3304	None
Shale			3304	3650	Upper Huron
Shale			3650	3988	None
Shale			3988	4141	Lower Huron
				4141	Total Depth

(Attach separate sheets as necessary)

Well Operator

By: _____

Date: _____

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."

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

RECEIVED

DEC - 6 1982

OIL AND GAS DIVISION
WV DEPARTMENT OF MINES

INSPECTOR'S WELL REPORT

Permit No. 47-079-1100

Oil or Gas Well _____
(KIND)

Company <u>Buffalo Resour. Inc</u>	CASING AND TUBING	USED IN DRILLING	LEFT IN WELL	PACKERS
Address <u>Charleston, WVA</u>	Size			
Farm <u>Lany Acres</u>	16			Kind of Packer _____
Well No. <u>1</u>	13			
District <u>Teays Valley County Putnam</u>	10 <u>9 5/8 - 350</u>			Surface of _____
Drilling commenced <u>12-1-82</u>	8 1/4 <u>Surface by Haliburton</u>			Depth set _____
Drilling completed <u>Rem 9 5/8 pipe at 350</u>	6 5/8			
Date shot _____	5 3/16			Perf. top _____
Depth of shot _____	3			Perf. bottom _____
Initial open flow _____ /10ths Water in _____ Inch	2			Perf. top _____
Open flow after tubing _____ /10ths Merc. in _____ Inch	Liners Used			Perf. bottom _____
Volume _____ Cu. Ft.				
Rock pressure _____ lbs. _____ hrs.	CASING CEMENTED _____ SIZE _____ No. FT. _____ Date _____			
Oil _____ bbls., 1st 24 hrs.	NAME OF SERVICE COMPANY _____			
Fresh water _____ feet _____ feet	COAL WAS ENCOUNTERED AT _____ FEET _____ INCHES			
Salt water _____ feet _____ feet	_____ FEET _____ INCHES _____ FEET _____ INCHES			
	_____ FEET _____ INCHES _____ FEET _____ INCHES			

Drillers' Names Rodney Paster
Carr, Clint Hunt of assets.
Remarks: _____

12-3-82
DATE

(503) E. Butcher
DISTRICT WELL INSPECTOR

RECEIVED

MAR 27 1984



OIL & GAS DIVISION
DEPT. OF MINES State of West Virginia
Department of Mines
Oil and Gas Division
Charleston 25305

FINAL INSPECTION REPORT
INSPECTORS COMPLIANCE REPORT
February 3, 1984

COMPANY Buffalo Resources Corp.
818 Oakwood Road, Suite 102
Charleston, West Virginia 25314

PERMIT NO 079-1100
FARM & WELL NO Penn Eastern Corp. #1
DIST. & COUNTY Teays Valley/Putnam

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 Strenght	_____	_____
15.05	Cement Type	_____	_____
23.02	Maintained Access Roads	_____	_____
25.01	Necessary Equipment to Prevent Waste	✓	_____
23.04	Reclaimed Drilling Pits	_____	_____
23.05	No Surface or Underground Pollution	✓	_____
23.07	Requirements for Production & Gathering Pipelines	✓	_____
16.01	Well Records on Site	_____	_____
16.02	Well Records Filed	_____	_____
7.05	Identification Markings	_____	_____

I HAVE INSPECTED THE ABOVE CAPTIONED WELL AND RECOMMEND THAT IT BE RELEASED:

SIGNED *Jimmy Holcomb*

DATE 3-23-84

Your well record was received and reclamation requirements approved. In accordance with Chapter 22, Article 4, Section 2, the above well will remain under bond coverage for the life of the well.

T. L. ...

Administrator-Oil & Gas Division

March 30, 1984

DATE

1.0 API well number: (If not available, leave blank. 14 digits.)	47-079-1100															
2.0 Type of determination being sought: (Use the codes found on the front of this form.)	103 Section of NGPA															
3.0 Depth of the deepest completion location: (Only needed if sections 103 or 107 in 2.0 above.)	4225 feet															
4.0 Name, address and code number of applicant: (35 letters per line maximum. If code number not available, leave blank.)	<u>Buffalo Resources Corp.</u> Name _____ Seller Code _____ <u>818 Oakwood Rd.</u> Street _____ <u>Charleston</u> <u>WV</u> <u>25314</u> City State Zip Code															
5.0 Location of this well: [Complete (a) or (b).] (a) For onshore wells (35 letters maximum for field name.)	<u>Teays Valley</u> Field Name _____ <u>Putnam</u> <u>WV</u> County State															
(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: (35 letters and digits maximum.)	<u>Loughner #1</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.)	<u>Columbia Gas Transmission Corp.</u> <u>004030</u> Name Buyer Code															
(b) Date of the contract:	<u>11/12/82</u> Mo. Day Yr.															
(c) Estimated annual production:	_____ MMcf.															
7.0 Contract price: (As of filing date. Complete to 3 decimal places.)	<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:30%;"></th> <th style="width:15%;">(a) Base Price (\$/MMBTU)</th> <th style="width:15%;">(b) Tax</th> <th style="width:15%;">(c) All Other Prices [Indicate (+) or (-).]</th> <th style="width:25%;">(d) Total of (a), (b) and (c)</th> </tr> </thead> <tbody> <tr> <td style="padding: 5px;">8.0 Maximum lawful rate: (As of filing date. Complete to 3 decimal places.)</td> <td style="padding: 5px; text-align: center;">2.722</td> <td style="padding: 5px; text-align: center;">-----</td> <td style="padding: 5px; text-align: center;">-----</td> <td style="padding: 5px; text-align: center;">-----</td> </tr> <tr> <td style="padding: 5px;">9.0 Person responsible for this application:</td> <td style="padding: 5px; text-align: center;">-----</td> <td style="padding: 5px; text-align: center;">-----</td> <td style="padding: 5px; text-align: center;">-----</td> <td style="padding: 5px; text-align: center;">-----</td> </tr> </tbody> </table>		(a) Base Price (\$/MMBTU)	(b) Tax	(c) All Other Prices [Indicate (+) or (-).]	(d) Total of (a), (b) and (c)	8.0 Maximum lawful rate: (As of filing date. Complete to 3 decimal places.)	2.722	-----	-----	-----	9.0 Person responsible for this application:	-----	-----	-----	-----
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FEB 4 1983

OIL & GAS DIVISION
DEPT. OF MINES

PARTICIPANTS:

DATE: MAY 26 1983

BUYER-SELLER CODE

WELL OPERATOR: Buffalo Resources Corp.

FIRST PURCHASER: Columbia Gas Trans. Corp.

OTHER: _____

004030

W. Va. Department of Mines, Oil & Gas Division
 WELL DETERMINATION FILE NUMBER
830204-103-079-1100
 Use Above File Number on all Communications
 Relating to Determination of this Well

~~Defered~~
~~* 22-4-86 No BAP~~
~~* No well log~~

QUALIFIED

CHECK EACH ITEM AS COMPLETE OR NOTE WHAT IS MISSING

- ITEM NO.
1. FERC -121 Items not completed - Line No. 70 b, c, d All 8.0
 2. IV-1 Agent John M. Foster
 3. IV-2 Well Permit _____
 4. IV-6 Well Plat
 5. IV-35 Well Record Drilling Deepening _____
 6. IV-36 Gas-Oil Test: Gas Only _____ Was Oil Produced? _____ Ratio _____
 7. IV-39 Annual Production _____ years
 8. IV-40 90 day Production _____ Days off line: _____
 9. IV-48 Application for certification. Complete?
 - 10-17. IV Form 51 - 52 - 53 - (54) - 55 - 56 - 57 - 58 Complete? Affidavit Signed
 - 18-28. Other: Survey _____ Logs _____ Geological Charts _____
 Structure Map _____ 1: 4000 Map _____ Well Tabulations _____
 Gas Analyses _____
 - (5) Date commenced: 12-1-82 Date completed 12-6-82 Deepened _____
 - (5) Production Depth: 3308-4032 2150-76
 - (5) Production Formation: Devonian Shale Berea
 - (5) Final Open Flow: 54 MCF 21 MCF
 - (5) After Frac. R. P. 465 # 48 hrs. 425 # 24 hrs.
 - (6) Other Gas Test: _____
 - (7) Avg. Daily Gas from Annual Production: _____
 - (8) Avg. Daily Gas from 90-day ending w/1-120 days _____
 - (8) Line Pressure: _____ PSIG from Daily Report
 - (5) Oil Production: _____ From Completion Report _____
 - 10-17. Does lease inventory indicate enhanced recovery being done No
 - 10-17. Is affidavit signed? Notarized?
 - Does official well record with the Department confirm the submitted information? yes
 - Additional information _____ Does computer program confirm? _____
 - Was Determination Objected to _____ By Whom? _____

713

STATE APPLICATION FOR WELL CLASSIFICATION

Previous File No.
(If Applicable)

WELL OPERATOR Buffalo Resources Corp.
ADDRESS 818 Oakwood Rd., Suite 102
Charleston, WV 25314

DESIGNATED AGENT John M. Foster
ADDRESS SAME

Gas Purchase Contract No AP-28049-WV and Date 11-24-82
Meter Chart Code (Month, day and year)

Name of First Purchaser Columbia Gas Transmission Corp.
P. O. Box 1273
(Street or P. O. Box)
Charleston, WV 25325
(City) (State) (Zip Code)

FERC Seller Code FERC Buyer Code 004030

TYPE OF DETERMINATION BEING SOUGHT:

- (1) Initial determination (See FERC Form 121.) 103 Section or NGPA Category Code
- (2) Determination that increased production is the result of enhanced recovery technology.
- (3) Determination of a seasonally affected well.

John M. Foster Manager, Eastern Region
Name (Print) Title

[Signature]
818 Oakwood Rd, Suite 102
Street or P. O. Box
Charleston WV 25314
City State (Zip Code)
(304) 345-9232
Area Code Phone Number

(Certificate of Proof of Service to Purchaser)

SENT VIA REGULAR MAIL FEBRUARY 2, 1983

(All of the above to be completed by the Operator/Applicant)

(To be completed by Jurisdictional Agency. Executed copy to be returned to Operator/Applicant and purchaser, if known).

The Department of Mines has received a request, for certification of the above described well as meeting the requirements of Section under the Natural Gas Policy Act of 1976 (NGPA); or for determination that increased production is the result of enhanced recovery technology under Section 108 of (NGPA); or for determination of a seasonally affected well under Section 108 of (NGPA).

All interested parties are hereby notified that on the day of , 1983, at the office of the Oil and Gas Division in Charleston, West Virginia, or as soon thereafter as it may be heard, there will be a public hearing, if requested, or if objection is filed.

This Application is assigned File No.

Initial review of information submitted indicates the well is, is not entitled to certification as claimed under the Natural Gas Policy Act (NGPA). A review of this evidence and any additional evidence will be made at the time appointed for a public hearing or as soon thereafter as the matter may be heard.

Unless objections are timely filed or a request for a hearing is made within fifteen (15) days, a hearing will not be held except on ex parte motion of the department and the matter will go to determination.

WEST VIRGINIA DEPARTMENT OF MINES

FEB 4 1983

Date received by Jurisdictional Agency

 Director
By [Signature]
Title

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

Date Feb. 3 1983

Operator's Well No. Loughner #1

API Well No. 47 - 079 - 1100
State County Permit

WELL CLASSIFICATION FORM
NEW ONSHORE PRODUCTION WELL
NGPA Section 103

DESIGNATED AGENT John M. Foster
ADDRESS 818 Oakwood Rd., Suite 102
Charleston, WV 25314

WELL OPERATOR Buffalo Resources
ADDRESS 818 Oakwood Rd., Suite 102
Charleston, WV 25314

LOCATION: Elevation 612.96
Watershed Big Hurricane Creek
Dist. Teays County Putnam Quad. Hurricane

GAS PURCHASER Columbia Gas
ADDRESS P. O. Box 1273
Charleston, WV 25325

Gas Purchase Contract No. AP-28049-WV
Meter Chart Code _____
Date of Contract 11-24-82

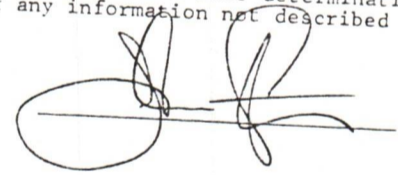
* * * * *

Date surface drilling was begun: 12-1-82

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

AFFIDAVIT

I, John M. Foster, 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.



STATE OF WEST VIRGINIA,
COUNTY OF Kanawha, TO WIT:

I, Karen A. Carr, a Notary Public in and for the state and county aforesaid, do certify that John M. Foster whose name is signed to the writing above, bearing date the 3rd day of February, 1983, has acknowledged the same before me, in my county aforesaid. Given under my hand and official seal this 3rd day of February, 1983. My term of office expires on the 6 day of October, 1991.

[NOTARIAL SEAL]

Karen A. Carr
Notary Public

BOTTOM HOLE PRESSURE CALCULATIONS

LOUGHNER #1
(47-079-1100)

DEVONIAN SHALE:

Wellhead Pressure = 465 psia

Well Depth = 3671.5'

Specific gravity = .7025

Compressibility Factor (Z) = .905

Temperature = 73.75°F = 533.75°R

$$\begin{aligned} \text{BOTTOM HOLE PRESSURE} &= 465e \frac{.01875 \times .7025 \times 3671.5}{.905 \times 533.75} \\ &= 514 \text{ psia} \end{aligned}$$

BEREA:

Wellhead Pressure = 425 psia

Well Depth = 2163

Specific gravity = .70

Compressibility Factor (Z) = 0.91

Temperature = 68°F = 525°R

$$\begin{aligned} \text{BOTTOM HOLE PRESSURE} &= 425e \frac{.01875 \times .70 \times 2163}{.91 \times 525} \\ &= 451 \text{ psia} \end{aligned}$$

1.0 API well number:
(If not available, leave blank. 14 digits.) 47-079-1100

2.0 Type of determination being sought:
(Use the codes found on the front of this form.) 107 Section of NGPA 3 Category Code
FEB 4 1983

3.0 Depth of the deepest completion location: (Only needed if sections 103 or 107 in 2.0 above.) 4225 feet

4.0 Name, address and code number of applicant: (35 letters per line maximum. If code number not available, leave blank.)
Buffalo Resources Corp. Name
818 Oakwood Rd. Street
Charleston City WV 25314 State Zip Code

5.0 Location of this well: [Complete (a) or (b).]
(a) For onshore wells (35 letters maximum for field name.)
Teays Valley Field Name
Putnam County WV State

(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: (35 letters and digits maximum.)
Loughner #1

(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.)
Columbia Gas Transmission Corp. 004030
Name Buyer Code

(b) Date of the contract:
11 24 82
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: (As of filing date. Complete to 3 decimal places.)	<u>5.444</u>	---	---	---
8.0 Maximum lawful rate: (As of filing date. Complete to 3 decimal places.)	<u>DEREGULATED</u>	---	---	---

9.0 Person responsible for this application:
Agency Use Only
Date Received by Juris. Agency FEB 4 1983
Date Received by FERC _____
John M. Foster Name Manager, Eastern Region Title
Signature _____
Feb. 3, 1983 Date Application is Completed (304) 345-9232 Phone Number

OIL & GAS DIVISION
DEPT. OF MINES

PARTICIPANTS:

DATE: MAY 26 1983

BUYER-SELLER CODE

WELL OPERATOR: Buffalo Resources Corp.

FIRST PURCHASER: Columbia Gas Trans. Corp.

OTHER: _____

004030

Devonian Shale

W. Va. Department of Mines, Oil & Gas Division
WELL DETERMINATION FILE NUMBER

830204-107-079-1100

Use Above File Number on all Communications
Relating to Determination of this Well

~~DEFERRED~~

~~BHP~~

~~Well Record - Incomplete well log~~

QUALIFIED

CHECK EACH ITEM AS COMPLETE OR NOTE WHAT IS MISSING

ITEM NO.

1. FERC -121 Items not completed - Line No. 7.0 bcd 8.0 Deregulated

2. IV-1 Agent John M. Foster

3. IV-2 Well Permit _____

4. IV-6 Well Plat

5. IV-35 Well Record Drilling Deepening _____

6. IV-36 Gas-Oil Test: Gas Only _____ Was Oil Produced? _____ Ratio _____

7. IV-39 Annual Production _____ years

8. IV-40 90 day Production _____ Days off line: _____

9. IV-48 Application for certification. Complete?

10-17. IV Form 51 - 52 - 53 - 54 - (55) - 56 - 57 - 58 Complete? Affidavit Signed

18-28. Other: Survey _____ Logs _____ Geological Charts _____
Structure Map _____ 1: 4000 Map _____ Well Tabulations _____
Gas Analyses _____

(5) Date commenced: 12-1-82 Date completed 12-6-82 Deepened _____

(5) Production Depth: 3308-4032 2150-76

(5) Production Formation: Devonian Shale Berea

(5) Final Open Flow: 54 MMCF 21 MCF

(5) After Frac. R. P. 465 # 48 hrs 425 # 24 hrs

(6) Other Gas Test: _____

(7) Avg. Daily Gas from Annual Production: _____

(8) Avg. Daily Gas from 90-day ending w/1-120 days _____

(8) Line Pressure: _____ PSIG from Daily Report

(5) Oil Production: _____ From Completion Report _____

10-17. Does lease inventory indicate enhanced recovery being done No

10-17. Is affidavit signed? Notarized?

Does official well record with the Department confirm the submitted information? yes

Additional information _____ Does computer program confirm? _____

Is Determination Objected to _____ By Whom? _____

STATE APPLICATION FOR WELL RECLASSIFICATION

WELL OPERATOR Buffalo Resources Corp.
ADDRESS 818 Oakwood Rd., Suite 102
Charleston, WV 25314

DESIGNATED AGENT John M. Foster
ADDRESS SAME

Gas Purchase Contract No. AP-28049-WV and Date 11-24-82
Meter Chart Code (Month, day and year)

Name of First Purchaser Columbia Gas Transmission Corp.
P. O. Box 1273
(Street or P. O. Box)
Charleston, WV 25325
(City) (State) (Zip Code)

FERC Seller Code FERC Buyer Code 004030

TYPE OF DETERMINATION BEING SOUGHT:

- (1) Initial determination (See FERC Form 121.) Section or NGPA 107 Category Code 3
- (2) Determination that increased production is the result of enhanced recovery technology.
- (3) Determination of a seasonally affected well.

John M. Foster Manager, Eastern Region
Name (Print) Title
[Signature]
Signature
818 Oakwood Rd., Suite 102
Street or P. O. Box
Charleston WV 25314
City State (Zip Code)
(304) 345-9232
Area Code Phone Number

(Certificate of Proof of Service to Purchaser)

SENT VIA REGULAR MAIL FEBRUARY 2, 1983

(All of the above to be completed by the Operator/Applicant)

(To be completed by Jurisdictional Agency. Executed copy to be returned to Operator/Applicant and purchaser, if known).

The Department of Mines has received a request for certification of the above described well as meeting the requirements of Section under the Natural Gas Policy Act of 1976. (NGPA): or for determination that increased production is the result of enhanced recovery technology under Section 108 of (NGPA): or for determination of a seasonally affected well under Section 108 of (NGPA).

All interested parties are hereby notified that on the day of , 19 at the office of the Oil and Gas Division in Charleston, West Virginia, or as soon thereafter as it may be heard, there will be a public hearing, if requested, or if objection is filed.

This Application is assigned File No.

Initial review of information submitted indicates the well is is not entitled to certification as claimed under the Natural Gas Policy Act (NGPA). A review of this evidence and any additional evidence will be made at the time appointed for a public hearing or as soon thereafter as the matter may be heard.

Unless objections are timely filed or a request for a hearing is made within fifteen (15) days, a hearing will not be held except on ex parte motion of the department and the matter will go to determination.

WEST VIRGINIA DEPARTMENT OF MINES

FEB 4 1983

Date received by Jurisdictional Agency

By [Signature] Director
Title

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

Operator's
Well No. #1
API Well
No. 079-1100
State

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

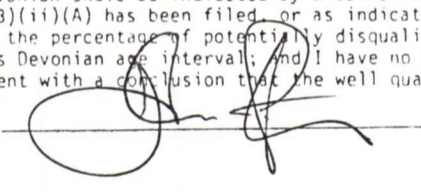
DESIGNATED BY <u>John M. Foster</u>	ADDRESS <u>818 Oakwood Rd., Ste. 102</u> <u>Charleston, WV 25314</u>
WELL OPERATOR <u>Buffalo Resources</u>	LOCATION Elevation <u>612.96</u> Watershed <u>Hurricane Creek</u> Dist <u>Teays County Putnam</u> <u>Hurricane</u>
ADDRESS <u>818 Oakwood Rd., Ste. 102</u> <u>Charleston, WV 25314</u>	Gas Purchase Contract No <u>AP-28049-WV</u> Meter Chart Code Date of Contract <u>11-24-82</u>
GAS PURCHASER <u>Columbia Gas</u>	
ADDRESS <u>P. O. Box 1273</u> <u>Charleston, WV 25314</u>	

Date surface drilling began: 12-1-82

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

AFFIDAVIT

I, John M. Foster, 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 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.



STATE OF WEST VIRGINIA,
COUNTY OF Kanawha, TO WIT

I, Karen A. Carr, a Notary Public in and for the state and county aforesaid do certify that John M. Foster, whose name is signed to the writing above, bearing date the 2 day of February, 1983, has acknowledged the same before me, in my county aforesaid

Given under my hand and official seal this 2nd day of February, 1983
My term of office expires on the 6th day of October, 1991

Karen A. Carr
Notary Public

[NOTARIAL SEAL]

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

Operator: Buffalo Resources Corp. Agent: John M. Foster
 Type Determination being sought - 107 (Devonian Shale)
 API Well No.: 47-079-1100 Well Name: Loughner #1
 West Virginia Office of Oil and Gas County: Putnam
 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 = 160 * API Units
2. Remarks:

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

1. GR Value = 160 * API Units
2. Calculation: $\frac{0.7 \text{ (GR Value at Base Line)}}{0.7 \text{ (} \underline{160} \text{ *)} = \underline{112} \text{ API Units}$

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>		

Total Devonian Interval 1952

Total Less Than 0.7 (Shale Base)

% Less Than 0.7 (Shale Base Line) = _____ x 100 = 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.



Buffalo
Resources
Corporation

February 3, 1983

818 Oakwood Road / Suite 102

Charleston, West Virginia 25314

(304) 345-9232

Theodore M. Streit, Administrator
Office of Oil and Gas
Dept. of Mines
1615 Washington St., E.
Charleston, WV 25311

Handwritten signature
FEB 4 1983
OIL & GAS DIVISION
DEPT. OF MINES

Dear Mr. Streit:

Please find attached NGPA filings for Well #47-079-1100, Loughner #1, situate in Putnam County, West Virginia. The filings are as follows:

- 1) Section 107 for the Devonian Shale
- 2) Section 103 for the Berea Sandstone
- 3) Section 107 for the Berea Sandstone

TF

The Loughner #1 Well has been dually completed in the Berea Sandstone and the Devonian Shale. The attached schematic drawing indicates the respective depths of the producing formations and the manner of completion. The formations are not separated mechanically by down-hole means and will flow into a common meter installed at the wellhead. For purposes of allocation for the Berea vis-a-vis the Devonian Shale, a stabilized wellhead open flow test was conducted by Buffalo Resources Corporation and the percentage allocation of the total gas measured should be based on said open flow determinations. The open flow tests were conducted as follows: 1) Devonian Shale was tested prior to fracturing the Berea Sandstone and 2) The Berea Sandstone was tested with a bridge plug set below the Berea isolating said formation.

