

PRELIMINARY GEOLOGIC MAP of the BOWEN VALLEY QUADRANGLE OREGON

STATE OF OREGON
DEPARTMENT OF GEOLOGY AND MINERAL INDUSTRIES
RALPH S. MASON, STATE GEOLOGIST

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

TIME ROCK CHART

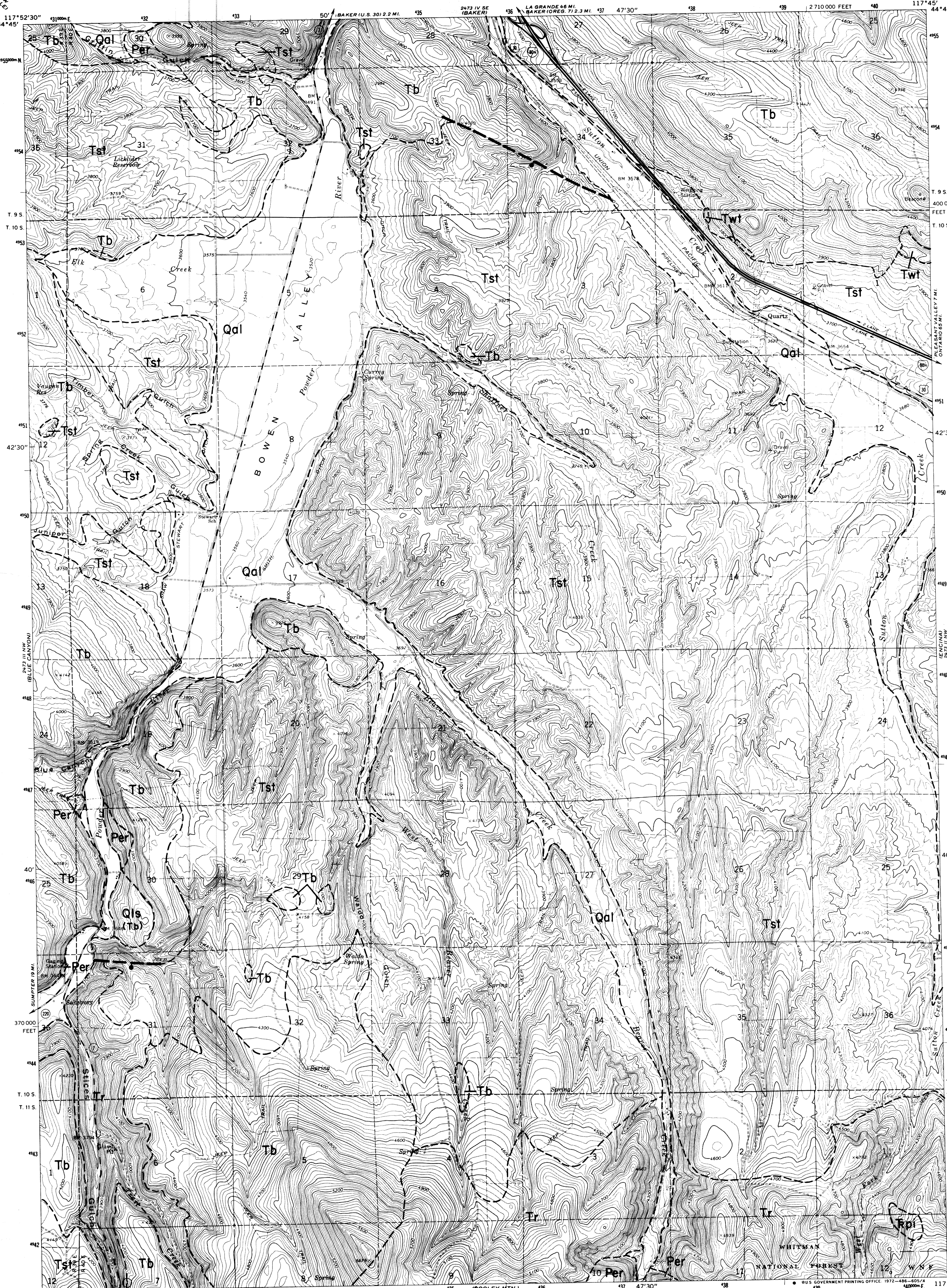
PERIOD	SUBPERIOD	ROCK UNITS		MILLIONS OF YEARS	
		Symbol	Symbol		
CENOZOIC	QUATERNARY	Holocene	Qal	2-3	
		Pleistocene	Qls		
	TERTIARY	Pliocene	Tst		65
		Miocene	Twt		
Oligocene Eocene Paleocene		Tr Tb			
MESOZOIC	CRETACEOUS		225		
	JURASSIC				
	TRIASSIC				
PALEOZOIC	PERMIAN	Per	280		
	PENNSYLVANIAN	Rpi			

