

Iron King Mine

Iron

626

NAME OLD NAMES PRINCIPAL ORE MINOR MINERALS

14 32 5W/4/18
T R S

PUBLISHED REFERENCES

Shays 40:98
Wulgate 20:47
Dogans Bull 9
" AB
U.S.B.M. Min Rpt. # 204749,
MISCELLANEOUS RECORDS

..... Grant COUNTY
..... Canyon AREA
..... 5400 ELEVATION
..... ROAD OR HIGHWAY
..... DISTANCE TO SHIPPING POINT

PRESENT LEGAL OWNER (S)

Address

OPERATOR

Name of claims Area Pat. Unpat.

Name of claims Area Pat. Unpat.

EQUIPMENT ON PROPERTY

IRON KING MINE

CANYON AREA

The Iron King mine is at an altitude of 5,400 feet, in the SW $\frac{1}{4}$ sec. 18, T. 14 S., R. 32 E., on the west slope of the northwest spur of Canyon Mountain. The mine is served by a dirt road, 5 $\frac{1}{2}$ miles long, from Canyon City. The workings, which consist of an open quarry, a tunnel, and small open pits, are shown on plate 15.

Mining at the Iron King deposit began in 1916, and 500 tons of ore was shipped by the end of the year. About 3,000 tons was shipped annually during 1917 and 1918, making the total production approximately 6,500 tons. The ore was hand-sorted, and there are now several hundred tons of low-grade ore in the dump. The shipping ore averaged about 32 percent of chromic oxide.

The ore at the Iron King mine is fine-grained spotted chromite in a matrix of serpentine derived from dunite. The ore is banded and gradates all the way from massive black ore containing, according to Bureau of Mines analyses, about 43 percent of chromic oxide to barren serpentinized dunite. Although planar banding is most apparent in the quarry face, dump specimens show well-developed linear banding. The primary, magmatic character of the banding is still evident despite serpentinization and complex faulting. Mainly because of such complex faulting, the distribution of the ore, as shown on plate 16, surrounded by olivinite in which irregular bodies of peridotite and pyroxenite occur. These pyroxenic masses are related to the pyroxenic border facies of the ultramafic rocks, and about 200 feet south of the mine a large east-west block of gneissic basement complex is included in the olivinite. The main contact of the intrusive mass with the basement complex is about 1,600 feet south of the mine. Small veins of magnesite occur in the serpentine, and large crystals of aragonite occur in open fractures in the chromite.

The ore body in the Iron King deposit appears to be a nearly horizontal

tabular mass, which is bounded laterally by faults and has been broken into several blocks that rise northward in a series of steps. The apparent dip of the banding in the individual fault blocks exposed in the quarry face is less than 15° NW. or SW., the dips in adjoining blocks being commonly in opposite directions. The chromite is cut off on the west by a fault that strikes N. 40° E. and dips 41° SE. The footwall of this fault forms the west wall of the quarry and was penetrated at a depth of 56 feet in diamond drill hole No. 24. The southeastern edge of the ore body is faulted against sheared and slickensided serpentine in the quarry face, and the northeastern limit of the ore-bearing block is probably a fault that brings serpentized dunite against peridotite and pyroxenite. Drill hole No. 29 reached the hanging wall of a breccia zone containing fragments of chromite ore at a depth of 63 feet, and from this fact and the surface exposures it is inferred that the fault trends about N. 50° W. and dips 50° NE. The small chromite blocks exposed southeast of the main ore body appear to be in the breccia, and the highest chromite exposure northwest of the quarry lies close to the northwesterly projection of the fault, on the footwall side. The intersection of the breccia zone with the footwall fault presumably determines the northwesternmost extension of the ore-bearing block. The total width of the ore in the quarry face is 115 feet, and the total exposed thickness ranges between 10 and 25 feet. The chromite exposed in the quarry floor is a thin band dipping 10° or 15° toward the quarry face. The tunnel east of the quarry is in barren serpentine, and no indications of minable ore were found southeast of the quarry or below the quarry level. The record of shipments indicates that the ore averages 25 to 30 percent of chromic oxide (Cr_2O_3), including low-grade ore thrown on the dump.

"The Iron King mine is at an altitude of 5400 feet, in the SW $\frac{1}{4}$ sec. 18, T.14 S., R.32 E., on the west slope of the northwest spur of Canyon Mountain. The mine is served by a dirt road, 5 $\frac{1}{2}$ miles long, from Canyon City. The workings, which consist of an open quarry, a tunnel, and small open pits, are shown on plate 15.

"Mining at the Iron King deposit began in 1916, and 500 tons of ore was shipped by the end of the year. About 3000 tons was shipped annually during 1917 and 1918, making the total production approximately 6500 tons. The ore was hand-sorted, and there are now several hundred tons of low-grade ore in the dump. The shipping ore averaged about 32 percent of chromic oxide.

"The ore at the Iron King mine is fine-grained spotted chromite in a matrix of serpentine derived from dunite. The ore is banded and gradates all the way from massive black ore containing, according to Bureau of Mines analyses about 43 percent of chromic oxide to barren serpentized dunite. Although planar banding is most apparent in the quarry face, dump specimens show well-developed linear banding. The primary, magmatic character of the banding is still evident despite serpentization and complex faulting. Mainly because of such complex faulting, the distribution of the ore, as shown on plate 16, is very irregular. The dunite mass in which the ore occurs is surrounded by olivinite in which irregular bodies of peridotite and pyroxenite occur. These

"pyroxenic masses are related to the pyroxenic border facies of the ultramafic rocks, and about 200 feet south of the mine a large east-west block of gneissic basement complex is included in the olivinite. The main contact of the intrusive mass with the basement complex is about 1600 feet south of the mine. Small veins of magnesite occur in the serpentine, and large crystals of aragonite occur in open fractures in the chromite.

"The ore body in the Iron King deposit appears to be a nearly horizontal tabular mass, which is bounded laterally by faults and has been broken into several blocks that rise northward in a series of steps. The apparent dip of the banding in the individual fault blocks exposed in the quarry face is less than 15° NW. or SW., the dips in adjoining blocks being commonly in opposite directions. The chromite is cut off on the west by a fault that strikes N. 40° E. and dips 41° SE. The footwall of this fault forms the west wall of the quarry and was penetrated at a depth of 56 feet in diamond drill hole no. 24. The southeastern edge of the ore body is faulted against sheared and slickensided serpentine in the quarry face, and the northeastern limit of the ore-bearing block is probably a fault that brings serpentized dunite against peridotite and pyroxenite. Drill hole no. 29 reached the hanging wall of a breccia zone containing fragments of chromite ore at a depth of 63 feet, and from this fact and the surface exposures it is inferred that the fault trends about N. 50° W. and dips 50° NE. The small chromite blocks exposed southeast of the main ore body appear to be in the breccia, and the highest chromite exposure northwest of the quarry lies close to the northwesterly projection of the fault, on the footwall side. The intersection of the breccia zone with the footwall fault presumably determines the northwesternmost extension of the ore-bearing block. The total width of the ore in the quarry face is 115 feet, and the total exposed thickness ranges between 10 and 25 feet. The chromite exposed in the quarry floor is a thin band dipping 10 or 15° toward the quarry face. The tunnel east of the quarry is in barren serpentine, and no indications of minable ore were found southeast of the quarry or below the quarry level. The record of shipments indicates that the ore averages 25 to 30 percent of chromic oxide (Cr₂O₃), including low-grade ore thrown on the dump."

References: Thayer 40:98-100 (quoted)
Allen 38:55
Westgate 20:49-50.