

SFB 8/26/87

7950

LATITUDE 39-10

LONGITUDE 81-42-30

NORTH

OHIO RIVER

P. NEAL

STONE

GRAHAM LEASE

R. FRAME

R. FRAME

LEE CREEK



Handwritten notes: 0.49, 3.75, 0.495, 1.50W

W-430P

11

WELL REFERENCE

28" POST OAK S78E 86

16" SUMAC S24E 68.5

N16 E5

FILE NO. _____
DRAWING NO. _____
SCALE 1" = 1000
MINIMUM DEGREE OF ACCURACY 1 IN 200
PROVEN SOURCE OF ELEVATION ROAD INT.
ELEV. 601

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) Charles R. Boice
R.P.E. _____ L.L.S. 667

PLACE SEAL HERE

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

FORM IV-6 (8-78)



DATE AUGUST 14, 1987
OPERATOR'S WELL NO. KEM-737
API WELL NO. _____

47 - 107 - 1412-F
STATE COUNTY PERMIT

STATE OF WEST VIRGINIA
DEPARTMENT OF MINES
OIL AND GAS DIVISION

WELL TYPE: OIL ___ GAS X LIQUID INJECTION ___ WASTE DISPOSAL ___
(IF "GAS,") PRODUCTION X STORAGE ___ DEEP X SHALLOW ___
LOCATION: ELEVATION 779 WATER SHED LEE CREEK
DISTRICT HARRIS 2 COUNTY WOOD
QUADRANGLE LUBECK 7 1/2 449 0094

SURFACE OWNER WILLIAM GRAHAM III ACREAGE 173
OIL & GAS ROYALTY OWNER WILLIAM GRAHAM III ET AL LEASE ACREAGE 173
LEASE NO. _____

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

AUG 22 1988

PLUG AND ABANDON ___ CLEAN OUT AND REPLUG ___
TARGET FORMATION ORISKANY ESTIMATED DEPTH 4310

WEL Peake Energy, Inc.
ADI P.O. Box 8
Ravenswood, WVa. 26164

ED AGENT John McCallister, agent
ADDRESS Same address

DEEP WELL 0200 66 New England (296)

