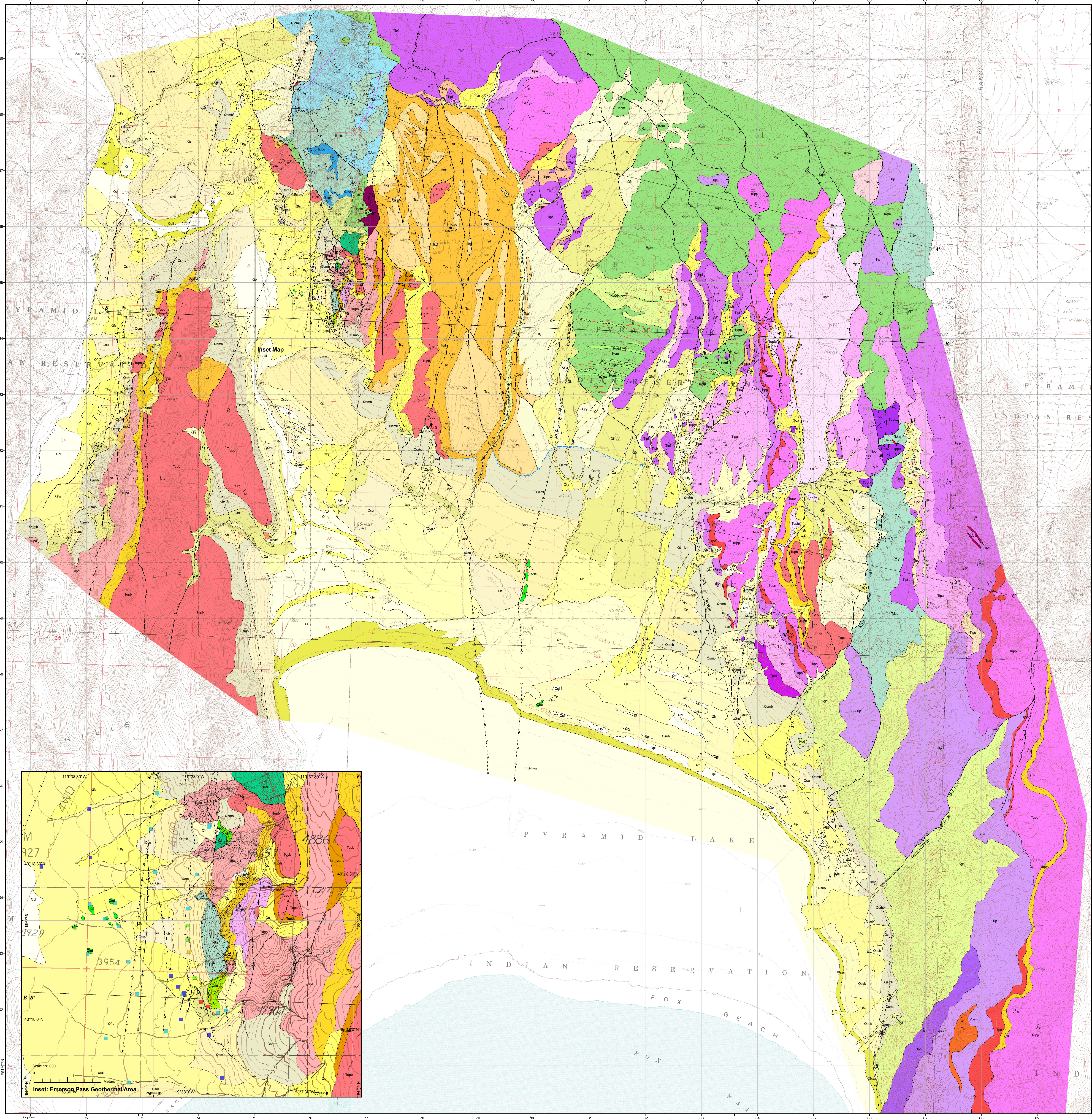
