

The Riddle District is bounded on the north by the north side of T. 29 south, on the east by the east side of R. 5 W. for 12 miles, and thence south-east on the divide between the drainage of Cow creek and the South Umpqua river to the Douglas-Jackson county line. On the south, it is bounded by Jackson and Josephine counties and on the west by Coos County.

Geology: The eastern half of this district has been mapped by Diller (98) and Diller and Kay (24). The generalized trend of formation exposures is northeast-southwest. Outlining the areal geology from east to west, - there are large masses of intrusive quartz diorite and related rocks in the greenstone areas drained by upper Cow creek and the South Umpqua river. Also mainly long lenticular serpentinous masses are exposed, particularly in the southern and southeastern parts along the Jackson county line, and in the north central part northeast and southwest of Nickel Mountain. Large areas of greenstone and related basic igneous rocks make up perhaps one-half of the surface exposures. They interfinger with Galice sediments (Jurassic) in the eastern and with Dothan sediments in the western portion of the area. Large

BEAVER SPRINGS MINE (copper, gold)

Riddle district

Owner: Beaver Springs Mining Company, care of Arthur March, Medford.

Location: Six miles S. of Riddle, on the N. side of Silver Peak Mt. in secs. 7 and 18, T. 31 S., R. 5 W.; and secs. 15 and 24, T. 31, S., R. 6 W. There is no road reaching directly to the property, but a road about four miles long with a 7° grade may be made easily by following the present trail.

Area: Six full-size lode claims or 120 acres held by location.

History: Following the World War, the Silver Peak Mine was active and the Silver Peak vein was traced in a northeasterly direction by H. L. Shawver with the financial assistance of Arthur March and associates. Shawver and Charles Bergen did about 1,000 feet of development work between the years 1923 and 1928. Since that time the only work done has been annual assessment work.

Development: A tunnel trending S. 35°E. was driven over 1,000 feet. The portal is now caved. Ore is reported to have shown pyrite, chalcopyrite, bornite and sphalerite. Some ore is said to have assayed 12% copper, 1 ounce of gold, and 12 ounces of silver to the ton.

Miscellaneous Information: The nearest available water is two to three miles away. There is plenty of timber. Maximum snow fall is 3 feet. It is difficult to get into the property during the winter season.

There is no equipment nor any record of production.

Reference: Shenon, 33;L5

Informant: J. E. Morrison, '38

DOUGLAS MINE (Baker Mine) (gold)

Riddle district.

Owner: Estates of Lincoln Smith and Paul Roehl, care of Robert Smith, Portland, Oregon. Property reported leased to E. G. Gabriel, 610 N. Capital St., Salem, Oregon.

Location: Nine miles west of Glendale on the N. side of Cow creek in

NW $\frac{1}{4}$ sec. 27, T. 32 S., R. 7 W.

Area: 20 acres held by location.

Geology: Country rock is metagabbro. Quartz containing gold has been deposited at numerous fracture intersections, which together make up a well-defined fracture-zone. Walls of fractures show slickensides and there is much altered serpentinous material present. About 6 inches of good ore is exposed in the bottom of a winze.

It is reported that the small mill previously used did not make a suitable recovery.

Development: There is a main adit which runs N. 75° W. for 150 feet, one winze and some drifting and stoping.

Equipment: 7 H.P. Stover Gas Engine, Gibson Prospect Mill, No. 8 Straub concentrating table.

Miscellaneous Information: Elevation is 1600 feet. There is a maximum snowfall of 3 feet. Sufficient timber and water on the property for mining purposes.

Informant: J. E. Morrison '38

FISHER PLACER

Riddle district

Owner: H. Fisher, Brockway, Oregon

Location: Twelve miles south of Brockway by road. S $\frac{1}{2}$ SW $\frac{1}{4}$, sec. 22, T. 29 S., R. 7 W.

Area: Approximately 10 acres.

History: The occurrence of gold in the locality appears to have been known for some time before the property was first operated in January, 1936. There has been small seasonal operations each year since that time.

Equipment: One No. 1 Giant together with about 80 feet of 12-inch to 5-inch pipe.

General Information: There is no secured water right. One quarter mile of the old Olalla Ditch, which collects water during the winter, is used. About 30 feet head is obtained. Gold is finely divided in alluvial material which contains considerable clay, especially close to the hard conglomerate bedrock. There are many small boulders with a maximum snowfall is about 30 inches, but snow does not prevent hydraulic operations.

