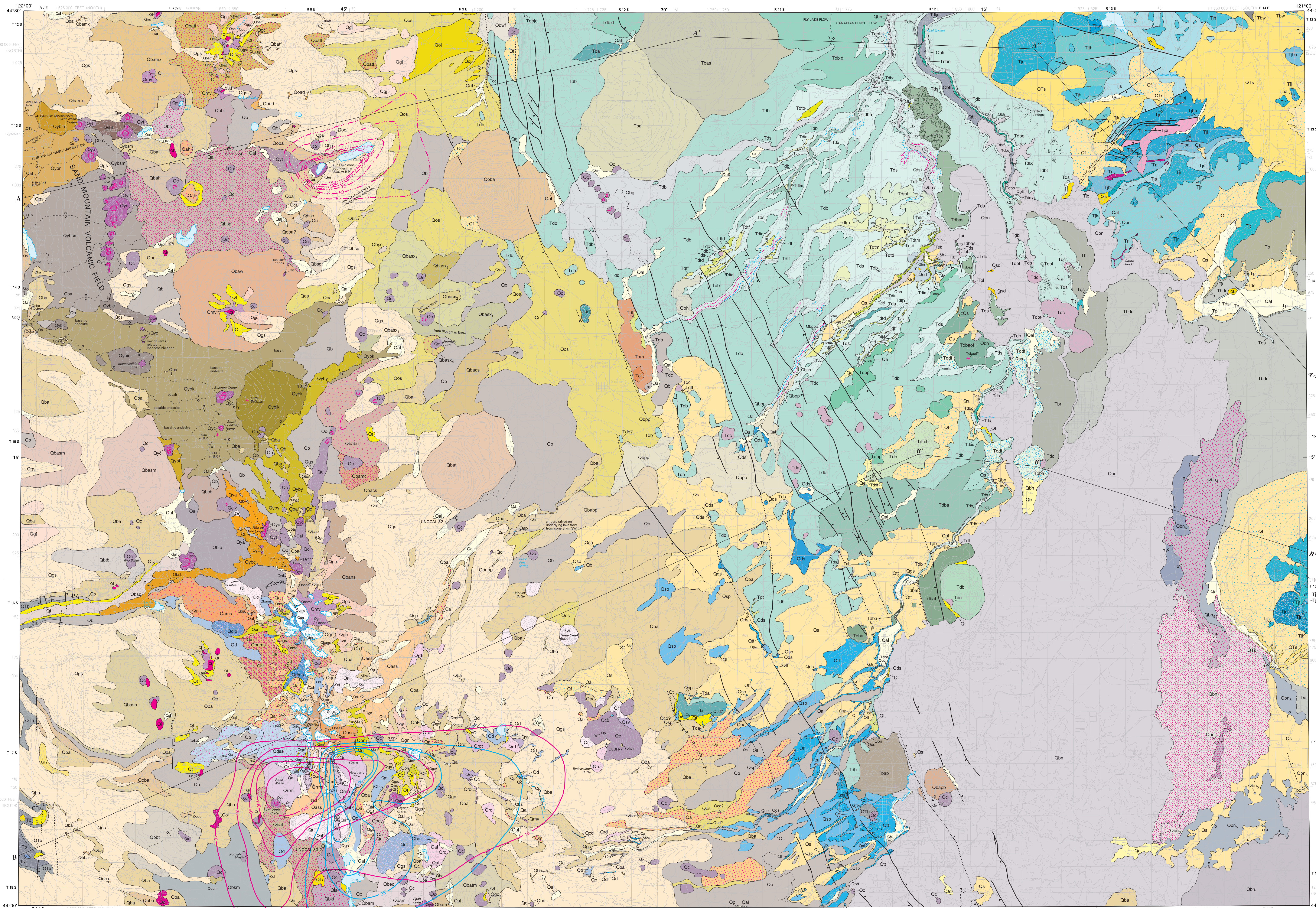




LIST OF MAP UNITS

(Some unit exposures on the printed or plotted map are too small to distinguish the color for unit identification. These units are labeled where possible, and unlabeled units are attributed to the database.)