The respective open flows with the percent of total gas to be allocated to each formation are as follows:

- 1) Devonian Shale - 44 Mcf/day - 67.69%
- 2) Berea Sandstone - 21 Mcf/day - 32.31%

It should be noted that filing for section 107 for the Berea Sandstone is now being made, although tight gas sand designation has not been approved by the FERC. However, Buffalo Resources desires to have said tight gas sand application on file with your agency in the event that this area is approved by the FERC.

If this method of allocation of Berea and Devonian gas is acceptable to you, it is requested that said filing be processed in order to allow Buffalo Resources to commence sale of gas to Columbia Gas Transmission Corporation.

Very truly yours,

John M. Foster
Eastern Regional Manager,
Designated Agent

cc: Columbia Gas

BOTTOM HOLE PRESSURE CALCULATIONS

LOUGHNER #1
(47-079-1100)

DEVONIAN SHALE:

Wellhead Pressure = 465 psia

Well Depth = 3671.5'

Specific gravity = .7025

Compressibility Factor (Z) = .905

Temperature = 73.75[°]F = 533.75[°]R

$$\begin{aligned} \text{BOTTOM HOLE PRESSURE} &= 465e \frac{.01875 \times .7025 \times 3671.5}{.905 \times 533.75} \\ &= 514 \text{ psia} \end{aligned}$$

BEREA:

Wellhead Pressure = 425 psia

Well Depth = 2163

Specific gravity = .70

Compressibility Factor (Z) = 0.91

Temperature = 68[°]F = 525[°]R

$$\begin{aligned} \text{BOTTOM HOLE PRESSURE} &= 425e \frac{.01875 \times .70 \times 2163}{.91 \times 525} \\ &= 451 \text{ psia} \end{aligned}$$

