

Latitude 38° 45' ← 5425 →

Topo. Loc. 4,550' South of 38° 45' 17,200' West of 81° 40'
 Topo. Loc. (1" = 2000') 4,200' South of 38° 45' 5320' West of 81° 42' 30" KENNA-3

Longitude 81° 40' 42' 30" → 7525 →

NOTE- ELEVATION TAKEN FROM U.S.C.G. T-106. ELEVATION 649.00' SE CORNER OF CONCRETE BRIDGE - SPRUCE HOLLOW - GIVEN, W.VA. STANDARD DISK T-106

- New Location
- Drill Deeper
- Redrill
- Abandonment

"I, the undersigned, hereby certify that this map is correct to the best of my knowledge and belief and shows all the information required by paragraph 6 of the rules and regulations of the oil and gas section of the mining laws of West Virginia."

Company CITIES SERVICE OIL COMPANY
 Address Box 873, CHARLESTON, W.VA.
 Farm UNION NATIONAL BANK, TRUSTEE ET AL
 Part of 300[±]
 Tract Acres 132.50 Lease No. WU-205
 Well (Farm) No. A-1 Serial No. GW-1557
 Elevation (Spirit Level) 782.10
 Quadrangle KENNA-3 5088 W 330 Kenna 7.5
 County JACKSON District RIPLEY
 Engineer Wendell S. Moore
 Engineer's Registration No. 2113
 File No. _____ Drawing No. W-25-65
 Date 6 AUG. 65 Scale 1" = 660'

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

WELL LOCATION MAP
 FILE NO. JAC-1111-Frac-P

+ Denotes location of well on United States Topographic Maps, scale 1 to 62,500, latitude and longitude lines being represented by border lines as shown.

- Denotes one inch spaces on border line of original tracing.

JUL 13 1967

47-035

5,425'

Latitude 38 45

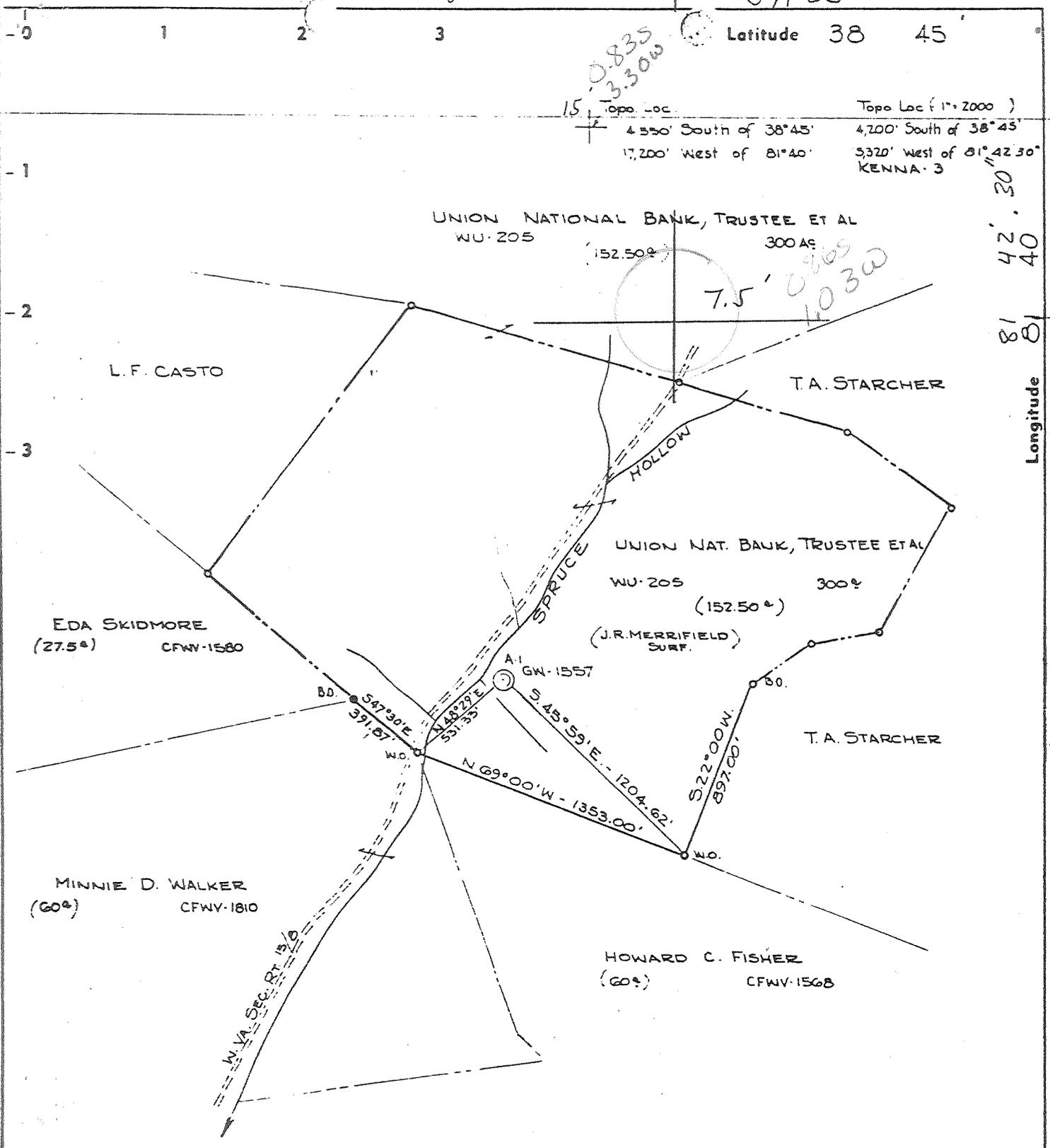
0.835
3.30W

15' Topo Loc.

4,550' South of 38°45'
17,200' West of 81°40'

Topo Loc (1" = 2000')
4,200' South of 38°45'
5,320' West of 81°42'30"
KENNA-3

42.30
40
81
Longitude
4525



NOTE- ELEVATION TAKEN FROM U.S.C.G. T-106. ELEVATION 649.00' SE CORNER OF CONCRETE BRIDGE - SPRUCE HOLLOW - GIVEN, W.VA. STANDARD DISK T106

- New Location
- Drill Deeper
- Redrill
- Abandonment

"I, the undersigned, hereby certify that this map is correct to the best of my knowledge and belief and shows all the information required by paragraph 6 of the rules and regulations of the oil and gas section of the mining laws of West Virginia."

Company CITIES SERVICE OIL COMPANY 169
 Address Box 673, CHARLESTON, W.VA.
 Farm UNION NATIONAL BANK, TRUSTEE ET AL
 Part of 300±
 Tract Acres 132.50 Lease No. WU-205
 Well (Farm) No. A-1 Serial No. GW-1557
 Elevation (Spirit Level) 782.10
 Quadrangle KENNA-3 5088 N 330
 County JACKSON District RIPLEY 3
 Engineer Wendell S. Moore
 Engineer's Registration No. 2113
 File No. _____ Drawing No. W-25-65
 Date 6 AUG. 65 Scale 1" = 660' 0.625" = 1'

