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Tungsten Mines

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January 1, 1960



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To His Excellency, The Honorable Stephen L. R. McNichols, Governor of the State of Colorado; Dr. Edward L. Clark, Director of Natural Resources; and Members of the Forty-second General Assembly:

I have the honor to transmit herewith, the Bulletin of the Metal Mining Fund on the subject, "Tungsten Mines of Colorado."

It is hoped that this publication will help to revitalize interest in Colorado mining, and that it will simplify future quests for at least one of our domestic minerals, thereby assisting Colorado's Mining Industry.

COLORADO STATE METAL MINING FUND

Harrison S. Cobb

204 State Office Building

1960

**STATE OF COLORADO
METAL MINING FUND**

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TUNGSTEN MINES OF COLORADO

Introduction

The history of tungsten in the United States is a history of "boom and bust," with periods of intense exploration and production followed by periods of almost complete abandonment of the mines. During these periods of non-operation, facts relating to the mines often become distorted or completely forgotten; indeed, the actual location of mines sometimes becomes lost, as witness a large group of small mines listed in this report, mines which were designated prospects upon a large agricultural patent, but which now appear to be completely lost, unknown even to the owning company and to its previous mine superintendents.

For reasons such as this, the Metal Mining Fund of the State of Colorado has deemed it advisable to compile certain basic facts concerning the tungsten mines of the state. This tabulation is not to be considered an evaluation of any property, but is limited to brief essential information which would offer a starting point in future mine investigations.

Information tabulated in this report is as of January 1, 1960. It will be realized that ownerships change from time to time, and that, in periods of production, the physical workings of the mines are gradually altered, as well as records of production.

An effort has been made to tie each property to some generally known landmark, so that its position may be recognized even after the lapse of several years.

Owner addresses have not been given, as ownerships are subject to change. Ordinarily such addresses may be obtained from county records.

Remarks under "Potential" have, in the main, been avoided, as there is no intention or desire to promote or discredit any property. If the last operator offered a factual observation which could be utilized as a clue in future exploration, this has been listed, otherwise "Potential" has been given as "Unknown."

When properties have been operated under DMEA contracts, maps were filed with both the United States Bureau of Mines, and with the United States Geological Survey. The notation "USGS" refers to this, but does not ensure availability of the maps to the general public.

Acknowledgements

Information contained in this report has been compiled from U.S.G.S. Professional Paper 245, "Geology and Ore Deposits, Boulder County Tungsten District, Colorado," by T. S. Lovering and Ogden L. Tweto; U. S. Bureau of Mines Information Circular, "Tungsten in Colorado," by W. J. Tesch, Jr.; U. S. Bureau of Mines Information Circular No. 7721, "Study of Tungsten Potential in Boulder County, Colorado," by Carl Belser; and from statements made by owners, ore purchasers, most recent operators, and by those few remaining who have passed most of their lives in and about the tungsten districts, and who have examined, inspected, and worked in the various mines.

Appreciation is expressed to authors of the above mentioned reports; to Mr. John H. East, Regional Director of the Bureau of Mines; to Dr. A. H. Koschmann, Liaison Officer of the United States Geological Survey, and to the many residents of the mining districts, all of whom were especially helpful in the gathering of information for this report.

ADAMS

LOCATION: SE $\frac{1}{4}$ Section 16, T42N, R7W, about eight miles north of Silverton, at Gladstone, San Juan County.

OWNER: T. J. and D. A. Mahoney.

PRODUCTION: Some production as early as 1899; substantial production during World War I; small amount in 1955.

WORKINGS: Old entries are adits on the vein. Under a DMEA contract in 1954, a crosscut was driven 220 feet to the vein; 160 feet of drifting and 93 feet of raising was done.

ORE OCCURRENCE: 3 to 4-foot vein contains some hubnerite. The best occurrences were irregular cavity fillings.

POTENTIAL: Unknown.

LAST OPERATOR: Ben Allen.

MAP SOURCES: Warren C. Prosser report.

ALBERT

LOCATION: Sec. 17, T43N, R7W. Poughkeepsie gulch, Como Lake district, Ouray County.

OWNER: Pat Fleming.

PRODUCTION: None recorded.

WORKINGS: Short adit on vein.

ORE OCCURRENCE: Spotty streaks showing tungsten mineralization.

POTENTIAL: Unknown.

LAST OPERATOR: No producing operator.

MAP SOURCES: No maps.

AMZY

LOCATION: Sec. 20, T1N, R71W, on N. slope of Arkansas mountain, south of Fourmile Creek, Boulder County.

OWNER: Skydale, Inc.

PRODUCTION: None.

WORKINGS: Short adit.

ORE OCCURRENCE: Shows large vein of very horny ore.

POTENTIAL: Unknown.

LAST OPERATOR: Doc Hill.

MAP SOURCES: None.

ANDES

LOCATION: Sec. 33, T8S, R78W, about 7 $\frac{1}{2}$ mi. N. of Alma, Park County.

OWNER: G. L. Colburn.

PRODUCTION: 6 tons of 15% ore recorded.

WORKINGS: 25 and 50-foot adits, 35 feet apart.

ORE OCCURRENCE: Wolframite and scheelite occur in 2 to 8-inch streaks in a 4" to 4' vein. Very large hubnerite crystals are found. The vein is in quartz monzonite gneiss.

POTENTIAL: Unknown.

LAST OPERATOR: Owner.

MAP SOURCES: Unknown.

ANGELUS

LOCATION: NW $\frac{1}{4}$ Sec. 5, T1S, R72W, N. of Sugarloaf road, at top of hill 1 mile east of junction with Ward-Nederland road. Boulder County.

OWNER: Ernest Ross.

PRODUCTION: Very small production.

WORKINGS: 20' shaft, caved. Two other shallow shafts.

ORE OCCURRENCE: Horn-type ore.

POTENTIAL: Unknown.

LAST OPERATOR: Ernest Ross.

MAP SOURCES: No maps.

ANGLO-SAXON

LOCATION: Sec. 31, T42N, R7W, in Minnesota gulch, about 5 mi. NW of Silverton, San Juan County.

OWNER: San Juan Gold King Co.

PRODUCTION: Some production during World War I.

WORKINGS: Surface workings. Caved adit.

ORE OCCURRENCE: Hubnerite in pyrite vein.

POTENTIAL: Unknown. Has been caved for 40 years.

LAST OPERATOR: Louis Schaeffer.

MAP SOURCES: No maps.

ANNA Nos. 1 and 2

LOCATION: Sec. 11, T1S, R73W, Boulder County.

OWNER: Cold Spring Tungsten, Inc.

PRODUCTION: 175 units of WO_3 .

WORKINGS: One of several named prospects on an agricultural patent.

ORE OCCURRENCE: Unknown.

POTENTIAL: Unknown.

LAST OPERATOR: Unknown.

MAP SOURCES: Owner.

ANNA C.

LOCATION: SW $\frac{1}{4}$ Sec. 11, T1S, R73W, 1 $\frac{3}{4}$ mi. NW of Nederland, Boulder County.

OWNER: O. B. Scott, Rye, Colo.

PRODUCTION: Less than 500 units of WO_3 .

WORKINGS: 155' shaft; levels at 90, 115, and 155 feet. A later shallow shaft was sunk at the east edge of the dump, from which ore was stoped.

ORE OCCURRENCE: Most of the production was taken from above the 115' level.

POTENTIAL: Unknown.

LAST OPERATOR: M. W. MacKenzie, 1955.

MAP SOURCES: No maps.

ANNIE L.

LOCATION: SE $\frac{1}{4}$ Sec. 36, T1N, R72W, 900' S67°W of the Roosevelt tunnel, Boulder County.

OWNER: Joseph Rafter.

PRODUCTION: About 3500 units.

WORKINGS: 120' shaft, with two levels, turned east.

ORE OCCURRENCE: On the Roosevelt vein. Horn and crystalline ore.

POTENTIAL: Unknown.

LAST OPERATOR: Thayer and McClellan.

MAP SOURCES: No maps.

APRIL FOOL (see Good Friday)

LOCATION: SW $\frac{1}{4}$ Sec. 36, T1N, R72W, on the east side of North Boulder Creek, above Boulder Falls. Boulder County.

OWNER: Shiprock Industries, Inc.

PRODUCTION: More than 138,000 units.

WORKINGS: 3 shafts, 3 adits. April Fool shaft is open, and is the main working entrance, over 400' in depth. Four levels are above the main tunnel, and a 110' winze, with drifts, is below the tunnel.

ORE OCCURRENCE: Crystalline ferberite in a 1400' ore-shoot, the longest in the district. This shoot has been mined to a depth of 370 feet, up to 1956.

POTENTIAL: Mine was in production at the time of the 1956 price failure.

LAST OPERATOR: Owner.

MAP SOURCES: Owner. Colorado Tungsten Corp. USGS PP 245, plate 23.

ARROW 1, 2, 3.

LOCATION: NE $\frac{1}{4}$ Sec. 7, T1S, R72W, N. and NW of Western Star shaft. Boulder County.

OWNER: Cold Spring Tungsten, Inc.

PRODUCTION: Less than 500 units.

WORKINGS: Shallow shafts.

ORE OCCURRENCE: Unknown.

POTENTIAL: Unknown.

LAST OPERATOR: T. J. Henning.

MAP SOURCES: Owner.

BALMORAL

LOCATION: SW $\frac{1}{4}$ Sec. 36, T1N, R72W, 900' E. of Boulder Falls, Boulder County.

OWNER: Colorado Tungsten Corporation.

PRODUCTION: About 1500 units.

WORKINGS: Inclined shaft, with 3 levels at 16, 39, and 79 feet. Second shaft connected with 39' level 70' NE of main shaft. Both caved.

ORE OCCURRENCE: In two veins, the Balmoral and the Smith.

POTENTIAL: 3rd level has a drift on the Smith vein. Might be explored to see if the Smith hanging-wall streak is present.

LAST OPERATOR: Owner.

MAP SOURCES: Owner. GS PP 245, plate 23.

BARKER No. 1

LOCATION: NW $\frac{1}{4}$ Sec. 17, T1S, R72W. 200' within the portal of the Clark tunnel. Boulder County.

OWNER: J. Clark-H. Barker estate.

PRODUCTION: Probably 2000-3000 units.

WORKINGS: 2 levels; Clark tunnel and winze levels.

ORE OCCURRENCE: Ore taken from stopes 25' above and 50' below tunnel level.

POTENTIAL: Unknown.
 LAST OPERATOR: Boulder Tungsten Mill, Inc.
 MAP SOURCES: Owner. GS PP 245, plate 13.

BARKER No. 2

LOCATION: NW $\frac{1}{4}$ Sec. 17, T1S, R72W. 450' within the portal of the Clark Tunnel. Boulder County.
 OWNER: J. Clark-H. Barker estate.
 PRODUCTION: Minor.
 WORKINGS: Short drifts on tunnel level, and 30' above. Winze below tunnel level.
 ORE OCCURRENCE: Ore was found in Murphy vein, and between the Murphy and the Hurricane Hill reef.
 POTENTIAL: Unknown.
 LAST OPERATOR: Boulder Tungsten Mill, Inc.
 MAP SOURCES: Owner. GS PP 245, plate 13.

BARKER No. 3

LOCATION: NE $\frac{1}{4}$ Sec. 18, T1S, R72W. Shaft is 1175' SW of Vasco 6 shaft. Vein is encountered at about 650' within the Clark tunnel. Boulder County.
 OWNER: J. Clark-H. Barker estate.
 PRODUCTION: 6000 units or more.
 WORKINGS: Mine is in two sections. The upper section has two shafts, with most of the work done on the second level of the old shaft. The first level is an adit, entering from SW of the shaft. There is also another adit on the property, which is caved. The second, or Clark tunnel section, consists of a 110' drift on the vein, and a 25' winze.
 ORE OCCURRENCE: From stope (in tunnel) 55' long, 65' high. 2 veins, of 3 intersecting veins, yielded the ore in the upper workings.
 POTENTIAL: Unknown.
 LAST OPERATOR: Boulder Tungsten Mills, Inc.
 MAP SOURCES: USGS PP 245, page 151; plate 13.

BARKER No. 4

LOCATION: NW $\frac{1}{4}$ Sec. 17, T1S, R72W, 720 feet within the portal of the Clark tunnel. Boulder County.
 OWNER: J. Clark-H. Barker estate.
 PRODUCTION: Small production.
 WORKINGS: Drifts and winze from tunnel level.
 ORE OCCURRENCE: 63 tons of 1 $\frac{1}{2}$ % ore from winze and stope above lower drift.
 POTENTIAL: Unknown.
 LAST OPERATOR: Boulder Tungsten Mill, Inc.
 MAP SOURCES: Owner. USGS PP 245, plate 13.

BEDDIG

LOCATION: Sec. 11, T1S, R73W about 1 mile NW of Nederland, and immediately west of the Conger mine. Boulder County.
 OWNER: The Colorado Tungsten Corp.

PRODUCTION: About 180,000 units ranking second only to the Conger, in Boulder County production.
WORKINGS: Shaft with seven levels, dipping into and joining with the Conger workings.
ORE OCCURRENCE: Several veins produced breccia ore cemented by ferberite and quartz.
POTENTIAL: An area of float-bearing ground occurs on the slope which forms the south side of Sherwood Gulch.
LAST OPERATOR: Cobb and Weldon.
MAP SOURCES: Vanadium Corp. of America. USGS PP 245, page 106.

BELMONT

LOCATION: Sec. 5, T1S, R71W. Boulder County.
OWNER: Mary R. Kettering.
PRODUCTION: About 50 units.
WORKINGS: Unknown.
ORE OCCURRENCE: Horn type.
POTENTIAL: Unknown.
LAST OPERATOR: Unknown.
MAP SOURCES: No maps.

BIG SIX

LOCATION: NW $\frac{1}{4}$ NW $\frac{1}{4}$ Sec. 13, T1S, R73W, about $\frac{1}{2}$ -mile SE of the new Conger shaft. Boulder County.
OWNER: Richard Tatlow III.
PRODUCTION: Over 1,000 units.
WORKINGS: Three shafts; the Big Six, with levels at 40, 105, and 150 feet; the old and new Mock shafts. The new Mock shaft, in 1953, was deepened to 100 feet, and 91 feet of drifting was completed.
ORE OCCURRENCE: Vein is in schist, and runs east of north.
POTENTIAL: Lowgrade ore drilled on 50' level, against dike. On floor of bottom of main shaft.
LAST OPERATOR: Lou Mock.
MAP SOURCES: USGS PP 245, page 126.

BISMARCK

LOCATION: Sec. 16, T42N, R7W, about 9 miles N of Silverton, on south fork of Cement Creek. San Juan County.
OWNER: San Juan County.
PRODUCTION: Only small production reported.
ORE OCCURRENCE: Hubnerite reported to have been "honey-colored," which may indicate low manganese content.
POTENTIAL: Unknown.
LAST OPERATOR: Unknown.
MAP SOURCES: No maps.

BLACK BEAUTY

LOCATION: Sec. 5, T1S, R72W. Boulder County.
OWNER: Cold Spring Tungsten, Inc.
PRODUCTION: Less than 200 units.
WORKINGS: One of several named prospects on an agricultural patent.
ORE OCCURRENCE: Unknown.
POTENTIAL: Unknown.

LAST OPERATOR: Unknown.

MAP SOURCES: No maps.

BLACK CRYSTAL

LOCATION: SW $\frac{1}{4}$ Sec. 31, T1N, R71W, Boulder County.

OWNER: L. A. Mock and H. W. Patton.

PRODUCTION: About 200 units.

WORKINGS: Shallow workings near Black Prince.

ORE OCCURRENCE: Horn-type.

POTENTIAL: Unknown.

LAST OPERATOR: L & P Leasing Company.

MAP SOURCES: Unknown.

BLACK DIAMOND

LOCATION: SE $\frac{1}{4}$ Sec. 7, T1S, R72W, about 1100 feet NW of Vasco 6 shaft. Boulder County.

OWNER: Green Vaughn estate.

PRODUCTION: Probably less than 1000 units.

WORKINGS: 30-foot adit.

ORE OCCURRENCE: Narrow stockwork of veins.

POTENTIAL: Unknown.

LAST OPERATOR: Harry Spier. J. M. Smith.

MAP SOURCES: USGS PP 245, page 151.

BLACKHAWK

LOCATION: Sec. 24, T1S, R73W, 900 feet west of the Tungsten shaft, and west of Colo. highway No. 119. Boulder County.

OWNER: George Cowdery, Boulder, Colo.

PRODUCTION: About 14,000 units, in 1907-10, 1915-17, and 1955.

WORKINGS: Several trenches and a caved shallow shaft, 70' or 80'.

ORE OCCURRENCE: Ore occurs in pegmatite; dies out in surrounding schist.

POTENTIAL: 2 pegmatites still show ore in bottom.

LAST OPERATOR: Roderick and R. Peterson.

MAP SOURCES: None.

BLACKHAWK

LOCATION: Sec. 5, T1S, R72W. Boulder County.

OWNER: Cold Spring Tungsten, Inc.

PRODUCTION: Over 20 units.

WORKINGS: One of several named prospects on an agricultural patent.

ORE OCCURRENCE: Unknown.

POTENTIAL: Unknown.

LAST OPERATOR: Unknown.

MAP SOURCES: No maps.

BLACK IRON

LOCATION: SW $\frac{1}{4}$ Sec. 19, T1S, R72W, 500' NW of Tungsten shaft. Boulder County.

OWNER: Richard Murdock.

PRODUCTION: Over 4000 units.

WORKINGS: 60' shaft and surface trenches.

ORE OCCURRENCE: Float and surface ore.

POTENTIAL: Unknown.
LAST OPERATOR: Judson Thomas, 1942-43.
MAP SOURCES: None.

BLACK JACK

LOCATION: SW $\frac{1}{4}$ Sec. 5, T1S, R72W, 1000' N of Cross shaft. Boulder County.

OWNER: Cold Spring Tungsten, Inc.

PRODUCTION: At least 1800 units.

WORKINGS: 500' or 600' adit, with 350' crosscut to Firecracker vein.
Shallow shafts and trenches.

ORE OCCURRENCE: Surface ore, which pinched when hard granite was encountered at depth.

POTENTIAL: Unknown.

LAST OPERATOR: Ray Flarty.

MAP SOURCES: Unknown.

BLACK KING

LOCATION: SE $\frac{1}{4}$ Sec. 29, T1S, R72W, 800' NE of Mammoth shaft. Boulder County.

OWNER: George Cowdery.

PRODUCTION: No production recorded.

WORKINGS: 1800' tunnel driven to explore several veins.

ORE OCCURRENCE: Unknown.

POTENTIAL: A drift at the end of the tunnel might encounter the ore which was mined in the Tungsten Mountain No. 9, above. An extension of the drift toward the Mammoth might find the Mammoth ore-shoot which was deflected off to the Mammoth side-line by a fault, into the Black King No. 2.

LAST OPERATOR: Tungsten Mountain Mining Co.

MAP SOURCES: USGS PP 245, plate 7.

BLACK METALS

LOCATION: Sec. 22 or 23, T2S, R73W, at head of Silver Creek, near Wideawake, Gilpin County.

OWNER: W. Perkins.

PRODUCTION: Possibly 1000 units.

WORKINGS: Shaft less than 100' deep.

ORE OCCURRENCE: Some recent ore from dump. Early production was during World War I; shipped to Rollinsville mill.

POTENTIAL: Unknown.

LAST OPERATOR: Owner.

MAP SOURCES: No map.

BLACK PEARL

LOCATION: SE $\frac{1}{4}$ Sec. 5, T1S, R72W, about 550' S68°E of Bonanza mine. Boulder County.

OWNER: Cold Spring Tungsten, Inc.

PRODUCTION: Small production, in 1913 and in 1945. Over 100 units.

WORKINGS: Shallow shaft and open cut. Both caved.

ORE OCCURRENCE: Unknown.

POTENTIAL: Unknown.

LAST OPERATOR: Oscar Fay.

MAP SOURCES: None.

BLACK PRINCE

LOCATION: SW $\frac{1}{4}$ Sec. 31, T1N, R71W. Boulder County.
 OWNER: L. A. Mock and H. W. Patton.
 PRODUCTION: About 5000 units.
 WORKINGS: Four adits driven on a shear zone.
 ORE OCCURRENCE: Horn type ore in variously dipping small veins.
 POTENTIAL: Unknown.
 LAST OPERATORS: M & P Leasing Company.
 MAP SOURCES: USGS PP 245, page 188.

BLACK ROSE

LOCATION: SW $\frac{1}{4}$ Sec. 4, T1S, R72W, east of Victor mine, near North Boulder Creek. Boulder County.
 OWNER: R. E. Dalley estate.
 PRODUCTION: About 3000 units.
 WORKINGS: Caved shaft; levels unknown.
 ORE OCCURRENCE: Crystalline ore. Vein in granite.
 POTENTIAL: Dump screenings show ore. Float, south of mine.
 LAST OPERATOR: Alec McClellan.
 MAP SOURCES: No maps.

BLACK ROVER

LOCATION: SW $\frac{1}{4}$ Sec. 20, T1S, R72W, about $\frac{1}{2}$ -mile SE of Mammoth shaft. Boulder County.
 OWNER: George Cowdery.
 PRODUCTION: Over 10,000 units, most of which was produced between 1916 and 1931, from the upper shaft workings.
 WORKINGS: Upper shaft and lower adit, unconnected.
 ORE OCCURRENCE: In an ore-shoot 6' x 80'.
 POTENTIAL: A 1-inch streak of solid ore leaves the workings at about 90 degrees. Will require surface trenching.
 LAST OPERATOR: Clyde Clemens.
 MAP SOURCES: USGS PP 245, plate 7.

BLACK SQUIRREL

LOCATION: NE $\frac{1}{4}$ Sec. 4, T1S, R72W, near the Rocky Mountain mine. Boulder County.
 OWNER: Hays Scruggs. Abandoned.
 PRODUCTION: Small.
 WORKINGS: One small adit.
 ORE OCCURRENCE: In vein striking NE.
 POTENTIAL: Unknown.
 LAST OPERATOR: Hays Scruggs.
 MAP SOURCES: No map.

BLUE BELL

LOCATION: NE $\frac{1}{4}$ Sec. 4, T1S, R72W, W. of Switzerland Park, on south side of North Boulder Creek. Boulder County.
 OWNER: Vanadium Corporation of America.
 PRODUCTION: Probably over 6000 units.
 WORKINGS: 180' shaft, and stopes.
 ORE OCCURRENCE: Concentrate contains heavy iron and zinc.

POTENTIAL: Unknown.
LAST OPERATOR: MacKenzie and Sterling.
MAP SOURCES: Owner.

BLUEBIRD

LOCATION: NE $\frac{1}{4}$ Sec. 34, T1N, R72W, near the top of Primos Hill, on the Sugarloaf road, Boulder County.
OWNER: Ben Skinner.
PRODUCTION: Very small production, most of which was made in 1954-55.
WORKINGS: 40 foot shaft, and several small pits.
ORE OCCURRENCE: Two veins on the claim.
POTENTIAL: Unknown.
LAST OPERATOR: Owner.
MAP SOURCES: None.

BLUE JAY

LOCATION: SE $\frac{1}{4}$ Sec. 35, T1N, R72W, above the Eureka mine, and above Boulder Falls on west side of Creek. Boulder County.
OWNER: W. D. Brown.
PRODUCTION: About 100 units. Small production in 1953.
WORKINGS: 3 adits; the upper one caved. Middle adit about 350' in length; lower adit 631' in length.
ORE OCCURRENCE: Horn type. Narrow streaks of siliceous, brecciated ferberite.
POTENTIAL: Unknown.
LAST OPERATOR: Owner.
MAP SOURCES: No map.

BOBCAT

LOCATION: Sec. 12, T1S, R73W, about $\frac{1}{2}$ -mile NE of the new Conger shaft. Boulder County.
OWNER: Vanadium Corporation of America.
PRODUCTION: About 1200 units, in 3% to 4% ore, during 1914.
WORKINGS: Shaft at least 140' deep. 200' drift on the 40' level.
ORE OCCURRENCE: Ore occurred at surface, 3' wide, 40' long, 40' deep.
POTENTIAL: Unknown.
LAST OPERATOR: C. H. Smith.
MAP SOURCES: Owner.

BONANZA

LOCATION: SE $\frac{1}{4}$ Sec. 5, T1S, R72W, about $\frac{1}{3}$ mile N72°E of the Cross shaft. Boulder County.
OWNER: Cold Spring Tungsten, Inc.
PRODUCTION: Over 15,000 units, a large part in ore averaging 13%.
WORKINGS: 2 shafts, 200'-300' in depth. South shaft is main entry. Three or four levels.
ORE OCCURRENCE: Ferberite veins in granite.
POTENTIAL: Unknown.
LAST OPERATOR: Bodnar brothers.
MAP SOURCES: Owner.

BOND RANCH

LOCATION: Sec. 10, T17S, R69W, in Eight Mile Creek, Phantom Canyon, 22 miles N of Canyon City, Fremont County.

OWNER: Edward Roberts.

PRODUCTION: Over one ton of 58% ore.

WORKINGS: 1200-foot adit.

ORE OCCURRENCE: Small veins in precambrian rock carry wolframite.

POTENTIAL: Unknown.

LAST OPERATOR: Owner.

MAP SOURCES: No maps.

BRACE TRACT

LOCATION: SE $\frac{1}{4}$ Sec. 24, T1S, R73W, about $\frac{1}{2}$ -mile SW of the Tungsten shaft, Boulder County.

OWNER: John Buchanan.

PRODUCTION: Less than 10,000 units, valued at \$100,000.

WORKINGS: 200' tunnel in granite and pegmatite, connecting with a glory-hole.

ORE OCCURRENCE: Ferberite in the intersection of two veins.

POTENTIAL: Unknown.

LAST OPERATOR: Johnson, A. Rudine, and Stuber.

MAP SOURCES: USGS PP 245, page 97.

BUENO

LOCATION: SE $\frac{1}{4}$ Sec. 24, T2N, R72W, about 1-mile NW of Jamestown, Boulder County.

OWNER: Harry M. Williamson, and Son.

PRODUCTION: 3 or 4 units.

WORKINGS: Gold mine; shaft with many levels. Adits above shaft collar.

ORE OCCURRENCE: Tungsten occurred in one pocket only, on the 3rd level.

POTENTIAL: None.

LAST OPERATOR: Ray Imel.

MAP SOURCES: Owner.

BYRON (LORD)

LOCATION: NW $\frac{1}{4}$ Sec. 35, T1N, R72W, NW of Wild Tiger mine, Boulder County.

OWNER: L. V. Davidson.

PRODUCTION: Less than 1000 units.

WORKINGS: 180' shaft, with short levels.

ORE OCCURRENCE: Horn type.

POTENTIAL: Unknown.

LAST OPERATOR: Unknown.

MAP SOURCES: No map.

CAMERON (BIG CAMERON)

LOCATION: SE $\frac{1}{4}$ Sec. 7, T1S, R72W, about 75' W of Jack-Summit, Boulder County.

OWNER: Cold Spring Tungsten, Inc.

PRODUCTION: Small production from the 104' level.
WORKINGS: 114' shaft, 178' of drifts, most of which was done under DMEA contract.
ORE OCCURRENCE: Nodules and small streaks of ferberite.
POTENTIAL: Unknown.
LAST OPERATOR: Brown, Mosch, and Mosch.
MAP SOURCES: Owner. USGS.

CARLBERG

LOCATION: SW $\frac{1}{4}$ Sec. 5, T1S, R72W, 1400' N74°W of the Cross shaft. Boulder County.
OWNER: Cold Spring Tungsten, Inc.
PRODUCTION: More than 2500 units, in ore averaging 16%.
WORKINGS: Shaft at least 100', with about 550' of drifts.
ORE OCCURRENCE: In contacts of aplite and granite.
POTENTIAL: Unknown.
LAST OPERATOR: T. J. Henning.
MAP SOURCES: Owner.

CATASTROPHE

LOCATION: SE $\frac{1}{4}$ Sec. 35, T1N, R72W, about $\frac{1}{2}$ -mile W of Boulder Falls, Boulder County.
OWNER: Mattie M. Lawrence.
PRODUCTION: About 8,000 units.
WORKINGS: 2 adits, one about 75' below the other. Raises and cross-cuts driven from lower adit.
ORE OCCURRENCE: Ferberite with scheelite.
POTENTIAL: Dump indicates ore content; physical recovery will be difficult.
LAST OPERATOR: Donald Scruggs.
MAP SOURCES: USGS PP 245, page 172.

CHAHUAHUA

LOCATION: SE $\frac{1}{4}$ Sec. 36, T2S, R73W, in Missouri gulch, Gilpin County.
OWNER: Melvin Blake, et al.
PRODUCTION: Less than 100 units.
WORKINGS: 4 adits; lower adit 500' in length.
ORE OCCURRENCE: Tungsten found only in two middle adits, occurring as a lens in the vein, which is in schist.
POTENTIAL: Unknown.
LAST OPERATOR: Harry S. Blake.
MAP SOURCES: Owner.

CHALLENGER

LOCATION: Sec. 23-24, T8N, R72W. Larimer County.
OWNER: T. H. Sackett, et al.
PRODUCTION: Few tons of 0.57% ore in 1942.
WORKINGS: 2 shallow shafts; several surface pits.
ORE OCCURRENCE: Scheelite in quartz, in quartz-biotite schist.
POTENTIAL: Unknown.
LAST OPERATOR: Owner.
MAP SOURCES: No map.

CHARLEY

LOCATION: Sec. 13, T1S, R73W, 200' S of Illinois shaft. Boulder County.

OWNER: Cold Spring Tungsten, Inc.

PRODUCTION: 67 units.

WORKINGS: Short tunnel; small stopes.

ORE OCCURRENCE: Tungsten with silver locally.

POTENTIAL: Unknown.

LAST OPERATOR: O. P. Pherson.

MAP SOURCES: Owner.

CHATHAM

LOCATION: SW $\frac{1}{4}$ Sec. 6, T1N, R72W, NE of Ward, Boulder County.

OWNER: Edward J. Peterson.

PRODUCTION: 3 tons of 1.12%, in 1956.

WORKINGS: Shaft of unknown depth, perhaps 450'. Joins with Nelson mine on 250' level. At least two drifts east.

ORE OCCURRENCE: Hubnerite in white quartz.

POTENTIAL: Unknown.

LAST OPERATOR: Chatham Mining Co. (Frank Perry).

MAP SOURCES: None.

CLARK TUNNEL

LOCATION: NW $\frac{1}{4}$ Sec. 17, T1S, R72W, at the village of Tungsten. Boulder County.

OWNER: J. Clark-H. Barker estate.

PRODUCTION: Covered in descriptions of individual mines.

WORKINGS: 2150' tunnel, runs N77°W, intersecting the following veins: Barker Nos. 1, 2, 3, 4; Vasco 6; Murphy; Five; and Hurricane Hill reef.

ORE OCCURRENCE: See individual mines.

POTENTIAL: See individual mines.

LAST OPERATOR: See individual mines.

MAP SOURCES: See individual mines.

CLIMAX

LOCATION: Sec. 12, T8N, R79W, on Fremont Pass, Lake County.

OWNER: Climax Molybdenum Co. Div., American Metals Climax Corp.

PRODUCTION: Over 300,000 units.

WORKINGS: Developed by adits and block-caving.

ORE OCCURRENCE: Wolframite occurs in veinlets with molybdenite.

POTENTIAL: Tungsten ore constantly occurs as by-product of molybdenum.

LAST OPERATOR: Owner.

MAP SOURCES: Owner.

CLIPPER (see Good Friday-April Fool)**CLYDE**

LOCATION: NW $\frac{1}{4}$ Sec. 7, T1S, R72W, about 1 $\frac{1}{2}$ miles NE of Nederland, Boulder County.

OWNER: Cold Spring Tungsten, Inc.

PRODUCTION: About 35,000 units. 8000 tons of ore averaged 3 $\frac{1}{2}$ %, before 1929. Some production in 1955.

WORKINGS: 7 levels in 2 overlapping shafts. Bottomed at 253'.

Winze from adit, at 211', extended to 512'.

ORE OCCURRENCE: Horn type ore. Workings are wet; make 500 gpm.

POTENTIAL: 3' of 1% ore on bottom level west; may be at the endline, which abuts Colorado Tungsten Corp. property.

LAST OPERATOR: Johnson brothers and H. Williams.

MAP SOURCES: Owner.

C. & M.

LOCATION: SE $\frac{1}{4}$ Sec. 7, T1S, R72W, back of Public Service house. Boulder County.

OWNER: Cold Spring Tungsten, Inc.

PRODUCTION: Small production in 1954 from a 10-foot pit.

WORKINGS: 100' shaft.

ORE OCCURENCE: Unknown.

POTENTIAL: Unknown.

LAST OPERATOR: Tom Hetzer.

MAP SOURCES: No map.

COLD SPRING

LOCATION: Sec. 7 & 8, T1S, R72W, about 2 miles NE of Nederland, in Trevarton gulch. Boulder County.

OWNER: Cold Spring Tungsten, Inc.

PRODUCTION: 101,586 units, in 7.1% ore, by end of 1935. Probably over 200,000 units total.

WORKINGS: 2 shafts, 480' deep, with 8 levels. In 1951-54, under DMEA, the mine was reopened, and 12,000' of core-drilling, 1547' of drifting, 487' of crosscutting, and 998' of raising was done. One of the large ore-bodies of the district was discovered during this development.

ORE OCCURRENCE: 4 major and 2 minor shoots on Cold Spring vein; several small shoots on other veins.

POTENTIAL: Requires development on good prospects.

LAST OPERATOR: Owner.

MAP SOURCES: Owner. USGS PP 245, plates 18, 19.

COLD SPRING NO. 2

LOCATION: NE $\frac{1}{4}$ Sec. 7, T1S, R72W, 1500' WSW of Cold Spring mine, and adjacent to the Forest Home mine. Boulder County.

OWNER: Cold Spring Tungsten, Inc.

PRODUCTION: At least 2000 units, in 8 $\frac{1}{2}$ % ore.

WORKINGS: Inclined shaft; levels at 41 and 74 feet.

ORE OCCURRENCE: Several intersecting veins, both in Cold Springs and Forest Home.

POTENTIAL: Unknown. Last lessees found no ore.

LAST OPERATOR: Owners, via underground connection, circa 1938.

MAP SOURCES: Owner. USGS PP 245, plate 16.

COLD SPRING NOS. 3 & 4 (No. 4 is Pick and Gad)

LOCATION: NW $\frac{1}{4}$ Sec. 8, T1S, R72W, between Cold Spring main shaft, and No. 2. Boulder County. Old No. 1 shafthouse burned down.

OWNER: Cold Spring Tungsten, Inc.
 PRODUCTION: Less than 1000 units.
 WORKINGS: Connect with part of main Cold Spring workings. No. 4 is on a footwall vein.
 ORE OCCURRENCE: Same as main Cold Spring.
 POTENTIAL: Same as main Cold Spring.
 LAST OPERATOR: Kenneth Horton, et al, on No. 4.
 MAP SOURCES: Owner.

COLUMBINE (*unpatented*)

LOCATION: NE $\frac{1}{4}$ Sec. 34, T1N, R72W, near top of Primos Hill.
 Boulder County.
 OWNER: Unknown. Claim is evidently abandoned.
 PRODUCTION: Small production in 1954.
 WORKINGS: 60'-80' shaft; one level.
 ORE OCCURRENCE: Unknown.
 POTENTIAL: Unknown.
 LAST OPERATOR: Unknown.
 MAP SOURCES: Unknown.

COMPLEX

LOCATION: Sec. 23, T31N, R4E, near Cumberland Pass, 8 miles N of Pitkin. Gunnison County.
 OWNER: U. S. Tungsten Corp.
 PRODUCTION: Probably about 500 units.
 WORKINGS: 300' crosscut and 400' drift constitute the lower workings, which are inaccessible. 200' inclined shaft above.
 ORE OCCURRENCE: Footwall streak of vein, hubnerite in quartz, is up to 18" in thickness.
 POTENTIAL: Stope fills contain some ore. PbAg on HW side of vein.
 LAST OPERATOR: Bernard Teets, et al. World War II.
 MAP SOURCES: Harold Koster.

CONGER

LOCATION: SE $\frac{1}{4}$ Sec. 11, T1S, R73W, about 1 mile NW of Nederland.
 Boulder County.
 OWNER: Vanadium Corporation of America.
 PRODUCTION: Over 400,000 units, making the Conger the largest producing tungsten mine of the state.
 WORKINGS: 991' shaft, with over 5 miles of horizontal workings.
 ORE OCCURRENCE: Fissure veins in granite. Most of the ore was above the 6th level.
 POTENTIAL: Large amount of dump and sorting-house screenings were yielding \$2.00 and \$4.00 per ton at the \$63.00 per unit price.
 LAST OPERATOR: J. M. Smith and Guy Tanner, underground. Cobb and Weldon, surface.
 MAP SOURCES: Owner.

CONNIE

LOCATION: Sec. 17, T43N, R7W, about 4000' SE of the Dunmore mine. Ouray County.

OWNER: George E. Wing.

PRODUCTION: Several tons of sorted hubnerite ore.

WORKINGS: 3 short adits.

ORE OCCURRENCE: A 15-foot vein yielded hubnerite during development of a small lead orebody.

POTENTIAL: Unknown.

LAST OPERATOR: E. E. Eggleston.

MAP SOURCES: No maps.

CONYER

LOCATION: S $\frac{1}{2}$ Sec. 29, T42N, R7W, about 5 miles N of Silverton, near the mouth of Dry Gulch. San Juan County.

OWNER: N. E. Walby and Earl Clifford.

PRODUCTION: Several tons of 30% ore during World War I, some production as early as 1900.

WORKINGS: Several adits, pits, and a shaft. One adit, accessible, was extended about 250' in 1956.

ORE OCCURRENCE: Mineralized fractures in andesite flows. Some contain ferberite.

POTENTIAL: Unknown.

LAST OPERATOR: Louis Schaeffer.

MAP SOURCES: No maps.

COPELAND

LOCATION: Sec. 20, T1S, R71W, in Forsythe gulch. Now under the lake formed by Gross dam. Boulder County.

OWNER: City of Denver. Previously Vanadium Corp. of America.

PRODUCTION: More than 16,000 units, with a small production in 1955.

WORKINGS: 260' vertical shaft, with levels at 50, 145, and 240 feet, in 1917. Supposedly deepened to 400' since 1917.

ORE OCCURRENCE: One of the largest orebodies in the district, but the ore is extremely siliceous and horny. Long surface cut about 10' in width and 30' deep was mined in the early years.

POTENTIAL: Mill tailings run about 0.5% WO₃.

LAST OPERATOR: C. H. Clark and E. P. Swerdfeger.

MAP SOURCES: Owner.

CORKSCREW

LOCATION: Sec. 12, T1S, R73W, about 900' W. of Lone Tree shaft, and directly north of Colorado Highway No. 119. Boulder County.

OWNER: V. C. A.

PRODUCTION: Probably less than 10,000 units, previous to 1914.

WORKINGS: Shaft about 200 feet in depth.

ORE OCCURRENCE: Vein in schist. Well crystallized ore.

POTENTIAL: Unknown.

LAST OPERATOR: Scruggs and Wilson.

MAP SOURCES: Owner.

CRACKERJACK

LOCATION: NE $\frac{1}{4}$ Sec. 4, T1S, R72W, on slope S. of N. Boulder Creek, W. of Switzerland Park. Boulder County.

OWNER: Margaret L. Peters.

PRODUCTION: Less than 100 units.

WORKINGS: Shaft and surface trenches.

ORE OCCURRENCE: Ferberite associated with sphalerite.

POTENTIAL: Dump indicates showing of ore.

LAST OPERATOR: Walter Laesch.

MAP SOURCES: No map.

CRACKERJACK

LOCATION: SW $\frac{1}{4}$ Sec. 29, T1N, R71W, about 600' NE of Dorothy shaft, in Millionaire Gulch. Boulder County.

OWNER: A. T. Barr and Robert C. Barr.

PRODUCTION: At least 500 units.

WORKINGS: 600' adit cuts three shafts at 430', 520', and 555'. Many shallow pits.

ORE OCCURRENCE: "Steel" tungsten in small streaks.

POTENTIAL: Ore showing in winze.

LAST OPERATOR: Gray (initials unknown), about 1944.

MAP SOURCES: George H. Teal.

CRETE

LOCATION: SW $\frac{1}{4}$ Sec. 29, T1N, R71W, 400' NE of Dorothy shaft. Boulder County.

OWNER: A. T. Barr and R. C. Barr.

PRODUCTION: About 460 units.

WORKINGS: 420' adit on Crete vein. Surface pits. Joins with Dorothy 2nd and 3rd levels.

ORE OCCURRENCE: Large part of production came from intersection of Crete vein with Peter and Nile veins.

POTENTIAL: Unknown.

LAST OPERATOR: Ralston and Tenhaeff.

MAP SOURCES: George H. Teal.

CROSS

LOCATION: NW $\frac{1}{4}$ Sec. 8, T1S, R72W, 1800' NE of Cold Spring mine, north side of Trearton Gulch. Boulder County.

OWNER: Cold Spring Tungsten, Inc.

PRODUCTION: About 40,000 units.

WORKINGS: Shaft with 4 levels, the lowest at 359 feet. Levels are approximately 800' long. Mine timbering has been damaged by lessees.

ORE OCCURRENCE: Several veins, including the Pump vein, converge to make the Cross. Hard ore.

POTENTIAL: Stope fill was yielding ore in 1955.

LAST OPERATOR: K. Horton, et al.

MAP SOURCES: Owner. USGS PP 245, plate 20.

CROSS NO. 2

LOCATION: SE $\frac{1}{4}$ Sec. 24, T1S, R73W, 2900' N87°W of Tungsten shaft. Boulder County.

OWNER: Cold Spring Tungsten, Inc.

PRODUCTION: 90,000 # of W, including 308 units, between 1907-17, in ore averaging 10.18%.

WORKINGS: 190' shaft; levels at 50', 120' and 180'.

ORE OCCURRENCE: 30' ore shoot NE of shaft above 120' level.

POTENTIAL: Unknown.

LAST OPERATOR: Clemens and Rugg, 1917-18.

MAP SOURCES: No map.

