

Company THE OWENS LIBBEY-OWENS GAS DEPT.

Address BOX 1375 CHARLESTON, W.VA.

Farm KOONCE & ZIMMERMAN

Tract _____ Acres 1666 Lease No. 585

Well (Farm) No. 3 Serial No. 603

Elevation (Spirit Level) 1101.9

Quadrangle WAYNE SW

County WAYNE District LINCOLN

Engineer T.S. Flournoy

Engineer's Registration No. 269

File No. _____ Drawing No. _____

Date APRIL 29, 1941 Scale 1" = 1000'

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

WELL LOCATION MAP
FILE NO. WAY-246

+ 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.

Sample (MT 93) 1466-300 Deep Well

KOONCE AND ZIMMERMAN NO. 3 (609) WELL.

Lincoln District, Wayne County, W. Va.

By The Owens, Libbey-Owens Gas Department, Charleston, W. Va.

Located 3.57 mi. W. of 82° 25' and 5.07 mi. S. of 38° 05' - SW - Wayne Quadrangle.

Elevation, 1101.9' L.

Permit Way-246.

Drilling commenced July 8, 1941; completed Aug. 12, 1941.

Gas well; volume, 55,000 cu. ft.

Rock pressure, 350 lbs. in 24 hours.

Salt water, 1029'.

Coal, 58-61, 152-154, and 332-335'.

8⁵/₈" casing, 751'; 7", 1460'; 3" tubing, 3309'.

Section based on examination of samples from 1466 to 3309' by C. N. Apsouri.

Record from Martens Dec. 2, 1943.

Top. Bottom. Thickness.

GREENBRIER LIMESTONE, 192 FEET

1457		Top "Big Lime" from driller's record
1466 - 1474	8	Limestone, very light brown
1474 - 1482	8	Limestone, light-brown, somewhat oolitic
1482 - 1546	64	Limestone, brown to nearly white
1546 - 1556	10	Limestone, nearly white, somewhat sandy
1556 - 1561	5	Limestone, nearly white
1561 - 1578	17	Limestone, nearly white, oolitic, somewhat sandy
1578 - 1610	32	Limestone, white to light-brown (gas, 1595', 30,000 cu. ft.)
1610 - 1627	17	Limestone, nearly white, oolitic
1627 - 1634	7	Limestone, very light brown and green, partly dolomitic
1634 - 1641	7	Limestone, very light brown, dolomitic
1641 - 1649	8	Dolomite, dark-brown

POCONO FORMATION, 541 FEET

1649 - 1659	10	Sandstone, green, very fine; contains specks of siderite and pyrite
1659 - 1679	20	Sandstone, green, very fine, 50%; dark-green shale, 50%; (gas, 1669-1679', 33,000 cu. ft.)
1679 - 1689	10	Sandstone, white, very fine
1689 - 1699	10	Siltstone, very light gray, sandy, 80%; dark-gray shale, 20%
1699 - 1710	11	Siltstone, very light gray, sandy, 50%; dark-gray shale, 50%
1710 - 1721	11	Sandstone, white, very fine
1721 - 1759	38	Shale and siltstone, gray
1759 - 1979	220	Shale, gray
1979 - 2033	54	No samples
2033 - 2128	95	Shale, gray
2128 - 2176	48	No samples
2176 - 2190	14	Shale, very dark gray, 90%; sandstone, white to light-gray, very fine, with large proportion of pyrite in some fragments, 10% (Sunbury Shale and Berea Sandstone; the Berea apparently occurs from about 2188 to 2190')

DEVONIAN SHALES, 1114 FEET

2190 - 2200	10	Shale, gray, with some sandy siltstone
2200 - 2256	36	Shale, gray, 60 to 70%; white, very fine sandstone, 40 to 30%; the driller's record includes the interval 2190 to 2236' with the Berea
2256 - 2263	7	Shale, light-gray, 80%; gray siltstone, 20%
2263 - 2292	29	No samples
2292 - 2305	13	Shale, very light gray
2305 - 3109	804	Samples not described (gas at 2854 and 2879')
3109 - 3188	79	Shale, light greenish gray

(OVER)

KOONCE AND ZIMMERMAN NO. 3 (609) WELL (Continued).