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

WELL LOCATION MAP

FILE NO. 47-035-1111-F

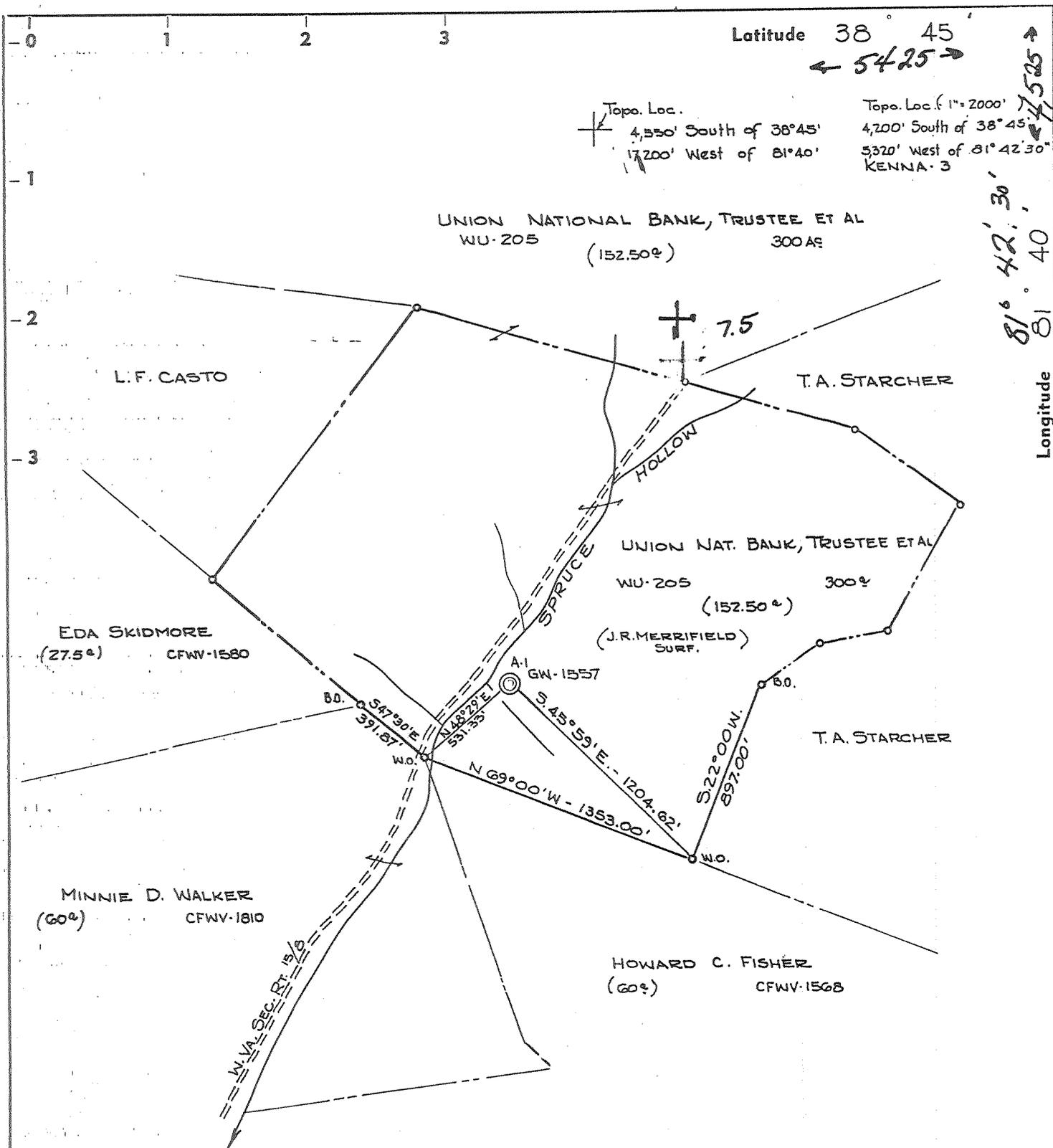
-- Denotes location of well on United States Topographic Maps, scale 1 to 62,500, latitude and longitude lines being represented by border lines as shown.

DEC 8 1966

-- Denotes one inch spaces on border line of original tracing.

NW

Deep well
ETP Area (Sissonville) (192)



Topo. Loc. 4,550' South of 38°45'
17200' West of 81°40'

Topo. Loc. (1"=2000')
4,700' South of 38°45'
5320' West of 81°42'30"
KENNA-3

UNION NATIONAL BANK, TRUSTEE ET AL
WU-205 (152.50[±]) 300 AC

L.F. CASTO

T.A. STARCHER

EDA SKIDMORE (27.5[±]) CFWV-1580

UNION NAT. BANK, TRUSTEE ET AL
WU-205 (152.50[±]) 300[±]
(J.R. MERRIFIELD SURF.)

