

Thrills in the Oil Fields

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FEW people realize the hardships and the difficulties encountered in discovering new oil fields. Back in the year of 1917, Meyer Well No. 3 was started in what is now known as the Santa



Fe Springs Oil Field. Two wells, Nos. 1 and 2 had previously been drilled, with unfavorable results, on the Meyer's Rancho of 865 acres. Many difficulties were encountered in drilling Meyer No. 3, but by alternating between rotary and standard tools, oil was finally discovered at a depth of 4578 feet. Owing

to the extreme depth and small diameter of the hole, $4\frac{1}{2}$ inch casing had to be set for a water string. The well came in showing considerable production and flowed at the rate of possibly two or three thousand barrels for a few hours when water broke in. The well had to be recemented under high pressure, and when it was again put on production with the water successfully shut off, it never produced over three or four hundred barrels per day. This well, however, produced 148,281 barrels during its life time. The oil was of high gravity, and perhaps brought an average price of \$2.00 per barrel. The abandonment, within the last few months, of Meyer No. 3 marks the passing of this remarkable well which gave birth to the Santa Fe Springs Field, one of the greatest in the world. Up to January 1st of this year, Santa Fe Springs has produced 153,741,803 barrels of oil together with great quantities of natural gas and gasoline.

The outstanding feature of Meyer No. 3 location is that it was practically an edge well, and had it been drilled 500 feet to the Southeast or further off structure, it would have been a failure, and possibly there would not have been encourage-

ment enough to locate elsewhere in this vicinity. In getting a commercial well, however, incentive was furnished for further drilling. The next location was selected by geological experts on the Bell property where No. 1 was drilled, approximately two miles northwest of the discovery well Meyer No. 3.

Bell No. 1 was brought in November 3rd, 1921, with an initial flow of 4,000 barrels. This was slightly heavier oil and was produced from what was later termed the Bell zone, which was found to overlie the Meyer zone in which Meyer No. 3 was drilled.

A later development of this field was the discovery of an additional zone known as Foix, still shallower than the Bell. Both the Foix and Bell productive zones disappear into edge water before reaching the contour of the discovery well, Meyer No. 3.

Some of the best and most profitable wells in California have been in the Santa Fe Springs Field, the early development of which witnessed many hazards and some real catastrophes.

The Union Oil Company in drilling its Alexander No. 1 had set $12\frac{1}{2}$ inch conductor string of casing at 2,000 feet, and it was the order of the State Mining Bureau at the time that all casing had to be tested regardless of its purpose. A water test was made but the water not shut off and drilling was resumed. Evidently the test had been made very close to a gas zone for when a depth of 2,060 feet was reached, before the well had been thoroughly mudded up, a terrific gas blow-out occurred. When the driller saw the mud starting to boil over around the rotary table, he called to the derrickman who was working about 75 feet above the ground to come down at once. The derrickman started and got within 30 or 35 feet of the ground when a full column of mud started through the derrick. He jumped to escape the force of the mud column and, fortunately, landed unhurt in a sump hole. The 900 feet of 6 inch



Crater of Alexander No. 1, viewed from the air

drill pipe that was in the hold at the time the blow-out started, went out through the derrick into the air and turned end for end, the bit striking the ground 700 feet from the well. The bit and drill collar was completely imbedded in the ground. Within three minutes after the blow-out started, the derrick was completely demolished and a huge crater formed. The well blew for twenty-nine days.

The next adventure with a gasser was Howard No. 1. It was drilled to 2,203 feet where 12½ inch casing was set. Anticipating a possible gasser, control equipment was placed on top of the well, but after bailing a short time, the well started to flow mud and sand which came with such force and velocity that the drillers were unable to close the gate valve. Within thirty minutes this rig was totally demolished and a great crater formed at the mouth of the well. This well caught fire, the gas having been ignited probably by friction of the sand or rocks on metal parts of the rig.

The next wild one for the Union Oil Company at Santa Fe Springs was Bell No. 2. It was thought that possibly a commercial gas zone existed in the field so 12½ inch casing was landed at 2,016 feet and all the necessary appliances for controlling a big gasser were installed. When the gas test was made it showed only a

production of three or four million feet per day with a shut-in pressure of 350 pounds. Everyone concluded, therefore, that the other gas blow-outs had been from gas pockets or else the gas zone pressure had been depleted. The well was unharnessed and drilling continued until 2,665 feet had been reached when evidently another gas pocket was encountered and the well blew out. Like its sister well, Howard No. 1, it caught

fire and finally formed a large crater and blew itself out.

There were no further gas or water tests tried on conductor strings in the Santa Fe Springs Field after these three unpleasant experiences, but Bell No. 17 blew out after the conductor string had been set at 1,500 feet and 10 inch water string had been set at 3,500 feet. Unlike the previous blow-outs, the rig was not destroyed nor any great crater formed, although there was a greater amount of mud, sand and shale discharged from this well and covered ten or fifteen acres of ground several feet deep.

The Union Oil Company was unfortunate in having the bulk of the blow-outs in Santa Fe Springs and it got some unpleasant advertising on this account, but the score was pretty well evened up when the Union went through most of the other fields with a big development program without blow-outs. This was particularly noticeable in Dominguez and Rosecrans Fields, both of which were discovered by Union Oil Company and in which the Union pioneered. In these fields, the Union carried on a major development program, bringing in some of the biggest wells without any loss through fire, blow-outs, or other causes.

So the oil driller is like the fellow who lives in a glass house, he never knows when his turn may come.