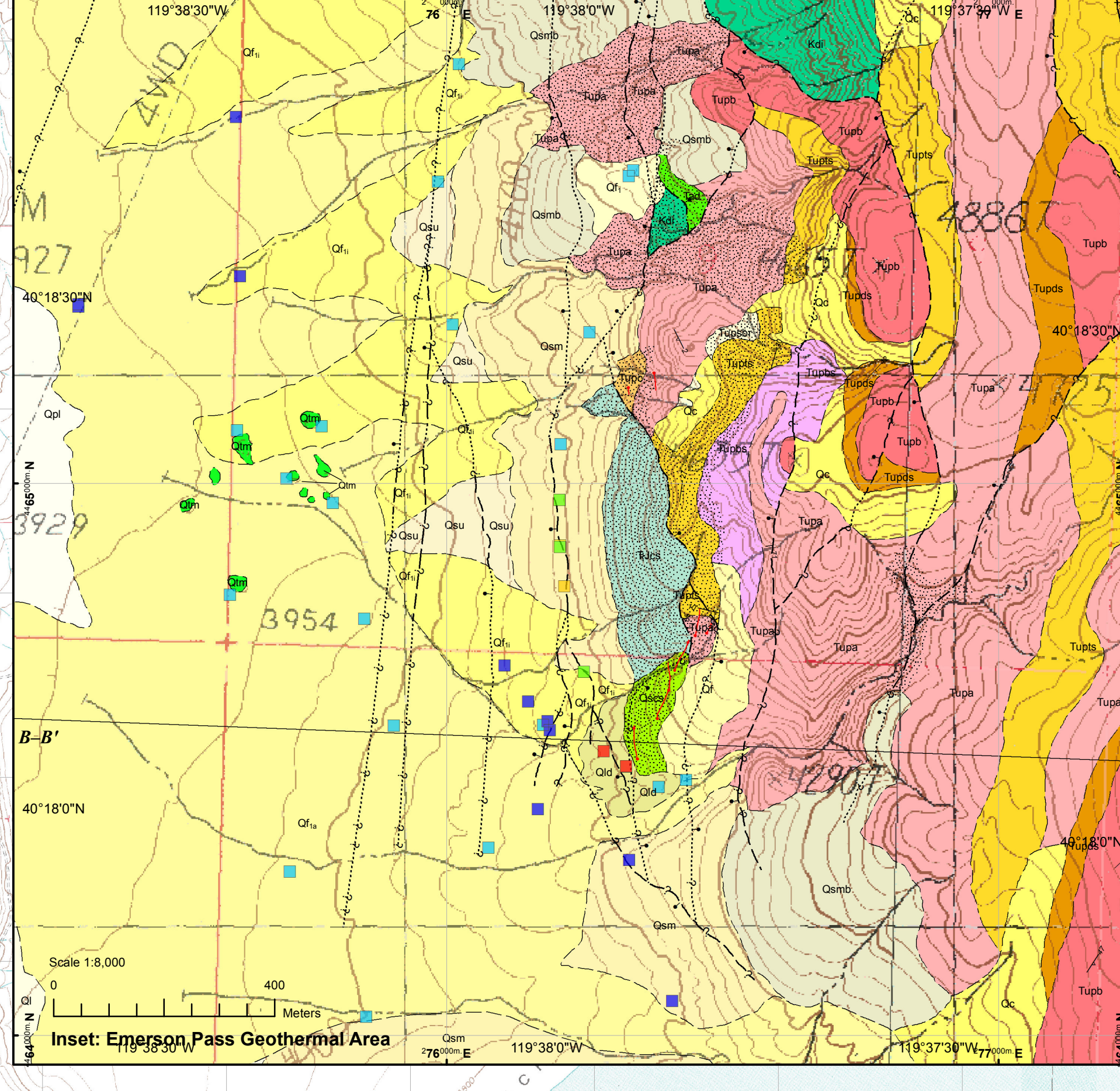