Informant: J. E. Morrison, '38

GOLD RIDGE CLAIM (gold)

Riddle district

Owners: Claude Russell and Geo. Bollenbaugh, Canyonville, Oregon.

Location: 4 $\frac{1}{2}$ miles southwest of Canyonville on Copper Creek (east

Fork of Ash creek) in sec. 5 and 6, T. 31 S., R. 5 W. The property is $1\frac{1}{4}$ mi. from Levins Ledge by trail

Area: 1 claim held by location

Miscellaneous Information: Elevation 2000 feet; mountainous topography. no equipment. Country rock schist and greenstone.

Informant: J. E. Morrison '39

GOLDEN GATE MINE (gold-copper)

Riddle District

Shanon (33a: 23-24) states:

"Most of the mining on the north side of Silver Peak has been done by N. A. Bradfield on the Golden Gate property. He located seven claims in 1919, and although lessees have since worked the property, he still retains the ownership. According to Mr. Bradfield two cars of ore have been shipped. One car containing 36 tons gave gross smelter returns of \$1,000, mostly in gold, and another car shipped by lessees is reported to have returned \$1.76.

"In all, about 600 feet of underground development work has been done. Most of the work has been concentrated on the claims near the road in the vicinity of the Bradfield cabin; the remainder on claims about half a mile to the east.

"The production has come chiefly from an open cut and some shallow workings close to the Silver Butte road. The ore occurring here is a dark grayish-green chlorite schist striking N. 30°- 60°E. and dipping 50° - 70° SE. A layer in the schist contains pyrite cubes and some stringers of chalcopyrite, and according to Mr. Bradfield free gold can be panned from some of the rock. The pyrite cubes range in size from those that are barely visible to some with faces over half an inch across. The cubes cut across the schistosity of the enclosing rock, thus indicating that they were formed later.

"Two tunnels have been driven on a mineralized bed in foliated schist at a point several hundred feet east of the workings just described. The two tunnels, which differ in altitude by 90 feet, have explored the mineralized bed for a total distance of about 170 feet. The schist is similar to that containing the disseminated ore at the Silver Peak Copper and Umpqua Consolidated mines and probably was mineralized under similar conditions and at the same time. In contrast, however, very little quartz or barite was noted in the deposit at the Golden Gate mine."

Ref: Shanon 33:23-24

GREEN MOUNTAIN PROSPECT (copper)

Riddle District

Owner: Frank Jantzer, Azalea, Oregon

Location: Secs. 27-28-44-34, T. 32 S., R. 4 W., 1 mile from road on Starvout Creek. Elevation, 3500 feet.

Miscellaneous Information: About 200 feet below the outcrop is a 40-foot incline shaft sunk near the common corners of the section given under location.

A tunnel 40 feet long has been driven about 200 feet below the outcrop upon which the incline shaft is sunk. About 300 feet N. of the shaft, a tunnel has been driven on the vein a distance of about 150 feet. A third tunnel called the "Biglow" with portal about 200 feet north of the 150-foot tunnel has been driven about 50 feet.

Quoting from Parks and Swartley (16:114):

"The country rock is typical greenstone that has been greatly sheared and altered, but still preserves its original structure and composition sufficiently to show its diabasic character. The greenstone belt, nearly a mile wide over the summit of Green Mountain, lies between belts of slates and other sedimentary rocks, and is cut off a short distance to the south ~~of~~ by serpentine, whose intrusion has influenced the mineralization of the region. The ore impregnates the greenstone and forms lenses. It is usually incased in deep-green chloritic material.

"The important copper mineral is chalcopyrite, which is intermingled with a large proportion of pyrrhotite and pyrite. The range of color from bronze to brass-yellow suggests the presence of cubanite, but the ore tested that was free from chalcopyrite gave no trace of copper.

"The outcrop lies in the upper drainage of Starvout creek, whose placers have been remarkably productive."

HIGH BAR PLACER

Riddle district

Owner: O. A. Ohlsen, Brockway, Oregon.

Location: In a gulch on the E. side of Byron Creek, about 2 miles up the Creek from its junction with Thompson Creek, a tributary of Olalla Creek in SW $\frac{1}{4}$, sec. 27, T. 29 S., R. 7 W.