SURFICIAL DEPOSITS

in	Man-made/land (Holocene)
Qal	Alluvium (Holocene and Pleistocene)
Qe	Eolian deposits (Holocene and Pleistocene)
Qd	Landslide deposits (Holocene and Pleistocene)
Qt	Talus and colluvium (Holocene and Pleistocene)
Qp	Till (Holocene and Pleistocene)—Divided into:
Qp1	Till of Neoglacial age (Holocene)
Qp2	Till of Canyon Creek advance of Cabot Creek glaciation of Scott, 1977 (Pleistocene)
Qp3	Till of Suttle Lake advance (of Cabot Creek glaciation of Scott, 1977) (Pleistocene)
Qp4	Till of Jack Creek glaciation of Scott (1977) (Pleistocene)
Qp5	Outwash (Holocene and Pleistocene)—Divided into:
Qp6	Outwash of Suttle Lake advance (Pleistocene)
Qp7	Outwash of Jack Creek glaciation (Pleistocene)
Qs	Sand and gravel (Pleistocene)
Qf	Alluvial fan deposits (Pleistocene)
Qd	Diatomite (Pleistocene)
Qr	Sedimentary rocks and deposits (Pleistocene and Pliocene)

Volcanic rocks and deposits of the Cascade Range and Newberry Volcano

(Arranged generally by composition, although first twelve units are compositionally diverse and have been grouped separately owing to their overlapping geographic setting and brief period of eruptive activity. These twelve units and additional units described later, the Myrtle of Rock Mesa and Devils Hill chain of vents (Qrm), are younger than the Mazama ash bed, a widespread tephra deposit erupted during climatic eruptions of Mount Mazama (Crater Lake National Park, 120 km south of map area).

Young volcanic rocks of Santiam and McKenzie Passes

Young lava flows (Holocene)—Divided by composition and eruptive source

Qp1	Basaltic andesite and andesite of Collier Cone
Qp2	Andesite of Four in One Cone
Qp3	Basaltic andesite of Vapour Crater
Qp4	Basalt and basaltic andesite of Bellup Crater
Qp5	Young tephra
Qp6	Basaltic andesite of Little Bellup
Qp7	(Following four units form Santiam volcanic field)
Qp8	Basaltic andesite of Little Nash Crater
Qp9	Basalt of Lost Lake chain of cones
Qp10	Basaltic andesite of Nash Crater
Qp11	Basalt of Sand Mountain chain of cones
Qp12	Basaltic andesite of Twin Craters
Qp13	Basalt of Inaccessible cone

Basalt of the Cascade Range and Newberry volcano

Basalt (Holocene? and Pleistocene)—Divided locally into:

Qb1	Basalt of Sims Butte (Holocene or Pleistocene)
Qb2	Basalt of Cayuse Crater (Holocene or Pleistocene)
Qb3	Basalt of Egg cone (Holocene or Pleistocene)
Qb4	Basalt of Kaskas Mountain (Pleistocene)
Qb5	Basalt of Newberry volcano (Pleistocene)—Divided into:

Qb6	Basalt of Bullheads
Qb7	Highly porphyritic basalt
Qb8	Large-feldspar basalt
Qb9	Basalt near Ashfall
Qb10	Very fine grained basalt
Qb11	Basalt of cones at summit and southeast flank of Cache Mountain (Pleistocene)
Qb12	Basalt of Condor Butte (Pleistocene)
Qb13	Basalt of Kaskas Mountain (Pleistocene)
Qb14	Basalt of Burnt Butte (Pleistocene)
Qb15	Basalt of Two Butte (Pleistocene)
Qb16	Basalt of Craig Lake (Pleistocene)
Qb17	Basalt of Wizard Falls (Pleistocene)
Qb18	Basalt of Garrison Butte (Pleistocene)
Qb19	Basalt of Henkle Butte (Pleistocene)
Qb20	Basalt of Santiam Pass (Pleistocene)
Qb21	Basalt of Booth Lake (Pleistocene)
Qb22	Basalt of Little Brother (Pleistocene)
Qb23	Basalt of Plainview (Pleistocene)
Qb24	Basalt of The Island (Pleistocene)
Qb25	Basalt (Pleistocene and Pliocene?)
Qb26	Basalt (Pliocene)