CROW NOS. 1, 1 $\frac{1}{2}$, 1 $\frac{3}{4}$

LOCATION: SE $\frac{1}{4}$ Sec. 12, T1S, R73W, at junction of Colo. highway 119 with Hurricane Hill road. Boulder County.

OWNER: Colorado Tungsten Corp.

PRODUCTION: 2000 units reported.

WORKINGS: Several shallow caved shafts.

ORE OCCURRENCE: Small highgrade ferberite veins in schist.

POTENTIAL: Unknown.

LAST OPERATOR: Cobb and Weldon.

MAP SOURCES: No map.

CROW NOS. 2 AND 37

LOCATION: Sec. 12 T1S, R73W, N. of Mud Lake, and W. of highway 119. Boulder County.

OWNER: Colorado Tungsten Corp.

PRODUCTION: Probably less than 5000 units.

WORKINGS: Four shafts connected by drifts.

ORE OCCURRENCE: Several intersecting veins in pegmatite, surrounded by schist.

POTENTIAL: Surface ore recovery in 1953 indicates possible stope-fill ore.

LAST OPERATOR: Cobb and Weldon.

MAP SOURCES: USGS PP 245, page 128.

CROW NO. 3

LOCATION: Sec. 12, T1S, R73W, south of Hoosier mine. Boulder County.

OWNER: Colorado Tungsten Corp.

PRODUCTION: Less than 1000 units.

WORKINGS: Several shafts and cuts.

ORE OCCURRENCE: Ferberite in pegmatitic veins.

POTENTIAL: Unknown.

LAST OPERATOR: Ray Flarty.

MAP SOURCES: None.

CROW NO. 4

LOCATION: Sec. 12, T1S, R73W, on N. side of Sherwood Gulch, about $\frac{1}{2}$ miles NW of Nederland. Boulder County.

OWNER: Colorado Tungsten Corp.

PRODUCTION: Probably over 15,000 units.

WORKINGS: 167' shaft; levels at 38', 73', 108', 133', 162'. Caved.
ORE OCCURRENCE: Coarsely crystalline ferberite in pegmatites.
POTENTIAL: Unknown.
LAST OPERATOR: Primos Chemical Co., 1918.
MAP SOURCES: VCA. USGS PP 245, page 113.

CROW NOS. 7 AND 8

LOCATION: Sec. 12, T1S, R73W, S. of Hurricane Hill road, 1/4-mile E. of Highway 119. Boulder County.
OWNER: Colorado Tungsten Corp.
PRODUCTION: About 2000 units.
WORKINGS: Various trenches, pits, and shafts.
ORE OCCURRENCE: Unknown.
POTENTIAL: Unknown.
LAST OPERATOR: Unknown.
MAP SOURCES: None.

CROW NO. 11

LOCATION: Sec. 12, T1S, R73W. Dump abuts E. side of Colo. 119, 1/4-mile N. of Hurricane Hill road. Boulder County.
OWNER: Colorado Tungsten Corp.
PRODUCTION: About 3000 units.
WORKINGS: Caved shaft, drifts at about 40 feet.
ORE OCCURRENCE: Highgrade ferberite veins in schist.
POTENTIAL: Unknown.
LAST OPERATOR: Ray Flarty.
MAP SOURCES: No map.

CROW NO. 12

LOCATION: Sec. 12, T1S, R73W, on upper road to Greenhorn mine, and NW of Mud Lake. Boulder County.
OWNER: Colorado Tungsten Corp.
PRODUCTION: Less than 1000 units.
WORKINGS: Caved shaft in soft ground. Level at about 75'.
ORE OCCURRENCE: Highgrade soft ore in NE-SW vein.
POTENTIAL: Surface ore recovery in 1954 indicates possible stope-fill ore. Workings caved during mining operations by Roose brothers while on good ore. Recommended that the Greenhorn be extended a short distance, to cut the No. 12 vein.
LAST OPERATORS: Cobb and Weldon.
MAP SOURCES: No map.

CROW NO. 17

LOCATION: Sec. 12, T1S, R73W, 125' NE of Crow 4. Boulder County.
OWNER: Colorado Tungsten Corp.
PRODUCTION: Probably less than 100 units.
WORKINGS: 35' shaft, short level and stope at 18'.
ORE OCCURRENCE: Small pocket in No. 4 vein.
POTENTIAL: Development from No. 4 mine found no ore.
LAST OPERATOR: Unknown.
MAP SOURCES: USGS PP 245, page 113.

CROW NO. 18

LOCATION: Sec. 12, T1S, R73W, 1/8-mile W. of hairpin turn in Colo. 119 at Sherwood Gulch. Boulder County.

OWNER: Colorado Tungsten Corp.

PRODUCTION: Probably over 17,000 units. One of the more prolific of the small mines of the district.

WORKINGS: Shaft with levels at 85', 123', 167', and 254'. A crosscut goes north, into VCA ground.

ORE OCCURRENCE: Highgrade ferberite in aplite.

POTENTIAL: Known ore possibility lies in VCA ground.

LAST OPERATOR: Jack MacKenzie.

MAP SOURCES: VCA. USGS PP 245, plate 11.

CROW NO. 19

LOCATION: Sec. 12, T1S, R73W, N. of and immediately adjoining Colo. 119 at the hairpin turn at Sherwood Gulch. Boulder County.

OWNER: Vanadium Corporation of America.

PRODUCTION: Small production during World War I.

WORKINGS: 35' shaft; open cut on surface.

ORE OCCURRENCE: Highgrade ore; vein in schist.

POTENTIAL: Ore said to show in floor.

LAST OPERATOR: James Flood et al.

MAP SOURCES: No map.

CROW NO. 22

LOCATION: Sec. 12, T1S, R73W, W. of Crow 12. Boulder County.

OWNER: Colorado Tungsten Corp.

PRODUCTION: Small.

WORKINGS: 60' shaft; 100' of drifting.

ORE OCCURRENCE: Ore was very light in weight; would not concentrate.

POTENTIAL: Unknown.

LAST OPERATOR: Ray and Russell Flarty.

MAP SOURCES: No map.

CROW NO. 36

LOCATION: Sec. 12, T1S, R73W, across Colo. 119, and gulch, east of Mud Lake. Boulder County.

OWNER: Colorado Tungsten Corp.

PRODUCTION: Less than 10,000 units, but one of the more prolific producers of the district.

WORKINGS: 50' shaft; drifts on network of small veins. Shaft area subsiding in 1959.

ORE OCCURRENCE: Small streaks in granite, schist, and aplite. No. 36 made some of the highest grade concentrate of the district, from 70% to 74%, in a clean, coarsely crystalline ferberite.

POTENTIAL: Small ore showings in floors of mine.

LAST OPERATOR: Cobb and Weldon.

MAP SOURCES: H. S. Cobb.

DAISY

LOCATION: Sec. 5, T1S, R72W.

OWNER: Cold Spring Tungsten, Inc.

PRODUCTION: Less than 30 units.
WORKINGS: One of several named prospects on an agricultural patent.
ORE OCCURRENCE: Unknown.
POTENTIAL: Unknown.
LAST OPERATOR: Unknown.
MAP SOURCES: No maps.

DAWN OF DAY — OHIO

LOCATION: Sec. 20, T42N, R7W, Dry Gulch area, about 8 miles N. of Silverton. San Juan County.
OWNER: Victor Steele.
PRODUCTION: One of the most productive tungsten mines in the district.
WORKINGS: 3 short adits, all caved.
ORE OCCURRENCE: Hubnerite was in a 120' ore shoot, 8" wide, of 40% ore.
POTENTIAL: Upper dump and stope fill near one portal recently milled.
LAST OPERATOR: Louis Schaeffer.
MAP SOURCES: Unknown.

DELANO

LOCATION: Sec. 7, T41N, R7W, about 2 mi. NW of Silverton. San Juan County.
OWNER: Henrik Avanzini.
PRODUCTION: One mill shipment yielded 5 tons of 61% concentrate in 1916-17.
WORKINGS: Crosscut about 100' in length, and 1300' of drifts.
ORE OCCURRENCE: 2 to 6-inch hubnerite band in a 6' vein, reportedly developed for 1300 feet, showing several small ore-shoots of up to 30' in length.
POTENTIAL: Possibility of developing a desirable prospect.
LAST OPERATOR: Dominick French.
MAP SOURCES: Warren C. Prosser.

DENVER

LOCATION: SE $\frac{1}{4}$ Sec. 11, T1S, R73W, about 500' N. of Illinois shaft, Boulder County.
OWNER: Cold Spring Tungsten, Inc.
PRODUCTION: 275 units reported.
WORKINGS: The only underground workings are in a crosscut from the Illinois shaft.
ORE OCCURRENCE: Unknown.
POTENTIAL: Unknown.
LAST OPERATOR: Wolfstongue Mining Co.
MAP SOURCES: No map.

DIAMOND

LOCATION: NE $\frac{1}{4}$ Sec. 8, T1S, R72W, 300' SW of Philadelphia mine, Dry Lake area. Boulder County.
OWNER: Gold, Silver and Tungsten, Inc., and M. M. Rinn.
PRODUCTION: Small production in 1916.
WORKINGS: 60' shaft; one level.

ORE OCCURRENCE: Horn type ore.

POTENTIAL: Unknown.

LAST OPERATOR: Doc Hill.

MAP SOURCES: No maps.

DILLON

LOCATION: SE $\frac{1}{4}$ Sec. 7, T1S, R72W, about 1500' W. of Vasco 6 shaft. Boulder County.

OWNER: Cold Spring Tungsten, Inc.

PRODUCTION: Less than 1000 units, mostly in 1907-09. Small production in 1916, and in 1955.

WORKINGS: 80' shaft.

ORE OCCURRENCE: Stopped out both sides of shaft.

POTENTIAL: Unknown.

LAST OPERATOR: Tom Hetzer. T. J. Hennings.

MAP SOURCES: Owner.

DOROTHY-KATIE

LOCATION: SW $\frac{1}{4}$ Sec. 29, T1N, R71W, in Millionaire Gulch, S. of Sugarloaf road. Boulder County.

OWNER: A. T. Barr and R. C. Barr.

PRODUCTION: Over 23,000 units.

WORKINGS: Dorothy: inclined shaft; levels at 100', 184', and 281'.

Katie: inclined shaft; levels at 79', 136', 195', and 248'.

ORE OCCURRENCE: Ore was mainly near Dorothy-Katie intersection.

POTENTIAL: Unknown.

LAST OPERATOR: Boulder Tungsten Mines, Inc.

MAP SOURCES: George H. Teal.

DOUBLE HEADER

LOCATION: NW $\frac{1}{4}$ Sec. 8, T1S, R72W, about 2000' E. of Cold Spring shaft. Boulder County.

OWNER: Vanadium Corporation of America.

PRODUCTION: Probably about 1000 units.

WORKINGS: Several short adits and shallow shafts. New shaft sunk in 1937.

ORE OCCURRENCE: In group of veins; worked on small scale.

POTENTIAL: Unknown.

LAST OPERATOR: Owner.

MAP SOURCES: Owner.

DUNMORE

LOCATION: Sec. 17, T43N, R7W, on highway, about 5 miles S. of Ouray. Ouray County.

OWNER: George E. Wing.

PRODUCTION: Small tungsten production, along with gold.

WORKINGS: 2 adits, one 174' above the other.

ORE OCCURRENCE: Hubnerite, in a vertical, chimney-like ore shoot.

POTENTIAL: A showing of ore is visible in the core of the vein.

LAST OPERATOR: E. E. Eggleston.

MAP SOURCES: No maps.

EARLY SPRING

LOCATION: NE $\frac{1}{4}$ Sec. 8, T1S, R72W, about 400' S. of the Philadelphia shaft, Dry Lake. Boulder County.

OWNER: Frank Robbins.

PRODUCTION: Probably less than 1000 units.

WORKINGS: Two or three shallow shafts.

ORE OCCURRENCE: Small veins in granite.

POTENTIAL: Unknown.

LAST OPERATOR: Roy Peterson, about 1918.

MAP SOURCES: No map.

EASTVIEW

LOCATION: Sec. 20, T1S, R72W, S. of Magnolia road, about 2 miles E. of Colo. 119. Boulder County.

OWNER: Merle Reynolds.

PRODUCTION: About 10 units.

WORKINGS: Many trenches, cuts, and shallow shafts.

ORE OCCURRENCE: Mostly as float, over an extensive area.

POTENTIAL: Surface areas may yield 1 to 2 pounds of 50% tungsten concentrate per ton, as placer.

LAST OPERATOR: J. M. Pastore.

MAP SOURCES: No map.

EDITH MARY

LOCATION: NE $\frac{1}{4}$ Sec. 7, T1S, R72W, about 500' SE of Western Star shaft, and 200' N. of Little Jap. Boulder County.

OWNER: Cold Spring Tungsten, Inc.

PRODUCTION: Few hundred units.

WORKINGS: Shallow shafts and open cuts.

ORE OCCURRENCE: Mine made highgrade ore.

POTENTIAL: Unknown.

LAST OPERATOR: George Todd, underground. Cobb and Weldon, surface.

MAP SOURCES: Owner.

ELSIE AND WINDY TUNNEL

LOCATION: SE $\frac{1}{4}$ Sec. 19, T1S, R72W, about 4 miles SE of Nederland. Boulder County.

OWNER: Guy Tanner et al.

PRODUCTION: About 16,180 units through World War II. Small production in 1955.

WORKINGS: Shaft on Elsie claim, 265'. Tunnel on Windy claim, 100' below shaft collar.

ORE OCCURRENCE: Single continuous ore shoot on Elsie vein, extending to below tunnel level.

POTENTIAL: Indicated possible ore pitching under creek. Might be core-drilled.

LAST OPERATOR: Eugene Scohy and Overly brothers.

MAP SOURCES: USGS PP 245, plate 7.

EUREKA

LOCATION: SE $\frac{1}{4}$ Sec. 35, T1S, R72W, about 2500' SW of Boulder Falls, in Middle Boulder Canyon. Boulder County.

OWNER: Eureka Tungsten Company.

PRODUCTION: Probably 30,000 units. Over 3000 units produced in 1956.

WORKINGS: Several tunnels. Main workings are through the 1635-foot Midway tunnel.

ORE OCCURRENCE: Granite and horn quartz cemented by ferberite. Eureka vein is in Boulder Creek granite.

POTENTIAL: In production at the time of the 1956 price failure.

LAST OPERATOR: Eureka Tungsten Co. Elliot Ralston, manager.

MAP SOURCES: Owner. USGS PP 245, page 168.

EVALINE

LOCATION: Sec. 20, T42N, R7W, 8 miles from Silverton, in Dry Gulch. San Juan County.

OWNER: Evaline Mining and Milling Co.

PRODUCTION: Possibly 100 tons of 12% ore through the Yukon mill.

WORKINGS: Tunnel driven from Dry Gulch to intersect the tungsten-vein.

ORE OCCURRENCE: Ore reported to be scattered, but of good concentrating grade.

POTENTIAL: Ore shows in dump. Good prospect for depth.

LAST OPERATOR: Louis Schaeffer.

MAP SOURCES: Unknown.

EVENING POST

LOCATION: SW $\frac{1}{4}$ Sec. 35, T1N, R72W, 3200' S84°E of Peewink Mtn. Boulder County.

OWNER: Mattie M. Lawrence.

PRODUCTION: Less than 10,000 units from shaft. None from adit.

WORKINGS: 1150' adit. Shaft with 3 levels.

ORE OCCURRENCE: In a short NE vein in granite.

POTENTIAL: Unknown.

LAST OPERATOR: Forrest.

MAP SOURCES: USGS PP 245, page 165.

EXCHANGE

LOCATION: NE $\frac{1}{4}$ Sec. 34, T1N, R72W, $\frac{1}{2}$ -mile N. of Peewink Mtn. Boulder County.

OWNER: Vanadium Corp. of America.

PRODUCTION: About 500 units, in 5% ore.

WORKINGS: Adit, caved.

ORE OCCURRENCE: In aplite, in NNE branch of Quaker City vein system.

POTENTIAL: Unknown.

LAST OPERATOR: James T. Durkan.

MAP SOURCES: Owner.

FAIRCOUNT

LOCATION: Middle of S $\frac{1}{2}$ Sec. 36, T1N, R72W, N. side of Boulder Canyon, below junction of north and Middle Boulder creeks. Boulder County.

OWNER: C. L. Stubbs.

PRODUCTION: 3000 units.
WORKINGS: On Denver claim.
ORE OCCURRENCE: Production was made during World War I.
POTENTIAL: Unknown.
LAST OPERATOR: Mr. Widdows, Ft. Collins.
MAP SOURCES: No underground maps.

FIRECRACKER

LOCATION: SW $\frac{1}{4}$ Sec. 5, T1S, R72W, S. of Blackjack shaft. Boulder County.
OWNER: Cold Spring Tungsten, Inc.
PRODUCTION: About 500 units, in 25.75% ore.
WORKINGS: Old adit; caved shaft of unknown depth; new 35' shaft.
ORE OCCURRENCE: In vein striking along porphyry dikes in granite.
POTENTIAL: Unknown.
LAST OPERATOR: Ray Flarty.
MAP SOURCES: Owner.

FIRST CHANCE

LOCATION: Sec. 20, T242N, R7W; Dry Gulch area, 8 miles N. of Silverton. San Juan County.
OWNER: Thomas Burgess.
PRODUCTION: Small production in 1953 ($\frac{1}{2}$ -ton of 10% ore).
WORKINGS: Surface cuts.
ORE OCCURRENCE: Vein in San Juan volcanic series.
POTENTIAL: Unknown.
LAST OPERATOR: Owner.
MAP SOURCES: No maps.

FITZSIMMONS NO. 1

LOCATION: SE $\frac{1}{4}$ Sec. 19, T1S, R72W, about 850' SW of Mammoth shaft. Boulder County.
OWNER: W. L. Tanner & Son.
PRODUCTION: About 4000 units.
WORKINGS: 4-level inclined shaft, over 217' in depth.
ORE OCCURRENCE: Short ore shoot, 217' deep.
POTENTIAL: Unknown.
LAST OPERATOR: Guy Tanner mined pillars.
MAP SOURCES: USGS PP 245, pages 95, 99.

FITZSIMMONS NO. 2

LOCATION: Same as Fitzsimmons No. 1.
OWNER: Same as Fitzsimmons No. 1.
PRODUCTION: About 4000 units.
WORKINGS: Surface cuts and stopes.
ORE OCCURRENCE: Unknown.
POTENTIAL: Unknown.
LAST OPERATOR: Unknown; was during World War I.
MAP SOURCES: Same as Fitzsimmons 1.

FITZSIMMONS NO. 4

LOCATION: Same as Fitzsimmons 1.
 OWNER: Same as Fitzsimmons No. 1.
 PRODUCTION: Unknown.
 WORKINGS: Several shafts and shallow pits.
 ORE OCCURRENCE: Unknown.
 POTENTIAL: Unknown.
 LAST OPERATOR: Unknown; World War I.
 MAP SOURCES: Same as Fitzsimmons 1.

FITZSIMMONS NO. 6

LOCATION: Same as Fitzsimmons 1.
 OWNER: Same as Fitzsimmons 1.
 PRODUCTION: Much of production credited to the Mammoth mine.
 WORKINGS: Shallow surface shafts. Underground work was done from the Mammoth.
 ORE OCCURRENCE: Smaller ore than that in the Mammoth.
 POTENTIAL: Unknown.
 LAST OPERATOR: Guy Tanner.
 MAP SOURCES: Same as Fitzsimmons 1.

FOREST HOME

LOCATION: NE $\frac{1}{4}$ Sec. 7, T1S, R72W, about 1500' S67°W of Cold Spring, and on W. side of road to Cold Spring. Boulder County.
 OWNER: Cold Spring Tungsten, Inc.
 PRODUCTION: Probably over 10,000 units.
 WORKINGS: Inclined shaft; 2 levels at 107 and 200 feet. Second level caved prior to 1942. 1st level connects with Cold Spring No. 2. The mine was reopened in 1951 under a DMEA contract, and 135' of crosscutting, 122' of drifting, 35' of raising was done on the 200' level; 85' of crosscutting, 135' of drifting was done on the 107' level. Ore was found and mined.
 ORE OCCURRENCE: Highgrade ore in aplite and gneissic granite.
 POTENTIAL: Unknown.
 LAST OPERATOR: Tom Stanford.
 MAP SOURCES: Owner. USGS PP 245, plate 16.

FRACTION

LOCATION: E $\frac{1}{2}$ Sec. 34, and W $\frac{1}{2}$ Sec. 35, T1N, R72W. Boulder County.
 OWNER: Vanadium Corporation of America.
 PRODUCTION: Less than 1000 units. Small production in 1955.
 WORKINGS: Adit and winze.
 ORE OCCURRENCE: Unknown.
 POTENTIAL: Unknown.
 LAST OPERATOR: Owner.
 MAP SOURCES: Owner.

GALE

LOCATION: NW $\frac{1}{4}$ Sec. 7, T1S, R72W, 100' N. of portal of Clyde tunnel. Boulder County.
 OWNER: Cold Spring Tungsten, Inc.

PRODUCTION: Over 7000 units.

WORKINGS: 182' shaft. Under a 1955 DMEA contract, 75' of shaft, and 314.5' of drift and crosscut on the lower level was completed.

ORE OCCURRENCE: Vein in fine-grained granite.