Miscellaneous Information: The claim was located in 1937. Apparently no regular channel of gold deposition has been proved. Reportedly colors have been panned from sands along the gulch. There is no available water close at hand.

Informant: J. E. Morrison '38

HOGUM HYDRAULIC MINES (Booth Mine) (placer)

Riddle district

Owner: John H. Jantzer, Azalea, Oregon

Location: On Hogum Creek about 6 miles S.E. of Azalea in secs. 21-28 and 33. T. 32 S., R. 4 W.

Area: 240 acres consisting of 88 acres patented ground and 152 acres held by location.

History: The ground has been worked in a small way from the time of discovery in 1853 to 1870. During this period about $\frac{1}{2}$ mile of the creek was worked. In the 80's W. S. Booth installed hydraulic equipment and used one giant.

The property was worked intermittently up to 1928. Since then the present owner has operated regularly every season.

Geology: The channel is about 100 feet wide and has a uniform grade of about 7%. Gravel varies in thickness from about 12 feet at the lower end, to about 7 feet at the upper end and has a variation in color, ranging through glue, green, and red—but apparently values bear no relation to color. There are boulders 2 or 3 feet in diameter. The bedrock is shale and is quite irregular and rough. Values are concentrated near bedrock which often contains coarse gold. A high channel is known to exist on Hogum Creek, but very little is known about it.

Equipment: 3,500 feet of pipe of various sizes. Five No. 1 Giants and a gas donkey engine.

Miscellaneous Information: Total water rights held by the company are 20½ C.F.S., divided as follows: White Horse—2C.F.S.; Fizzelout—5 C.F.S.; Boulder Creek—5½ C.F.S.; Hogum—8 C.F.S. There are 11 ditches with a total length of 6 miles. A maximum head of 500 feet may be obtained, but most of the water is delivered under a head of less than 100 feet.

The operating season is about 200 days from November to June. The maximum snow fall is 18 inches. During some working seasons, freezing of water in the ditches gives trouble.

Informant: J. E. Morrison '38

HUCKELBERRY MINE (gold)

Riddle District

Owners: J. R. Bean, Portland, Oregon; J. L. Shambrook, Canyonville, Oregon; Harvey Shawver, Riddle, Oregon.

Property reported to be leased to Phillip Backus and associates, Medford, Oregon.

Location: On Ash Creek or Mitchell Creek, 5 miles S. of Riddle, in sec. 7, T. 31 S., R. 5 W. The mine is reached by means of three miles of road and 2 miles of trail.

Area: 7 lode claims or 140 acres held by location.

History: Mineral was reportedly discovered in 1912 by the present owners and work has been carried on sporadically since that time. The record of production is as follows: 1912-1915, \$2,000; 1931 - \$400; 1932-1936, \$4,000 per year.

Miscellaneous Information: Elevation, 1900 feet. Mountainous topography; abundance of timber and water. Maximum snowfall, 3 feet.

Informant: J. E. Morrison '38

KATE C MINE (chromite)

Riddle district

Diller, (21:34) describes the property as follows:

"On Nickel Mountain, west of Riddle, a large quantity of high-grade

chromite occurs irregularly in small bodies scattered through saxonite. An ore of nickel occurs in the same rock and suggests the similar occurrence which is of great importance as a source of chromite and nickel in New Caledonia.

In 1917 considerable chromite was mined about 10 miles south of Nickel Mountain. In 1918 some ore was mined, but none shipped from the Kate C Mine."

It was reported that two cars were shipped in 1916 containing 110 tons of chromite which averaged 53% Cr₂O₃.

Informant: J. E. Morrison 1939

KERNIN MINING CORPORATION (placer)

Riddle district

Oregon corporation; W. F. Kernin, Pres., G. A. Helbig, Secy., Roseburg, Oregon; Capitalization, \$20,000; the corporation has a contract to mine Moore and Weaver bars in South Umpqua River near Myrtle Creek.

LEVENS LEDGE (gold)

Riddle district

Owner: L. E. Heminger, Canyonville, Oregon.

Location: Sec. 5, T. 31 S., R. 5 W. about 3½ miles by road southwest of Canyonville.

History: The property had a production in the early days of the order of seventy-five or eighty thousand dollars in gold.

Miscellaneous Information: Two small ore-bodies are reported to have been outlined above the present level, but grade of ore has not been determined, and sublevels above are inaccessible. The vein width averages 3 or 4 feet with swells up to 7 or 8 feet. Apparently values are in enriched bands and streaks along the hanging wall with less definitely outlined streaks on the footwall. In the swells, the vein looks leaner.

MILDRED MINE (gold)

Riddle District

Owner: Mrs. Minnie A. Brown, Box 213, Gresham, Oregon

Location: Six miles by road South of Azalea on Starveout Creek. Sec. 33, T. 32 S., R. 4 W.

Area: 19 acres patented.

History: The property was worked in a small way for about twenty years prior to 1936 when it was leased to E. F. Ames and associates of Azalea, Oregon, who built a mill in 1936. It was reported that a pocket valued at \$630 was taken out in 1937.

Development: There are five caved tunnels driven on stringers and having a total reported length of 200 feet.

General Information: Elevation is about 2500 feet. Water is available

throughout the year, and there is a possibility of developing some water power. Maximum snowfall is about 4 feet. Some mining timber is available on the property. Values are in quartz stringers in andesite porphyry.

Informant: J. E. Morrison, '38

MISER MINE (placer)

Riddle district

Owners: Frank Haberlack, John J. Jauger

Location: Southeast of Azalea on Starvout Creek in secs. 20, 29, and 32, T. 32 S., R. 4 W.

Area: 320 acres; 16 claims of which 12 are patented.

Miscellaneous Information: Placer ground in a channel 300 ft. wide is reported to extend for 2 miles along the creek. For the most part, the surface is covered with timber. Gravel is said to be from 6 to 12 feet deep with few large boulders and some clay. Previous operations were reportedly unsuccessful because of clay. Gold is coarse. A nugget valued at \$385 (with gold at \$20.67 an ounce) is said to have been found. Equipment consists of 2 - No. 3 and 1 - No. 2 giants; 2000 feet of 12 to 18 inch pipe. Mining season is November to June.

Informant: J. E. Morrison '39

MORRISON MINING COMPANY (placer)

Riddle District

It was reported in 1937 that this company, headed by H. F. Morrison, 1604 S. E. 38th St., Portland, Oregon, had started operations on Cow Creek, about 40 miles W. of Glandale, Oregon. Ground had been leased from Ralph Stark. At that time development work only was being done. It was planned to excavate mechanically and run the gravel through sluice boxes.

NICKEL MOUNTAIN MINE (nickel)

Riddle district

Location: Sec. 16 and 17, T. 30 S., R. 6 W.

Parks and Swartley, (16:173) describe the deposit as follows:

"The property is reached by a good wagon road 5 miles west of Riddle station on the Southern Pacific Railway. There are 816 acres patented, under the management of W. Q. Brown of Riddle.

"The rocks in the neighborhood of Nickel mountain are mostly of a basic igneous variety called peridotite by Diller. The nickel ore is a silicate of nickel genthite, and is found in veins or irregular bodies, probably produced by the action of rising hot waters from some deeper s ated magma.

"These nickel deposits have been prospected quite extensively and considerable effort has been made to satisfactorily solve the ore treatment problem in order to make the mine commercially successful. No satisfactory solution has yet been reached.

OLLALA PLACERS (placer)

Riddle district

Owner: H. E. Bellows, 864 Military St., Rosebrug, Oregon. Reported to be optioned to Alaska and Sunset Mines, Seattle, Washington.

Location: 12 miles south of Brockway, on Thompson Creek in secs. 21-28-29-32, T. 29 S., R. 7 W.

Area: 600 acres patented, of which the owner estimates 200 acres to be possible dredge ground, and 100 acres to be hydraulic ground.

Miscellaneous Information: Estimates of the value of this placer area are based on tests made under the direction of Col. J. D. Day in 1907. It is reported that 5000 lineal feet of test holes showed an average value of 36¢ a yard (with gold at \$20.67 an ounce) also according to this testing work, the gravel varied from 10 to 70 feet in depth, averaging about 35 feet. Several tributaries to Thompson Creek have been and are being hydraulicked. This creek has a relatively flat surface, apparently favorable for dredging. Gold is reported to be in flat scales, running about 960 fine.

If the Bellows placer were proved to be workable, other ranches along Thompson Creek might be favorable ground for testing. These are the ranches owned by Mrs. J. M. Ware, Brockway, Oregon, containing 159 acres in secs. 18-29; and that owned by Otto Mentzel, Brockway, Oregon, containing 249 acres in secs. 20-21-28-29 -- both being in T. 29 S., R. 7 W.

