

# OPEN-FILE REPORT

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY



## EXPLANATION

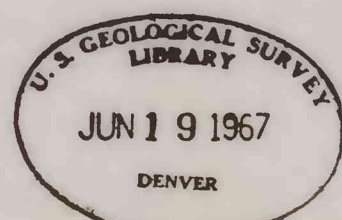
### SEDIMENTARY AND VOLCANIC ROCKS

Recent	Qa	Alluvium Unconsolidated silt, sand, and gravel
	Ql	Landslide debris Only larger and better defined slides shown
Quaternary	Qt	Terrace deposits, undifferentiated Relatively unconsolidated clay, silt, sand and gravel. Stream terrace deposits occur along main streams about 5 to 30 ft above stream level, ancient bay-fill deposits occur only in western part of area and reach altitudes of 350 ft.
	Unconformity	Unconformity
Miocene and Pliocene (?)	Tm	Montesano Formation Friable, light-olive-gray to yellowish-gray, well-sorted fine to coarse-grained sandstone, commonly cross-bedded, 2,000 to 3,000 ft thick; thin conglomerate at base; thin beds of silt fragments locally common in upper 500 ft. Tmp, last SacK Basalt Member, slightly porphyritic, column-jointed basalt, 200 to 300 ft thick.
	Unconformity	Unconformity
Miocene	Tau	Astoria (?) Formation Light-olive-gray to dark-gray, very fine to coarse-grained sandstone and sandy siltstone, 500 to 6,000 ft thick. Tau, upper unit, locally cross-bedded fine to medium-grained sandstone. Tam, middle unit, very fine to medium-grained, tuffaceous, micaceous sandstone with local tuff beds. Tal, lower unit, carbonaceous sandy siltstone with clay-peat, silty sandstone (circle-dot symbol) locally at base. Solid circle indicates position of ground observation, position of bed inferred elsewhere. Talb, submarine basalt flow, pillow structure common, 0 to 200 ft thick.
	Tlc	Lincoln Creek Formation Light-olive-gray to dark-greenish-gray tuffaceous siltstone, generally bedded in lower part and massive in upper part, contains thin units of very fine to fine-grained sandstone in middle and upper parts. Volcanic, concretionary beds occur in lower part in conjunction with tuffaceous sandstone beds (circle-dot symbol) above middle sandstone unit. Tuffaceous sandstone at base of formation (circle-dot symbol) contains green claystone and dark-gray basalt pebbles. Solid circle indicates position of ground observation, position of bed inferred elsewhere. Average thickness 4,500 ft.
Eocene, Oligocene, and Miocene (?)	Tmu	McIntosh Formation Light-gray to light-olive-gray, fine to medium-grained sandstone and tuffaceous or carbonaceous siltstone, 500 to 3,500 ft thick. Tmu, upper unit, laminated sequence of light- to medium-gray siltstone and fine-grained sandstone, tuffaceous siltstone, carbonaceous siltstone, 300 to 2,000 ft thick. Tmv, volcanic unit interbedded in upper unit, consists of lenticular, faintly bedded, water-laid lapilli, tuff and basaltic breccia with scattered agate crystals, 0 to 1,500 ft thick. Tml, lower unit, rhythmic-bedded fine- to medium-grained micaceous sandstone and carbonaceous siltstone, 200 to 1,800 ft thick.
	Tc	Crescent Formation Predominantly fine-grained pillow basalt and blocky-jointed basalt that contains a few beds of amygdaloidal, agate-rich basalt and locally cemented lapilli, tuff (circle symbol) and dark-gray foraminiferal siltstone (dot symbol) in upper part. Solid circle and large dot indicate position of ground observation, position inferred elsewhere, at least 5,000 ft thick.
Eocene	Tg	Intrusive igneous rocks
	Tib	Intrusive rocks Fine- to coarse-grained dikes and sills of basaltic and gabbro composition; probably middle and late Eocene in age. Some basalt is fine-grained. Tg, gabbro dikes and sills; Tib, basalt dikes.
Middle and upper Eocene	Contact	Contact, approximately located Queried where inferred, dotted where concealed
	Fault	Fault, approximately located Queried where inferred, dotted where concealed, U, upthrown side; D, downthrown side
Eocene	Anticline	Anticline
	Syncline	Syncline
Middle and upper Eocene	Folds	Folds, approximately located Queried where inferred
	Inclined	Inclined
	Horizontal	Horizontal
Middle and upper Eocene	Strike and dip of beds	Strike and dip of beds
	Quarry	Quarry
Middle and upper Eocene	Exploratory well	Exploratory well Union Oil Co. Wilson Creek No. 1 Sec. 20, T.14N., R.7W., S.49E., T.1D. Raymond Oil Co. Willapa No. 1 Sec. 30, T.14N., R.8W., S.49E., T.1D.

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### PRELIMINARY GEOLOGIC MAP OF THE RAYMOND QUADRANGLE, PACIFIC COUNTY, WASH.

by  
Holly C. Wagner  
1967



Press Release dated June 19, 1967

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