PRELIMINARY GEOLOGIC MAP OF THE CENTRAL LAKE RANGE, SOUTHERN FOX RANGE, AND NORTHERN TERRACED HILLS, EMERSON PASS GEOTHERMAL AREA, WASHOE COUNTY, NEVADA

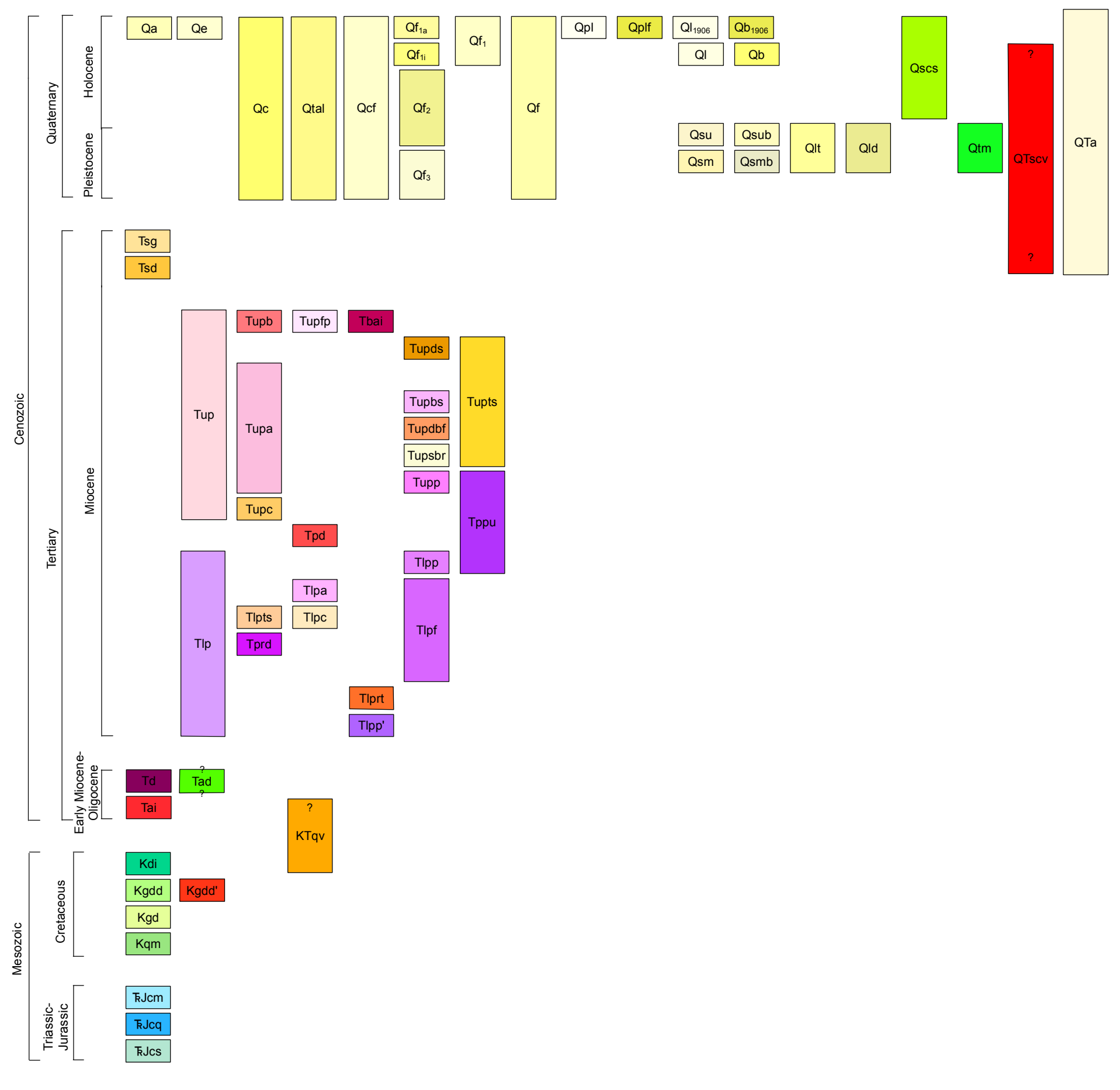
Ryan B. Anderson, James E. Faulds, and Gregory M. Dering
Nevada Bureau of Mines and Geology
2013