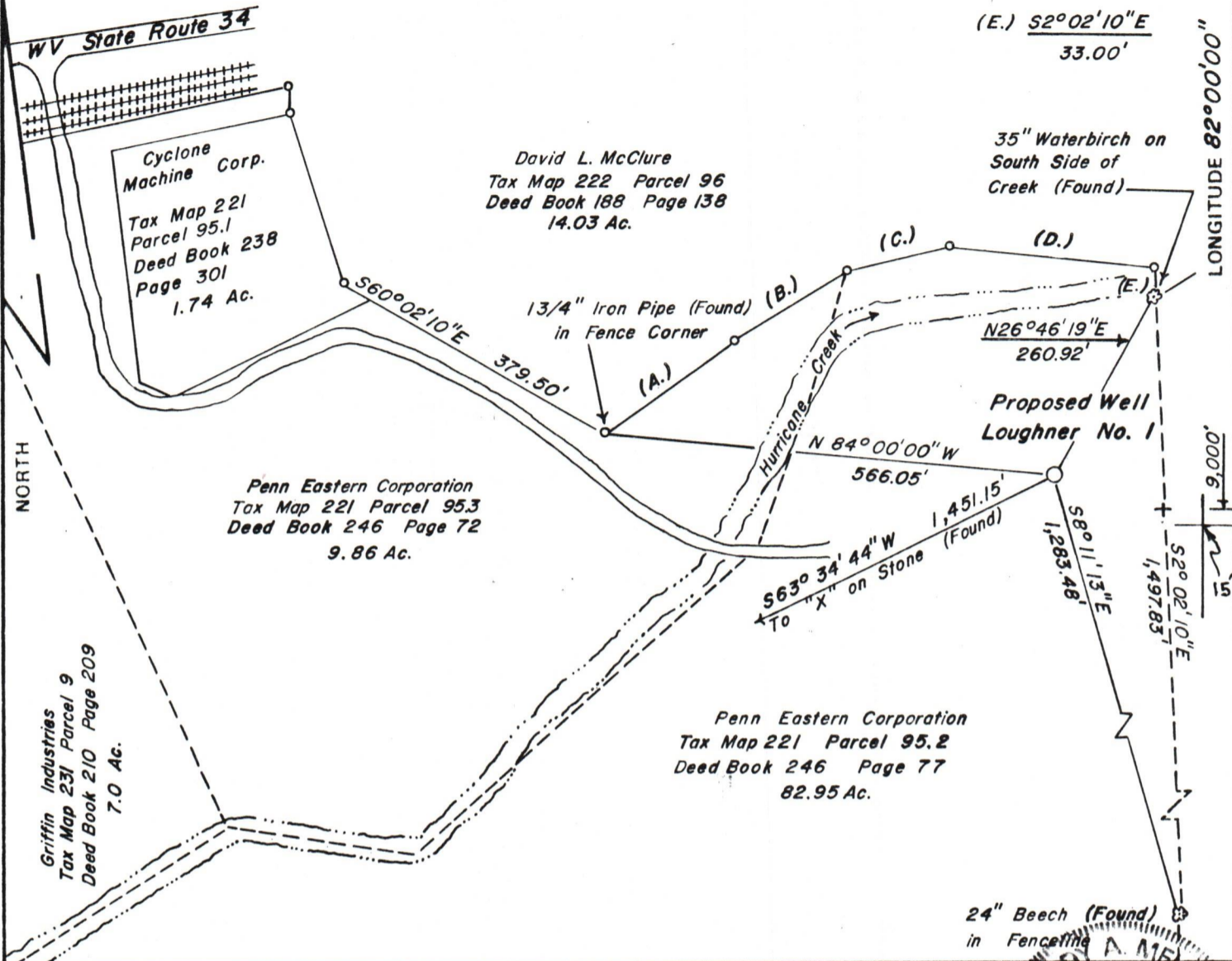
1111.11/4/82

Note: See Plat of the Subject Tract, Prepared by Stagg Engineering Services, Inc., for Buffalo Resources Corporation, Dated November, 1982. Surveyed by Randy A. Melton L.L.S. 765

LATITUDE $38^{\circ} 27' 30''$
 $38^{\circ} 30'$

920'

- (A.) $N55^{\circ} 20' 16'' E$
198.34'
- (B.) $N57^{\circ} 52' 17'' E$
168.72'
- (C.) $N76^{\circ} 06' 53'' E$
130.26'
- (D.) $S82^{\circ} 37' 21'' E$
261.01'
- (E.) $S2^{\circ} 02' 10'' E$
33.00'



FILE NO E170-148-112
DRAWING NO _____
SCALE 1"=200'
MINIMUM DEGREE OF ACCURACY 1 IN 2,500
PROVEN SOURCE OF ELEVATION BM Y-35
Scott Depot

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) Randy A. Melton
R.P.E. _____ L.L.S. 765

RANDY A. MELTON
LICENSED
No. 785
STATE OF WEST VIRGINIA
LAND SURVEYOR
PLACE SEAL HERE

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



DATE November 3, 1982
OPERATOR'S WELL NO Loughner No. 1
API WELL NO _____
47-079 - 1100
STATE COUNTY PERMIT

STATE OF WEST VIRGINIA
DEPARTMENT OF MINES
OIL AND GAS DIVISION

WELL TYPE OIL ___ GAS LIQUID INJECTION ___ WASTE DISPOSAL ___
(IF "GAS") PRODUCTION STORAGE ___ DEEP ___ SHALLOW
LOCATION ELEVATION 612.96 WATERSHED Hurricane Creek
DISTRICT Teays Valley COUNTY Putnam
QUADRANGLE Hurricane, 7 1/2' Series
SURFACE OWNER Penn Eastern Corporation ACREAGE 82.95
OIL & GAS ROYALTY OWNER Eleanor Coal Company LEASE ACREAGE 93 ±
LEASE NO PUT-2
PROPOSED WORK DRILL CONVERT ___ DRILL DEEPER ___ REDRILL ___ FRACTURE OR STIMULATE ___ PLUG OFF OLD FORMATION ___ PERFORATE NEW FORMATION ___ OTHER PHYSICAL CHANGE IN WELL (SPECIFY) _____
PLUG AND ABANDON ___ CLEAN OUT AND REPLUG ___
TARGET FORMATION Devonian Shale ESTIMATED DEPTH 4,225
WELL OPERATOR Buffalo Resources Corp DESIGNATED AGENT John Foster
ADDRESS 818 Oakwood Road ADDRESS 818 Oakwood Road
Charleston, WV 25314 Charleston, WV 25314

PUT - 1100