5420 0028

(21)

Item 28

Wonder District

LOCATION

The Wonder district is located about 15 miles north of Highway 50 in the Louderback Mountains, a spur range that runs south from the southwestern part of the Clan Alpine Mountains. The best access is the road from Dixie Valley, that skirts the north end of Chalk Mountain and leads directly to the old townsite of Wonder. A second access is possible, from the north, by traveling east from Dixie Valley through Victor, over Geiger Gap and up Hercules Canyon to Wonder. Routes from the north and west into Red Top Gulch are no longer passable.

HISTORY

Vanderburg (1940, p. 54) summarized the early history of the camp as follows: "The first location in the Wonder district was made in April 1906 by T. J. Stroud on the Jackpot group of claims, and the Nevada Wonder Mine was located shortly afterward by Murray Scott, William May, and others. The discovery of rich silver-gold ore started quite a stampede from Fairview that began in May of that same year, and, in a few weeks over 1,000 locations were made". According to Schrader (1947, p. 25) "Many of the more promising properties were soon taken over by mining companies or mining men of experience and means, with the result that, by 1908, the Nevada Wonder, Jack Pot, Spider and Wasp, Vulture, June Wonder, and Capitol Wonder companies were working in good ore. Of these, the Nevada Wonder had 5,000 sacks of ore ready for shipment, the Jack Pot 1,000, the Spider and Wasp 1,600 and Vulture had shipped 16 tons. Fully 30 other properties were working on ore bodies or prospects assaying from $2 to $50 to the ton". Although the district was only 4 miles by 6 miles, it is in very mountainous terrain which led to the development of townsites adjacent to favorable workings. As a result, the townsites of Hercules, 2 miles north, Victor, 4 miles northwest and Red Top, 3 miles west, were developed around the main camp of Wonder (Shamberger, 1973, p. 13). The life of such townsites depended on the mines and when it was found that the ore bodies did not extend much below a hundred feet, mining operations were halted and the camps quickly died. The financial panic of 1907, resulting from the San Francisco earthquake and fire of 1906, also had a serious impact on the camp by drying up venture capital, slowing or halting the development of many properties.

With the construction of a 200-ton/day cyanide mill at the Nevada Wonder Mine in 1911, the camp began a new era of mining. Thereafter, until the mine closed for the want of ore in December 1919, the history and the deep production of the camp was essentially that of the Nevada Wonder Mine (Schrader, 1947, p. 25).

Production from the camp during the period 1911 to 1919 was over 69,000 ounces of gold and over 6,400,000 ounces of silver, most of which was credited to the Nevada Wonder Mine. Over the life of the district, the average value of the ore was $15 per ton.

from NBMG 87-2 OFR

GEOLOGIC SETTING

According to Willden and Speed (1974, p. 88) the oldest rocks in the district are andesites and basalt flows of Oligocene age, that crop out along its western boundary, north and south of Red Top Gulch (see fig. 16). Lying unconformably on the older volcanics is a 2,000 foot section of quartz-latite to rhyolite flows of probable late Oligocene to Miocene age that extends over most of the mapped area. These rocks--known collectively as the Wonder rhyolite--are cut by dacite plugs and stocks, by rhyolite and andesite plugs and dikes, and by basalt dikes (Schrader, 1947, p. 36-39).

Schrader (1947, p. 28-30) described the volcanic section as being intensely fractured and highly altered. Of the several different fault systems, the most important, with exceptions, trends in a northwesterly direction; its fissures contain nearly all of the veins in the district and show slickensides, brecciation, and gouge associated with fault movement. The northwest-striking northeast-dipping Nevada Wonder vein system is the main gold-silver producer in the district. The Gold King fault just west of Geiger Gap can be traced for several miles on the surface and contains the veins of the Gold King Group. North-striking faults intermittently active to the present are credited with forming earthquake scarps within the district in 1906, 1911 and 1954. The same fault system helped form fault-controlled valleys, such as north-running Hercules Canyon.

ORE DEPOSITS

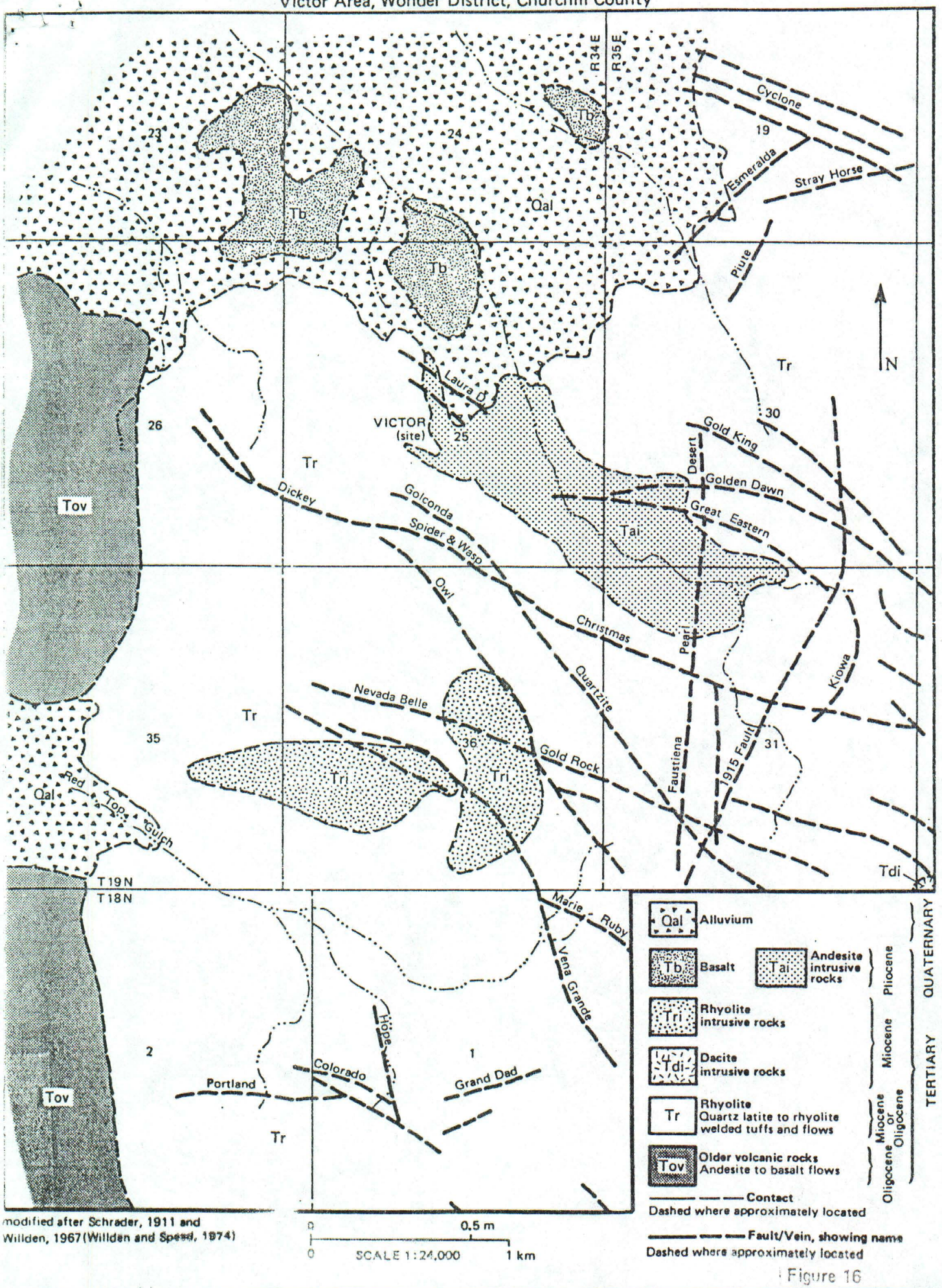
Schrader (1947, p. 40) reported the presence of over 50 veins in the district, mostly in Wonder rhyolite, all highly siliceous, with quartz-adularia gangue common and values in silver-gold. Almost all of the gold-silver production from the district came from Wonder rhyolite, principally the Nevada Wonder vein system. According to the early investigations of the district, the vein system--or branches from it--continues northward for several miles and is present in the Jack Pot and Hercules Mines.

