

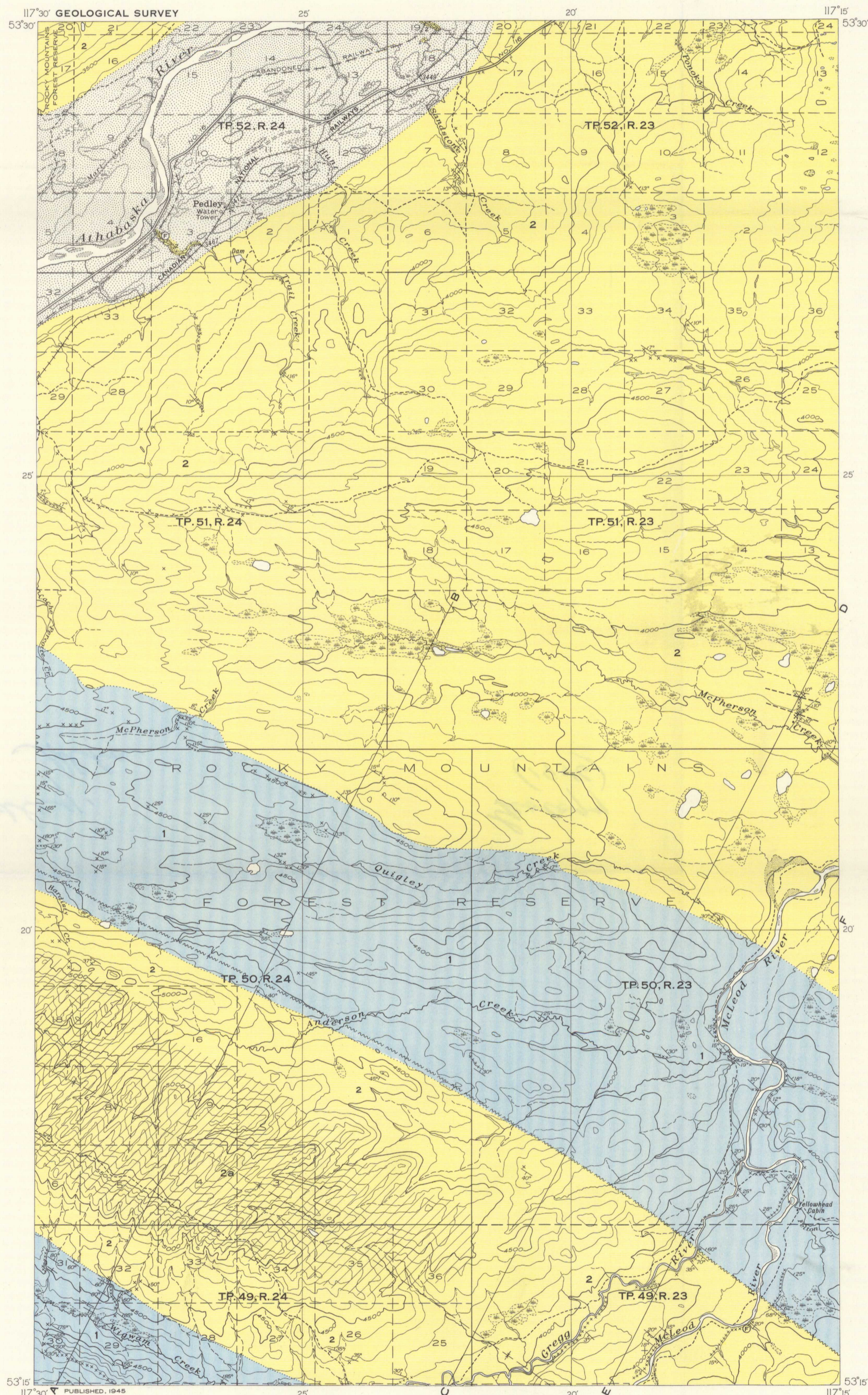
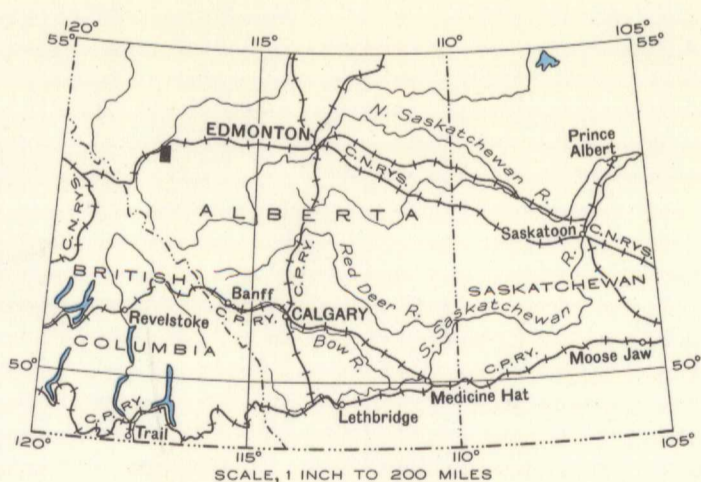
Structure sections along lines A-B, C-D, and E-F

LEGEND

- MESOZOIC AND CENOZOIC**
- CRETACEOUS AND TERTIARY**
UPPER CRETACEOUS AND PALEOCENE
- 2, 2a EDMONTON and PASKAPOO FORMATIONS: soft sandstone, clayey shale; minor conglomerate, ash beds, and coal; 2a, chiefly conglomerate.
- MESOZOIC**
- UPPER CRETACEOUS
- 1 BRAZEAU FORMATION: sandstone, shale, pebble conglomerate; some ash beds and thin coal seams

