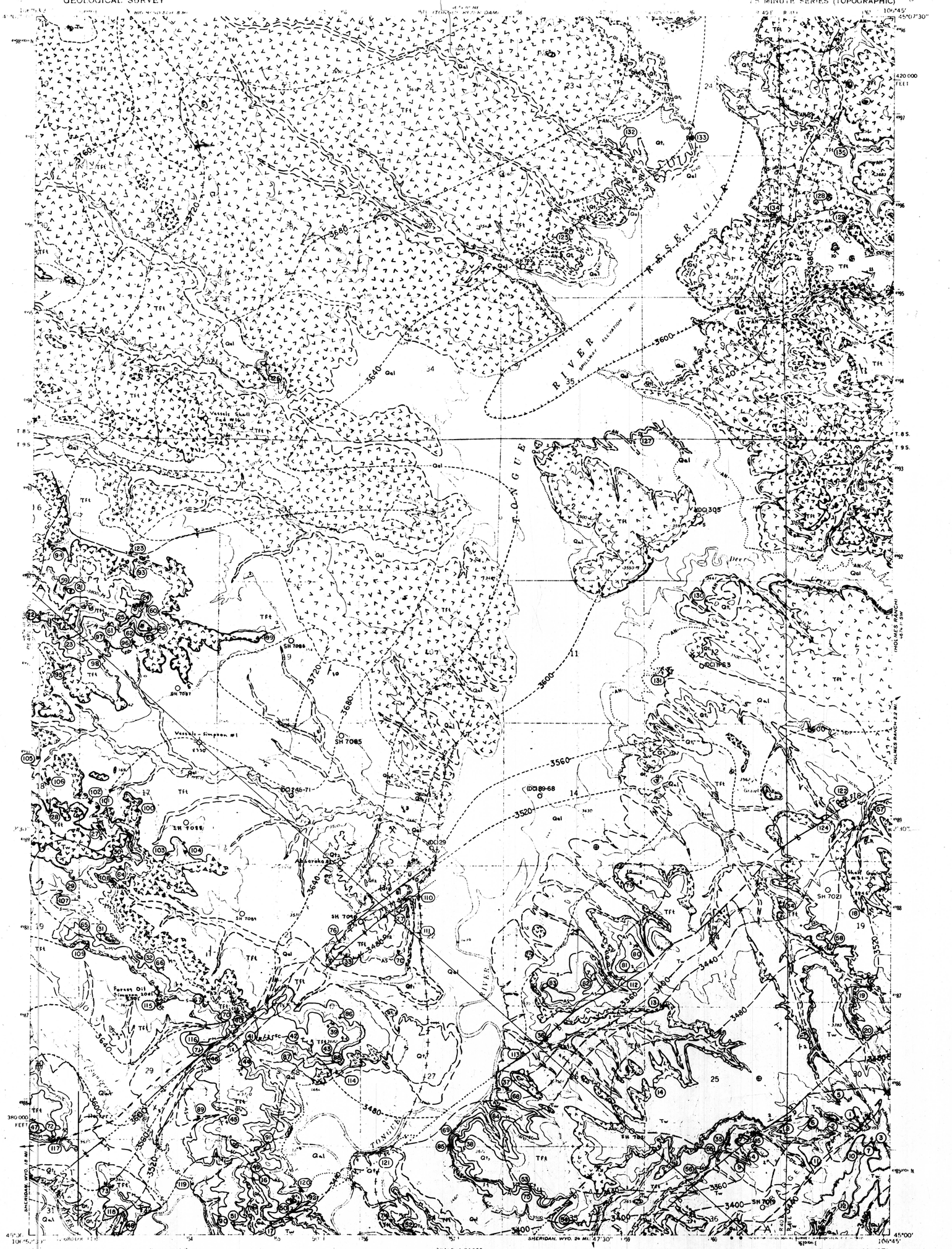
UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

ADVANCE PROOF
SUBJECT TO CORRECTION

DECKER QUADRANGLE
MONTANA-BIG HORN CO
7.5 MINUTE SERIES (TOPOGRAPHIC)



Mapped, edited, and published by the Geological Survey
Base by U.S. Geological Survey, 1967
Railroad shown as of 1972
Projection: 1927 North American datum
10,000-foot grid based on Montana coordinate system, south zone
2,000 meter Universal Transverse Mercator grid ticks, zone 13, shown in blue
Faint red dashed lines indicate selected fault lines

