

Boulder County

Gold Hill District

Mining in the Gold Hill District was set off by placer discoveries starting in December of 1859. Lode gold was discovered the following summer and the district grew as thousands of miners moved in. The rush didn't last long, and scaled back. Mining was rejuvenated by the discovery of gold tellurides in 1872. Later bursts of activity occurred in 1898 (when a railroad was completed between Boulder and Ward) and in 1934. Nearly all mining ended by 1942.

The district covers roughly 12 square miles west of Boulder. Included is the Sugarloaf District. The towns of Gold Hill, Rowena, Glendale, Sunshine, Wallstreet, Salina and Crisman populated the area. A hundred mines appear on plate 23 in Lovering and Goddard (1950), indicating the intense prospecting and mining that occurred in the district through the years.

The best figures for production include the Sugarloaf District (which mostly lies within the boundaries of the Gold Hill District), indicate ore production of 706,293 tons with about \$78 million at the time. Aggregated estimates from Vanderwilt (1947), Del Rio (1960) and Lovering and Goddard (1950), the combined Gold Hill/Sugarloaf Districts produced at least 690,000 ounces of gold from 1859 to 1980. From Vanderwilt (1947), during the period 1932 to 1945, the district produced 244,391 ounces of silver, 536,630 pounds of copper, 995,080 pounds of lead and 76,700 pounds of zinc.

The production has always been from fissure veins, mostly 5-feet in width, but up to 15-feet. Nearly all the important veins occur near breccia zones. Seracitic wallrock alteration is characteristic. Del Rio (1960) stated that exploration indicates that mineralization does not extend much beyond 1000 feet in depth. Few mines reached depths greater than 500 feet.

Ore grades ranged from 1 to 10 ounces of silver and 1/2 to 2 ounces of gold per ton. Gold tellurides have been the most important with petzite (Ag_3AuTe_3), sylvanite ($[\text{Au,Ag}]_2\text{Te}_4$), calaverite/krennerite (AuTe_2)/($[\text{AuAg}]\text{Te}_2$), hessite (Ag_2Te) and altaite (PbTe) present along with native gold. Subordinate sphalerite, galena, auriferous pyrite, auriferous chalcopyrite, and tennantite (copper arsenic sulfide) also occurred.

While gold was the main focus, and silver very important, the Boulder Tungsten Belt runs through the Gold Hill District and tungsten was produced in the Logan vein (5 to 10% WO_3). Another unusual occurrence is that of nickel-cobalt ore at the Copper King Mine. Of Precambrian age, the ores include pyrite and arsenopyrite, pyrrhotite, sphalerite, chalcopyrite and the nickel minerals pentlandite (NiFeS), polydymite (Ni_3S_4), Bravoite (Fe,NiS_2), Violarite ($\text{Ni,Fe}_3\text{S}_4$), Cobaltite CoAsS , Nickeline NiAs , and Millerite NiS . Goddard and Lovering (1942) interpreted the deposit to occur in a metagabbro, intruded into the schists of the Idaho Springs Formation.

Minerals reported from the Gold Hill District (Mindat.org) include those below:

[Aikinite](#) - PbCuBiS_3

[Altaite](#) - PbTe

[Ankerite](#) - $\text{Ca}(\text{Fe,Mg,Mn})(\text{CO}_3)_2$

[Antimony](#) - Sb

[Arsenopyrite](#) - FeAsS

[Beryl](#) - $\text{Be}_3\text{Al}_2\text{Si}_6\text{O}_{18}$

[Biotite](#) - $\text{K}(\text{Mg,Fe})_3(\text{Al,Fe})\text{Si}_3\text{O}_{10}(\text{OH,F})_2$

