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REPORT ON RECENT OIL EXPLORATION
DRILLING--CAPISTRANO EMBAYMENT AREA
ORANGE COUNTY, CALIFORNIA

This report sets forth the results of a study of the available basic data obtained from three recent holes drilled within the San Juan Capistrano embayment.

- No. 1 Arriba de la Estrella "J.W. Ficklin" No. 1
Elevation - 1180' ground, 1191' Kelly Bushing
Spud 12/5/78; Abandoned 12/29/78; Total Depth 3856'
Location 1390' South, 220' East from Northwest corner
Section 24, T6S, R7W
The location of this hole is plotted on Exhibit B--
Generalized contours on Base Tertiary--Top Cretaceous,
Revised November 1978.
The following data was obtained from the State Division
of Oil and Gas
- A. Electrical Surveys
 - 1. Dual Induction laterolog
 - 2. Compensated Neutron Formation Density Log
 - 3. Formation Factor Log
 - 4. Dipmeter Plot and Tabulations
 - B. Well Summary Report and History

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- C. Miscellaneous Operational Reports between Operator and DOG
- D. Schlumberger Wire Line Formation tests

The hole spudded in beds near the top of the Santiago formation (Eocene). No paleontological report was made on the sediments penetrated by the hole. The following formation contacts have been determined by electric log correlation with other wells and partly by projection of regional thickness of sub-surface formation members.

- 1110 - Base Santiago (Eocene)/Top Silverado (Palescone)
- 1660 - Top Cretaceous (Pleasants member of Williams formation)
Good development of sandstone within the Pleasants member was found between 2100 and 2375 feet
- 3828 - Total depth--in shales near the base of the Pleasants member

Dipmeter was run only in the interval 2000' to 3000' where the approximate average dips varied between 15° to 20° South 52 to 72° West.

The hole is located approximately 2000' feet west of the Mission Viejo fault, which in this vicinity is about parallel to but four miles east of the Cristianitos fault. No evidence of oil or gas is indicated from the electrical surveys or wire line formation tests. The abandonment report, however, did mention a gas show on the ditch at 2130', which in this hole is the top of the sandstone unit in the Pleasants member.

No evidence of faulting was found in the hole and the above formation contacts indicate that the structural interpretation is about as shown on Exhibit B referred to above.

No. 2 Santa Fe Energy "Reed-Krum" No. 1
Elevation 657' Kelly Bushing (645' ground)
Location 2900' North, 450' East from the Southwest
corner Section 9, T6S, R7W
Spud 5/15/80; Abandoned 12/19/80; TD 6609'

Information on this hole has not been released to the public by the operator. However, the operator has released the following data for the exclusive use by Southern California Edison Company and the Nuclear Regulatory Commission.

A. Electrical Surveys

1. Dual Induction-Laterolog
2. Bore Hole Compensated Sonic Log
3. Dipmeter Plot

B. Mud and Ditch Sample Log

C. Paleontological Report

D. Well Summary and History

This hole is located about 4500' southwest of the surface trace of the Forster branch of the Cristianitos fault. It falls about on line with structure section C-B by Jack C. West dated July 1975 and revised December 1978, approximately 1400' southwest of Northlode "University of California" No. 1.

The hole spudded in the Capistrano Formation. The following formation contacts have been determined from the above data.

1300 - Base Capistrano/Top Monterey Formation

2240 - Base Monterey/Top San Onofre Breccia

2505 - Base San Onofre Breccia/Top Topanga-SESPE
(undifferentiated)

3900_± Top Santiago-Silverado (Eocene-Paleocene)
(undifferentiated)

6609 - Total Depth (in Paleocene) according to Paleontological Report

The data from the upper part of this hole (to 3500'±) indicate no significant change in the sub-surface geologic interpretation of the Miocene and younger beds as shown on structure section C-B and on Exhibit A-1, generalized contours near the top of the Monterey by Jack C. West dated December 1978.

Electric log correlation and the paleontological report indicate, however, that the Cretaceous was not reached in this hole. This data along with comparison of the dipmeter in this hole with the Northlode hole suggest the presence of older faulting-leaving the area of the Santa Fe hole at Cretaceous depth in a structurally low fault block. The direction of this older faulting probably trends northwest similar to other old faulting in this regional area. This older fault block is about one mile west of the Cristianitos fault and has no relation to the younger and more north trending Cristianitos Fault Zone.

