U.S. Department of the Interior
U.S. Geological Survey

author: many of the colors used stray from USGS standards (e.g., Jurassic rocks are suggested to be greens, Triassic blues, and Tertiary as muted orange, browns ,and yellowish-oranges. While some deviations is definitely necessary for this map (for example, there are more Qauternary units than suggested Quaternary colors) there are definitely some that stray from the USGS color scheme (for example: the bright yellow unit Ts). With your permission, I can work to come up with a color scheme that more closely follows USGS standards; please let me know if you approve this, and if there are any colors that absolutely need to remain as is for any specific reason.

NOTE: The LMU will likely need to be edited further based on revisions to the DMU/DMU. Please leave any comments on edits you see that need to be made, but note that some of this may be changed during reconciliation and will be revised so it is consistent with the DMU/CMU

CORRELATION OF MAP UNITS

[Queries at tops and (or) bottoms of CMU boxes indicate age uncertainty. See Description of Map Units (in pamphlet) for precise unit ages]

moved the lacustrine deposits to the right side here, based on my suggested edit in the DMU

In the DMU, I've suggested adding "Surficial Deposits" as a header; if that is accepted, then it will be added here at the top of both the CMU and LMU. Let me know if you accept this edit, and I will revise during reconciliation

author: these have been reordered. See edited DMU

Author: "Unconformity" isn't necessary under a major heading, and I've visualized this with a break in the brackets on the right side of the CMU. I edited this here and under the "Cretaceous intrusive rocks" heading

moved these three units to the right so they don't fall under the "Tuff of Poco Canyon" brackets

author: Should these all be "blobs" within Tjc, as I have done above for Tec and the associated megabreccias? Whatever is decided for one (Tec or Tjc) should be used to organize the other as well

"fault" was removed here, as that isn't typically shown on a CMU

"not exposed" was removed here, as that isn't typically shown on a CMU

author: I followed your submitted CMU for the placement of these; however, in the DMU these two units are described as just Triassic, not Upper Triassic. i believe these should likely be below TRca, and just under the "Triassic" bracket to the right. Can you confirm if this is correct, or if they should be left as is? If left as is, the DMU/pamphlet should be revised.

author: Triassic would be considered lower Mesozoic. I suggest adding a third bracket on the far right for Mesozoic, then this can appear where it is just at the bottom of the Mesozoic bracket. Let me know if you are okay with this edit, and I will make it.

LIST OF MAP UNITS

[See Description of Map Units (in pamphlet) for complete unit descriptions.]

ALLUVIAL DEPOSITS

- Qaya — Mainstream alluvium (Holocene)
- Qay — Young alluvial deposits (Holocene)
- Qam — Young to intermediate alluvial deposits (Holocene and late Pleistocene)
- Qai — Intermediate alluvial deposits (late and middle Pleistocene)
- Qao — Old alluvial deposits (middle and early? Pleistocene)
- QTa — Very old alluvial deposits (early Pleistocene and Pliocene?)
- QTs — Very old sediments (early Pleistocene and Pliocene?)

EOLIAN DEPOSITS

- Qes — Eolian sand (Holocene to middle Pleistocene)

BASIN-FILL DEPOSITS

- Qbf — Basin-fill deposits (Holocene to middle Pleistocene)

COLLUVIAL, ALLUVIAL, AND MASS-WASTING DEPOSITS

- Qtc — Talus, colluvium, and alluvium, undivided (Holocene to middle Pleistocene)
- Qls — Landslide deposits (Holocene to middle Pleistocene)

LACUSTRINE DEPOSITS

- Qlb — Beach and shoreline deposits of Lake Dixie (late Pleistocene)
- Qlf — Sediments of Lake Dixie (late Pleistocene)
- Qlbl — Beach and shoreline deposits of Lake Lahontan (late Pleistocene)
- Qlfl — Sediments of Lake Lahontan (late Pleistocene)
- Qtf — Tufa deposits (late Pleistocene)
- Qlfo — Older sediments of Lake Dixie (middle Pleistocene)