Inset Map



- Quaternary Deposits**
 - Alluvial and Hillslope Deposits**
 - Qa Active stream channels and channel deposits
 - Qd Alluvial fan deposits
 - Qcl Colluvium
 - Qclm Tails and lesser colluvium
 - Qclf Colluvium and fan, undivided
 - Qf Fan alluvium, undivided
 - Qfa Young active fan alluvium
 - Qfay Young inactive, recently abandoned fan alluvium
 - Qfy Young active fan alluvium and recently abandoned fan alluvium, undivided
 - Qia Intermediate fan alluvium, undivided
 - Qif Old fan alluvium, undivided
 - Playa and Related Deposits**
 - Qpl Playa deposits
 - Qplf Playa fringe deposits
- Historic Lacustrine Deposits Associated with 1906 Pyramid Lake Level at -1180 M**
 - Qlms Shallow water and near shore deposits
 - Qlmsr Beach ridge deposits
 - Qlmsl Lacustrine deposits associated with Lake Holocene Rise of Pyramid Lake at -1129 M
 - Qlms2 Shallow water and near shore deposits
 - Qlms3 Beach ridge deposits
- Sesuvio Alluviation**
 - Qsa Wave form silt deposits
 - Qsua Lacustrine sediments of the upper Sesuvio Alluviation
 - Qsua2 Beach and bar deposits associated with the upper Sesuvio Alluviation
 - Qsua3 Lacustrine sediments of the middle Sesuvio Alluviation
 - Qsua4 Beach and bar deposits associated with the middle Sesuvio Alluviation
 - Qsua5 Channel
- Hydrothermal and Spring Related Deposits**
 - Qhs Silica and calcite cemented sediments
 - Qhs2 Subaqueous spring-related silt deposits
 - Qhs3 Silica and calcite veins and travertine mounds
 - Qhs4 Basin fill alluvium, undivided, in cross-section only
- Late Tertiary Sediments and Sedimentary Rocks**
 - Tu1 Unconsolidated sand and gravel
 - Tu2 Fine-grained sandstone, siltstone, diatomaceous shales, and unconsolidated sediments
- Middle Miocene Pyramid Sequence**
 - Pu1 Upper Pyramid sequence, undivided
 - Pu2 Basaltic andesite dikes
 - Pu3 Aphanitic basaltic andesite
 - Pu4 Finely porphyritic to porphyritic basaltic andesite
 - Pu5 Tuftaceous sedimentary rocks
 - Pu6 Basaltic sedimentary rocks
 - Pu7 Basaltic flow
 - Pu8 Sedimentary Breccia
 - Pu9 Aphanitic Andesite
 - Pu10 Volcaniclastic pebble conglomerate
 - Pu11 Porphyritic basaltic andesite
 - Pu12 Porphyritic basaltic andesite, undivided
 - Pu13 Porphyritic dacite
 - Pu14 Lower Pyramid sequence, undivided
 - Pu15 Porphyritic basaltic andesite
 - Pu16 Aphanitic andesite
 - Pu17 Volcaniclastic pebble conglomerate
 - Pu18 Tuftaceous sedimentary rocks and reworked ash
 - Pu19 Aphyric rhyolite
 - Pu20 Finely porphyritic basaltic andesite
 - Pu21 Lithic rhyolite tuff
 - Pu22 Coarsely porphyritic basaltic andesite
- Basalts**
 - Ba1 Aphanitic basaltic andesite
 - Ba2 Basaltic flow
 - Ba3 Sedimentary Breccia
 - Ba4 Aphanitic Andesite
 - Ba5 Volcaniclastic pebble conglomerate
 - Ba6 Porphyritic basaltic andesite
 - Ba7 Porphyritic basaltic andesite, undivided
 - Ba8 Porphyritic dacite
 - Ba9 Lower Pyramid sequence, undivided
 - Ba10 Porphyritic basaltic andesite
 - Ba11 Aphanitic andesite
 - Ba12 Volcaniclastic pebble conglomerate
 - Ba13 Tuftaceous sedimentary rocks and reworked ash
 - Ba14 Aphyric rhyolite
 - Ba15 Finely porphyritic basaltic andesite
 - Ba16 Lithic rhyolite tuff
 - Ba17 Coarsely porphyritic basaltic andesite
- Early Miocene to Oligocene Volcanic Rocks**
 - V1 Porphyritic dacite
 - V2 Altered porphyritic dacite (?)
 - V3 Coarsely porphyritic andesite intrusion
- Quaternary Intrusive Rocks**
 - I1 Mineralized quartz veins associated with the Packard and Sano Mines
 - I2 Fine-grained diorite
 - I3 Fine- to medium-grained granodiorite dikes
 - I4 Fine- to medium-grained granodiorite dikes
 - I5 Diorite
 - I6 Quartz monzonite
 - I7 Granite
- Mesozoic Metasedimentary Rocks of the Cottonwood Canyon Formation (Kinoshita, 2010)**
 - M1 Marble with lesser slate
 - M2 Quartzite
 - M3 Slate with lesser marble and quartzite