These epithermal vein systems crop out throughout the district, forming prominent ledges due to their erosion resistant siliceous gangue, and are largely replacement deposits. Some of them are 2 to 3 miles in length and range in thickness from 1- to- 40 feet. The vein filling is generally soft and crushed by faulting and pressure, and therefore is easily mined and milled. Some of the veins are thought to extend to considerable depth but only the Nevada Wonder vein system was opened to 2,000 feet while the Jack Pot vein was examined to 1,000 feet.

The main gangue is quartz and adularia with Fe-Mn oxides and occasional fluorite, calcite, or barite. The quartz-adularia is partly pseudomorphic after calcite and often is banded, sheared, brecciated, or crushed. Locally the gouge is well mineralized and constituted good ore in some mines. Recoverable values were nearly all in gold and silver with minor products in copper and lead. The principal ore minerals are argentite, ceragyrite, and silver halogen salts. Gold occurs both free and native, in combination with the argentite. Schrader described over 40 minerals, mostly secondary and largely associated with the Nevada Wonder Mine. The age of the mineralization is thought to be late Miocene or Pliocene since all of the volcanics to that date were mineralized.

GENERALIZED GEOLOGIC MAP

Victor Area, Wonder District, Churchill County



modified after Schrader, 1911 and Willden, 1967 (Willden and Speed, 1974)

Figure 16

PROPERTIES WTIHIN OR ADJACENT TO PROPOSED WITHDRAWAL AREA

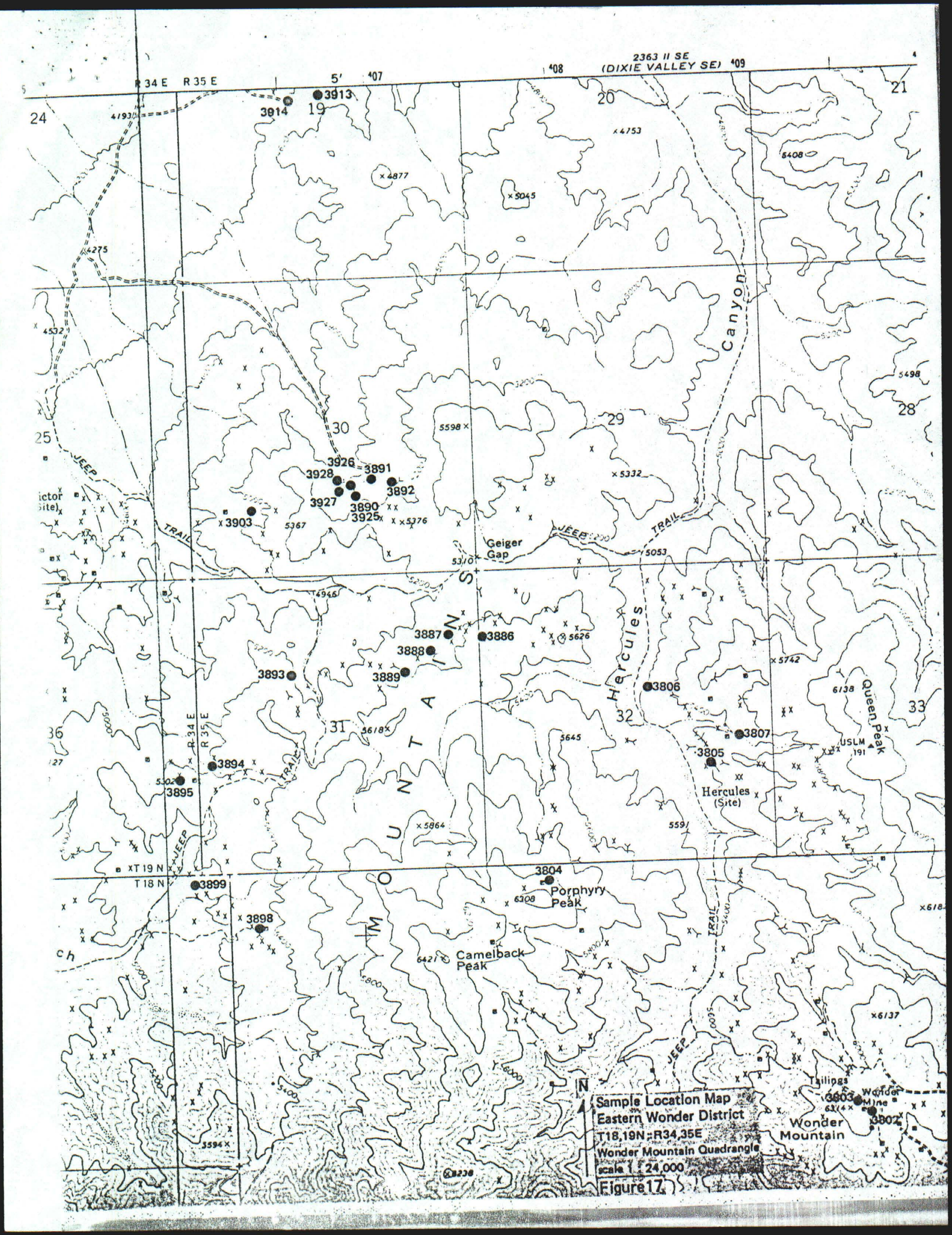
Nevada Wonder Mine: The Nevada Wonder Mine is located on the upper east side of Wonder Mountain about one-half mile north of the townsite of Wonder in the eastern part of the district. The deposit was discovered during the rush to the district in April 1906 (Shamberger, 1974, p. 4), but the period of major mining activity began in 1911 with the construction of a 200-ton, 10-stamp mill which operated until 1919.

During the period 1911-1919, the Wonder vein was explored to a depth of 2,000 feet and worked on 13 levels with 3,400 feet of lateral development. According to Schrader (1974, p. 48) the development work totaled more than 66,000 feet or nearly 12.3 miles. The 3-compartment Nevada Wonder shaft was sunk to the 1300 level but the main mining from it stopped at the 700 level. The Nevada Extension shaft, 1,300 feet south of the Nevada Wonder shaft was sunk to the 700 foot level then continued down to 2,000 feet via four step-off shafts (sub-shafts). The mine was dry as the deepest workings did not reach the water table.

Nearly all of the production from the Wonder vein came from the secondarily enriched ore above the 1300 level, thought to be the level an ancient ground-water table. The 500-700 level was a zone of especially rich ore. The main Nevada Wonder vein followed a contact between a large dacite intrusive and rhyolite. On the north end, the vein was traced entirely into rhyolite. Oxide minerals were reported to a depth of 1300 feet; the ore contained no zinc and only minor amounts of arsenic and antimony. The principal gangue minerals were quartz and adularia with brecciated wall rock. The main values were in gold and silver and the ore minerals were dominately argentite with free gold and cerargyrite (Schrader, 1947, p. 45-55). During the period 1911 to 1919, the total production was approximately 392,763 tons of ore with a net value of $6,002,989.