- Heavily drift-covered area x x x x x
Small rock outcrop, area of outcrop x x x x x
Bedding (horizontal, inclined, vertical) + / \
Fault - - - - -
Synclinal axis - - - - -
Fossil locality ⊕
Coal seam - - - - -
Prospect x
- Provincial highway NO. 16
Road not well travelled - - - - -
Trail - - - - -
Building - - - - -
Township boundary (surveyed) - - - - -
Township boundary (unsurveyed) - - - - -
Section line - - - - -
Forest Reserve boundary - - - - -
Intermittent stream - - - - -
Marsh - - - - -
Sand bar - - - - -
Contours (interval 100 feet) - - - - -
Depression contour - - - - -
Height in feet above mean sea-level 3487'

Geology by E. J. W. Irish, 1944.
Base map from surveys by the Topographical Survey, 1943, with air photographs taken in 1943. Cartography by the Drafting and Reproducing Division 1945.



MAP 838A
PEDLEY
WEST OF FIFTH MERIDIAN
ALBERTA

Scale, 63360 or 1 Inch to 1 Mile
Miles
Approximate magnetic declination, 26 1/2° East.

DESCRIPTIVE NOTES

Outcrops are few due to widespread glacial and fluvio-glacial deposits. The better exposures are confined to stream canyons and ridge tops; and, in general, are extremely weathered.

The map-area is underlain by a thick succession of non-marine, sedimentary strata of Upper Cretaceous and Paleocene age, the entire assemblage representing a very similar lithology.

The Brazeau formation (1) consists of conglomerate, sandstone, and shale, with thin coal seams and several beds of volcanic ash. In adjoining areas, the base of the Brazeau is represented by a bed of hard, fine-grained, brown-weathering sandstone overlying Wapiabi shale. In Pedley map-area the base of the formation is not exposed; the lowest strata observed consist of conglomeratic sandstones and pebble beds. Above the pebble beds, massive, crossbedded sandstone is the most common rock type. This is interbedded with grey and greenish-grey shale and, in places, with thin coal seams. The upper contact of the formation has been placed at the top of a massive sandstone that underlies the Entrance conglomerate.

The Edmonton and Paskapoo formations (2) overlie the Brazeau formation conformably. In the adjoining Entrance map-area to the west, the base of the series is placed at the bottom of a prominent bed of pebble-conglomerate, known as the Entrance conglomerate. In Pedley map-area, outcrops of this conglomerate were found only in the southwest corner, in sec. 32, tp. 49, rge. 24, and elsewhere the position of the Brazeau-Edmonton contact has been inferred mainly from information available outside the map-area.

The Entrance conglomerate consists of closely packed, well rounded pebbles of quartzite and chert in a sandy matrix. Some pebbles have a diameter of as much as 5 inches, but most of them are about 1 1/2 inches across.

Strata above the conglomerate consist of interbedded sandstones and shales, with occasional beds of volcanic ash and conglomerate. Mineable coal seams occur north of, and near the lower part of McPherson Creek.

The uppermost beds exposed in the map-area contain fossil plants of probable Paleocene age, and, as such, would form part of the Paskapoo formation, but, as no means of separating them from the underlying Edmonton beds has been found, all strata overlying the Brazeau formation are mapped together. Sandstone predominates in this assemblage.

In the north and northeast corner of the map-area conglomerate lenses are numerous, and the strata in which these occur, are, on the evidence of fossil plants, high in the Edmonton-Paskapoo section.

The thick conglomerate (2a) that caps most of the high ridge in the southwest corner of the map-area is thought to be a local, thick concentration of about the same age as the numerous lenses in the northeast part of the map-area. The area occupied by this conglomerate has been outlined, but the approximate boundary shown on the map is meant only to define an area underlain predominantly by conglomerate. It does not represent a formational boundary.

Two major structures, the Prairie Creek-Coalspur anticline and the Entrance-Mercal syncline cross the southern half of the map-area, axes of both structures striking north 60 degrees west. The Entrance-Mercal syncline is a broad, open, asymmetrical fold with a moderate plunge to the southeast. The Prairie Creek-Coalspur anticline parallels the syncline on the northeast. It is faulted near the crest, and the position of the axis is difficult to determine. Available information suggests a steeply dipping thrust, as lower Brazeau strata on the northeast side are in contact with strata high in the Edmonton-Paskapoo succession on the southwest side of the fault. Paleocene fossils were collected from a locality about half a mile up McLeod River on the south side of the fault.

Strata lying north of these two folds have, except for minor, local warping, and faults of small displacement, low dips to the northeast.

No oil wells have yet been drilled in Pedley map-area, the nearest being those of the Imperial Oil Company, near Coalspur, about 11 miles to the southeast. The Coalspur wells are on the faulted, Prairie Creek-Coalspur anticline, which continues northwest across Pedley map-area. This is the only known structure with oil possibilities in the area.

Thin coal seams occur in both Brazeau and Edmonton-Paskapoo beds, and coal float occurs on both Quigley and Anderson Creeks, but seams of mineable thickness were found only on a small, south-flowing stream that enters McPherson Creek about three-quarters of a mile west of the eastern edge of the map-area. Two seams outcrop here, and each is more than 7 feet thick. They were prospected in 1925, and, apparently lie near the top of the Edmonton formation, assuming the same thickness as that obtained in the Entrance map-area to the west. Coal mined at Coalspur to the southeast and at Drinnan to the northwest occurs at a much lower horizon than that estimated for the McPherson Creek seams.

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