

5,950'

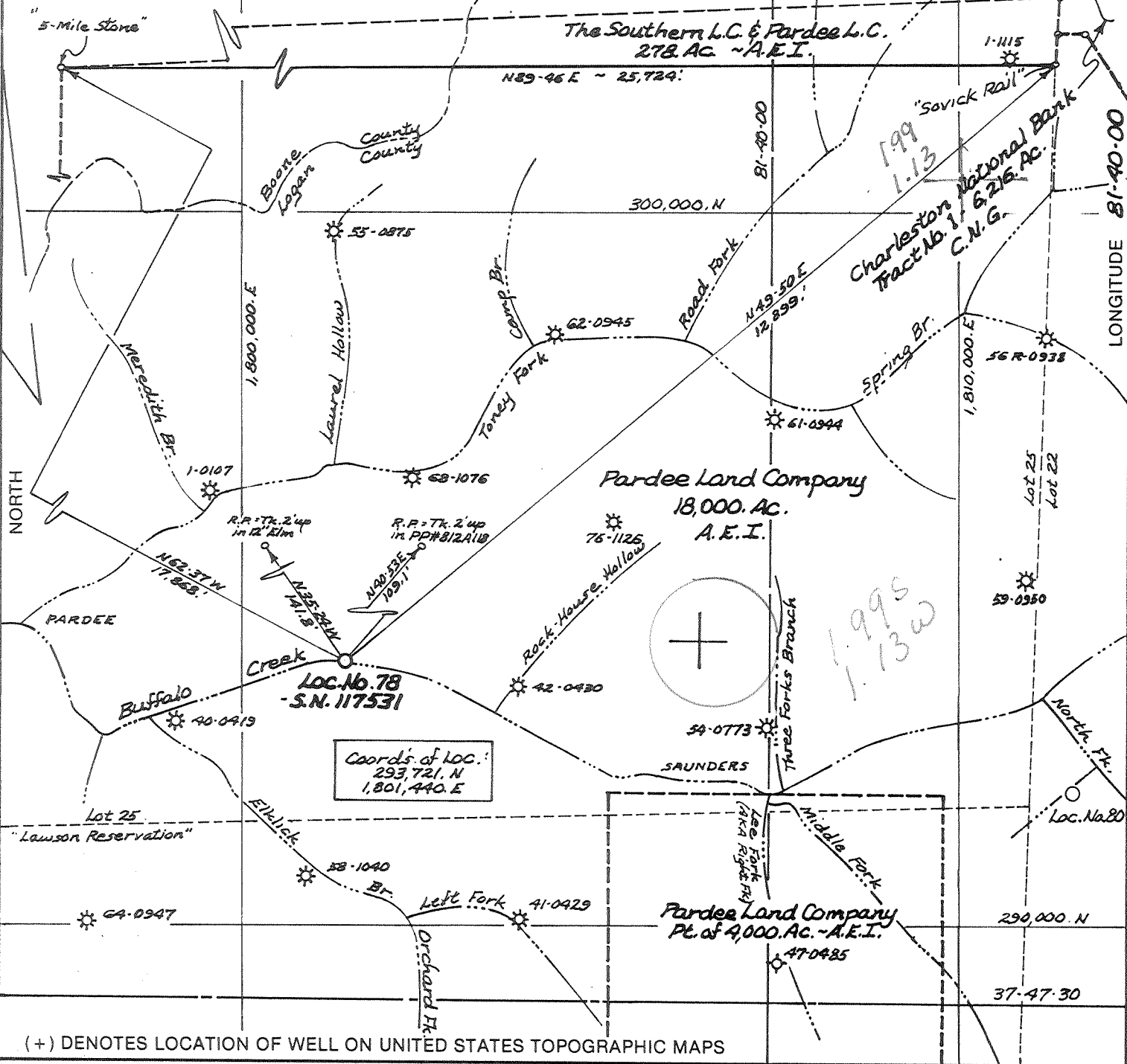
37-50-00

LATITUDE 37-50-00

Janie 3/3/89

The Southern Land Company
PT of 15,409 AC. - A.E.I.

The Southern L.C. & Pardee L.C.
278 AC. - A.E.I.



Coords. of LOC.:
293,721 N
1,801,440 E

FILE NO. 62-33
 DRAWING NO. ~
 SCALE 1" = 2,000'
 MINIMUM DEGREE OF ACCURACY 1:22,550.
 PROVEN SOURCE OF ELEVATION Buffalo Mining Co. Datum

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 ENERGY.
 (SIGNED) George Gary Corn
 R.P.E. 3999 L.L.S. _____

PLACE SEAL HERE

STATE OF WEST VIRGINIA
 DEPARTMENT OF ENERGY
 OIL AND GAS DIVISION



DATE Feb'y. 14, 19 89
 OPERATOR'S WELL NO. 78, S.N. 117531
 API WELL NO. _____

WELL TYPE: OIL ___ GAS LIQUID INJECTION ___ WASTE DISPOSAL ___
 (IF "GAS,") PRODUCTION STORAGE ___ DEEP ___ SHALLOW

LOCATION: ELEVATION 1364.6 WATER SHED Buffalo Creek
 DISTRICT Triadelphia 3 COUNTY Logan

QUADRANGLE Lorado 445 006 7 Bald Knob SW
 SURFACE OWNER Pardee Land Company ACREAGE 17,000.+

OIL & GAS ROYALTY OWNER Pardee Land Company LEASE ACREAGE 18,000.
 LEASE NO. 4107

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 Berea ESTIMATED DEPTH 3985'

WELL OPERATOR Ashland Exploration, Inc. DESIGNATED AGENT Forrest Burkett
 ADDRESS P.O. Box 391 Ashland, Ky. 41114 43 ADDRESS P.O. Box 379 Brenton, W. Va. 24818

MAR 24 1989

DEEP WELL 66 Man-Oceana (266)

FORM WW-6 H.T. HALL 45673

COUNTY NAME PERMIT

WR-35
NOV 09 1989

20-Mar-89
API # 47- 45-01137

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

DIVISION OF OIL & GAS
DEPARTMENT OF ENERGY Well Operator's Report of Well Work

Farm name: PARDEE LAND COMPANY Operator Well No.: 78-S-117531

LOCATION: Elevation: 1364.60 Quadrangle: LORADO

District: TRIADELPHIA County: LOGAN
Latitude: 10450 Feet South of 37 Deg. 50Min. 0 Sec.
Longitude 5950 Feet West of 81 Deg. 40 Min. 0 Sec.

Company: ASHLAND EXPLORATION, INC.
P. O. BOX 391
ASHLAND, KY 41114-0000

Agent: FORREST BURKETT

Inspector: TIM BENNETT
Permit Issued: 03/20/89
Well work Commenced: 5/25/89
Well work Completed: 10/27/89
Verbal Plugging
Permission granted on: _____
Rotary X Cable _____ Rig
Total Depth (feet) 5765'
Fresh water depths (ft) 7" stream @ 28'
2" stream @ 40', 4" stream @ 150' & approx.
Salt water depths (ft) 350'
Approximately 1735'
Is coal being mined in area (Y/N)? N
Coal Depths (ft): not noted during drl'g

Casing & Tubing Size	Used in Drilling	Left in Well	Cement Fill Up Cu. Ft.
20"	21'	21'	--
16"	35'	35'	76
11 3/4"	457'	457'	259
8 5/8"	1795'	1795'	554
5 1/2"	5730'	5730'	675

1.9" @ 5564' w/ADL-1 Pkr @ 3430'
1.9" @ 3407' KB

OPEN FLOW DATA

Producing formation Devonian Shale Pay zone depth (ft) 4493-5598
Gas: Initial open flow 0/30 MCF/d Oil: Initial open flow _____ Bbl/d
Final open flow 365/1373 MCF/d Final open flow _____ Bbl/d
Time of open flow between initial and final tests 3 Hours
Static rock Pressure 403 psig (surface pressure) after 72 Hours
Berea 3378-3392 Weir 3137-3150
Second producing formation Lower Weir & B. Lime Pay zone depth (ft) 2774-2780
Gas: Initial open flow 30 MCF/d Oil: Initial open flow _____ Bbl/d
Final open flow 1008 MCF/d Final open flow _____ Bbl/d
Time of open flow between initial and final tests 3 Hours
Static rock Pressure 520 psig (surface pressure) after 72 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.

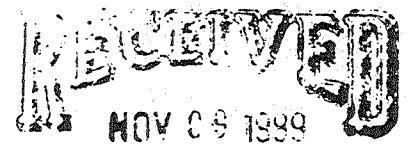
For: ASHLAND EXPLORATION, INC.

By: James L. Stephens J. L. Stephens, Engr. Tech.
Date: 11/07/89

NOV 20 1989

<u>FORMATION</u>	<u>TOP</u>	<u>BASE</u>
Sand & Shale	0	1043
Lower Lee Sand	1043	1726
Sand & Shale	1726	1835
Ravenscliff	1835	1858
Shale	1858	1895
Avis LS	1895	1932
Shale	1932	1973
Stray Maxton	1973	2028
Sand & Shale	2028	2392
Lower Maxton	2392	2424
Shale	2424	2459
Little Lime	2459	2534
Pencil Cave	2534	2546
Big Lime	2546	2880
Shale	2880	2973
Upper Weir	2973	3015
Shale	3015	3134
Lower Weir	3134	3158
Shale	3158	3343
Coffee Shale	3343	3364
Berea	3364	3396
Devonian Shale	3396	5754
Onondaga LS	5754	TD

EST
 UD 3396
 LH 4418
 J 4948
 A 5056
 Rh 5337



DTD 5765'
 LTD 5760'

DIVISION OF OIL & GAS
 DEPARTMENT OF ENERGY

WELL TREATMENT

Perf L. Dev. Shale 25H/4493-4982 - 75 Q foam frac using 500 gal 9% Fe inh acid, 1000 gal 25% treated Methanol, 92,000# 20/40 sand, 20#/1000 gal gel system & 897,000 SCF N₂ @ 35,000 SCF/min rate. ED @ 3520#, ATP 3400# @ 50 bpm foam rate, MTP 3570#, ISIP 2600#, 15 min 2290# & TF 351 bbls.