No underground mining has been done at Wonder for many years and the main shafts and workings have become inaccessible. At the present time, Belmont Resources of Vancouver, B. C., is mining the large waste dumps just north of the old Nevada Wonder shaft. The dump material is transported to two large leach pads constructed near the old Wonder townsite where it is sprayed with a cyanide leach solution. Gold and silver are recovered from the leach solution in a small stripping-refining facility located at the site. At the time of our visit in the fall of 1986, a new leach pad was being constructed using material hauled from the northern Nevada Wonder dumps. The mine is currently operating on a year-round schedule and some of the staff and mine crew are living in nearby quarters.

Our sample No. 3802 (see fig. 17) chipped from an exposed vein in one of the north-facing adits ran 16 ppm gold and 1500 ppm silver while a sample from the north dump (No. 3803) ran 0.55 ppm gold and 100 ppm silver. Similar values were observed by Willden and Speed (1974, p. 90) from exposed veins, altered dacite, silicified rhyolite, and dump samples taken during their examinations of the surface exposures near the Wonder Mine.


2363 II SE
(DIXIE VALLEY SE)
R 34 E
R 35 E
T 19 N
T 18 N
3913
3914
3926
3928
3891
3892
3927
3890
3925
3903
3887
3886
3888
3893
3889
3806
3807
3805
3894
3895
3899
3898
3804
Porphyry Peak
Camelback Peak
Hercules (Site)
Geiger Gap
Hercules
Queen Peak
Canyon
JEEP
TRAIL
Tailings
Wonder Mine
3802
3803
Wonder Mountain
N
Sample Location Map
Eastern Wonder District
T18,19N - R34,35E
Wonder Mountain Quadrangle
scale 1 : 24,000
Figure17

Silver Center Mine: The Silver Center Mine and claim block follows a northwest-trending vein system from near the Nevada Wonder Mine and extends into the withdrawal area. Some of the Silver Center claims near Porphyry Peak are staked over the top of patented ground owned by Frank Lewis of Reno. Mr. Lewis leased the ground to Belmont to operate a small open pit mine, later called the Silver Center Mine. The decline in silver prices in 1984-85 led to the suspension of that operation before it had made any significant production. The company is presently using ore from the Wonder Mine dumps. Some drilling has been done on the Silver Center claims to the west of Porphyry Peak and the company has added the HD Claims to the west end of the original claim block. Our Samples 3894 and 3895 from the HD Claims were badly leached and had low gold-silver values. Assays from our sample near the pit ran 50 ppm silver but the company had better results from a suite of samples taken from the same area.

Jack Pot Mine: The Jack Pot Mine is located in Jack Pot Canyon about 1.2 miles northeast of the Nevada Wonder Mine. The property was located in April 1906 by Tom Stroud, making it one of the first in the district. It was also one of the first to make an ore shipment, of which $40,000 worth was taken from a 50-foot shaft (Schrader, 1947, p. 50). The company was sold to the Atlas Wonder Mining Co. in 1910 who implemented an extensive development program under the assumption that the Jack Pot was on a northern extension of the Nevada Wonder vein system. The vein system was opened to a depth of 960 feet by the two-compartment Jack Pot shaft with an additional 6,000 feet of working that included the Grand View and Hercules tunnels.

Before the company built a mill they employed J. A. Burgess, a well-known mining engineer and geologist who had worked at the Nevada Wonder Mine, to advise them. Burgess's report (1914, p 1-10) summarized the geology of the Jack Pot occurrence as "...three veins coming together at depth..veins narrow without improvement at the junctions...best ore has been stoped out...present showings are very weak...no assured ore blocked out..quartz veins practically pinched out on 700 level." His recommendations were for further exploration on the 100, 200 and 300 levels with some additional work to the west, but no work at depth. As a result the mill was never built. Some ore was taken later but only in small quantities. Our sample 3807, taken from the ore-bin and dump, assayed 5,000 ppm silver and 4.8 ppm gold associated with minor lead and antimony.

Vulture Mine: The Vulture Mine is on the eastside of Hercules Canyon about 1.5 miles northwest of the Wonder Mine and about 1 mile southeast of the eastern boundary of the withdrawal area. The mine has the distinction of having made the first shipment of ore from the district in March 1907 consisting of 40 tons of ore that averaged $100 per ton. At a later date, Schrader (1947, p. 62) estimated there were 100 tons of $23 ore still left in the dumps.

The main vein system called the Vulture vein strikes N10^{o}W, dips nearly vertically, and is hosted in Wonder rhyolite. There is also an andesite dike about 250 feet south of the main tunnel. The ground around the workings is badly fractured and faulted, with brecciation within the veins and in the ore. The main vein is about 2 feet wide and is opened by the 600-foot main adit. The best ore came from the upper 50 feet of the vein and consisted of yellow-brown silver chloride, including horn silver. Schrader (1947, p. 62)

described the best values in the hanging-wall side of the vein in narrow ore shoots, consisting of crushed quartz and silicified rock. Ore values were reported to have decreased with depth. Our sample from the upper portion of the exposed vein and ore-bin was 5 lbs. of selected sample. The assays exceeded 5,000 ppm silver and 6.0 ppm gold. A grab sample (3805) was taken from a small adit near the Hercules townsite consisting of quartz and quartz breccia. Assays of the sample ran 1500 ppm silver and 11 ppm gold. All of the samples from this part of the district had low base metal and mercury values.

Gold King Group: The Gold King Group is located about one-half mile northwest of Geiger Gap on the south side of a steep but narrow canyon about 2 miles northwest of Wonder. An old, now impassable road enters this canyon from the northwest and terminates below the workings in the south half of Section 30. The best access to the workings is to walk northwest from Geiger Gap, the high point along the east-west, Victor to Hercules road. All of the workings of the old Gold King Group are within the proposed withdrawal area.

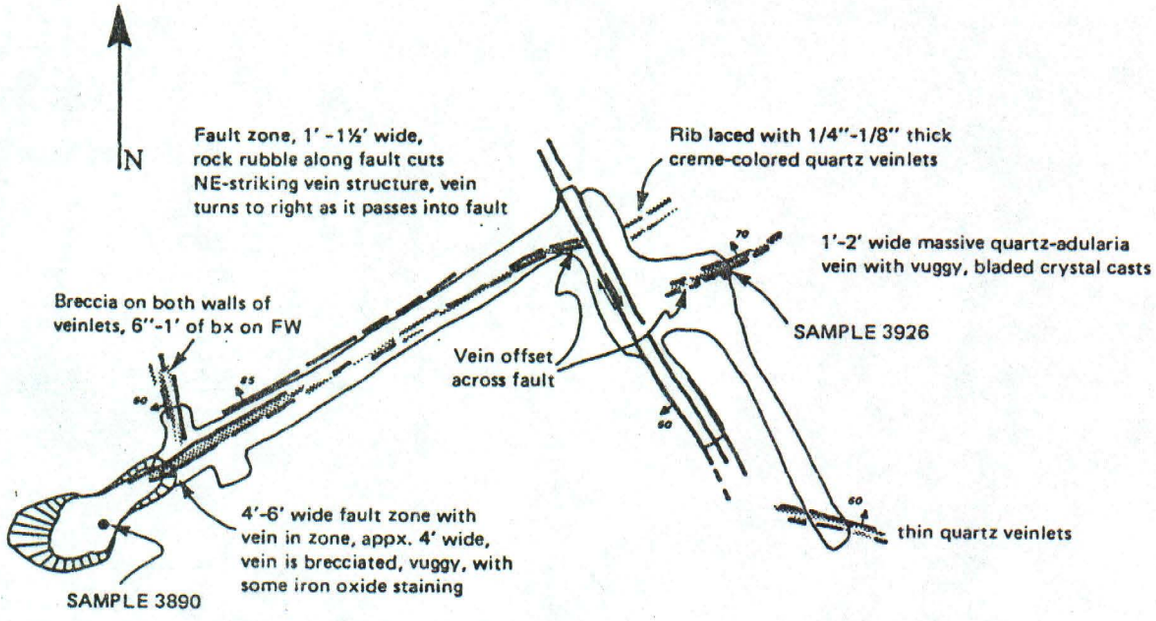
Very little is known about the Gold King workings, but the men who did most of the work on the ground were the Geiger brothers. According to Shamberger (1974, p. 29) the brothers came to Wonder in 1906 from Alaska. "They were young men when they arrived, and they spent the rest of their lives trying to develop a mine on the Gold King Group of claims which they located."