Top.	Bottom.	Thickness.	
3188	- 3243	55	Shale, light greenish gray, 50%; dark-gray shale, 50%
3243	- 3263	20	Shale, dark-gray to very dark gray, pyritic
3263	- 3287	24	Shale, dark-gray to very dark gray, 60%; gray limestone, 40%
3287	- 3304	17	Shale, very dark gray
			HUNTERSVILLE CHERT, 5+ FEET
3304	- 3309	5	Chert and cherty limestone, very light gray
	3309		Total depth

WEST VIRGINIA DEPARTMENT OF MINES
OIL & GAS DIVISION
W E L L R E C O R D

Permit No. Way-246

Gas Well

Wayne Quad.

Company The Owens, Libbey-Owens Gas Dept.
Address Chareleston, W. Va.
Farm Koonce & Zimmerman Acres 1666
Location Lost Creek
Well No. 3-609 Elev. 1102
District Lincoln - Wayne County
Surface & Mineral Koonce & Zimmerman, Youngstown, Ohio
Commenced 7-8-41
Completed 8-12-41
Shot 8-14-41 Depth shot 3032-2544
Volume 55,000 c.f.
Rock Pressure 350# 24 hrs.
Salt Water 1029'

Casing & Tubing

8-58	751	751
7	1460	1460
3	3309	3309
Packer Comb. Wall & Anch.		
Size	3" x 6-5/8" x 16"	
Depth set	1443	
Coal	58'	36"
	152'	24"
	332'	36"

Surface	s	0	3	Shell	lt m	2033	2039
Sand	yl h	3	58	Slate	dk s	2039	2128
Coal	bk s	58	61	Slate	gy s	2128	2176
Slate	dk s	61	76	Slate	dk s	2176	2184
Sand	yl s	76	132	Shale	bn s	2184	2190
Sand	dk s	132	152	Berea Sand	lt h	2190	2236
Coal	bk s	152	154	Slate&Shells	lt h	2236	2292
Slate	wh s	154	158	Slate&Shells	lt s	2292	2324
Sand	gy h	158	196	Shale	bn s	2324	2399
Slate	gy s	196	208	Slate	gy s	2399	2454
Sand	wh s	208	292	Slate&Shells	gy s	2454	2505
Slate	dk s	292	317	Slate	dk s	2505	2535
Slate&Shells	gy s	317	332	Slate	gy s	2535	2565
Coal	bk s	332	335	Shale	bn s	2565	2730
Slate&Shells	gy s	335	373	Slate	gy s	2730	2760
Sand	wh h	373	400	Shale	bn s	2760	2804
Slate	lt s	400	408	Shale	bn s	2760	2804
Sand	wh s	408	498	Slate	lt s	2804	2841
Slate	wh s	498	560	Shale	bn s	2841	3026
Sand	wh s	560	596	Gas		2854	22M
Slate	wh s	596	661	Slate	wh s	3026	3243
Sand	wh s	661	686	Gas		2879	25M
Slate	dk s	686	716	Shale	bn s	3243	3305
Slate&Shells	gy s	716	751	Corniferous	gy h	3305	3309
Slate&Shells	gy s	751	804	Total Depth			3309
Slate	lt s	804	874				
Slate	dk s	874	940				
Salt Sand	wh s	940	1104W.1029HF				
Slate	gy s	1104	1108				
Salt sand	wh s	1108	1139				
Slate	dk s	1139	1142				
Sand	lt m	1142	1173				
Slate	lt s	1173	1179				
Sand	lt s	1179	1264				
Slate	dk s	1264	1289				
Shells	lt h	1289	1295				
Sand	dk s	1295	1305				
Slate	dk s	1305	1315				
Red Rock	rd s	1315	1323				
Slate&Shells	dk s	1323	1346				
Shell	gy h	1346	1363				
Sand	wh s	1363	1405				
Slate	dk s	1405	1410				
Lime	dk s	1410	1413	<i>Parvic Cave</i>			
Lime	gy h	1413	1428				
Lime	dk h	1428	1457	<i>Top Big Cave</i>			
Big Lime	wh h	1457	1649	Gas 1595 - 30M			
Slate	dk s	1639	1652				
Sand	wh s	1652	1721	Gas 1669-79 33M			
Slate&Shells	wh s	1721	1759				
Slate&Shells	dk s	1759	1797				
Slate&Shells	gy s	1797	1893				
Slate	dk s	1893	1933				
Slate	lt s	1933	1979				
Slate&Shells	gy s	1979	2033				

3305
1102

2203

1190
1151
1139
113

2150
1413
787



STATE OF WEST VIRGINIA
DEPARTMENT OF MINES
OIL AND GAS DIVISION | 6

Quadrangle Wayne

Permit No. Way-246-Rev.

WELL RECORD

Oil or Gas Well Gas

Company OWENS, LIBBEY-OWENS GAS DEPARTMENT
Address P. O. Box 4168, Charleston, W. Va.
Farm Koonce-Zimmerman Acres 650

Location (waters) _____
Well No. 3 (Serial No. 609) Elev. 1108.18
District Lincoln County Wayne

The surface of tract is owned in fee by _____
Address _____

Mineral rights are owned by First Natl. Bank, Adm. W. C. Moore)
Charles Koonce Estate
Radnor, W. Va.) Address Sharon, Penna.

Drilling commenced August 7, 1963
REPAIRS
Drilling completed September 24, 1963

Date 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 _____

WELL FRACTURED See below.

RESULT AFTER TREATMENT Big Injun Sand 767 MCF

ROCK PRESSURE AFTER TREATMENT 420# in 7 Days

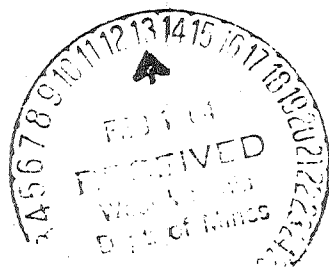
Fresh Water _____ Feet _____ Salt Water _____ Feet _____

Casing and Tubing	Used in Drilling	Left in Well	Packers
Size			Kind of Packer _____
16			Size of _____
13			Depth set _____
10			Perf. top _____
8 1/4			Perf. bottom _____
6 3/8			Perf. top _____
4-1/2	1724' 3"	1724' 3"	Perf. bottom _____
3-1/2"	3008' 5"	Pulled	
1"	1699' 4"	1699' 4"	
Liners Used			

CASING CEMENTED 4-1/2" SIZE No. Ft. 8-22-63 Date

COAL WAS ENCOUNTERED AT _____ FEET _____ INCHES
_____ FEET _____ INCHES
_____ FEET _____ INCHES

Formation	Color	Hard or Soft	Top	Bottom	Oil, Gas or Water	Depth	Remarks
As completed 8-19-63:							
						8-8-63	Pulled 3008' 5" of 3-1/2" tubing 29 hour test 3.2 M
						8-9-63	Hole casing 2260 - 2250 Set bridge 2254 ft. Rock 2254 - 2230
						8-12-63	Rock bridge 2230 - 2200 Cement 2200 - 2180 (5 bags)
						8-13-63	Rock bridge 1810 - 1805
						8-14-63	Rock bridge 1805 - 1770 Cement 1770 - 1750 (5 bags)
						8-15-63	Cal Seal 1750 - 1740 (2-1/2 bags)
						8-22-63	Schlumberger ran temperature, gamma-gamma-density and induction logs. Installed 4-1/2" casing at 1724 ft. with a Baker cement float collar set at 1712 ft. Well Service, Inc. cemented in the 4-1/2 inch casing with 28 bags cement.
						8-26-63	McCullough perforated 4-1/2" casing at 1678 ft. with one triple-frac notch.



Formation	Color	Hard or Soft	Top 16	Bottom	Oil, Gas or Water	Depth Found	Remarks
					No gas. 9-10-63 Dowell riverfraced Injun with 25,000 lbs. 20-40 sand, 250 gal. mud acid, 574 barrels water. Pumped 70,000 SCF nitrogen Test 29 Hrs.		767 MCF

DATE OF WORK Date February 7, 1964

APPROVED OWENS, LIBBEY-OWENS GAS DEPARTMENT, Owner

By G. H. Smith
A. H. Smith, Mgr. (Title) Land, Engrg. & Geol.