Perf U. Dev. Shale 25H/4493-4982 - 75 Q foam frac using 7% HCl w/Fe agent, 1000 gal 25% treated Methanol, 97,000# 20/40 sand & 688,500 SCF N₂ @ 25,600 SCF/min. BD @ 2140#, ATP 2400# @ 50 bpm foam rate, MTP 4050#, ISIP 4020#, 15 min 3760# & TF 389 bbls. Well screended out on flush.

Perf Berea 29H/3378-3392 - 75 Q foam frac using 500 gal 18% HCl, 49,000# 20/40 sand & 308,000 SCF N₂ @ 9200 SCF/min. BD @ 1260#, ATP 1150# @ 27 bpm foam rate, MTP 3820#, ISIP 3750#, 15 min 3300# & TF 227 bbls.

Perf L. Weir 33H/3137-3150 - 75 Q foam frac using 500 gal 14% inh Fe acid, 49,000# 20/40 sand & 300,000 SCF N₂ @ 8650 SCF/min. BD @ 1270#, ATP 1100# @ 25 bpm foam rate, MTP 1270#, ISIP 750#, 15 min 640# & TF 271 bbls.

Perf Big Lime 25H/2574-2580 in 4" HCG. Acidize Big Lime using 2000 gal 16% Fe inh HCl & 1000 gal 27% Fe inh acid. BD @ 1560#, MTP 1900#, ATP 1300# @ 4-6 bpm, ISIP 420#, 15 min 100# & TF 147 bbls.

565
 5765'

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

27503 445

- 1) Well Operator: Ashland Exploration, Inc. Pardee Land Company
2) Operator's Well Number: 78, Serial #117531 3) Elevation: 1364.6
4) Well type: (a) Oil ___/ or Gas X/
(b) If Gas: Production X/ Underground Storage ___/ Deep ___/ Shallow X/
5) Proposed Target Formation(s): Berea
6) Proposed Total Depth: 3485'KB feet
7) Approximate fresh water strata depths: 350'KB 72
8) Approximate salt water depths: 1735'KB
9) Approximate coal seam depths: None 105-108
10) Does land contain coal seams tributary to active mine? Yes ___/ No X/
11) Proposed Well Work: Drill & Stimulate New Well
12)

CASING AND TUBING PROGRAM

Table with columns: TYPE, SPECIFICATIONS (Size, Grade, Weight per ft.), FOOTAGE INTERVALS (For drilling, Left in well), CEMENT (Fill-up). Rows include Conductor, Fresh Water, Coal, Intermediate, Production, Tubing, and Liners.

5095

38CSR18-11-3
38CSR18-11-22
38CSR18-11-1

RECEIVED FEB 28 1989

PACKERS : Kind
Sizes
Depths set

DIVISION OF OIL & GAS DEPARTMENT OF ENERGY

For Division of Oil and Gas Use Only

506513
5

Fee(s) paid: Well Work Permit Reclamation Fund WPCP
Plat WW-9 WW-2B Bond 50 Blanket Agent
(Type)

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FEB 28 1989

Page 1 of 2
Form WW2-A
(09/87)
File Copy

DIVISION OF OIL & GAS
DEPARTMENT OF ENERGY

1) Date: February 27, 1989
2) Operator's well number
Pardee Land Co. #78, Serial #117531
3) API Well No: 47 - 045 - 1137
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 Pardee Land Company
 Address 1510 Two Mellon Bank Center
Philadelphia, PA 19102
 (b) Name _____
 Address _____
 (c) Name _____
 Address _____

5) (a) Coal Operator:
 Name Buffalo Mining Company
 Address Box 429
Lyburn, WV 25632
 (b) Coal Owner(s) with Declaration
 Name Same as No. 4(a)
 Address _____
 Name _____
 Address _____

6) Inspector Tim Bennett
 Address 525 Tiller St.
Logan, WV 25601
 Telephone (304)- 792-7075

(c) Coal Lessee with Declaration
 Name Same as No. 5(a)
 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 2 on the above named parties, by:

- Personal Service (Affidavit attached)
- X 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 Ashland Exploration, Inc.
 By: J. T. Mellinger
 Its: Manager Eastern Region
 Address P.O. Box 391
Ashland, KY 41114
 Telephone (606) 329-5450

Subscribed and sworn before me this 27th day of February, 1989

Vicki W. Rosta Notary Public
 My commission expires November 23, 1990