MINNIE D. WALKER (60[±]) CFWV-1810

HOWARD C. FISHER (60[±]) CFWV-1568

NOTE- ELEVATION TAKEN FROM U.S.C.G. T-106. ELEVATION 649.00' SE CORNER OF CONCRETE BRIDGE - SPRUCE HOLLOW - GIVEN, W.VA. STANDARD DISK T 106

- New Location
- Drill Deeper
- Redrill
- Abandonment

"I, the undersigned, hereby certify that this map is correct to the best of my knowledge and belief and shows all the information required by paragraph 6 of the rules and regulations of the oil and gas section of the mining laws of West Virginia."

Company CITIES SERVICE OIL COMPANY

Address Box 673, CHARLESTON, W.VA.

Farm UNION NATIONAL BANK, TRUSTEE ET AL
Part of 300[±]

Tract Acres 152.50 Lease No. WU-205

Well (Farm) No. A-1 Serial No. GW-1557

Elevation (Spirit Level) 782.10

Quadrangle KENNA-3 5088 W 330 Kenna 7.5

County JACKSON District RIPLEY

Engineer Wendell S Moore

Engineer's Registration No. 2113

File No. _____ Drawing No. W-25-65

Date 6 AUG. 65 Scale 1" = 660'

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

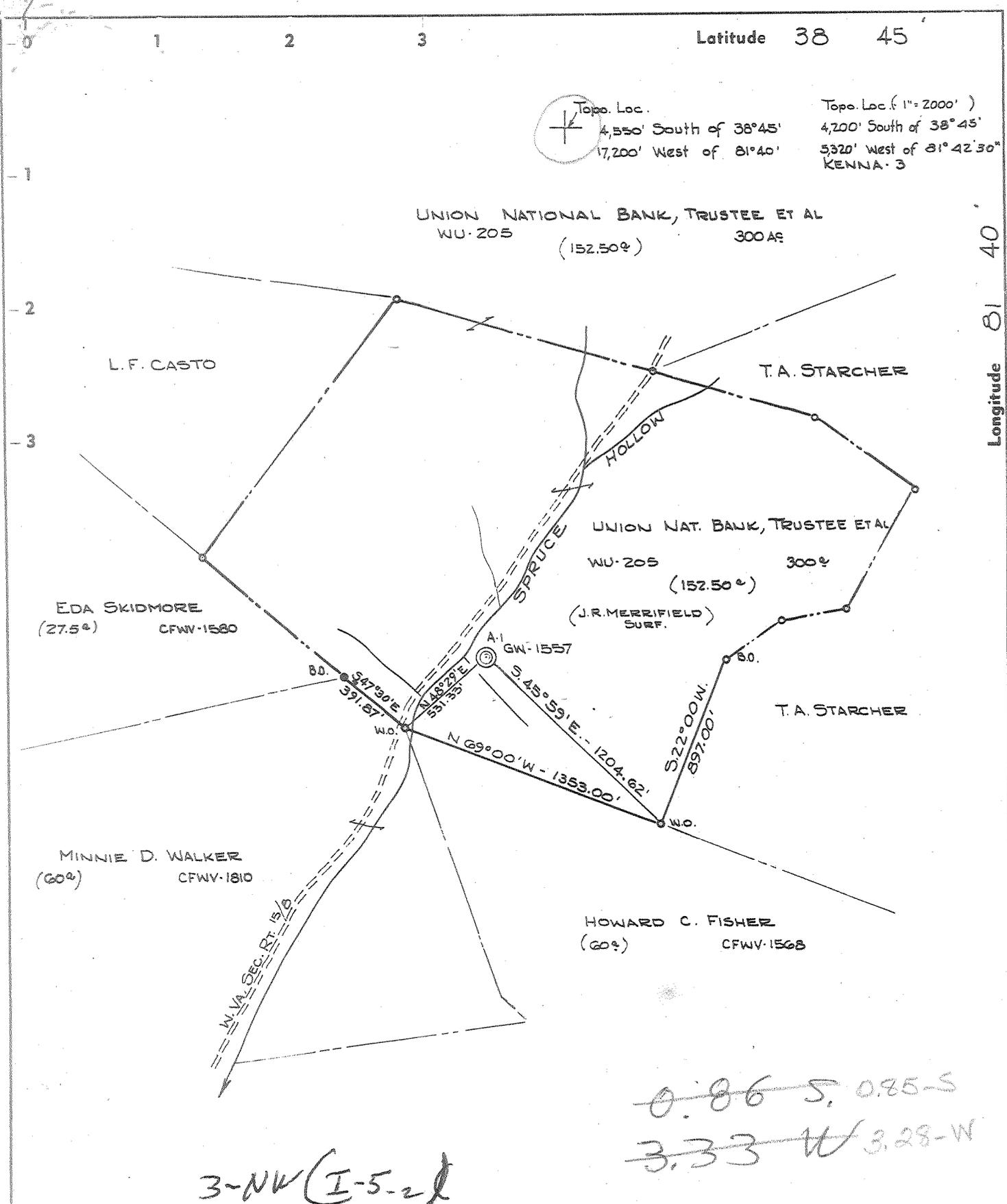
WELL LOCATION MAP

FILE NO. JAC-1111-Frac
Plugging Cancelled

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47-035



3-NW (I-5-2)

~~0.86 S, 0.85-S~~
~~3.33 W 3.28-W~~

NOTE- ELEVATION TAKEN FROM U.S.C.G. T-106. ELEVATION 649.00' SE CORNER OF CONCRETE BRIDGE - SPRUCE HOLLOW - GIVEN, W.VA. STANDARD DISK T-106

- New Location
- Drill Deeper
- Redrill
- Abandonment

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Part of 300±

Tract Acres 152.50 Lease No. WU-205

Well (Farm) No. A-1 Serial No. GW-1557

Elevation (Spirit Level) 782.10

Quadrangle KENNA-3 NW 5088 W 330

County JACKSON District RIPLEY

Engineer Walter S Moore

Engineer's Registration No. 2113

