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- Considerable post-glacial seismicity along the north-trending Saddle Mountain fault zone is well documented in the map area but remains poorly understood, especially regarding its relationship to several other known or postulated active tectonic structures in or near the map area.
- A new Ar-Ar date indicates c.38 ± 18 ka for a t.lg on Crescent Formation(?) basalts, two to six times abundant pillow structures and geochronology consistent with the upper Crescent Formation.
- Sediments of Ordovician provenance consist of lithologic assemblages that have provided difficult to separate from sediments of northern (continental glacial/Cordilleran ice sheet) source in the map area.
- While it remains unclear if Puget lobe (Vashon) ice melt Olympic ice in the map area, new ¹⁴C data constrain arrival of Puget lobe ice between about 15,700 and 17,000 calendar years ago.
- Recent studies above Hood River suggest that a paleo-lake existed just above 240 ft elevation, with possible but unresolved structural implications.

HOLOCENE NONGLACIAL DEPOSITS

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| af | Artificial fill —lay, silt, sand, gravel, organic matter, and rip-rap placed to elevate and reshape the land; may or may not be engineered. |
| ml | Modified land —Locally derived sediment, ranging from clay to gravel and diamictic; mixed and reworked by excavation and redistributed to modify topography. |
| Qb | Beach —Transient sand, pebbles, pebbly sand, cobbles, silt, clay, and shells; clasts moderately to well-rounded and oblate; well-sorted; loose. |
- ### HOLOCENE TO POST-GLACIAL PLEISTOCENE NONGLACIAL DEPOSITS
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| Qp | Peat —Organic sediment and organic-rich mineral sediment; includes peat, muck, silt, and clay; typically in closed depressions. |
| Qls | Landslide deposits —Cobbles, pebbles, sand, silt, clay; boulders, and diamictic in body and toe; angular to rounded clasts and grains; unsorted; generally loose; jumbled, and unstratified. |
| Qmw | Mass-wasting deposits —Cobbles, pebbles, sand, silt, clay, boulders, and diamictic; generally unsorted; but locally stratified; loose; shown along potentially or demonstrably unstable slopes. |
| Qa | Alluvium —Pebble and cobble gravel, sand, boulders, silt, clay, and peat; clasts well-sorted; moderately to well-sorted and loose; deposited in flood plains and on terraces; unit Qoa where relict. |
| Qaf | Alluvial fan —Cobble and pebble gravel with sand, silt, and boulders; poorly sorted and -stratified; fine concentric lobes where streams emerge from valleys; unit Qoa where relict. |

Deposits of the Vashon Stade of the Fraser Glaciation (northern source)

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| Qgo | Vashon recessional outwash —Mostly cobble and pebble gravel; some sand, silt, and clay; generally fresh; loose; moderately sorted; some exposures difficult to separate from unit Qga. |
| Qgoaf | Vashon recessional alluvial fan —Cobble and pebble gravel, sand, silt, and boulders; poorly sorted; stratified; forms concentric lobes where streams once left valleys. |
| Qgol | Vashon recessional glacial lake-deltaic outwash —Cobble and pebble gravel with sand and locally fines; loose; moderately to well-sorted and clean; deltaic assemblage. |
| Qgls | Vashon recessional glacial lake beach —Sand, pebbly sand, cobbly sand, and fines; gray; typically well-sorted; loose; marks relict glacial lake shoreline. |
| Qgic | Vashon ice-contact deposits —Sand, cobble and pebble gravel, flow till, lodgment till, silt, and clay; tan to gray; variably sorted; loose to compact; includes sub-ice flow and collapse features. |
| Qgik | Vashon ice-contact kames and kame deltas —Cobble and pebble gravel, sand, and some silt, flow till, and lodgment till; mostly loose; medium- to very thickly bedded. |
| Qgim | Vashon Pudget lobe end moraine —Sand, cobble and pebble gravel, till, silt, and clay; variably sorted; loose to compact; includes sub-ice flow and collapse features. |
| Qge | Vashon eskers —Cobble and pebble gravel and sand; tan to brown; mostly loose; moderately to well-sorted; forms low, elongate, sinuous hills; commonly on fluted uplands. |
| Qgt | Vashon lodgment till —Unsorted, unstratified mix of sand, cobbles, pebbles, silt, clay, and boulders; mostly gray; compact; commonly resembling concrete. |
| Qga | Vashon advance outwash —Pebble and cobble gravel, sand, silt, and clay; diamictic; gray to tan; compact, but commonly cohesionless; mostly well-sorted; thinly to thickly bedded. |
| Qgag | Vashon advance outwash gravel —Cobble and pebble gravel with some sand, silt, and clay; gray to tan; compact, but commonly cohesionless; thinly to thickly bedded. |

Olympic-sourced drift of probable late Pleistocene age (may include Vashon and pre-Vashon deposits)

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| Qat | Uppermost Olympic-sourced till —Unsorted, unstratified mix of sand, cobbles, pebbles, silt, clay, and boulders; gray; typically unweathered; compact, commonly resembles concrete. |
| Qad | Uppermost Olympic-sourced drift, undivided —Till and outwash consisting of cobble to pebble gravel with occasional boulders and a sandy to clayey matrix. |
- Pre-Fraser Olympic-sourced glacial deposits*
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| Qiso | Pre-Fraser Olympic-sourced outwash gravel —Cobble to pebble gravel with sandy to clayey matrix; gray to light orange-brown; compact; clasts mostly subrounded, moderately sorted. |
| Qspt | Pre-Fraser Olympic-sourced till —Unsorted, unstratified mix of sand, cobbles, pebbles, silt, clay, and boulders; gray to brown; compact, commonly resembling concrete. |
| Qsod | Pre-Fraser Olympic-sourced glacial drift, undivided —Till and outwash consisting of cobble and pebble gravel with boulders and sandy to clayey matrix; gray to orange-brown; compact. |

Qpo **Pre-Fraser northern-sourced outwash**—Cobble and pebble gravel with sandy or clayey matrix; dark gray to reddish brown; compact; well-sorted; thinly to very thickly bedded.

Qpd **Pre-Fraser northern-sourced drift, undivided**—Till and outwash consisting of cobble to pebble gravel with rare boulders in a sandy to clayey matrix.

Qpl **Pre-Fraser glaciolacustrine sediment, paleomagnetically reversed**—Silt, sand, and clay, locally ranging to diamicton; sparse dropstones; gray to tan; compact, mostly laminated.

Qpu **Undivided Quaternary sediment (cross section only)**—Cobble and pebble gravel (locally bouldery), diamicton, sand, silt, clay, and organic sediment.

Oligocene	Marine sedimentary rocks (Oligocene to Eocene) —Rhythmic marine sandstone to mudstone some conglomerate; stratigraphically above Crescent Formation.
Eocene	Crescent Formation (early to middle Eocene) —Subaerial and submarine basalt flows and pillows, with minor sedimentary interbeds; typically weathered and fractured.
Mid-Eocene	Crescent Formation, sandstone facies (early to middle Eocene) —Basaltic sandstone interbedded with Crescent Formation basalt; most exposures highly weathered.

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— — — —	Contact—Identity and existence certain, location approximate
— ? —	Contact—Identity or existence questionable, location approximate