WOOD 1412-F

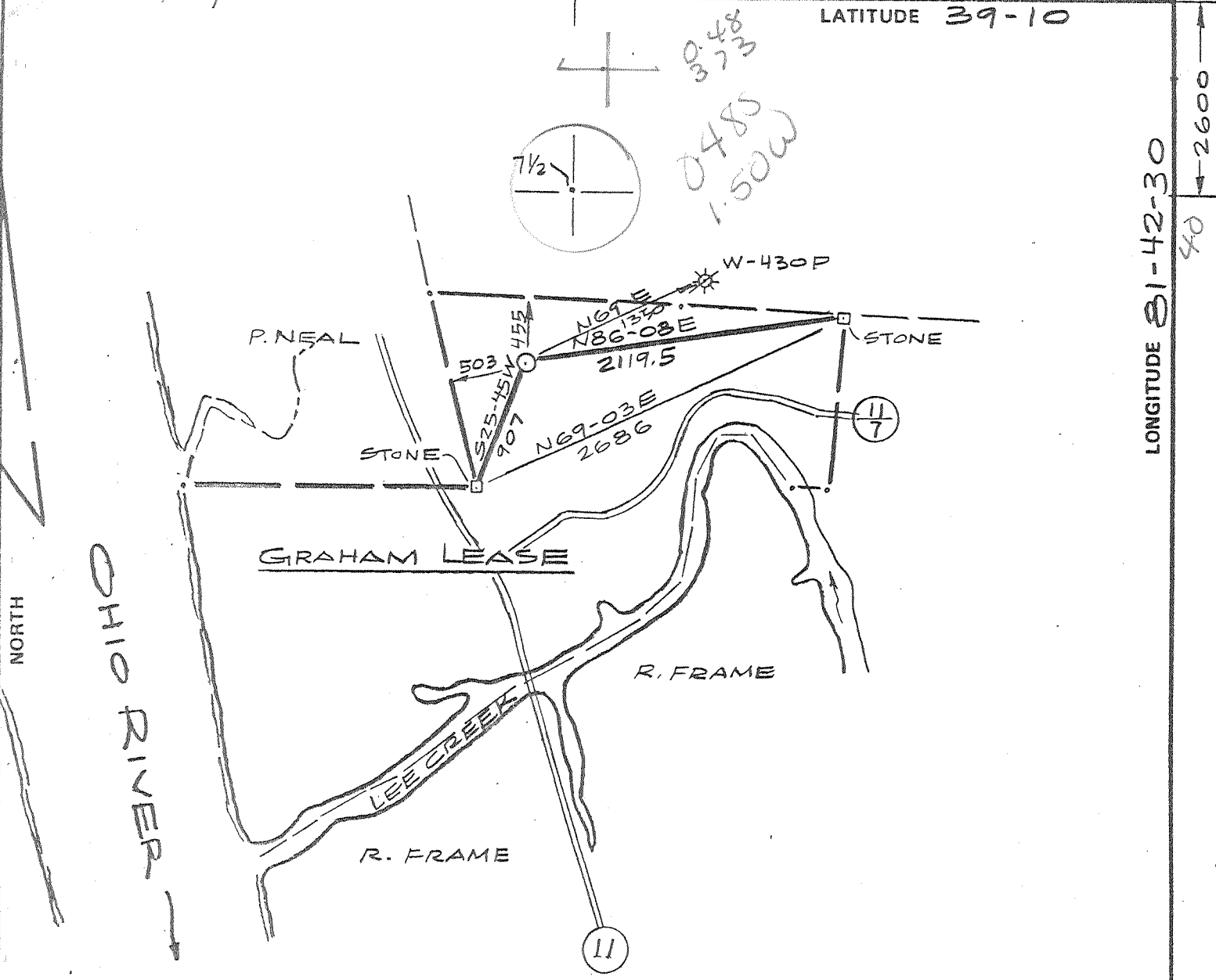
87B 8/26/87

7950

LATITUDE 39-10

LONGITUDE 81-42-30

2600
40



WELL REFERENCE

28" POST OAK S78E 86

16" SUMAC S24E 68.5

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 (SIGNED) James R. Boice
 R.P.E. _____ L.L.S. 667

PLACE SEAL HERE

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



DATE AUGUST 14, 1987
 OPERATOR'S WELL NO. KEM-737
 API WELL NO. _____
47 - 107 - 1412
 STATE COUNTY PERMIT

STATE OF WEST VIRGINIA
 DEPARTMENT OF MINES
 OIL AND GAS DIVISION

WELL TYPE: OIL ___ GAS X LIQUID INJECTION ___ WASTE DISPOSAL ___
 (IF "GAS,") PRODUCTION ___ STORAGE X DEEP X SHALLOW ___
 LOCATION: ELEVATION 779 WATER SHED LEE CREEK
 DISTRICT HARRIS 2 COUNTY WOOD
 QUADRANGLE LUBECK 7 1/2 449 009 4 Belleville WC
 SURFACE OWNER WILLIAM GRAHAM III ACREAGE 173
 OIL & GAS ROYALTY OWNER WILLIAM GRAHAM III ETAL LEASE ACREAGE 173
 LEASE NO. _____

PROPOSED WORK: DRILL X 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 DEEP WELL
 TARGET FORMATION ORISKANY ESTIMATED DEPTH 4310
 WELL OPERATOR KAISER EXPLOR + MIN. CO. DESIGNATED AGENT R. A. PRYCE
 ADDRESS P. O. BOX 8 ADDRESS P. O. BOX 8
RAVENSWOOD, WV 26164 RAVENSWOOD, WV 26164

AUG 31 1987

7/85 RECEIVED AUG 26 1987



1) Date: August 20, 19 87
 2) Operator's Well No. KEM #737
 3) API Well No. 47 State 107 County 1412 Permit