POTENTIAL: Unknown.

LAST OPERATOR: Harold Williams.

MAP SOURCES: Owner. USGS PP 245, plate 12.

GALTIE BOY

LOCATION: Sec. 17, T42N, R7W, about 8 miles from Silverton, in Dry Gulch. San Juan County.

OWNER: Green Mountain Development Corp.

PRODUCTION: Unknown.

WORKINGS: Extensive old workings with later adit below. All caved.

ORE OCCURRENCE: 2 ore shoots; 2.4' x 10', and 1.7' x 60'.

POTENTIAL: Spotty ore was on hanging wall.

LAST OPERATOR: Billy Lonergan.

MAP SOURCES: Unknown.

GEM

LOCATION: NE $\frac{1}{4}$ Sec. 7, T1S, R72W, 1100' N79°W of Cold Spring shaft. Boulder County.

OWNER: Cold Spring Tungsten, Inc.

PRODUCTION: Less than 2000 units.

WORKINGS: 120' shaft with 2 levels, first level at 90'. An older shaft is buried in the dump 80' NE of the present Gem shaft.

ORE OCCURRENCE: Very highgrade ore in aplite.

POTENTIAL: Ore produced from dump indicates possible stope-fill ore.

LAST OPERATOR: Todd and Flarty, 1938. Cobb and Weldon, 1952.

MAP SOURCES: Owner.

GERMANIA 1 AND 2

LOCATION: NW $\frac{1}{4}$ Sec. 8, T1S, R72W, E. of Cold Spring, in Cold Spring group of claims. Boulder County.

OWNER: Cold Spring Tungsten, Inc.

PRODUCTION: Less than 1000 units.

WORKINGS: The present (new) Cold Spring shaft is on the Germania.

ORE OCCURRENCE: Stopes east and west of new shaft.

POTENTIAL: Unknown.

LAST OPERATOR: Owner.

MAP SOURCES: Owner.

GLENDALE

LOCATION: Sec. 32, T1S, R72W, S. of Manchester mine. Gilpin County.

OWNER: Ray Slaughenaupt and William Goldman.

PRODUCTION: Small production; total unknown.

WORKINGS: 110' shaft with two levels. Water stands 40' below collar.

ORE OCCURRENCE: Highgrade ferberite in granite. Vein usually pinched in pegmatite.

POTENTIAL: Requires sinking, and short crosscut to vein.

LAST OPERATOR: William Quiner, 1955.

MAP SOURCES: Owners.

GOLD COIN

LOCATION: SW $\frac{1}{4}$ Sec. 29, T1N, R71W, about 500' NNE of the Dorothy shaft. Boulder County.

OWNER: Homer Pennock.

PRODUCTION: Included in Dorothy-Katie.

WORKINGS: 2 shafts; several open cuts. Dorothy 2nd and 3rd levels extend under Gold Coin.

ORE OCCURRENCE: Unknown.

POTENTIAL: Small ore shows in bottom of mine.

LAST OPERATOR: Boulder Tungsten Mines, Inc.

MAP SOURCES: George H. Teal.

GOLD LAKE

LOCATION: Sec. 4, T1N, R72W, S. of Gold Lake. Boulder County.

OWNER: George Harvey.

PRODUCTION: Less than 100 units.

WORKINGS: 50' shaft, very wet from lake seepage. Short drift NE on 30' level.

ORE OCCURRENCE: Horn type. 3" of 8%-12%.

POTENTIAL: Small streak in bottom.

LAST OPERATOR: James Morgan.

MAP SOURCES: No map.

GOLD LEAF

LOCATION: Sec. 29, T1N, R71W, in Bummer Gulch. Boulder County.

OWNER: Hal Miller.

PRODUCTION: About 50 units, between 1934 and 1943.

WORKINGS: 125' tunnel; 60' shaft, with drifts.

ORE OCCURRENCE: Crystalline and "steel" tungsten, up to 8% in granite.

POTENTIAL: An intersection to the south is not yet reached.

LAST OPERATOR: W. E. Brewster.

MAP SOURCES: Owner.

GOLD THREAD

LOCATION: Sec. 28, T42N, R7W, 10 miles from Silverton, near the S. fork of Cement Creek. San Juan County.

OWNER: H. C. Sprinkle, Durham, N. C.

PRODUCTION: World War I production reported.

WORKINGS: 300' adit.

ORE OCCURRENCE: 1" to 3" hubnerite in an 18" vein.

POTENTIAL: Unknown.

LAST OPERATOR: Big Colorado M. & M. Co.

MAP SOURCES: Unknown.

GOLDEN QUEEN

LOCATION: Sec. 6, T1N, R72W, at Ward. Boulder County.

OWNER: Joseph Walters.

PRODUCTION: At least 140 units. Hubnerite and scheelite in sulphides. Estimated several thousand units lost since 1905 in gold ore sales.

WORKINGS: 360' shaft; levels at 100', 220', 300', 350'. The 200' level extends west to the endline.

ORE OCCURRENCE: Crystalline hubnerite in quartz, alongside sulphide gold ore shoot.

POTENTIAL: Extensive tungsten-bearing pillars said to be left on 2 levels. 2-oz. Au, with tungsten, extends into Newmarket, across west end line. Said to be 1% ore on 220' level east.

LAST OPERATOR: Owner.

MAP SOURCES: Owner.

GOOD FRIDAY (*see April Fool*)

GRAND VIEW

LOCATION: SW $\frac{1}{4}$ Sec. 8, T1N, R71W, about 1 mile SW of Sunshine. Boulder County.

OWNER: A. C. Hager.

PRODUCTION: About 2000 units.

WORKINGS: 600' inclined shaft.

ORE OCCURRENCE: Highly siliceous tungsten ore found and mined at 156' and 250' levels.

POTENTIAL: The tungsten ore shoot returned into gold ore.

LAST OPERATOR: Ray Betasso. Bus Tyrer.

MAP SOURCES: Domino Mines, Inc.

GRAPHIC

NOTE: Tungsten production has been incorrectly reported from the Graphic mine. There was, however, tungsten found on a claim NE of the Graphic.

LOCATION: NE $\frac{1}{4}$ Sec. 5, T1S, R71W. One of the mines first reached on the way from Boulder Canyon to Magnolia. Boulder County.

OWNER: Unknown. Probably abandoned.

PRODUCTION: Less than 50 units.

WORKINGS: Short tunnel and shaft.

ORE OCCURRENCE: Very small streak of horn ore.

POTENTIAL: Unknown.

LAST OPERATOR: Owner.

MAP SOURCES: No map.

GREAT SPHINX

LOCATION: SW $\frac{1}{4}$ Sec. 20, T1N, R71W, S. of Crisman. Boulder County.

OWNER: Edward Bonelli.

PRODUCTION: None recorded.

WORKINGS: Adits and short drifts.

ORE OCCURRENCE: Vein outcrops. Horn type ore.

POTENTIAL: Unknown.

LAST OPERATOR: A. B. Weldon.

MAP SOURCES: No map.

GREENHORN

LOCATION: Sec. 12, T1S, R73W, on S. side of Sherwood Gulch. Boulder County.

OWNER: Colorado Tungsten Corp.

PRODUCTION: About 4000 units, most of which were produced before 1915.

WORKINGS: Crosscut tunnel to several veins. About 690' of drifts and crosscuts. Several shallow shafts. The Greenhorn includes Crow Nos. 5, 9, 15, and 16, and should eventually cut No. 12.

ORE OCCURRENCE: Highgrade ferberite in aplite.

POTENTIAL: See section on Crow No. 12.

LAST OPERATOR: Cobb and Weldon.

MAP SOURCES: USGS PP 245, page 128.

GREEN ROCK

LOCATION: Secs. 26 & 35, T9N, R71W, 2 miles N. of Columbine summer camp. Larimer County.

OWNER: Clifford Woodhouse.

PRODUCTION: About 50 tons of 1% ore in 1942. Some 4% - 5% ore.

WORKINGS: 30' shaft, and 2 short adits.

ORE OCCURRENCE: 6' scheelite vein in quartz-biotite schist.

POTENTIAL: Unknown.

LAST OPERATOR: George H. Teal.

MAP SOURCES: George H. Teal.

GREYBACK

LOCATION: SE $\frac{1}{4}$ Sec. 11, T1S, R73W, about 1400' S. of new Conger shaft. Boulder County.

OWNER: Vanadium Corporation of America.

PRODUCTION: Probably in excess of 4000 units.

WORKINGS: 100' shaft, with drifts west. Adit, which made the production.

ORE OCCURRENCE: Crystalline ore near intersection of 2 veins.

POTENTIAL: Ore has been noted in lower floor, and in lower filled shaft.

LAST OPERATOR: Owner.

MAP SOURCES: Owner. USGS PP 245, page 125.

HALLIE A.

LOCATION: Sec. 25, T1N, R73W, 7 $\frac{1}{2}$ miles N. of Nederland. Boulder County.

OWNER: Morris Mitts.

PRODUCTION: Less than 500 units.

WORKINGS: 130' lower adit; 200' upper adit; shaft with 160' drift on 100' level; 75' winze.

ORE OCCURRENCE: Horn ore. Shear zone with quartz and minor amounts of ferberite.

POTENTIAL: Mine was abandoned after DMEA completion.

LAST OPERATOR: McBroom.

MAP SOURCES: Owner. USGS.

HELEN

LOCATION: Near middle of N $\frac{1}{2}$ Sec. 30, T1N, R71W, S. of Logan mine. Boulder County.

OWNER: John Bosko.

PRODUCTION: About 30 units.

WORKINGS: Shaft and open cuts.

ORE OCCURRENCE: Horn ore.

POTENTIAL: Unknown.

LAST OPERATOR: Owner.

MAP SOURCES: No map.

HERALD

LOCATION: NW $\frac{1}{4}$ Sec. 35, T1N, R72W, S. of Sugarloaf; Boulder County.

OWNER: Maude Coughlin estate.

PRODUCTION: None.

WORKINGS: Inclined shaft; 3 levels, at 71, 118, and 197 feet.

ORE OCCURRENCE: Telluride gold has been produced. Tungsten as ferberite occurs in the vein.

POTENTIAL: Unknown.

LAST OPERATOR: John W. McChristy, 1952.

MAP SOURCES: USGS PP 245, page 173.

HILDEGARDE

LOCATION: NE $\frac{1}{4}$ Sec. 33, T1N, R72W, about 150' E. of Oregon shaft. Boulder County.

OWNER: Vanadium Corp. of America.

PRODUCTION: Over 1500 units.

WORKINGS: From 2nd level of Oregon mine. Open cuts.

ORE OCCURRENCE: Ferberite and scheelite; vein in granite.

POTENTIAL: Unknown.

LAST OPERATOR: C. H. Smith.

MAP SOURCES: Owner.

HILLSIDE

LOCATION: SE $\frac{1}{4}$ Sec. 34, T1N, R72W, in Gordon Gulch. Boulder County.

OWNER: Vanadium Corp. of America.

PRODUCTION: Over 1500 units.

WORKINGS: Old tunnel at least 200' in length. 220' shaft with levels at 60', 125' and 200'. Extensive stoping on lower level.

ORE OCCURRENCE: Up to 10'' vein; ore both crystalline and horn.

POTENTIAL: Ore was evident all the way down the shaft; shows in bottom of shaft. Shaft was quite wet.

LAST OPERATOR: Eugene Scohy and Overly brothers.

MAP SOURCES: John Overly.

HOLY CROSS

Horrible Gash, unpatented.

LOCATION: Sec. 5, T1S, R72W, Boulder County.

OWNER: Cold Spring Tungsten, Inc.

PRODUCTION: 32 units recorded.

WORKINGS: Two of several named prospects on an agricultural patent.

ORE OCCURRENCE: Unknown.

POTENTIAL: Unknown.

LAST OPERATOR: Unknown.

MAP SOURCES: No maps.

HOME RUN

LOCATION: NE $\frac{1}{4}$ Sec. 6, T1S, R72W, N. of Sugarloaf road at Lakewood. Boulder County.

OWNER: Crucible Steel Co. of America.

PRODUCTION: About 100 units during World War I.

WORKINGS: Shallow shafts and surface cuts.

ORE OCCURRENCE: Horn and crystalline ore.

POTENTIAL: Unknown.

LAST OPERATOR: Unknown.

MAP SOURCES: No maps known.

HUBNERITE

LOCATION: Sec. 32, T15S, R81W, 13 miles by road from Pitkin, on the N. side of Cumberland Pass. Gunnison County.

OWNER: U. S. Tungsten Corp.

PRODUCTION: Estimated 100 units.

WORKINGS: 3 adits. Lower one is a 63' crosscut, which was reopened in 1953-54 under a DMEA contract. 200' of additional drifting and crosscutting was done, after which the project was abandoned.

ORE OCCURRENCE: 3 hubnerite-bearing veins. Dump specimens indicate hubnerite-bearing streaks of from 4 to 8 inches in width.

POTENTIAL: Vein was crosscut 40' from the portal, assaying 2.76% over 2 $\frac{1}{2}$ feet. No drifting done. An additional 60' of crosscut cut 8' of less than 1%, also 6" of 17%. (Statement of A. L. Pearson, Pitkin.)

LAST OPERATOR: DMEA.

MAP SOURCES: USGS.

HUGO

LOCATION: SW $\frac{1}{4}$ Sec. 5, T1S, R72W, on N. side of N. Boulder Creek, east of Lakewood. Boulder County.

OWNER: Alton Stinson.

PRODUCTION: About 2000 units in 2.25% ore, in 1943-44.

WORKINGS: Shaft with levels at 150 and 220 feet. 260 feet of drift on the 150, and 170 feet on the 220.

ORE OCCURRENCE: One ore-shoot containing fine-grained ferberite, horny ferberite, some scheelite, and black horn quartz.

POTENTIAL: Unknown.

LAST OPERATOR: Boulder Tungsten Mills, Inc.

MAP SOURCES: H. S. Cobb. USGS PP 245, page 155.

HUMMER

LOCATION: NW $\frac{1}{4}$ Sec. 7, T1S, R72W, 250' NW of Hoosier shaft. Boulder County.

OWNER: Cold Spring Tungsten, Inc.

PRODUCTION: Over 200 units.

WORKINGS: 65' shaft; about 190' of drifting.

ORE OCCURRENCE: Good ore was in the shaft, but not in other workings.

POTENTIAL: Unknown.

LAST OPERATOR: Johnson brothers.

MAP SOURCES: USGS PP 245, page 128.

IDA MAE

LOCATION: SE $\frac{1}{4}$ Sec. 11, T51N, R4E, 12 miles by road from Pitkin, and W. of Cumberland Pass. Gunnison County.

OWNER: U. S. Tungsten Corp.

PRODUCTION: 60 tons of 11% ore during World War I. Reported that \$69,910.00 has been produced since.

WORKINGS: 60' shaft; crosscut adit; several surface pits and short adits.

ORE OCCURRENCE: At least seven 1 to 3-foot veins. Most of them are said to have a 2" to 6" streak of quartz-hubnerite along one wall.

POTENTIAL: Unknown.

LAST OPERATOR: Owner.

MAP SOURCES: Owner.

ILLINOIS

LOCATION: SE $\frac{1}{4}$ Sec. 11, T1S, R73W, about .8 mile NW of Nederland. Boulder County.

OWNER: Cold Spring Tungsten, Inc.

PRODUCTION: About 26,500 units, in ore averaging 2.5%.

WORKINGS: 500' shaft; levels at 145, 200, 300, 400, and 500 feet. Illinois 4, and Illinois Extension 3, via the Oregon and Beddig mines, join the Conger, but 25' below Conger 3.

ORE OCCURRENCE: Ferberite veins in granite.

POTENTIAL: Unknown.

LAST OPERATOR: VCA, 1952.

MAP SOURCES: Owner. USGS PP 245, page 102; plates 8, 9.

IOWA

LOCATION: NE $\frac{1}{4}$ Sec. 31, T1N, R72W, E. of Ophir-Miser group, in Gordon Gulch. Boulder County.

OWNER: Vanadium Corp. of America.

PRODUCTION: About 100 units.

WORKINGS: Short adit.

ORE OCCURRENCE: Ferberite and scheelite; vein in granite.

POTENTIAL: Small amount of development by underhand stoping produced fair grade of ore in 1955.

LAST OPERATOR: A. B. Weldon, et al.

MAP SOURCES: No map.

IRENE

LOCATION: NE $\frac{1}{4}$ Sec. 31, T1N, R72W, about 9 miles N. of Nederland, and S. of the Washington Avenue mine. Boulder County.

OWNER: J. E. Spaulding.

PRODUCTION: 5 tons of .89% in 1955.

WORKINGS: 150' shaft with 2 levels. Adit joins the 70' level.

ORE OCCURRENCE: Horn ore, running up to 3%.

POTENTIAL: Vein opened on surface by bulldozer.

LAST OPERATOR: Owner.

MAP SOURCES: Owner.

JACK AND SUMMIT

LOCATION: SE $\frac{1}{4}$ Sec. 7, T1S, R72W, at the junction of the Cold Spring Road with the ridge road turning east, at the E. end of Hurricane Hill. Boulder County.

OWNER: Cold Spring Tungsten, Inc.

PRODUCTION: About 3600 units, in ore averaging 11.77%.

WORKINGS: Inclined shaft, caved; levels at 57, 116, and 175 feet. The 116' level is the most extensive. Also other old caved shafts.

ORE OCCURRENCE: Veins were in aplite and schist. Made ore only on 175' level.

POTENTIAL: Dump screenings yielded \$5.00 per ton at the \$63.00 per unit price, which indicates that stope-fills should be investigated.

LAST OPERATOR: Cobb and Weldon.

MAP SOURCES: Owner. USGS PP 245, page 152.

JASPER QUEEN

LOCATION: Sec. 11, T12S, R72W, 4.6 miles W. of Lake George on U.S. highway No. 24. Park County.

OWNER: Consolidated Tungsten Corp.

PRODUCTION: 3700 lbs of 1.3%; 14 tons of 0.62%, during World War II.

WORKINGS: Shallow shaft, pits, and trenches.

ORE OCCURRENCE: Lenses of thinly-coated scheelite, in lime-silicate beds.

POTENTIAL: Unknown.

LAST OPERATOR: Hayden Mining Co.

MAP SOURCES: Possibly from Hayden Mining Co.

JUNE

LOCATION: Middle of E $\frac{1}{4}$ Sec. 35, T1N, R72W, above Eureka mine. Boulder County.

OWNER: George Todd.

PRODUCTION: About 50 units.

WORKINGS: Shallow shaft.

ORE OCCURRENCE: Horn Type ore. Good showing in 1953.

POTENTIAL: Unknown.

LAST OPERATOR: Owner.

MAP SOURCES: No Maps.

KATIE (see Dorothy)**KEKIONGA**

LOCATION: On S line of Sec. 6, T1S, R71W, above Magnolia on the upper Magnolia road, which passes between the dumps. The workings may be clearly seen from many high points miles to the north. Boulder County.

OWNER: Mrs. Wm. Greenewald.

PRODUCTION: About 2000 units.

WORKINGS: Shaft, over 200'. Other shafts and cuts.

ORE OCCURRENCE: Horn ore, often carrying gold values.

POTENTIAL: Last work was done under an RFC loan. Combination gold and tungsten ore was developed; supposedly not mined.

LAST OPERATOR: McDonald.

MAP SOURCES: Owner. USGS.

KICKER

LOCATION: NW $\frac{1}{4}$ Sec. 8, T1S, R72W, 750' N63°E of Western Star shaft. Boulder County.

OWNER: Cold Spring Tungsten, Inc.

PRODUCTION: Over 7000 units in 18.6% ore. Small amount of work in 1954.

WORKINGS: Inclined shaft; 5 levels, at 33, 68, 108, 153, and 203 feet.

The 108 and 203 levels the most extensive. Shaft collar caved, 1955.

ORE OCCURRENCE: Vein is a branch of the Western Star.

POTENTIAL: Unknown, but said to be ore in some of the stope-fills.

LAST OPERATOR: T. J. Hennings.

MAP SOURCES: Owner. USGS PP 245, page 155.

KING

LOCATION: Sec. 28, T41N, R7W, 2 miles S. of Silverton. San Juan County.

OWNER: San Juan County.

PRODUCTION: Small amount of tungsten, along with gray copper.

WORKINGS: Adit and raise with 4 levels. The extension of the Chicago vein.

ORE OCCURRENCE: Copper and tungsten ore.

POTENTIAL: Unknown.

LAST OPERATOR: King Mining Company.

MAP SOURCES: No maps.

LADY LUCK

LOCATION: Sec. 34, T1N, R72W, between the Sugarloaf and Dream Canyon roads; above the Pennsylvania mine. Boulder County.

OWNER: C. H. Smith.

PRODUCTION: Over 1000 units.

WORKINGS: 60' shaft; levels at 35' and 60'; 100' of drift on lower level. Stope 50' in length.

ORE OCCURRENCE: Ferberite veins in granite.

POTENTIAL: New ore was found in surface cut, 1956.

LAST OPERATOR: Owner.

MAP SOURCES: No map.

LAST CHANCE NO. 1

LOCATION: Secs. 7 & 12, T1S, R72W, about 600' S. of Hoosier shaft. Boulder County.

OWNER: Cold Spring Tungsten, Inc., eastern part; Colorado Tungsten Corp., western part.

