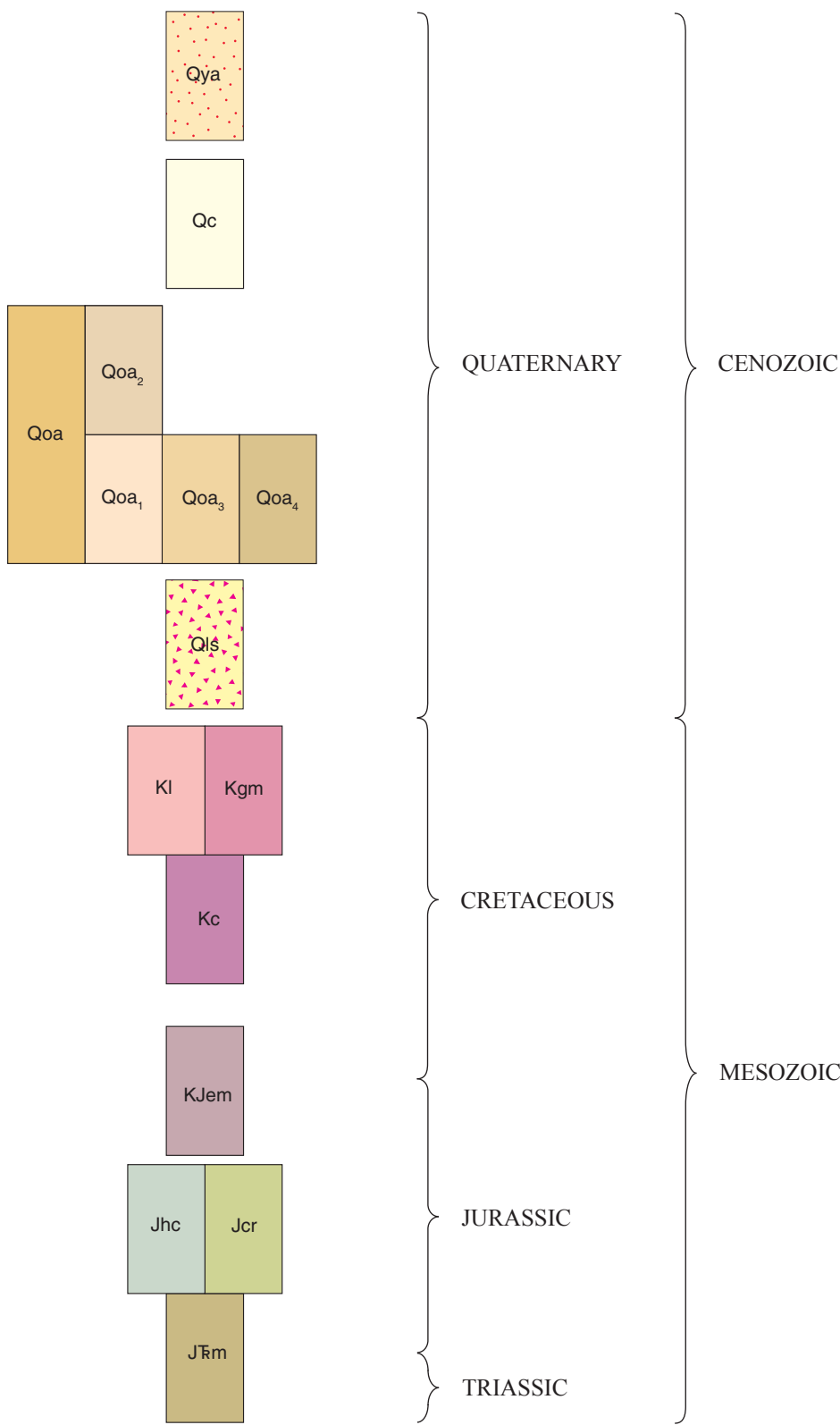


CORRELATION OF MAP UNITS



LIST OF MAP UNITS

- Oya** Younger alluvium (Quaternary)—Sand, silt, and gravel in modern washes
- Oc** Colluvium (Quaternary)—Sand, silt, and gravel on hillslopes; grades locally to younger alluvium
- Qoa** Older alluvium, undivided (Quaternary)—Dissected sand and gravel of alluvial fans and terraces in modern washes
- Qoa1** Older alluvium (Quaternary)—Older materials of alluvial fan on west side of San Felipe Valley
- Qoa2** Older alluvium (Quaternary)—Younger materials of alluvial fan on west side of San Felipe Valley
- Qoa3** Older alluvium (Quaternary)—Coarse alluvium beneath slide or thrust of crystalline rocks in the east wall of Banner Canyon
- Qoa4** Older alluvium (Quaternary)—Alluvium at southeast end of Rodriguez Canyon composed of boulders of tonalite of Granite Mountain
- Qoa5** Landslide deposits (Quaternary)—Landslides, slumps, and debris flows; arrows indicate direction of movement
- Kl** Leucocratic dikes (Cretaceous)—Dikes consisting of pegmatite, alkali, and leucogranite
- Kgm** Tonalite of Granite Mountain (Late Cretaceous)—Biotite-hornblende tonalite; hornblende-biotite tonalite and lesser granodiorite; minor quartz diorite. Medium- to coarse-grained; weak to mylonitic foliation. C.I. from 17-27
- Kc** Cuyamaca Gabbro (Early Cretaceous)—Interior of large plutons: hornblende-bearing troctolite; anorthositic gabbro ± amphibole ± opx ± olivine; amphibole-olivine gabbro; minor hornblende diorite, leucodiorite ± pyroxene ± biotite. Fine- to medium-grained smaller bodies, marginal zones of large plutons: hornblende gabbro ± opx ± cpx ± biotite. Moderately to strongly foliated
- KJem** Quartz diorite of East Mesa (Cretaceous and Jurassic)—Fine- to medium-grained, gneissic biotite-hornblende tonalite and quartz diorite; and fine-grained (quenched), locally porphyritic biotite-hornblende quartz diorite and tonalite; lesser diorite, granodiorite, quartz monzonite, and gabbro. Texturally and compositionally heterogeneous. Strongly foliated to mylonitic. Some rocks contain hypersthene ± clinopyroxene
- Jcr** Granodiorite of Cuyamaca Reservoir (Jurassic)—Biotite- and hypersthene-biotite granodiorite and tonalite ± actinolitic amphibole ± hornblende. Contains sphene, ilmenite, allanite. Fine- to medium-grained, gneissic, locally mylonitic. C.I. = 16-30
