

Searchlight Mining District, Nevada

PROPOSAL

Recent experience in the Searchlight area indicates potential open-pit gold-silver deposits.

Proposed is to negotiate with the four major claim owners to obtain feasible leases. The cost of this initial phase would be \$5,000.

Phase two would commence upon the consumation of any lease agreements. For each property, the sampling and geology would cost \$15,000. After the initial sampling and evaluation, a detailed report would be written and further exploration development/budgets prepared.

The immediate production potential of the area is 100,000 tons of dumps that would average \$25.00 per ton. This would gross about \$2.5 million and net about \$2 million.

The initial open pit potential is about 500,000 tons of .06 t. oz. Au/ton ore at a very low stripping ratio. This would gross \$7.5 million and net about \$5 million.

LOCATION

The Searchlight district is in the southern part of Clark County, Nevada, which is 56 miles south of Las Vegas on U.S. Highway 95, and 37 miles from the Union Pacific branch railroad to Boulder City (see map on the following page). The district discovered in 1897, has a recorded production of about \$7,000,000.

The district lies in the low hills and pediment slope bordering the western flank of the Opal Mountains. Annual rainfall is about 9 inches. No surface water is available nearer than the Colorado River, 13 miles to the east, but water is obtainable from mine shafts at depths of from 145 to 225 feet.

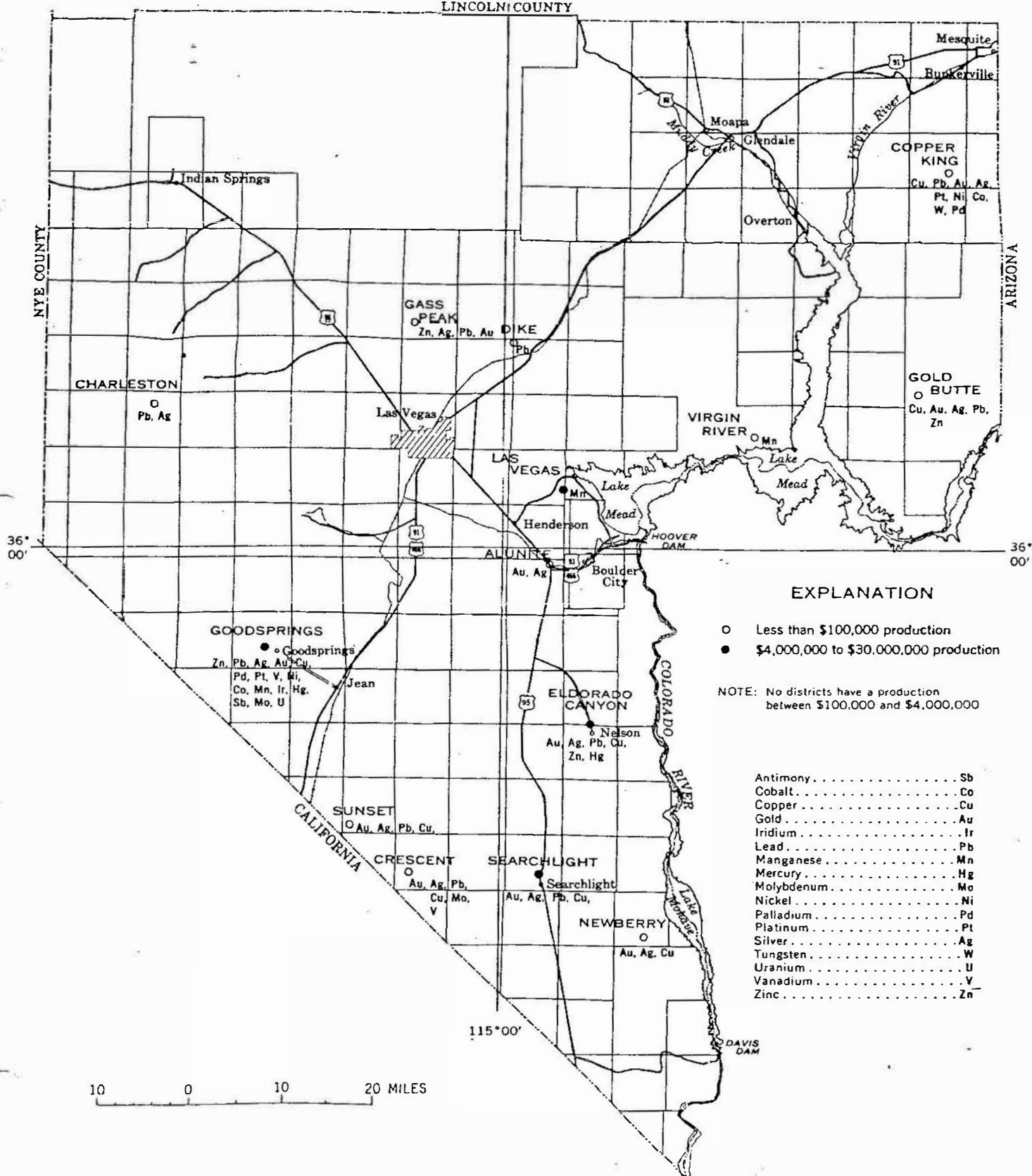
GEOLOGY

Except for a small outcrop of Precambrian granite gneiss, the district is underlain by igneous rocks of presumed Tertiary Age (see maps of the north and south portions of the District following the location map). The oldest of these is andesite which was intruded by dikes and masses of andesite porphyry and later by a considerable mass of quartz monzonite. Following the quartz monzonite intrusion the andesite was largely altered to hornfels. Later fracturing of the hornfels near the quartz monzonite contact permitted the rise of vein-forming solutions and the emplacement of the metalliferous veins in the andesite near the contact. Another series of andesite flows, younger than the quartz monzonite and accompanying mineralization, is exposed in the northwestern part of the district.

The veins that crop out in the older andesite and andesite porphyry are all near the quartz monzonite contact, suggesting that

NEVADA

115°00'
LINCOLN COUNTY



EXPLANATION

- Less than \$100,000 production
- \$4,000,000 to \$30,000,000 production

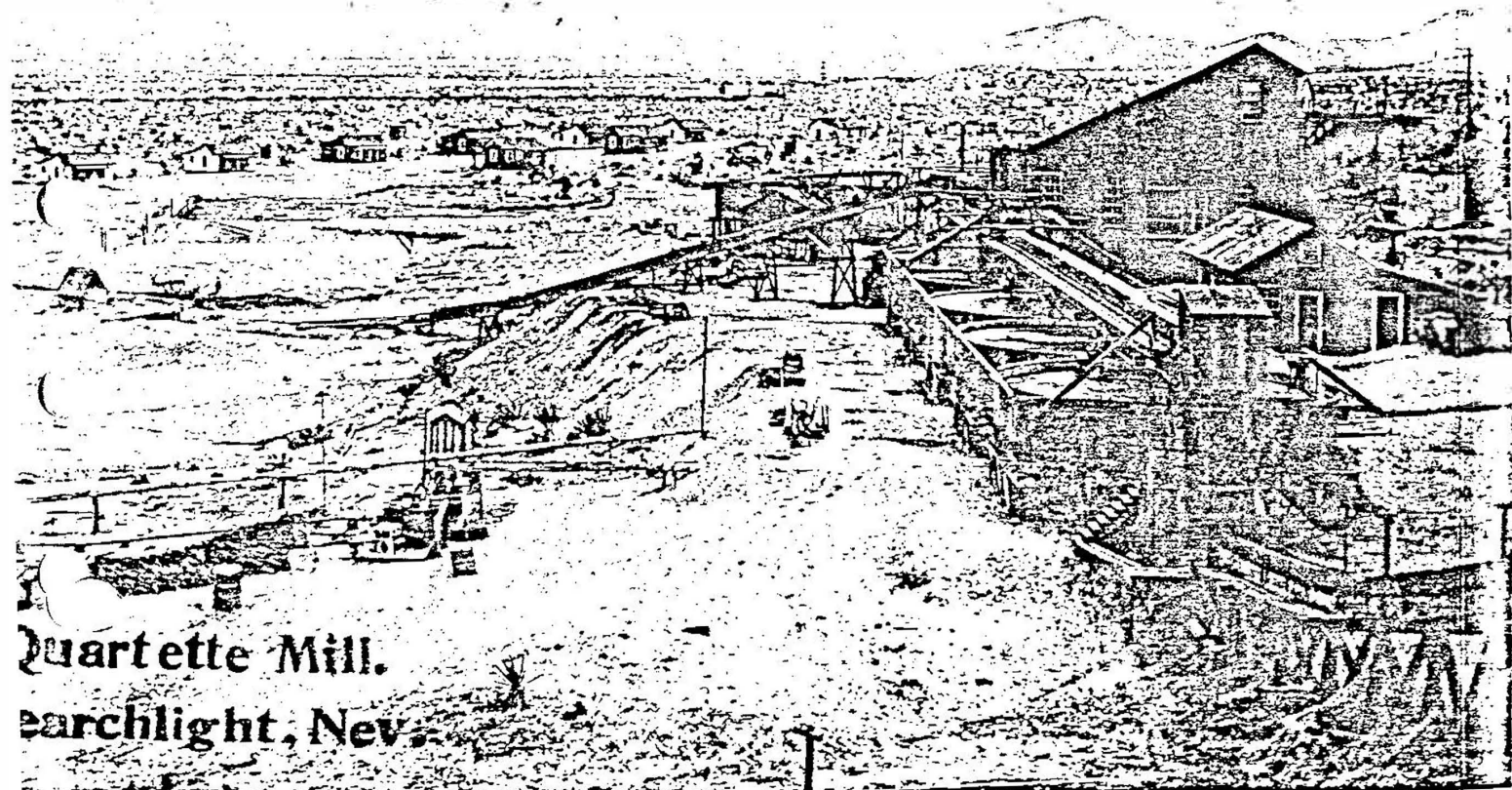
NOTE: No districts have a production between \$100,000 and \$4,000,000

Antimony	Sb
Cobalt	Co
Copper	Cu
Gold	Au
Iridium	Ir
Lead	Pb
Manganese	Mn
Mercury	Hg
Molybdenum	Mo
Nickel	Ni
Palladium	Pd
Platinum	Pt
Silver	Ag
Tungsten	W
Uranium	U
Vanadium	V
Zinc	Zn

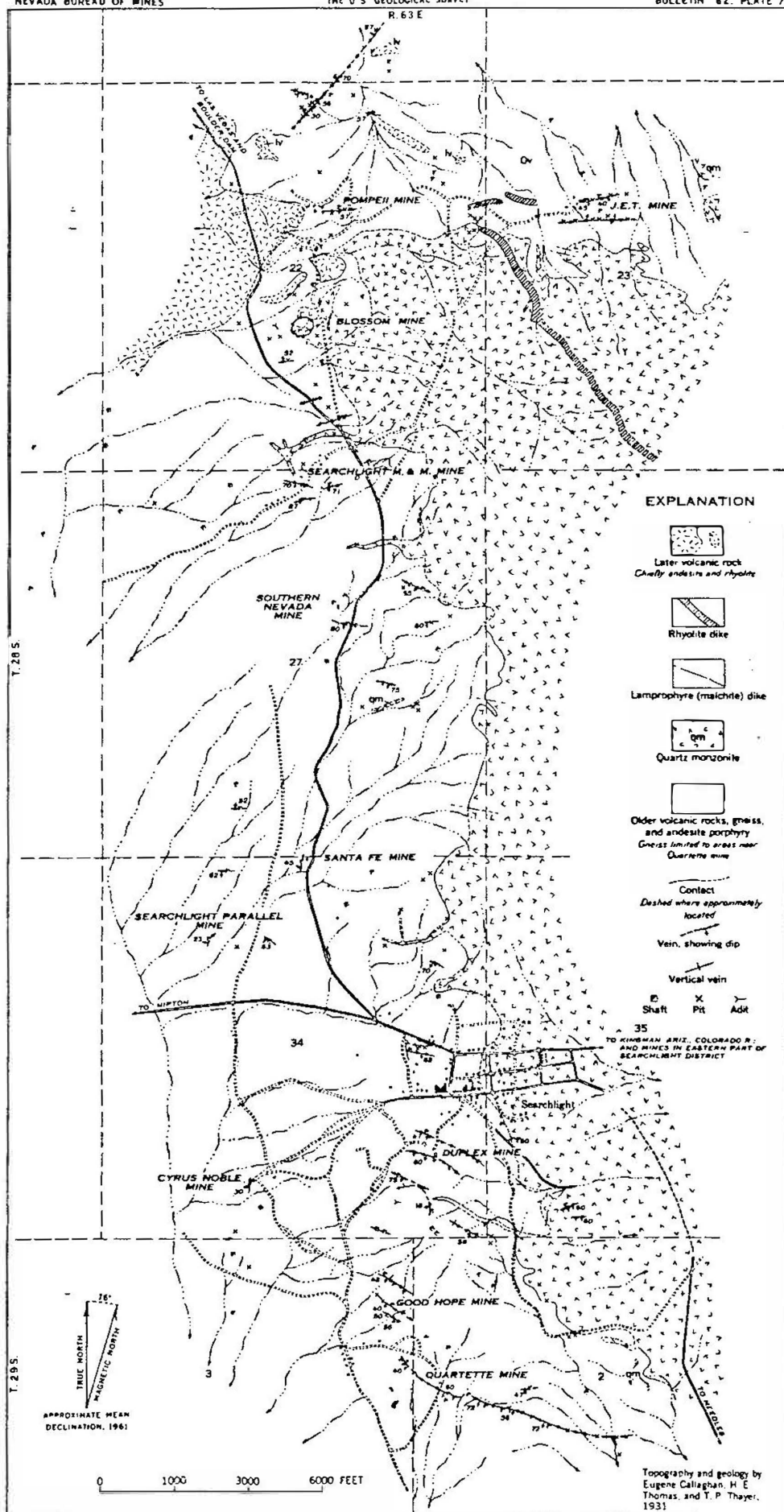
METAL MINING DISTRICTS



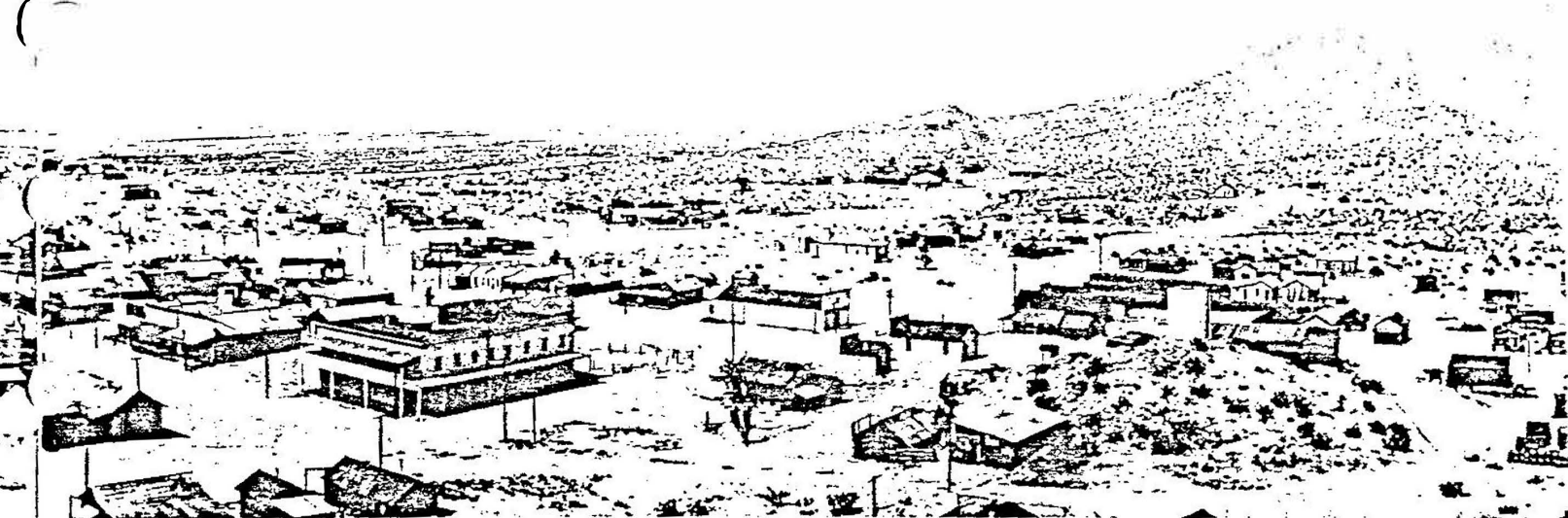
The Quartette mill (below) was Searchlight's principal producer; from its mine came \$2.2 million between 1898 and 1911 — almost half of the district's total production. This mill, built in 1903, was one of the first in Nevada to use the cyanide process extensively.
(James Cashman Sr. Collection)



Quartette Mill.
Searchlight, Nev.

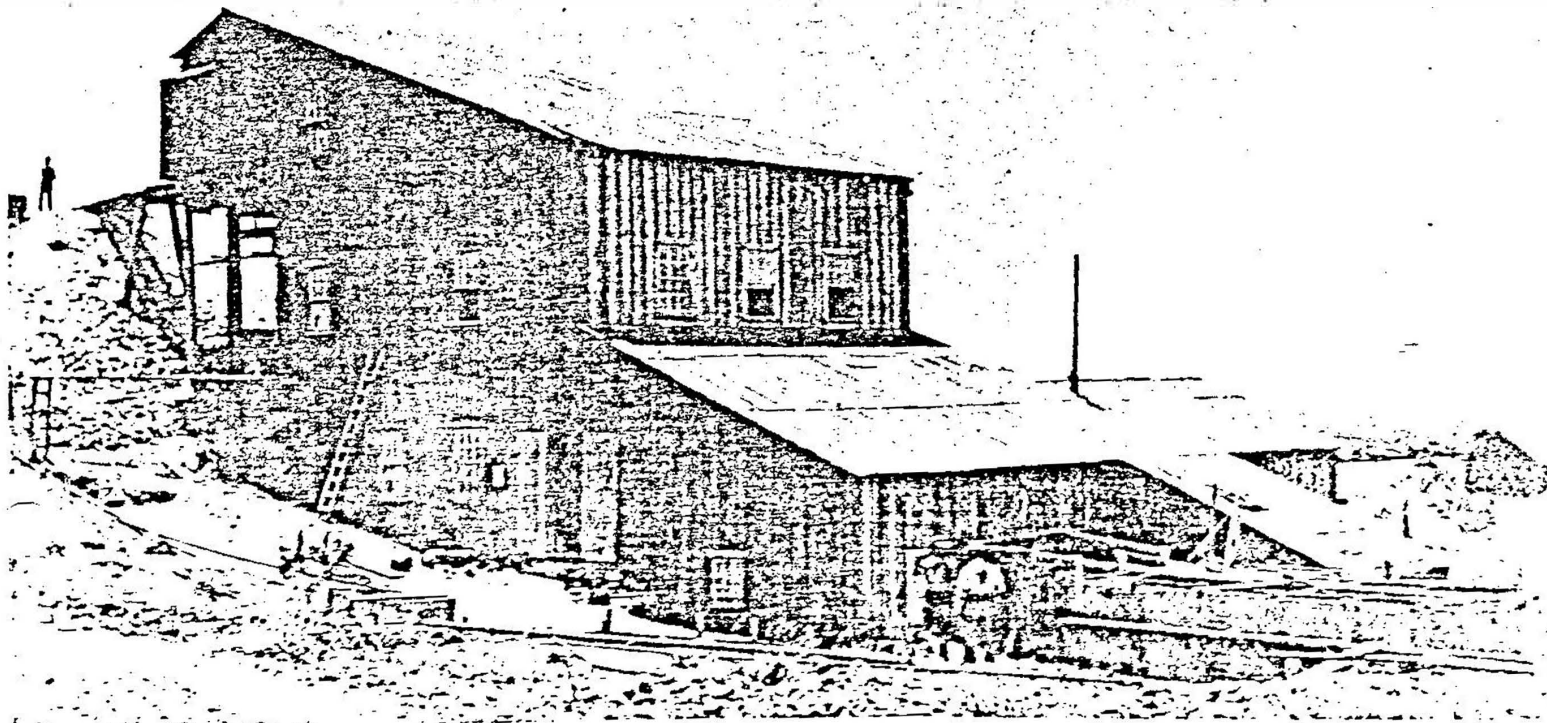


GEOLOGIC MAP OF THE MAIN PART OF THE SEARCHLIGHT DISTRICT,
CLARK COUNTY, NEVADA



By 1910 Searchlight was a mature mining town that had outgrown the crude conditions of only six years previous. In 1904 there were mostly tents and cloth-lined houses, only a few of which had running water. A business street soon formed, which included 13 saloons. The town that developed was conveniently situated in the midst of a golden triangle of mines. The local paper called booming wild Searchlight the "camp without a failure." Many prominent Las Vegas made their start here. The camp took its name from the Searchlight claim, probably named for a popular brand of sulphur matches of the day. *(Gordon Colton Collection)*

In Searchlight the smaller Duplex Mining Co. owned this twenty-stamp mill. That company mined more than a million dollars worth of ore. *(Gordon Colton Collection)*



their position may have been determined by fracturing accompanying its emplacement.

ORE DEPOSITS

Most of the veins show a breccia country rock cemented by quartz, but they differ in type in the southern and northern parts of the district. Those in the south are simple quartz veins accompanied by adularization and silification of the wall rock; they originally contained a considerable amount of base metal sulfides with little or no wall-rock alteration. In the north the veins appear to be of a lower-temperature type and contain quartz with lamellar calcite and fewer traces of sulfides but a higher ratio of gold and silver than in the south.

The ores are largely oxidized. Callaghan, quoting from a private report by T.A. Jaggar, Jr., and Charles Palache, lists a large number of oxidized lead, zinc, and copper minerals; original sulfides, sphalerite, galena and chalcopryrite-the last subordinate-were found in places. The principal production was from lead carbonate ores. During the early years of mining the output of gold, in ounces, slightly exceeded that of silver, but with exhaustion of the surficial ores, silver has been in excess.

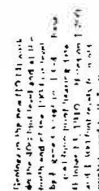
The Quartette and Blossom mines described below are examples of deposits from the southern and northern parts of the district, respectively. Parts of the descriptions are quoted directly from Callaghan.

Quartette Mine. The Quartette mine is three quarters of a mile south of Searchlight. The mine has been the largest producer in the Searchlight district, and up to 1934 had accounted for 64 percent of the gold, 21 percent of the silver, 58 percent of the copper, and 13 percent of the lead recorded for the district. The total yield at that time was probably more than \$2,800,000, largely produced between 1902 and 1923. There was also some production in 1934, 1935, and 1951. Since 1940 there has been additional output of gold and silver derived from the old tailings and dumps.

Most of the workings shown on plate 8 were inaccessible at the time of Callaghan's examination in 1934. Heikes (1912) reported that at the cessation of the operations in 1911 the main shaft had been sunk to a depth of 1,267 feet and the underground workings were 5.5 miles in length.

The workings of the Quartette mine are along a large vein that in general strikes N.70° W. and dips 40° to 60° S. The vein has been largely stoped between the main shaft and shaft 3 from 100 to 1,100-foot levels. The vein crops out over a distance of 3,300 feet.

The country rocks of the mine include gneiss, hornfels, and andesite porphyry. Generally the hornfels is more abundant in the hanging wall and the gneiss in the footwall. The rocks on both sides of the vein are cut by dikes and irregular masses of andesite porphyry.



PLAN AND STOPE MAP OF THE QUARTETTE MINE, CLARK COUNTY, NEVADA

The structure of the vein is complex; numerous intersecting gouge seams enclose lenses of quartzose vein matter and lenses of country rock as well. Some of the lenses of ore were stoped to widths of 50 feet and crosscuts show that gouge seams and quartz veins or veinlets, mostly parallel to the main vein, occur in both the footwall and hanging wall.

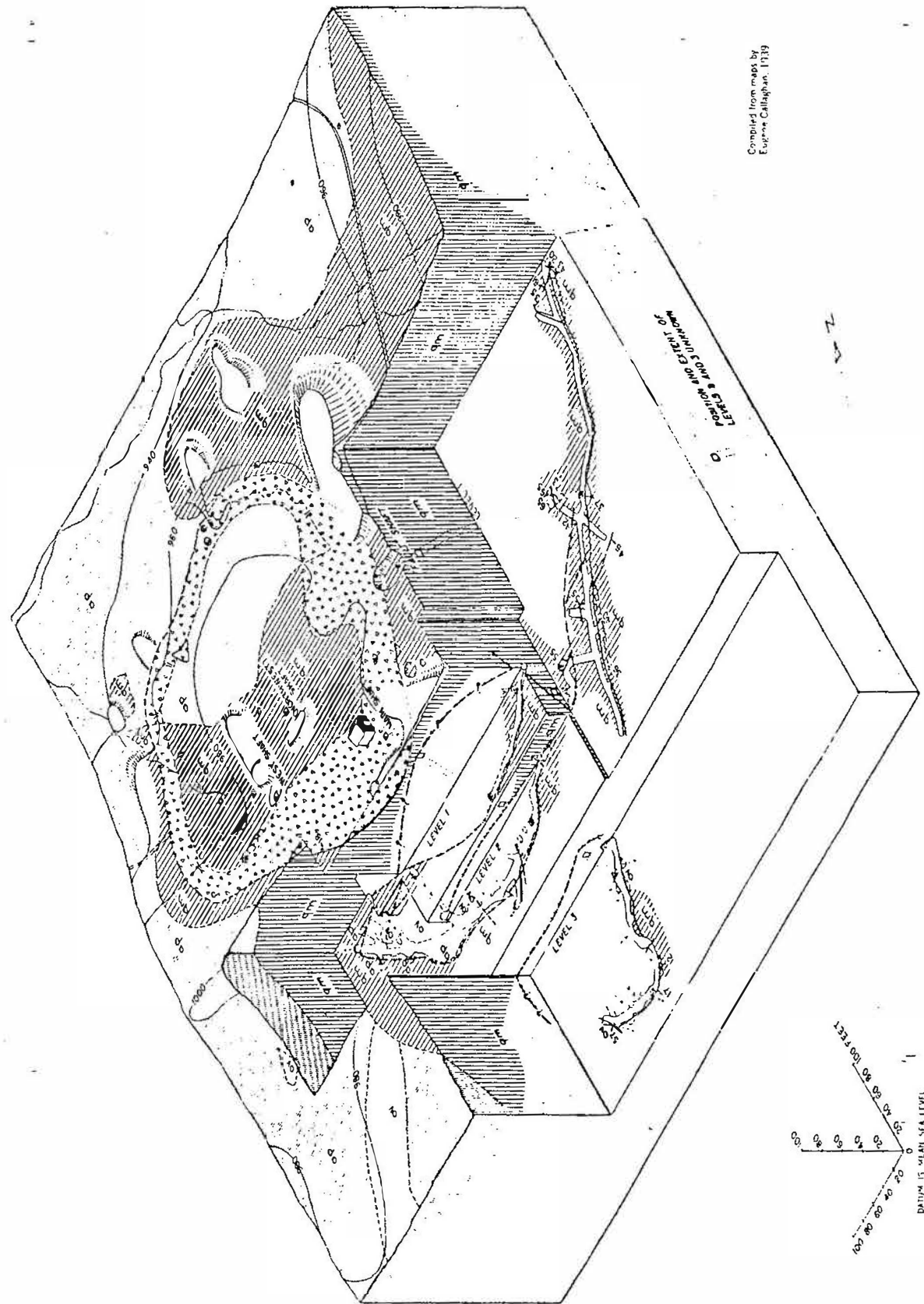
Ransome (1907) described the ore as follows:

"The ore is ordinarily a soft shattered mass of altered country rock intimately mingled with the various ore minerals. It is generally oxidized, but a little chalcocite is said to be found occasionally, and some residual kernels of galena were seen in the west drift of the eighth level. Good ore is nearly always associated with chrysocolla or with earthy cuprite and in some places carries from 10 to 12 percent copper. Small cupriferous bunches are sorted and shipped. Where galena or, more commonly, cerussite appears the ore carries a larger proportion of silver than where copper is the dominant base metal. Wulfernite, the molybdate of lead, in characteristic square, tabular orange-colored crystals, is very common throughout the mine and does not necessarily indicate ore. It is apparently one of the later products of oxidation and occurs in little vugs and open fissures, implanted on the other minerals. Hematite is abundant but, like wulfenite, does not seem to be particularly characteristic of good ore. Quartz is widely distributed through the lode but never forms large or solid masses. Its most typical occurrence is in small vugs and veinlets."

Blossom Mine. The Blossom (see enclosed claim map) mine is approximately 2 miles north-northeast of Searchlight. Total production of gold and silver, produced intermittently since 1903, is valued at more than \$325,000; most of the production was made prior to 1906.

The Blossom mine is at the contact of a sill-like tongue of quartz monzonite intrusive into hornfelsized andesite and andesite porphyry. Most of the ore came from a nearly flat or shallow saucer-shaped ore body that cropped out on all sides of a low hill. Ore was also mined from a gently dipping vein explored by approximately 1,400 feet of workings on three levels (pl.9).

The quartz-cemented breccia of the flat vein is to 10 feet or more thick, although the actual ore had a maximum thickness of 3 feet. This consisted of fragments of silicified country rock and porous sugary quartz. Gold was visible in some of this material, and the proportion of gold to silver was commonly 1 to 4. Free gold was observed associated with limonite and small streaks of specular hematite. Ore from the west end of level 2 in 1934 consisted of a breccia of altered country rock and radiating aggregates of vuggy comb quartz. White and gray clay and a little late calcite occur in the vugs and openings. Lumps of massive calcite with a fibrous structure are included in the ore and probably represent primary vein calcite.



EXPLANATION



Quartz monzonite
Includes porphyry in some localities



Andesite porphyry
May include porphyry in some localities

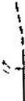


Older volcanic rock
Essentially a dike

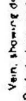


Quartz cemented breccia

Contact, showing dip
Quartz cemented breccia, mostly in and
dip of quartz cemented breccia



Fault, showing dip
Quartz cemented breccia, mostly in and
dip of quartz cemented breccia



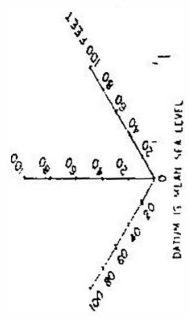
Vein, showing dip
Quartz cemented breccia, mostly in and
dip of quartz cemented breccia

Shaft at surface Foot of mine or mine Bottom of shaft

Shaft going above and below level Head of mine or mine

Inclined workings going above and
below level
Quartz cemented breccia

Compiled from maps by
Eugene Callaghan, 1939



BLOCK DIAGRAM OF THE BLOSSOM MINE, SEARCHLIGHT DISTRICT, CLARK COUNTY, NEVADA

A few fragments show a little copper stain. The quartz is shattered, apparently by late post-mineral movements, so that much of it can be mined with a pick. Many of the stopes in the gently dipping vein are 4 to 5 feet wide, but vein matter remaining in pillars is mostly between 1 and 2 feet wide. The ore body at the west end of level 2 is 4 feet wide between walls, but ore is restricted to lenses within this zone. On level 3 the vein fans out in a group of thin quartz seams without a definite wall.

A 120-foot inclined shaft on the top of the hill northwest of the main shaft follows a fracture containing about 6 inches of gouge and a little quartz. The workings on the flat ore body are 28 feet below the collar of this shaft.

Blossom Sampling

Below are the results of sampling at the Blossom:

Spectrograph

1.	Aluminum	2.50 %
2.	Calcium	1.50
3.	Chromium	0.01
4.	Iron	5.50
5.	Lead	0.80
6.	Magnesium	0.50
7.	Potassium	0.04
8.	Sodium	0.90
9.	Strontium	0.20

Wet Chemical

1.	Iron	4.00 %
2.	Gold	
3.	Silver	Tr
4.	Platinum	Tr
5.	Palladium	Tr

Fire Assay

1.	Iron	5.00 %
2.	Gold	3.00 t.oz./ton
3.	Silver	0.76 t.oz./ton
4.	Platinum	0.08 t.oz./ton
5.	Palladium	Tr

Following are a summary of recent Blossom sampling:

<u>Claim/location</u>	<u>Average Gold Assay (t.oz./ton)</u>				<u>Number of samples</u>
	<u>Fire</u>	<u>Wet</u>	<u>Cyanide</u>	<u>Amalgam</u>	
Blossom, 1st level	1.200	1.215	1.067	1.187	15
Blossom, dump	.375	.400	.380	.400	10
Blossom, cut	.550	.580	.520	.585	10
Red Bird, pit	.360	.380	.352	.374	5
Pompeii, mill site	.117	.150	.167	.152	6
Pompeii, cut	.200	.240	.200	.230	5
Coyote, cut	.333	.333	.315	.320	6
Coyote, dump	.250	.260	.270	.290	5
American Belle, pit	.125	.225	.175	.200	4
Independence, dump	.500	.504	.400	.460	4
New Diamond, cut	.160	.200	.170	.190	5
Uncle Sam, dump	.125	.188	.163	.188	<u>4</u>
					80

Pediment

Following is information on another group of claims near Searchlight:

The attached geologic sketch map shows the location of the mineral claims, the location of the veins in the district and the general geologic setting. The geological basis for the location of the mineral claims follows:

1. Favorable E-W trending productive gold veins west of the quartz monzonite stock and along its entire west side.

2. Formerly productive veins lie at the north end of the stock and extend well east of the western contact.

3. By far the most productive Au-Cu veins lie at the south end of the stock just west of the newly claimed area. These veins include the Duplex and the Quartette.

4. The area of the new claims is almost totally gravel covered. The thickness of the gravel is unknown, but apparently is not great.

5. The contact of the quartz monzonite lies just north of the claims, based on our magnetic traverses results. All veins to date have been mined in the country rock near the contact of the quartz monzonite, but not within it.

6. Two low level, but distinct, heavy metal geochemical anomalies were outlined by our geochemical surveys a few years ago. The gold in the district is known to be associated with heavy metals--copper, lead and zinc.

7. Minor discovery work drilling and sampling in the gravels show patterns of copper-lead-zinc suggestive of a nearby source.

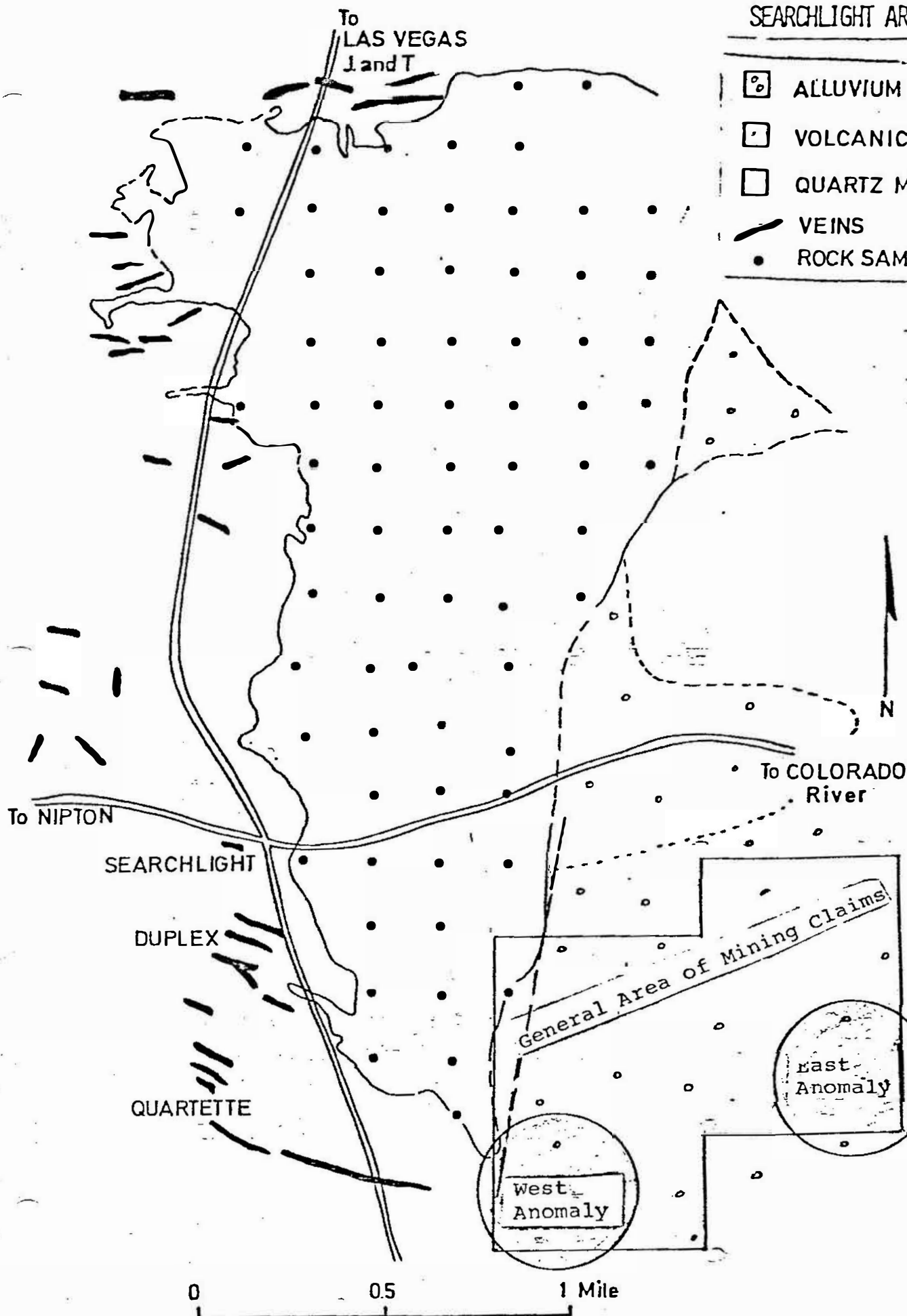
8. Gold colors have been observed in at least one discovery hole and on property east of our claims.

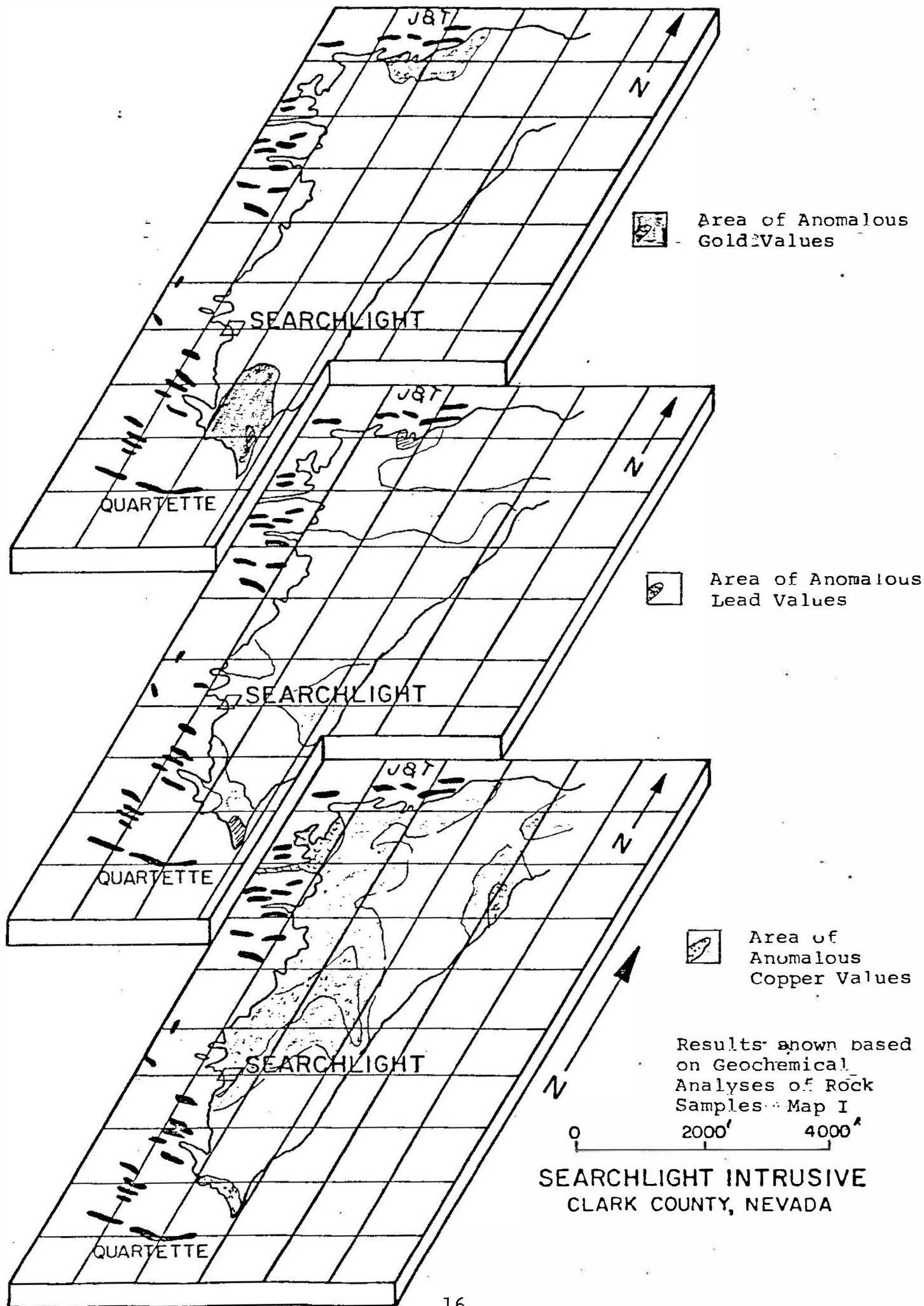
9. Results of a detailed scientific study of the intrusive body (note samples collected) suggest that the trace element heavy metal anomalies within the stock are spatially related to productive vein zones in the nearby country rock. A good trace element anomaly is present in the southernmost samples of the stock.

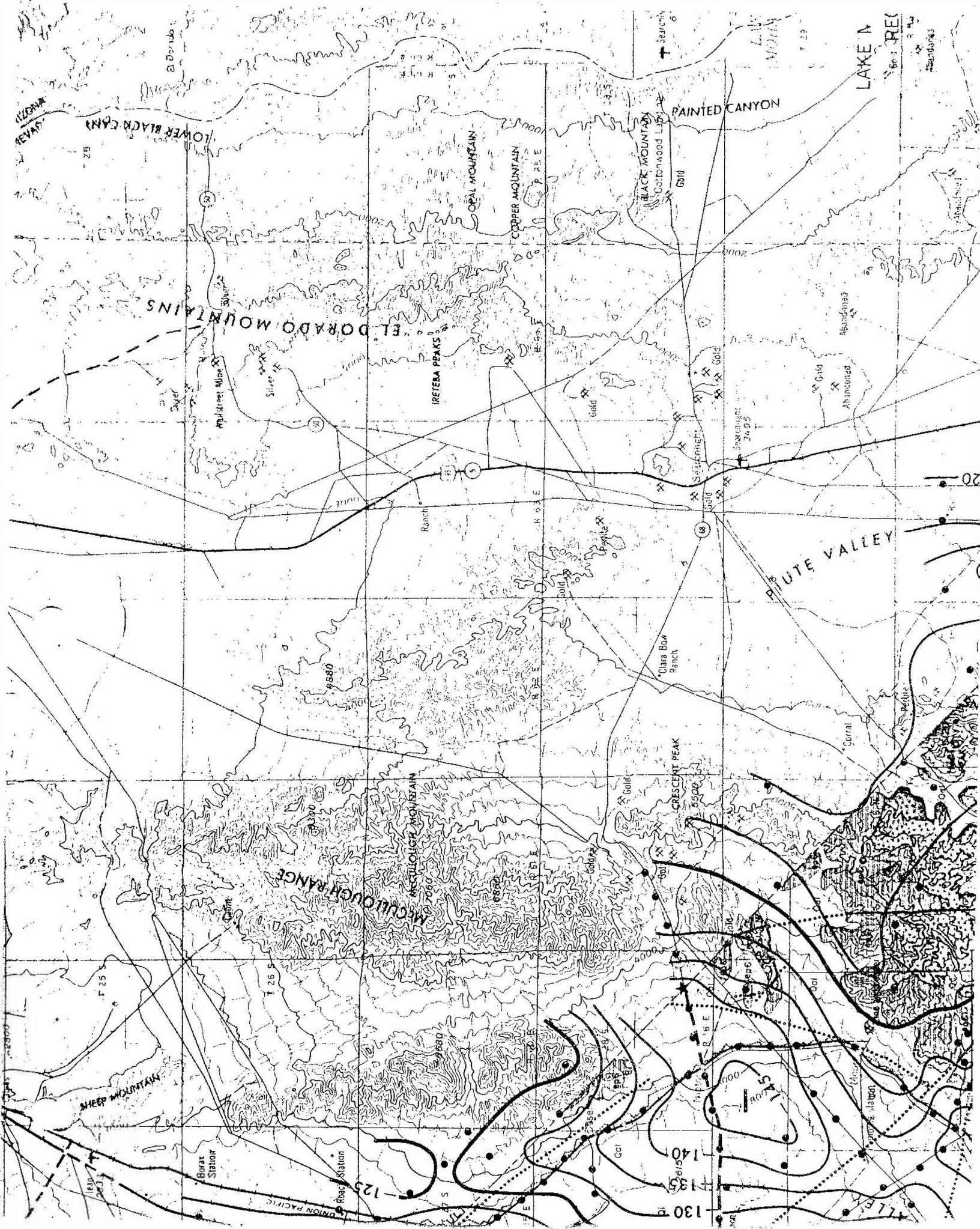
10. The claim area selected is most favorable for possible placer deposits. Most of the veins of the district occur in pediment areas and gold placers are unknown.

Based on the above observations we believe the mineral claims offer an excellent potential for hidden veins of good gold content in the country rock south of the contact of the stock. Placer gold is also a strong possibility. If the recognized zoning in the Searchlight district holds, the potential veins should carry good gold content and recoverable quantities of copper and possibly lead. Further, if the habit of the district holds, the vein or veins should dip moderately south. This suggests that exploration holes into the bedrock should be vertical, or preferably, inclined northward to cut such veins. Possibly a shaft to bedrock and a drill hole station at that level would give the best results. See the attached sketch.

SEARCHLIGHT AREA, NEVADA







WESTLAND MINERALS EXPLORATION CO.

EXECUTIVE SUMMARY

Westland Minerals Exploration Co., a Colorado corporation, engages in the business of exploring for and mining commercial deposits of minerals; the emphasis being on precious metals and subordinate base metals, but with professional attention to such other metals and non-metallic minerals as are encountered. In these endeavors, the Company explores for previously undiscovered deposits of minerals, reviews new mineral discoveries by third parties, and reviews old mining properties in selected mining districts which may in some instances still hold economic reserves of ore passed over or unrecognized by previous operators.

The Company's management team includes both mineral exploration Geologists and Mining Engineers, supported by technical and administrative employees and contracted services. Warren H. Hinks, Jr. is Westland's President and Chief Executive Officer. James A. Briscoe is Executive Vice-President and Manager of Exploration. Richard F. Hewlett is a Vice-President and Steve A. Shennum is Westland's Secretary-Treasurer. Each of these officers is also a Director of Westland. Michael Cimba, Jr. and James M. Hart, Jr. serve as additional Directors.

Mr. Hinks, age 59, graduated from Pennsylvania State University in 1949 with a degree in Mining Engineering. Since that time, he has engaged in the mining business as an employee, consultant or principal in mining operations, primarily for coal, but recently his activities have been focused almost entirely on precious metals exploration and mining opportunities in the Western U.S. He is, in addition to serving as President and a Director of Westland, a part owner and Secretary-Treasurer of Associated Drilling, Inc. and Harmony Mining Company (both underground, producing, coal mining operations) and a Vice-President and part owner of Mining Analytics Corporation, a consulting firm for surface mining and construction. Mr. Hinks is married and resides in Johnstown, Pennsylvania.

James A. Briscoe is a Registered Professional Geologist (Arizona and California) who has resided in Tucson, Arizona most of his life. He received both a Bachelor of Science degree (1964) and a Master of Science degree (1967) in Geology from the University of Arizona at Tucson, is 40 years of age, and single. Since his first job after graduation (ASARCO, 1965-1969) and to the present time, Mr. Briscoe has been involved, as an employee, consultant, or as a principal, exclusively in geology and exploration work in the field of metals and other minerals of the types sought by Westland, and he has an impressive record of accomplishments. As Executive Vice-President and Manager of Exploration for Westland, he directs the research and exploration activities of the Company. In addition to his role in Westland, he is also the owner of James A. Briscoe & Associates, a mineral exploration consulting firm which provides Westland with some ongoing technical personnel services as well as providing such services for others on a limited basis.

Richard F. Hewlett, Vice-President of Westland, received a Bachelor of Science degree in Chemical Engineering in 1957 from the Iowa State University and a Master of Science degree in Mining Engineering from the University of Arizona in 1960. In 1967 he completed the course and dissertation work required for Doctoral degrees in Mining Engineering and Geological Engineering, undertaken while he was on the faculties of the University of Arizona and the Colorado School of Mines. Throughout his career he has been an employee, consultant, or principal in mineral exploration, mining, metallurgical work or related fields. In his capacity as Vice-President of Westland, Mr. Hewlett is primarily involved in project development and acquisition activities, as well as contributing to the technical evaluation process. Mr. Hewlett is 47 years of age, married, and presently resides in Las Vegas, Nevada.

Steve A. Shennum (33), Westland's Secretary-Treasurer, attended West Texas State University and the University of Texas at Arlington through May, 1971, majoring in Accounting. Prior to his entry into the minerals field in 1975, he worked as an

accountant and tax preparer for firms in the manufacturing and real estate businesses. In his seven years' full-time involvement in the minerals business, he has been responsible primarily in accounting for and reporting on multiple mineral ventures, and preparation of documentation for mineral financing and acquisition agreements, subleases and sales of mining properties, and related matters. As well, Mr. Shennum has managed or consulted on programs for the acquisition of barite, precious metals, coal, and sand and gravel. He is President of District Service & Investment Company, a mineral consulting firm based in Amarillo, Texas, as well as being Secretary-Treasurer of Westland. Mr. Shennum is married and has two children.

Director Michael Cimba, Jr., graduated from the University of Pittsburgh in 1950 with a Bachelor of Science degree in Mining Engineering. Since that time he has been involved full-time in the mining business as an employee, consultant, or principal. He is President of Associated Drilling, Inc. and Harmony Mining Company (companies actively mining coal in Pennsylvania) and is Secretary-Treasurer of Mining Analytics Corporation, a surface mining consulting firm. Mr. Cimba is 56 years of age, married, and resides in Johnstown, Pennsylvania.

Westland Director, James M. Hart, Jr., is President of Mining Analytics Corporation. Mr. Hart, age 53, graduated from Fordham University School of Business (Management) and since that time has been involved in coal mining, development and production of stone aggregate properties, and heavy construction projects for highways, bridges, and large dams. Recently, he has devoted much of his working time to the evaluation of precious metals projects. Mr. Hart contributes significantly to Westland's ability to prepare mining feasibility studies. Mr. Hart is married, has seven children, and resides in Stoneboro, Pennsylvania.

Westland employs four full-time experienced field crew members and utilizes part-time administrative and secretarial services through the offices of Mr. Briscoe, Mr. Shennum, and Associated Drilling, Inc.

Briscoe & Associates, referred to earlier, employs one full-time geologist and landman, Thomas E. Waldrip, a seven-year employee of Mr. Briscoe, and other technical personnel (including a geologic librarian and a draftsman) and a full-time Office Manager, Mardee A. Stewart. This Tucson-based firm has on hand an estimated 8,000 files on various mines and mineral properties in the Western U.S. as well as an extensive geologic library, all of which is available to Westland.

The Board of Directors is establishing a Technical Review Committee consisting of at least four outside consultants with long-established expertise in the fields of mining exploration and geology, metallurgy, and mining engineering, in order to supplement the planning and decision-making process with respect to difficult technical issues and to provide further guidance to the Company. The Committee will meet at least quarterly to review projects which management places in the Committee's agenda and to make recommendations to the Board. In addition to the regular meetings, each of the members of the Committee may be called upon from time to time to perform consulting work as needed.