PRODUCTION: Probably less than 1000 units.

WORKINGS: Several shallow shafts and pits.

ORE OCCURRENCE: Vein in aplite and pegmatite.

POTENTIAL: Unknown.

LAST OPERATOR: Unknown lessees during World War I.

MAP SOURCES: No maps.

LAST CHANCE NO. 2

LOCATION: NE $\frac{1}{4}$ Sec. 7, T1S, R72W, about 750' SW of Western Star shaft; Boulder County.

OWNER: Cold Spring Tungsten, Inc.

PRODUCTION: Over 1000 units.

WORKINGS: Inclined shaft; levels at 96' and 170' about 690' of drift on each level. 1st level caved NE of shaft in 1929.

ORE OCCURRENCE: Wide crystalline lowgrade vein. Ore ran about 6% as sorted in the stopes.

POTENTIAL: Said to be 3 to 4 feet of ore in floor under 125' stope on 170-level east.

LAST OPERATOR: Ray Flarty.

MAP SOURCES: Owner. USGS PP 245, page 154.

LILY

LOCATION: NW $\frac{1}{4}$ Sec. 7, T1S, R72W, on Colo. 119, 1 $\frac{1}{2}$ miles NE of Nederland; Boulder County.

OWNER: Cold Spring Tungsten, Inc.

PRODUCTION: Over 3700 units, most of which were in ore averaging 25.5%.

WORKINGS: Shallow shaft and joining adit, with 4 drifts on veins.

ORE OCCURRENCE: Highgrade ferberite in fine-grained granite and coarse-grained aplite.

POTENTIAL: Screened stope-fills indicated \$5.00 per ton value, at the \$63.00 per unit price.

LAST OPERATOR: Cobb and Weldon.

MAP SOURCES: Owner. USGS PP245, page 116.

LINCOLN

LOCATION: SE $\frac{1}{4}$ Sec. 30, T1N, R71W, in Bummer Gulch; Boulder County.

OWNER: James McGlaghan.

PRODUCTION: 1250 units.

WORKINGS: Shaft in creek bottom; 60' tunnel; surface cuts.

ORE OCCURRENCE: Vein in granite. Tungsten was in cross vein.

POTENTIAL: Unknown. Was primarily a gold mine.

LAST OPERATOR: Owner.

MAP SOURCES: No maps.

LITTLE DORA

LOCATION: Sec. 17, T41N, R7W, on the S. edge of Silverton; San Juan County.

OWNER: Mystery Gold Mining Company.

PRODUCTION: Substantial. One shipment, from A level, was comprised of 19 tons of 35% ore.

WORKINGS: Adit, crosscutting tungsten vein and other veins.

ORE OCCURRENCE: Veins in quartz-monzonite stock. Hubnerite.

POTENTIAL: New levels to be developed.

LAST OPERATOR: Owner.

MAP SOURCES: Owner.

LITTLE JACK

LOCATION: Sec. 34, T1N, R72W, E. of Farwell Gulch, in Gordon Gulch; Boulder County.

OWNER: James Durkan.

PRODUCTION: Very small.

WORKINGS: Surface cuts.

ORE OCCURRENCE: Horn type.

POTENTIAL: Unknown.

LAST OPERATOR: Owner.

MAP SOURCES: No map.

LITTLE JAP

LOCATION: NE $\frac{1}{4}$ Sec. 7, T1S, R72W, about 300' N. of Tenderfoot shaft. Boulder County.

OWNER: Cold Spring Tungsten, Inc.

PRODUCTION: Over 400 units.

WORKINGS: In a N-S vein. 60' shaft, caved.

ORE OCCURRENCE: Crystalline ore in granite. Stope N. of shaft.

POTENTIAL: Dump was all \$5.00 ore at the \$63.00 per unit price. Stopefill may be worth investigating. Said to be lowgrade ore in footwall of stope; also a flat vein in FW at about 30'. A 10' raise from the bottom near shaft showed iridescent ferberite.

LAST OPERATOR: Cobb and Weldon.

MAP SOURCES: Owner.

LITTLE LESTER

LOCATION: SE $\frac{1}{4}$ Sec. 36, T1N, R72W, 500' S80°E of Good Friday shaft. Boulder County.

OWNER: G. R. Anderson.

PRODUCTION: About 500 units.

WORKINGS: 180' adit; 70' shaft with 1 level about 140' long, on the Pleasant Dream vein.

ORE OCCURRENCE: Small streak of light, horny ore.

POTENTIAL: Unknown.

LAST OPERATOR: A. B. Pace.

MAP SOURCES: No map.

LITTLE MAJOR

LOCATION: NE $\frac{1}{4}$ Sec. 34, T1N, R72W, about 1000' NE of mouth of Perkins Gulch. Boulder County.

OWNER: Vanadium Corp. of America.

PRODUCTION: Contributed to the production of the Gordon Gulch group, of 36,000 units by 1907.

WORKINGS: 2 shafts; 2 levels; open stopes, in 1960.

ORE OCCURRENCE: Mainly near junction of Little Major and Miser's Hoard veins, about 160' SE of Little Major shaft.

POTENTIAL: Stringered zones are visible in stope walls.

LAST OPERATOR: C. L. Mason.

MAP SOURCES: Owner. USGS PP 245, page 160.

LOGAN

LOCATION: SE $\frac{1}{4}$ Sec. 19, T1N, R71W, in Sunbeam Gulch; Boulder County.

OWNER: Logan Metals Company.

PRODUCTION: About 2250 units. Primarily a gold mine.

WORKINGS: 5 adit levels.

ORE OCCURRENCE: Tungsten was found on No. 3, and lower levels.

POTENTIAL: Unknown, in regard to tungsten.

LAST OPERATOR: Seth Armstead.

MAP SOURCES: Owner. USGS PP 245, pages 178, 180; plate 26.

LONE JACK

LOCATION: NW $\frac{1}{4}$ Sec. 7, T1S, R72W, contiguous to Clyde claim. Boulder County.

OWNER: Cold Spring Tungsten, Inc.

PRODUCTION: Less than 100 units.

WORKINGS: 40' shaft.

ORE OCCURRENCE: Small feeders.

POTENTIAL: Unknown.

LAST OPERATOR: Charles Meyring.

MAP SOURCES: No maps.

LONE PINE

LOCATION: Sec. 11, T1S, R73W, 200' SW of old Conger shaft. Boulder County.

OWNER: Vanadium Corp. of America.

PRODUCTION: 277.5 units.

WORKINGS: Shaft connecting with Conger Workings.

ORE OCCURRENCE: As streaks in old stope walls.

POTENTIAL: Worked out.

LAST OPERATOR: Vincent DeBell.

MAP SOURCES: No map.

LONESOME POLECAT

LOCATION: Sec. 13, T1S, R73W, S. of ridge road to Conger mine. Boulder County.

OWNER: Richard Tatlow.

PRODUCTION: Less than 100 units.

WORKINGS: 100' shaft; 60' drift south.

ORE OCCURRENCE: Pocket of ore at 35' in shaft. Pinched out.

POTENTIAL: Unknown.

LAST OPERATOR: Lou Mock.

MAP SOURCES: USGS.

LONE TREE

LOCATION: Sec. 12, T1S, R73W, on Colo. 119, N. side of Sherwood Gulch, 1/3 mile E. of hairpin turn. Boulder County.

OWNER: Vanadium Corp. of America.

PRODUCTION: 4000 tons of 10% ore by 1914. Small production since.

WORKINGS: 350' shaft; levels at 44, 113, 215, 276, and 340 feet.

ORE OCCURRENCE: Highgrade ferberite, in large part from a glory-hole at an intersection of veins.

POTENTIAL: Unknown.
 LAST OPERATOR: Wolftongue Mining Company.
 MAP SOURCES: Owner. USGS PP 245, page 115.

LONGSHOT NO. 3

LOCATION: SE $\frac{1}{4}$ Sec. 7, T1S, R72W, about 500' W. of Vasco 6 shaft.
 Boulder County.
 OWNER: Cold Spring Tungsten, Inc.
 PRODUCTION: Unknown, but was made in 1916-18.
 WORKINGS: Surface cuts.
 ORE OCCURRENCE: In schist; some granite and aplite.
 POTENTIAL: Unknown.
 LAST OPERATOR: Unknown.
 MAP SOURCES: Owner.

LONGSHOT NO. 4

LOCATION: SE $\frac{1}{4}$ Sec. 7, T1S, R72W, about 1800' WNW of Tungsten village; Boulder County.
 OWNER: Cold Spring Tungsten, Inc.
 PRODUCTION: About 18 tons of 57% concentrate.
 WORKINGS: 95' shaft; 132' drift, most of which is stoped.
 ORE OCCURRENCE: Ore found on surface, extended to the 100' level.
 POTENTIAL: Unknown.
 LAST OPERATOR: Smith, Henning, and Rugg.
 MAP SOURCES: Owner. Old shaft map on plate 13 of USGS PP 245.

LONG TUNNEL

LOCATION: Sec. 34, T1N, R72W, in N. Boulder Creek, a few hundred feet above the Gordon Gulch confluence. Boulder County.
 OWNER: Unknown.
 PRODUCTION: Less than 10,000 units.
 WORKINGS: Crosscut and drifts on veins. Perhaps 3000' of workings.
 ORE OCCURRENCE: Various grades of ore, in granite.
 POTENTIAL: Unknown.
 LAST OPERATOR: Dr. Long, during World War I.
 MAP SOURCES: J. G. Clark (last known).

LOOKOUT

LOCATION: SW $\frac{1}{4}$ Sec. 36, T1N, R72W, few hundred feet NW of junction of North and Middle Boulder Creeks. Boulder County.
 OWNER: Donald Brotzman.
 PRODUCTION: Probably over 3000 units.
 WORKINGS: 3 crosscut adits, with drifts on the vein. 500' trench on surface.
 ORE OCCURRENCE: Most of the production said to have been from the trench.
 POTENTIAL: Unknown.
 LAST OPERATOR: Johnson; Orville Heizer.
 MAP SOURCES: USGS PP 245, page 170.

LOOKOUT

LOCATION: NE $\frac{1}{4}$ Sec. 22, NW $\frac{1}{4}$ Sec. 23, T8N, R72W, about 1 $\frac{1}{2}$ miles NW of the Challenger mine. Larimer County.

OWNER: T. H. Sackett, et al.
 PRODUCTION: Over 100 tons of 2% ore, in 1952-53.
 WORKINGS: 200' surface cut, 20' wide and 10' deep.
 ORE OCCURRENCE: Scheelite in tactite.
 POTENTIAL: Unknown.
 LAST OPERATOR: Owner.
 MAP SOURCES: No map.

LOWER RAMBLER (see Rambler)

LUCKIE (see Venture No. 2)

LUCKIE NO. 2

LOCATION: SW $\frac{1}{4}$ Sec. 36, T1N, R72W, in Middle Boulder Canyon, just above North Boulder Creek confluence. Boulder County.
 OWNER: County of Boulder.
 PRODUCTION: Over 72,000 units.
 WORKINGS: Lower crosscut portal below highway. 2 main crosscuts, the lower being 970 feet in length. Development was on Luckie 2 and Lookout veins. Workings now inaccessible.
 ORE OCCURRENCE: Lookout vein unproductive in Luckie 2 claim.
 POTENTIAL: Other veins to be developed.
 LAST OPERATOR: Ray and Ernest Betasso.
 MAP SOURCES: USGS PP 245, page 170.

MAC GROUP

LOCATION: SE $\frac{1}{4}$ Sec. 31, T1N, R71W, E. of Sugarloaf. Boulder County.
 OWNER: Betasso brothers.
 PRODUCTION: Less than 500 units.
 WORKINGS: 120' surface cut.
 ORE OCCURRENCE: $\frac{1}{2}$ " to 3" streak.
 POTENTIAL: Unknown.
 LAST OPERATOR: H. M. Gregory.
 MAP SOURCES: No map.

MADELINE

LOCATION: NW $\frac{1}{4}$ Sec. 8, T1S, R72W, about 900' W. of Cross shaft. Boulder County.
 OWNER: Cold Spring Tungsten, Inc.
 PRODUCTION: A few hundred units, in 10% ore.
 WORKINGS: 100' shaft, with about 530 feet of drifts along the Madeline fault.
 ORE OCCURRENCE: Vein contains a little horn quartz and ferberite.
 POTENTIAL: Unknown.
 LAST OPERATOR: Wolf Tongue Mining Co.
 MAP SOURCES: Owner.

MAGNOLIA

LOCATION: Sec. 27, T42N, R7W, 10 miles N. of Silverton, on S. fork of Cement Creek. San Juan County.
 OWNER: Silver Bay Mines, Inc.
 PRODUCTION: Unknown.

WORKINGS: 2500 feet of drifts, 900' from portal of Occidental cross-cut adit. Occidental now caved.

ORE OCCURRENCE: Persistent, narrow hubnerite streak in Magnolia vein.

POTENTIAL: Unknown.

LAST OPERATOR: Unknown.

MAP SOURCES: Unknown.

MAMMOTH

LOCATION: SE $\frac{1}{4}$ Sec. 19, T1S, R72W, on S. slope of Tungsten Mtn. Boulder County.

OWNER: W. L. Tanner and Son.

PRODUCTION: Over 45,000 units.

WORKINGS: Two 300' inclined shafts; five levels.

ORE OCCURRENCE: In Mammoth vein, striking N20°E. Also in Fitzsimmons 6, on 3rd and 4th levels.

POTENTIAL: Unknown.

LAST OPERATOR: Owner.

MAP SOURCES: Owner. USGS PP 245, page 95.

MANCHESTER AND NUGGET

LOCATION: Sec. 32, T1S, R72W, E. of Rollinsville, N. of S. Boulder Creek; Gilpin County.

OWNER: Stroehle estate.

PRODUCTION: Manchester, about 5000 units. Nugget, substantial, but total unknown.

WORKINGS: 325' shaft, very crooked, with 4 levels, 2 of which open into the valley as adits. Drifts on east-west vein.

ORE OCCURRENCE: Crystalline ore. Vein in granite and schist.

POTENTIAL: Hard-sortable ore appears in dump, indicating possible stop-fill ore. Shaft requires sinking. Ore said to be showing in one drift.

LAST OPERATOR: John Phillips.

MAP SOURCES: Owner.

MANYON

LOCATION: Sec. 4, T1N, R72W, in Spring Gulch, N. of Lefthand Canyon. Boulder County.

OWNER: Manyon and Spence.

PRODUCTION: About 10 units.

WORKINGS: Adit and drift on vein. Old shaft at portal.

ORE OCCURRENCE: Very light, horny ore.

POTENTIAL: Ore is evident in the vein within the mine workings.

LAST OPERATOR: Slide Mine, Inc.

MAP SOURCES: Slide Mine, Inc. Denver Public Library.

MARCH

LOCATION: SW $\frac{1}{4}$ Sec. 19, T1S, R72W, 75' SE of Tungsten shaft. Boulder County.

OWNER: George Cowdery.

PRODUCTION: Included in production from Sunday and Tungsten mines.

WORKINGS: 2 shallow shafts. Most of workings were from adjoining mines.

ORE OCCURRENCE: Vein in biotite schist.

POTENTIAL: Unknown.

LAST OPERATOR: George Cowdery.

MAP SOURCES: Included in records of the Tungsten mine.

MARCH WIND — RED BIRD

LOCATION: NW $\frac{1}{4}$ & SE $\frac{1}{4}$ Sec. 36, T1N, R72W, adjacent to Good Friday. Boulder County.

OWNER: Shiprock Industries, Inc.

PRODUCTION: Small production from dumps in 1954-55.

WORKINGS: Surface pits. Good Friday tunnel enters end of March Wind. Red Bird is extension of April Fool.

ORE OCCURRENCE: Unknown. Gold vein.

POTENTIAL: Unknown.

LAST OPERATOR: Unknown.

MAP SOURCES: No maps.

MARY NELSON

LOCATION: Sec. 19, T1S, R72W, 1200' S76°E of Tungsten shaft. Boulder County.

OWNER: W. Tanner.

PRODUCTION: Small.

WORKINGS: 100' shaft with two levels.

ORE OCCURRENCE: Small ore shoots.

POTENTIAL: Unknown.

LAST OPERATOR: Tanner and Clark, about 1916.

MAP SOURCES: No map.

MASON RANCH

LOCATION: Sec. 9, T6N, R70W, about 2 miles N. of Masonville; Larimer County.

OWNER: J. W. Livingstone.

PRODUCTION: Small tungsten production.

WORKINGS: 122' inclined shaft, caved. 960' adit, 150' below the shaft collar. 200' of drifting reported.

ORE OCCURRENCE: Originally a gold prospect. Flakes of scheelite in a 6" to 48" vein.

POTENTIAL: Unknown.

LAST OPERATOR: Unknown.

MAP SOURCES: No maps.

McKENZIE TUNNEL

LOCATION: SE $\frac{1}{4}$ Sec. 13, T1S, R73W, SE edge of Nederland. Boulder County.

OWNER: Don McKenzie.

PRODUCTION: Probably less than 1000 units.

WORKINGS: 500' tunnel; 400 feet of drifts, 1940.

ORE OCCURRENCE: Seams of ferberite in vein, with horn quartz.

POTENTIAL: Unknown.

LAST OPERATOR: Owner.

MAP SOURCES: Owner. USGS PP 245, page 127.

MINNESOTA

LOCATION: Sec. 20, T42N, R7W, between Dawn of Day-Ohio, and Galtie Boy Mines. San Juan County.

OWNER: F. L. Ross and E. M. Bacon.

PRODUCTION: Early production substantial. Small production from dumps in 1954.

WORKINGS: Short adit, caved, with stope to surface.

ORE OCCURRENCE: Vein contains base metals and hubnerite.

POTENTIAL: Unknown.

LAST OPERATOR: Owner.

MAP SOURCES: Owner.

MINNESOTA

LOCATION: SE $\frac{1}{4}$ Sec. 24, T1S, R73W, 1400' N50°W of Tungsten shaft. Boulder County.

OWNER: Cold Spring Tungsten, Inc.

PRODUCTION: Small production in 1917-18 from shallow ore.

WORKINGS: 100' shaft, caved, with 2 levels.

ORE OCCURRENCE: Vein in schist. Splits off Rambler sideline.

POTENTIAL: Unknown.

LAST OPERATOR: Unknown, but was in 1930's.

MAP SOURCES: No maps.

MINNIE

LOCATION: NW $\frac{1}{4}$ Sec. 32, T1N, R71W, S. of Ohio mine; Boulder County.

OWNER: L. A. Cole.

PRODUCTION: Small production in 1955.

WORKINGS: Short adits and surface pits.

ORE OCCURRENCE: Very hard, horny ore.

POTENTIAL: Unknown.

LAST OPERATOR: Owner.

MAP SOURCES: No map.

MINNIE FOY

LOCATION: SW $\frac{1}{4}$ Sec. 11, T1S, R73W, 675' S80°W of Illinois shaft. Boulder County.

OWNER: D. H. Petzke.

PRODUCTION: Probably less than 100 units.

WORKINGS: 125' shaft; 2 levels.

ORE OCCURRENCE: On Illinois vein system.

POTENTIAL: Unknown.

LAST OPERATOR: Gresser; 1942.

MAP SOURCES: No map.

MISER'S HOARD

LOCATION: NE $\frac{1}{4}$ Sec. 34, T1N, R72W, about 1000' NE of mouth of Perkins Gulch; Boulder County.

OWNER: Vanadium Corporation of America.

PRODUCTION: Included in production from Gordon Gulch group; 36,000 units.

WORKINGS: Connected adit and shaft. About 1000 feet of workings, connecting with Ophir, Pride, and Little Major mines.

ORE OCCURRENCE: Mostly from intersection of Miser's Hoard and Little Major veins.
POTENTIAL: Early production may indicate presence of stope-fill ore.
LAST OPERATOR: C. L. Mason.
MAP SOURCES: Owner. USGS PP 245, page 160.

MISHAP

LOCATION: Sec. 29, T1N, R71W, above Marion mill in Bummer Gulch. Boulder County.
OWNER: Hal Miller.
PRODUCTION: Probably less than 100 units.
WORKINGS: 325' adit and drifts.
ORE OCCURRENCE: Crystalline and steel tungsten. One shipment ran 38.93%.
POTENTIAL: Ore showed in open cut. Intersection to south not yet reached.
LAST OPERATOR: Unknown.
MAP SOURCES: Owner.

MISSING LINK

LOCATION: SE $\frac{1}{4}$ Sec. 24, T1S, R73W, 100' SW of Lower Rambler shaft. Boulder County.
OWNER: George Cowdery.
PRODUCTION: 100 to 150 tons of 5% ore, chiefly in 1915-16.
WORKINGS: 110' shaft.
ORE OCCURRENCE: Horn quartz cemented with ferberite, in vein up to 7' in width, striking N20°E.
POTENTIAL: Unknown.
LAST OPERATOR: Joseph M. Smith; crosscut from Lower Rambler.
MAP SOURCES: J. M. Smith.

MISSING LINK

LOCATION: NE $\frac{1}{4}$ Sec. 7, NW $\frac{1}{4}$ Sec. 8, T1S, R72W, crossing E. end of Tenderfoot claim; Boulder County.
OWNER: Cold Spring Tungsten, Inc.
PRODUCTION: Over 100 units.
WORKINGS: Probably connect with Tenderfoot workings.
ORE OCCURRENCE: Unknown.
POTENTIAL: Unknown.
LAST OPERATOR: Owner.
MAP SOURCES: Owner.