Symbology (see FGDC-STD-015-2006)

Contact: Solid where certain and location accurate; long-dashed where approximate; short-dashed where inferred; dotted where concealed.

Normal fault: Showing top of fault and level of stress on the fault surface (arrow); top or downthrown side; solid where certain and location accurate; long-dashed where approximate; dotted where concealed; quoted if identity of downthrown side is uncertain.

Mainly strike-slip fault: Solid where certain and location accurate; long-dashed where approximate; dotted where concealed; quoted if identity of downthrown side is uncertain.

Arcticite: Long-dashed where approximate.

Syncline: Long-dashed where approximate.

Fanmer shoreline, highest of Lake Lahontan: Long-dashed where approximate.

- Mineralized quartz veins
- Silica and calcite veins
- Silica and calcite veins

Vein, veinlet, or mineralized stringer: Solid where certain and location accurate.

Alluvium: Clay alteration, silica and calcite flooding and cementation, lesser pyrite.

Alteration: Clay alteration, silica and calcite flooding and cementation, lesser pyrite.

Strike and dip of bedding: Solid where certain and location accurate.

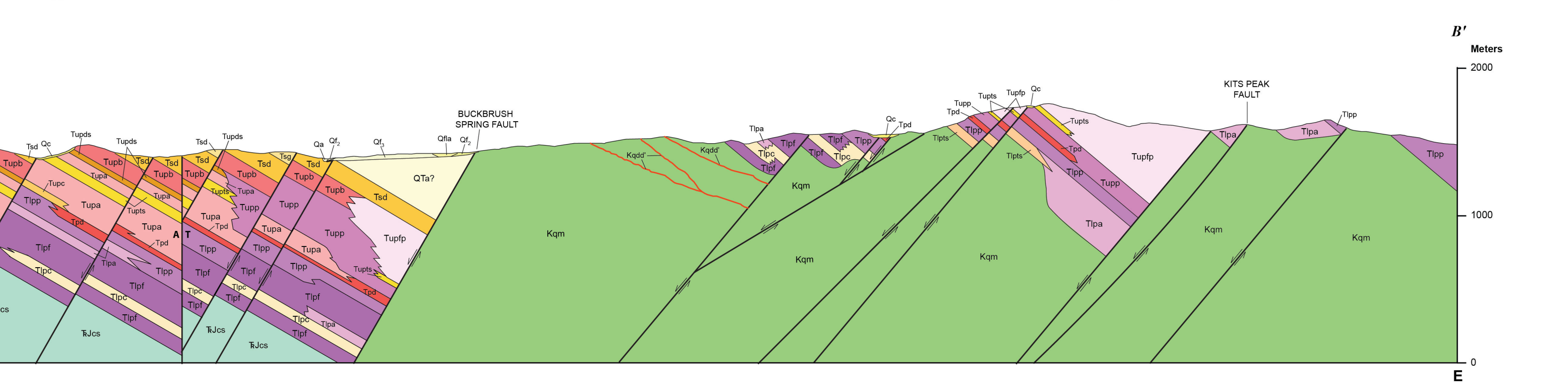
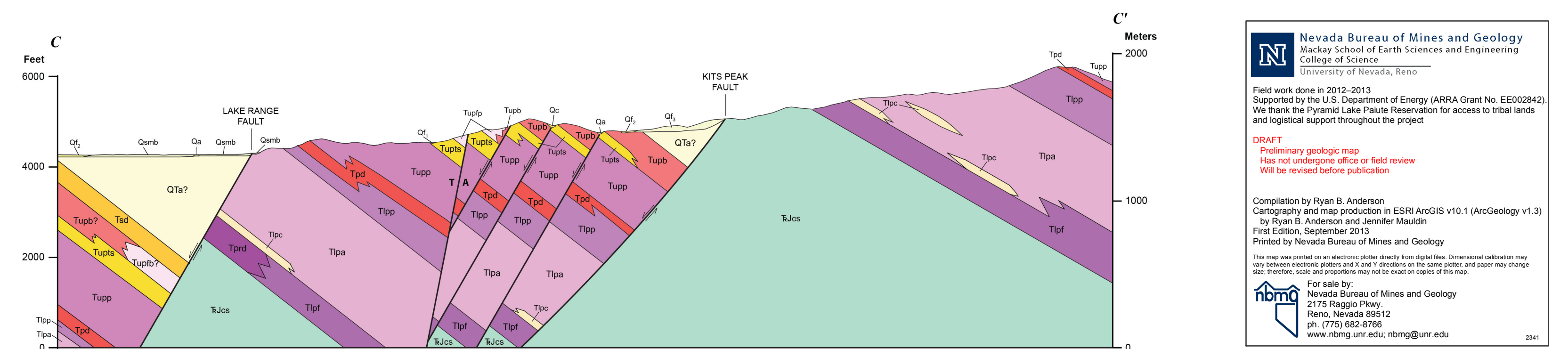
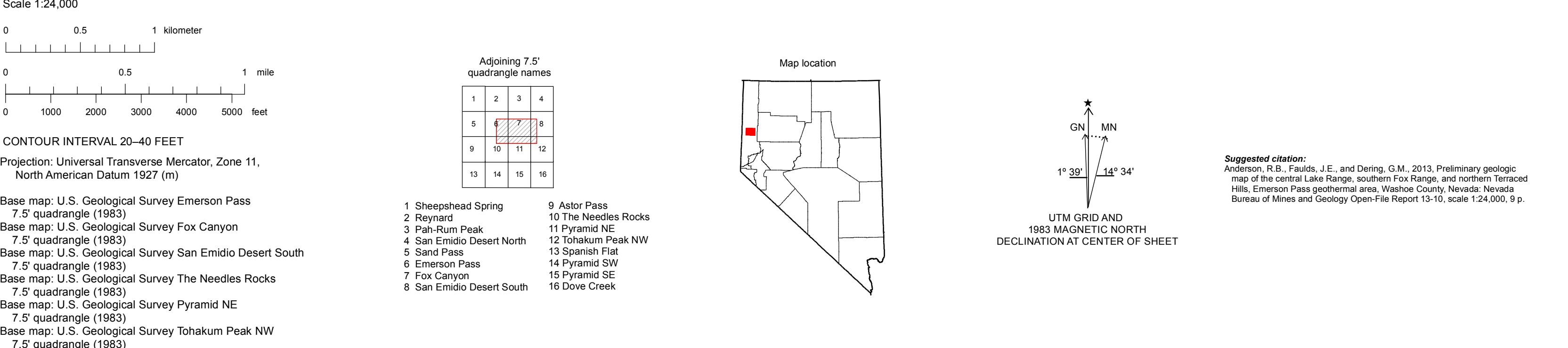
Strike and dip of foliation in metamorphic rock: Solid where certain and location accurate.

Strike and dip of flow banding or flow foliation in volcanic rock: Solid where certain and location accurate.

Line of cross section: Solid where certain and location accurate.

RA100

***An*/An Sample locality**



NEVADA BUREAU OF MINES AND GEOLOGY
Nevada State Office of Earth Sciences and Engineering
University of Nevada, Reno

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Map scale: 1:24,000
Scale bar: 0 to 1 mile
UTM GRID AND 1983 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET