

New Location   
 Drill Deeper   
 Abandonment

Company CITIES SERVICE OIL COMPANY  
 Address Box 873, CHARLESTON, W. VA.  
 Farm WALLER C. HARDY, JR. ET AL  
 Tract \_\_\_\_\_ Acres 9707.19 Lease No. 1-11-47-00834  
 Well (Farm) No. 20 Serial No. GW-1558  
 Elevation (Spirit Level) 991.51  
 Quadrangle PEYTONA-2 <sup>NC</sup> 5018 W 310  
 County KANAWHA District LOUDON  
 Engineer \_\_\_\_\_  
 Engineer's Registration No. 2113  
 File No. \_\_\_\_\_ Drawing No. W-19-65  
 Date 17 JUNE 65 Scale 1" = 1000'

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

**WELL LOCATION MAP**  
 FILE NO. Kan-2047

+ 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 1000 - 2200' 4400 - 70' 6-A Deep Well 65 305



STATE OF WEST VIRGINIA  
DEPARTMENT OF MINES  
OIL AND GAS DIVISION

Rotary   
Spudder   
Cable Tools   
Storage

Quadrangle Peytona 2 SW

Permit No. Kan-2047

WELL RECORD 23

Oil or Gas Well gas  
(KIND)

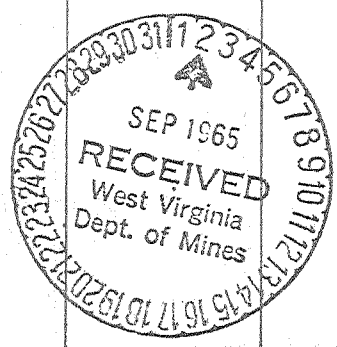
Company Cities Service Oil Company  
Address Box 873, Charleston, W. Va. 25323  
Farm W. C. Hardy, Jr., et al Acres 9707.19  
Location (waters) Hoffman Hollow  
Well No. #20-GW-1558 Elev. 991.51'  
District Loudon County Kanawha  
The surface of tract is owned in fee by Dep't of Natural Resources  
Capital Building Address Chas. W. Va. 25305  
Mineral rights are owned by W. C. Hardy, Jr., et al  
5100 2nd Avenue Address Vienna, W. Va.  
Drilling commenced 7-22-65  
Drilling completed 8-13-65  
Date Shot not shot From \_\_\_\_\_ To \_\_\_\_\_  
With \_\_\_\_\_  
Open Flow /10ths Water in \_\_\_\_\_ Inch  
/10ths Merc. in \_\_\_\_\_ Inch  
Volume \_\_\_\_\_ Cu. Ft.  
Rock Pressure \_\_\_\_\_ lbs. \_\_\_\_\_ hrs.  
Oil \_\_\_\_\_ bbls., 1st 24 hrs.  
WELL ACIDIZED (DETAILS) not acidized  
WELL FRACTURED (DETAILS) see reverse side

Casing and Tubing	Used in Drilling	Left in Well	Packers
Size			
<del>20"</del>	40'	40'	Kind of Packer
13 3/8" 48#	408'	408'	none
<del>9-5/8" 32#</del>	1595'	1595'	Size of
8 1/4"			Depth set
6 3/4"			
5 3/16"			
4 1/2" 11.6#	5483'	5483'	Perf. top
3"			Perf. bottom
2 3/8" 4.7#	5415'	5415'	Perf. top
Liners Used <u>with cage as siphon string</u>			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

RESULT AFTER TREATMENT (Initial open Flow or bbls.) 5,176 MCF (Newburg)  
ROCK PRESSURE AFTER TREATMENT 4 days HOORS 2030#  
Fresh Water 170' Feet Salt Water 710' Feet  
Producing Sand Newburg Sand Depth 5362-80'

Formation	Color	Hard or Soft	Top	Bottom	Oil, Gas or Water	Depth	Remarks
Sandy Clay			0	15			
Sand			15	180	F. water	170'	
Sand and Shale			180	250			
Shale			250	280			
Sand with Shale			280	417			
Shale			417	650			
Sand - Salt			650	750	S. water	710'	
Shale and Sand			750	940			
White Sand			940	1040			
Shale			1040	1060			
Sand and Shale			1060	1070			
Sand			1070	1175			
Shale with Sand			1175	1300			
Lime - Big Lime			1300	1505			
Big Injun Sand - 365			1505	1535			
Lime			1535	1560			
Red Rock			1560	1575			
Shale			1575	1596			
Shale with Sand			1596	2615			
Shale w/ Sand streaks			2615	3600			
Shale w/ Lime streaks			3600	4100			
Shale			4100	4590			
Lime - Onondaga			4590	4730			
Sand Oriskany			4730	4750			
Lime - Helix			4750	5364			
Sand Newburg			5364	5380			



Formation	Color	Hard or Soft	Top	Bottom	Oil, Gas or Water	Depth Found	Remarks
Lime			5380	5420			
Total depth	-----			5420'	Drillers' Meas. =		
				5421'	Schlumberger's Meas.		
Schlumberger Log showed:							
Newburg Sand			5362	5380			
<u>CASING RECORD</u>							
7-27-65	Set and cemented 13-3/8" 48# H-40 new casing with steel shoe at 417' RTM with 100 sacks cement with 3% Calcium Chloride.						
8-1-65	Set 9-5/8" 32.3# H-40 new casing with guide shoe at 1596'. Gelled hole and killed gas. Cemented casing with 200 sacks cement with 2% Calcium Chloride.						
8-14-65	Set and cemented 4-1/2" 11.6# J-55 new casing at 5,421' with Whirler Guide shoe with 140 sacks Pozmix. Baker wall scratchers on 12' centers 5417' to 5177'. Centralizers at 5,420', 5,382', 5,362', 5,287', 5,217' and 5,137'. Pumped plug to 5,405'						
7-31-65	Ran Schlumberger Logs thru Big Injun: Gamma Ray, Temperature, Caliper, Density and later log.						
8-13-65	Ran Schlumberger Logs thru Newburg Sand: Gamma Ray, Caliper, Density, SP and Induction.						
8-17-65	Ran Gamma Ray Collar Locator and Cement bond log. Good bonding. Correlated Gamma Ray and perforated Newburg 5366-67' and 5372-73' with 4 shots per foot.						
8-18-65	<u>FRACTURED THE NEWBURG SAND</u>						
	Pumped 500 gallons mud acid and 1,500 gallons regular 15% acid into formation at 2 bbls/minute and 2,700#. Fraced with 10,000# 20-40 sand in 11,500 gallons gelled water. Minimum treating pressure 3900#-maximum 5,000#. Average injection rate 9.1 bbls/min. Used 413 bbls. treating and load water. Opened - started flowing back - died after 8 hours.						
8-19-65	Ran 2" upset tubing to 5,386' for siphon string with cage and bull plug on bottom.						
8-31-65	Final open flow 5,176 MCF (Newburg)						

Date August 30, 1965

APPROVED Cities Service Oil Company, Owner

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