

EARLE M. CRAIG, JR. CORPORATION

1400 TWO FIRST CITY CENTER
MIDLAND, TEXAS
915 682-8244

submitted
Ex. 5

22 August 1985

MAILING ADDRESS:
P. O. BOX 1351
MIDLAND, TEXAS 79702-1351

Geologic Report
Earle M. Craig, Jr. Corporation
Spitfire "18" No. 1
660' FSL & 660' FEL, Section 18,
T-26-S, R-31-E,
Eddy County, New Mexico

The Earle M. Craig, Jr. Corporation plans to further extend the narrow Red Bluff-Phantom Draw Wolfcamp detrital gas productive trend. This orderly development will require that the next well, the above captioned Spitfire "18" No. 1, be drilled at a non-standard location in the SE/4 of Section 18. The subject well, to be drilled to a planned total depth of 12,900' will drain the south half of that section. At this time the N/2 of Section 18 is judged non-productive. The captioned non-standard location is justified by the geologic setting which is illustrated by the enclosed Wolfcamp "A" zone isolith map, (Exhibit 1). This map is based partly on analogy to the Red Bluff Wolfcamp Field, located four miles southwest in Loving County, Texas, at the south end of the subject narrow gas productive paleogeomorphic carbonate hinge line trend. The dry holes in the SW/4, Section 5 and in the N/2 of Sections 16 and 17, define the productive limits of the Red Bluff Field.

The enclosed isolith map (Exhibit 1) shows the interpreted distribution of porous (>7%) limestone in the Wolfcamp "A" zone. A thickness of at least 13' of net clean (clay free) porous reservoir is required for an economic completion of the subject Wolfcamp "A" zone field extension test well. This cut-off is based on comparison of the carbonate reservoir isolith values in the nearby analogous Red Bluff Field in Loving County, Texas, with production from that field. Cumulative production is annotated on the enclosed production map (Exhibit 2). It is unlikely that an economic well can be drilled at a standard location in the S/2 of Section 18 based on the enclosed isolith (Exhibit 1). An economic producer could probably be drilled at the subject proposed non-standard location.

The wells drilled in the Red Bluff-Phantom Draw Fields trend define a narrow band of economic gas production. The productive trend is flanked by non-permeable carbonates to the northwest and by a deep water shale facies to the southeast. The productive trend is probably developed along a paleogeomorphic hinge line, which trends northeastward through the Phantom Draw Field area.

The Earle M. Craig, Jr. Corporation Spitfire "19" No. 1 was recently drilled to extend the Phantom Draw Wolfcamp Field in T-26-S, R-31-E, southeastern Eddy County, New Mexico. The well reached a total depth

J.

Spitfire "18" No. 1
Eddy County, New Mexico
22 August 1985

of approximately 12,927' in the Wolfcamp Formation on August 8, 1985. Casing (4 1/2") was set at total depth and cemented. The Wolfcamp "A" zone was perforated on Thursday, 15 August, from approximately 12,445-80' (35') and a natural gas completion is indicated based on surface flowing tubing pressures ranging from 875 to 1200 psi through a 3/4" choke during a short flow test on that same day.

The relationship between the Craig Spitfire "19" and Phantom Draw Unit No. 1 wells is shown on the enclosed NW-SE cross section (Exhibit 3). The subject Spitfire "19" well No. 1 is perforated in the Wolfcamp "A" zone, as identified on the enclosed cross section. The main gas productive zone in the Phantom Draw Unit No.1, the field discovery well, located in the SW/4 of Section 20, is the Wolfcamp "B". After the initial completion of the Wolfcamp "B" in 1975 from 12,670-98', some of the Wolfcamp "A" was perforated selectively from 12,451-94' and 12,530-36' during a 1977 workover of this Phantom Draw Unit No. 1 well. There was no significant change in the surface tubing pressure immediately following that workover. The subject Wolfcamp "A" zone is therefore judged to be a non-commercial formation in the Craig (T.P., Sun) Phantom Draw Unit No. 1 well.

The gas and condensate production along this trend is from highly pressured (typically 8,000 to 10,200 psi BHP) Wolfcamp zones which exhibit characteristics of gas solution drive reservoirs. Rates of gas and water production do not appear to be structurally influenced. The enclosed Wolfcamp structure map (Exhibit 4) demonstrates regional east dip of the objective reservoir zone. The gas accumulations of the trend appear to be in stratigraphic traps of limited areal extent.


Wayne R. Gibson
Manager, Geology & Geophysics

WRG:lw
Enclosures

