

PRELIMINARY
GEOLOGIC MAP
of the
BAKER QUADRANGLE
OREGON

O-77-06

BAKER QUADRANGLE
OREGON—BAKER CO.
7.5 MINUTE SERIES (TOPOGRAPHIC)

TIME ROCK CHART

CENOZOIC	QUATERNARY	Holocene	Qal	Qtg	
		Pleistocene			
	TERTIARY	Pliocene	Tst	Twt	Tr
		Miocene			Tb
		Oligocene Eocene			
MESOZOIC	CRETACEOUS		Kji		
	JURASSIC				
	TRIASSIC				
PALEOZOIC	PERMIAN				
	PENN.				

EXPLANATION

Qal Alluvium: Recent valley and stream channel deposits consisting of unconsolidated, crudely stratified silt, sand, and gravel.

Qtg Alluvial fan deposits: Unconsolidated, poorly sorted deposits of gravel, cobbles, and boulders with intermixed clay, silt, and sand along the southwest margin of Baker Valley.

Tst Lacustrine and fluvial deposits: Unconsolidated to moderately well-consolidated deposits of clay, silt, sand, and gravel with intermixed and interbedded siliceous ash and pumice and minor palaeontologic tuff. Some deposits in map area are sublacustrine coalescing alluvial fans, as indicated by wide distribution of gravel and poor sorting and lenticular bedding of deposits. Also includes thin, welded and nonwelded layers of ash-flow tuff. Siliceous vitroclastic material is commonly altered to secondary silica minerals, alkali feldspar, zeolites, and clay minerals. Vertebrate fossils indicate unit is mostly of lower Pliocene (Clarendonian) age. Fossil plants indicate some beds are Miocene in age. Sedimentary deposits are generally clearly younger than basalt of unit Tb, but in places they underlie or separate basalt flows.

Twt Siliceous welded and nonwelded tuff: Twt Light gray to pale brown, firmly to moderately welded, partly flow-banded tuff. Tt Medium gray to dark gray, nonwelded, partly water-laid tuff. Contains white pumice fragments. Several small, long-abandoned quarries in the unit in secs. 22 and 27, T. 9 S., R. 40 E. attest to early-day use of rock for building stone. Evidence outside map area indicates that Twt and Tt are approximately the same age. Locally, rocks of these units bridge the contact between basalt flows of unit Tb and older rocks and grade upward into sedimentary strata of unit Tst.

Tb Basalt: Dark-gray to black; locally reddish- and dark greenish-gray. Chiefly flow-on-flow basalt. Includes thin interbeds of poorly to semiconsolidated tuffaceous sedimentary rocks including gravel that is rich in rounded fragments of pre-Cenozoic rocks. Flows are 10 to 80 feet thick. Flow tops commonly are scoriaceous. Platy and columnar jointing are prominent features locally. Clay minerals, zeolites, calcite, common opal, and chalcocite are alteration products in fractures and open spaces. Unit is Miocene in age, based on plant fossils found in tuff interbeds (Gilluly, 1937) and lithologic similarity to basalt flows of the Columbia River Group elsewhere.

Kji Intrusive rocks: Coarse- to medium-grained quartz diorite and granodiorite. Approximately equal amounts of biotite and hornblende comprise 10-25 percent of typical specimens. Rocks are similar to quartz diorite and granodiorite of the Late Jurassic Bald Mountain and Wallows batholiths. Emplacement postdates regional metamorphism which affected sedimentary rocks as young as Middle Jurassic (Bajocian) age.

Per Marine sedimentary and volcanic rocks: Elkhorn Ridge argillite of Gilluly (1937). Mostly argillite, chert including radiolarite, and tuff; some lava flows and small pods of limestone. Complexly deformed and metamorphosed to the greenschist facies; foliated locally. Generally poorly exposed. Pennsylvanian, Permian, and Mesozoic fossils have been found in similar rocks in the Virtue Hills east of Baker.