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

- 4) WELL TYPE: A Oil / Gas /
 B (If "Gas", Production / Underground storage / Deep / Shallow)
 5) LOCATION: Elevation: 779' / Watershed: Lee Creek
 District: Harris / County: Wood 107 / Quadrangle: Lubeck 449
 6) WELL OPERATOR Kaiser Exploration and Mining Company CODE: 25550 / 7) DESIGNATED AGENT R. A. Pryce
 Address P. O. Box 8 / Address Same
 Ravenswood, WV 26164
 8) OIL & GAS INSPECTOR TO BE NOTIFIED Name Glen Robinson / Address Mt. Pleasant Estates Mineral Wells, WV
 9) DRILLING CONTRACTOR: Name Unknown / Address _____
 10) PROPOSED WELL WORK: Drill / Drill deeper / Redrill / Stimulate /
 Plug off old formation / Perforate new formation /
 Other physical change in well (specify) _____
 11) GEOLOGICAL TARGET FORMATION, Oriskany
 12) Estimated depth of completed well, 4307' feet
 13) Approximate trata depths: Fresh, _____ feet; salt, _____ feet.
 14) Approximate coal seam depths: _____ Is coal being mined in the area? Yes _____ / No /

15) CASING AND TUBING PROGRAM

CASING OR TUBING TYPE	SPECIFICATIONS					FOOTAGE INTERVALS		CEMENT FILL-UP OR SACKS (Cubic feet)	PACKERS
	Size	Grade	Weight per ft.	New	Used	For drilling	Left in well		
Conductor									Kinds
Fresh water	10 3/4			X		350'	350'	Cement to surface	
Coal									Sizes
Intermediate	7"			X		1757'	1757'	Cement to surface	
Production	4 1/2"			X		4307'	4307'	250 sks 50/50 Depo mix	
Tubing									Perforations:
Liners									Top Bottom

OFFICE USE ONLY
 DRILLING PERMIT

Permit number 47-107-1412 Date August 28, 19 87

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. August 28, 1989

Permit expires _____ unless well work is commenced prior to that date and prosecuted with due diligence.

Bond: <input checked="" type="checkbox"/>	Agent: <input checked="" type="checkbox"/>	Plat: <input checked="" type="checkbox"/>	Casing: <input checked="" type="checkbox"/>	Fee: 228 970204	WPCP: <input checked="" type="checkbox"/>	SEP: <input checked="" type="checkbox"/>	Other: <input type="checkbox"/>
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NOTE: Keep one copy of this permit posted at the drilling location. Director, Division of Oil and Gas File

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

IV-35
(Rev 8-81)



Date October 20, 1987
Operator's
Well No. KEM #737
Farm Graham
API No. 47 - 107 - 1412

State of West Virginia
Department of Mines
Oil and Gas Division

10/23/87

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

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

LOCATION: Elevation: 779' Watershed Lee Creek
District: Harris County Wood Quadrangle Lubeck

COMPANY Kaiser Exploration & Mining Co.
ADDRESS P. O. Box 8, Ravenswood, WV 26164
DESIGNATED AGENT R. A. Pryce
ADDRESS Same
SURFACE OWNER William Graham III
ADDRESS Rt. 1, Box 45, New England, WV 26154
MINERAL RIGHTS OWNER Same
ADDRESS _____
OIL AND GAS INSPECTOR FOR THIS WORK Glen
Robinson ADDRESS Rt. 1, Mineral Wells, WV
PERMIT ISSUED 8/28/87
DRILLING COMMENCED 9/29/87
DRILLING COMPLETED 10/04/87
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.			
10 3/4"	10 3/4"	357'	225 sks clas
9 5/8			
8 5/8			
7	7"	1750'	100 sks clas 100 sks 50/
5 1/2			pozn
4 1/2	4 1/2"	4304'	250 sks 50/
3			pozmix
2			
Liners used			

GEOLOGICAL TARGET FORMATION Oriskany Depth 4272 feet
Depth of completed well 4339 feet Rotary X / Cable Tools _____
Water strata depth: Fresh -- feet; Salt -- feet
Coal seam depths: N/A Is coal being mined in the area? NO
Drilled on fluid not known.

OPEN FLOW DATA

Producing formation Oriskany Sandstone Pay zone depth 4272'-4277' feet
Gas: Initial open flow -- Mcf/d Oil: Initial open flow -- Bbl/d
Final open flow 400 Mcf/d Final open flow -- Bbl/d
Time of open flow between initial and final tests 4 hours
Static rock pressure 960 psig (surface measurement) after 72 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) OCT 26 1987

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

- 10/07/87 Young Wireline perforated the Oriskany from 4272' - 4277' with 20 (.39" dia.) shots
- 10/08/87 Nowsco 75% foam fractured the Oriskany with 30,000# of 20/40 sand, 412,500 scf of nitrogen and 167 bbls of water at 1950 psig. ISIP: 1600 psig; 5 min SIP: 1580 psig

WELL LOG

FORMATION	COLOR	HARD OR SOFT	TOP FEET	BOTTOM FEET	REMARKS
					Including indication of all free gas and salt water, coal, oil and c
Shale			0	70	
Siltstone & Shale			70	185	
Sand			185	240	
Siltstone & Shale			240	545	
Sand			545	635	
Shale			635	883	
Sand			883	916	
Shale			916	1250	
Dunkard Sands			1250	1412	
Shale			1412	1525	
Salt Sands			1525	1650	
Shale			1650	2020	
Coffee Shale (Sunbury)			2020	2038	
Berea Sand			2038	2042	S/g
Shale			2042	3180	
Brown Shale (Huron)			3180	3658	S/g @ 3570'
Shale			3658	3982	
Black Shale (Rhinstreet)			3982	4178	S/g @ 4078', 4160'
Onondaga Lime			4178	4258	
Oriskany Sand			4258	4300	S/g @ 4272'
Helderberg Lime			4300	4339	
Total Depth			4339		

(Attach separate sheets as necessary)

KAISER EXPLORATION AND MINING COMPANY

Well Operator

By: R A P -

Date: October 20, 1987

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."

107-1412-F
 Issued 8/15/88 Expired 8/15/90
 Page ____ of ____

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

1012
 37085, 2, 449

- 1) Well Operator: Peake Energy, Inc.
- 2) Operator's Well Number: PKE-737 3) Elevation: 779'
 Permit No. 47-107-01412
- 4) Well type: (a) Oil / or Gas /
 (b) If Gas: Production / Underground Storage /
 Deep / Shallow /
- 5) Proposed Target Formation(s): Brown Shale and Berea Sandstone
- 6) Proposed Total Depth: 3800' feet
- 7) Approximate fresh water strata depths: 185'
- 8) Approximate salt water depths: 1530'
- 9) Approximate coal seam depths: None recognized
- 10) Does land contain coal seams tributary to active mine? Yes / No /
- 11) Proposed Well Work: Plug Oriskany w/ mechanical plug and cal-seal, stimulate Brown Shale and Berea Sandstone by fracturing
- 12) CASING AND TUBING PROGRAM

TYPE	SPECIFICATIONS		FOOTAGE INTERVALS		CEMENT	
	Size	Grade	Weight per ft.	For drilling		Left in well
Conductor						
Fresh Water	10 3/4"		32.75#/ft	357'	357'	Surface Class A
Coal						
Intermediate	7"		20#/ft	1750'	1750'	100 sks 50/50poz 100 sks Class A
Production	4 1/2"		11.6#/ft	4304'	4304'	250 sks 50/50 poz
Tubing						
Liners						

PACKERS : Kind _____
 Sizes _____
 Depths set _____

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 AUG 11 1988

For Division of Oil and Gas Use Only

DIVISION OF OIL & GAS
 DEPARTMENT OF ENERGY

Fee(s) paid: Well Work Permit Reclamation Fund WPCP
 Plat WW-9 WW-2B Bond Blanket Agent

(Type)

426
 26
 81

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AUG 11 1988

DIVISION OF OIL & GAS
DEPARTMENT OF ENERGY

- 1) Date: 08-09-88
- 2) Operator's well number PKE 737
- 3) API Well No: 47 - 107 - 1412-~~Free~~
State - County - Permit

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

NOTICE AND APPLICATION FOR A WELL WORK PERMIT

- 4) Surface Owner(s) to be served:
 - (a) Name William Graham, III
 - Address Rt. 1, Box 45
New England, WV 26154
 - (b) Name _____
 - Address _____
 - (c) Name _____
 - Address _____
- 6) Inspector Glen Robinson
- Address Mt. Pleasant Estates
Mineral Wells, WV 26150
- Telephone (304)- 489-9162

- 5) (a) Coal Operator:
 - Name _____
 - Address _____
 - (b) Coal Owner(s) with Declaration
 - Name _____
 - Address _____
 - (c) Coal Lessee with Declaration
 - Name _____
 - Address _____

TO THE PERSON(S) NAMED ABOVE TAKE NOTICE THAT:

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

X Included is the information required by Chapter 22B, Article 1, Section 8(d) of the Code of West Virginia (see page 2)

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

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

I have read and understand Chapter 22B and 38 CSR 11-18, and I agree to the terms and conditions of any permit issued under this application.