[Bismuth](#) - Bi

[Bornite](#) - Cu_5FeS_4

[Boulangerite](#) - $\text{Pb}_5\text{Sb}_4\text{S}_{11}$

[Calaverite](#) - AuTe_2

Calcite - CaCO_3
Chalcocite - Cu_2S
Chalcopyrite - CuFeS_2
Chlorargyrite - AgCl
'Chlorite Group' -
Chrysocolla - $(\text{Cu,Al})_2\text{H}_2\text{Si}_2\text{O}_5(\text{OH})_4 \cdot n\text{H}_2\text{O}$
Cobaltite - CoAsS
Coloradoite - HgTe
Covellite - CuS
Empressite - AgTe
Ferberite - FeWO_4
Fizélyite - $\text{Pb}_{14}\text{Ag}_5\text{Sb}_{21}\text{S}_{48}$
Fluorite - CaF_2
Freibergite - $(\text{Ag,CuFe})_{12}(\text{Sb,As})_4\text{S}_{13}$
Fülöppite - $\text{Pb}_3\text{Sb}_8\text{S}_{15}$
Galena - PbS
'Garnierite' - hydrous Ni silicates
Gold - Au
var: Electrum
Graphite - C
Hematite - Fe_2O_3
Hessite - Ag_2Te
Hübnerite - MnWO_4
Iodargyrite - AgI
Jamesonite - $\text{Pb}_4\text{FeSb}_6\text{S}_{14}$
'K Feldspar' - KAlSi_3O_8
Krennerite - $(\text{Au,Ag})\text{Te}_2$
Limonite - nonspecific iron oxides
Magnetite - Fe_3O_4
Malachite - $\text{Cu}_2(\text{CO}_3)(\text{OH})_2$
Marcasite - FeS_2
Melonite - NiTe_2
Mercury - Hg
Millerite - NiS
Molybdenite - MoS_2
Morenosite - $\text{NiSiO}_4 \cdot 7\text{H}_2\text{O}$
Muscovite - $\text{KAl}_2(\text{Si}_3\text{Al})\text{O}_{10}(\text{OH,F})_2$
var: Sericite
Nagyágite - $\text{Pb}_5\text{Au}(\text{Te,Sb})_4\text{S}_{5-8}$
Nickeline - NiAs
Pentlandite - $(\text{Fe,Ni})_9\text{S}_6$
Petzite - Ag_3AuTe_2
Polydymite - Ni_2S_4
Pyrargyrite - Ag_3SbS_3
Pyrite - FeS_2
var: Bravoite (with Nickel)
Pyrrhotite - $\text{Fe}_{1-x}\text{S}_2$
Quartz - SiO_2
var: Chalcedony
Rhodochrosite - MnCO_3
Rickardite - Cu_7Te_5
Riebeckite - $\text{Na}_2(\text{Fe,Mg})\text{Fe}_2\text{Si}_8\text{O}_{22}(\text{OH,F})_2$

Roscoelite - $K(V,Al,Mg)_2AlSi_3O_{10}(OH)_2$
 Scheelite - $CaWO_4$
 Schröckingerite - $NaCa_3(UO_2)(CO_3)_3(SO_4)F \cdot 10H_2O$
 Siderite - $FeCO_3$
 Silver - Ag
 Sphalerite - ZnS
 Stibnite - Sb_2S_3
 Stromeyerite - CuAgS
 Stützite - Ag_7Te_4
 Sylvanite - $(Ag,Au)_2Te_4$
 Tellurantimony - Sb_2Te_3
 Tellurite - TeO_2
 Tellurium - Te
 Tennantite - $(Cu,Fe,Ag)_{12}(As,Sb)_4S_{13}$
 Tetradymite - Bi_2Te_2S
 Tetrahedrite - $(Cu,Fe,Ag)_{12}(Sb,As)_4S_{13}$
 Torbernite - $Cu(UO_2)_2(PO_4)_2 \cdot 8 - 12 H_2O$
 Uraninite - UO_2
 Violarite - Ni_2FeS_4

Some 185 mines and prospects are identified in the Gold Hill District (Mindat.org):

Alamakee	Leoch Occurrence (Big John; Dolly; Worlds Fair; Gillespie; United Empire Mines Group; American; Missing Link; Hawkeye)
Alaska Group	Little Princess
American	Little Ruby
Amzy; Great Sphinx Occurrence	Logan & Sunbeam Occurrence
Andesite Rock Quarry	Lost Boy (Lost Boy Lode)
Arapahoe Group of Claims	Loukonen Brothers Silica Mine
Archer	Lucky Star
Arrowhead	Mack
Atchison Mine (Atchison and Eldorado)	Macky
Atlanta	McCall Quarries (Landau)
Atlantic (Milwaukee; Emma Daniels; Pennsylvania Group; Black Diamond Occurrence)	McConnel
Bat Claim No. 1 (Corona Mine)	McKnight Placer
Bell Group	Melvina
Belle of Memphis (Blackhawk; Horseshoe; Victoria; Mountain Chief; Fairfax; Olympic; Bighorn; Silver Queen; Scotia; Gowanda)	Minnie Barrel Occurrence
Bellvue (Belview)	More
Big Five (Black Jack Occurrence)	Mountain Plains
Black Cloud	Myrtle Occurrence
Blue Eagle Occurrence	New California Occurrence (Baltimore; Gray Bird; Philadelphia; Nimbus; Gold Chief; Boston; Gold King; Village Bell; Baxter; High Line; Cross; U.P.; Cornicopia)
Brodies Saint Vrain	New York (New York Union; Pilot Occurrence)
Carol Gore	Noland
Centennial Tunnel Occurrence (Gov. Routt; Continental; Bismark; Bluebell Shaft & Tunnel; Canton; Mammoth; Scandia)	Ogalla
Central Gulch Placers	Ohio Tungsten Mine
Chivington Lode Occurrence	Ohline
Cobalt - Gold Mining Company (Emily; Francis B.; Acme Occurrence)	Osceola
Col. Dick Occurrence (Yellow Aster; Puzzler; Northwestern; Leviathan Group; Alaska; Four Tree; Palladium)	Parker Prospect (Rowena)
Cold Spring and Red Cloud	Peacock
Cold Springs Group (Times Tunnel; Hoodoo; Horsefai; Haddock; Crown; King; Wolf Tongue; Red Cloud)	Pfiefer
Colorado	Pilot Mine
Columbus	Plain View
Copper King (Gold Drop Occurrence)	Plough Boy
Corning Tunnel (Cold Spring; Alamakee; St. Joe; Blackhawk; Cash Occurrence)	Polar Star Occurrence (Moltke; Tarbox; Oklahoma; Brainard Tunnel; Bismark; Superior; Empire No. 3; Ward; Lulu B.)
Dale Taylor Lease Loukon	Poorman Group
Dam Waters Group	Poorman Hill
Denver City Occurrence (Contact; St. John; Skandia Group; Little Ida; Meadow Lark; Bald Mtn.; Old Hannah; Evening Star; New Prussian)	Ramey
	Rawley
	Ready Cash