File No. _____ Drawing No. W-25-65

Date 6 AUG. 65 Scale 1"=660'

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

WELL LOCATION MAP
FILE NO. JAC-1111

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- Denotes one inch spaces on border line of original tracing.

Allen Blueprint & Supply Co. 1630 - 2480' & 4800 - 5020' (23-3) 2nd Well

WR-35

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DIVISION OF OIL & GAS
DEPARTMENT OF ENERGY

State of West Virginia
DEPARTMENT OF ENERGY
Oil and Gas Division

Date FEB. 5, 1987
Operator's
Well No. UNION NATIONAL BANK A#1
Farm UNION NATIONAL BANK A' LEASE
API No. 47-035-1111-F

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: 782.10' Watershed SPRUCE HOLLOW
District: RIPLEY County JACKSON Quadrangle KENNA 3 SW

COMPANY CITIES SERVICE OIL & GAS CORP.
ADDRESS PO BOX 873 CHARLESTON WV. 25323
DESIGNATED AGENT PAUL D. PHILLIPS
ADDRESS PO BOX 873 CHARLESTON WV 25323
SURFACE OWNER J.R. MERRIFIELD
ADDRESS 300 MORITY AVE., GRAFTON WV. 26354
MINERAL RIGHTS OWNER UNION NATIONAL BANK, TRUST ET AL.
ADDRESS CLARKSBURG, WV.
OIL AND GAS INSPECTOR FOR THIS WORK JERRY TEPHABOCK ADDRESS RT1 BOX 101-A, RIPLEY WV 25271
PERMIT ISSUED DECEMBER 3, 1986
DRILLING COMMENCED (PLUGBACK) DEC. 8, 1986
DRILLING COMPLETED (RECOMPLETED) DEC. 20, 1986
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"	40'	40'	
9 5/8			
8 5/8	2480'	2480'	
7			
5 1/2			
4 1/2	4900'	4642'	22.5 ^{cu} /ft.
3			
2	4367'	4367'	
Liners used			

GEOLOGICAL TARGET FORMATION DEVONIAN SHALE Depth 4870' feet
Depth of completed well 4642' feet Rotary ___ / Cable Tools ___
Water strata depth: Fresh NONE feet; Salt NONE feet
Coal seam depths: NONE Is coal being mined in the area? ___