MOLYBDENITE EXTENSION

LOCATION: NW $\frac{1}{4}$ Sec. 14, T51N, R4E, about 1400' SW of the Ida Mae shaft; Gunnison County.
OWNER: U. S. Tungsten Corp.
PRODUCTION: 10 tons of 20% concentrate from 100 tons of ore reported.
WORKINGS: 20' shaft; surface trench; shallow pits. 200' tunnel.
ORE OCCURRENCE: 4" to 12" streak of hubnerite ore in a 2' to 4' vein.

POTENTIAL: Good ore showing in surface dozer cuts.
LAST OPERATOR: Owner.
MAP SOURCES: No map.

MONTANA

LOCATION: Sec. 28, T43N, R8W, at the head of Marshall Creek. San Miguel County.
OWNER: Idarado Mining Company.
PRODUCTION: Small production saved from base-metal mining during World War II.
WORKINGS: Extensive workings; adits and drifts.
ORE OCCURRENCE: Core of hubnerite in sulphide vein.
POTENTIAL: Mined out.
LAST OPERATOR: Owner.
MAP SOURCES: Owner.

MUD LAKE

LOCATION: NE $\frac{1}{4}$ Sec. 12, T1S, R73W, about 1 mile N. of Nederland. Boulder County.
OWNER: Colorado Tungsten Corp.
PRODUCTION: About 36 tons of 1% ore.
WORKINGS: 25' shaft in lake bottom. Makes a great deal of water.
ORE OCCURRENCE: Crystalline ferberite vein in granite and schist.
POTENTIAL: Vein reported as 6" wide in shaft bottom.
LAST OPERATOR: Scruggs and Wilson.
MAP: No maps.

NABOB

LOCATION: NE $\frac{1}{4}$ Sec. 12, T1S, R73W, 275' E. of Lone Tree shaft. Boulder County.
OWNER: Vanadium Corp. of America.
PRODUCTION: 150 tons of 7%-8% ore in 1914. Production since 1914 probably credited to Conger mine.
WORKINGS: 75' shaft; 133' drift.
ORE OCCURRENCE: 6 to 18 inches of brecciated granite and horn quartz cemented with ferberite.
POTENTIAL: Unknown.
LAST OPERATOR: John White.
MAP SOURCES: Owner.

NANCY HENDERSON

LOCATION: NE Cor. Sec. 7, T1S, R72W, 1425' W. of Cold Spring shaft. Boulder County.
OWNER: Ernest Bonelli.
PRODUCTION: May be about 5000 units.
WORKINGS: 108' shaft; levels at 43, 78, and 98 feet. Other caved shafts.
ORE OCCURRENCE: Most of the ore came from the 43' level, in a stope 170' long, going to the surface in several places.
POTENTIAL: Unknown.
LAST OPERATOR: Ed Henderson.
MAP SOURCES: USGS PP 245, page 153.

NATALIE

LOCATION: Sec. 27, T42N, R7W, 10 miles from Silverton, on S. fork of Cement Creek. San Juan County.

OWNER: Silver Bay Mines, Inc.

PRODUCTION: Small.

WORKINGS: Reached through Occidental tunnel, about 5000' from portal.

ORE OCCURRENCE: Vein in pyroxene andesite. Shows spots of hubnerite on surface.

POTENTIAL: Vein said to contain considerable hubnerite.

LAST OPERATOR: Unknown.

MAP SOURCES: Unknown.

NAVY

LOCATION: Sec. 3, T8S, R78W, at lower Blue Lake. Summit County.

OWNER: R. Parker and M. Sheldon.

PRODUCTION: Some 9% ore.

WORKINGS: 5 adits, up to 160' in length. Surface cuts.

ORE OCCURRENCE: 3 to 30-inch vein containing hubnerite and scheelite. Averages 2% in a 200' surface cut, 3" to 30" in width.

POTENTIAL: Unknown.

LAST OPERATOR: H. Williams and Jim Witcher, under DMEA contract.

MAP SOURCES: USGS.

NEW YORK

LOCATION: NW $\frac{1}{4}$ Sec. 8, T1S, R72W, 60' NW from Philadelphia shaft, which is 800' N57°E from Western Star shaft. Boulder County.

OWNER: Cold Spring Tungsten, Inc.

PRODUCTION: About 2800 units in 11.9% ore, up to 1929. Small production in 1953, making total about 3600 units.

WORKINGS: Philadelphia vein splits off of New York (Western Star) vein. One-level shafts with levels extending 50' NE, and 65' SW.

ORE OCCURRENCE: Hard ore.

POTENTIAL: Almost all of dump made \$4.00 per ton screenings. Stope fills assayed 0.40%.

LAST OPERATOR: Cobb and Weldon. Bodnar brothers.

MAP SOURCES: Owner. USGS PP 245, page 155.

NIAGARA

LOCATION: SE $\frac{1}{4}$ Sec. 11, T1S, R73W, 800' S60°E of the Illinois shaft. Boulder County.

OWNER: Patterson estate.

PRODUCTION: Probably less than 1000 units.

WORKINGS: 125' shaft; levels at 75' and 125'.

ORE OCCURRENCE: Unrecorded.

POTENTIAL: Unknown.

LAST OPERATOR: Wolf Tongue Mining Co. 1943.

MAP SOURCES: Possibly Cold Spring Tungsten, Inc.

1905

LOCATION: SE $\frac{1}{4}$ Sec. 7, T1S, R72W, 825' S25°W of Vasco No. 1 shaft. Boulder County.

OWNER: Cold Spring Tungsten, Inc.

PRODUCTION: 250 units, in 12.9% ore; small production in 1953-54. Total over 400 units.

WORKINGS: Caved shaft probably not over 150 feet in depth.

ORE OCCURRENCE: Vein in aplite and granite on HW side of Hurricane reef.

POTENTIAL: Unknown.

LAST OPERATOR: Jack Clark.

MAP SOURCES: Unknown.

NO NAME

LOCATION: Sec. 5, T1S, R72W.

OWNER: Cold Spring Tungsten, Inc.

PRODUCTION: Less than 100 units.

WORKINGS: One of several named prospects on an agricultural patent.

ORE OCCURRENCE: Unknown.

POTENTIAL: Unknown.

LAST OPERATOR: Unknown.

MAP SOURCES: No maps.

NUGGET (see Manchester)**OCCIDENT**

LOCATION: NE $\frac{1}{4}$ Sec. 15, T51N, R4E, Gunnison County.

OWNER: U. S. Tungsten Corp.

PRODUCTION: None.

WORKINGS: 300' crosscut.

ORE OCCURRENCE: Hubnerite in lead-silver vein.

POTENTIAL: 12" of 4% ore reported in workings.

LAST OPERATOR: Tatman and Wylie, 1880.

MAP SOURCES: USGS.

OHIO

LOCATION: NE $\frac{1}{4}$ Sec. 32, T1N, R71W, about 3000' S76°E of Dorothy shaft; Boulder County. Probably the easternmost productive tungsten mine of the district.

OWNER: Vanadium Corp. of America.

PRODUCTION: Almost 10,000 units.

WORKINGS: Glory hole; extensive underground stopes; lower tunnel with shaft connecting with glory hole. Many surface cuts and shafts.

ORE OCCURRENCE: Ore in pegmatites and aplites. Scheelite was important constituent of Ohio ore, along with ferberite. Majority of material removed from upper workings was ore.

POTENTIAL: Small showings still evident at various places in the mine.

LAST OPERATOR: Cobb and Weldon.

MAP SOURCES: Owner. H. S. Cobb, USGS PP 245, page 194.

OHIO (see Dawn of Day)

OLIVER

LOCATION: Sec. 20, T19S, R73W, about 13 miles by road from Texas Creek, and on Copper Creek. Fremont County.

OWNER: Mr. Oliver, Canyon City.

PRODUCTION: 4 tons of 2% ore in 1942.

WORKINGS: Several shallow pits.

ORE OCCURRENCE: Scheelite lenses in hornblende.

POTENTIAL: Unknown.

LAST OPERATOR: Owner.

MAP SOURCES: No map.

ONLY CHANCE

LOCATION: NE $\frac{1}{4}$ Sec. 7, T1S, R72W, adjoining Last Chance No. 2. Boulder County.

OWNER: Cold Spring Tungsten, Inc.

PRODUCTION: Over 150 units.

WORKINGS: Shaft possibly 200' in depth.

ORE OCCURRENCE: Ferberite in granite.

POTENTIAL: Unknown.

LAST OPERATOR: Unknown, but during World War I.

MAP SOURCES: No maps.

OPHIR

LOCATION: NE $\frac{1}{4}$ Sec. 34, T1N, R72W, adjacent to Miser's Hoard. Boulder County.

OWNER: Vanadium Corp. of America.

PRODUCTION: Less than 10,000 units.

WORKINGS: Shaft; levels at 100 and 210 feet, connecting with adjoining mines of Gordon Gulch group. 40' open cut NE at shaft collar.

ORE OCCURRENCE: On 3 main intersections; bottomed at about 100'.

POTENTIAL: Dump screenings indicate value of \$4.00 per ton at the \$63.00 price. Stringered zones show on stope walls.

LAST OPERATOR: E. Webb.

MAP SOURCES: Owner. USGS PP 245, page 160.

ORANGE BLOSSOM

LOCATION: NW $\frac{1}{4}$ Sec 8, T1S, R72W, 475' S68°E of Cold Spring shaft. Boulder County.

OWNER: Cold Spring Tungsten, Inc.

PRODUCTION: About 3800 units.

WORKINGS: 195' inclined shaft; 5 levels. Cold Spring 7th connects via raise with Orange Blossom shaft.

ORE OCCURRENCE: Horn ore in hard gneissic biotite granite.

POTENTIAL: Unknown.

LAST OPERATOR: Owner.

MAP SOURCES: Owner. USGS PP 245, plate 18.

OREGON

LOCATION: SE $\frac{1}{4}$ Sec. 11, T1S, R73W, 800' S28°W of new Conger shaft. Boulder County.

OWNER: Cold Spring Tungsten, Inc.

PRODUCTION: Estimated 10,000 units until 1914, at \$5.00 per unit.
WORKINGS: Shaft connects with Conger second level.
ORE OCCURRENCE: Part of the Conger vein. Hard ore.
POTENTIAL: Unknown.
LAST OPERATOR: Allebaugh and Sisson, about 1935.
MAP SOURCES: Owner. USGS PP 245, plate 9.

OREGON

LOCATION: Sec. 33, T1N, R72W, about 1/2-mile NW of Peewink Mtn.
 Boulder County.
OWNER: Vanadium Corp. of America.
PRODUCTION: About 40,000 units.
WORKINGS: Inclined shaft; levels at 84, 139, 260, 337, 433, and 463 feet. Adit to first level.
ORE OCCURRENCE: Hard ore in Oregon, Quaker City, and Hildegard veins.
POTENTIAL: Unknown.
LAST OPERATOR: George Jump.
MAP SOURCES: Owner. USGS PP 245, plate 21.

PANSY BLOSSOM

LOCATION: NW 1/4 Sec. 8, T1S, R72W, 500' S of Cold Spring shaft.
 Boulder County.
OWNER: Cold Spring Tungsten, Inc.
PRODUCTION: About 1400 units in 5.44% ore.
WORKINGS: 100' shaft; drifts 400' SW and 100' NE.
ORE OCCURRENCE: Horn ore, in Orange Blossom vein.
POTENTIAL: Unknown.
LAST OPERATOR: Wolf Tongue Mining Co.
MAP SOURCES: Owner.

PARKER

LOCATION: SE 1/4 Sec. 36, T1N, R72W, E of Good Friday-April Fool.
 Boulder County.
OWNER: Joseph Rafter.
PRODUCTION: About 200 units.
WORKINGS: 140' adit; 15' winze. Caved.
ORE OCCURRENCE: Stope 35' long.
POTENTIAL: Ore shows in trench ahead of tunnel.
LAST OPERATOR: Al Blanchard.
MAP SOURCES: No underground map.

PAYMASTER — WHEELMAN TUNNEL

LOCATION: SE 1/4 Sec. 31, T1N, R71W, on Colo. 119, W. of Red Signe mine. Boulder County.
OWNER: Paymaster Mine Trust.
PRODUCTION: About 250 units. Small production in 1955.
WORKINGS: Wheelman adit is close to highway; about 500' in length, striking north. Paymaster is about 75' higher, 260' in length, on an easterly vein.
ORE OCCURRENCE: In Paymaster adit, as a very light, horny ore.
POTENTIAL: Unknown.

LAST OPERATOR: E. A. Baumgartner.
 MAP SOURCES: USGS PP 245, page 192.

PEEWINK

LOCATION: S $\frac{1}{2}$ Sec. 34, T1N, R72W, S side of Gordon Gulch. and S of the Oregon mine, on Peewink mountain. Boulder County.
 OWNER: Partly located by Al Rogers and Eastman, as the Lady Luck Extension. Otherwise unknown.
 PRODUCTION: Probably as much as 5000 units.
 WORKINGS: Upper: Glory hole and open cuts on stockwork. Lower: 500' adit on two veins.
 ORE OCCURRENCE: Adit vein in granite with aplite and pegmatite. Glory hole produced from veinlets in fractures.
 POTENTIAL: Unknown.
 LAST OPERATOR: Gold, Silver, and Tungsten, Inc.; 1937.
 MAP SOURCES: USGS PP 245, page 163.

PENNSYLVANIA

LOCATION: NE $\frac{1}{4}$ Sec. 34, T1N, R72W, between the Sugarloaf and Dream Canyon roads, and on Primos hill. Boulder County.
 OWNER: John Jordan, et al.
 PRODUCTION: May be about 10,000 units.
 WORKINGS: 100' inclined shaft; levels at 32, 64, and 100 feet. Adit connects with 2nd level. Workings are mainly east of shaft.
 ORE OCCURRENCE: In 2 ore-shoots; one near shaft, the other 50'-60' farther east. 6" of highgrade in ore-shoots 3' wide. Contained scheelite as well as ferberite.
 POTENTIAL: Unknown.
 LAST OPERATOR: Earl Craig and Sons.
 MAP SOURCES: Owner. USGS PP 245, page 164.

PENNSYLVANIA

LOCATION: NW $\frac{1}{4}$ Sec. 31, T1N, R71W, SE of Sugarloaf village. Boulder County.
 OWNER: Joseph Rafter.
 PRODUCTION: About 50 units.
 WORKINGS: 100' shaft; 275' of drift on 80' level.
 ORE OCCURRENCE: Ferberite as filling in minor fractures; as cement in breccia.
 POTENTIAL: Operating at time of 1956 price failure.
 LAST OPERATOR: Prime. Betasso, and Hetzer.
 MAP SOURCES: USGS.

PHILADELPHIA (*see New York*)

PHILADELPHIA (*Dry Lake*)

LOCATION: NE $\frac{1}{4}$ Sec. 8, T1S, R72W, about 1000' E of Bonanza shaft. Boulder County.
 OWNER: W. D. Townsend.
 PRODUCTION: About 3000 units.
 WORKINGS: 210' shaft; levels at 50, 135, and 200 feet.
 ORE OCCURRENCE: Ore made in cross veins between two east-west veins.

POTENTIAL: Unknown.

LAST OPERATOR: W. G. Kent until 1942. Doc Hill later.

MAP SOURCES: USGS PP 245, page 156.

PHILLIP

LOCATION: NW $\frac{1}{4}$ Sec. 7, T1S, R72W, adjoining Hoosier mine on west.

OWNER: Cold Spring Tungsten, Inc.

PRODUCTION: Less than 3000 units.

WORKINGS: Connect with the Hoosier mine.

ORE OCCURRENCE: Highgrade crystalline ferberite.

POTENTIAL: Unknown.

LAST OPERATOR: Johnson Bros. and Prime.

MAP SOURCES: Johnson Bros. Cold Spring Tungsten, Inc. USGS PP 245, page 122.

PHILLIP EXTENSION

LOCATION: SE $\frac{1}{4}$ Sec. 12, T1S, R73W, 1 mile NE of Nederland; W. of Hoosier. Boulder County.

OWNER: Colorado Tungsten Corp.

PRODUCTION: About 12,000 units since 1938.

WORKINGS: 200' shaft; levels at 90, 150, and 200 feet.

ORE OCCURRENCE: Veins in aplite.

POTENTIAL: Main vein worked out to 200'. Prospects exist on other veins.

LAST OPERATOR: Johnson Bros. and Prime.

MAP SOURCES: USGS PP 245, page 120.

PINE SHADE

LOCATION: NE $\frac{1}{4}$ Sec. 15, T1S, R73W, on Nederland-Cardinal road. Boulder County.

OWNER: Nannie E. Duval.

PRODUCTION: Less than 100 units.

WORKINGS: 150' adit connects with Alton tunnel.

ORE OCCURRENCE: Spots of ore; surface showing.

POTENTIAL: Unknown.

LAST OPERATOR: Smith and Rugg.

MAP SOURCES: No map.

PIONEER (*see Brace Tract*)

PLEASANT DREAM

LOCATION: SW $\frac{1}{4}$ Sec. 36, T1N, R72W, adjacent to April Fool-Good Friday. Boulder County.

OWNER: Colorado Tungsten Corp.

PRODUCTION: Less than 1000 units.

WORKINGS: Open into April Fool workings in lower levels.

ORE OCCURRENCE: Near junction with April Fool vein.

POTENTIAL: Unknown.

LAST OPERATOR: Unknown.

MAP SOURCES: USGS PP 245, page 176.

POOPOUT

LOCATION: SE $\frac{1}{4}$ Sec. 34, T1N, R72W, about $\frac{1}{8}$ mile N of Gordon Gulch-North Boulder junction. Boulder County.

OWNER: J. L. Starnes.

PRODUCTION: Unrecorded, but very small.

WORKINGS: 108' shaft; 200' drift on bottom level.

ORE OCCURRENCE: Unknown.

POTENTIAL: DMEA certificate of discovery was issued, but property was abandoned.

LAST OPERATOR: Owner.

MAP SOURCES: Owner. USGS.

PRINCESS EULALIA

LOCATION: SW $\frac{1}{4}$ Sec. 29, T1N, R71W, 410' N48°E of Katie shaft. Boulder County.

OWNER: Homer Pennock.

PRODUCTION: Less than 10,000 units.

WORKINGS: 300' adit on Eulalia vein. 140' shaft on Katie vein; levels at 80 and 130'.

ORE OCCURRENCE: Two veins in granite, cut by dikes of aplite and pegmatite.

POTENTIAL: Winze was being sunk on ore, when work was drowned out.

LAST OPERATOR: Sid West.

MAP SOURCES: George Teal. USGS PP 245, plate 24.

PROSPECT TUNNEL

LOCATION: NW $\frac{1}{4}$ Sec. 7, T1S, R72W, S side of Sherwood Gulch. Boulder County.

OWNER: Cold Spring Tungsten, Inc.

PRODUCTION: Over 3000 units.

WORKINGS: 2170' tunnel; 1000' of drifts.

ORE OCCURRENCE: Vein in pegmatite. above tunnel level.

POTENTIAL: Original goal of Nancy Henderson, Forest Home, etc., not yet reached.

LAST OPERATOR: Reynolds Tungsten Corp.

MAP SOURCES: Owner.

PROTECTION (placer)

LOCATION: SE $\frac{1}{4}$ Sec. 34, T1N, R72W, near Gordon Gulch-North Boulder junction. Boulder County.

OWNER: Gold Uranium Mining Company.

PRODUCTION: Less than 1000 units.

Workings: None.

ORE OCCURRENCE: Possibly as float.

POTENTIAL: Unknown.

LAST OPERATOR: Unknown.

MAP SOURCES: No map.

PUEBLO BELLE

LOCATION: SE $\frac{1}{4}$ Sec. 31, T1N, R71W, near mouth of Black Tiger Gulch. Boulder County.

OWNER: Shattuck Chemical Company.

PRODUCTION: \$49,000 from open cuts, 1915-17. At least 5000 units, mostly 1939-44.

WORKINGS: 360' inclined shaft; levels at 100, 200, 280, and 360 feet. 400' surface cut.

ORE OCCURRENCE: Horn-type ferberite.

POTENTIAL: Unknown. Small production was made in 1953-54.

LAST OPERATOR: Owner.

MAP SOURCES: Owner. USGS PP 245. page 190.

QUAKER CITY

LOCATION: NW $\frac{1}{4}$ Sec. 34, T1N, R72W, N side of Gordon Gulch road, above Perkins Gulch. Boulder County.

OWNER: Vanadium Corp. of America.

PRODUCTION: About 15,000 units.

WORKINGS: Shaft; levels at 139 and 260 feet.

ORE OCCURRENCE: In vein zone averaging about 20 feet in width.

POTENTIAL: Said to be volume of minus 1% ore.

LAST OPERATOR: C. H. Smith and W. G. Cowdery.

MAP SOURCES: Owner.

QUAY

LOCATION: SE $\frac{1}{4}$ Sec. 11, T1S, R73W, about 1 mile NW of Nederland. West of Conger and Beddig mines. The westernmost productive mine of the district. Boulder County.

OWNER: Colorado Tungsten Corp.