The properties lie along the Gold King fault (fig. 16), a well identified structural feature that is known to have been active in both 1903 and 1954. An easily identifiable scarp follows the fault trace along the ridge leading into the canyon from the southeast and it can also be seen inside some of the mine workings where movement has left debris piled in the drifts. The Gold King area is currently covered by Treasure Hill Claims Nos. 1075 and 1076.

The country rock in the Gold King area is highly altered and fractured Wonder rhyolite in contact with andesite (see fig. 16). On the western side of the properties is a series of parallel adits, one above the other, that are aligned along the south side of the canyon that crosses the Gold King fault. In general, the adits follow structures that bear N40°-60°E and dip 70°-85°NW.

The upper west adit follows a 4- to 6-foot thick, partly brecciated quartz vein in a shear zone that cuts highly altered and partly silicified rhyolite. At about 60 feet from the portal, the vein is offset by a northwest-trending fault (see fig. 18). Sample 3926, taken from near the intersection of the two faults where the vein continues to the northeast, consists of vuggy quartz and adularia with some bladed crystals, pseudomorphic after calcite, up to one half inch long. The sample assayed 15 ppm silver and 0.40 ppm gold. A second but similar sample (3890), selected from the adit dump, contained 5,000 ppm silver and 22 ppm gold.

Further up the side of the canyon, some stoping to surface was done from an adit, now caved, that followed an irregular vein in highly fractured rhyolite. Sample 3925 taken from within the stope and from the associated dumps, consists of vuggy, limonite-stained, cream colored adularia and white quartz with streaks of silver sulfides. Tha sample assayed 1,000 ppm silver and 0.85 ppm gold.



Sketch Map 1" = 20'

UPPER WEST ADIT
GOLD KING GROUP
GEIGER GAP AREA
WONDER DISTRICT
CHURCHILL COUNTY
J. Quade, J. V. Tingley, Oct 7, 1986

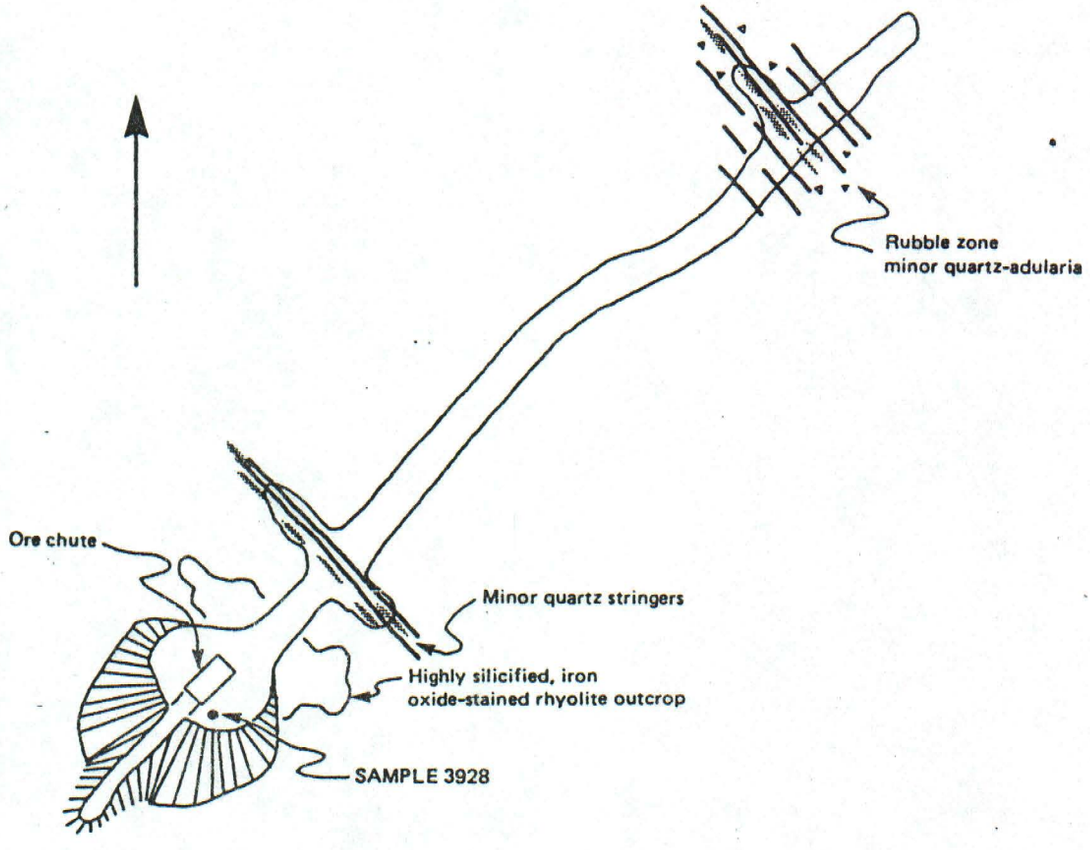
Figure 18

Two adits further to the west, lower on the side of the canyon, follow structures that bear N70°W and dip close to vertical. The upper of the two follows a vein for about 56 feet along strike. Sample 3927, taken from vuggy, iron-oxide stained quartz-adularia vein material in the adit, ran 500 ppm silver and 6.5 ppm gold. The lower workings are about 190 feet long and intersect two separate, parallel northwest-striking vein structures (see fig. 19). Near the portal, a stringer zone of thin quartz-adularia veinlets, containing specks of silver sulfides, was cut. Near the end of the crosscut, a northwest-striking rubble zone containing minor quartz-adularia was exposed. These structures are generally parallel to the Gold King fault (see fig. 16), but the structures followed by the upper Gold King Mine workings, (fig. 18) all strike northeast.

There are no production records from this property, but the open, empty stopes above the upper adits and the presence of the ore bin indicate that some ore was produced and shipped.

To the east of these upper workings, a crosscut (middle adit, fig. 20) was driven from the bottom of the canyon 300 feet into and beneath the major northwest trending Gold King fault-vein. The S25°W heading of the crosscut was no doubt intended to cross the fault and also should have cut some of the vein systems seen in the upper western workings if they continued to depth. (see fig. 20). At about 160 feet from the portal the fault zone was in evidence but included only minor quartz stringers. A 55-foot drift was driven along the hanging-wall side of the shear on a S80°W heading, another short drift along the face of the adit followed a narrow unproductive vein. Sample 3891 was selected from a few showings of quartz ore found on the dump; it assayed 500 ppm silver and 2.1 ppm gold. It should be pointed out that only minor showings of quartz stringers were cut by the adit and that no attempt was made to develop or to mine any of the showings. The quartz veins exposed in the western workings appear to have pinched out at depth and the major shear cut by the middle adit was without mineralization of any consequence.