EXPLANATION

- Qal** Alluvium: Mainly valley fill and recent stream channel deposits consisting of unconsolidated silt, sand, and gravel.
- Qls** Landslide debris: Symbols in parentheses identify the rock units composing slide.
- Tst** Lacustrine and fluvial deposits: Unconsolidated to moderately well-consolidated deposits of clay, silt, sand, and gravel with interbedded siliceous ash and pumice and minor palagonitic tuff; some deposits are sublacustrine coalescing alluvial fans as indicated by wide distribution of gravel, poor sorting, and lenticular bedding; siliceous vitroclastic material commonly altered to secondary silica minerals, alkali feldspar, zeolites, and clay minerals; vertebrate fossils mostly Lower Pliocene (Clarendonian); fossil plants are Miocene. In most places, sedimentary deposits are clearly younger than basalt of Tb, but they locally underlie or separate basalt flows.
- Twt** Silicic welded tuff: Firmly to moderately welded tuff; light-gray to pale-brown with white pumice fragments; partly flow-banded. Outside map area welded tuff of Twt grades laterally into nonwelded tuff and tuffaceous sedimentary rocks in lower part of Tst.
- Tb** Basalt: Dark-gray to black, locally reddish- and dark greenish-gray, chiefly flow-on-flow basalt; includes thin interbeds of poorly to semi-consolidated tuffaceous sedimentary rocks including gravel rich in rounded fragments of pre-Cenozoic rocks; flows range from 10 to 80 ft in thickness; flow tops commonly are scoriaceous; platy jointing and columnar jointing are prominent features locally; clay minerals, zeolites, calcite, common opal, and chalcodony are alteration products in fractures and open spaces; Miocene, based on plant fossils in tuff interbeds and lithologic similarity to basalt flows of the Columbia River Group elsewhere.
- Tr** Rhyolite and andesite: Includes rocks mapped by Gilluly (1937) as Dooley Rhyolite Breccia; rhyolite flows, flow breccia, and tuff; minor andesite and andesite vitrophyre; locally underlies basalt flows of Tb; Miocene; dated radiometrically at 14.3 million years.
- Per** Marine sedimentary and volcanic rocks: Elkhorn Ridge Argillite; mostly argillite, chert including radiolarite, and tuff; some lava flows and small pods of limestone; complexly deformed and metamorphosed to greenschist facies; foliated locally; generally poorly exposed. Pennsylvanian, Permian, and Mesozoic fossils have been found in similar rocks in Virtue Hills east of Baker.
- Rpi** Intrusive rocks: Mostly quartz diorite and gabbro; some poorly exposed, fine-grained rocks may be mafic dikes or flows; these rocks probably are equivalent to pre-Upper Triassic rocks of Canyon Mountain Complex.

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

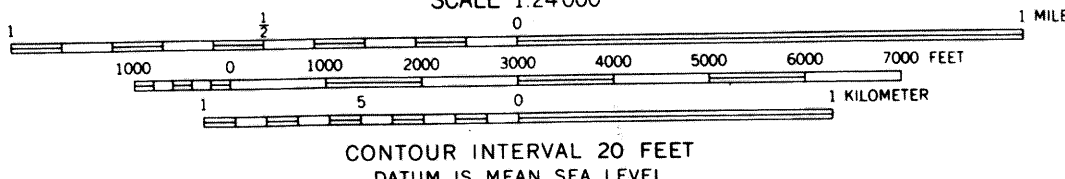
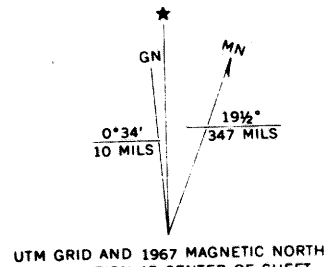
BOWEN VALLEY, OREG.
N4437.5—W11745/7.5

1967

AMS 2473 III NE—SERIES V892

Geology by: H. C. Brooks and J. R. McIntyre
Cartography by: K. A. Eisele 1977

Control by USGS and USC&GS
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



THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS

