STATE OF OREGON
DEPARTMENT OF GEOLOGY AND MINERAL INDUSTRIES
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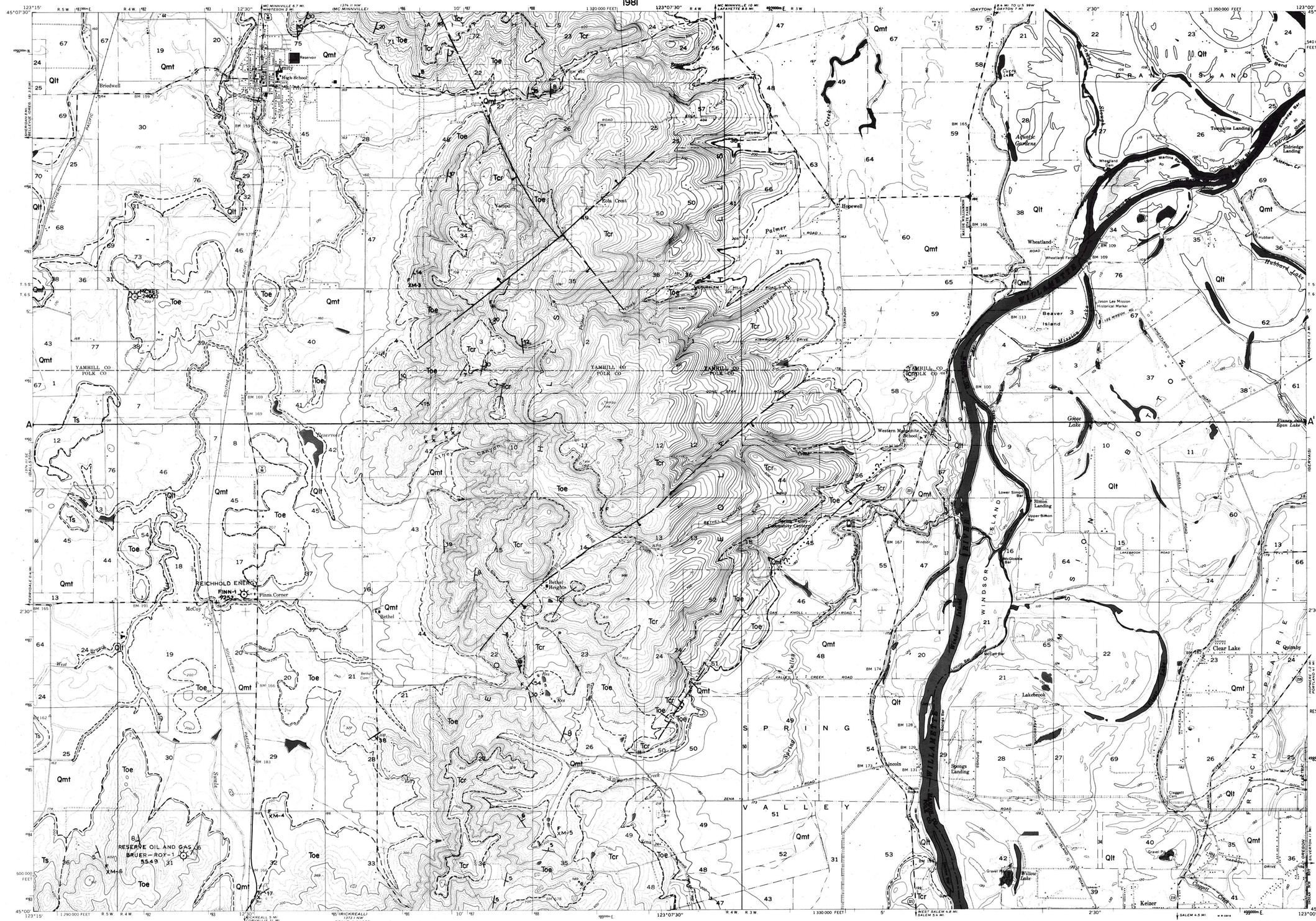
PRELIMINARY GEOLOGIC MAP OF THE AMITY AND MISSION BOTTOM QUADRANGLES, OREGON

1981

By Michael E. Brownfield and Herbert G. Schlicker

O-81-05



TIME ROCK CHART

CENOZOIC	QUATERNARY	Holocene	Qlt, Qmt	
		Plio.		UNCONFORMITY
	TERTIARY	Miocene	Tcr	
				UNCONFORMITY
		Oligo.	Toe	
			Ts	UNCONFORMITY
		Eocene	Ty	UNCONFORMITY
			Tsr	

DESCRIPTION OF MAP UNITS

SURFICIAL GEOLOGIC UNITS (HOLOCENE AND PLEISTOCENE)

Age ranges of individual units overlap

Qlt — Lower terrace deposits and alluvium: Mostly poorly sorted, unconsolidated to semiconsolidated deposits of clay, silt, sand, and fine to very coarse gravel; includes recent alluvium associated with Willamette River and its tributaries. Unit is 0-50 ft thick

Qmt — Middle terrace deposits: Poorly sorted, semiconsolidated deposits of clay, silt, sand, and fine to very coarse gravel; includes 10-50 ft of light-brown, massive to faintly bedded silt called Willamette Silt. Unit is 0-150 ft thick

BEDROCK GEOLOGIC UNITS

Tcr — Columbia River Basalt Group (Miocene): Gray to black, dense, fine-grained to aphanitic, intersertal to ophitic, occasionally porphyritic, tholeiitic basalt. Individual flows range in thickness from 40-100 ft. Weathered flows consist of reddish-brown to grayish-brown, crumbly to medium-dense basalt. Some exposures are altered to laterite to depths of over 25 ft. Unit is 0-1,000 ft thick

Toe — Oligocene and Eocene sedimentary rock undivided (middle and upper Oligocene and upper Eocene): Tuffaceous marine sedimentary deposits consisting of two lithologic and faunal units; however, poor exposure in area west of Eola and Amity Hills prevents the division of these units. The older of these units is light-gray to tan, sandy, tuffaceous siltstone equivalent in age to early Oligocene to late Eocene Keasey Formation. The thickest section of lower Oligocene-upper Eocene sediments is exposed in sec. 31, T. 6 S., R. 4 W., where about 1,000 ft of strata is present. The younger unit, light-brown to gray, fine- to coarse-grained, tuffaceous sandstone and siltstone equivalent in age to middle Oligocene Pittsburg Bluff Formation, is approximately 1,350 ft thick. The lower and middle Oligocene sediments are equivalent to Eugene Formation of Hickman (1969); foraminiferal faunas for lower part of unit are assigned by McWilliams (1968) and McKeel (1980) to Refugian (Schenck and Kleinpell, 1936; Kleinpell, 1938) and upper Narizian (Mallory, 1959) stages, and molluscan faunas are referred by Hickman (1969) to Keasey and Lincoln stages of Weaver and others (1944)

Ts — Spencer Formation (upper Eocene): Light-gray to yellowish-brown, very fine- to medium-grained, well-sorted, thinly laminated to thin-bedded to massive-bedded, cross-bedded, micaceous, calcareous, lithic, arkosic, littoral, tuffaceous sandstones; interbedded with dark-gray to yellowish, sandy, micaceous, tuffaceous siltstones, shales, and mudstones; carbonaceous material consisting of leaves and stems is common. To the south, unit contains some nonmarine beds. Weathered outcrops of massive, fine- to medium-grained sands are generally friable, ranging in color from gray to yellowish-brown. Foraminiferal assemblages are assigned by McWilliams (1968, 1973) and McKeel (1980) to the upper Narizian stage of Mallory (1959). Unit is about 800 ft thick in Bruer No. 1 drill hole

Ty — Yamhill Formation (middle and upper Eocene): Medium- to dark-gray, massive to faintly bedded, micaceous, tuffaceous shale and siltstone. Occasional beds of medium-gray to greenish-gray, fossiliferous, calcareous sandstone; minor limestone concretions. Foraminiferal assemblages are assigned by McWilliams (1968, 1973) and McKeel (1980) to the Narizian stage of Mallory (1959); molluscan faunas are assigned to late Eocene by Baldwin and others (1955). Unit is found in drill holes only, where it is about 2,680-2,950 ft thick. Shown in cross-section only

Tsr — Siletz River Volcanics (lower and middle Eocene): Dark-greenish-gray, aphanitic to porphyritic, vesicular basalt and pillow basalt; flow breccia; tuff breccia; red to green, calcareous, sandy tuff; medium- to dark-gray, calcareous, tuffaceous shale, siltstone, and sandstone. Foraminiferal assemblages are assigned by McWilliams (1968, 1973) and McKeel (1980) to lower Narizian and Ulatisian stages of Mallory (1959). Unit is found in drill holes only, where it is about 1,000-3,650 ft thick. Shown in cross-section only

GEOLOGIC SYMBOLS

Contact: Approximately located and inferred; contacts exposed only along stream beds or roads

Fault: Approximately located; dashed where inferred; dotted where concealed. Some faults inferred from aerial photos. Doubtful fault queried. Bar and ball on downthrown side

Strike and dip of beds

OTHER SYMBOLS

RESERVE OIL AND GAS BRUER-ROY-1 5549 — Abandoned oil and gas hole: Showing name of operator and lease name; total depth in feet

F X — Fossil locality: Megafossil locality from Hickman (1969), Steere (1977), and this study

F M-6 — Fossil locality: Microfossil locality from Baldwin and others (1955)

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Control by USGS, USC&GS, USCE, and State of Oregon

Topography from aerial photographs by Kelsh plotter and by planetable surveys 1957. Aerial photographs taken 1954

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 10

SCALE 1:24000

CONTOUR INTERVAL 20 FEET
DASHED LINES REPRESENT 10-FOOT CONTOURS
DATUM IS MEAN SEA LEVEL

UTM GRID AND 1970 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

OREGON — QUADRANGLE LOCATION

Geology by H.G. Schlicker, 1979 and M.E. Brownfield, 1980-81

Geologic Cross Section