SCALE 1:24 000
1 MILE
1000 0 1000 2000 3000 4000 5000 6000 7000 FEET
1 KILOMETER
CONTOUR INTERVAL 20 FEET
DATUM IS MEAN SEA LEVEL

UTM GRID AND 1967 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

MONTANA
QUADRANGLE LOCATION

Geology mapped in 1971

ROAD CLASSIFICATION
Secondary highway, all weather hard surface
Light duty road, all weather
Improved surface
Unimproved road, fair or dry weather

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U.S. GEOLOGICAL SURVEY, DENVER, COLORADO 80225, OR WASHINGTON, D.C. 20242
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

DECKER, MONT.
N4500—W10645/7.5
1967
Formerly Kirby 3 NW, Mont. AMS K-11 JS
(K) JS
BGN (Pending)
PHOTOREVISED 1971
DMA 4356 I SERIES V894

PRELIMINARY GEOLOGIC MAP AND COAL RESOURCES OF THE DECKER QUADRANGLE, BIG HORN COUNTY, MONTANA

By
B. E. Law and S. L. Grazis

DESCRIPTION OF MAP UNITS

Qal — **ALLUVIUM (HOLOCENE)**-- Valley fill consisting mostly of unconsolidated sand, silt, and clay

Qt_1 **Qt_2** — **TERRACE DEPOSITS (PLEISTOCENE?)**-- Gravel beds 2-20 feet thick consisting primarily of sand, chert, quartzite, limestone, dolomite, granite, diabase, and metamorphic pebbles and cobbles as much as 1 foot in diameter. Commonly cap small terraces near the Tongue River

unconformity

Tw — **WASATCH FORMATION (EOCENE)**-- Interbedded soft clay, shale, siltstone, and sandstone containing calcareous concretion zones, several thin coal beds, and numerous thin fossil beds. Numerous well-preserved gastropods and pelecypods are chiefly near base of formation, and thin beds of fragmented pelecypods occur throughout. Relatively thick sandstone, commonly baked and fused (clinker), generally forms a resistant unit at base of formation

Tft — **TONGUE RIVER MEMBER OF FORT UNION FORMATION (PALEOCENE)**-- Interbedded sandstone, siltstone, and shale containing several calcareous concretion zones. Contains numerous thick coal beds as much as 70 feet thick. Several thin nonmarine fossil beds and several zones of abundant silicified logs and tree stumps are present. The fossils are mostly fragmented pelecypods, but a few gastropods and vertebrate fragments are present. The top of the Roland coal is considered to be the top of the Fort Union Formation

Coal bed-- Dashed where approximately located; short dashed where inferred; dotted where concealed; queried where doubtful. Letter denotes specific coal bed named in Generalized Stratigraphic Section, sheet 3. Number in circle refers to coal section measured at triangle

Baked and fused rock-- Base and areal extent of burned coal. Dashed where approximately located; attached v's indicate base of baked and fused rock; short dashes indicate extent of burning

Contact-- Dashed where approximately located; short dashed where inferred; dotted where concealed

Fault-- Showing dip. Dashed where approximately located; short dashed where inferred; queried where doubtful; dotted where concealed. U, upthrown side; D, downthrown side

Monocline-- Showing trace of anticlinal axis. Dashed where approximately located; dotted where concealed