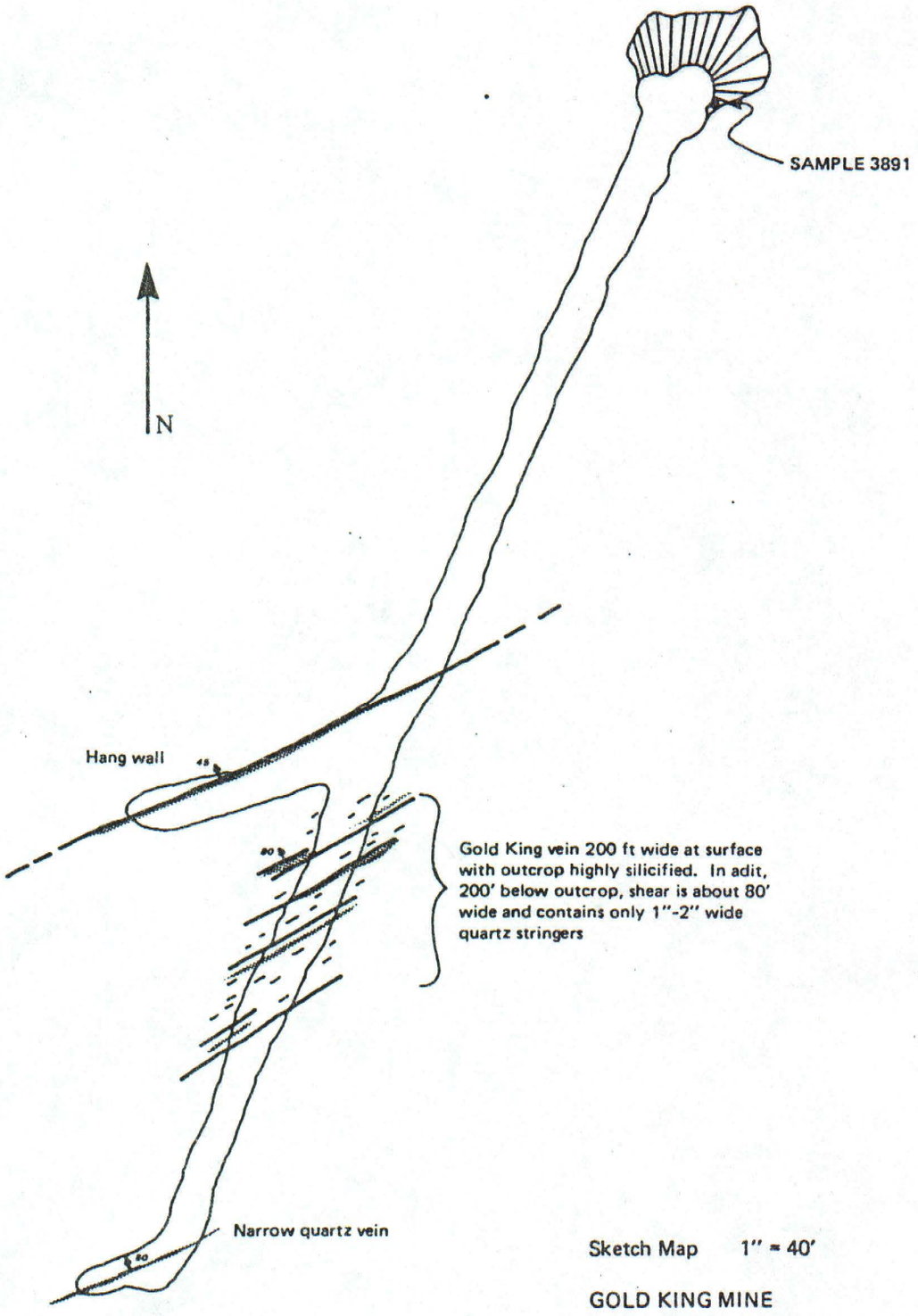
Still further east, the most extensive of the Gold King workings were driven on a S40°W heading from the bottom of the canyon. Near the end of the main, 1,245-foot adit, the Gold King fault was intersected at a point about 200 feet below its surface outcrop (see fig. 21). Another 1,675 feet of exploration drifts and crosscuts lead from the main adit. These workings follow small, discontinuous veins in faults parallel to the major shear zone. Some ore grade quartz stringers must have been crossed in these workings, as a small pile of hand-sorted vein material was found on the dump. It is not known, however, exactly where this material was mined; there are no stopes developed above the exploration drifts, and none of the exposed structures contain strong evidence of quartz veining. Our sample 3892 was collected from the small high-grade ore pile on the dump it consisted of quartz-adularia vein material and assayed 2,000 ppm silver and 16 ppm gold. A date of 1939 was painted on the face of one of the drifts and may indicate the time of the last mining, but no official records have been found that account for these or the other workings. At several points underground, along the fault zones, we noticed evidence of recent caving or spalling along the drifts. This may be the result of recent activity along the Gold King fault, possible related to the 1954 Fairveiw Peak earthquake.



Sketch Map 1" = 40'

GOLD KING GROUP
Lower West Adit
WONDER DISTRICT
CHURCHILL COUNTY
J. Quade, J. V. Tingley, Oct 7, 1986

