GEOLOGICAL REPORT

OF

PROPOSED WEST DALLAS RANCH UNIT

CHAVES COUNTY, NEW MEXICO

BEFORE EXAMINER STAMETS
OIL CONSERVATION COMMISSION
Exhibit 5
CASE NO. 5797
Submitted by C & K Pet. Inc.
Hearing Date 11-10-76

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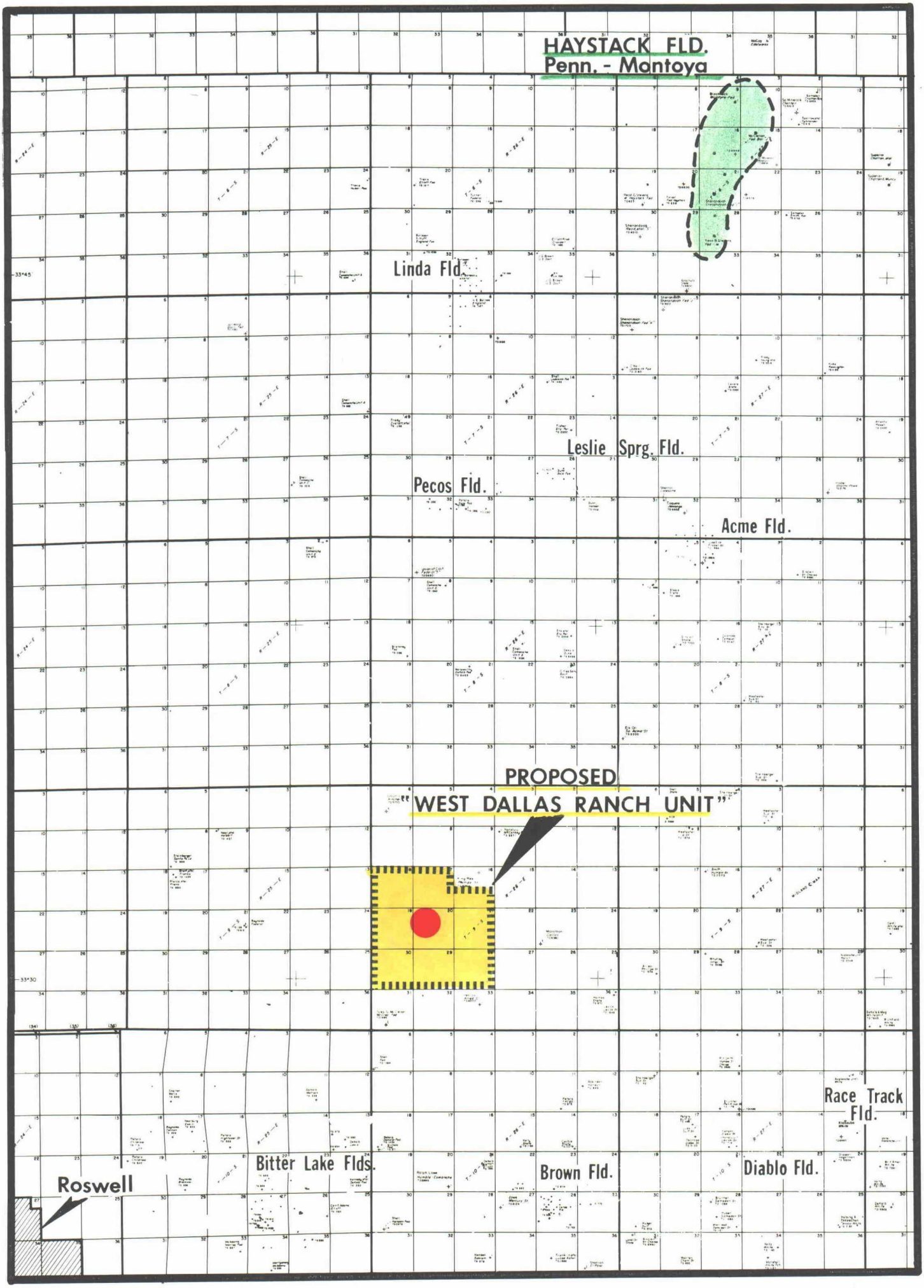
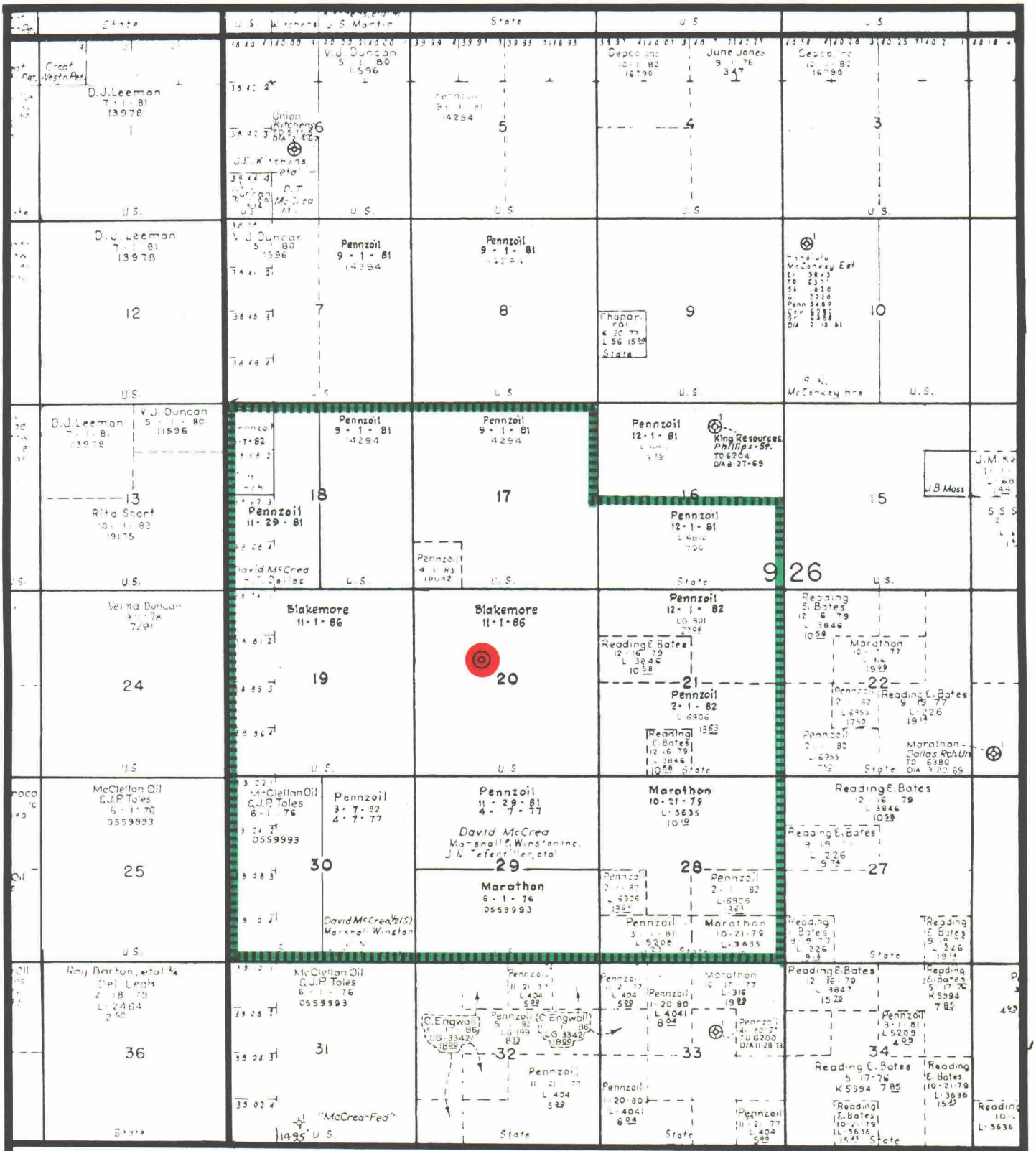