I certify under penalty of law that I have personally examined and am familiar with the information submitted on this application form and all attachments, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete.

I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Well Operator PEAKE ENERGY, INC.
 By: *John V. M. ...*
 Its: Designated Agent
 Address P. O. Box 8
Ravenswood, WV 26164
 Telephone 273-5371

Subscribed and sworn before me this 10th day of August, 1988

Stephen W. Kelly Notary Public
My commission expires October 28, 1993

State of West Virginia
DEPARTMENT OF ENERGY
Division of Oil and Gas

Well Operator's Report of Well Work

Farm name: GRAHAM, WILLIAM III Operator Well No.: PKE737

LOCATION: Elevation: 779.00 Quadrangle: LUBECK

District: HARRIS County: WOOD
Latitude: 2600 Feet South of 39 Des. 10Min. 0 Sec.
Longitude: 7950 Feet West of 81 Des. 42 Min. 30 Sec.

Company: PEAKE ENERGY, INC
P. O. BOX 8
RAVENSWOOD, WV

Asent: JOHN V. McCALLISTER

Inspector: GLEN F. ROBINSON
Permit Issued: 08/15/88
Well work Commenced: 8/29/88
Well work Completed: 8/30/88
Verbal Plussing
Permission granted on:
Rotary Cable Ris
Total Depth (feet) 4339
Fresh water depths (ft)
Salt water depths (ft)
Is coal beins mined in area (Y/N)? N
Coal Depths (ft):

Casing & Tubing	Used in Drilling	Left in Well	Cement Fill Cu. Ft.
Size			
Same as previously submitted			

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SEP 30 1988

DIVISION OF OIL & GAS
DEPARTMENT OF ENERGY

OPEN FLOW DATA

Producing formation: Devonian Brown Shale Pay zone depth (ft) 3482-3630
Gas: Initial open flow MCF/d Oil: Initial open flow Bbl/d
Final open flow * MCF/d Final open flow Bbl/d
Time of open flow between initial and final tests Hours
Static rock Pressure * psig (surface pressure) after Hours

Second producing formation: Berea Sand Pay zone depth (ft) 2037-40
Gas: Initial open flow MCF/d Oil: Initial open flow Bbl/d
* Both Zones Final open flow 200 MCF/d Final open flow Bbl/d
Time of open flow between initial and final tests Hours
Static rock Pressure 650 psig (surface pressure) after 48 Hours

NOTE: ON BACK OF THIS FORM PUT THE FOLLOWING: 1). DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC. 2). THE WELL LOG WHICH IS A SYSTEMATIC DETAILED GEOLOGICAL RECORD OF ALL FORMATIONS, INCLUDING COAL ENCOUNTERED BY THE WELLBORE.

For: PEAKE ENERGY, INC
John V. McCallister

OCT 10 1988


By: John V. McCallister, Asst. Oper. Mngr.
Date: 9/28/88

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

8/29/88: Perforated Brown Shale through 4½" csg from 3482 - 3640 using 20 holes.

8/30/88: Foam fractured Brown Shale using 60,000 # sand, 520,000 SCF of N₂, and 340 bbl fluid. BD = 2210 psig. ATP = 2156 psig. ISIP = 995 psig.
Perforated Berea Sand through 4½" csg from 2037 - 2040 using 12 holes.
Foam - fractured Beresa Sand using 60,000 # sand, 612,000 SCF of N₂ and 345 BBL of fluid. BD = 2590 psig. ATP = 2032 psig. ISIP = 1011 psig.

WELL LOG

FORMATION	TOP	BOTTOM	REMARKS
<p>Well Log is the same as previously submitted</p>			<p style="text-align: right;">  SEP 30 1988 DIVISION OF OIL & GAS DEPARTMENT OF ENERGY </p>

7573