CENOZOIC VOLCANIC, SEDIMENTARY, AND INTRUSIVE ROCKS

- Tb — Basalt (Miocene)
- Tbi — Basalt intrusions (Miocene)
- Tbs — Basaltic sedimentary rocks (Miocene)
- Td — Diabase (Miocene)
- Tya — Andesite (Miocene)
- Tddc — Dacite of Diamond Canyon (Miocene)
- Tddcl — Porphyritic dacite intrusions (Miocene)
- Tha — Horndblende andesite (Miocene)
- Ts — Sedimentary rocks (Miocene)
- Tlb — Landslide breccia (Miocene)
- Tsd — Silicic dikes (Miocene)
- Tr — Rhyolite (Miocene or Oligocene)
- Tdi — Dacite intrusions (Miocene? and Oligocene)
- Tyr — Younger Rhyolite (Oligocene)
- Tsi — Silicic intrusive rocks (Oligocene)
- Tts — Tuffs and sedimentary rocks (Oligocene)

Freeman Creek pluton (Oligocene)

- Tfcgr — Granite
- Trp — Rhyolite porphyry
- Tfcgd — Granodiorite porphyry
- Tgp — Granite porphyry

Elevenmile Canyon caldera (Oligocene)

- Tsf — Silicic lava flows
- Tst — Sedimentary tuff unit
- Tec — Tuff of Elevenmile Canyon
- Tecx — Megabreccia
- a — Megabreccia blocks of Andesite of Sheep Canyon within tuff of Elevenmile Canyon
- m — Megabreccia blocks of marble
- s — Megabreccia blocks of black argillite
- Tasc — Andesite of Sheep Canyon

Poco Canyon caldera (Oligocene)

Tuff of Poco Canyon

- Tpcu — Upper cooling unit
- r — Megabreccia blocks of underlying tuff and breccia of Government Trail Canyon and rhyolite of Pirouette Mountain
- Tpbr — Tuff and breccia of Government Trail Canyon
- Tpsb — Sandstone and breccia
- Tpcl — Lower cooling unit
- Trelc — Rhyolite of East Lee Canyon (Oligocene)
- Tupc — Tuff of the upper part of Poco Canyon (Oligocene)
- Tjp — Tuff of Job Peak (Oligocene)
- pa — Blocks of propylitized andesite
- Tap — Andesite porphyry (Oligocene)
- Tot — Older tuffs (Oligocene)
- Trpm — Rhyolite of Pirouette Mountain (Oligocene)
- Tixl — IXL pluton (Oligocene)
- Tdg — Diorite and granodiorite (Oligocene)
- Tor — Older rhyolite (Oligocene)

Younger dacite and andesite (Oligocene)

- Tyda — Younger dacite and andesite unit, undivided
- Tydai — Dacite and andesite intrusions
- Tydas — Lacustrine sedimentary rocks
- Tydat — Dacite tuff

Job Canyon caldera (Oligocene)

- Tjc — Tuff of Job Canyon
- Tjcx — Megabreccia, undivided
- ms — Brecciated metashale and metasiltsone in the Tuff of Job Canyon
- Tjcxv — Metavolcanic megabreccia
- Tjcxq — Quartzite megabreccia

Older dacite and andesite unit (Oligocene)

- Todt — Dacite tuff
- Tolf — Lava flows
- Tobr — Breccia, conglomerate, and tuffs

CRETACEOUS INTRUSIVE ROCKS

- Klp — La Playa Canyon pluton (Cretaceous)
- Kf — Felsite (Cretaceous)

MESOZOIC METASEDIMENTARY AND METAVOLCANIC ROCKS

LA PLATA CANYON AREA

Mountain Well sequence (Early Cretaceous?)—Divided into:

- Kmv — Andesitic metavolcanic rocks
- Kms — Metasedimentary rocks
- Kmd — Dacitic volcanic-felsite flows and sedimentary breccia

Clan Alpine sequence (Lower Jurassic and Upper Triassic)—Divided into:

- J̄Ŧcl — Upper limestone (Lower Jurassic and (or) Upper Triassic)
- Ŧcl — Lower limestone (Upper Triassic)
- Ŧca — Argillite (Upper Triassic)

Lower plate of the La Plata Fault

- Mɨp — Phyllite (lower Mesozoic?)

COX AND I X L CANYONS AREA

- Jrmb — Rhyolite megabreccia (Upper Jurassic)
- Jq — Quartzite (Middle and (or) Lower Jurassic)

Clan Alpine sequence (Triassic)—Divided into:

- Ŧcs — Calcareous siltstone and sandstone (Triassic)
- Ŧs — Siltstone and argillite (Triassic)

currently, this is the only unit where I need to change to text to white for readability. We can also tinker with the color of the unit to make it a bit lighter, if you'd like all the text to remain black and consistent

author: The color of either units or unit Ŧca should be changed so they aren't the same color. I suggest darkening unit s a bit so the same color scheme is maintained, while still being able to tell the two units apart.

Same goes for units a and Tasc, though in this case I suggest lightening Tasc and leaving unit a as is

author: The color of one of these units should be changed, so it is easier to tell them apart where not labelled. I understand that unit pa are block of Tap, so I think keeping the same color scheme but lightening/darkening one of them is the way to go. I suggest darkening pa, since it is the smaller mapped unit

Same question as in the CMU - should these be subunits of Tjc? I think these units should be treated the same as Tec and the associated megabreccias
Note: the LMU was my first attempt at organizing these, but this will definitely need to be revised based on the revisions in the DMU/CMU

author: for now, I have left the dikes symbolized as the undecorated red line (1.03.01) rather than the 4th option as listed in the geodatabase (1.03.07). I think this works well symbolized as a plain, undecorated red line, however if you want to stick with the decorated 4th option I can change this.

I also had to add a symbol for the neatline; for now this is the FGDC standard 0.25mm black line, but this can change.
Because the neatline is not the same as the extent of geologic mapping, I have also added a symbol for that (the color will likely change). The other option is moving the neatline to the extent of geologic mapping.

Author: because this figure is shown on the map sheet, I don't think it's necessary to show those boundaries on the map itself. Removing these on the main geologic map will help avoid some extra clutter; I've removed these boundaries for now, but if you disagree, let me know; we will need to add these boundaries to the explanation of map symbols if they are used.

Note: In the estimate, it's mentioned that figure 3 should appear on the map sheet. I've placed the current version of it here as a placeholder, and if you have any comments or suggestions on placement, let me know; however, all comments and figure edits will appear on the version in the PDF with all other figures. After i receive your figure comments/edits I will send them to our VIS, and once they have a revised version of figure 3 I will replace the version currently on this map sheet.

should these three units be subunits of Tyda?

EXPLANATION OF MAP SYMBOLS

[Ar, argon; K, potassium; U, uranium; Pb, lead; SHRIMP, sensitive high-resolution ion microprobe]

Contact—Solid where location is accurate; long-dashed where location is approximate

Fault—Solid where location is accurate; long-dashed where location is approximate; short-dashed where location is inferred; dotted where location is concealed; queried where identity or existence is questionable

- **Fault, sense of slip unspecified**
- **Normal fault**—Ball and bar on downthrown block
- **Thrust fault**—Sawteeth on upper plate
- **Low-angle normal fault**—Half circles on downthrown block
- **Dike**
- **Neatline**
- **Limit of geologic mapping**

PLANAR POINT FEATURES

Bedding—Showing strike and dip

- 20 — Inclined
- Horizontal
- Vertical

Metamorphic foliation—Showing strike and dip

- 20 — Inclined
- Vertical

Flow foliation—Showing strike and dip

- 10 — Inclined
- Vertical

Eutaxitic foliation—Showing strike and dip

- 5 — Inclined
- Vertical

Sample localities—Showing sample number; sample numbers refer to table 1

- H06-33 — $^{40}Ar/^{39}Ar$ sample
- 89-DJ-1 — K-Ar sample
- 17-DJ-1 — U-Pb SHRIMP sample

Figure 3. Index map showing principal sources of previous geologic mapping used as a basis for the new geologic map, which is demarcated by heavy black line. Dashed lines show outlines of 7-1/2 minute quadrangles with quadrangle names in italics.

Geologic Map of the Southern Stillwater Range, Nevada

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