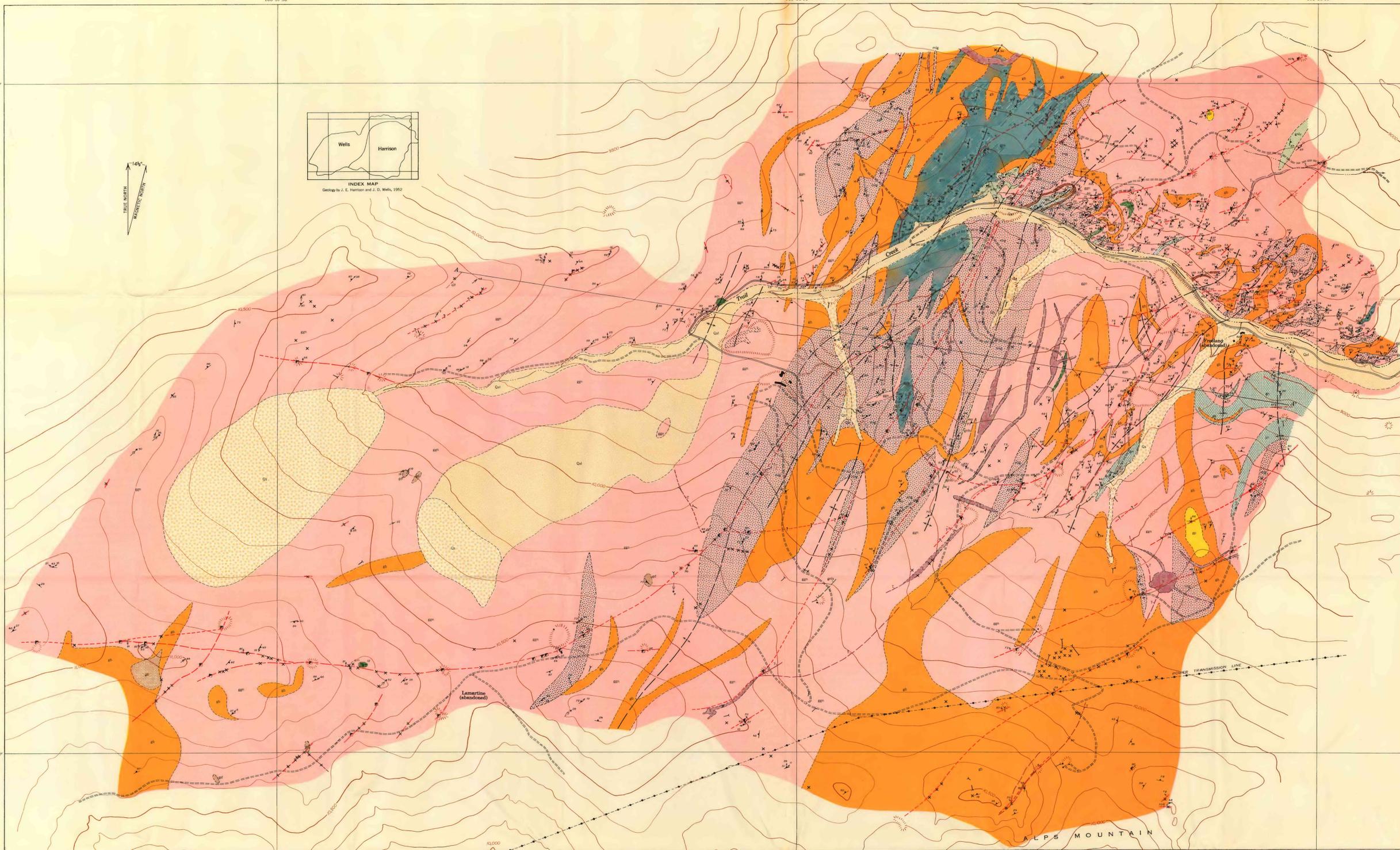




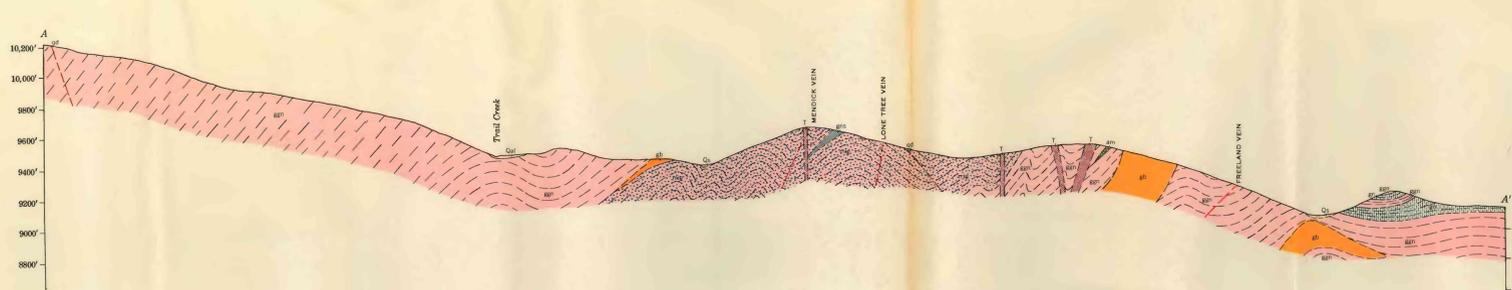
INDEX MAP
Geology by J. E. Harrison and J. D. Walls, 1952