PRODUCTION: About 30,000 units.

WORKINGS: 2 shafts, joined by 6 levels. Most extensive work was on the 265', or third level.

ORE OCCURRENCE: From 2 parallel veins. Scheelite with ferberite.

POTENTIAL: \$2.00 per ton screenings, at the \$63 per unit price, left in dump.

LAST OPERATOR: W. M. MacKenzie.

MAP SOURCES: USGS PP 245. page 103.

QUEEN (see *Golden Queen*)**RAINY DAY**

LOCATION: Sec. 8, T1S R72W, 400'-500' W of Madeline. Boulder County.

OWNER: Cold Spring Tungsten, Inc.

PRODUCTION: Less than 100 units.

WORKINGS: At least 100' of shaft.

ORE OCCURRENCE: No production.

POTENTIAL: Unknown.

LAST OPERATOR: Wolf Tongue Mining Co.

MAP SOURCES: Owner.

RAKE OFF

LOCATION: NE Cor. Sec. 12, T1S, R73W, about 1½ miles NE of Nederland, on Colo. 119. Boulder, County.

OWNER: Vanadium Corp. of America.

PRODUCTION: More than 10,000 units.

WORKINGS: 284' shaft; levels at 133, 250, and 284 feet.

ORE OCCURRENCE: Large ore-body was mined above first level.

POTENTIAL: Unknown.

LAST OPERATOR: Owner.

MAP SOURCES: Owner. USGS PP 245, page 116.

RAMBLER — LOWER RAMBLER

LOCATION: SW¼ Sec. 24, T1S, R73W, 1500' to 1800' westerly from Tungsten shaft. Boulder County.

OWNER: George Cowdery.

PRODUCTION: Close to 20,000 units.

WORKINGS: Rambler workings consist of an inclined shaft with levels at 30, 42, and 75 feet. Vein strikes N57°E; dips 65° NW to a depth of 50', where it flattens to 45°. Lower Rambler main shaft is 200' deep. New level at 187' has 537' of drifting and crosscutting done under a DMEA contract.

ORE OCCURRENCE: Rambler ore was good to 50' depth. Lower Rambler has small feeder veins that make ore locally.

POTENTIAL: Unknown.

LAST OPERATOR: Joseph M. Smith.

MAP SOURCES: USGS PP 245, pages 96, 98.

RANGE VIEW

LOCATION: Sec. 34, T1N, R72W, on south side of Gordon Gulch, across from Oregon and Quaker City mines. Boulder County.

OWNER: Glen Coughlin.

PRODUCTION: Reported \$92,000 worth of ore, 1915-18 and 1942-43.

WORKINGS: 180' crosscut; drifts on two veins.

ORE OCCURRENCE: Both north and south veins, in granite, have been productive.

POTENTIAL: DMEA contract extended workings in 1952-53.

LAST OPERATOR: Owner.

MAP SOURCES: USGS.

RED BIRD (see *March Wind*)**RED PINE**

LOCATION: NW¼ Sec. 7, T1S, R72W, in gulch above Clyde tunnel. Boulder County.

OWNER: Cold Spring Tungsten, Inc.

PRODUCTION: Perhaps 140 units.

WORKINGS: Shallow shaft; 40' drift.

ORE OCCURRENCE: In aplite.

POTENTIAL: Unknown.

LAST OPERATOR: Ray Flarty.

MAP SOURCES: None Known.

RED SIGNE

LOCATION: Sec. 31, T1N, R71W; one of the first mines to be observed along the Boulder Canyon highway. Boulder County.

OWNER: A. T. Barr.

PRODUCTION: About 6000 units.

WORKINGS: 3 adits; 3 shafts; 3 winzes.

ORE OCCURRENCE: A 2-product mine. Crystallized and horn tungsten was mined in the western, lower section of the workings; gold, both free and in tellurides, in the eastern, upper section.

POTENTIAL: 40' x 15" of 3% to 4% shows in the bottom, under the creek. Workings are very wet from creek seepage.

LAST OPERATOR: Sid West. RFC loan in 1943.

MAP SOURCES: George Teal. USGS PP 245, page 193.

REEVES

LOCATION: SE $\frac{1}{4}$ Sec. 8, T1S, R72W, below the village of Tungsten. Boulder County.

OWNER: Sugro.

PRODUCTION: Less than 1000 units.

WORKINGS: 90' shaft; 70' drift east, 20' west.

ORE OCCURRENCE: Stopped to surface east.

POTENTIAL: Ore said to show in floor.

LAST OPERATOR: T. and M. Williams.

MAP SOURCES: No maps.

RICHARD

LOCATION: Sec. 12, T1S, R73W, adjoining Crow 4 on NE. Boulder County.

OWNER: Colorado Tungsten Corp.

PRODUCTION: Estimated 500 units.

WORKINGS: 70' shaft, stopped both sides.

ORE OCCURRENCE: Flat vein in footwall of Crow 4. Crystalline ferberite.

POTENTIAL: Dump screenings were yielding \$5.00 per ton at the \$63.00 per unit price.

LAST OPERATOR: Cobb and Weldon.

MAP SOURCES: No maps.

ROCKY MOUNTAIN

LOCATION: NE $\frac{1}{4}$ Sec. 4, T1S, R72W, about 4500', SW of Peewink Mtn. Boulder County.

OWNER: E. J. Radke.

PRODUCTION: About 3500 units.

WORKINGS: Stopes along veins intersected by 2 crosscut adits. Caved shaft.

ORE OCCURRENCE: Veins in granite.

POTENTIAL: Unknown.

LAST OPERATOR: Fansteel Corp., 1938.

MAP SOURCES: Owner, or Fansteel Corp. USGS PP 245, page 162.

ROBINS

LOCATION: Sec. 6, T1N, R72W, E of Ward. Boulder, Colorado.
 OWNER: B. F. Points.
 PRODUCTION: None recorded.
 WORKINGS: 100' shaft.
 ORE OCCURRENCE: Crystalline hubnerite in quartz at the 30' level,
 beside sulphide gold ore shoots.
 POTENTIAL: Ore shows in end of caved shaft.
 LAST OPERATOR: Unknown.
 MAP SOURCES: No maps.

RODERICK

LOCATION: SE $\frac{1}{4}$ Sec. 24, T1S, R73W, 175' N of the Brace glory-hole.
 Boulder County.
 OWNER: John Buchanan.
 PRODUCTION: About 500 units of 1 $\frac{1}{2}$ -2% ore in 1942-43.
 WORKINGS: 50' shaft; 100' of drifts.
 ORE OCCURRENCE: Highgrade ferberite in granite and pegmatite.
 POTENTIAL: Unknown.
 LAST OPERATOR: Roderick and Putnam.
 MAP SOURCES: No maps.

ROGERS NO. 1

LOCATION: NW $\frac{1}{4}$ Sec. 3, T1S, R72W, about 1500' SSW of Switzerland
 Park. Boulder County.
 OWNER: Platt Rogers Estate.
 PRODUCTION: About 37,000 units, in ore of over 10% grade.
 WORKINGS: 2 adits on Rogers 1 vein. Upper is 380' long, 135' above
 the lower, which is 600' long.
 ORE OCCURRENCE: All production came from above the upper level.
 POTENTIAL: Unknown.
 LAST OPERATOR: Slide Mines, Inc.
 MAP SOURCES: USGS PP 245, plate 22. Slide Mine, Inc., maps to be
 placed in Denver Public Library Technical Division.

ROGERS NO. 2

LOCATION: SW $\frac{1}{4}$ Sec. 4, T1S, R72W, 3750' N of Castle Rock. Boulder
 County.
 OWNER: Platt Rogers Estate.
 PRODUCTION: At least 5000 units.
 WORKINGS: Inclined shaft; levels at 75 and 118 feet. 110' of workings
 on the 75, and 200' on the 118.
 ORE OCCURRENCE: Main stope was NE of the shaft.
 POTENTIAL: Unknown.
 LAST OPERATOR: J. A. Smith, 1943.
 MAP SOURCES: USGS PP 245, page 165.

ROGERS NO. 3

LOCATION: SW $\frac{1}{4}$ Sec. 3, T1S, R72W. 1900' S12°E of Rogers 1.
 Boulder County.
 OWNER: Platt Rogers Estate.

PRODUCTION: 1528 units until 1926. Statements indicate total of 30,000 units, but this probably includes production from other of the Rogers mines.

WORKINGS: Numerous small tunnels, open cuts, and shafts.

ORE OCCURRENCE: From extensions of Rogers 4 and 5 veins.

POTENTIAL: Unknown.

LAST OPERATOR: Slide Mines, Inc.

MAP SOURCES: Denver Public Library.

ROGERS NO. 4

LOCATION: SW $\frac{1}{4}$ Sec. 3, T1S, R72W, 2300' S of upper Rogers 1. Boulder County.

OWNER: Platt Rogers Estate.

PRODUCTION: Over 1200 units.

WORKINGS: 2 adits. intersecting the vein. About 450' of drift on each level.

ORE OCCURRENCE: Sorted horn type ore ran about 8%.

POTENTIAL: Unknown.

LAST OPERATOR: Slide Mines, Inc., 1942.

MAP SOURCES: Denver Public Library.

ROGERS NO. 5

LOCATION: SW $\frac{1}{4}$ Sec. 3, T1S, R72W, 300' NW of lower tunnel of Rogers No. 4. Boulder County.

OWNER: Platt Rogers Estate.

PRODUCTION: Probably few hundred units.

WORKINGS: 80' shaft, with 225' drift. 125' adit, with stopes along N. side.

ORE OCCURRENCE: Lowgrade, horn-type ferberite.

POTENTIAL: Unknown.

LAST OPERATOR: Slide Mines, Inc., 1943-44.

MAP SOURCES: USGS PP 245, page 166. Denver Public Library.

ROGERS NO. 6

LOCATION: SE $\frac{1}{4}$ Sec. 4, T1S, R72W, Boulder County.

OWNER: Platt Rogers Estate.

PRODUCTION: About 200 units.

WORKINGS: Unknown.

ORE OCCURRENCE: Horn-type ore.

POTENTIAL: Unknown.

LAST OPERATOR: Unknown.

MAP SOURCES: Unknown.

ROGERS NO. 7

LOCATION: NW $\frac{1}{4}$ Sec. 3, T1S, R72W, 175' S30°E of upper tunnel of Rogers 13. Boulder County.

OWNER: Platt Rogers Estate.

PRODUCTION: Given as 1000 units.

WORKINGS: Adit, drifts, and crosscut, comprising about 300' of workings.

ORE OCCURRENCE: Horn-type ore.

POTENTIAL: Unknown.

LAST OPERATOR: Unknown.
MAP SOURCES: USGS PP 245, page 166.

ROGERS NO. 8

LOCATION: Sec. 3, T1S, R72W, Boulder County.
OWNER: Platt Rogers Estate.
PRODUCTION: About 37 units.
WORKINGS: 10' tunnel.
ORE OCCURRENCE: From small pocket.
POTENTIAL: Unknown.
LAST OPERATOR: Owner.
MAP SOURCES: None.

ROGERS NO. 9

LOCATION: NE $\frac{1}{4}$ Sec. 3, T1S, R72W, about 3700' S58°E of Peewink Mt. Boulder County.
OWNER: Platt Rogers Estate.
PRODUCTION: 612 units, in 8% ore.
WORKINGS: Several adits and open cuts, all caved.
ORE OCCURRENCE: Veins in granite.
POTENTIAL: Unknown.
LAST OPERATOR: Owner.
MAP SOURCES: Unknown.

ROGERS NO. 10

LOCATION: Sec. 3, T1S, R72W, Boulder County.
OWNER: Platt Rogers Estate.
PRODUCTION: About 55 units.
WORKINGS: 15' shaft.
ORE OCCURRENCE: Small pocket.
POTENTIAL: Unknown.
LAST OPERATOR: Owner.
MAP SOURCES: Unknown.

ROGERS NO. 11

LOCATION: NW $\frac{1}{4}$ Sec. 3, T1S, R72W, about 1500' SSW of Switzerland Park. Boulder County.
OWNER: Platt Rogers Estate.
PRODUCTION: About 3000 units, in below 2% ore, in 1942.
WORKINGS: 140' crosscut adit, 500' of drift. Short winze level 50' below west drift.
ORE OCCURRENCE: Black horn and ferberite in brecciated light gray horn quartz.
POTENTIAL: Unknown.
LAST OPERATOR: Slide Mine, Inc.
MAP SOURCES: USGS PP 245, plate 22. Denver Public Library.

ROGERS NO. 12

LOCATION: SW $\frac{1}{4}$ Sec. 4, T1S, R72W, 400' NE of Rogers 2 shaft. Boulder County.
OWNER: Platt Rogers Estate.
PRODUCTION: 727 units, in 20.8% ore, before 1919.
WORKINGS: Several shallow shafts and trenches.

ORE OCCURRENCE: At intersections of Rogers 2 vein with small branch veins.

POTENTIAL: Unknown.

LAST OPERATOR: Owner.

MAP SOURCES: Unknown.

ROGERS NO. 13

LOCATION: NE $\frac{1}{4}$ Sec. 4, T1S, R72W, 3650' S30°W of Peewink Mt. Boulder County.

OWNER: Platt Rogers Estate.

PRODUCTION: Over 1800 units, in 10.6% ore.

WORKINGS: 2 parallel adits, 200' and 300' long.

ORE OCCURRENCE: Mostly in extensive surface trenches.

POTENTIAL: Unknown.

LAST OPERATOR: A. H. Scruggs.

MAP SOURCES: USGS PP 245, page 167.

ROOSEVELT

LOCATION: NE $\frac{1}{4}$ Sec. 36, T1N, R71W, SE of Sugarloaf village. Boulder County.

OWNER: Joseph Rafter.

PRODUCTION: At least 4200 units.

WORKINGS: 350' adit; connects with Annie L. adit through a winze. 150' shaft, with 3 levels. Caved adit below Roosevelt tunnel.

ORE OCCURRENCE: In vein following 3 aplite dikes through granite. Crystalline and horn ore.

POTENTIAL: Unknown.

LAST OPERATOR: Tracy and Paulzine.

MAP SOURCES: No maps.

ROSE

LOCATION: Sec. 10, T42N, R7W, at the head of Cement Creek, on Hurricane Peak, 11 miles N of Silverton. San Juan County.

OWNER: Laurette Giroux.

PRODUCTION: Small production reported.

WORKINGS: Few short workings.

ORE OCCURRENCE: Hubnerite in sulphide quartz.

POTENTIAL: Unknown.

LAST OPERATOR: Owner.

MAP SOURCES: No maps.

ROUND MOUNTAIN GROUP

LOCATION: Secs. 3 and 10, T12S, R72W, about 6 miles NW of Lake George, 1 mile N of Highway No. 24. Park County.

OWNER: D. W. Denny.

PRODUCTION: 14 tons of 0.63%, during World War II.

WORKINGS: Pits, trenches, and shallow shafts, up to 27 feet in depth.

ORE OCCURRENCE: Scheelite in lime-silicate beds, following the schist bedding.

POTENTIAL: Unknown.

LAST OPERATOR: Sandusky, 1951.

MAP SOURCES: No maps.

RUBY

LOCATION: Sec. 5, T41N, R6W, 9 miles ENE of Silverton, in Maggie Gulch; San Juan County.

OWNER: Angelo Dalla.

PRODUCTION: About 14 tons of 10% ore in 1942. Small production in 1953.

WORKINGS: 270' adit.

ORE OCCURRENCE: Hubnerite in a strong vein through rhyolite.

POTENTIAL: Said to be 4 or 5 feet of disseminated hubnerite.

LAST OPERATOR: Harrison and Bird.

MAP SOURCES: No maps.

RUDY NO. 2

LOCATION: Sec. 34, T1N, R72W, in Dry Lake area. Boulder County.

OWNER: Elmer Rudine.

PRODUCTION: About 15 units.

WORKINGS: Shallow shaft and open cuts.

ORE OCCURRENCE: Unknown.

POTENTIAL: Unknown.

LAST OPERATOR: Owner.

MAP SOURCES: No maps.

ST. ELMO

LOCATION: SW $\frac{1}{4}$ Sec. 7, T1S, R72W, 200' SE of Hoosier shaft. Boulder County.

OWNER: Cold Spring Tungsten, Inc.

PRODUCTION: Very small.

WORKINGS: 200' shaft; 2 levels, inaccessible.

ORE OCCURRENCE: Above the 150' level. In aplite: pinched out in schist in bottom.

POTENTIAL: Ore was not found in bottom.

LAST OPERATOR: Elmer Hetzer.

MAP SOURCES: No maps.

SILVER BELL

LOCATION: Sec. 33, T42N, R9W, W of Ophir. San Miguel County.

OWNER: Silver Bell Mines Co.

PRODUCTION: 60 tons in 1940.

WORKINGS: 6 adits; veins opened for as much as 2000 feet.

ORE OCCURRENCE: Wolframite found in Butler and Ida veins.

POTENTIAL: Mill was discontinued in 1953.

LAST OPERATOR: Owner.

MAP SOURCES: Owner.

SILVER KING

LOCATION: NE $\frac{1}{4}$ Sec. 7, T1S, R72W, N. of Western Star shaft. Boulder County.

OWNER: Albert Perkins.

PRODUCTION: About 2 units.

WORKINGS: Surface cuts.

ORE OCCURRENCE: Stringers and float.

POTENTIAL: Unknown.

LAST OPERATOR: Owner.

MAP SOURCES: No maps.

SILVER LEDGE

LOCATION: Sec. 27, T42N, R7W, 10 miles N. of Silverton. San Juan County.

OWNER: McCausland and Ruhder.

PRODUCTION: Has produced some hubnerite ore. Primarily a gold mine.

WORKINGS: 300 feet within the portal of the Occidental tunnel. Also the Silver Ledge adit. Both caved. 2000 feet of drifting reported.

ORE OCCURRENCE: Vein contains a persistent but narrow hubnerite zone.

POTENTIAL: Unknown.

LAST OPERATOR: Barnes (?), Silverton.

MAP SOURCES: No maps.

SILVER QUEEN

LOCATION: SW $\frac{1}{4}$ Sec. 9, T1S, R72W, 1 mile E. of Tungsten village, and on N. side of Highway No. 119. Boulder County.

OWNER: Victor P. Helburg.

PRODUCTION: Less than 10,000 units.

WORKINGS: Shaft; adit 160' in length, with 295' drift on vein.

ORE OCCURRENCE: Shaft workings (now caved) produced the tungsten ore.

POTENTIAL: Unknown.

LAST OPERATOR: Owner.

MAP SOURCES: USGA PP 245, page 157.

SISSON (*see Sunset*)**SMITH**

LOCATION: SW $\frac{1}{4}$ Sec. 36, T1N, R72W, on S. side of Good Friday mine. Boulder County.

OWNER: Colorado Tungsten Corp.

PRODUCTION: About 10,000 units.

WORKINGS: 50' shaft. Level stoped to surface on main vein.

ORE OCCURRENCE: "Steel" tungsten in east-west vein.

POTENTIAL: Ore streak recently discovered in hanging wall of main stope. Balmoral 3rd level has drifts on Smith vein. HW streak might be checked in these workings.

LAST OPERATOR: Clyde Jump.

MAP SOURCES: USGS PP 245, page 176. H. S. Cobb.

SPENCER TUNNEL

LOCATION: NE $\frac{1}{4}$ Sec. 7, T1S, R72W, 950' S76°W from Star shaft. Boulder County.

OWNER: Cold Spring Tungsten, Inc.

PRODUCTION: Less than 100 units recorded.

WORKINGS: 80' open cut; 360' adit, with a 70' raise to surface. A drift south from the face of the adit was driven in 1944.

ORE OCCURRENCE: In granite with aplite and pegmatite.

POTENTIAL: Unknown.

LAST OPERATOR: Wolf tongue Mining Co.

MAP SOURCES: USGS PP 245, page 155. Owner.

SPIDERLEG

LOCATION: NE $\frac{1}{4}$ Sec. 11, T1S, R73W, 1475' NE of Conger shaft.
Boulder County.

OWNER: Vanadium Corp. of America.

PRODUCTION: Probably over 5000 units.

WORKINGS: Shaft; about 1300' of drifting and stoping on the 200' level.

ORE OCCURRENCE: Most of the ore was found near the surface. Other-wise productive zones were where veins crossed pegmatite.

POTENTIAL: Unknown.

LAST OPERATOR: Owner.

MAP SOURCES: Owner. USGS PP 245, page 127.

STEEL PLATE

LOCATION: NE $\frac{1}{4}$ Sec. 7, T1S, R72W, 400'-500' S. of Cold Spring.
Boulder County.

OWNER: Cold Spring Tungsten, Inc.

PRODUCTION: Over 100 units.

WORKINGS: 45' shaft.

ORE OCCURRENCE: Horn-type ore.

POTENTIAL: Unknown.

LAST OPERATOR: Ford and Flarty.

MAP SOURCES: No maps.

STOCKTON

LOCATION: Sec. 10, T49N, R9E, 3 miles SW of Salida, on N. side of
Arkansas river. Chaffee County.

OWNER: E. G. Gobatti.

PRODUCTION: About 2 tons of ore, value \$110.00, during World War
I.

WORKINGS: Shaft with 3 short levels. 2 adits, 500'-600' in length.

ORE OCCURRENCE: Pegmatitic Stockton vein contains scheelite.