Denver Post Occurrence
 Dewey Rocky Mountain
 Diamond K
 Electronic
 Emerson
 Escanaba and Humboldt Occurrence
 Evans (Grant; Great Britain Occurrence)
 Evening Star
 Fairfax
 Fallow Tunnel
 First National Bank Occurrence
 Fisk
 Five Brothers
 Fools Paradise Number 1 and 2
 Forest Mine
 Fourmile Creek Placer
 Franklin No. 5
 Freiberg Mine
 George Henry
 Gillaspie and Big John
 Gina No. 1 and 2
 Gladys (Tamborine; Tamborine; Dime; Evening Star Dirigo Occurrence)
 Gold Hill
 Cash Mine
 Copper King Mine (Yeager's Mine)
 Little Johnny mine (Emancipation Group; Home Sweet Home Occurrence)
 Nancy Wood mine (Sugar Loaf; Forest; Pittsburg; Gray Copper)
 Gold Hill Occurrence (Rowena; Sunshine; Salina)
 Gold Run Placer
 Golden Bell Occurrence (Providence; Forget Me Not; Chamois; Last Chance; John Jay & MS; Kicking Horse; Cross; Cleveland; Surprise; Yates)
 Golden Slipper Occurrence (Bloomer; Parole; Protection; Johannesburg; Red Lion Occurrence)
 Goldsmith Maid Occurrence
 Good Hope
 Grace
 Grand Lodge Mine
 Grand Republic Occurrence
 Grand View
 Grant
 Gray Copper
 Great Britain
 Hammons
 Hawkeye
 Henna
 Henry No. 1 & No. 2
 High Line
 Holt (Sound Currency; Star Occurrence)
 Homestake (Silent Friend; Cumberland; Morning Glory Occurrence)
 Hoodoo
 Howe
 Ingram mine (Valley Forge Occurrence; Critic and Railroad Boy; Sunshine; Three Brothers; Atchison; Belle; Golden Eagle; Melvina; Baron; Richmond)
 Interocean Mine
 Iron King Tunnel (Jule Lode Tunnel)
 Jacobson and Lyons
 Jake Witter
 Johnson
 King Mountain
 King Occurrence (Dana; Gold Lode; Gillard; Doss; Lucky Star; Sakhart; Morning Glory)
 King Tunnel Occurrence
 Kirts
 Kline
 Lands End
 Last Chance (Gray Copper Emerson; Concord; Forest; Franklin Occurrence)
 Red Cloud Mine (Chicago; Colorado Occurrence)
 Redstone
 Rex Mine
 Richard Occurrence (Minnie Bell; Washburn; White Eagle; Dolly; Plough Boy; Oceola; Gillaspie)
 Richmond Mine
 Rose Mary Occurrence
 Rough Rider (Monument; Gold Lode; Zuma; Lincoln Occurrence)
 Ruski Quarry
 Sakkrat
 Silica Quarry (MRDS - 10117165)
 Silver Harp
 Silver Lode
 Sisk Mine
 Slide Mine
 Smokey Hill Mine
 St. Joe Mine
 St James
 Steamboat Valley
 Summers
 Summit Shaft
 Sunrise (Yellow Jacket; Don D.; Shelton; McDermit Occurrence)
 Sunshine Group
 Tammany
 Tennessee (American; White Crow; Golden Harp Occurrence)
 Three Brothers
 Times
 Tom Lyle Group
 Trombo
 United Building Stone
 United Empire
 University of Colorado Quarry
 Utica Occurrence
 Victoria (Scotia Occurrence)
 Viola Beatty Claim
 Virginia (Golden Key)
 Ward
 Ward H. Lamon
 Ward Rose Occurrence
 White and Headley Gold Mine Property
 White Crow
 White Eagle (Archer)
 White Rock
 Who Do
 Wild Dutchman
 Wilson beryl prospect
 Winona
 Wood Chuck
 Wood Mountain Group

References

[Mineral Resource Data System \(MRDS\) - Online Spatial Data - Gold Hill District](#)

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