SYMBOLS

--- Contact
--- Fault (ball and bar on downthrown side)

ROAD CLASSIFICATION

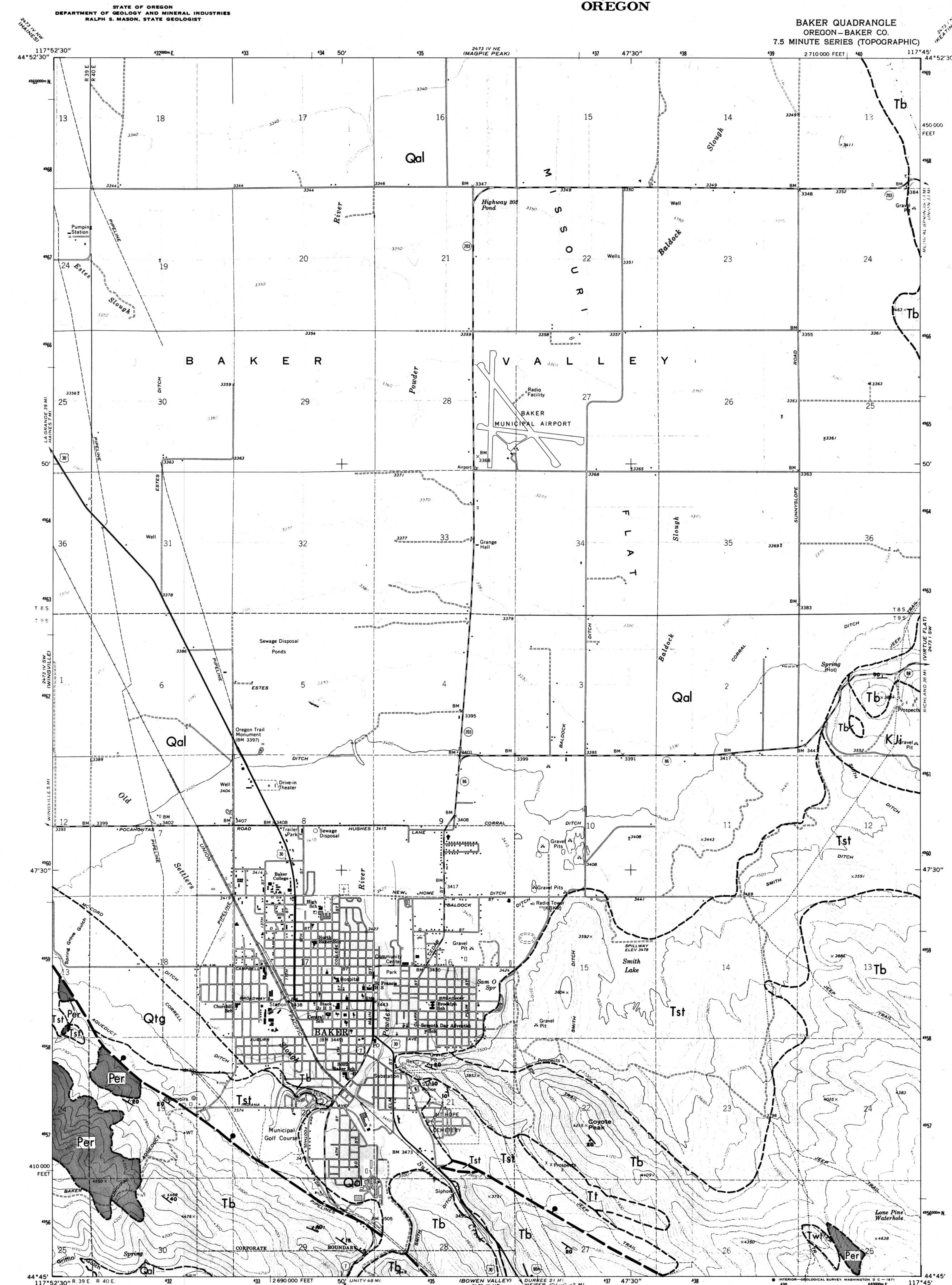
Heavy-duty ——— Light-duty ———
Medium-duty ——— Unimproved dirt ———
○ Interstate Route ○ U.S. Route ○ State Route

BAKER, OREG.
N4445—W11745/7.5

1967

AMS 2473 IV SE—SERIES V692

Geology by: H.C. Brooks and J.R. McIntyre
Cartography by: B.A. Gordon 1977



Control by USGS, USC&GS, and State of Oregon
Topography by photogrammetric methods from aerial
photographs taken 1966. Field checked 1967
Polyconic projection. 1927 North American datum
10,000-foot grid based on Oregon coordinate system,
north zone
1000-meter Universal Transverse Mercator grid ticks,
zone 11, shown in blue

UTM GRID AND 1967 MAGNETIC NORTH
DECLINATION AT CENTER OF SHEET

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of the Department of Geology and Mineral Industries
Ralph S. Mason, State Geologist; C. A. Schumacher, Chief Cartographer