Basaltic andesite of the Cascade Range

Basaltic andesite (Holocene? and Pleistocene)—Divided locally into:

Qba1	Basaltic andesite of Le Conte Crater (Holocene or Pleistocene)
Qba2	Basaltic andesite of Mount Bachelor (Holocene? and Pleistocene)
Qba3	Basaltic andesite of South Sister (Pleistocene)—Divided on basis of intervening andesite (Qba4) into younger and older parts:
Qba4	Basaltic andesite of summit cone
Qba5	Basaltic andesite of upper flanks

Qba6	Basaltic andesite of Hoodoo Butte (Pleistocene)
Qba7	Basaltic andesite of Maxwell Butte (Pleistocene)
Qba8	Basaltic andesite of Scott Mountain (Pleistocene)
Qba9	Basaltic andesite of Tumalo Mountain (Pleistocene)
Qba10	Basaltic andesite of Skunk Butte lava field (Pleistocene)—Divided into:
Qba11	Basaltic andesite of Blugrass Butte
Qba12	Basaltic andesite of Graham Butte
Qba13	Basaltic andesite of Fiveville Butte
Qba14	Basaltic andesite of Fourmile Butte
Qba15	Basaltic andesite of Sixmile Butte
Qba16	Basaltic andesite of Cold Spring (Pleistocene)
Qba17	Basaltic andesite of Milliken Crater (Pleistocene)
Qba18	Basaltic andesite of Black Crater (Pleistocene)
Qba19	Basaltic andesite of Red Hill (Pleistocene)
Qba20	Basaltic andesite of Middle Sister (Pleistocene)
Qba21	Basaltic andesite of North Sister (Pleistocene)
Qba22	Basaltic andesite of Three Fingered Jack (Pleistocene)
Qba23	Basaltic andesite of Black Pine Spring (Pleistocene)
Qba24	Basaltic andesite of Trout Creek Butte (Pleistocene)
Qba25	Basaltic andesite of Mount Washington (Pleistocene)
Qba26	Basaltic andesite of Substrate Point (Pleistocene)
Qba27	Basaltic andesite of Pilot Butte (Pleistocene)
Qba28	Older basaltic andesite (Pleistocene)

Qba29	Andesite of the Cascade Range
Qba30	Andesite (Pleistocene)—Divided locally into:
Qba31	Andesite of South Sister—Divided at summit into:
Qba32	Andesite of summit
Qba33	Andesite of east flank
Qba34	Andesite of Hug Rock and Hayrick Butte
Qba35	Andesite of Middle Sister
Qba36	Andesite and dacite of First Creek (Pleistocene)
Qba37	Dacite, rhyolite, and rhyolite of the Cascade Range
Qba38	Dacite (Pleistocene)—Divided locally into:
Qba39	Dacite of South Sister
Qba40	Dacite of Middle Sister
Qba41	Dacite of Lane Plateau
Qba42	Dacite of Todd Lake
Qba43	Rhyolite (Pleistocene)—Divided locally into:
Qba44	Rhyolite of Tum McArthur Rim
Qba45	Rhyolite (Holocene and Pleistocene)—Youngest rhyolite shown separately as:
Qba46	Rhyolite of Rock Mesa and Devils Hill chain of vents (Holocene)
Qba47	Rhyolite or dacite (Pliocene or Miocene)

Qba48	Pumice-fall deposits (Pleistocene)
Qba49	Shoshone Butte Tuff (Pleistocene)
Qba50	Century Drive Tuff (Pleistocene)
Qba51	Rhyolite tuff (Pleistocene)
Qba52	Tumalo Tuff (Pleistocene)
Qba53	Desert Spring Tuff (Pleistocene)

Basaltic andesite of the Cascade Range

Dacite, rhyolite, and rhyolite of the Cascade Range

Dacite (Pleistocene)—Divided locally into:

Qba54	Dacite of South Sister
Qba55	Dacite of Middle Sister
Qba56	Dacite of Lane Plateau
Qba57	Dacite of Todd Lake
Qba58	Rhyolite (Pleistocene)—Divided locally into:
Qba59	Rhyolite of Tum McArthur Rim
Qba60	Rhyolite (Holocene and Pleistocene)—Youngest rhyolite shown separately as:
Qba61	Rhyolite of Rock Mesa and Devils Hill chain of vents (Holocene)
Qba62	Rhyolite or dacite (Pliocene or Miocene)

Pumice-fall deposits (Pleistocene)

Shoshone Butte Tuff (Pleistocene)

Century Drive Tuff (Pleistocene)

Rhyolite tuff (Pleistocene)

Tumalo Tuff (Pleistocene)

Desert Spring Tuff (Pleistocene)

Basaltic andesite of the Cascade Range

Dacite, rhyolite, and rhyolite of the Cascade Range

Dacite (Pleistocene)—Divided locally into:

Qba63	Dacite of South Sister
Qba64	Dacite of Middle Sister
Qba65	Dacite of Lane Plateau
Qba66	Dacite of Todd Lake
Qba67	Rhyolite (Pleistocene)—Divided locally into:
Qba68	Rhyolite of Tum McArthur Rim
Qba69	Rhyolite (Holocene and Pleistocene)—Youngest rhyolite shown separately as:
Qba70	Rhyolite of Rock Mesa and Devils Hill chain of vents (Holocene)
Qba71	Rhyolite or dacite (Pliocene or Miocene)

Pumice-fall deposits (Pleistocene)

Shoshone Butte Tuff (Pleistocene)

Century Drive Tuff (Pleistocene)

Rhyolite tuff (Pleistocene)

Tumalo Tuff (Pleistocene)

Desert Spring Tuff (Pleistocene)

Basaltic andesite of the Cascade Range

Dacite, rhyolite, and rhyolite of the Cascade Range

Dacite (Pleistocene)—Divided locally into:

Qba72	Dacite of South Sister
Qba73	Dacite of Middle Sister
Qba74	Dacite of Lane Plateau
Qba75	Dacite of Todd Lake
Qba76	Rhyolite (Pleistocene)—Divided locally into:
Qba77	Rhyolite of Tum McArthur Rim
Qba78	Rhyolite (Holocene and Pleistocene)—Youngest rhyolite shown separately as:
Qba79	Rhyolite of Rock Mesa and Devils Hill chain of vents (Holocene)
Qba80	Rhyolite or dacite (Pliocene or Miocene)

Pumice-fall deposits (Pleistocene)

Shoshone Butte Tuff (Pleistocene)

Century Drive Tuff (Pleistocene)

Rhyolite tuff (Pleistocene)

Tumalo Tuff (Pleistocene)

Desert Spring Tuff (Pleistocene)

Basaltic andesite of the Cascade Range

Dacite, rhyolite, and rhyolite of the Cascade Range

Dacite (Pleistocene)—Divided locally into:

Qba81	Dacite of South Sister
Qba82	Dacite of Middle Sister
Qba83	Dacite of Lane Plateau
Qba84	Dacite of Todd Lake
Qba85	Rhyolite (Pleistocene)—Divided locally into:
Qba86	Rhyolite of Tum McArthur Rim
Qba87	Rhyolite (Holocene and Pleistocene)—Youngest rhyolite shown separately as:
Qba88	Rhyolite of Rock Mesa and Devils Hill chain of vents (Holocene)
Qba89	Rhyolite or dacite (Pliocene or Miocene)

Pumice-fall deposits (Pleistocene)

Shoshone Butte Tuff (Pleistocene)

Century Drive Tuff (Pleistocene)

Rhyolite tuff (Pleistocene)

Tumalo Tuff (Pleistocene)

Desert Spring Tuff (Pleistocene)

Basaltic andesite of the Cascade Range

Dacite, rhyolite, and rhyolite of the Cascade Range

Dacite (Pleistocene)—Divided locally into:

Qba90	Dacite of South Sister
Qba91	Dacite of Middle Sister
Qba92	Dacite of Lane Plateau
Qba93	Dacite of Todd Lake
Qba94	Rhyolite (Pleistocene)—Divided locally into:
Qba95	Rhyolite of Tum McArthur Rim
Qba96	Rhyolite (Holocene and Pleistocene)—Youngest rhyolite shown separately as:
Qba97	Rhyolite of Rock Mesa and Devils Hill chain of vents (Holocene)
Qba98	Rhyolite or dacite (Pliocene or Miocene)

Pumice-fall deposits (Pleistocene)

Shoshone Butte Tuff (Pleistocene)

Century Drive Tuff (Pleistocene)

Rhyolite tuff (Pleistocene)

Tumalo Tuff (Pleistocene)

Desert Spring Tuff (Pleistocene)

Basaltic andesite of the Cascade Range

Dacite, rhyolite, and rhyolite of the Cascade Range

Dacite (Pleistocene)—Divided locally into:

Qba99	Dacite of South Sister
Qba100	Dacite of Middle Sister
Qba101	Dacite of Lane Plateau
Qba102	Dacite of Todd Lake
Qba103	Rhyolite (Pleistocene)—Divided locally into:
Qba104	Rhyolite of Tum McArthur Rim
Qba105	Rhyolite (Holocene and Pleistocene)—Youngest rhyolite shown separately as:
Qba106	Rhyolite of Rock Mesa and Devils Hill chain of vents (Holocene)
Qba107	Rhyolite or dacite (Pliocene or Miocene)

Pumice-fall deposits (Pleistocene)

Shoshone Butte Tuff (Pleistocene)

Century Drive Tuff (Pleistocene)

Rhyolite tuff (Pleistocene)

Tumalo Tuff (Pleistocene)

Desert Spring Tuff (Pleistocene)

Basaltic andesite of the Cascade Range

Dacite, rhyolite, and rhyolite of the Cascade Range

Dacite (Pleistocene)—Divided locally into:

Qba108	Dacite of South Sister
Qba109	Dacite of Middle Sister
Qba110	Dacite of Lane Plateau
Qba111	Dacite of Todd Lake
Qba112	Rhyolite (Pleistocene)—Divided locally into:
Qba113	Rhyolite of Tum McArthur Rim
Qba114	Rhyolite (Holocene and Pleistocene)—Youngest rhyolite shown separately as:
Qba115	Rhyolite of Rock Mesa and Devils Hill chain of vents (Holocene)
Qba116	Rhyolite or dacite (Pliocene or Miocene)

(Next two units are not part of the Deschutes Formation as presently defined. They are either of uncertain age relative to Deschutes Formation or relatively isolated from the Deschutes basin)

Basaltic andesite of the Cascade Range

Dacite, rhyolite, and rhyolite of the Cascade Range

Dacite (Pleistocene)—Divided locally into:

Qba117	Dacite of South Sister
Qba118	Dacite of Middle Sister
Qba119	Dacite of Lane Plateau
Qba120	Dacite of Todd Lake
Qba121	Rhyolite (Pleistocene)—Divided locally into:
Qba122	Rhyolite of Tum McArthur Rim
Qba123	Rhyolite (Holocene and Pleistocene)—Youngest rhyolite shown separately as:
Qba124	Rhyolite of Rock Mesa and Devils Hill chain of vents (Holocene)
Qba125	Rhyolite or dacite (Pliocene or Miocene)

Pumice-fall deposits (Pleistocene)

Shoshone Butte Tuff (Pleistocene)

Century Drive Tuff (Pleistocene)

Rhyolite tuff (Pleistocene)

Tumalo Tuff (Pleistocene)

Desert Spring Tuff (Pleistocene)

Basaltic andesite of the Cascade Range

Dacite, rhyolite, and rhyolite of the Cascade Range

Dacite (Pleistocene)—Divided locally into:

Qba126	Dacite of South Sister
Qba127	Dacite of Middle Sister
Qba128	Dacite of Lane Plateau
Qba129	Dacite of Todd Lake
Qba130	Rhyolite (Pleistocene)—Divided locally into:
Qba131	Rhyolite of Tum McArthur Rim
Qba132	Rhyolite (Holocene and Pleistocene)—Youngest rhyolite shown separately as:
Qba133	Rhyolite of Rock Mesa and Devils Hill chain of vents (Holocene)
Qba134	Rhyolite or dacite (Pliocene or Miocene)

