New Mexico Bureau of Mines and Mineral Resources Open File Report No. OF 198

HYDROCARBON SOURCE-ROCK EVALUATION STUDY, SYCOR NEWTON NO. 1 STATE L-6,350 WELL, LUNA COUNTY, NEW MEXICO

by L. Paul Tybor GeoChem Laboratories, Inc. Houston, Texas May 17, 1982



GEOCHEMICAL ANALYSES SOURCE ROCK EVALUATION

CRUDE OIL-SOURCE ROCK CORRELATION

CRUDE OIL CHARACTERIZATION
GEOCHEMICAL PROSPECTING

1143-C BRITTMOORE ROAD ● HOUSTON, TEXAS 77043-5094 ● 713/467-7011

May 17, 1982

Mr. Clayton S. Valder Marshall R. Young Oil Co. 750 West Fifth Street Fort Worth, Texas 76102

Dear Mr. Valder:

Enclosed please find the results of the organic geochemical analyses performed on well cutting samples from the Sycor Newton #1 State L-6,350 well, located in Sec. 10-T23S-R11W, Luna County, New Mexico.

Upon arrival at the lab, the samples were assigned the GeoChem Job Number 2289, and were submitted to the following analytical program:

Type of Analysis	Table
Total organic carbon determination and brief lithological description	ı
Visual kerogen assessment	II

Pyrolysis analysis was not performed on samples from this well due to the organic-lean nature of the rocks penetrated by this well.

DISCUSSION OF THE RESULTS

A. Thermal Maturity

The thermal maturity of the sediments penetrated by this well ranges from an immature Maturation Index Stage 1+ at 6010+ feet, within the Lobo unit, to a moderately mature Maturation Index Stage 2 to 2+ at 7690+ feet, within Cambrian Bliss Sandstone (Table II). The rocks from 6010' to 6460', within the Lobo, are within the pre-oil generating zone, wherein only biogenic methane gas could have been generated. The moderately mature rocks from 6710', within the Montoya, to 7690', within the Bliss Sandstone, are within the oil window, where oil generation could have occurred from rocks containing sufficient quantities of organic matter.

B. Hydrocarbon Source Characterization

The sediments analyzed from this well are organic-lean and have poor hydrocarbon source characteristics. The explorationist should move in a direction whereby the mature maturation levels observed in this well are maintained, and hopefully in this direction these rocks would contain rich amounts of organic matter.

Should you have any questions concerning this data or if we can be of further assistance to you, please feel free to contact us.

Yours truly,

Paul Tybor

Project Coordinator

GEOCHEM LABORATORIES, INC.

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Enclosures



Table I SCREEN ANALYSIS SUMMARY

	GeoChem Sample Number	Well Interval (Feet)	Brief Lithological Description	Total Organic Carbon (% of Rock)
2	2289-001	6000-6010	Composite: Red shale and sandstone.	0.12
2	2289-002	6200-6210	Composite: Red shale and sandstone.	0.12/0.12
2	2289-003	6450-6460	Composite: Red shale and sandstone.	0.08
2	2289-004	6600-6610	Dolomite, pinkish gray.	0.06
2	2289-005	6700-6710	Dolomite, cherty, pinkish gray.	0.06
2	2289-006	6800-6810	Dolomite, light brownish gray.	0.05
2	2289-007	6900-6910	Dolomite, light brownish gray.	0.06/0.05
2	2289-008	7000-7010	Dolomite, light brownish gray.	0.06
2	2289-009	7100-7110	Dolomite, light brownish gray.	0.05
2	2289-010	7200-7210	Dolomite, grading to limestone, brownish gray.	0.05
2	2289-011	7300-7310	Limestone, light brownish gray.	0.05
2	2289-012	7400-7410	Dolomite, light brownish gray.	0.05
2	2289-013	7500-7510	Dolomite, light brownish gray.	0.05/0.06
2	2289-014	7600-7610	Dolomite, light brownish gray.	0.05
:	2289-015	7680-7690	Composite: Dolomite and sandstone.	0.06

TABLE II
VISUAL KEROGEN ASSESSMENT WORKSHEET

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VLOM = Very little organic material.