HAYSTACK FLD.
Penn. - Montoya
Linda Fld.
Leslie Sprg. Fld.
Pecos Fld.
Acme Fld.
PROPOSED
"WEST DALLAS RANCH UNIT"
Race Track Fld.
Bitter Lake Flds.
Brown Fld.
Diablo Fld.
Roswell



PROPOSED

"WEST DALLAS RANCH UNIT"

Chaves County, New Mexico

– LAND PLAT –

GEOLOGICAL REPORT
OF
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CHAVES COUNTY, NEW MEXICO

I. PURPOSE

The purpose of this report is to briefly summarize the geological reasons for forming a 5,440 acre federal unit to drill a 6500' Ordovician wildcat in SE/4 NW/4 Section 20, T-9-S, R-26-E, Chaves County, New Mexico.

II. LOCATION

The proposed location is approximately 12 miles northeast of Roswell in the central part of Chaves County, New Mexico. Geologically, the location is in the Northwest Shelf Province, adjacent to and east of the Perdernal Uplift.

The proposed unit contains eight and one-half sections being approximately 5,440 acres and includes all of Sections 17, 18, 19, 20, 21, 28, 29 and 30 and the south half of Section 16, all in T-9-S, R-26-E, Chaves County, New Mexico.

III. GEOLOGICAL DISCUSSION

The West Dallas Ranch Prospect is a combination structural-stratigraphic trap located near the western limit of the Montoya wedge-edge on the eastern flank of the Perdernal Uplift. The primary target is the Montoya, a massive dolomite sequence which pinches out to the west. The pinchout is a well known regional geological feature of the area and extends many miles north and south of the prospect area.

Structural interpretation of the prospect area (Exhibit 1) reveals a broad, east plunging nose at Montoya depth. As will be observed on the pre-Mississippian isopachous map (Exhibit 2) an "embayment" of thick Ordovician sediments extends below the proposed unit, creating the ideal structural-stratigraphic trap. The proposed location should be approximately 300' high to the King Resources No. 1 Phillips - State well in Section 16, T-9-S, R-26-E which tested gas shows in the target reservoir. Other pertinent subsurface control data with DST recoveries is illustrated on Exhibit 1.

In an attempt to determine potential reservoir area, a map was contoured utilizing final shut in pressures (where available) taken from drill stem tests in the Montoya dolomite sequence. This interpretation (Exhibit 3) shows the effective limit of the reservoir to be considerably east of the limit of the Montoya dolomite. This effective limit is illustrated by the Union No. 1 Kitchens well in Section 6, T-9-S, R-26-E which tested 675' of mud with very low final shut in pressure. This limit line, together with the pre-Pennsylvanian subcrop pattern, was used in determining the unit area.

The cross-section shows the progressive thinning of the Montoya dolomite to the west and shows a downdip well in Section 23, T-9-S, R-26-E, which recovered 4,108' of salt water from the middle Montoya dolomite. The section also illustrates the Pennsylvanian carbonate interval which produces gas 18 miles north-northeast in the Haystack Field (a secondary objective at the proposed location). This field also has two oil producers in the Montoya producing from a trap very similar to the one postulated below the prospective unit.

IV. SUMMARY

In summary, the proposed unit will test a structural-stratigraphic trap associated with the westward pinchout of the Montoya dolomite in an area of positive structure with formation water present downdip and gas shows offsetting the unit area. Secondary potential is provided by the Pennsylvanian carbonate equivalent to the pay in the Haystack Field.

Donald L. McClurg
Geologist