The strongest oil and gas shows encountered in this hole occur at the following depths:

4360 - 4380'

4550 - 4600'

6465 - 6500'

Casing was run in this hole and the well history confirms that the lower show was perforated, acidized, and tested by pumping. The test recovered no formation fluids of any kind, which indicates a very hard and impermeable reservoir. The writer was informed verbally by the operator that the upper shows were also later tested in a like manner with the same results prior to abandonment.

No. 3 Texaco Inc. "O'Neill" No. 3
Elevation 390, Kelly Bushing
Location 1700' South, 100 East, from the Northwest
corner Section 23, T8S, R7W
Spud 10/27/80; Total Depth 4500'; Redrilled from 1800'
to 4487' Total Depth; Ran casing and completed well;
minor production reported; well shut in; Operator reports
"evaluating area".

The surface location of this well falls on the line of structure section H-G, by Jack C. West dated July 1975, revised December 1978. It is located approximately 400' northeasterly of Texaco "O'Neill Estate NCT No. 1-1", and approximately 750' southwesterly of the most westerly branch of the surface trace of the Cristianitos Fault Zone. Texaco has informed the writer in writing that the original hole, total depth 4500', was a straight hole, and that the redrill, total depth 4487' (4437' vertical depth) was directed westerly with the bottom hole coordinates 61' south - 545' west from the surface location. Thus, the redrill is practically a twin to Texaco "Estate NCT No. 1-1" at the depths 3500'± to 4487'.

The writer has discussed with the operator (Texaco) at considerable length the release of all the basic data from this well for the exclusive use by the Southern California Edison Company and the Nuclear Regulatory Commission. Texaco will not release this data at this time mainly because of industry competition which involves land lease problems, additional evaluation in preparation for more possible drilling, and the trading value of their data with competitors. Texaco is aware of the writer's interpretation of the Cristianitos fault in the vicinity

of their wells and they have verbally informed the writer that their new data does not reflect any structural change that would suggest any type, magnitude, or timing of fault movement along the Cristianitos Fault Zone different from that shown on Section H-G.

In regard to questions regarding recent drilling in the vicinity of the Cristianitos fault the writer summarizes the results of the above drilling as follows:

No. 1 Arriba de la Estrella "J.W.Ficklin" No. 1

This hole is located about four miles east of the Cristianitos fault. The data from this hole shows no faulting and does not effect the present geologic interpretation of the Cristianitos fault.

No. 2 Santa Fe Energy "Reed-Krum" No. 1

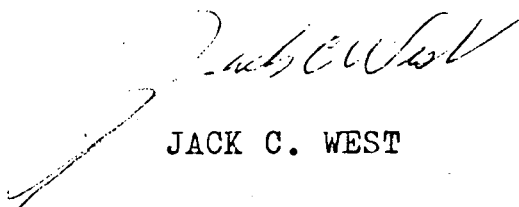
This hole is located about one mile west of the Cristianitos fault. The data from this hole indicates no faulting that cuts the bore hole and that the upper beds, Lower Pliocene-Oligocene, in age are normal in structural position and thickness to a depth of 3500'±. Below this depth to total depth, 6609', the beds are thicker than normal and the paleontological report indicates that Cretaceous was not reached. This condition and other well data mentioned above suggests older faulting--not related to the Cristianitos fault as discussed above.

Accordingly, the writer believes that data from this hole does not effect the present interpretation of the Cristianitos fault.

No. 3 Texaco "O'Neill" No. 3

This well is located about 750' west of the Cristianitos fault. As explained above the data from this well, other than its redrilled position is not available at this time and probably will not be available for six months or a year. However, as discussed above, it is very close to a well where we have good data that provides substantial information toward the present geologic interpretation of the Cristianitos fault. The operator has verbally informed the writer that there is no new data from this new well that would change the present interpretation of the Cristianitos fault.

Of the three new holes, the Texaco "O'Neill" No. 3 is the only well that recovered any oil--which is a minor amount. In the writer's opinion, hydrocarbon withdrawal from any future oil or gas discovery along or near the Cristianitos fault would have no effect on movement along or near this fault zone.



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