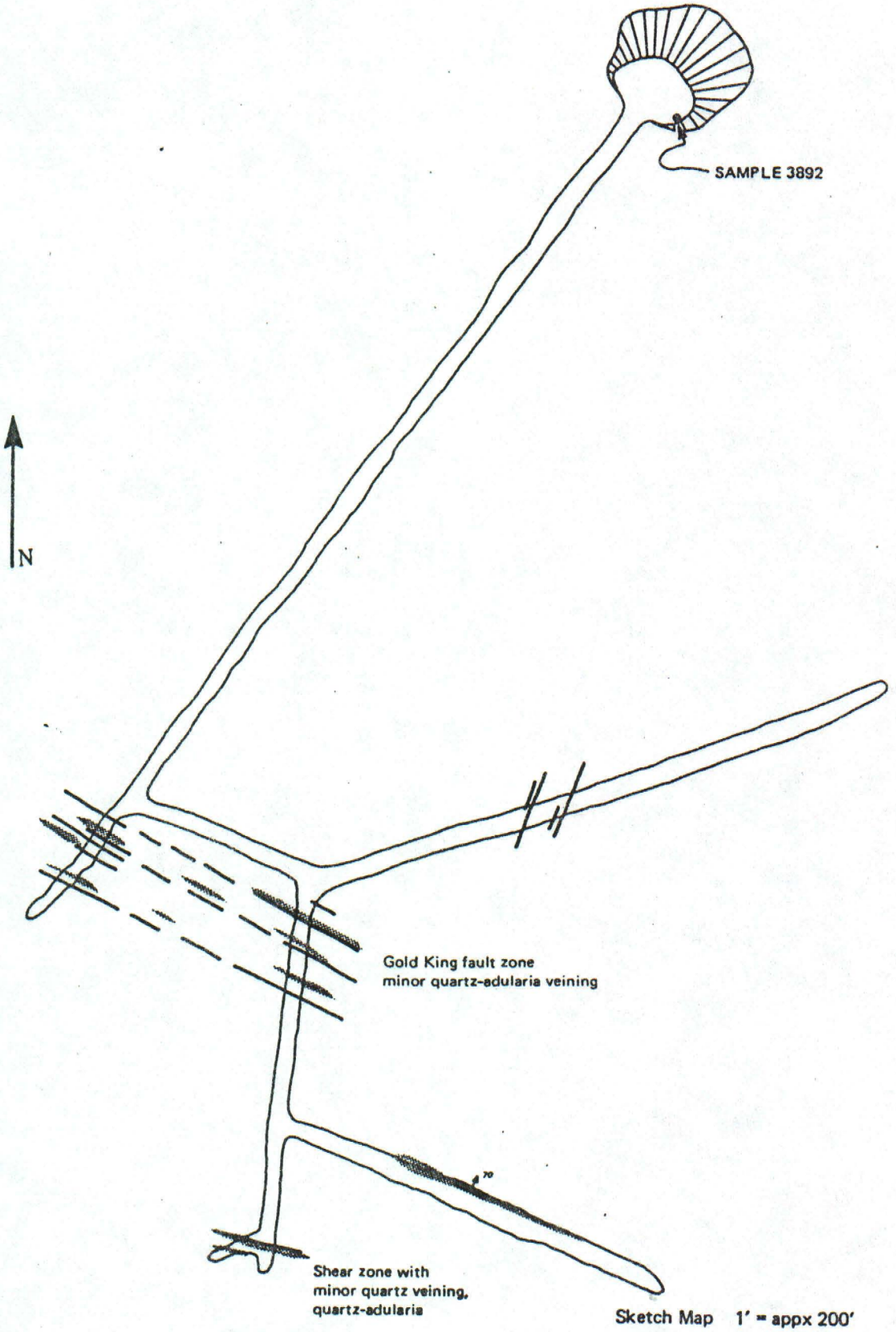
Figure 19



Sketch Map 1" = 40'

GOLD KING MINE
MIDDLE ADIT (Beneath
Major Central Gold King
Group Workings)
WONDER DISTRICT
CHURCHILL COUNTY
J. Quade, J. V. Tingley, Oct 7, 1986

Figure 20



Sketch Map 1' = appx 200'

GOLD KING GROUP
Geiger Bros. Exploration Workings
Gold King Fault Zone
WONDER DISTRICT
CHURCHILL COUNTY
J. Quade, J. V. Tingley, Oct. 7.1986

Figure 21

Kiowa Fault-Vein Prospects: Southwest of Geiger Gap, a line of adits and shafts leave evidence of other work by the Geiger brothers. There are no roads to these prospects and the best access is by foot from Geiger Gap. The workings explore the curving, northeast-striking Kiowa vein system of Schrader (1947) (see fig. 16). This ground is entirely within the proposed withdrawal area, and is now covered by Treasure Hill Claim Nos. 1061, 1066, 1067 and 1072.

Our samples 3886 to 3889 were collected from the Kiowa vein prospects (see fig. 17). Sample 3886 was collected from a small quartz vein hosted in strongly kaolinized rhyolite, exposed in a 40-foot adit. The sample contained 7 ppm silver and less than 0.05 ppm gold. Sample 3887 was also collected from small workings along a quartz vein; it assayed 7 ppm silver and 0.25 ppm gold. Sample 3888 was chipped from a vein and selected from dumps associated with a 150-foot, partly caved, adit and a 75-foot shaft near the intersection of the Kiowa fault with another N10°-30°E-trending vein. The sample consisted of vein quartz and breccia containing gray-sulfides in a silica-rich matrix. Assays ran 700 ppm silver and 9.3 ppm gold. Sample site 3889 was from the Geiger shaft, the southern-most of the Kiowa vein prospects. The shaft was sunk with a hand capstan, still in place at the shaft collar, on a 10- to 15-foot rib of highly silicified and partly brecciated vein that crops out on the north side of the hill. The outcrop is laced with quartz veinlets and highly silicified breccia. This sample contained 500 ppm silver and 0.55 ppm gold with very minor copper and molybdenum values. There were almost no base metal or mercury values in any of the sample collected from the Geiger properties.

Spider and Wasp Mines: The Spider and Wasp Mines are located about 1.5 miles west of Geiger Gap adjacent to the townsite of Victor. The mines are located within a group of patented claims that total approximately 350 acres. This patented land is now very nearly surrounded by the Treasure Hill Claim block. This area is completely with the proposed withdrawal area. The best access to the Spider-Wasp area is to travel almost directly east from Dixie Valley on the old Victor-Geiger Gap Road.

The first locations in the camp were made in 1907 followed quickly by the establishment of the townsite of Victor. In slightly more than a year approximately ten shafts and an equal number of tunnels were driven into the Dickey-Spider and Wasp vein system which follows very nearly the east-west contact between an andesite intrusive and the Dickey Peak rhyolite (see fig. 16).

Nearly all of the workings in the camp crosscut the vein from the north or were sunk on it. When it was found that the good ore did not extend much below 50 to 100 feet anywhere along the vein, mining stopped and the camp was largely idle by 1908. There is almost nothing written about the men, the mines, or the production of this small camp.

On the part of the Spider-Wasp patented claim group that extends north of the Victor-Geiger Gap road, two shafts were sunk on the Golden Dawn fault-vein system (see fig. 16). At this location the vein forms a bold, east-west trending outcrop; the zone is silicified, iron-stained, and leached, locally containing boxworks structures. The country rock is an andesite that is altered near the contact to white argillite. Sample 3903 (see fig. 17) was taken from dumps here and consisted of barren-appearing quartz that had low assay values.

Samples 3904 to 3909 (see fig. 22) were collected from the dumps and veins of the major workings in the central part of the camp. Assay values were consistently high for silver, ranging from 100 to 3,000 ppm and averaging more than 1,400 ppm. All of the samples had detectable gold, above the detection limit of 0.05 ppm, with a range of 0.05 to 8.6 ppm and averaging 2.56 ppm. Many of these samples contained fine-grained pyrite and all of them reported low to moderate base-metal values unlike the samples collected in the rest of the district. Samples collected from workings outside of the central camp area reported similar, but lower geochemical values.

At the highest exposure of the large Spider and Wasp fault vein structure, on the northeast slope of Dickey Peak, is a 200- to 300-foot long outcrop of rhyolite near the portal of an adit. The 160-foot adit follows a 5- to 6-foot brecciated vein in the fault zone. The wall rock is composed of a bleached, kaolinized, silicified rhyolite tuff. Approximately 140 feet into the adit is a stope that opens to the surface and a 40° decline that extends downward to about 40 feet, then steepens, passing out of sight (see fig. 23). The open stope is connected to an adjacent shaft to the east, above the level of the adit. Sample 3908 was selected from the adit dump and consisted of highly silicified, flint-hard breccia with dark, fine-grained pyrite in the matrix. The sample assayed 1,000 ppm silver, 0.70 ppm gold, 300 ppm copper, 500 ppm molybdenum, and 200 ppm lead. Sample 3909 was collected from the dump associated with the upper part of the stope and from the stope wall. This sample contained 1,500 ppm silver 3.8 ppm gold, 300 ppm copper, and 100 ppm molybdenum. Sample 3929 collected from the stope chute in the mine at the adit level and chipped from the vein in the stope, assayed 2,000 ppm silver, 4.9 ppm gold, 150 ppm molybdenum, and 50 ppm lead.