Pumice-fall deposits (Pleistocene)

Shoshone Butte Tuff (Pleistocene)

Century Drive Tuff (Pleistocene)

Rhyolite tuff (Pleistocene)

Tumalo Tuff (Pleistocene)

Desert Spring Tuff (Pleistocene)

Basaltic andesite of the Cascade Range

Dacite, rhyolite, and rhyolite of the Cascade Range

Dacite (Pleistocene)—Divided locally into:

Qba135	Dacite of South Sister
Qba136	Dacite of Middle Sister
Qba137	Dacite of Lane Plateau
Qba138	Dacite of Todd Lake
Qba139	Rhyolite (Pleistocene)—Divided locally into:
Qba140	Rhyolite of Tum McArthur Rim
Qba141	Rhyolite (Holocene and Pleistocene)—Youngest rhyolite shown separately as:
Qba142	Rhyolite of Rock Mesa and Devils Hill chain of vents (Holocene)
Qba143	Rhyolite or dacite (Pliocene or Miocene)

Pumice-fall deposits (Pleistocene)

Shoshone Butte Tuff (Pleistocene)

Century Drive Tuff (Pleistocene)

Rhyolite tuff (Pleistocene)

Tumalo Tuff (Pleistocene)

Desert Spring Tuff (Pleistocene)

Basaltic andesite of the Cascade Range

Dacite, rhyolite, and rhyolite of the Cascade Range

Dacite (Pleistocene)—Divided locally into:

Qba144	Dacite of South Sister
Qba145	Dacite of Middle Sister
Qba146	Dacite of Lane Plateau
Qba147	Dacite of Todd Lake
Qba148	Rhyolite (Pleistocene)—Divided locally into:
Qba149	Rhyolite of Tum McArthur Rim
Qba150	Rhyolite (Holocene and Pleistocene)—Youngest rhyolite shown separately as:
Qba151	Rhyolite of Rock Mesa and Devils Hill chain of vents (Holocene)
Qba152	Rhyolite or dacite (Pliocene or Miocene)

Pumice-fall deposits (Pleistocene)

Shoshone Butte Tuff (Pleistocene)

Century Drive Tuff (Pleistocene)

Rhyolite tuff (Pleistocene)

Tumalo Tuff (Pleistocene)

Desert Spring Tuff (Pleistocene)

Basaltic andesite of the Cascade Range

Dacite, rhyolite, and rhyolite of the Cascade Range

Dacite (Pleistocene)—Divided locally into:

Qba153	Dacite of South Sister
Qba154	Dacite of Middle Sister
Qba155	Dacite of Lane Plateau
Qba156	Dacite of Todd Lake
Qba157	Rhyolite (Pleistocene)—Divided locally into:
Qba158	Rhyolite of Tum McArthur Rim
Qba159	Rhyolite (Holocene and Pleistocene)—Youngest rhyolite shown separately as:
Qba160	Rhyolite of Rock Mesa and Devils Hill chain of vents (Holocene)
Qba161	Rhyolite or dacite (Pliocene or Miocene)

Pumice-fall deposits (Pleistocene)

Shoshone Butte Tuff (Pleistocene)

Century Drive Tuff (Pleistocene)

Rhyolite tuff (Pleistocene)

Tumalo Tuff (Pleistocene)

Desert Spring Tuff (Pleistocene)

Basaltic andesite of the Cascade Range

Dacite, rhyolite, and rhyolite of the Cascade Range

Dacite (Pleistocene)—Divided locally into:

✦ **Core hole**—Showing name. Four deep drill-core holes in map area, all within High Cascades. Not shown are numerous rotary-drill holes that have been drilled for water wells throughout the lower elevations of the map area.

❄ **Glacier or perennial snow**—Showing outline of ice and snow fields remaining on four major peaks—Broken Top and North, Middle, and South Sisters—in Cascade Range (southwest corner of map).