OREGON MINING AND POWER CO. (Placer)

Riddle district.

Parks and Swartley (16:173) state that the property consisting of 320 acres was located 7 miles west of Glendale near Tunnel 7 of the Southern Pacific Railroad. It was reported that ground running 20¢ a yard was hydraulicked.

Reference: Parks and Swartley 16:173

PUZZLER MINE (gold)

Riddle district

Owners: Marshall and Herbert Wagner, Grants Pass, Oregon

Location: About 8 miles from Azalea at the head of Last Chance Creek at the foot of Green Mountain in sec. 33, T. 32 S., R. 4 W. The last mile to the property is by trail.

Area: 2 full-size lode claims held by location.

Miscellaneous Information: Development consists of one 12-ft. shaft, one open cut, and one tunnel 44 feet in length. Ore has been milled in a arrastre driven by a 16-ft. over-shot water wheel.

Elevation is 4,000 feet. Topography is mountainous. Maximum snow fall, 7 ft.

Informant: J. E. Morrison, '38

QUARTZMILL MINE (gold)

Riddle district

Owner: Frank Kruse, Azalea, Oregon

Location: About 7 miles south of Azalea in S $\frac{1}{2}$, NE $\frac{1}{4}$, sec. 2 and W $\frac{1}{2}$, W $\frac{1}{2}$, NW $\frac{1}{4}$ sec. 1 both in t. 33 S., R 5 W.

Area: 102 acres of which 20 acres is patented.

Miscellaneous Information: The ground was first located in the 1860's. Values are in quartz stringers in porphyry and occur both as free gold and in pyrite. Country rock is greenstone. A tunnel trending S. 55° W. has been driven for about 250 feet on a quartz stringer 3 to 4 inches wide. The property has a 2-stamp mill with 500-lb. stamps and run by a water wheel. There is sufficient water usually from December until June.

Informant: J. E. Morrison, 1939.

SILVER PEAK MINES (copper, gold, silver, zinc)

Riddle district.

Shenon(33a:15-23) gives the following description.

"Location and Access: The copper deposits of the Silver Peak district lie in the southern parts of Douglas Count, Oregon, in secs. 23 and 26, T. 31 S., R. 6 W. By air line the mines are about 7 miles directly south of Riddle, a shipping point on the Southern Pacific Railroad, but by road the distance is about 6 $\frac{1}{2}$ miles. The road is steep and narrow, but except during stormy periods is readily passable.

"Topography: The surface of the Silver Peak district is made up chiefly of the steeply sloping sides of many valleys and intervening narrow ridges with fairly flat tops. Altitudes range from 4,000 feet on Silver Peak, to less than 2,000 feet in some of the valleys slightly more than a mile distant. Silver Peak is the highest point in the immediate region, and from it a splendid view can be had of the surrounding country. The valley slopes are generally covered with dense growths of timber and underbrush, and hence most of the trails and roads tend to follow the wider valleys or ridge tops.

"The three principal streams that rise on the slopes of Silver Peak--the West Fork of Canyon Creek, Middle Creek, and Russell Creek-- flow respectively eastward, westward, and northward. The radial drainage pattern is of small extent, however, because all three streams join the Umpqua River. The streams have dissected the region to a stage in which the canyon areas prevail over the rather narrow divides, and the topography of the region can therefore be described as mature.

"General Geology: The rocks in the vicinity of Silver Peak belong principally to the Dothan formation, described by Diller, and to a group of highly altered igneous rocks of several types which are termed greenstones because of their prevailing green color. The contact between the Dothan rocks and the greenstones is irregular but in general strikes northeast and, in the vicinity of Silver Peak, dips at steep angles to the southeast. No quartz diorite or related intrusive rocks are known to crop out in the immediate region.