OPEN FLOW DATA

Producing formation DEVONIAN SHALE Pay zone depth 4356' feet
Gas: Initial open flow 21 Mcf/d Oil: Initial open flow 0 Bbl/d
Final open flow 9 Mcf/d Final open flow 0 Bbl/d
Time of open flow between initial and final tests 53 hours
Static rock pressure 410 psig (surface measurement) after 68 hours shut in
(If applicable due to multiple completion--)
Second producing formation N/A 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

FEB 11 1987

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

PERFORATED 4 1/2" CSG. W/ 3/8" ALPHA JET CHARGES @ 4080, 4082, 4084, 4086, 4088, 4090, 4100, 4102, 4104, 4138, 4140, 4174, 4176, 4200, 4202, 4348, 4350, 4352, 4354, & 4356 FOR A TOTAL OF 20 SHOTS OVER 276'. SPOTTED 350 GAL. 15% HCL DOWN 4 1/2" CSG. FRACED DEVONIAN SHALE W/ 60,000# DF 20/40 SAND USING A 75% QUALITY FOAM FRAC. BROKE DOWN @ 12 BPM @ 2500 PSI. AVG. SAND CONCENTRATION 7 PPG. AVG. INJ. PRES. 2600PSI. AVG. INJ RATE 11.8 BPM. TOTAL N₂ USED FOR JOB 501,000 SCF. ALL FLUID TREATED W/ 2% KCL, FOAMER (F-78), CLAY STABILIZER (L-53), & IRON CONTROL AGENT (U42).

WELL LOG

FORMATION	COLOR	HARD OR SOFT	TOP FEET	BOTTOM FEET	REMARKS Including indication of all fresh and salt water, coal, oil and gas
TOPSOIL			0	5	
SAND			5	40	
SLATE			40	90	
SAND			90	165	
SHALE			165	230	
RED ROCK			230	255	
SHALE			255	350	
SAND			350	415	
SHALE			415	485	
SAND			485	595	
SHALE			595	720	
RED ROCK			720	750	
SHALE			750	800	
SAND			800	850	
SLATE & SHELLS			850	990	
RED ROCK			990	1010	
SHALE			1010	1035	
RED ROCK			1035	1055	
SAND			1055	1100	
SHALE			1100	1135	
SAND			1135	1200	
SHALE			1200	1220	
SAND			1220	1350	
SHALE			1350	1615	
SALT SAND			1615	1775	
SHALE			1775	1815	
SAND			1815	1875	
BIG LIME			1875	1955	
BIG INJUN SAND			1955	2200	
SAND & SHALE			2200	2460	
SAND			2460	2475	
SHALE			2475	4642	PBTD.

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FEB 10 1987

DIVISION OF OIL & GAS
DEPARTMENT OF ENERGY

(Attach separate sheets as necessary)

CITIES SERVICE OIL & GAS CORP.
Well Operator

By: JAMES RISKER

Date: 2-5-87

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



STATE OF WEST VIRGINIA
DEPARTMENT OF MINES
OIL AND GAS DIVISION 15

Rotary xxx
Spudder
Cable Tools
Storage

Quadrangle Kenna 3 SW
Permit No. Jac-1111

WELL RECORD

Oil or Gas Well gas
(KIND)

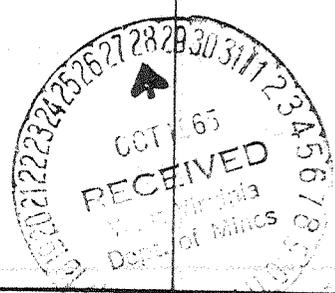
Company	Address	Farm	Location (waters)	Well No.	District	The surface of tract is owned in fee by	Mineral rights are owned by	Drilling commenced	Drilling completed	Date Shot	With	Open Flow	Volume	Rock Pressure	Oil	WELL ACIDIZED (DETAILS)	WELL FRACTURED (DETAILS)	RESULT AFTER TREATMENT (Initial open flow or bbls.)	ROCK PRESSURE AFTER TREATMENT	Fresh Water	Producing Sand	
Cities Service Oil Company	P. O. Box 873, Charleston, W. Va. 25323	Union National Bank Tr., etal Acres 300	Spruce Hollow	"A" #1, GW-1557	Ripley	J. R. Merrifield	Union National Bank, Trust, et al	8-23-65	9-16-65				127M			see attached sheet	see attached sheet	231 MCF (Oriskany)	164		Oriskany	
						Smithfield, W. Va.	Clarksburg, W. Va.															

