APRIL 20, 1989
NARRATIVE FOR
A PORTION OF THE BOWDOIN/CAT CREEK MONTANA
OIL AND GAS DEVELOPMENT POTENTIAL MAP

INTRODUCTION:

This narrative covers the southeast corner of the Bowdoin/Cat Creek oil and gas development potential map. The area covers the northwest corner of Garfield County, Montana located east of the Musselshell River and south of the Missouri River.

This portion of Garfield County has two regional structures (Dobbin and Erdmann, 1955). The Blood Creek Syncline plunges eastward across the central portion of this area, and the Cat Creek Anticline strikes southeast in the southeastern portion of this area. The Cat Creek Anticline has several producing fields along its axis.

The Pre-Cambrian basement structurally varies from 6,000 to 9,000 feet in depth, with a regional dip of south and southeast (Mallory, 1972). Almost a complete section of Mesozoic and Paleozoic rocks overlie the Pre-Cambrian basement. The Flathead Quartzite forms the basal Paleozoic section with Tertiary Fort Union and Cretaceous Shales at the surface.

There have been 25 wells drilled in the last 15 years in this portion of Garfield County. Twelve of these wells were drilled in T. 15 N., R. 30 E.. The Mosby Dome Field is located in this township, with the Cat Creek Field being just south. This is the only township that has production for the area being discussed. There are no Indian lands within this area.

OCCURRENCE POTENTIAL:

All of the northwest corner of Garfield County is classified as high occurrence potential. This is based on a sedimentary package of Paleozoic and Cretaceous rocks in excess of 5,000 feet thick (Mallory, 1972), and the potential for structural and stratigraphic traps to exist.

The type log for this area is the # 1-32 Salzgebe, sec. 32, T. 15 N., R. 35 E.. This well was drilled in 1981 by the Atlantic Richfield Company. It reached Pre-Cambrian rock at a drilling depth of 9555 feet, and reported no shows in the various formations tested.

DEVELOPMENT POTENTIAL:

All of the northwest corner of Garfield County is classified as moderate development potential except for T. 15 N, R. 35 E. which is classified as high. This high development potential classification is based on the fact that there is established production in a sedimentary package that is in excess of 5,000 feet thick. The moderate development potential classification is based on: 1.) a sedimentary package with source and reservoir

rocks, that are productive elsewhere in the state; 2.) a structural setting that is conducive to oil and gas exploration, and 3.) a lack of established production.

Based on the past drilling activity and the geologic setting of this area, it is expected that in the next 15 years this county will experience a moderate level of oil and gas exploration. This could result in one to ten wells being drilled in this portion of the county.

REFERENCES CITED

Dobbin C. E., and Erdmann, C. E., 1955, Structure contour map of the Montana Great Plains: U. S. Geological Survey, Oil and Gas Investigation Map OM 178A, scale 1:1,000,000.

Mallory, W. W., (ed.) 1972, Geologic atlas of the Rocky Mountain Region: Rocky Mountain Association of Geologists, p.56.