

7/10/87

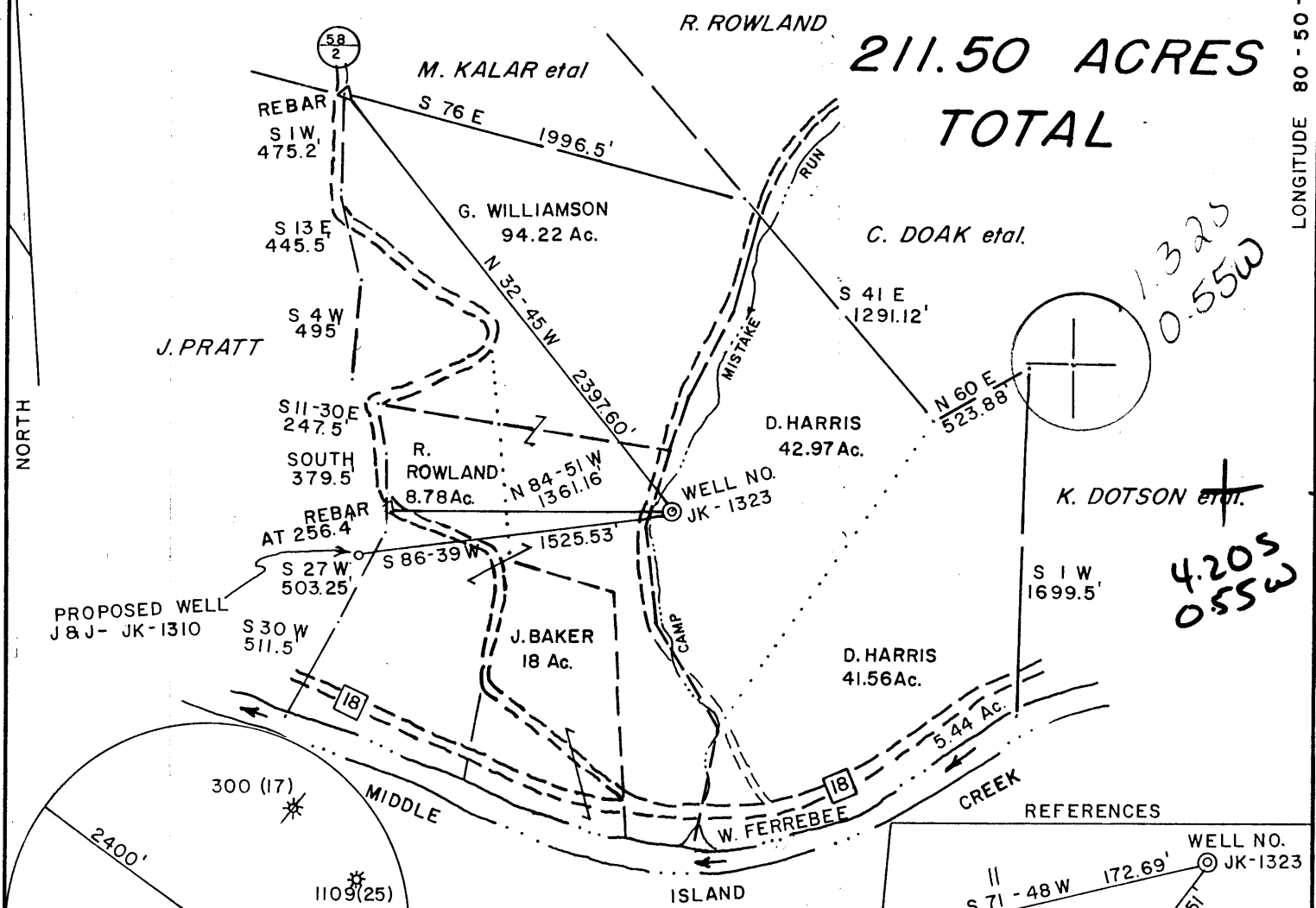
25 2930'

LATITUDE 39 - 22 - 30

IRELAND LEASE

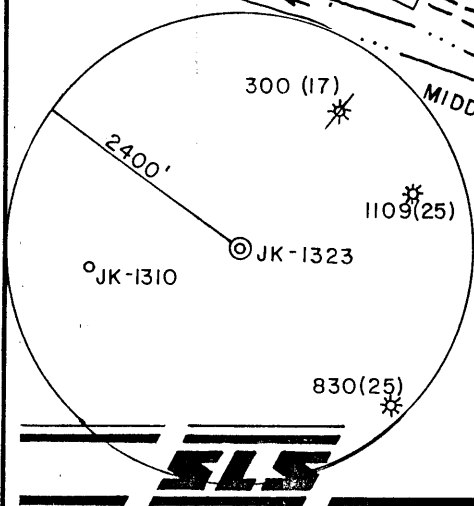
211.50 ACRES TOTAL

LONGITUDE 80 - 50 - 00

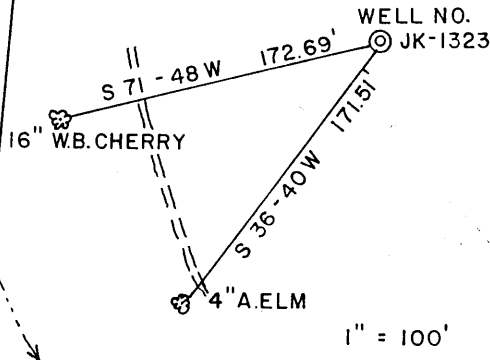


1.325
0.55W

4.205
0.55W

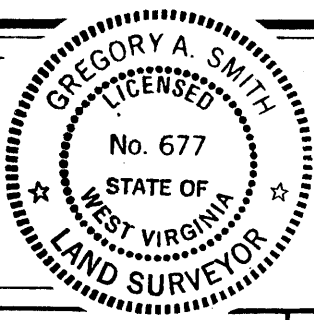


WELL NO. JK-1323



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
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(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS.
DATE JUNE 11, 19 87
OPERATORS WELL NO. JK-1323
API WELL NO. 47-095-1204
STATE WEST VIRGINIA COUNTY TYLER PERMIT 1204

MINIMUM DEGREE OF ACCURACY 1 / 200 FILE NO. 1648 (22-19)
PROVEN SOURCE OF ELEVATION TOP OF KNOB SCALE 1" = 800' ELEV. 1008'

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 778' WATERSHED CAMP MISTAKE RUN
DISTRICT CENTERVILLE COUNTY TYLER QUADRANGLE WEST UNION 7.5
SURFACE OWNER DANNY C. HARRIS ACREAGE 42.97
ROYALTY OWNER NANCY P. McCLAIN et al. LEASE ACREAGE 84.5 of 211.5
PROPOSED WORK: LEASE NO. JJ-2244
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 5700'

WELL OPERATOR J&J ENTERPRISES, INC. DESIGNATED AGENT OLIVER L. HAWKINS, III
ADDRESS P.O. BOX 48, BUCKHANNON, WV 26201 ADDRESS P.O. BOX 48, BUCKHANNON, WV 26201

COUNTY NAME
PERMIT

427
AUG 03 1987

6-6 Wilbur (92)



Date November 20, 1987
 Operator's
 Well No. 2552
 Farm Dorothy Wells #1
 API No. 47 - 095 - 1204

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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 XX / Underground Storage ___ / Deep ___ / Shallow XX /)

LOCATION: Elevation: 778' Watershed Camp Mistake Run
 District: Centerville County Tyler Quadrangle West Union 7.5

COMPANY Union Drilling, Inc.
 ADDRESS P.O. Drawer 40, Buckhannon, WV 26201
 DESIGNATED AGENT Joseph C. Pettey
 ADDRESS P.O. Drawer 40, Buckhannon, WV 26201
 SURFACE OWNER Danny and Patricia Harris
 ADDRESS Star Route, Box 55, West Union, WV 26456
 MINERAL RIGHTS OWNER SEE ATTACHED
 ADDRESS _____
 OIL AND GAS INSPECTOR FOR THIS WORK Robert
Lowther ADDRESS General Delivery, Middle-
 PERMIT ISSUED 7-28-87 bourne, WV 26149
 DRILLING COMMENCED 9-4-87
 DRILLING COMPLETED 9-8-87
 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 Cord.			
13-10"			
9 5/8			
8 5/8		932.80	280
7			
5 1/2			
4 1/2		4786.25	320
3			
2			
Liners used			

GEOLOGICAL TARGET FORMATION Alexander Depth 5700 feet
 Depth of completed well 4919 feet Rotary XXX / Cable Tools _____
 Water strata depth: Fresh 248 feet; Salt _____ feet
 Coal seam depths: none Is coal being mined in the area? no

OPEN FLOW DATA

Producing formation Benson, Riley Pay zone depth 4291 feet
 Gas: Initial open flow 1237 Mcf/d Oil: Initial open flow _____ Bbl/d
 Final open flow 1 Mcf/d Final open flow _____ Bbl/d
 Time of open flow between initial and final tests _____ hours
 Static rock pressure 1350 psig (surface measurement) after 24 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

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

Dowell - 2 stage Foam Frac - 9-18-87

4684/88 - Benson - 231 bbls. water, 518,000 SCF Nitrogen, 80/100- 5000# sd,
40,000#

4254/91 - Riley - 235 bbls. water, 461,000 SCF Nitrogen, 80/100 sd- 5000# sand,
20/40 sd- 35,000#

WELL LOG

FORMATION	COLOR	HARD OR SOFT	TOP FEET	BOTTOM FEET	REMARKS Including indication of all fresh and salt water, coal, oil and gas
Sand			47	62	Damp @ 38'
Red Rock			62	71	
Sand			71	84	
Red rock			84	96	
Sand & Shale			96	104	
Red rock			104	117	
Sand			117	123	
Sand & Shale			123	233	
Shale			233	342	1" fresh water stream @ 248'
Red rock			342	384	
Red rock & Shale			384	1209	
Shale			1209	1288	
Shale & Rock			1288	1579	
Little Lime			1579	1598	
Big Lime			1618	1698	Damp @ 1632'
Big Injun			1699	1786	Gas Check 1775' - 12/10-2" water
Gantz			1788	1980	Gas Check 2258' - 12/10-2" water
Weir			1982	2094	Gas Check 3477' - 10/10-2" water
Sand & Shale			2094	4253	Gas Check 3885' - 6/10- 2" water
Riley			4253	4315	Gas Check 4328' - 6/10 -2" water
Shale			4315	4684	
Benson			4684	4703	
Sand & Shale			4703	4919	Gas Check 4919' - 8/10-2" water

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DIVISION OF OIL & GAS
DEPARTMENT OF ENERGY

(Attach separate sheets as necessary)

Union Drilling, Inc.

Well Operator

By: Douglas P. Terry

Date: November 20, 1987 Douglas P. Terry

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 ... encountered in the drilling of a well."

FORM WW-2 (B) FILE COPY
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 1) Date: July 7, 19 87
 2) Operator's Well No. WVGK-2552
 3) API Well No. 47 State 095 County 1204 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: 778 Watershed: Camp Mistake Run
 District: Centerville / County: Tyler 095 Quadrangle: West Union 7.570
 6) WELL OPERATOR Union Drilling Inc CODE: 50550 7) DESIGNATED AGENT Joseph C. Pettey
 Address Post Office Drawer 40 Address Post Office Drawer 40
 Buckhannon, WV 26201 Buckhannon, WV 26201
 8) OIL & GAS INSPECTOR TO BE NOTIFIED 9) DRILLING CONTRACTOR:
 Name Robert Lowther Name Union Drilling, INC.
 Address General Delivery Address Post Office Drawer 40
 Middlebourne, WV 26149 Buckhannon, WV 26201
 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, Alexander
 12) Estimated depth of completed well, 5700 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	11 3/4	H 40	42	X		20	20		Kinds
Fresh water									
Coal									Sizes
Intermediate	8 5/8	ERW	23	X		928	928	to surface	
Production	4 1/2	J-55	10.5	X		5600	5600	as required	Depths set
Tubing									
Liners									Perforations:
									Top Bottom

OFFICE USE ONLY
 DRILLING PERMIT

Permit number 47-095-1204 Date July 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.

Permit expires July 28, 1989 unless well work is commenced prior to that date and prosecuted with due diligence.

10418

Bond: <input checked="" type="checkbox"/>	Agent: <input checked="" type="checkbox"/>	Plat: <input checked="" type="checkbox"/>	Casing: <input checked="" type="checkbox"/>	Fee: 218 8000	WPCP: <input checked="" type="checkbox"/>	S&E: <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.