

Abstract:

Umbrella Point Field, Chambers County, Texas, by Coleman L. Lofton,
District Geologist, Tidewater Oil Co., Corpus Christi, Texas *

The discovery well for the field was the Sun No. 1 State Tract 88, completed in June, 1957. The field is located approximately in the center of the north portion of Galveston Bay and is on strike with Fishers Reef field, which is about three miles to the northeast.

Although there are 14 producing sands at Umbrella Point, not all of the Frio sands penetrated are productive. The sands which have actually produced hydrocarbons are as follows:

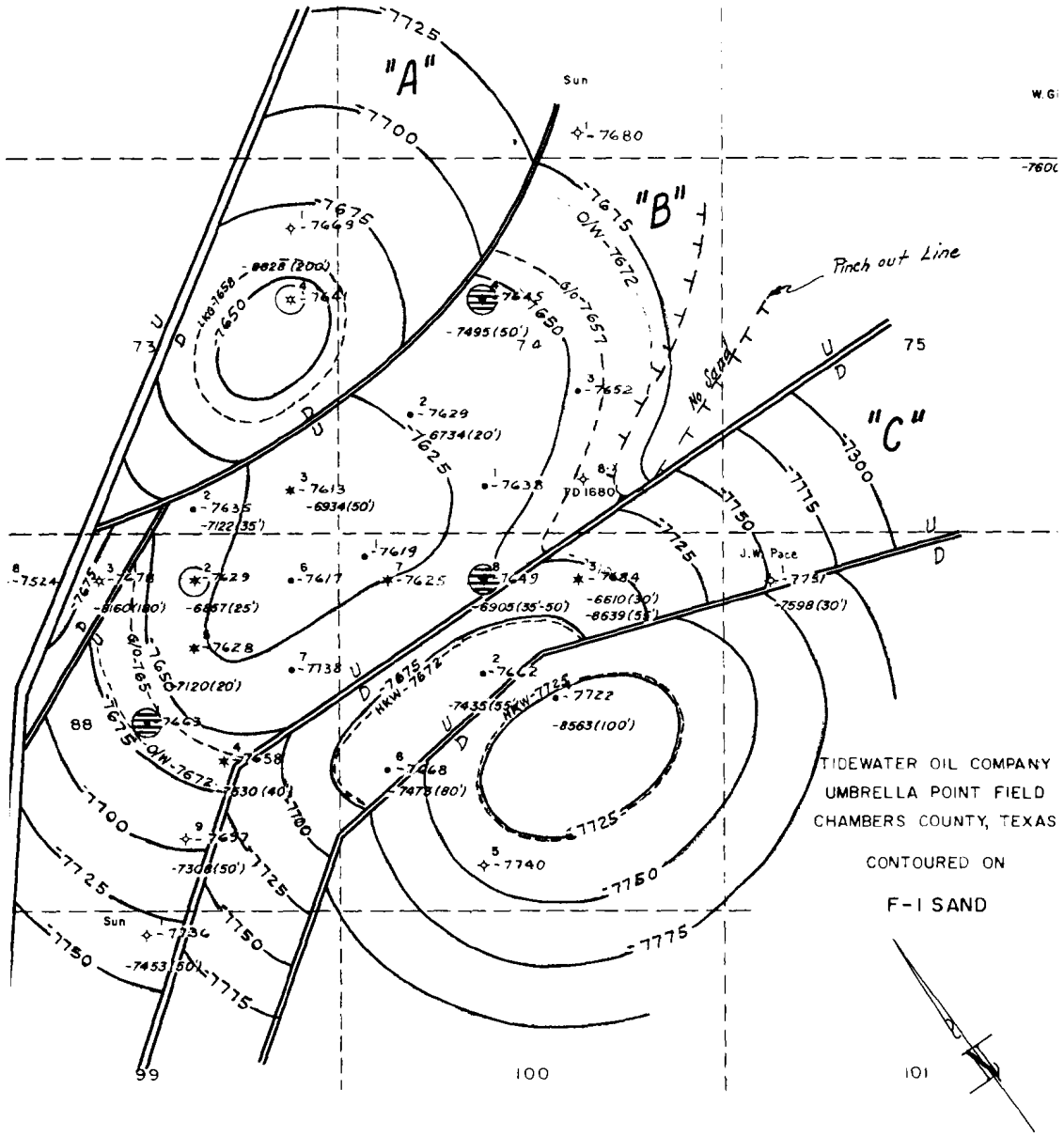
F-1	oil and gas	F-9	gas
F-1A	oil and gas	F-10	oil and gas
F-1B	oil	F-11	oil
F-4	oil and gas	F-12	oil and gas
F-5	oil	F-14	gas
F-8	oil	F-15	oil

Two structural maps have been chosen rather arbitrarily for this paper. The first of these is the F-1 sand map. It shows a fairly well defined dome-shaped structure, a mile and a half to two miles in dimension, its four segments being defined by four principal down-to-the-south faults, having from 30' to 200' of throw. The closure ranges from 125' on the upper productive beds to 200' on the F-15 sand. The F-4 sand has a maximum productive closure of 79'. Although not large in dimension, the shape of the structure suggests the possibility of a deep-seated salt dome. With the exception of the Sun No. 3 State Tract 88, production from all sands is limited to fault segments "A", "B" and "C", which are labeled on the structural maps.

The F-1 sand has a combination gas expansion and water drive. The reservoir pressure has held up fairly well, but where Tidewater and Sun originally had four gas wells in Segment "B" there are now oil wells and a gas well on 6-B allowable. The well labeled 8-X, which you may think to be a test of recent sediments, was initiated as a relief well when the Tidewater No. 8 State Tract 87 blew out. However, the latter well was brought under control, and the 8-X was abandoned. The dashed line in Fault Segment "C" indicates only "highest known water."

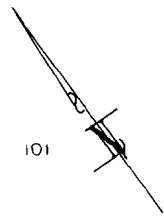
The second structural map (page 16) is contoured on the F-11 sand

*Presented before the Society, January 9, 1961



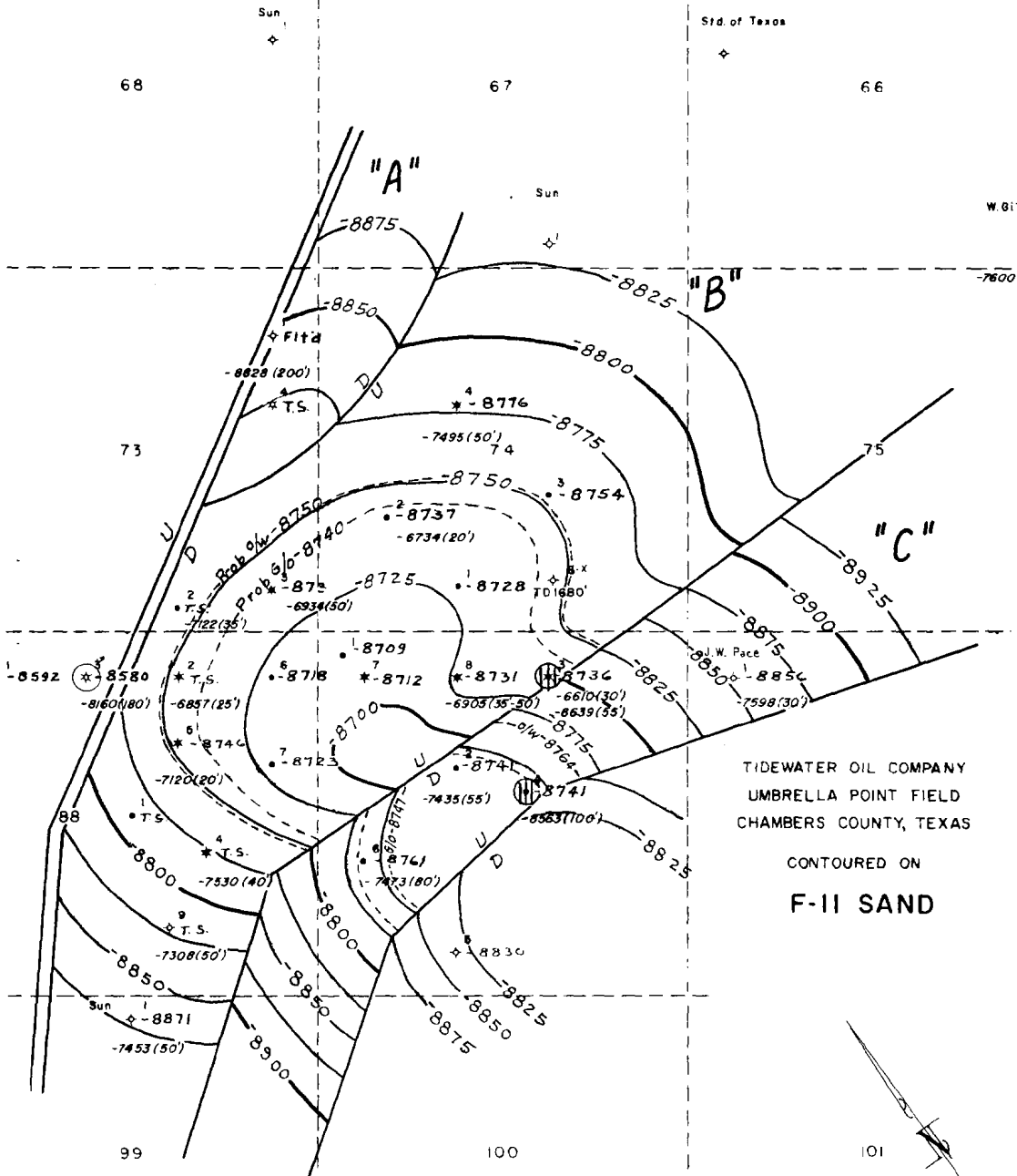
TIDEWATER OIL COMPANY
 UMBRELLA POINT FIELD
 CHAMBERS COUNTY, TEXAS

CONTOURED ON
 F-1 SAND



approximately 1000' below the F-1 sand. The overall picture is the same, for all practical purposes, as the structural appearance in the first map. The structural high was centered over the north corner of State Tract 87 on the F-1 sand. As you can see, there is only a slight migration of the high in a southerly direction on the F-11 sand. The Sun No. 3 State Tract 88 is a gas completion in this sand. However, being on the upthrown side of a major fault, it lies outside our sphere of interest.

A total of 21 wells have been completed in 14 Frio sands ranging in depth from 7600' to 9100'. Two wells are single completions, 13 wells are duals, and six wells are triple completions, giving a grand total of 46 completions. Porosity for all sands ranges from 22% to 28%; permeability varies from 15 md. to 1380 md. Interstitial water saturation has averaged 40% for all sands. The cumulative production



totals for all sands through August, 1960, are 1,587,761 barrels of oil and 5,006,937 MCF gas. Production data indicate that all sands have a combination gas cap expansion and water drive.

Briefly, these are the steps in Tidewater's well program for the field: A 30" conduit is driven to 60'. 300' of 16" to 20" conductor pipe is set. Then we run 1500' of 10-3/4" to 13-3/8" surface pipe. Seven inch production casing is set for single and dual completions, and 7-5/8" to 9-5/8" for triple completions. Each zone is produced through 2-1/16" or 2-3/8" tubing string. Multiple completions are made with isolated packers and tubing strings. A packer leakage test is conducted and the well is then completed.