

THE ACCURACY OF THIS SURVEY IS WITHIN THE LIMITS PRESCRIBED BY THE OIL AND GAS DIVISION OF THE DEPARTMENT OF MINES.

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 G OF THE RULES AND REGULATIONS OF THE OIL AND GAS SECTION OF THE MINING LAWS OF WEST VA.

Wendell S. Moore

- New Location
- Drill Deeper
- Abandonment

Company CITIES SERVICE OIL CO.
 Address Box 873 CHARLESTON, W. VA.
 Farm LEWIS MAXWELL
 Tract _____ Acres 640 Lease No. C-32-F
 Well (Farm) No. 20F Serial No. GW 1406
 Elevation (Spirit Level) 892.71
 Quadrangle West Union-7-5331 W 03B
 County DODDRIDGE District WEST UNION
 Engineer Wendell S. Moore
 Engineer's Registration No. 2113
 File No. _____ Drawing No. W-11-63
 Date 21 MAR 63 Scale 1"=100'

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

WELL LOCATION MAP
 FILE NO. D00-949

+ 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.

SAMPLES 342-1842 T.D. 79 MG- I-6



STATE OF WEST VIRGINIA
DEPARTMENT OF MINES
OIL AND GAS DIVISION 3

Quadrangle West Union 7 SW

Permit No. DOD-949

WELL RECORD

Oil or Gas Well Gas
(KIND)

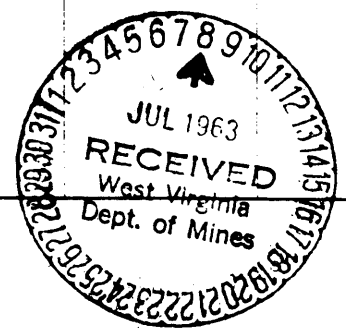
Company Cities Service Oil Co.
 Address P. O. Box 873, Charleston 23, W. Va.
 Farm Lewis Maxwell Acres 640
 Location (waters) Bluestone Creek
 Well No. F-20, GW-1406 Elev. 892.21'
 District West Union County Doddridge
 The surface of tract is owned in fee by B. O. Davis Hrs.
c/o Garnet Davis Address Blandville, W. Va.
 Mineral rights are owned by Mrs. Grace Gaylord, widow
420 Kemmer Road Address State College, Pa
 Drilling commenced 5-20-63
 Drilling completed 6-11-63
 Date Shot not shot From _____ To _____
 With _____
 Open Flow 16 /10ths Water in _____ 2 _____ Inch
 _____ /10ths Merc. in _____ Inch
 Volume 169,000 _____ Cu. Ft.
 Rock Pressure _____ lbs. _____ hrs.
 Oil _____ bbls., 1st 24 hrs.
 WELL ACIDIZED not acidized
 WELL FRACTURED see reverse side
 RESULT AFTER TREATMENT 12# spring gauge 3-1/4" I. D. = 6,011 MCF - Big Injun
 ROCK PRESSURE AFTER TREATMENT 6 days 445#
 Fresh Water 90-120' 140' Feet Salt Water _____ Feet

Casing and Tubing	Used in Drilling	Left in Well	Packers
Size			Kind of Packer
16.			<u>Anchor Packer</u>
13			Size of <u>4x6"</u>
10 3/4" 32#	60'	60'	Depth set <u>1,650'</u>
8 1/2" 24#	343'7"	343'7"	Perf. top _____
7" 23#	904'6"	pulled	Perf. bottom _____
4-1/2" 9.5#	1852'	1852'	Perf. top _____
			Perf. bottom _____

CASING CEMENTED _____ SIZE _____ No. Ft. _____ Date _____
see reverse side
 COAL WAS ENCOUNTERED AT none FEET _____ INCHES _____
 FEET _____ INCHES _____ FEET _____ INCHES _____
 FEET _____ INCHES _____ FEET _____ INCHES _____

Formation	Color	Hard or Soft	Top	Bottom	Oil, Gas or Water	Depth	Remarks
Clay			0	20			
Slate			20	35			
Red Rock			35	38			
Lime			38	51			
Red Rock			51	54			
Lime			54	65			
Red Rock			65	90			
Lime			90	120	F. water	90-120'	6-10"blr/hr.
Red Rock			120	137			
Broken Lime			137	205	F. water	140'	hole full
Slate			205	220			
Red Rock			220	235			
Slate and Shells			235	284			
Lime			284	308			
Slate			308	342			
Lime			342	355			
Slate and Shells			355	365			
Red Rock			365	375			
Lime			375	416			
Red Rock and Shells			416	475			
Lime			475	500			
Slate and Shells			500	520			
Red Rock			520	532			
Broken Lime			532	595			
Slate and Shells			595	615			
Sand			615	645			
Slate and Shells			645	670			

(over)



Formation	Color	Hard or Soft	Top ₃	Bottom	Oil, Gas or Water	Depth Found	Remarks
Red Rock			670	677			
Lime			677	812			
Red Rock			812	827			
Slate and Shells			827	890			
Lime			890	900			
Sand			900	927			
Slate and Shells			927	947			
Sand			947	1090			
Slate and Shells			1090	1106			
Sand			1106	1200			
Slate			1200	1205			
Grey Lime			1205	1235			
Sand			1235	1260			
Lime			1260	1275			
Slate and Shells			1275	1335			
Lime			1335	1358			
Sand			1358	1424	Gas	1413'	3/10 W. 1"=18M
Lime			1424	1443			
Slate and Shells			1443	1460			
Lime			1460	1479			
Slate			1479	1501			
Black Lime			1501	1516			
Slate and Shells			1516	1570			
Sand			1570	1595			
Lime			1595	1617			
Slate			1617	1623			
Big Lime			1623	1668			
Big Injun Sand			1668	1809	Gas	1695-1701'	20/10 W. 2"=189M
Slate and Shells			1809	1842			
Total depth	-----		-----		1842'DLM=1843'Schlumberger Meas.		
Ran Logs: Gamma Ray, Caliper, Induction, Density and Temperature Logs.							
<u>CASING RECORD</u>							
5-25-63	Ran 8-5/8" casing 341'DLM with shoe- set in 20' red mud.						
5-30-63	Ran 7" casing 895'DLM with shoe-set in 20' red mud - pulled.						
6-11-63	Ran 4-1/2" at total depth with shoe on bottom - 4x6" anchor packer set at 1,650' - R/L nipple 1,417'. Circulated with 6 sacks Gel-cemented with 35 sacks Hi Early Cement - pumped plug to 1,827'						
<u>FRACTURED THE BIG INJUN 6-17-63</u>							
Perforated Big Injun 1700', 1740' and 1754' with 8 shots/section. Pumped in 500 gallons MCA, 1,000 gallons regular acid. Broke down formation at 2,000#. Treated with 574 bbls. water, 30,000# sand. Average injection pressure 1,796#. Frac started at 1,400#. Injected 8 perf balls. Pressure increased 100#. Injected 10 perf balls - pressure increased 500#. Maximum sand concentration 2-1/2#/gallon. Average injection rate 29.4 bbls/minute. Used 100,000 standard cubic feet of Nitrogen. Before fracing gas gauged 169 MCF. Final open flow 6,011 MCF.							

Date July 5, 1963

APPROVED Cities Service Oil Company, Owner
 By W. S. Moore, Division Sup't
 (Title)