Casing and Tubing	Used in Drilling	Left in Well	Packers
Size			
16			Kind of Packer
13 3/8" 48#	32'	32'	none
10			Size of
8 1/4" 24#	2480'	2480'	
6%			Depth set
3/16			
4 1/2" 11.6#	5087'	5087'	
3			Perf. top
2 3/8" 4.6#	5034'	5034'	Perf. bottom
			Perf. top
			Perf. bottom

Attach copy of cementing record.
CASING CEMENTED SIZE No. Ft. Date
Amount of cement used (bags)
Name of Service Co. see reverse side
COAL WAS ENCOUNTERED AT none FEET INCHES
FEET INCHES FEET INCHES
FEET INCHES FEET INCHES

231 MCF (Oriskany)
985# on Braden Head
Depth 4951-5005'

Formation	Color	Hard or Soft	Top	Bottom	Oil, Gas or Water	Depth	Remarks
pp Soil			0	5			
nd			5	40			
ate			40	90			
nd			90	165			
ale			165	230			
ed Rock			230	255			
ale			255	350			
nd - 1 1/2" P.H.S.P.			350	415			
ale			415	485			
nd - 1 1/2" P.H.S.P.			485	595			
ale			595	720			
ed Rock			720	750			
ale			750	800			
nd			800	850			
ate and Shells			850	990			
ed Rock			990	1010			
ale			1010	1035			
ed Rock			1035	1055			
nd			1055	1100			
ale			1100	1135			
nd			1135	1200			
ale			1200	1220			
nd			1220	1350			
ale			1350	1615			
It Sand			1615	1775			
ale			1775	1815			



Formation	Color	Hard or Soft	Top 11'	Bottom	Oil, Gas or Water	Depth Found	Remarks
Sand - 2			1815	1875			
Big Lime			1875	1955			
Big Injun Sand			1955	2200	too thick	245'	
Sand and Shale			2200	2460			
Sand - <i>Bella</i>			2460	2475			
Shale			2475	4860			
Lime- 463			4860	4940	TIO ₂ METACENTORITE - 4839'E? - 4850'E		
Sand - <i>Oriskany</i>			4940	5050			
Lime - <i>Helderberg</i>			5005	5051	EPDS T ④ 485		
Total depth							5050' Drillers' Meas. = 5051' Schlumberger Meas. 5017' Plugged back depth.
Electric Logs showed:							
Corniferous Lime			4862	4951			
Oriskany Sand			4951	5005	④ 475		
CASING RECORD							
8-24-65	Set and cemented 13-3/8" 48# H-40 casing at 40' with 15 sacks of cement.						
9-12-65	Set and cemented 8-5/8" 24# J-55 B. Grade casing at 2480' with 75 sacks Pozmix and 2% Calcium Chloride. Pumped plug to 2,450'. R/L nipple at 1962'. Centralizers at 2450', 2352', 2256' and 2186'						
9-17-65	Set 4-1/2" 11.6# J-55 casing at 5,050'. Float at 5,017'. Centralizers 4981', 4882', 4782', 4692' and 4595'. Baker Wall Scratchers on 12' centers 5050' to 4810', R/L nipple at 4459'. Cemented with 75 sacks Pozmix cement with friction reducer.						
	<i>estimated logs:</i>						
	404	2475					
	813	3701					
	822	4233					
	825	4376					
	830	4603					
	835	4784					
	842	4849					
	455	4868					

Date October 27, 19 65

APPROVED Cities Service Oil Company, Owner

By L. D. Todd, District Sup't
(Title)