POTENTIAL: Unknown.

LAST OPERATOR: Owner.

MAP SOURCES: Owner.

SUMMIT (see Jack)**SUNBEAM**

LOCATION: SE $\frac{1}{4}$ Sec. 19, T1N, R71W, below Logan mine. Boulder
County.

OWNER: Fred J. Holmes.

PRODUCTION: About 200 units.

WORKINGS: 30' stope above adit. Winze stope below adit on same
shoot.

ORE OCCURRENCE: About 30' x 30' ore shoot in granite.

POTENTIAL: No further development indicated for tungsten.

LAST OPERATOR: John Romarine.

MAP SOURCES: No maps.

SUNDAY

LOCATION: SW $\frac{1}{4}$ Sec. 19, T1S, R72W, 400' SE of Tungsten shaft.
Boulder County.

OWNER: George Cowdery.

PRODUCTION: Estimated 6260 units.

WORKINGS: 200' shaft; levels at 100', 150', and 200'.

ORE OCCURRENCE: All ore found above 150' level. One large, disseminated orebody mined.

POTENTIAL: Unknown.

LAST OPERATOR: Tom Walsh, 1942.

MAP SOURCES: Owner. USGS PP 245, page 93; plate 6.

SUNNYSIDE

LOCATION: Sec. 26, T1N, R72W. Boulder County.

OWNER: Bessie I. and C. V. Skinner.

PRODUCTION: Few units.

WORKINGS: Unknown.

ORE OCCURRENCE: Unknown.

POTENTIAL: Unknown.

LAST OPERATOR: Owner.

MAP SOURCES: Unknown.

SUNSET-SISSON

LOCATION: SE $\frac{1}{4}$ Sec. 11, T1S, R73W, 180' S of Anna C. shaft.
Boulder County.

OWNER: Nannie L. Duval.

PRODUCTION: Less than 1000 units.

WORKINGS: 140' shaft; crosscut to Anna C. vein. Stopped.

ORE OCCURRENCE: Ferberite-bearing vein in granite.

POTENTIAL: Unknown.

LAST OPERATOR: W. M. MacKenzie.

MAP SOURCES: No maps.

SUNSHINE

LOCATION: Sec. 20, T42N, R7W, 8 miles from Silverton, in Dry
Gulch, adjacent to the Ohio. San Juan County.

OWNER: Charles Bacon.

PRODUCTION: Small.

WORKINGS: Short tunnel.

ORE OCCURRENCE: Narrow band of hubnerite in the vein.

POTENTIAL: Unknown.

LAST OPERATOR: Owner.

MAP SOURCES: No map.

SWEET HOME

LOCATION: Sec. 33, T8S, R78W, 5 miles NW of Alma. Park County.

OWNER: E. C. Spray.

PRODUCTION: $\frac{1}{2}$ -ton of 10% ore.

WORKINGS: Several adits; 200' winze; over 5000' of drifts.

ORE OCCURRENCE: One 12" vein contained a 10' ore-shoot assaying
2%.

POTENTIAL: Unknown.

LAST OPERATOR: Guy O. Lear, for owner.

MAP SOURCES: Owner.

TENDERFOOT

LOCATION: NE $\frac{1}{4}$ Sec. 7, T1S, R72W, about 900' NW of Cold Spring shaft. Boulder County.

OWNER: Cold Spring Tungsten, Inc.

PRODUCTION: About 3800 units. 2243 units in ore averaging 13.2%.

WORKINGS: 2 inclined shafts; one level at 105', with about 900' of drifts and crosscuts.

ORE OCCURRENCE: In several intersecting veins.

POTENTIAL: Unknown.

LAST OPERATOR: Rugg and Conklin.

MAP SOURCES: Owner. USGS PP 245, page 153.

TENNESSEE

LOCATION: Sec. 24, T1S, R73W, NW of Tungsten shaft. Boulder County.

OWNER: Joseph M. Smith.

PRODUCTION: 2750 units.

WORKINGS: 95' shaft. 100' of drift SE on 90' level.

ORE OCCURRENCE: Stopped to surface.

POTENTIAL: Small ore in sump of shaft.

LAST OPERATOR: Rodgers and Crook, 1950.

MAP SOURCES: No maps.

TOM MOORE

LOCATION: Sec. 17, T42N, R6W, 10 miles NE of Silverton, in Burns Gulch; San Juan County.

OWNER: U. S. Manganese Co.

PRODUCTION: Some tungsten produced along with base metals.

WORKINGS: 5 adits, the lowest of which is 1500 feet in length.

ORE OCCURRENCE: Hubnerite mined only in the face of one adit. Shows in outcrop across stream.

POTENTIAL: Small showings.

LAST OPERATOR: Great Divide M. & M. Co.

MAP SOURCES: Owner.

TOWNLOT

LOCATION: NE $\frac{1}{4}$ Sec. 13, T1S, R73W, at N edge of Nederland. Boulder County.

OWNER: Cold Spring Tungsten, Inc.

PRODUCTION: About 2300 units.

WORKINGS: Shaft not over 150' deep, with small stopes and drifts.

ORE OCCURRENCE: Ferberite in aplite, surrounded by schist.

POTENTIAL: Unknown.

LAST OPERATOR: Rudine and Williams.

MAP SOURCES: Owner.

TUNGSTEN

LOCATION: SW $\frac{1}{4}$ Sec. 19, T1S, R72W, beside Colo. 119, 1 $\frac{1}{2}$ miles SE of Nederland. Boulder County.

OWNER: George Cowdery.

PRODUCTION: Probably exceeds 70,000 units.

WORKINGS: Shaft with levels at 80, 120, 180, 220, 300, and 370 feet. 384' of drifts and crosscuts driven in 1951-52 under a DMEA contract.

ORE OCCURRENCE: High grade ferberite in 2 veins, the Tungsten and the March. In schist with aplite and pegmatite.

POTENTIAL: Continuous producer. Many possibilities.

LAST OPERATOR: Owner.

MAP SOURCES: USGS PP 245, page 91; plate 6.

TUNGSTEN

LOCATION: Sec. 30, T42N, R7W, 6 miles from Silverton, in Minnesota Gulch. San Juan County.

OWNER: San Juan County.

PRODUCTION: Small.

WORKINGS: Open cuts.

ORE OCCURRENCE: Hubnerite showings.

POTENTIAL: Unknown.

LAST OPERATOR: Clifford and Walby.

MAP SOURCES: No maps.

TUNGSTEN MOUNTAIN NOS. 6 AND 9

LOCATION: SE $\frac{1}{4}$ Sec. 19, T1S, R72W, E of Tungsten shaft. Boulder County.

OWNER: George Cowdery.

PRODUCTION: 1000 units or more from No. 9.

WORKINGS: 100' tunnel and stopes.

ORE OCCURRENCE: Ore at intersection of large vein with small veins.

POTENTIAL: Short crosscut and 230' raise required to join from Black King tunnel.

LAST OPERATOR: Norton, in upper workings.

MAP SOURCES: No maps.

TUNGSTEN KING

LOCATION: Sec. 5, T1S, R71W. Boulder County.

OWNER: Nellie B. Robb.

PRODUCTION: About 50 units.

WORKINGS: Unknown. Probably on agricultural patent.

ORE OCCURRENCE: Unknown.

POTENTIAL: Unknown.

LAST OPERATOR: May have been owner, 1955.

MAP SOURCES: No maps.

UTICA

LOCATION: Sec. 7, T1N, R72W, at Ward. Boulder County.

OWNER: Joseph K. Davidson.

PRODUCTION: None recorded.

WORKINGS: 900' shaft with many levels.

ORE OCCURRENCE: Hubnerite in gold sulphide vein.

POTENTIAL: Unknown.

LAST OPERATOR: Owner.

MAP SOURCES: Owner.

VACANT SPOT

LOCATION: SE $\frac{1}{4}$ Sec. 11, T1S, R73W. Boulder County.
 OWNER: Cold Spring Tungsten, Inc.
 PRODUCTION: Less than 100 units.
 WORKINGS: If any, from the Oregon workings.
 ORE OCCURRENCE: Production probably from float.
 POTENTIAL: Unknown.
 LAST OPERATOR: Unknown.
 MAP SOURCES: Owner.

VASCO NO. 1

LOCATION: 2900' S of NE Corner Sec. 7, T1S, R72W, in SE corner of junction of Trevarton Gulch road with Ridge road. Boulder County.
 OWNER: Cold Spring Tungsten, Inc.
 PRODUCTION: About 30,000 units in ore averaging 14%.
 WORKINGS: 220' shaft; levels at 46, 95, 142, and 220 feet. Workings were in good condition in 1955. Under a DMEA contract in 1953-54, drifts were extended, and a footwall vein explored.
 ORE OCCURRENCE: From strong main vein, and from branch vein in FW of shaft.
 POTENTIAL: Unknown.
 LAST OPERATOR: P. H. Bennett.
 MAP SOURCES: P. H. Bennett. USGS PP 245, page 140. H. S. Cobb.

VASCO NO. 2

LOCATION: SW $\frac{1}{2}$ Sec. 8, T1S, R72W, inside of the turn, and below the highway, at the village of Tungsten. Boulder County.
 OWNER: Cold Spring Tungsten, Inc.
 PRODUCTION: Records show only 3800 units.
 WORKINGS: Shaft with levels at 87 and 188 feet. Workings connect with Vascos 8 and 5.
 ORE OCCURRENCE: Strong, wide veins in granite.
 POTENTIAL: Unknown.
 LAST OPERATOR: H. M. Gregory.
 MAP SOURCES: Owner. USGS PP 245, page 135: plate 13.

VASCO NO. 3

LOCATION: SW $\frac{1}{4}$ Sec. 8, T1S, R72W, 1150' NE of Vasco 2. Boulder County.
 OWNER: Cold Spring Tungsten, Inc.
 PRODUCTION: Large production pre-1915. 4749 units, 1915-45. Small 1955 production.
 WORKINGS: Inaccessible. Upper and lower adits, and stope to surface.
 ORE OCCURRENCE: Evidently stoped between upper and lower adits.
 POTENTIAL: Should be investigated for stope-fill.
 LAST OPERATOR: J. G. Clark.
 MAP SOURCES: Owner. USGS PP 245, plate 13.

VASCO NO. 4

LOCATION: SW $\frac{1}{4}$ Sec. 8, T1S, R72W, 740' N16°W of Vasco 2. Boulder County.
 OWNER: Cold Spring Tungsten, Inc.

PRODUCTION: 3000 units from 1915 to 1945.

WORKINGS: Shaft and 2 adits. Lower adit was main entry, and connects by a 20' winze with 5th level of Vasco 10. Shaft levels at 50, 125, 147, 195, and 220 feet.

ORE OCCURRENCE: Best ore was taken from upper workings.

POTENTIAL: Unknown.

LAST OPERATOR: Boulder Tungsten Mills, Inc.

MAP SOURCES: Owner. USGS PP 245, plates 13, 14.

VASCO NO. 5

LOCATION: SW $\frac{1}{4}$ Sec. 8, T1S, R72W, near center of village of Tungsten. Boulder County.

OWNER: Cold Spring Tungsten, Inc.

PRODUCTION: Possibly as much as 25,000 units.

WORKINGS: Upper and lower adits; underground shaft. Lower adit connects with Vasco 3. 25' level of shaft connects via raise with 1st level of Vasco 2. Workings are flooded.

ORE OCCURRENCE: Strong vein was largely quartz and ferberite cementing granite breccia.

POTENTIAL: Unknown. Possible stope-fill ore.

LAST OPERATOR: Bob Plummer.

MAP SOURCES: Owner. USGS PP 245, plate 13.

VASCO NO. 6

LOCATION: SW corner of Sec. 8, T1S, R72W, about 1000' W of Tungsten village. Boulder County.

OWNER: Cold Spring Tungsten, Inc.

PRODUCTION: May be as much as 60,000 units.

WORKINGS: Inclined shaft with 8 levels; 102' (Stevens tunnel), 178', 227', 280', 362', 410', 455', 515', 605'.

ORE OCCURRENCE: Upper orebody was between 2nd level and surface; Lower orebody between 8th and 3rd levels. One of the larger mines of the district.

POTENTIAL: Unknown.

LAST OPERATOR: Boulder Tungsten Mills, Inc.

MAP SOURCES: Owner. USGS PP 245, page 131; plate 13.

VASCO NO. 7

LOCATION: SW $\frac{1}{4}$ Sec. 8, T1S, R72W, about 1700' NW of Tungsten village. Boulder County.

OWNER: Cold Spring Tungsten, Inc.

PRODUCTION: Probably at least 16,000 units.

WORKINGS: 336' shaft; levels at 30, 120, 218, 282, and 335 feet, plus a 109' winze. Workings are flooded below the 30' level.

ORE OCCURRENCE: In main vein, and in a footwall split.

POTENTIAL: DMEA development contract in 1953 yielded only small production.

LAST OPERATOR: P. H. Bennett.

MAP SOURCES: Owner. USGS PP 245, plate 15.

VASCO NO. 8

LOCATION: NW $\frac{1}{4}$ Sec. 17, T1S, R72W, 80' S22°W of Vasco 2.
Boulder County.

OWNER: Cold Spring Tungsten, Inc.

PRODUCTION: 1564 units recorded.

WORKINGS: Adit; winze with levels at 22, 68, and 125 feet.

ORE OCCURRENCE: One ore shoot in vein which intersects Vasco 2 vein.

POTENTIAL: Unknown.

LAST OPERATOR: J. G. Clark.

MAP SOURCES: Owner. USGS PP 245, plate 13.

VASCO NO. 10

LOCATION: SW $\frac{1}{4}$ Sec. 8, T1S, R72W, about 1400' N of Tungsten.
Boulder County.

OWNER: Cold Spring Tungsten, Inc.

PRODUCTION: About 20,000 units to 1945.

WORKINGS: Inclined shaft; levels at 30, 66, 114, 158, 206, 256 and 323 feet. The 206 and 256 levels connect with Vasco 4.

ORE OCCURRENCE: Upper levels made best production, averaging 8.74% ore.

POTENTIAL: DMEA contract in 1955 resulted in only small production.

LAST OPERATOR: Boulder Tungsten Mills, Inc.

MAP SOURCES: Owner. USGS PP 245, plate 14.

VENTURE NO. 2 — LUCKIE

LOCATION: Sec. 5, T48N, R8E, near Poncha Pass. Chaffee County.

OWNER: John Butala.

PRODUCTION: Very small production in 1955.

WORKINGS: 30' shaft.

ORE OCCURRENCE: 1" streak with scheelite.

POTENTIAL: Unknown.

LAST OPERATOR: Mining Ventures, Inc.

MAP SOURCES: No maps.

VICTOR

LOCATION: NE $\frac{1}{4}$ Sec. 8, T1S, R72W, E of Bonanza 2. Boulder County.

OWNER: Milton V. Christman.

PRODUCTION: Over 300 units.

WORKINGS: 125' shaft, two levels; winze and sub-level.

ORE OCCURRENCE: Small pockets of coarsely crystalline soft ore.

POTENTIAL: Unknown.

LAST OPERATOR: Oscar Fay and associates.

MAP SOURCES: Unknown.

VICTORY

LOCATION: Sec. 3, T12S, R72W, 7 miles NW of Lake George; 2 miles by road N of US 24, and N of the Round Mountain group of claims.
Park County.

OWNER: Rocky Mountain Tungsten Corp.

PRODUCTION: Small scheelite production in 1955.
WORKINGS: 40' shaft; shallow pits.
ORE OCCURRENCE: Scheelite in tactites following schistosity.
POTENTIAL: Unknown.
LAST OPERATOR: Owner.
MAP SOURCES: No maps.

WALKER RANCH

LOCATION: Sec. 28, T1S, R71W, about 4 miles from Boulder, via Flagstaff mountain highway. Boulder County.
OWNER: Dr. O. I. and Bertha N. Taylor.
PRODUCTION: About 150 units.
WORKINGS: Shaft about 80' in depth, with short drifts.
ORE OCCURRENCE: Horn type ore.
POTENTIAL: Said to be 5" of 20% ore in shaft bottom. Property is on margin of district.
LAST OPERATOR: S. Clyde, 1942.
MAP SOURCES: No maps.

WESTERN STAR

LOCATION: NE $\frac{1}{4}$ Sec. 7, T1S, R72W, about 1500' NW of Cold Spring shaft. Boulder County.
OWNER: Cold Spring Tungsten, Inc.
PRODUCTION: Possibly over 12,000 units.
WORKINGS: Vertical shaft; levels at 75, 122, 200, and 300 feet. Old inclined shaft to first level.
ORE OCCURRENCE: The Star was opened as a silver prospect. The tungsten vein had been exposed in the shaft before the mineral was identified. Ore in the Star vein ended at its intersection with the Madeline fault, just below the 122' level.
POTENTIAL: Re-openings in 1942 and 1953 resulted in small production, but no new ore shoots were discovered.
LAST OPERATOR: Owner.
MAP SOURCES: Owner. USGS PP 245, plate 17.

WHEELMAN TUNNEL (see *Paymaster*)

WILD TIGER

LOCATION: NE $\frac{1}{4}$ Sec. 35, NW $\frac{1}{4}$ Sec. 36, T1N, R72W, 3500' S15°W of village of Sugarloaf. Boulder County.
OWNER: Robert Cochran.
PRODUCTION: Less than 1000 units.
WORKINGS: 2 shafts and one main adit.
ORE OCCURRENCE: 60' shaft produced the tungsten ore. Adit was on low grade gold ore.
POTENTIAL: Unknown.
LAST OPERATOR: A. B. Pace.
MAP SOURCES: USGS PP 245, page 175.

WILLIAMS, H. & M.

LOCATION: Sec. 33, T7S, R73W, on Quandary Peak, about 13 miles by road south and west of Breckenridge. Summit County.
OWNER: Harold and Milo Williams.

PRODUCTION: Several shipments from outcrops and float.
WORKINGS: Shallow surface workings.
ORE OCCURRENCE: Hubnerite and scheelite in small veins.
POTENTIAL: Small ore showing.
LAST OPERATOR: Owners.
MAP SOURCES: No maps.

WILLIAMS, THOMAS

LOCATION: 3 claims in Sec. 4, T8S, R78W, near upper Blue Lake.
Summit County.
OWNER: Thomas Williams.
PRODUCTION: Small production of 5% ore.
WORKINGS: 60' adit; small pits.
ORE OCCURRENCE: 2 lenses, 10 to 15 feet in length, containing hubnerite, scheelite, and other minerals.
POTENTIAL: Unknown.
LAST OPERATOR: Owner.
MAP SOURCES: No maps.

WINDY TUNNEL (*see Elsie*)

WISCONSIN

LOCATION: Sec. 8, T1S, R73W, at Dry Lake. Boulder County.
OWNER: Edward Bonelli.
PRODUCTION: Less than 1000 units.
WORKINGS: Surface cuts.
ORE OCCURRENCE: Small ore found with bulldozer.
POTENTIAL: Unknown.
LAST OPERATOR: Owner.
MAP SOURCES: No map.

WORLD

LOCATION: NW $\frac{1}{4}$ Sec. 8, T1S, R72W, between Cold Spring and Cross mines. Boulder County.
OWNER: Cold Spring Tungsten, Inc.
PRODUCTION: Reported \$50,000 from above the 40' level of World shaft.
WORKINGS: 2 shafts, the World and the Brandt, connected by crosscut from World 80' to Brandt 107'.
ORE OCCURRENCE: Several veins in altered granite produced ore locally.
POTENTIAL: DMEA contract in 1953 resulted in small production.
LAST OPERATOR: P. H. Bennett.
MAP SOURCES: Owner. USGS.

YUKON TUNNEL

LOCATION: Sec. 32, T42N, R7W, 4 miles N of Silverton, on E side of Cement Creek. San Juan County.
OWNER: Ariadne Corp.
PRODUCTION: Small production of concentrate in Gold Hub mill in 1936.
WORKINGS: Yukon tunnel crosscuts Uncle Sam vein; now caved.

ORE OCCURRENCE: Hubnerite and scheelite in a shoot 6'' to 18'' wide, and about 100' long.

POTENTIAL: Hubnerite float reported from surface above the adit.

LAST OPERATOR: John Cooper.

MAP SOURCES: Owner. H. L. Tedrow.

FRONT RANGE TACTITES

There are numerous occurrences of scheelite in tactites following the bedding planes in the schists and gneisses in the Front Range of the Colorado Rocky Mountains. Many of these have been located as claims, and abandoned; many others have never been claimed. These lens-shaped occurrences vary in size from those that would yield a few hundred pounds of ore, to larger ones that might produce as much as 200 tons. The vein rock is usually very hard, and is often surrounded by rock equally hard, so that it is difficult to make a clean mine product. Clean vein material with strong showings of scheelite, will assay from 0.20% to over 1%, with occasional samples running as high as 3% WO_3 .

These occurrences have the typical appearance of tactites, with local quartz, iron-oxide filled vugs, and garnet, epidote and calcite accompanying the small amounts of scheelite. They are quite widespread, and have been recognized in Larimer County; in Gilpin County, southeast of Blackhawk; in Grand County, east-northeast of Tabernash; in Chaffee County, east of Salida; in Park County, in the Tarryall district; and in Fremont County, south of the Arkansas river. At least two such occurrences have been noted across the state line, in Wyoming.