The southeast ore body on the Umpqua Consolidated level appears to turn into the southeast wall of the drift about 50 feet from the face. It appears also to have undergone shearing, and further work may prove that it is displaced. At the south end of the same drift the ore appears to end against an east-west, southward-dipping fault. Sulphide ore interlayered with barite is exposed on one side of this drift about 20 feet from the face, and it seems likely that the ore body may continue southwestward from this point. Thus the evidence underground does not suggest that the horizontal limits of the ore bodies have been reached. Even where the ore is sheared off by faulting there is no known reason why the segments may not be recovered. Outcrops of partly oxidized sulphide ore occur 140 and 270 feet above the ore bodies found on the two main levels. No raises have been driven through to the surface to prospect the ground between these outcrops, although at one place ore has been stoped above the Silver Peak Copper Co.'s level for a vertical distance of about 90 feet. It seems reasonable, however, to expect the ore to continue to the surface, though not necessarily as one continuous body, because of the possibility of fault displacement. It is generally recognized that there is usually a relationship between the horizontal extent of an ore body and its downward extension, and as the ore bodies under discussion are exposed on the lower levels over a horizontal distance of 450 feet without having ended, they can reasonably be expected to extend for some distance below the present workings."

Ref: Shenon, 33a: 15-23 (quot d)

STARVOUT CREEK (chromite)

Riddle District

Owners: L. A. and W. L. Curtis, Azalea, Oregon.

Area: 3 claims held by location

Allen (38:50) gives the following description:

"Located near the center of $W\frac{1}{2}$ of sec. 5, T. 33 S., R. 4 W., on Quartzmill Peak.

"The country rock is a dark greenish black serpentine, highly sheared and broken, and shot through with veins of magnesite and light-colored pyroxene. The largest diggings lie at the southern end of an indistinct ore-bearing zone perhaps 2000 feet long, extending N. 20° E. This zone is covered by the first two claims, Black Boy and June Bug. At the southernmost end, two large open cuts are found fifty feet apart, on the crest of a ridge. Only a small amount of ore appears in place in these cuts, which are about 100 feet long, 20 feet wide, and 30 feet or more deep in the black ends. What ore does appear lies in irregular much-sheared patches. The highly disturbed nature of the rock indicates that the ore deposit must be much adulterated by rock material and irregular in outline.

"Smaller cuts show some ore cropping for 200 feet to the north; and 2000 feet still farther north several ditches cutting across the top of an east-west ridge expose low-grade (10-20 per cent chromic oxide) disseminations and fine streaks of ore, also running N. 10° E.

"On the third claim, Grey Boy, which lies a half mile to the east and 500 feet lower down the hill, another large open cut exposes ore in place in its face at least 3 feet wide, the other dimensions not being discernible. A rather large ore pile also lies at this cut. Other conditions are similar to those above, the kidney here apparently striking N and S, and dipping 45° E.

"The large amount of development work (including old chutes, tracks, dump piles, etc.) suggest that considerable tonnage of ore was mined from this deposit, perhaps as much as several thousand tons. Some ore was shipped in the fall of 1937.

"Ore still appears in the cut face on the lower claim, and 50 to 75 tons of ore lie mined and piled.

"The ore is almost entirely of a medium grade which may not run much over 40 per cent chromic oxide on the upper claims (where it is of the soft chocolatey fine-grained variety), or 35 per cent on the lower claim.

"A steep, third-class road about 2½ miles long leads down the mountain 2000 feet to Starveout Creek. From there it is six miles by logging road to the Pacific Highway at Azalea, and thence 12 miles to the railroad at Glendale, a total of about 21 miles from mine to railroad. "

WHITE STAR MINE (gold)

Riddle district

Owner: Arthur Wagner and associates

Location: On Last Chance Creek in sec. 19, T. 33 S., R. 4 W.

Miscellaneous: One lode mining claim of 20 acres held by location. Development consists of an open cut 36 feet in greenstone.

Informant: J. E. Morrison '38

WILLIS MINE (gold)

Riddle district

Owner: Adeline Willis, 1984 N. W. Marshall, Portland, Oregon.

Location: One mile by road southeast of Glendale in NW¼ sec. 9, T. 33 S., R. 6 W.

Area: Total area owned is all of secs. 8 and 9, 1288 acres, timber land.

Geology: Country rock is rhyolite, in places considerably altered. The possibility of disseminated gold values was thought to be indicated by iron stain and occasional sparsely distributed pyrite. A tunnel, trending N 86° E for a distance of 200 feet, was sampled from portal to face. Twelve samples were taken. Four gave a return of 35 cents to the ton and eight returned a trace.

Miscellaneous Information: Elevation 1500 feet; abundant timber; one-half mile to electric power line; no equipment. Water from the tunnel is being used by the town of Glendale.

Informant: J. E. Morrison '38