

# Descriptions of Some Mines and Prospects in the Triassic to Jurassic Magmatic Arc of Western Nevada and Eastern California

Larry J. Garside  
1996

See U.S. Geological Survey Open File Report 96-9 for geochemical analyses and more details

PROPERTY NAME: Lucky Bill mine

OTHER NAMES:

MINING DISTRICT: Red Canyon

COUNTY: Douglas

MINERAL COMMODITY(IES): Ag, Pb, Zn

TYPE OF DEPOSIT: Polymetallic replacement

QUAD SHEET: Oreana Peak 7.5'

OWNERSHIP:

LOCATION: NE $\frac{1}{4}$  NW $\frac{1}{4}$  sec. 2, T11N, R22E

North: 4303100 East: 0284300

PRODUCTION: Minor (?)

HISTORY:

DEVELOPMENT: Adits, bulldozer roads and cuts

GEOLOGY: According to Hill (1915), the workings at the Lucky Bill mine explore small, pockety deposits of argentiferous galena, quartz, and stibnite with miner zones in quartzite, and ore described as replacements, only a few cuts and pits were examined during this visit. In one cut a 1 m wide isolated band of pyrite-rich material occurs parallel to bedding of the siltstone units of Triassic Gardnerville Formation. (Sample 4522). An ore sample (4523) found along a haul road going up the canyon northeast of the main bulldozer cuts contains coarse crystalline calcite, sphalerite galena, and pyrite. The wall rocks are siltstone and carbonate rocks of the Gardnerville Formation.

REMARKS: Sample 4522 is a chip sample across a 1 m wide band of pyrite-rich siltstone.

Sample 4523 is select ore from a haul road, consisting of galena, calcite, sphalerite, and pyrite.

SAMPLE SITE: 4522, 4523

REFERENCES: Hill, 1915, p. 62; Doebrich and others, 1996; MRDS no. M035898

FIELD EXAMINATION: L.J. Garside, R.F. Hardyman; 10/16/89

PROPERTY NAME: None (?)

OTHER NAMES:

MINING DISTRICT: Peavine

COUNTY: Sierra

MINERAL COMMODITY(IES): ?

TYPE OF DEPOSIT: Disseminated

QUAD SHEET: Evans Canyon 7.5'

OWNERSHIP:

LOCATION: SW $\frac{1}{4}$  SW $\frac{1}{4}$  sec. 15, T21N, R 17E

North: East:

PRODUCTION:

HISTORY: Old workings - A 30 cm Jeffery Pine is growing on a dump.

DEVELOPMENT: Two small prospect pits

GEOLOGY: Pyrite is disseminated in Mesozoic foliated rhyolite along a probable fault zone having a trend of N70W, 60°S. The light gray rhyolite is silicified. Metamorphic foliation appears to decrease to the east of the prospect, where flow-banding and original bedding features are better preserved.

REMARKS: Sample 4518 is grab pyritized rhyolite from prospect pit.

SAMPLE SITE: 4518

REFERENCES: Doebrich and others, 1996

Field examination: L.J. Garside, 8/16/89

PROPERTY NAME: None

OTHER NAMES:

MINING DISTRICT: Peavine (?)

COUNTY: Sierra

MINERAL COMMODITY(IES):?

TYPE OF DEPOSIT: Vein

QUAD SHEET: Evans Canyon, CA

OWNERSHIP:

LOCATION: SW $\frac{1}{4}$  NE $\frac{1}{4}$ , sec. 7, T21N, R18E

North: East:

PRODUCTION: None

HISTORY:

DEVELOPMENT: A single small prospect pit on ridge crest.

GEOLOGY: A 4-10 cm wide vein of white quartz and red piemontite cuts dacitic metavolcanic rocks, the quartz and piemontite are present in approximately equal proportions as bands 0.5-2 cm wide. The wall rock is purple-grey to gray metadacite with up to 30% white plagioclase phenocrysts, 3-4% quartz, and pseudomorphic outlines of biotite and hornblende. Sparse but ubiquitous fragments of darker fine-grained porphyritic and non-porphyritic andesite occur in the unit, which crops out along the ridge for over 3 km.

REMARKS: Sample 4505 is select piemontite-quartz vein matter.

SAMPLE SITE: 4505

REFERENCES: Doebrich and others, 1996

FIELD ELIMINATION: L.J. Garside, 7/18/89

PROPERTY NAME: None

OTHER NAMES:

MINING DISTRICT: Peavine

COUNTY: Sierra

MINERAL COMMODITY(IES):Cu

TYPE OF DEPOSIT: Skarn

QUAD SHEET: Dog Valley 7.5'

OWNERSHIP:

LOCATION: NW $\frac{1}{4}$ , NE $\frac{1}{4}$ , sec. 34, T20N, R17E

North: East:

PRODUCTION:

HISTORY: There is no real evidence that this locality has been prospected.

DEVELOPMENT: None

GEOLOGY: Oxide copper minerals occur as patchy fracture-surface encrustations over an area of about 4 by 4 m. In the rock light brown garnet occurs as 2–4 mm clots; the rock is dense and hard, possibly because of other calc-silicate minerals. Malachite, azurite, chrysocolla, and chalcocite (?) occur. Epidote is more common in the vicinity of the mineralization. The wall rock is porphyritic meta-andesite or meta-diorite, dark greenish gray. It locally contains inclusions of metasedimentary rock, and is probably a subvolcanic intrusive.

REMARKS: Photo 14 is of copper-stained rock and rock hammer. Sample 4512 is select meta-andesite (?) containing garnet and oxide copper minerals.

SAMPLE SITE: 4512

REFERENCES: Doebrich and others, 1996

FIELD EXAMINATION: L.J. Garside, 7/25/89

PROPERTY NAME: unknown

OTHER NAMES: Beacon Point

MINING DISTRICT: Peavine

COUNTY: Sierra

MINERAL COMMODITY(IES): Cu?, Au?

TYPE OF DEPOSIT: Quartz-tourmaline Veins

QUAD SHEET: Dog Valley 7.5'

OWNERSHIP:

LOCATION: NE ¼, NE ¼, sec. 2, T19N, R17E

North: East:

PRODUCTION: None

HISTORY:

DEVELOPMENT: About six small prospect pits

GEOLOGY: Bonded quartz-tourmaline veins cut dark greenish gray heterolithic andesite laharic breccia? of the Peavine sequence. Where a vein can be observed in ore pit it trends N15E, 80SW to 90° and is 20-50 cm wide. The vein matter usually consists of banded black tourmaline and white, milky quartz (about 75% and 25% respectively). Quartz is also commonly brecciated and the breccia is filled with tourmaline. Other subparallel veins may be present in nearby pits, but are not exposed. A N40E, 20SE vein was also noted. The banding in the vein matter is usually about 1 cm wide. In the vein matter limonite boxworks and pseudomorphs after pyrite are found as well as sparse remnant pyrite, and very rare malachite. The rocks are strongly epidotized. No magnetite was noted with a hand magnet, but a 2 cm wide quartz-epidote-magnetite vein was observed about 200 m south of this locality. It is likely there are more prospects like this in the Verdi range, not shown on topographic maps and covered with brush grown up after the fire and 1970 reseeded to Jeffery Pine. About 3 km south of this locality, in Cretaceous (?) granodiorite near the contact with Peavine sequence rocks, 3–4 mm veinlets of quartz and black tourmaline are found. This occurrence suggests the possibility of a Cretaceous age for the quartz-tourmaline mineralization in the Peavine sequence.

REMARKS: Sample 4511 is grab quartz-tourmaline-limonite vein matter from prospect pits.

Photo 1-4 is wall rock breccia, outcrops.

SAMPLE SITE: 4511

REFERENCES: Doebrich and others, 1996

FIELD EXAMINATION: L.J. Garside, 7/24/89

PROPERTY NAME: None

OTHER NAMES:

MINING DISTRICT: Peavine

COUNTY: Sierra

MINERAL COMMODITY(IES): Cu

TYPE OF DEPOSIT: Vein

QUAD SHEET: Dog Valley 7.5'

OWNERSHIP:

LOCATION: W<sup>1</sup>/<sub>2</sub>, sec. 7, T19N, R18E

North: East:

PRODUCTION: None

HISTORY: No prospect symbol is shown on Topographic map.

DEVELOPMENT: Small dump, from probable short adit caved at portal.

GEOLOGY: Minor amounts of oxide copper minerals (chrysocolla?), limonite, and hematite (rare) occur as fracture coatings and clots in a banded quartz-tourmaline vein. Samples on the dump of dense banded black tourmaline and white quartz bands are commonly 1–3 cm wide, but white quartz bands may be up to 10 cm wide in other samples. Some coarse quartz crystals several centimeters long are found; no magnetite or sulfides noted. The wall rock is light-grey weathering black biotitic hornfels with a probable protolith of finely crystalline basalt.

REMARKS: Sample 4510 is select quartz-tourmaline vein matter from dump. Slight possibility of significant contamination of sample during crushing by broken fluorescent light bulb.

SAMPLE SITE: 4510

REFERENCES: Doebrich and others, 1996

FIELD EXAMINATION: L.J. Garside, 7/20/89

PROPERTY NAME: Flying Dutchman Mine

OTHER NAMES:

MINING DISTRICT: Stateline Peak

COUNTY: Lassen

MINERAL COMMODITY(IES): Cu, Au(?)

TYPE OF DEPOSIT: Vein

QUAD SHEET: Loyalton, CA

OWNERSHIP:

LOCATION: SE<sup>1</sup>/<sub>4</sub>, NE<sup>1</sup>/<sub>4</sub>, sec. 25, T22N, R16E

North: East:

PRODUCTION:

HISTORY: Pre 1900 workings based on presence of purple glass. Mine name probably applies to more extensive workings in SW<sup>1</sup>/<sub>4</sub>, sec. 19

DEVELOPMENT: Three small prospect pits

GEOLOGY: A mineralized zone prospected in small pits contains spotty quartz vein matter, tourmaline, chlorite, iron and copper oxide minerals, pyrite, chalcocite(?), and possibly chalcopyrite. The attitude of the mineralized zone cannot be determined. The wall rock is slightly bleached and silicified meta-andesite (Jurassic?). The meta-andesite rocks include units with plagioclase phenocrysts up to nearly 1 cm long as well as fine-grained, dark greenish gray units.

Rock was originally a hornblende andesite; plagioclase is probably albitized, and hornblende biotitized. Mineralized samples commonly contain black tourmaline matrix breccia veins and stockworks a few mm to a few cm wide.

REMARKS: Sample 4501 is mineralized meta-andesite from dumps of prospect pits.

SAMPLE SITE: 4501

REFERENCES: Doebrich and others, 1996

FIELD EXAMINATION: L.J. Garside, 7/12/89

PROPERTY NAME: "Flying Dutchman Mine"

OTHER NAMES: Tille, Richmond (MILLS data)

MINING DISTRICT: Stateline Peak

COUNTY: Lassen

MINERAL COMMODITY(IES): Cu(?), Au(?), Mo

TYPE OF DEPOSIT: Replacement vein

QUAD SHEET: Evans Canyon, CA

OWNERSHIP:

LOCATION: SW $\frac{1}{4}$ , sec. 19, T22N, R17E

North: East:

PRODUCTION: Minor or none

HISTORY: These workings are considerably more extensive than those shown as the Flying Dutchman on the Loyalton 15' quadrangle and possible the name should be applied here.

DEVELOPMENT: Three adits over an area of 0.25 km<sup>2</sup>

GEOLOGY: Quartz-tourmaline veins with pyrite and locally molybdenite (4503) cut Jurassic(?) meta-andesite and porphyritic granodiorite. At locality 4502 a small, partly caved adit explores a N35W, 90° zone of quartz tourmaline veining and replacement. The zone is about 1 m wide and the wall rock is apparently meta-andesite. Within the zone irregular bands of tourmaline-rich rock up to several cm wide occur. Tourmaline veins and breccia zone and stockwork fillings are common in dump samples. Mineralized samples contain quartz, tourmaline, pyrite, and chlorite. The surface rocks here and in the vicinity are iron-stained; silicification occurs in the wall rock near the vein. The wall rocks are slightly bleached from supergene acid leaching from oxidizing pyrite. Site 4503 is an adit with accessible workings, possible 100 m(?) long. The workings follow a quartz-black tourmaline-pyrite vein in granodiorite porphyry. The vein is about 15 cm wide and trends due N, 90° at the portal and N30W, 90° further back in the workings. Nearby, microdiorite dikes cut the granodiorite porphyry. This granodiorite resembles a unit mapped with the Peavine sequence in the Reno NW quadrangle. Molybdenite occurs in sulfide vein matter. Site 4504 is a short adit which explores a brecciated quartz vein which is apparently over 10 m wide and appears to trend N35°W. Sparse black tourmaline occurs in the vein with pyrite, and locally coarse sericite. The sericite may be partly sericitized wall rock fragments. The wall rock is interpreted to be meta-andesite. Gossan is common on surface outcrops of the vein.

REMARKS: Select samples from dumps of adits are numbered 4502, 4503, 4504. Sample 4504 AD yielded a K-Ar age of 88.6 Ma on sericite from sericitized wall rock fragments in the vein (Garside and others, 1992).

SAMPLE SITE: 4502, 4503, 4504, 4504 AD

REFERENCES: Doebrich and others, 1996; MILS

FIELD EXAMINATION: L.J. Garside, 7/12/89

PROPERTY NAME: Name unknown  
OTHER NAMES:  
MINING DISTRICT: Peavine  
COUNTY: Lassen  
MINERAL COMMODITY(IES): Cu  
TYPE OF DEPOSIT: Vein  
QUAD SHEET: Evans Canyon 7.5'  
OWNERSHIP:  
LOCATION: SE¼, sec. 28, T22N, R17E  
North: East:  
PRODUCTION: None  
HISTORY:  
DEVELOPMENT: Two adits (one 25–50? m, another 50–100? m), both caved at portal.  
GEOLOGY: Sparse oxide copper minerals occur with milky and clear quartz, black tourmaline, epidote, and limonite (pseudomorphic after pyrite?) on dumps of workings in Mesozoic metavolcanic rock. The metavolcanic rock is microgranodiorite, probably a subvolcanic intrusive related to the Peavine sequence volcanic units. No obvious mineralized structure was noted; introduced mineral matter apparently occurs as veins.  
REMARKS: Sample 4519 is select vein matter from east adit dump.  
SAMPLE SITE:4519  
REFERENCES: Doebrich and others, 1996  
FIELD EXAMINATION: L.J. Garside, 8/17/89

PROPERTY NAME: Name unknown  
OTHER NAMES:  
MINING DISTRICT: Peavine  
COUNTY: Sierra  
MINERAL COMMODITY(IES): Unknown  
TYPE OF DEPOSIT: Vein?  
QUAD SHEET: Dog Valley 7.5'  
OWNERSHIP:  
LOCATION: sec. 6, T20N, R18E  
North: East:  
PRODUCTION: None  
HISTORY:  
DEVELOPMENT: A lone shaft (4513). A small pit (4514)  
GEOLOGY: A shallow shaft is located near the contact of Cretaceous aplite (phase of granodiorite) and the north margin of a small pendant of foliated quartzofeldspathic flaser gneiss. The protolith of the foliated rock is probably fragmental (pyroclastic?) volcanic rock. ??A zone of quartz rich rock appears to trend about N60W; this trend is about parallel to an adjacent quartz-sericite vein which is near vertical(?). The wall rock adjacent to the coarse quartz vein is strongly sericitized. Black tourmaline? crystals up to 4 by 8 mm occur sparsely in the quartz vein. The mineralized zone is white, quartz-rich rock with 2–3% pyrite and sparse scattered blebs of light brown garnet(?). Sericite also occurs in the quartz-rich rock. The foliated metavolcanic rock, normally light gray is nearly white and mostly replaced by quartz. The white aplite which crops out just to the north of the prospect has rare thin veinlets of black tourmaline. A prospect to

the southeast 400 m, along the road, consists of massive replacement of the metavolcanic rock described above by the black tourmaline, white quartz, magnetite, and hematite. The area of exposed mineralization is only a few meters by a few meters. No trend of mineralization is noted. The wall rock is strongly sericitized.

REMARKS: Photo 16 is of dump with tree across shaft. Sample 4513 is of pyrite-bearing quartz-rich rock from dump. Sample 4514 is quartz-tourmaline-magnetite-hematite material from small dump of pit.

SAMPLE SITE: 4513, 4514

REFERENCES: Doebrich and others, 1996

FIELD EXAMINATION: L.J. Garside, 7/25/89

PROPERTY NAME: Unnamed Prospect

OTHER NAMES:

MINING DISTRICT: Pyramid (McCellan)

COUNTY: Washoe

MINERAL COMMODITY(IES): Cu. W?

TYPE OF DEPOSIT: Vein

QUAD SHEET:

OWNERSHIP:

LOCATION: NW¼, NW¼, sec. 7, T21N, R21E

North: East:

PRODUCTION: None

HISTORY:

DEVELOPMENT: Several small pits and an adit 20–30 m long.

GEOLOGY: A quartz vein about 400 m long occurs at the contact of a biotite granodiorite and biotite schist. The vein is about 30–40 cm wide (but silicification may extend for another 30 cm on each side of the vein), tends east-west, and dips 72°S. The biotite schist, on the north side of the contact, becomes less foliated as you go to the north. The protolith of the schist is either a intermediate-composition subvolcanic rock (meta-dacite) or a granodiorite porphyry that is older than the granodiorite. This metamorphic rock is a selvage between two granitic plutons in this area. The quartz vein contains limonite and sparse malachite; no sulfides were noted. This is probably a property described by Stager & Tingley (1988, p.204) in sec. 12, T21N, R20E; an adjacent skarn reportedly contains chalcopyrite and some scheelite. Tourmaline and quartz veining was noted in the footwall rocks, but is not associated with mineralization.

REMARKS: Sample 4533 is select vein quartz from the dump of an adit. Doebrich and others (1996) place the property in the Pyramid District, but it is more properly included in the McCellan district (see Tingley, 1992).

SAMPLE SITE: 4533

REFERENCES: Doebrich and others, 1996; Stager and Tingley, 1988

FIELD EXAMINATION: L.J. Garside, 8/6/90

PROPERTY NAME: Excelsior Mine 2

OTHER NAMES:

MINING DISTRICT: Meadow Lake

COUNTY: Nevada (CA)

MINERAL COMMODITY(IES): Au

TYPE OF DEPOSIT: Vein

QUAD SHEET: English Mountain

OWNERSHIP:

LOCATION: sec. 27, T18N, R13E

North: East:

PRODUCTION: Minor

HISTORY: District worked 1858-60's, for shallow oxide Au in quartz-tourmaline veins; sulfide ore was refractory.

DEVELOPMENT: Long adit, plus drifts?; flooded.

GEOLOGY: Adit starts in granodiorite, but must crosscut vein within 100 m. Vein is same as present at sample site 4557. Quartz-tourmaline pyrite vein. Dump is mostly granodiorite but there is abundant vein material present. Size of dump suggests extensive workings, presumably designed to explore vein system.

REMARKS: Sample 4558 photo 18.

SAMPLE SITE: 4558

REFERENCES: Doebrich and others, 1996

FIELD EXAMINATION: Harold F. Bonham, Jr., 1989

PROPERTY NAME: Guy Walt's Zinc property

OTHER NAMES:

MINING DISTRICT: Peavine

COUNTY: Sierra (CA)

MINERAL COMMODITY(IES): Zn

TYPE OF DEPOSIT: Volcanogenic(?)

QUAD SHEET: Dog Valley 7.5'

OWNERSHIP:

LOCATION: sec. 6, T19N, R18E

North:39°32'24.3" West:120°01'10.2" East:

PRODUCTION: None(?)

HISTORY:

DEVELOPMENT: Several bulldozer cuts and roads, a caved shaft (originally 10 m deep) and a completely caved adit.

GEOLOGY: Iron-rich sphalerite occurs with traces of chalcopyrite, pyrite, and reportedly, galena in a unit of finely banded and contorted siliceous rock within a sequence of dark gray to black metabasalt, presumably of Jurassic age. The metabasalts and silica-rich unit (and some other adjacent, parallel silica rich units) trend N10W, 80°W. The metabasalts are foliated, and this foliation appears to parallel the gross bedding? in the rocks. Aligned metamorphic minerals are biotite(?) or actinolite(?). Fine millimeter-scale banding in the siliceous unit is highly contoured, folded, and exhibits sheared off folds, etc. Sphalerite clots in highly mineralized siliceous rock seem to be elongate parallel to banding and have a "pulled-apart" or boudin-like aspect on a cm to mm scale. The overall trend of units here is similar to that observed to the west on the Verdi Range. There, the rocks face west, and are believed to be at least in part subaerial. The rocks at the Guy Walt's prospect are cut by Cretaceous(?) quartz monzonite and related(?) white, tourmaline-bearing aplite dikes. Miocene andesite flows cap the hill above the prospects; thus, the mineralized zone is concealed by these flows to the north. The protolith of the siliceous unit is not easily determined without further research. It may be a silica-and zinc-

rich exhalite of submarine volcanogenic origin, or a flow-banded rhyolite, or some silicified, finely laminated clastic or chemical precipitate. Older studies suggest the rock is a silicified limestone; this cannot be completely discounted, but no carbonate rocks remain here or are recognized elsewhere in the Verdi Range metavolcanic rock small-scale folding like that in the siliceous unit is not recognized elsewhere in the Jurassic metavolcanic rocks of the Reno-Verdi area, and cleavage is rarely observed. If the rocks at this prospect are part of the Jurassic package, some type of primary folding would be consistent with the lack of minor folds elsewhere (flow or slump folding, for example). Mineralization could then be, for example, epigenetic but pre folding. Further research is needed.

REMARKS: Photos 1? to 10 taken of outcrops. Sample 4524 is select mineralized outcrop.

SAMPLE SITE: 4524

REFERENCES: Doebrich and others, 1996; Kaare, A. and Barries, A.H., 1948. A preliminary examination of the Guy Walt's Zinc property: unpubl. report. NBMG mining district files, Peavine district, item 5, page 11.

FIELD EXAMINATION: L.J. Garside, 6/5/90

PROPERTY NAME: Rocky Hill mine

OTHER NAMES:

MINING DISTRICT: Galena

COUNTY: Washoe

MINERAL COMMODITY(IES): Au

TYPE OF DEPOSIT: Vein

QUAD SHEET: Washoe City 7.5'

OWNERSHIP:

LOCATION:

North: 39°20'55.4"N West:119°45'47.4"W East:

PRODUCTION: Minor (see Bonham, 1969,p 60)

HISTORY:

DEVELOPMENT: A number of shallow prospect pits and caved adits (probably short). Some rotary drilling was done in last 10? years.

GEOLOGY: Several pits and caved adits explore a number of sulfide-bearing quartz-tourmaline veins which cut dark gray and dark greenish gray metavolcaniclastic rocks. These rocks consist of feldspathic and volcanic lithic sandstones, tuffaceous siltstone, pebbly mudstone, and volcanic conglomerates. The rocks appear to strike northerly and dip about 30°E. Foliation seems to be approximately parallel to bedding. The veins are not well exposed in the workings, but appear to trend due north or N25W dips of veins are interpreted to be 45°E and/or 55°W. The veins are commonly brecciated; it is not certain if they are folded or not. The veins or zones of veins are 1-3 m wide. Vein matter consists of milky to clear quartz; black, fine-grained to locally acicular tourmaline; and, the zone of oxidation iron oxide gossan and rare malachite. The limonite gossan occurs in cavities with terminated quartz crystals. In some vein samples, black tourmaline is banded with quartz, or occurs as irregular concentrations. Locally wall rock fragments occur in the veins. At one locality, thin quartz sericite veinlets cut the metavolcanics; it is not known if this sericite (coarse, green-colored) is an alteration mineral related to the quartz-tourmaline vein mineralization. On one dump, fragments of sulfide vein material consist of relatively massive arsenopyrite and greenish colored quartz. Elsewhere remnants of pyrite occur in limonite gossan. Bonham (1969 p.62) reports that the main vein trends northeast and dips 55°W; Hedquist (1946,

unpubl. report, NBMG files) reports the presence of magnetite, ilmenite, and minor chalcopyrite and covellite (secondary) in the veins as well. Prospect pits and dumps of caved adits extend about 1 km to the north of the mine. No sulfide minerals were observed on these dumps, only limonite, quartz, and tourmaline. At one of these caved adits, a 1 m wide quartz-tourmaline-gossan vein has an attitude of N25E, 60°(?) NW.

REMARKS: A select sample of vein matter with quartz, arsenopyrite and tourmaline was collected (4525) from a dump.

SAMPLE SITE: 4525

REFERENCES: Doebrich and others, 1996; Bonham, 1969, p. 60; Hedquist, Wilbur, 1946, the metamorphic rocks of Pleasant Valley, Nevada; unpubl. student report, NBMG files - item 17, district 312.

FIELD EXAMINATION: L.J. Garside, 6/6/89

PROPERTY NAME: Unnamed

OTHER NAMES:

MINING DISTRICT: Carson City

COUNTY: Lyon

MINERAL COMMODITY(IES): Unknown

TYPE OF DEPOSIT: Vein

QUAD SHEET: New Empire 7.5'

OWNERSHIP:

LOCATION: SW¼, SW¼, sec. 13, T16N, R20E

North:39°14'43.5"N West:119°41'35.6"W East:

PRODUCTION: None

HISTORY:

DEVELOPMENT: Small prospect pit

GEOLOGY: A northeast-trending calcite-tourmaline vein cuts greenish gray Mesozoic meta-andesite and is explored by a small prospect pit. Samples of vein matter consist of very light gray calcite with thin bands of black tourmaline. Limonite concentrations occur locally. See sample site 4527 for a similar, more significant prospect.

REMARKS: Sample 4528 is grab material from poor surface outcrops of calcite-tourmaline vein matter. Field note GRE-130

SAMPLE SITE: 4528

REFERENCES: Doebrich and others, 1996; Bingler, 1977, NBMG map 59

FIELD EXAMINATION: L.J. Garside, 6/25/90

PROPERTY NAME: Name unknown

OTHER NAMES:

MINING DISTRICT: Jumbo

COUNTY: Washoe

MINERAL COMMODITY(IES): Au (?)

TYPE OF DEPOSIT: Vein ?

QUAD SHEET: Virginia City

OWNERSHIP:

LOCATION: SW¼, NW¼, sec. 3, T16N, R20E

North: 39°17'02.2"N West: 119°43'42.1"W East:

PRODUCTION: None?

HISTORY:

DEVELOPMENT: Two short (caved) adits and small prospect pit.

GEOLOGY: Limonite gossan, black tourmaline, and quartz occur in sheared Mesozoic granodiorite and associated aplite. A few samples on dumps contain pyrite, and the gossan and limonite boxworks in surface exposures are probably from pyrite. No copper staining was noted. Black tourmaline occurs as bands, sheared zones, and boudin-like masses in the granitic rocks. Locally, a breccia of white aplite fragments is surrounded by dark gray to black quartz-tourmaline matrix. One adit follows a due N, 55 E band of tourmaline 2–3 cm wide which is parallel to foliation at the portal. Surface outcrops and float suggest the tourmaline-bearing zone pinches and swells and varies in sulfide (now gossan) content. Blocks up to 20 cm wide of massive black tourmaline and subordinate quartz are observed on the surface.

REMARKS: Sample 4526 is select gossan and quartz-tourmaline material from dump, outcrop, and float. Photo 5 is of sheared granodiorite with boudin-like concentrations of tourmaline. Photo 6 is of adit.

SAMPLE SITE: 4526

REFERENCES: Doebrich and others, 1996; D.M. Hudson, oral commun., 1989

FIELD EXAMINATION: L.J. Garside, 6/6/90

PROPERTY NAME: Unnamed

OTHER NAMES:

MINING DISTRICT: Carson City

COUNTY: Carson City

MINERAL COMMODITY(IES):Unknown

TYPE OF DEPOSIT: Vein

QUAD SHEET: New Empire

OWNERSHIP:

LOCATION: sec. 26, T16N, R 20E

North:39° 13' 35.4" West 119° 41' 43.9 East:

PRODUCTION:

HISTORY:

DEVELOPMENT: A road cuts the vein; no prospect pits on the vein itself.

GEOLOGY: A 1 m wide tourmaline-bearing breccia zone and vein cuts greenish gray meta-andesite (Mesozoic). A zone 1 m wide on either side of the zone is altered to lighter-colored rock. (alkali metasomatism?). Brecciation of the wall rock is confined to part of the central zone. Black tourmaline, pinkish calcite and sparse limonite occur as vein filling and breccia cement. Wall rock meta-andesite is not obviously brecciated or pillowed; probably a subaerial flow.

REMARKS: Sample 4529 is grab vein and metasomatized wall rock meta-andesite. Field notes GRE-133; Photo 16 of vein in road cut.

SAMPLE SITE: 4529

REFERENCES: Doebrich and others, 1996; Bingler, 1977, NBMG map 59

FIELD EXAMINATION: L.J. Garside, 6/26/90

PROPERTY NAME: Unknown

OTHER NAMES:

MINING DISTRICT: Delaware

COUNTY: Douglas  
MINERAL COMMODITY(IES): Iron  
TYPE OF DEPOSIT: Vein  
QUAD SHEET: Mineral Peak 7.5-minute  
OWNERSHIP:  
LOCATION: SW¼ NE¼ sec. 19, T14N, R 22E  
North:39° 04' 02.0" West: 119° 33' 15.8" East:  
PRODUCTION: None  
HISTORY:

DEVELOPMENT: Bulldozer cuts  
GEOLOGY: A magnetite vein about 1 m wide is exposed in a bulldozer trench. The vein trends northerly and dips steeply. Wall rock is metamorphosed volcanoclastic rocks, possible volcanic member of the Jurassic Gardnerville Fm. Silicification adjacent to the vein is common, as is limonite gossan. Some scattered pyrite occurs in the magnetite-bearing rock. No tourmaline noted in vein or nearby.

REMARKS: Sample 4530 is magnetite-bearing vein matter from trench.

SAMPLE SITE: 4530

REFERENCES: Doebrich and others, 1996

FIELD EXAMINATION: L.J. Garside, 8/1/90

PROPERTY NAME: Tourmaline Breccia

OTHER NAMES:

MINING DISTRICT: Carson City

COUNTY: Lyon

MINERAL COMMODITY(IES): Au?

TYPE OF DEPOSIT: Vein

QUAD SHEET: New Empire 7.5'

OWNERSHIP:

LOCATION: NW¼ SW¼ sec. 24, T16N, R 20E

North:39° 14' 10.8" East: 119° 41' 38.7"

PRODUCTION: None

HISTORY:

DEVELOPMENT: A small prospect pit and a caved adit with small dump

GEOLOGY: A breccia zone with vein-filling tourmaline and calcite cuts Mesozoic andesite volcanic rocks. The zone is over 400 m long and up to 75 m wide. The wall rock is grayish green meta-andesite; metamorphism is green schist grade and original outlines of mafic phenocrysts (hornblende, biotite?) and plagioclase are still visible. The breccia zone consists of fragments of meta-andesite in a matrix of black (brown in single, thin crystals) tourmaline and white to pinkish calcite. The breccia is generally matrix supported; fragments range from less than 1 cm to as large as 20 cm or more in diameter. Tourmaline is universally fine-grained, crystalline material; calcite is medium to very coarse grained. Tourmaline predominates over calcite by 10:1, but can occur in parts of the vein as the main matrix material. Deposition of calcite and tourmaline appears synchronous, as both appear as earlier or later materials in different areas of the vein. The rock fragments in the breccia zone are very light colored in contrast to the wall rock; a few larger fragments have only a rim of lighter-color with the core unaltered. The fragments are obviously altered by alkali metasomatism (probably albitization). Narrow veinlets

observed in the wall rock have tourmaline in center with a much wider, light colored metasomatized envelope; outside this is a strong epidote concentration in the meta-andesite,. These small veinlets may represent, in miniature, the alteration/mineralization represented in the main breccia zone. Pyrite, nearly always oxidized to limonite, occurs as sparse concentrations of crystals up to 3 mm in diameter. No other metallic minerals were noted. The vein trends northerly and is high-angle.

REMARKS: Sample 4527 is select tourmaline breccia material with sparse limonite and remnant pyrite from dump of caved adit. Numerous photos of breccia fragments taken. Field notes, GRE-129

SAMPLE SITE: 4527

REFERENCES: Bingler, 1977; Doebrich and others, 1996

FIELD EXAMINATION: L.J. Garside, 6/25/90

PROPERTY NAME: Utopian Mine

OTHER NAMES:

MINING DISTRICT: Delaware

COUNTY: Douglas

MINERAL COMMODITY(IES): gold

TYPE OF DEPOSIT: vein

QUAD SHEET: Mineral Peak 7.5 '

OWNERSHIP:

LOCATION: NE¼ NW¼ sec. 23, T14N, R21E

North:39° 04' 17.6" West:119° 35' 46.6" East:

PRODUCTION:

HISTORY:

DEVELOPMENT: Short? adit, pits and trenches, drill hole.

GEOLOGY: A dense, hard quartz-tourmaline vein is exposed near an adit. The vein strikes northerly and dips about 20° E; the dense part of the vein is 20 cm wide and a gossan envelope is around that. Wall rock is greenish-gray meta-andesite; volcanoclastic sedimentary rocks crop out at top of hill to east. Vein consists of black tourmaline, white vein quartz, and pyrite. Rare chrysocolla was noted on dump. A drill hole to east of outcrop and adit encountered the vein, as pyrite, tourmaline, and quartz are found in cuttings. Although no magnetite was noted in vein matter, a piece of slightly rounded quartz-tourmaline vein matter found in float nearby did have magnetite.

REMARKS: See Jack Quade description in NBMG OF 90-2, p. 159. Sample 4531 is of select, pyrite-bearing quartz-tourmaline vein matter from ore? peak. Compare with sample 3716 of Quade.

SAMPLE SITE: 4531

REFERENCES: Doebrich and others, 1996

FIELD EXAMINATION: L.J. Garside, 8/1/90

PROPERTY NAME: Name unknown

OTHER NAMES:

MINING DISTRICT: Peavine

COUNTY: Washoe

MINERAL COMMODITY(IES): Iron

TYPE OF DEPOSIT: Iron skarn

QUAD SHEET: Verdi 7.5'

OWNERSHIP:

LOCATION: NE $\frac{1}{4}$  NW $\frac{1}{4}$  sec. 31, T20N, R 19E

North:39° 33' 44.7" West: 119° 53' 30.8" East:

PRODUCTION: None

HISTORY:

DEVELOPMENT: A small prospect pit, a 6 m deep shaft, and a bulldozer cut?

GEOLOGY: Black tourmaline, magnetite, limonite gossan, and sparse white vein quartz occur in a zone about 100 m long and a few to 20 m wide in meta-andesite of the Peavine sequence (Mesozoic). The rocks are intruded just to the east by Tertiary Kate Peak Formation, which is strongly hydrothermally altered. In places, the skarn or metasomatic replacement zone is massive, black fine-grained tourmaline with scattered areas of concentrated magnetite. Relatively sparse white quartz occurs with tourmaline as somewhat later veins cutting tourmalinized rock and as breccia fragments in tourmaline-matrix breccias. In these breccias, open space textures are observed in quartz vein matter, and needles of black tourmaline occur in the quartz; otherwise tourmaline is very fine grained. Locally, the skarn zone is strongly silicified, with only tourmaline, silica, and limonite remaining, this silicification is probably a tertiary overprint on the Cretaceous skarn. The skarn zone trends about N4SW, as do some white quartz veins within the zone. Compass needle deflections due to magnetite are common.

REMARKS: Sample 4532 is grab and select magnetite, tourmalinized rock, and quartz vein matter from outcrop and dump. Photo 31 is an overview of dark skarn zone, looking northwest. Photo 32 is of quartz-tourmaline breccia; photo 33 is of massive, black tourmalinized rock with white quartz-tourmaline veins.

SAMPLE SITE: 4532

REFERENCES: Bell Garside, L.J., 1987; Doebrich and others, 1996

FIELD EXAMINATION: L.J. Garside, 8/16/90

PROPERTY NAME: Black Star Mine

OTHER NAMES: Easter Sunday Mine?

MINING DISTRICT: Peavine

COUNTY: Lassen

MINERAL COMMODITY(IES): Cu

TYPE OF DEPOSIT: Vein

QUAD SHEET: Evans Canyon 7.5'

OWNERSHIP:

LOCATION: S12 sec. 29, T22N, R 17E

North: East:

PRODUCTION: Minor(?); some ore spilled on road out of canyon.

HISTORY:

DEVELOPMENT: Shallow (20–30 m) shaft and 2 bulldozer cuts.

GEOLOGY: A shaft and shallow trenches explore a N25W, 90° vein of black tourmaline and white quartz which cuts Mesozoic meta-andesite. The vein is finely banded quartz and tourmaline (sheared?); some brecciated white quartz vein matter is cemented with tourmaline, which is generally quite fine-grained. Oxide copper minerals, especially malachite and chrysocolla occur as fracture coatings. Iron oxide minerals are also present. Rare sulfide minerals

are observed in dump samples (bornite, chalcopyrite). The light-gray, porphyritic meta-andesite is locally foliated.

REMARKS: Sample 4520 is select quartz-tourmaline vein matter with oxide copper minerals: from dump.

SAMPLE SITE: 4520

REFERENCES: Doebrich and others, 1996

FIELD EXAMINATION: L.J. Garside, 8/17/89

PROPERTY NAME: Name unknown

OTHER NAMES:

MINING DISTRICT: Peavine

COUNTY: Lassen

MINERAL COMMODITY(IES): Cu

TYPE OF DEPOSIT: Skarn

QUAD SHEET: Evans Canyon 7.5'

OWNERSHIP:

LOCATION: NE¼ sec. 31, T22N, R 17E

North: East:

PRODUCTION: None (?)

HISTORY: Workings are fairly old; a 30 cm Jeffrey Pine is growing on one dump.

DEVELOPMENT: Two adits and a trench; possibly 100 m total workings. Caved at portals.

GEOLOGY: Milky quartz, brown garnet, epidote, black tourmaline, limonite, malachite, chrysocolla, and sparse magnetite and bornite occur along a N40W, 90° mineralized zone appears to extend for less than 50 m. Massive bornite, noted only in one small sample, probably represents the primary copper-bearing ore mineral. A north-south-trending intrusive contact with hornblende biotite quartz monzonite is exposed 50 m west of the prospect.

REMARKS: Sample 4521 is select oxide copper minerals, skarn minerals and rare bornite from dump of adit.

SAMPLE SITE: 4521

REFERENCES: Doebrich and others, 1996

FIELD EXAMINATION: L.J. Garside, 8/17/89

PROPERTY NAME: Name unknown

OTHER NAMES:

MINING DISTRICT: Peavine

COUNTY: Sierra

MINERAL COMMODITY(IES): Cu

TYPE OF DEPOSIT: Skarn (?)

QUAD SHEET: Evans Canyon

OWNERSHIP:

LOCATION: NW¼ sec. 22, T21N, R 17E

North: East:

PRODUCTION: None (?)

HISTORY: Recently used for garbage dump

DEVELOPMENT: Shaft (caved), probably 50 m or more deep One small prospect pit.

GEOLOGY: Sparse copper mineralization occurs in foliated to non-foliated Mesozoic

metarhyolite. The oxide copper minerals occur with limonite in a small prospect pit as fracture coatings. Samples from the nearby shaft dump contain sparse garnet-epidote-quartz skarn with rare pyrite. Oxide copper minerals may be related to copper-rich areas of skarn mineralization.

REMARKS: Sample 4517 is select mineralized rock from dump, with limonite copper oxide minerals, and garnet-epidote skarn.

SAMPLE SITE: 4517

REFERENCES: Doebrich and others, 1996

FIELD EXAMINATION: L.J. Garside, 8/16/89

PROPERTY NAME: Name unknown

OTHER NAMES:

MINING DISTRICT: Peavine

COUNTY: Sierra

MINERAL COMMODITY(IES): Cu, Au (MILS data)

TYPE OF DEPOSIT: Vein

QUAD SHEET: Evans Canyon 7.5'

OWNERSHIP:

LOCATION: C SW $\frac{1}{4}$  sec. 4, T21N, R 17E

North: East:

PRODUCTION: None or minor

HISTORY:

DEVELOPMENT: A 50 m (?) or less adit, caved at portal, a shallow shaft filled with water, and a shallow, small prospect pit.

GEOLOGY: Black tourmaline with sparse magnetite, chrysocolla, limonite, copper pitch, and malachite occurs in stranded or stockworks-like veins. The most obvious vein, at the prospect pit, has an attitude of N45E, 60°NW and varies in width from 20–50 cm. Massive, fine-grained black tourmaline occurs as veinlets and strands, individually varying in width from a few millimeters to 10 cm or more. The wall rock is Mesozoic meta-rhyolite. The rock is light-gray weathering, medium to dark-gray, flow-banded, and has a felsic-appearing groundmass. Quartz phenocrysts were not observed, but may be present. Phenocryst content is low, but local variants in vicinity are more phenocryst rich. The rock resembles flow-bonded rhyolite/rhyodacite on Peavine Peak.

REMARKS: Sample 4515 is select tourmaline-bearing vein matter from dumps.

SAMPLE SITE: 4515

REFERENCES: Doebrich and others, 1996

FIELD EXAMINATION: L.J. Garside, 8/15/89

PROPERTY NAME: Name unknown

OTHER NAMES:

MINING DISTRICT: Peavine

COUNTY: Lassen

MINERAL COMMODITY(IES): unknown

TYPE OF DEPOSIT: skarn (?)

QUAD SHEET: Evans Canyon 7.5'

OWNERSHIP:

LOCATION: SE $\frac{1}{4}$  sec. 32, T22N, R 17E

North: East:

PRODUCTION:

HISTORY: Dump is overgrown with large sagebrush. Old workings

DEVELOPMENT: A single adit, caved at portal (probably 50–75 m long)

GEOLOGY: There is no obvious reason for this adit. A few small pieces of garnet and epidote-bearing rock were noted on dump. There is no obvious mineralized structure. The wall rock is gray, foliated rhyolite or rhyodacite (Mesozoic). A biotite-hornblende quartz monzonite intrudes the Mesozoic rocks about 700 m to the southwest, and an aplite dike related to the intrusive quartz monzonite was noted nearby.

REMARKS: Sample 4516 is select garnet-bearing rock from dump.

SAMPLE SITE: 4516

REFERENCES: Doebrich and others, 1996

FIELD EXAMINATION: L.J. Garside, 8/15/89

PROPERTY NAME: Unnamed

OTHER NAMES:

MINING DISTRICT: Unnamed (Floriston)

COUNTY: Nevada (CA)

MINERAL COMMODITY(IES): Cu, Mo

TYPE OF DEPOSIT: Vein

QUAD SHEET: Boca 7.5'

OWNERSHIP: Santa Fe Railroad ?

LOCATION: sec. 30, T18N, R 18E

North: East:

PRODUCTION: None

HISTORY:

DEVELOPMENT: Railroad cut (abandoned part of line) at Floriston

GEOLOGY: Quartz-tourmaline veins which cut hornblende-biotite granodiorite (Cretaceous) contain pyrite, molybdenite, and sparse chalcopyrite. Thin selvages of quartz and tourmaline on exposed surfaces have scattered flakes of molybdenite. A N55W, 90° vein about 15 cm wide which cuts the porphyritic granodiorite contains local strong concentrations of fine-grained pyrite in association with the quartz, tourmaline, and scattered molybdenite. The granodiorite is apparently somewhat mineralized and cut by tourmaline veins over its exposed area of a few hundred square meters.

REMARKS: Photos 7, 8 of outcrop. Sample R32F (J.H. McCarthy) is of molybdenite-bearing vein matter.

SAMPLE SITE: R32F

REFERENCES:

FIELD EXAMINATION: L.J. Garside, J.H. McCarthy, Jr.; 1989

PROPERTY NAME: Unnamed

OTHER NAMES:

MINING DISTRICT: Unnamed (Floriston)

COUNTY: Nevada (CA)

MINERAL COMMODITY(IES): Cu

TYPE OF DEPOSIT: Vein

QUAD SHEET: Boca 7.5'

OWNERSHIP: State of California? (Highway right-of-way)

LOCATION: sec. 30, T18N, R 18E

North: East:

PRODUCTION: None

HISTORY:

DEVELOPMENT: Road cut, old U.S. Highway 40, apparently not prospected at area examined.

GEOLOGY: Cretaceous (?) hornblende-biotite granodiorite is exposed over an area of a few hundred square meters on both sides of the Truckee River at the Floriston exit from Interstate 80. The granodiorite is commonly iron-stained on weathered surfaces, and at the sample site is cut by numerous tourmaline and quartz-tourmaline veins containing sparse pyrite and chalcopyrite. Local green-stained areas indicate secondary copper minerals. The granodiorite is exposed along an old road cut for about 100 m; it is overlain by a coarse boulder unit of granitic boulders, which is overlain by Miocene andesitic lahars and Quaternary Truckee River gravels. The major mineralized vein and adjacent shear zone trends approximately east-west and dips 60° S. A fine-grained, pyrite-bearing tourmaline vein, at least 40 cm wide, cuts the granodiorite. Other, narrower veins also trend east-west, but dip northerly or are vertical. In an area north of the wider vein, the granodiorite is cut by numerous tourmaline veins a few centimeters wide which occur every 20–30 cm. Similar mineralization (but with molybdenite occurs to the southwest about 300 m). Presumably, more mineralization in the granodiorite is concealed in adjacent areas by Tertiary volcanic rocks.

REMARKS: Photos 2–6 of veins and outcrop area. Samples B32R, B32AR, B32BR (J.H. McCarthy) are from mineralized outcrop.

SAMPLE SITE: B32R, B32AR, B32BR

REFERENCES:

FIELD EXAMINATION: L.J. Garside, J.H. McCarthy, Jr.; 1989