Syncline-- Showing troughline and direction of plunge. Dotted where concealed

Strike and dip of beds

Component of dip

Horizontal beds

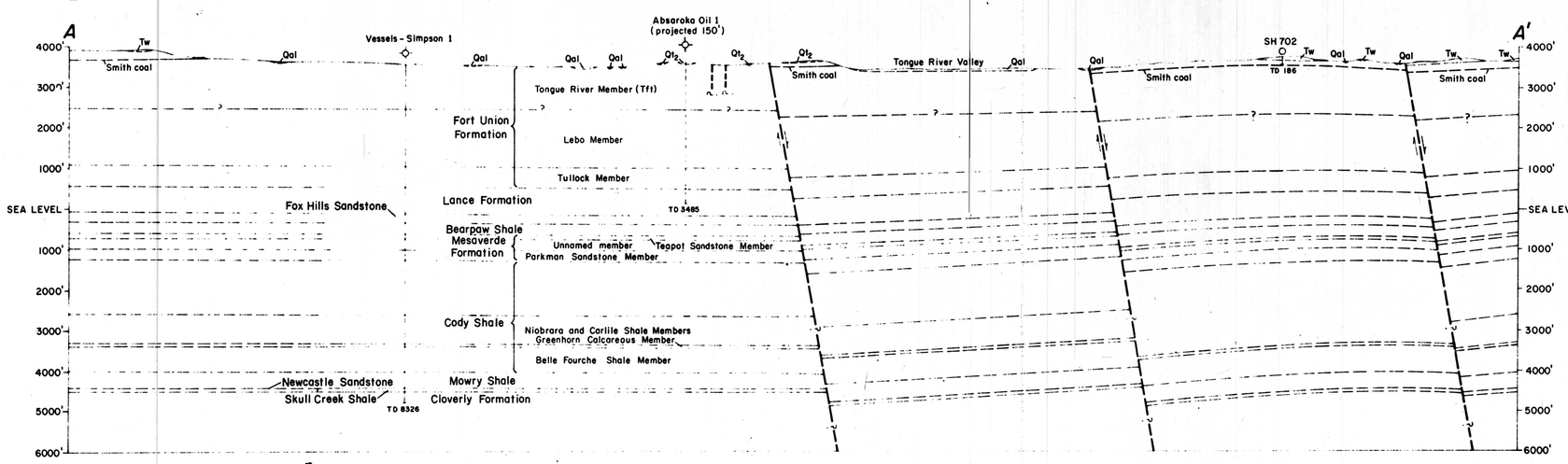
—3640— Structure contours-- Drawn on base of Smith coal bed. Dashed where approximately located; short dashed where projected above topography. Hachures indicate depression. Contour interval 40 feet. Datum mean sea level

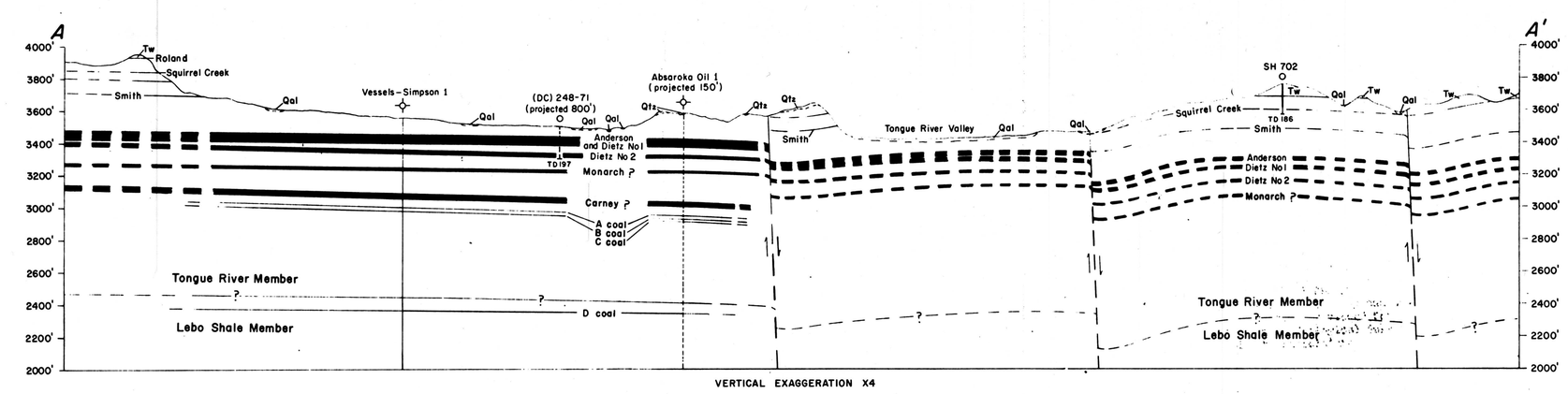
SH 702 Coal test hole-- SH, drilled by Montana Bureau of Mines and Geology (HEW Coal Project); (DC), drilled by Decker Coal Co.

Absaroka Oil 1 3480 Dry hole-- Name and total depth indicated

Gravel pit

Coal prospect or mine





VERTICAL EXAGGERATION X4

This report is preliminary and has not been edited or reviewed for conformity with U.S. Geological Survey standards or nomenclature