- EXPLANATION**
- Alluvium
 - Archean gneiss
Archean-age debris, thin to thick, Wisconsin age composed of poorly sorted silt, sand, and pebbles
 - Shale deposits
Silicified debris of probably early Wisconsin age composed of unsorted silt to sand-size rock fragments
 - Intrusive dikes and plugs
Light-colored to buff porphyritic to microphyritic rocks of acidic composition
 - Granite pegmatite
Pink to white coarse-grained granite composed essentially of muscovite and quartz with some albite, locally contains inclusions of mica or mica
 - Biotite-muscovite granite
Gray to tan fine- to medium-grained, foliated biotite-muscovite granite, fine-grained facies is equigranular, medium-grained facies is seriate porphyritic
 - Granodiorite
Gray medium- to coarse-grained usually well-foliated granodiorite, some of the rock is granodioritic
 - Granite gneiss and pegmatite
Pink to white medium- to coarse-grained and pegmatitic granodioritic gneiss and pegmatite, locally contains muscovite, quartz, or albite inclusions. Inclusions to the coarse range in thickness from thin biotite plaques to distinct layers of muscovite, sillimanite biotite-quartz gneiss, or biotite-quartz gneiss
 - Migmatite
A mixed rock consisting principally of biotite-quartz gneiss with thin layers and pods of granite gneiss and pegmatite along the foliation planes, locally contains muscovite, quartz, or albite inclusions. Inclusions to the coarse range in thickness from thin biotite plaques to distinct layers of muscovite, sillimanite biotite-quartz gneiss, or biotite-quartz gneiss
 - Quartz diorite and associated hornblende
Black fine- to coarse-grained quartz diorite consisting principally of quartz, hornblende, and plagioclase, locally contains small amounts of biotite. Usually massive, but local schistosity and some folding
 - Lime silicate gneiss
Bright green to greenish-black fine- to coarse-grained gneiss consisting principally of quartz, epidote, hornblende, and pyroxene. Includes hornblende schistose rocks, locally contains thin layers of quartz gneiss
 - Amphibole
Black to greenish black fine- to medium-grained usually massive; contains principally of hornblende, muscovite, albite, and quartz, locally contains pyroxene-rich layers
 - Sillimanite biotite-quartz gneiss
Mottled black and gray medium-grained gneiss consisting principally of biotite, sillimanite, and quartz, locally contains many sillimanite gneiss, muscovite, and thin layers of granite gneiss and pegmatite
 - Biotite-quartz gneiss
Black to mottled gray and black fine- to medium-grained gneiss consisting principally of biotite and quartz, locally granoblastic or sillimanitic. All but the porphyroblastic varieties are usually massive. Locally contains layers of sillimanite biotite-quartz gneiss, muscovite, and granite gneiss and pegmatite

- Contact, showing dip
Dashed where approximately located, short dashed where inferred or hypothetical
- Anticline
Showing approximate trace of axial plane
- Syncline
Showing approximate trace of axial plane
- Overturned anticline
Showing approximate trace of axial plane and direction of dip of limbs
- Plunge of minor anticline
- Plunge of minor syncline
- Strike and dip of foliation
- Strike and dip of foliation and plunge of lineation
More than one lineation shown where measured
- Strike and dip of foliation and horizontal lineation
- Strike of vertical foliation
- Strike of vertical foliation and plunge of lineation
- Bearing and plunge of lineation
- Horizontal lineation
- Vain, showing dip
Dashed where approximately located, short dashed where inferred, dotted where concealed. In upper half, C, downthrow side
- Vain, showing true strike and dip
- Vertical vein
- Vain, indicating probable location
- Collar of shaft
- Portal of shaft
- Trench
- Prospect pit
- Dump

Base map by U. S. Geological Survey from aerial photographs



GEOLOGIC MAP AND SECTION OF THE FREELAND-LAMARTINE DISTRICT, CLEAR CREEK COUNTY, COLORADO

Scale: 0 to 2000 Feet
Contour interval 100 feet
Datum to mean sea level