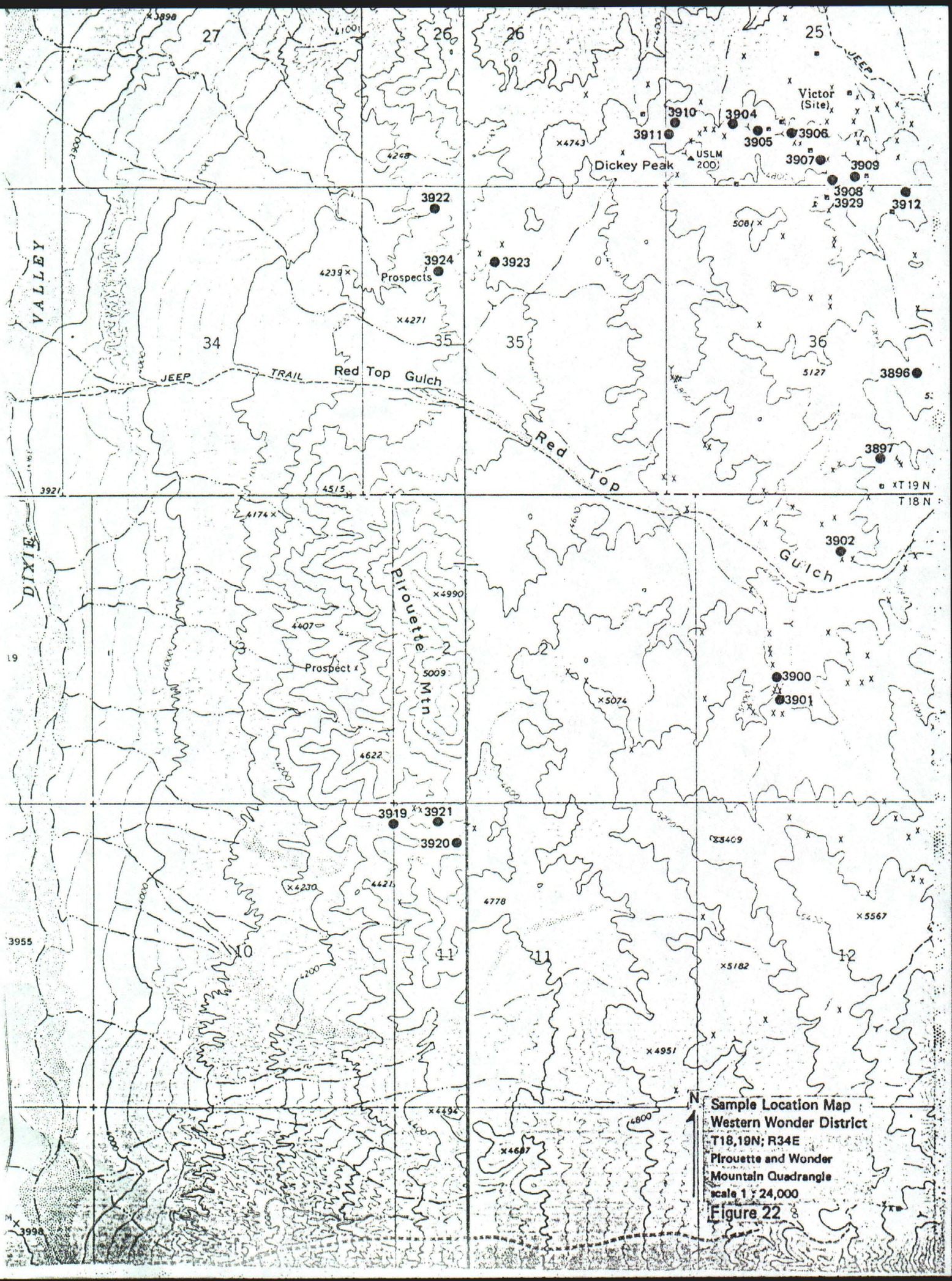
The other nearby workings were not accessible and most were fairly small. One of the shafts near sample site 3905, however, may be several hundred feet deep. The shaft dump consists almost entirely of crystal-rich tuff that does not crop out locally.

Purple Spar Prospect: The Purple Spar prospect is located near the northern boundary of the withdrawal area in S19,T19N,R35E (see fig. 17). The best access to the area is via a little-used road east of Dixie Valley.

The property was first discovered in 1944 and held until 1955 by V. S. Baxter who sold it in 1972 to the Klondyke Mining Co. There was been some drilling and trenching in the vicinity of several old adits and shafts on the property but there is no history of production (Papke, 1979, p. 17). The area is currently included within the large Treasure Hill Claim Block.

The principal exposure of fluorspar is in a 30-foot cut within a shallow adit that explored a 4-foot vein that trends to the east. The vein contains stringers of purple and white fluorite crystals. Similar pockets of crystals can be seen in the dozer trenches. Our sample 3914 assayed low for everything.

Christmas and Faustiene Fault-vein Intersection: At the intersection of the two vein systems is a west southwest-bearing crosscut adit in Wonder rhyolite, near the contact with an andesite. The workings are fairly large but the adit is approximately 100 feet below the rim of the canyon and the vein appears to have narrowed greatly. Sample 3893 was from the Christmas-Faustiene fault-vein prospect.


Victor (Site)
3910
3904
3911
3905
3906
Dickey Peak
USLM 200
3907
3909
3908
3929
3912
3922
3924
Prospects
3923
JEEP TRAIL
Red Top Gulch
3896
3897
T 19 N
T 18 N
DIXIE VALLEY
Pirouette Mtn
3902
Gulch
Prospect
3900
3901
3919
3921
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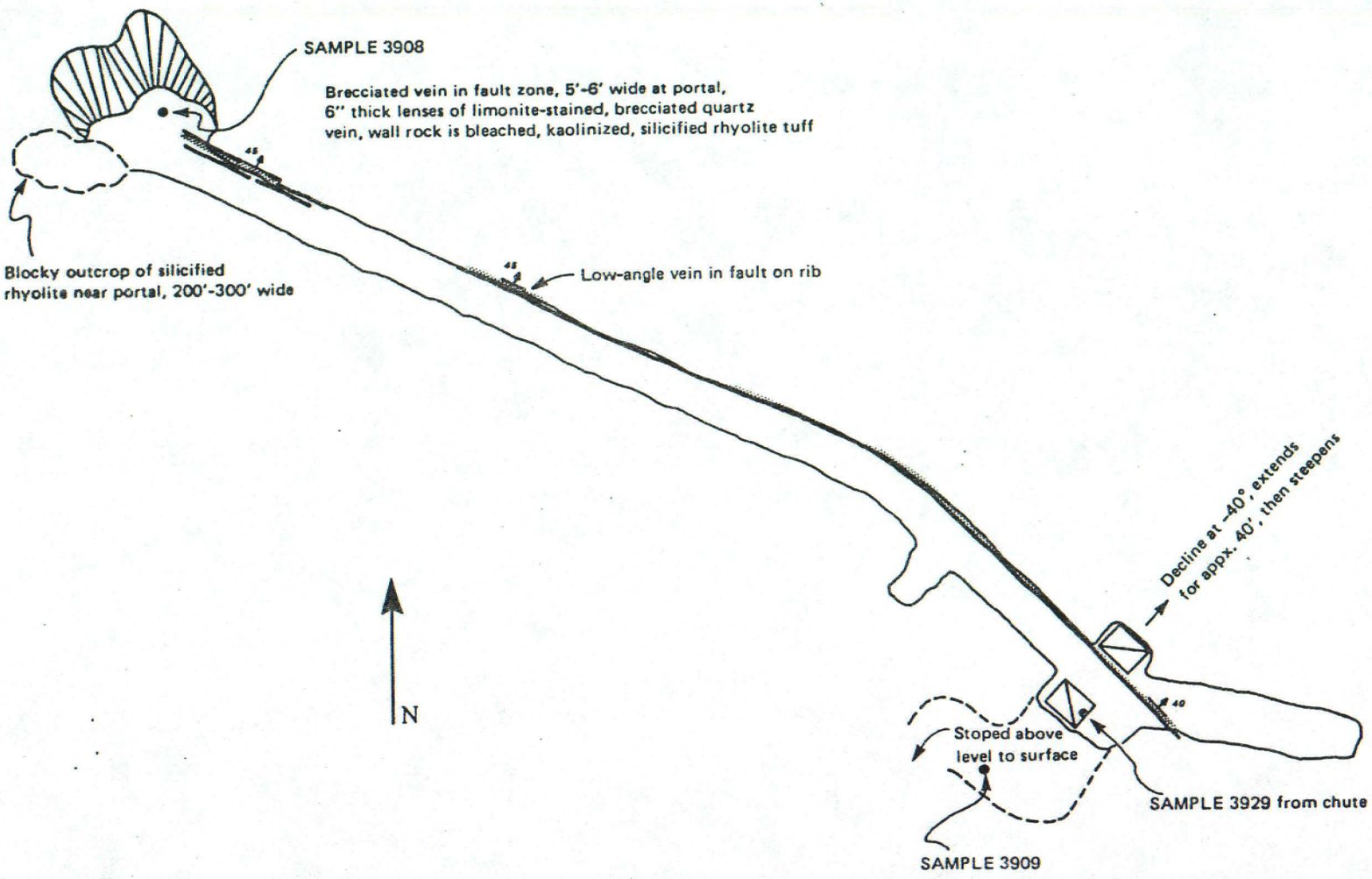
Sample Location Map
Western Wonder District
T18,19N; R34E
Pirouette and Wonder
Mountain Quadrangle
scale 1 : 24,000