Formation	Color	Hard or Soft	Top /FA	Bottom	Oil, Gas or Water	Depth Found	Remarks
Additional information on GW-1557, Union National Bank Trustee, Con. "A" #1							
9-16-65	Ran Schlumberger Logs: Gamma Ray, Caliper, Density, Temperature and Induction. Schlumberger's T. D. 5,051'. Gas gauging 127 M from the Oriskany.						
9-21-65	Ran Cement Bond Log, Gamma Ray Correlation Log and Collar Locator Log. Cement Bond Log indicates good bonding 5005' to 4775'. Birdwell Measurement 5005' = 5009' Schlumberger Measurement. Correlated Logs and perforated Oriskany 4962' to 4972' with 2 shots/foot and 5,000' to 5,005' with 4 shots/foot. Ran 2" tubing to 5,007'						
Acidized and Fraced Oriskany Sand 9-22-65							
Spotted 1,000 gallons regular 15% acid and 500 gallons mud acid on bottom to acidize and frac Oriskany Sand. Pumped acid into formation at 2900# and fraced with 16,000# 20-40 sand in 16,000 gallons of gelled water. Pumped in 6,000 gallons at 4,000# and dropped 5 perf balls. Pressure increased to 4,100#. After pumping 12,000 gallons dropped 10 perf balls. Pressure increased to 4300# - maximum treating pressure. Used 75,000 cu. ft. nitrogen - 525 bbls. frac water. Average injection rate 20 bbls/minute.							
9-23-65	Ran 2" tubing to 5,008' - swabbed and kicked off. Gas gauging 227 MCF.						
10-6-65	164 hour shut in pressure 985# on Braden head - 885# tubing. Final open flow 231 MCF - making 2 gallons salty oily water per 7 minutes.						



Date October 27, 19 65

APPROVED Cities Service Oil Company, Owner

By L. D. Todd, District Superintendent
(Title)

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NOV 05 1986



1) Date: November 1, 1986
 2) Operator's Well No. Union National Bank "A" #1
 3) API Well No. 47 State 035 County 1111 -F 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: 782.10' Watershed: Spruce Hollow
 District: Ripley 169 3 County: Jackson Quadrangle: Kenna 415
- 6) WELL OPERATOR Cities Service Oil & Gas Corp. CODE: 9800 7) DESIGNATED AGENT Paul D. Phillips
 Address P. O. Box 873 Address P. O. Box 873
Charleston, WV 25323 Charleston, WV 25323
- 8) OIL & GAS INSPECTOR TO BE NOTIFIED 9) DRILLING CONTRACTOR:
 Name Jerry Tephobock Name Not available
 Address Route 1, Box 101-A Address _____
Ripley, WV 25271
- 10) PROPOSED WELL WORK: Drill / Drill deeper / Redrill / Stimulate /
 Plug off old formation / Perforate new formation /
 Other physical change in well (specify) Set CIRP @ 4900'. Dump 3 sxs on top-plug 4900-4870
- 11) GEOLOGICAL TARGET FORMATION, Devonian Shale PARTIAL PLUG
- 12) Estimated depth of completed well, 4870 feet
 13) Approximate strata depths: Fresh, None feet; salt, None feet.
 14) Approximate coal seam depths: None 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	13-3/8	H-40	48			40	40	15 sxs	Kinds
Fresh water									
Coal									Sizes
Intermediate	8-5/8	J-55	24			2480	2480	75 sxs	
Production	4-1/2	J-55	11.6			4870 PBD	4870 PBD	526 sxs	Depths set
Tubing	2-3/8		4.6			4650	4650		
Lin...									Perforations: 4080-4356
									Top Bottom

SEE ATTACHED PROCEDURE FOR PARTIAL PLUG*

OFFICE USE ONLY
 DRILLING PERMIT

Permit number 47-035-1111-F Date December 3 19 86

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 Note 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 December 3, 1988 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: <u>22051</u>	WGP: <input checked="" type="checkbox"/>	S&E: <input checked="" type="checkbox"/>	Other: <input type="checkbox"/>
---	--	---	---	-------------------	--	--	---------------------------------

John W. Johnston
 Director, Division of Oil and Gas
Margaret J. Hassel
 File

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

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