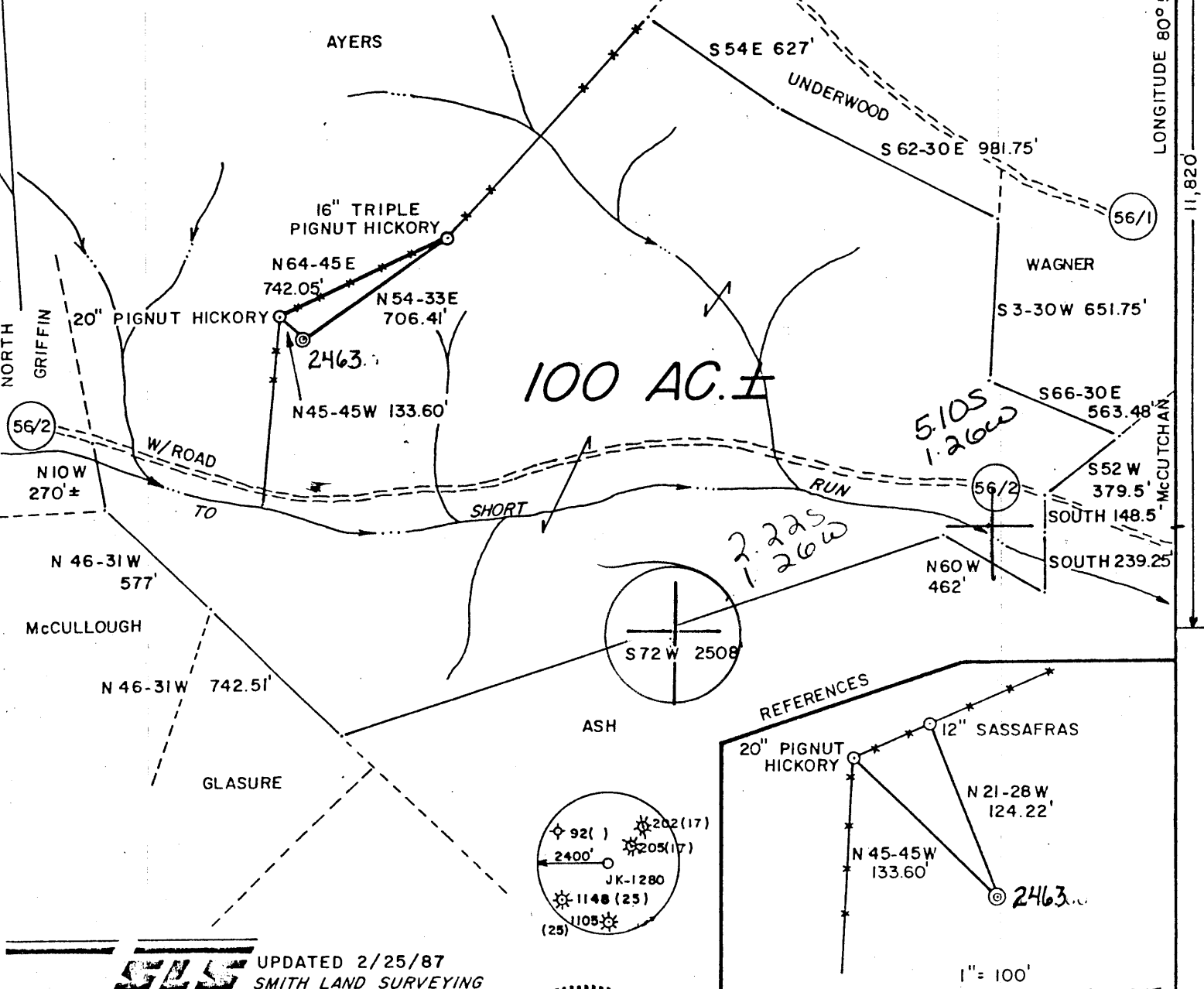


L. L. JAMES LEASE

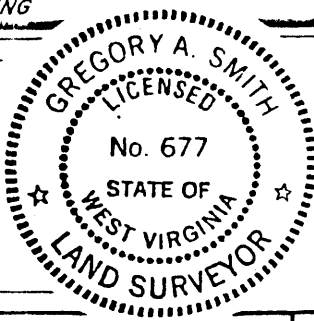
WELL NO. 2463



SLS UPDATED 2/25/87
SMITH LAND SURVEYING

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.


L.L.S. Gregory A. Smith
677



(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS.
 DATE JUNE 19, 1986
 OPERATORS WELL NO. 2463
 API WELL NO. 47 - 095 - 1177
 STATE COUNTY PERMIT

MINIMUM DEGREE OF ACCURACY 1 / 200 FILE NO. 1488 19-36
 SCALE 1" = 600'
 PROVEN SOURCE OF ELEVATION TOP OF KNOB ELEV. 1142'

STATE OF WEST VIRGINIA
 DEPARTMENT OF ENERGY
 OIL AND GAS DIVISION



WELL TYPE: OIL GAS LIQUID INJECTION WASTE DISPOSAL IF "GAS" PRODUCTION STORAGE DEEP SHALLOW

LOCATION: ELEVATION 1045' WATERSHED SHORT RUN
 DISTRICT CENTERVILLE COUNTY TYLER QUADRANGLE WEST UNION 7.5'

SURFACE OWNER LAWRENCE L. AND THELMA E JAMES ACREAGE 100 671
 ROYALTY OWNER S. M. DOAK HEIRS et. al. LEASE ACREAGE 100 133

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 ALEXANDER
 ESTIMATED DEPTH 5400'

WELL OPERATOR UNION DRILLING, INC. DESIGNATED AGENT JOSEPH C. PETTEY
 ADDRESS P. O. DRAWER 40 ADDRESS P. O. DRAWER 40
893 993
 BUCKHANNON, WV 26201 BUCKHANNON, WV 26201

MAR 30 1987

COUNTY NAME PERMIT

V-35
ev 8-81)



Date December 22, 1987
Operator's _____
Well No. JK-1280
Farm S.M. Doak
API No. 47 - 095 - 1177

RECEIVED
DEC 23 1987

State of West Virginia
Department of Mines
Oil and Gas Division

DIVISION OF OIL & GAS
DEPARTMENT OF ENERGY

WELL OPERATOR'S REPORT
OF

DRILLING, FRACTURING AND/OR STIMULATING, OR PHYSICAL CHANGE

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

LOCATION: Elevation: 1045' Watershed Short Run
District: Centerville County Tyler Quadrangle West Union 7.5

COMPANY J & J Enterprises, Inc.

ADDRESS P.O. Box 48, Buckhannon, WV 26201

DESIGNATED AGENT Oliver L. Hawkins, III

ADDRESS P.O. Box 48, Buckhannon, WV 26201

SURFACE OWNER Lawrence & Thelma James

ADDRESS Box 104, Greenwood, WV 26360

MINERAL RIGHTS OWNERS S.M. Doak Hrs. et.al.

ADDRESS _____

OIL AND GAS INSPECTOR FOR THIS WORK _____

Robert Lowther ADDRESS Gen. Del., Middlebourne, WV
26149

PERMIT ISSUED 3/25/87

DRILLING COMMENCED 11/5/87

DRILLING COMPLETED 11/9/87

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.			
13-10"	32.00'	pulled	
9 5/8			
8 5/8	1265.85'	1265.85'	255 sks.
7			
5 1/2			
4 1/2		5384.10'	285 sks.
3			
2			
Liners used			

GEOLOGICAL TARGET FORMATION Alexander Depth 5400' feet

Depth of completed well 5517' feet Rotary xx / Cable Tools _____

Water strata depth: Fresh 990'. 152 feet; Salt none feet

Coal seam depths: 420/424 Is coal being mined in the area? no

OPEN FLOW DATA

Producing formation Alexander Pay zone depth 5246/5250 feet

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

Commingled Final open flow 1,100 Mcf/d Final open flow _____ Bbl/d

Time of open flow between initial and final tests 4 hours

Static rock pressure 1650# psig (surface measurement) after 96 hours shut in

(If applicable due to multiple completion--)

4953/4954

Second producing formation Benson, Riley Pay zone depth 4542/4573 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 1650# psig (surface measurement) after 96 hours shut in

DEC 28 1987
(Continue on reverse side)

(REVERSE)

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

Riley: Perforations: 4542/4573 (14 holes)

Fracking: 500 sks. 20/40 sand: 700 mscf N2: 895 Bbls. fluid

Benson: Perforations: 4953/4954 (8 holes)

Fracking: 450 sks. 20/40 sand: 500 gal. acid: 500 Bbls fluid

Alexander: Perforations: 5246/5250 (12 holes)

Fracking: 400 sks. 20/40 sand: 500 gal. acid: 475 Bbls fluid

$Pf = P_{we} \times GLS$

$Pf = 1650 \times 2.72^{(0.103)} = 1650 \times 1.1$

$t = 60 + (0.0075 \times 5384) + 459.7 = 560$

$Pf = 1815$

$x = \frac{1}{53.35 \times 560} = \frac{1}{29,876} = 0.0000334$

$Pf = 1650 \times 2.72^{(0.0000334)(4896)(0.701)(0.9)}$ WELL LOG

FORMATION	COLOR	HARD OR SOFT	TOP FEET	BOTTOM FEET	REMARKS Including indication of all fresh and salt water, coal, oil and gas
Clay & Fill			0	10	
Shale & Clay			10	25	
Sand & Shale			25	40	
Red Rock & Shale			40	420	
Coal			420	424	
Red Rock & Shale			424	955	
Sand			955	1020	Hole damp @990'
Sand & Shale			1020	1920	Hole damp @1525'
Big Lime			1920	1976	Gas check @1844' no show
Big Injun			1976	2108	Gas check @2100' 2/10ths 7" w/w
Sand & Shale			2108	2270	450,000
Weir			2270	2385	
Sand & Shale			2385	2460	Gas check @2430' 2/10ths 7" w/w
Berea			2460	2464	450,000
Sand & Shale			2464	4536	Gas check @2523' 2/10ths 7" w/w
Riley			4536	4576	450,000
Sand & Shale			4576	4945	Gas check @3509' 85/10ths 2" w/w
Benson			4945	4960	389,000
Sand & Shale			4960	5200	Gas check @4650' 2/10ths 7" w/w
✓ Alexander			5200	5270	450,000
Sand & Shale			5270	5517'	Gas check @5052' 4/10ths 7" w/w
					900,000
					Gas check @5362' 140/10ths 2" w/w
					508,000
					Gas check @drill collars 52/10ths
					2" w/w 304,000

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DIVISION OF OIL & GAS
DEPARTMENT OF ENERGY

(Attach separate sheets as necessary)

J & J Enterprises, Inc.

Well Operator

By:

Date: Robert Dahlin - Geologist 12/22/87

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 sand, encountered in the drilling of a well."

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1) Date: February 26, 1987
2) Operator's Well No. 2463
3) API Well No. 47 State 095 County 1177 Permit

FORM WW-2(B) FILE COPY

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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 X / B (If "Gas", Production X / Underground storage / Deep / Shallow X /)
5) LOCATION: Elevation: 1045 Watershed: Short Run District: Centerville / County: Tyler 095 Quadrangle: West Union 7.5' 670
6) WELL OPERATOR Union Drilling CODE: 50550 7) DESIGNATED AGENT Joseph C. Pettey
8) OIL & GAS INSPECTOR TO BE NOTIFIED Robert Lowther
9) DRILLING CONTRACTOR: Union Drilling, Inc.
10) PROPOSED WELL WORK: Drill X / Drill deeper / Redrill / Stimulate X /
11) GEOLOGICAL TARGET FORMATION, Alexander
12) Estimated depth of completed well, 5400 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

Table with columns: CASING OR TUBING TYPE, SPECIFICATIONS (Size, Grade, Weight per ft., New, Used), FOOTAGE INTERVALS (For drilling, Left in well), CEMENT FILL-UP OR SACKS (Cubic feet), PACKERS (Kinds, Depths set, Perforations: Top, Bottom). Includes handwritten notes like 'per inspectors request' and 'By Rule 15.01 or 540 SKS'.

OFFICE USE ONLY
DRILLING PERMIT

Permit number 47-095-1177 Date March 25, 1987

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 March 25, 1989 unless well work is commenced prior to that date and prosecuted with due diligence.

Table with columns: Bond, Agent, Plat, Casing, Fee (3331), WCCP, S&E, Other. Includes handwritten checkmarks and signatures.

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

John H. Johnston, Director, Division of Oil and Gas. File. See the reverse side of the APPLICANT'S COPY for instructions to the well operator.