Figure 22



Sketch Map 1" = 20'

SPIDER–WASP MINE
WONDER DISTRICT
CHURCHILL COUNTY
Upper Workings
J. Quade, J. V. Tingley, Oct 8, 1986

Figure 23

This prospect is located in upper Red Top Gulch, just west of the Kiowa fault-vein prospects (see fig. 16). At the prospect, a west-southwest bearing crosscut explores the intersection of the two vein systems. The crosscut, located about 100 feet below the rim of the canyon, was driven in Wonder rhyolite near the contact with the andesite. Judging from the size of the dump, the workings were fairly large. The vein at this point, however, appears to be very narrow. Sample 3893 (see fig. 17), collected from the dump, contained some vein quartz and altered andesite. The sample assayed 200 ppm silver and 0.60 ppm gold with no associated base metals.

Quartzite Fault Vein Prospect: Two 75- to 100-foot shafts were sunk on 30- to 40-foot-thick silicified rib that crops out along the N40°W quartzite fault vein. Very strong argillic alteration forms a bleached white contact zone. Parts of the outcrop are leached, forming boxworks structures, while other are totally silicified. These shafts, which still have a hand capstan in place, are part of the western most Silver Center-HD Claim block. Our sample 3894 (fig. 17) was collected from a silicified zone within the old workings and from vuggy vein quartz from the dumps. Assays of the highly altered material were low (15 ppm silver and less than 0.05 ppm gold).

Owl and Gold Rock Fault Intersection Prospect: This prospect is within Treasure Hill Claim No. 1134. The workings are on the intersection of the two fault-veins near a 20- to 40-foot thick silicified mass hosted in rhyolite. Locally there are outcrops of highly altered tuff or andesite(?). The contact zone is bleached white and contains minor quartz stringers. Much of the vein is also leached and boxworks structures are evident. Sample 3896 (fig. 17) was taken from a dump adjacent to a shaft and consisted of silicified vein and quartz stringers. It assayed 0.15 ppm gold and 150 ppm molybdenum. Sample 3895 (fig. 17) was from a lateral vein which branches from the Owl vein system to the southeast. This vein is composed almost entirely of silicified rhyolite. Assay results were very low.

Marie-Ruby Fault-vein Prospects: An incline sunk on the Marie-Ruby fault vein follows the contact of highly altered rhyolite and tuff or andesite(?). The vein at sample site 3897 (fig. 22) composed largely of argillically altered volcanic rubble that contained 100 ppm lead and 30 ppm tin, but contained no precious metal value. The property is within Treasure Hill Claim No. 1157.

At the south end of the structure, within the boundaries of Treasure Hill Claim No. 1125, an inclined shaft was sunk down-dip on a 4- to 6-foot wide vein hosted in Wonder rhyolite. The vein is composed of highly silicified rhyolite that is argillically altered along the contact. Sample 3898 (fig. 17) was chipped from the open portions of the vein, near a stope adjacent to the incline. Although a hand specimen collected from this site contained visible ruby silver (pyrargyrite), sample 3898 contained only 20 ppm silver and 0.06 ppm gold. The sample contained 150 ppm molybdenite but no other base metals.

A half-dozen other prospect pits and shallow workings follow an exposed portion of the vein within Treasure Hill Claim No. 1131. The vein is silicified, highly oxidized, iron-stained and leached. Locally there are dikes of darker but more highly altered andesite(?). Sample 3899, from the dumps, assayed 30 ppm silver and 0.45 ppm gold.

Colorado and Hope Fault-vein Prospects: These prospects all within Treasure Hill Claim Nos. 1148 and 1149, are located along a canyon leading south from Red Top Gulch. The workings explore north-northwest bearing veins (Hope system) near the intersection of a vein bearing N70°W, dipping 80°SW (Colorado system) (see fig. 16). The host rock in this area is silicified Wonder rhyolite. The mine workings here are mostly shallow adits that crosscut the vein exposures. Our sample 3900 (fig. 22) collected from dumps, contained 700 ppm silver, 0.20 ppm gold, 1,000 ppm copper, and 3,000 ppm lead.

Sample 3901 (fig. 22) was chipped from an outcrop of silicified rhyolite and strong quartz veining. Parks of the vein are completely leached with boxwork structures and display argillic alteration along the contacts. The sample assayed 1,000 ppm silver, 0.05 ppm gold, 200 ppm copper and 3,000 ppm lead.

Pirouette Mountain Prospects: Several shafts, prospects, and trenches explore mineralization on the south side of Pirouette Mountain. This area is now accessible only by foot; it appears that roads into the area may have come south from Red Top Gulch but there are not enough traces remaining to be sure of this. The western-most shaft now on the Treasure Hill Claim No. 1121, was sunk along a contact between Mesozoic sediments and what appears to be a dacite intrusive. Visible mineralization along the contact includes pyrite and epidote. Sample 3919 collected from the shaft dump was only slightly anomalous in lead.

Further up the canyon to the east, Treasure Hill Claim No. 1213 encompasses some shallow prospects and a very old shaft. The workings explored a faulted contact zone between volcanics and mesozoic metasediments. The wall rock and portions of the shear are brecciated containing small fragments of sedimentary rock in a matrix of silicified volcanics. Minor sulfide mineralization has replaced some of the sedimentary rock. Sample 3920, collected from the contact zone, assayed only minor lead. Sample 3921, selected from the dumps associated with the old shaft, consisted of light to dark green oxides of lead with specks and clots of galena. The sample assayed 200 ppm silver, 0.05 ppm gold, over 20,000 ppm lead, 5,000 ppm zinc, 150 ppm bismuth, 150 ppm molybdenum, 10 ppm tin, and 5,000 ppm manganese.

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