- Jhc** Harper Creek Gneiss (Jurassic)—Biotite granodiorite and tonalite, lesser monzogranite; mylonitic rocks are quartz-rich granitoids. Contains graphite, muscovite, tourmaline, ilmenite, sillimanite (mostly fibrous habit), cordierite, garnet. Fine- to coarse-grained, gneissic to mylonitic. Average C.I. is 22
- Jlm** Julian Schist (Jurassic and Triassic)—Interlayered, intergradational semi-pelitic, pelitic, and quartzitic schists; calcisilicate-bearing feldspathic metagranite; and minor small-pebble metaconglomerate, metastuff, and orthoamphibolite; metamorphosed to amphibolite facies. Protoliths interpreted as turbidites deposited on submarine fan complex that received intermittent basaltic flows and sills

EXPLANATION OF MAP SYMBOLS

- Contact**—Solid where well located, dashed where approximately located, dotted where concealed, queried where location is questionable
- High-angle fault**—Solid where well located, dashed where approximately located, queried where probable, dotted where concealed; bar and ball on downthrown side; arrow shows direction and amount of dip of fault plane; diamond symbol shows direction and amount of plunge of linear features on fault plane or gouge zone; arrows indicate sense of lateral displacement
- Low-angle fault or glide plane**—Dashed where approximately located; teeth on upper plate
- Lineament, possible fault**
- Incipient slump, hachure indicates direction of possible movement**
- Strike and dip of small fault or gouge zone (≤ 25 cm thick)**—Diamond symbol shows direction and plunge of linear features on fault plane
- Inclined
- Vertical
- Strike and dip of mineral foliation in crystalline rocks**
- Inclined
- Vertical
- Strike and dip of overturned bedding in metasedimentary rocks**
- Direction and plunge of lineation within plane of foliation**
- Small fold (wavelength ≤ 1 m) showing fold profile**—Vergence (double arrows indicate steeper limb), direction ± amount of plunge
- Syncline (isoclinal)
- Anticline (Chevron)
- Landslide**—Arrows indicate direction of movement
- Spring or seep**

Geologic Map of the Julian 7.5' Quadrangle, San Diego County, California

By
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2015

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