1200 0004

STOREY GENERAL

[redacted]

ITEM 11

GEOLOGY AND MINERAL POTENTIAL OF THE **BRUNSWICK TREND** STOREY COUNTY, NEVADA

for

MIRAMAR MINING CORPORATION
213 West First Street
North Vancouver, B.C.
V7M 1B3 Canada
(604) 985-2572

by

Chester E. Nichols, PhD
680 Greenbrae Drive, Suite 290
Sparks, NV 89431
(702) 331-4223

January 1991
Revised April 1991

EXECUTIVE SUMMARY

This report summarizes the first work by Miramar on the Brunswick trend, the unpublished reports available to date, and some of the key literature. The objective of the project is to find surface-mineable ore for gold and silver. Depending on the tonnage and grade, it would be haulable to Miramar's permitted and operating leach site at the Flowery mine, or a new site could be established on the trend itself.

The Brunswick lode trends northward about 1.5 miles southeast of Virginia City in Storey County, Nevada. The area of this report is bisected by the famous Sutro Tunnel, which drained the Comstock lode southeastward under Flowery Ridge into the Carson River valley.

The Brunswick is a closely-related sister to the Comstock lode which was the first great silver producer in Nevada, the place square set timbering was developed to mine large stopes in very heavy ground, and the district for which the current U.S. mining laws of 1866 and 1872 were established.

The epithermal veins of the Comstock district are dominated by quartz and calcite in the major east-dipping normal faults. The wall rocks are altered to clay, especially in the hanging wall, and ore may occur in the main vein filling, the clays, and vein stockworks of the wall rocks. The host rocks are mainly Miocene andesite flows, mostly of the Alta Formation. Temperatures established from fluid inclusions and oxygen isotope measurements suggest heat centers in the Comstock lode, the Brunswick lode, and the Flowery lode.

The Brunswick lode is very similar to the Comstock lode in structure, host rock, alteration, and mineralization. Previous mining in the Brunswick trend was from the surface down and only in the highest grade material, indicating a potential for establishing open pit reserves similar to those which were mined along the Comstock fault since 1920. From the Flowery lode to the Comstock the ratio of silver to gold is typically in the range of 10:1 to 40:1. The grade of most of the major underground orebodies varied from approximately 0.5 to 2.0 opt Au.

Based on surface and underground sampling, the potential to find surface-mineable ore is greatest over the Occidental stopes, where the grade might be in the range of 0.05 to 0.08 opt equivalent gold, over a strike length of 1,200 feet and a width 30 to 50 feet to a depth of several hundred feet. In guessing what the volume of the ore might be, the length might be discounted 500 feet for waste. My impression based on the Gower and Northcote report and conversations with Don Hudson is that the near-surface ore potential of the Occidental property south of the Occidental grade is greater than for the Occidental north of the highway.

Initial exploration is recommended for near-surface ore which is more quickly and less expensively found than any bonanzas that might remain. As we become more familiar with the Brunswick and establish an operational status, exploration for bonanzas will probably become more feasible.

This revision of the Brunswick trend report is mainly to incorporate additional geochemical data for the Occidental property and to summarize the contents of the data package from Rea Gold Corporation which has added new drilling targets for near-surface ore at the Brunswick mine, the North Brunswick mine, and the Shannon prospect.

TABLE OF CONTENTS

LIST OF ILLUSTRATIONS

LIST OF MAPS

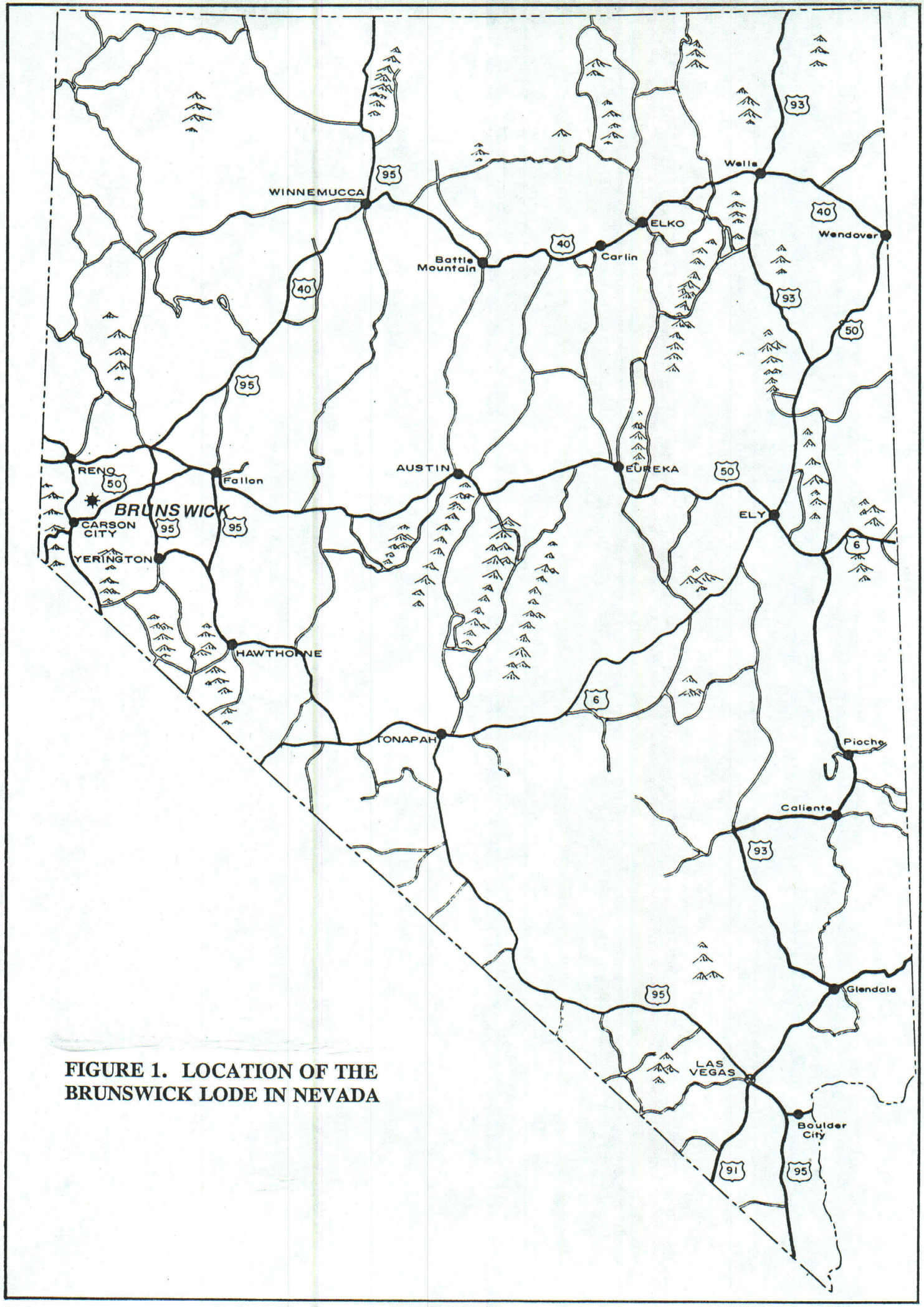


FIGURE 1. LOCATION OF THE BRUNSWICK LODE IN NEVADA

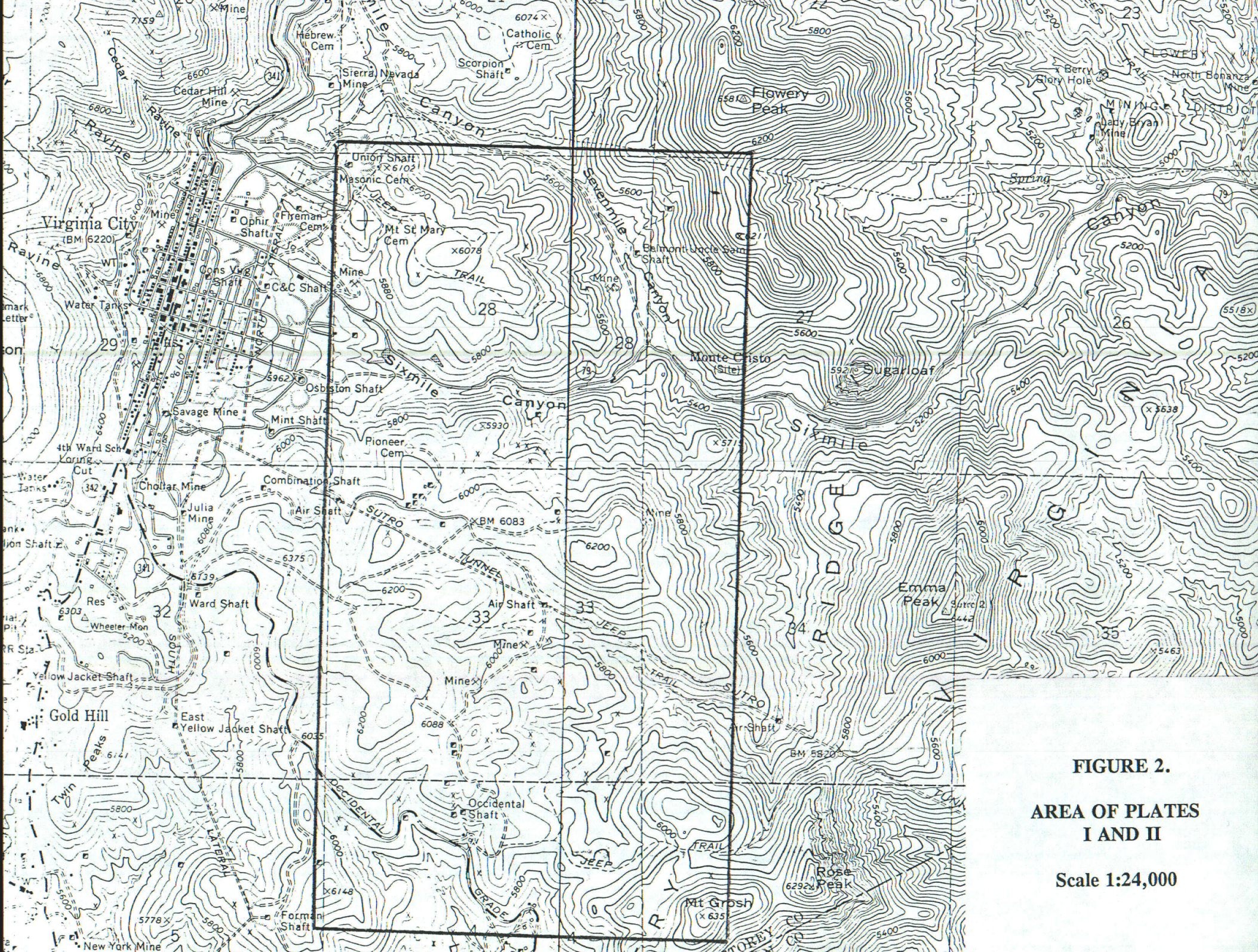


FIGURE 2.

AREA OF PLATES I AND II

Scale 1:24,000

1. PURPOSE AND SCOPE

The purpose of this project as originally conceived was to map the veins of the Occidental/Brunswick Lode for a preliminary identification of areas that might be favorable for the production of precious metals by open pit methods. The northern end of the assigned area is less than two miles up the Six Mile Canyon road from American Eagle's Flowery mine.

After the project was begun, it was expanded to allow time for some geologic mapping, including the alteration patterns, the location of 22 claims which cover the available ground in the trend which was mostly in fractions, a modest amount of literature study, and a more comprehensive report.

2. INTRODUCTION

The Brunswick area is located in western Nevada, about 15 miles by paved road northeast of Carson City. From Reno it is 10 miles south on US 395 to State Route 341, which turns southeast over the Virginia Range through Virginia City (Fig. 1). The Brunswick lode lies 1.5 miles southeast of Virginia City by various access roads (Fig. 2). Driving time from Reno is about one hour.

The Brunswick lode lies in the northeast-trending Virginia Range, between Mt. Davidson on the western edge of Virginia City and Flowery Ridge, west of the broad Carson's River valley. The topography is hilly, ranging in elevation from roughly 5,400 feet at the Monte Cristo site in Sixmile Canyon to 6,200 feet just north of the Sutro tunnel in the middle of the area of this report. Snowfall in the winter accumulates to a few feet deep and supports a sparse population of pinion pine, now rather patchy after destruction by fire.

The terms "Brunswick" and "Occidental" have been used interchangeably for the easternmost of the major lodes in the Virginia City area. I will follow the usage of Rea Gold Corporation and refer to the lode north of the south boundary of the Sutro Tunnel Grant as the Brunswick, and south of that line, which is also the north end of the North Occidental patent (Plate II), as the Occidental.

This report covers the area of the Occidental and Brunswick faults north of the Occidental Grade, a paved road from Virginia City southeast to Dayton. I will also use the term "Brunswick trend" to refer to the area of this study which includes the adjacent subparallel faults to the east and west (Plate I). The long axis of the Comstock district is north-south. In the east-west direction it extends from Virginia City to the Flowery mine (Fig. 3). The Brunswick trend lies west of the Flowery lode in the Silver Star Mining District, which may be considered a subdistrict of the Comstock district.

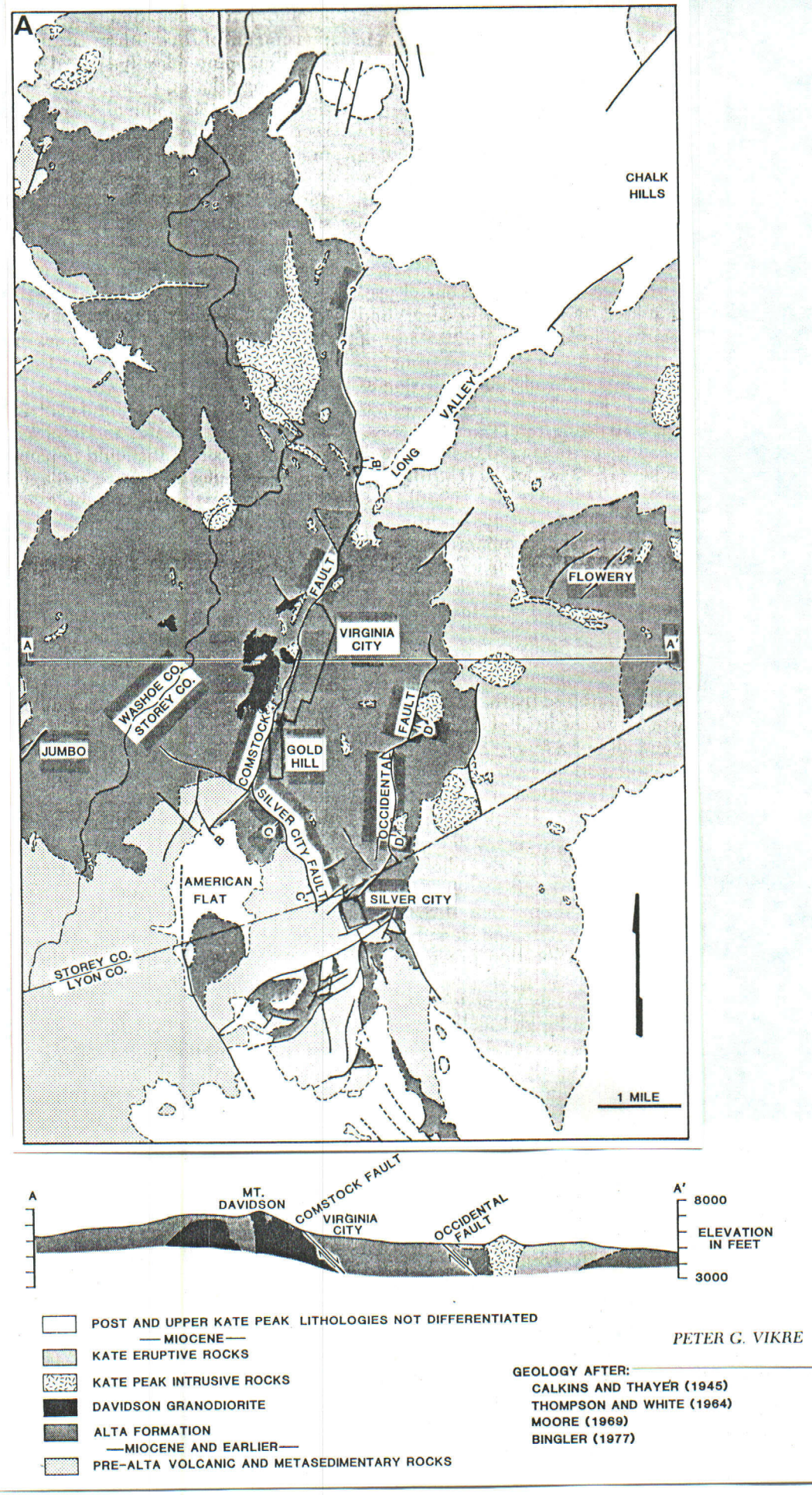


FIGURE 3. GENERALIZED GEOLOGIC MAP OF THE COMSTOCK DISTRICT.

This revision is still preliminary in nature, based on determining the land status of all the ground in the trend, field mapping (Plate I), and review of reports. Fractions available in the trend were located as the Robin claims for American Eagle Resources, Inc. on behalf of Miramar Mining Corporation (Plate II).

3. PREVIOUS WORK

The literature survey is incomplete at this stage. Rather than attempt to summarize it in this section, various references will be mentioned as needed. There is no key reference which gives a comprehensive treatment for the Brunswick trend.

Bonham (1969) gives a brief but excellent summary of the geology of the Comstock district, including the Brunswick trend. Vikre (1989) published a massive paper on the Comstock lode based mostly on fluid inclusion data.

Before the revision of this report, the major private reports available dealt with the north and south ends of the trend. The Monte Cristo area to the north is evaluated in subsection 9.1. To the south, a major property appraisal was performed by Northcoat and Gower (1984) for the Big Comstock property. This is a group of lode and patented claims, which lie north and south across the Occidental Grade, was introduced to Miramar Mining by Michael Skopos. The northern half of this block is in the area assigned for this report, but the bulk of the Northcoat and Gower work was on the southern half of the property.

The most serious exploration work on the trend was conducted by Rea Gold Corporation. Their interest was centered on the valley where the Potosi-Chollar patent is located (Plate II), hereinafter referred to as the valley of Potosi-Chollar.

Before obtaining the data package, I talked to Jim Marin who worked on the project and is now with Rea Petrol Energy, Inc. in Etna, California. Rea Gold worked on the Brunswick from the Potosi property about 4000 feet north to the Monte Cristo block (Plate II), and some 2000 feet in width. Marin staked the RGC group of claims that are now defunct and laid out a 100 by 100-foot grid of metal-tagged laths that is still useful. The baselines start at the No. 3 Air Shaft (Plate I) of the Sutro Tunnel which is collared on the Brunswick fault.

Rea Gold's first work consisted of some spot sampling along the lode which yielded high values and got them excited. More followup sampling was disappointing and indicated that a proper geochemical program would be required to identify target areas. At this point the whole area of interest was sampled at a 100 by 100-foot spacing using B horizon soils. Anomalies were followed up by a VLF survey and fill-in geochemical sampling at a 50-foot spacing. The multi-element results were contoured, and the geology was mapped.

The complete data package for the Rea Gold program was obtained in April 1991. It consisted of four reports and apparently all copies of the maps used in the program from field maps to mylars.

Chronologically, the first report was by Stanley Hodgson (1983) of Reno, Nevada, a

mining engineer, who summarized the historic importance of the Comstock lode and reviewed the regional and district geology. In the last three pages he presents his description of and recommendations for the project. Included are the assays for 8 samples which, with the exception of one from the vein, were taken along the Brunswick lode in the host rocks. "The results were better than anticipated" and Hodgson (1983, p. 14) judged that there was a potential in addition to the width of the vein itself to find ore which "should average in excess of 0.10 opt gold and 3 opt silver at depths below the surface leached zone." He thought 50,000 to 200,000 tons of this near-surface ore would be readily established for shipment to the United Mining mill at American Flat south of Virginia City and recommended exploration on the 9 ERA and HOM claims.

Geologist J.D. Blanchflower of Kamloops, British Columbia dated his report just three weeks later than Hodgson and after a letter of intent to acquire the claims had been signed. He described the geologic setting and exploration potential of the property and recommended a two-staged program of exploration and drilling at an estimated cost of $326,500.

Included in Blanchflower's report are assays and descriptions of two samples taken on the surface near the stope of the Brunswick mine and a parallel vein in the footwall. These vein widths are 3 feet and 5.6 feet respectively, with gold assaying 0.656 and 0.066 opt. This suggests that further sampling and drilling might define a small open pit potential in this area of prominent vein outcrop and massive calcite deposition. Blanchflower (1983, p. 14) thought than "the true width of ... [the mineralized] zone may be approximately 100 feet."

The most comprehensive of the four reports is by geologist D.W. Charlton (1983, 60p) whose tome and plates indicate an incredible amount of work for one month on the property and one month of report preparation. In addition to reconnaissance-mapping the geology and alteration of the property block, he mapped the subsurface geology and channel-sampled the walls of the Brunswick and North Brunswick mines. His orientation was toward finding underground ore bodies, as is evident, for example, in his section on epithermal modeling.

Charlton (1983, p.15) identifies the North Brunswick mine as having the most "immediately recognizable potential for future production" and this resource may extend to the surface. He notes that the mine is different from the Brunswick and Occidental in that the ratio of gold to silver is higher and the mineralization is associated with strong silicification and virtually no calcite (p. 38). He felt that the North Brunswick mineralization may have been shallower than the Brunswick and Occidental to the south, and that more calcic ore might be found below.

"Gold is chiefly carried in the main frothy quartz vein, silicified rocks in the vein footwall, and clay $\pm$ silica-altered hydrothermal/tectonic breccias" (Charlton, 1983, p.17.). He estimated that "Ore-shoots contain roughly 6,000 - 10,000 tons of >0.1 opt Au and >0.5 opt Ag" on the North Brunswick property and felt that "many untested good exploration targets exist" (p. 38) on the property block as a whole.

From the standpoint of mineable widths for open pit operations, he noted that "among strongest mineralization at the property are disseminations in silicified footwalls of braded

faults;" (p. 27) and "in stockworks ore may regularly extend from wall to wall" (p. 33).

J.D. Blanchflower, wrote the "Summary Report of the Brunswick Property" in May 1985. Although it covered a much larger program than that of Charlton, it is much briefer and sketchier in describing results.

All the fieldwork was completed in 1984. It consisted of establishing 21.9 line-miles of control grid, collecting 1511 geochemical samples, running a VLF-EM survey on lines generally 100 feet apart, remapping the geology of the property at 1" = 100', sampling and lithologically logging trenches and road cuts, and diamond drilling 1712 feet of HQ hole.

Blanchflower's geologic map is substantially different from Charlton's, and neither bears much resemblance to Hudson's. Reconciling the three in the field could be quite an exercise, even for a limited area like the Shannon target because not only are the faults in very different places, but the geologic units are not the same.

The drilling program only tested the near-surface potential of the Brunswick lode from the Potosi patent north to the Brunswick mine. Four holes intersected the vein at depths of about 140, 240, 240 and 320 feet. The best intercept was in DDH 84-1 which struck .023 and .022 opt Au between 265 - 268 and 315 - 320 feet near the Brunswick mine. Of 27 channel samples taken underground only 4 were $>$.02 opt Au and 2 were $>$.03 opt. The results were disappointing, and coupled with serious land problems, Blanchflower recommended terminating the project.

4. LAND STATUS

Indexes of the Bureau of Land Management (BLM) were checked for claims apparently valid and all were plotted on Plate II. Storey County records were checked for the filing of 1990 assessment work which is not available at the BLM, and discrepancies found between the records of these two offices were worked out.

A number of available fractions became apparent and these were immediately located as the Robin claims (Plate II). Mineral rights for much of the balance of the trend has been, or is being, acquired by Miramar.

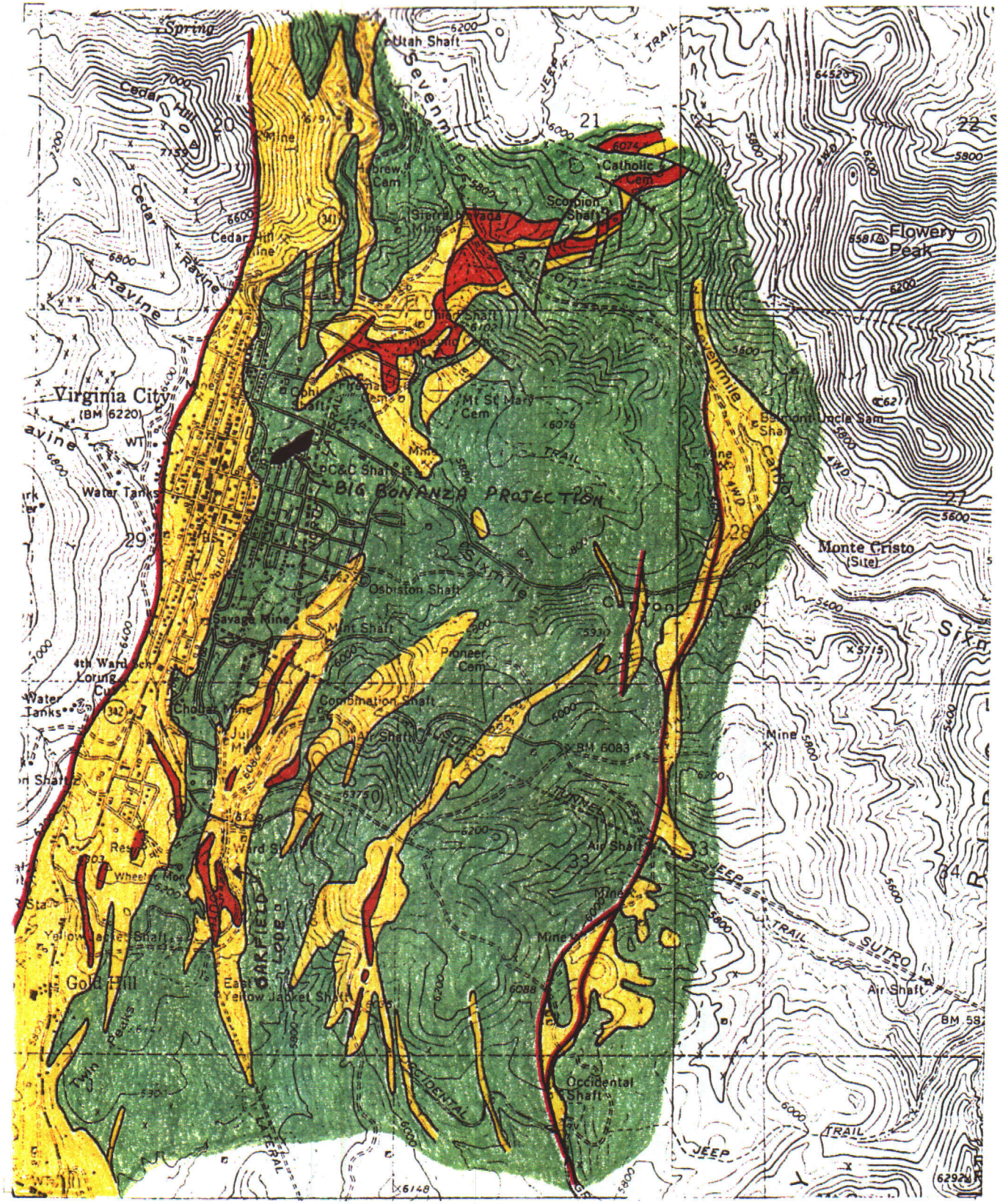


FIGURE 4. HANGING WALL ALTERATION PATTERNS OF THE COMSTOCK DISTRICT.

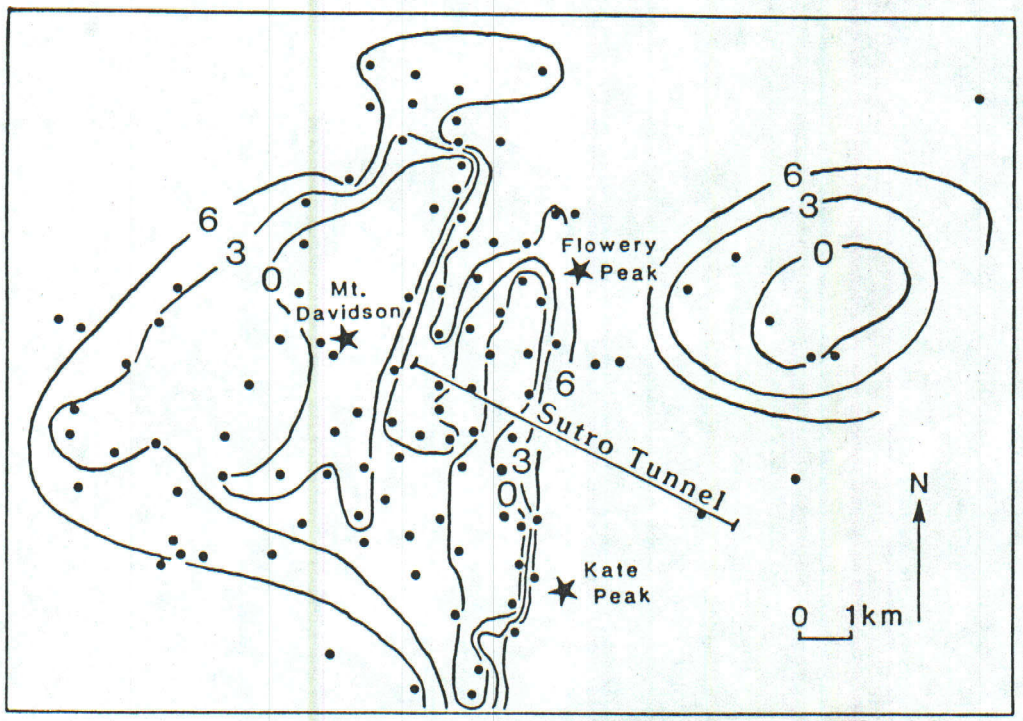


FIGURE 5. OXYGEN ISOTOPE MAP OF THE COMSTOCK DISTRICT.
Contour map of $\delta^{18}O$ values (dots) from intermediate composition volcanic rocks of the Comstock Lode mining district. Contour interval is 3 per mil. (Criss et al, 1989).

5. GEOLOGY

5.1 REGIONAL SETTING

The oldest rocks exposed in the Virginia City area are Jurassic and Cretaceous intrusives and extrusives ranging in composition from gabbro to granite (Hudson, 1986a). On this lies some Oligocene tuffs and a thick sequence of Miocene volcanics dominated by extrusives, but numerous related intrusives are recognized. Contacts are rotated westward by several east-dipping normal faults from the Comstock fault eastward to the Occidental/Brunswick fault.

Ore in the Comstock district, including the Flowery and Brunswick lodes, is hosted mainly by Miocene volcanics of the Alta Formation. The sequence is regionally propylitized to various mineral assemblages related to a long history of intrusives which extend well beyond the Comstock district as a whole. (Vikre, 1989, p. 1580).

Argillic alteration mainly of illite and kaolinite, (the yellow zones of Figure 4), surround silicic cores of epithermal quartz which mark the outcrop of the lodes. These crop out as bold elongate knobs stained by the weathering of pyrite. Laterally along the lode the fissure-type vein filling degenerates to silicified and argillized stockwork which is sometimes altered beyond recognition of the original host rock fabric to a soft quartz-bearing clay which also makes ore.

Criss, et al (1989, p. 13) was impressed by the pervasive nature of the alteration which crossed rock types. His oxygen isotope values (Fig. 5) indicate to me that there are at least three intensive heat centers in the Comstock district: one on the Comstock lode, one on the Flowery deposit, and one on the Brunswick trend. This conclusion is supported by Vikre (1989, Fig. 12). A number of intrusive plugs and dikes correlate with the Kate Peak Formation (Bonham, 1969, p. 105), suggesting several heat centers of slightly differing ages.

Vikre (1989, p. 1577-1578) summarizes literature on radiometric age dating which indicates that the mineralization in the Comstock district is at least partly of Kate Peak age. Hudson (pers. comm. Nov. 2, 1990) disputes the accuracy of the K-Ar dates, but Vikre believes the "Kate Peak rocks range from about 16 to 12 Ma" (million years ago). He concluded "that the Virginia Range has been a center of volcanism since 23 Ma, the onset of Tertiary volcanism. Coalescing deposition of eruptive rocks from numerous proximal vents apparently maintained a volcanic upland throughout the Miocene."

A good summary of the geologic setting may be found in Vikre (1989, p. 1575). Other prominent references not included in the literature review are Gianella (1936), Smith (1943), Calkins (1944), Stoddard and Carpenter (1950), Axelrod (1956), Thompson (1956), and Cornwall et al (1967).

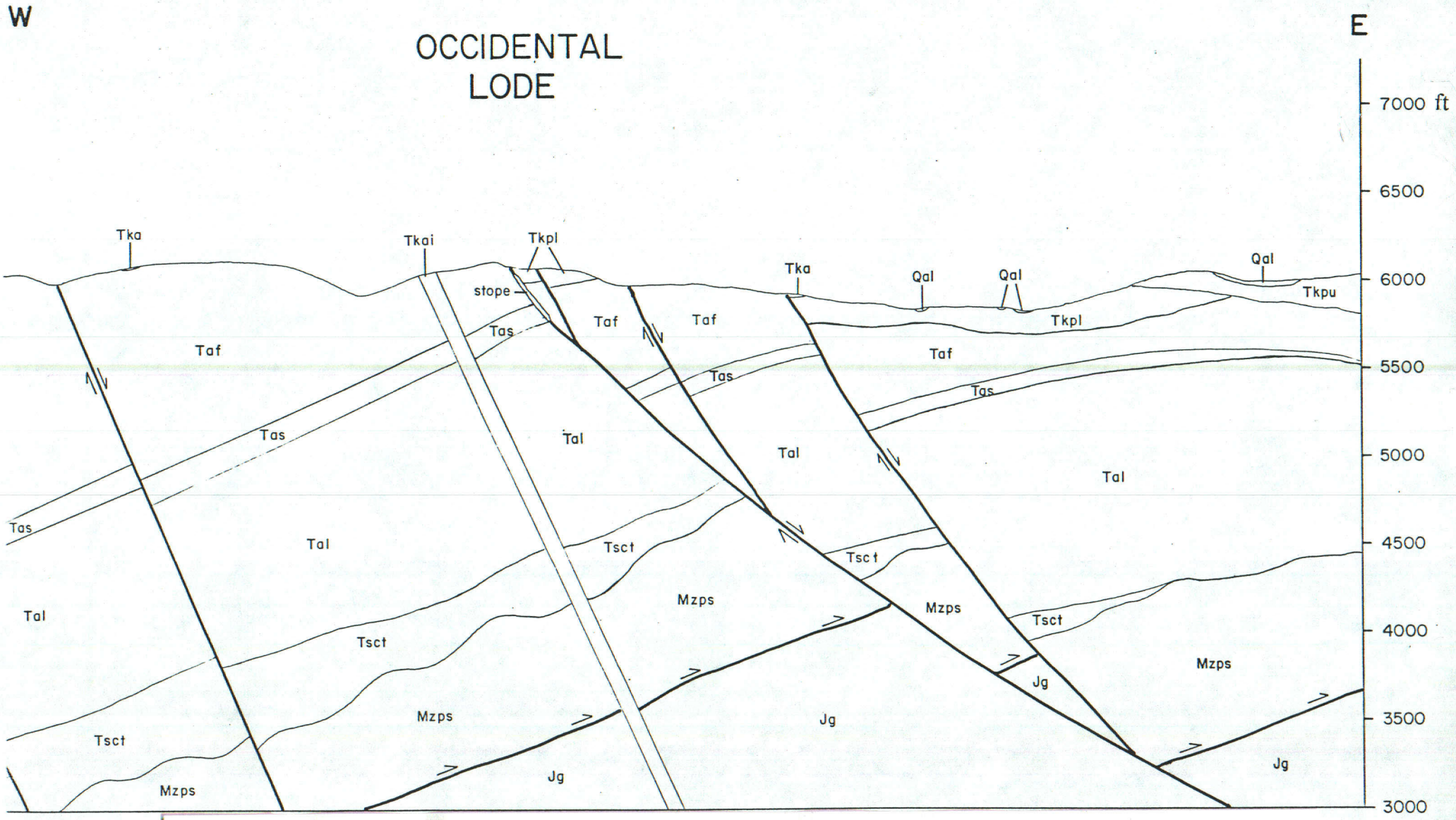


FIGURE 6. CROSS SECTION THROUGH THE OCCIDENTAL MINE. Section trends N 76 W through the middle the stopes north of the Occidental shaft. No vertical exaggeration. Qal = Alluvium, Tka = Knickerbocker andesite flow, Ktai = Knickerbocker intrusion, Tkpu = Kate Peak upper member flows, Tkpl = Kate Peak lower member flows, Taf = Alta Formation flow member, Tas = Alta Formation, Sutro member, Tal = Alta Formation lower member, (Hudson, 1986).

Figure 7. OCCIDENTAL VEIN LOOKING NORTH.
Sign marks the southern end of the main Occidental stope in a massive quart-calcite vein. The surface expression of the stope extends to the top of the hill which is just visible to the right of the pinyon pine. Stockwork to the left is in highly altered Alta Formation flows.

FIGURE 8. OCCIDENTAL VEIN LOOKING SOUTH.
Stope in the center of the quartz-calcite vein looking SSE from the middle of the main Occidental stope to the area where the first hanging wall split joins the Occidental fault at the Occidental shaft (Plate I).

Bonham (1969, p. 106) notes the similarity of the mineralogy in the Occidental lode to that of the Comstock lode and states that "Adulaira locally constitutes up to 15 percent of the vein matter." Both lodes are noted for quartz and calcite associated with the precious metals, have bold outcrops of hydrothermal quartz-alunite breccia at the surface, and the development of kaolinitic and illitic alteration laterally (Hudson, 1986a). Like the productive Silver City ores adjacent to the south (Bonhan, 1969, p. 106), the Occidental/Brunswick lode apparently has less sphalerite and galena than the Comstock. For a good summary of the geology of the Occidental lode south of the Occidental Grade, the reader is referred to Gower and Northcoat (1984).

5.2 BRUNSWICK TREND

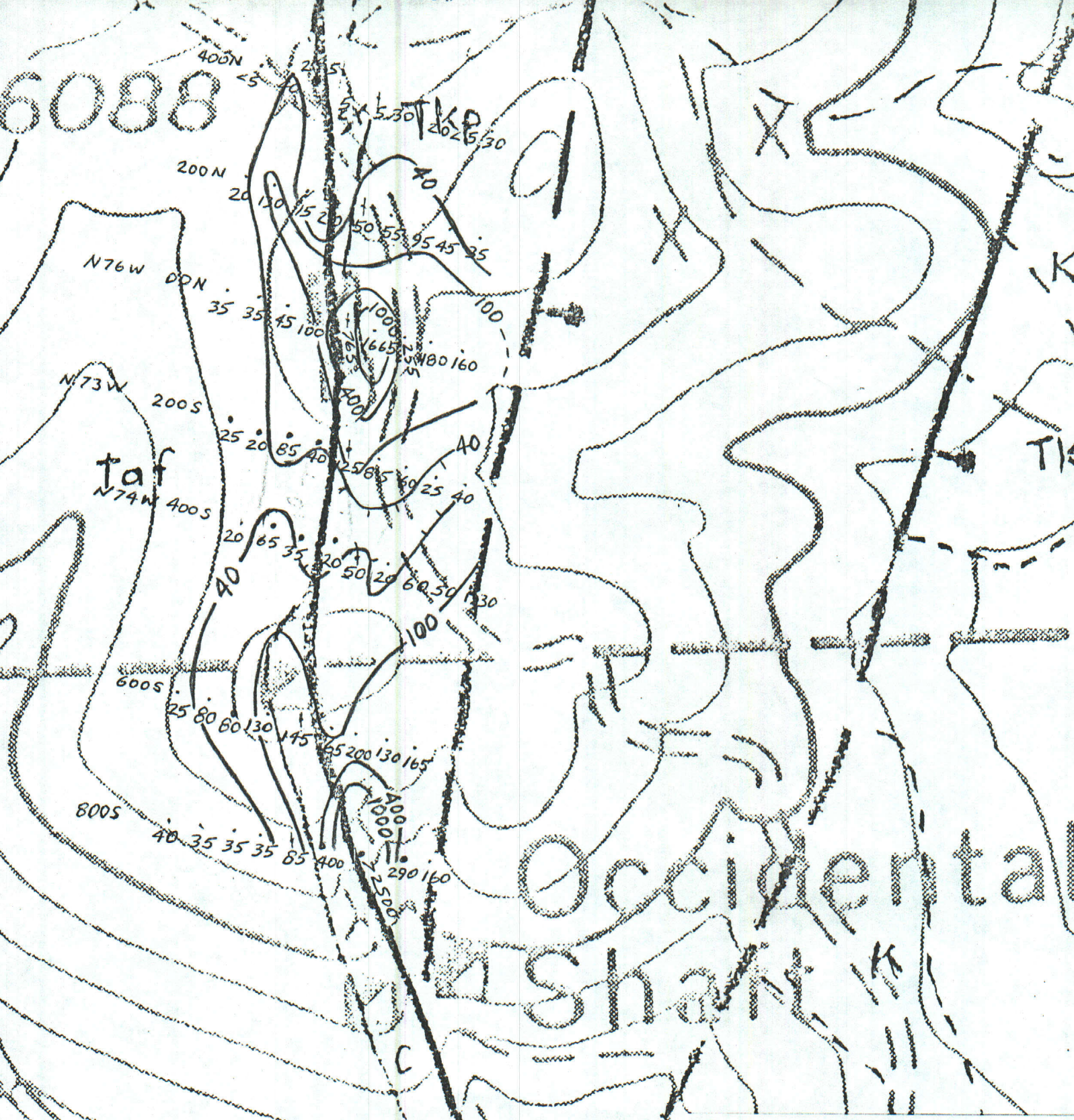
The Alta flows, which dominate the surface geology of the Brunswick trend (Plate I), are overlain in slight unconformity by the Kate Peak Formation (Vikre, 1989, p. 1577-1578). He also suggests that Kate Peak volcanism ended with upland rhyolitic eruptions which were coeval with the Comstock mineralization.

Hudson (1986a) disagrees with Calkins and Thayer (1945) who show a northeast-trending crossfault offsetting the Brunswick fault in the valley of Potosi-Chollar. Based on the offset of the mineralization exposed by bulldozer cuts in the topographic saddle a few hundred feet north of the St. George incline, Plate I shows a cross-fault at this location.

An important hanging wall split of the Occidental fault branches to the northeast about 500 feet south of the Occidental shaft and possibly rejoins the Brunswick fault in the vicinity of the No. 3 Air Shaft on the Sutro Tunnel (Plate I). Figure 6 shows this split downthrown about 500 feet to the east compared with about 700 feet for the main fault, suggesting a potential second major access of mineralization.

The main ore shoots were at the north and south end of the westward bow in the Occidental/Brunswick fault north of the Occidental Grade (Plate I). In between, the mineralization is much weaker on the main fault. The altered area, which is some 3000 feet wide at this point, is centered on the hanging wall split and lies almost entirely east of the main fault (Calkins and Thayer, 1945; Hudson, 1986). Mapping for this project has not progressed to the eastern side of this area, but the additional extent is obvious when reviewed from the west toward the prospect pits in the valley (Plate I, southeast corner of section 33).

Looking northward up the hill from the Occidental Grade, the Occidental vein is a conspicuous ledge of calcite and quartz dipping 45 degrees to the east (Fig. 7). It is generally 10 to 20 feet thick and prominently slickensided (Fig. 8). The top of the hill is held up by a bold outcrop of hydrothermal quartz breccia very similar to that which Buchanan (pers. comm., 1989) maintains is invariably associated with the ore shoots of the Comstock lode. It is only fair to say, however, that ore has not been discovered below all the quartz-alunite breccias. Holabird (pers. comm. Jan. 9, 1990) notes the association of these same breccias with mineralization at the Flowery mine. Another mineral association with ore is fine-grained white adularia (locally up to 15%, Bonham, 1969, p. 106) which is found in the Comstock and in stockwork of the Occidental/Brunswick fault.


6088
400N
200N
N76W 00N
N73W 200S
N74W 400S
600S
800S
Taf
Tke
Occidental
Mt Shasta
C
FIGURE 9.
CONTOUR MAP OF GOLD (PPB)
IN OCCIDENTAL SOILS.
Field plotted
Estimated location
00 feet west
0 100 200 300 Feet

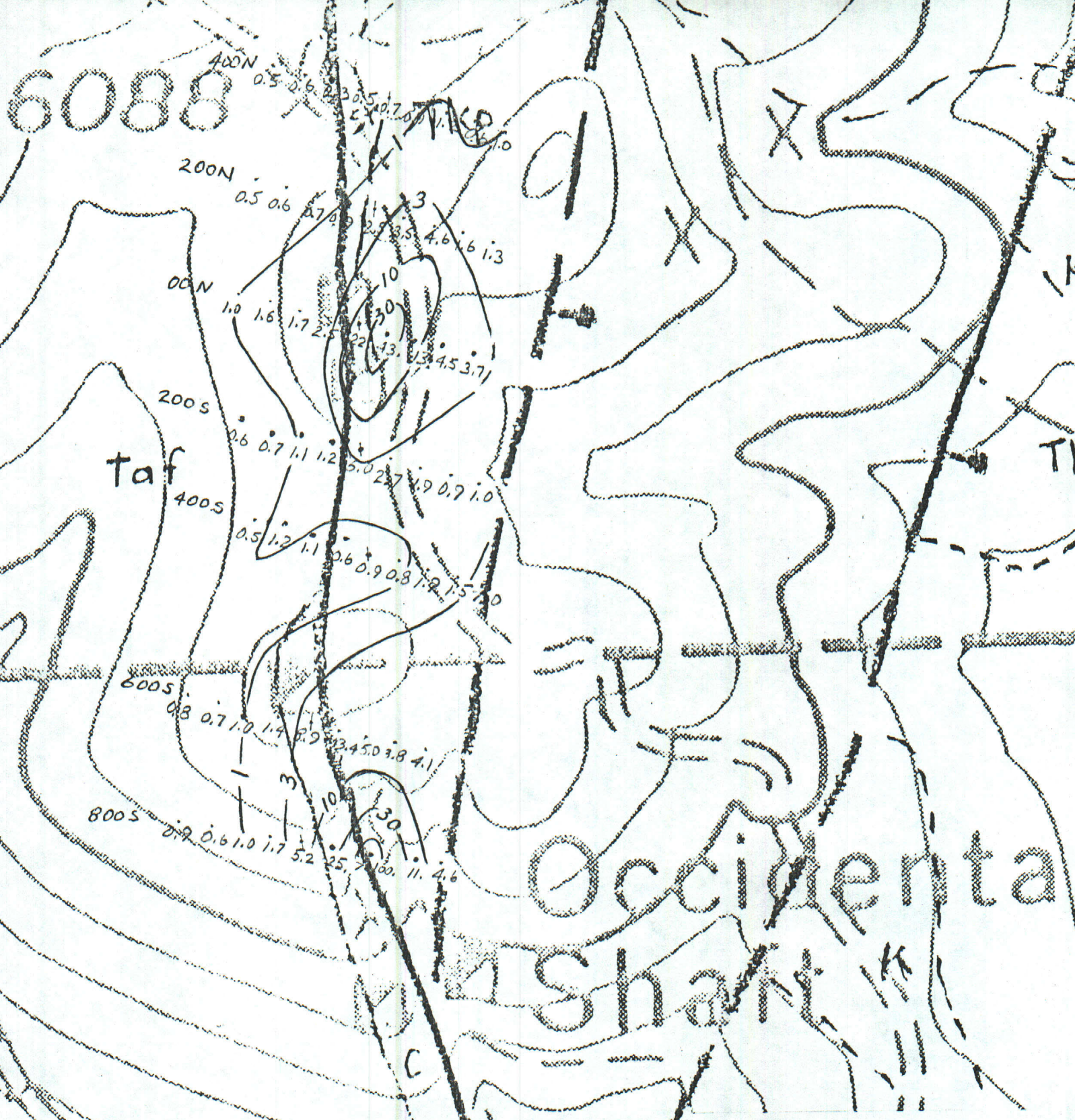


FIGURE 10.
CONTOUR MAP OF SILVER (PPM) IN OCCIDENTAL SOILS

- Field plotted
- Estimated location
- 00 feet west

0 100 200 300 Feet

insert figure 6

6. OCCIDENTAL GEOCHEMICAL SURVEY

A small geochemical survey of soils was conducted on the Occidental property by Fred Holabird of American Eagle, at a sample spacing of 50 feet on lines 200 feet apart. The grid was designed to cover 200 feet on either side of the Occidental lode, from the Occidental shaft to the north end of the North Occidental property, a distance of over 1200 feet. B-horizon soils were sampled at a depth of approximately six inches, except for a few places where the C horizon was reached at that depth.

Rocky Mountain Geochemical of Sparks, Nevada, assayed 63 samples by fire assay with atomic absorption finish during September 1990. Only three samples were below the 5 ppb detection limit for Au and the lowest Ag value was 0.3 ppm. Overall, the values were quite high, with most being anomalous. One sample above the range of reliability for the geochemical test was run by fire assay and determined to contain at 0.164 opt Au and 7.08 opt Ag. The 1665 ppb sample shown on Figure 9 near the St. George incline is 0.046 opt Au.

The high correlation between Au and Ag in these samples is apparent by the similarity of pattern in Figures 9 and 10. The Ag pattern is a little more regular than that of Au, and background values are obviously associated with the footwall for both elements. The highest numbers are centered on outcrops above the old stopes, clearly indicting the centers of the most obvious drill targets. Open contours to the south and east demonstrate that the survey needs to be extended.

These soil samples are most useful as an orientation survey to show what levels are significant in nearby untested ground. Areas to the east exceeding 100 ppb Au or 5 ppm Ag associated with normal faults and massive alteration should also receive serious consideration for drilling.

Subsequent to the above sampling, four more lines were added to the south (Plates III and IV). Values above 1000 ppb Au are closely associated with soils over the stoped area of the Occidental mine (Plate V). Where the vein thins to the north and south, the gold and silver drop off sharply. Both elements show the same pattern of bifurcation and truncation to the south (Plates III and IV).

The lateral pinch in the contours at line 68N may be due to sampling the upper C horizon on this line whereas all the other samples are from the B horizon. The purpose of the C-horizon samples was to obtain precious metal concentrations that might be more comparable to the rock below. Even though the pinch may be real, this survey and surface rock channel sampling by Rea do give some encouragement that there is additional mineable width in the wall rock stockwork and disseminations at the Occidental mine.

7. REA GOLD GEOCHEMICAL SURVEY

The Rea Gold program covered an area from the Potosi property to the North Brunswick mine, a distance of almost 5000 feet, and east-west a width of about 4000 feet. This was the area of the geophysical survey, the geological mapping, and the geochemical sampling.

The strongest and largest coincident gold and silver anomalies along the Brunswick fault are around the Brunswick and North Brunswick mines, the two major mines in the sampled area. A third anomaly in the area of the Shannon Claims (Plate II) lies in the southern corner of the Rea block. The precious metals values are equally spectacular and the size of the area is similar to that around the mines. The host rock is Alta formation as for the vast majority of historic production in the whole Comstock district, and the alteration pattern is very similar.

Briefly summarizing the results of the multielement geochemical survey, there is a modest lead anomaly peripheral to the gold anomaly in the Shannon target area. Elsewhere the highest values are single-sample anomalies and one-line anomalies that need verification. Copper is not associated with the known deposits along the Brunswick fault, but there is a good cooper anomaly on the hillside northeast of the Brunswick mine.

There is a weak zinc development associated with the Shannon anomaly but zinc is not associated with the Brunswick mine. A one-line zinc anomaly crosses the North Brunswick mine perpendicular to strike, but the best zinc anomaly is on the hillside about 1000 feet northeast of the Brunswick mine where there is large altered area. As this anomaly is coincident with the one mentioned above for copper, the area should be investigated further.

Possibly more significant than the heavy metal patterns is a good molybdenum anomaly on the North Brunswick and Shannon areas. Don Hudson (per. comm. Feb. 1991) feels that molybdenum is the most useful pathfinder in the district.

8. MODEL OF MINERALIZATION

8.1 STRUCTURE

The Silver City fault is a southeast branch of the Comstock fault, and the Occidental fault branches northward from the Silver City fault, parallel to the Comstock (Fig. 3). This whole circuit of faults from the north end of Virginia City to Silver City and north again was dotted with ore bodies. Most of the ore in the district was in stockwork systems, including zones completely altered to incompetent clays, and not in classic banded veins (Hudson, 1986b).

Most of the ore was associated with changes in strike or dip of a fault (Buchanan, 1988, p.5). Actually, these two features tend to occur together. An example is the westward bow of the Occidental fault north of the Occidental Grade (Plate I). The bow results in a decrease of the dip of the fault and the formation of a hanging wall split (Fig. 11). Significantly, the area

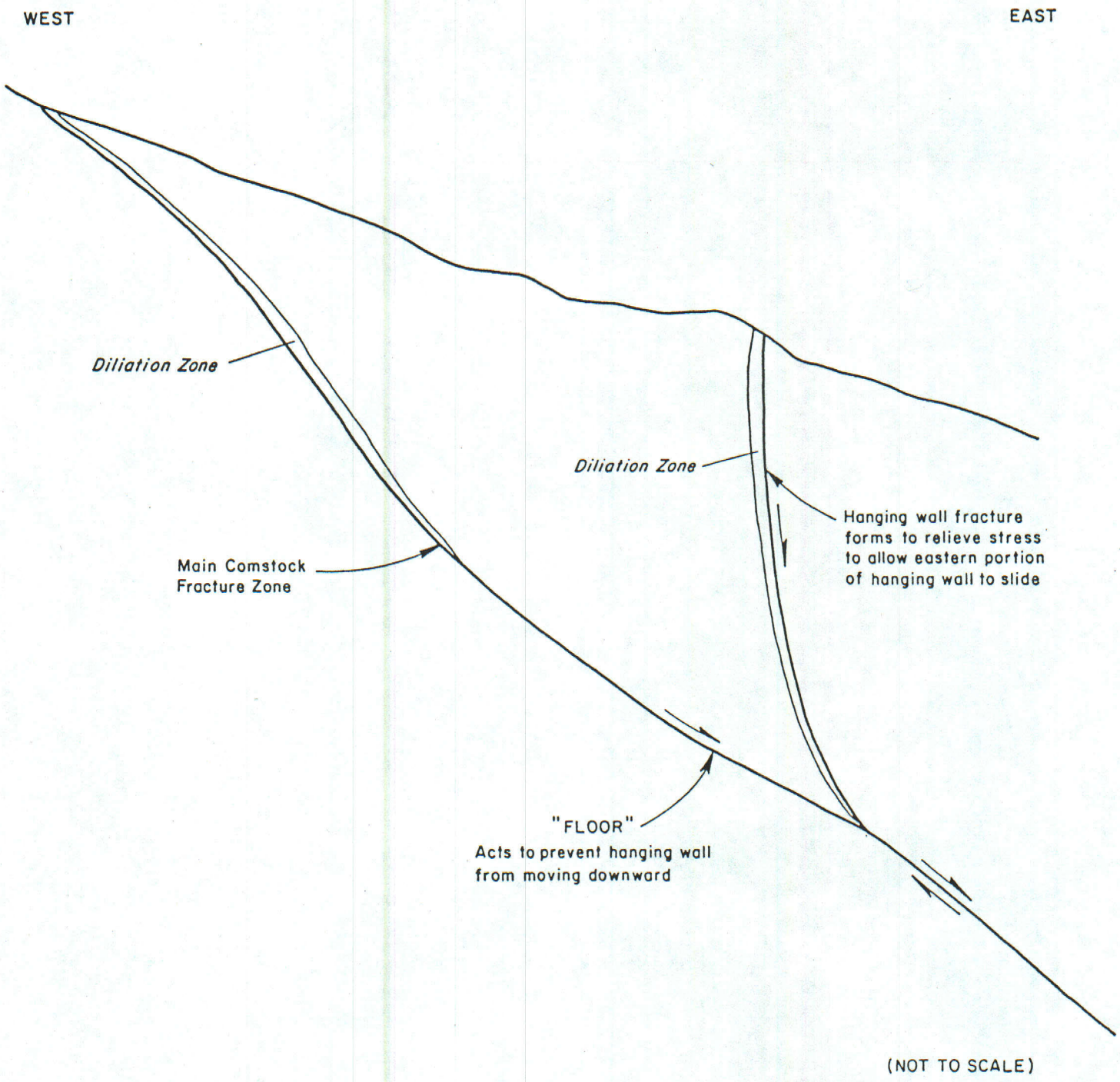


FIGURE 11. MODEL FOR DILATION ZONES. The movement of the hanging wall is restricted by the "floor" in the main fault causing the formation of a hanging wall fracture or split. (Buchanan, 1988)

of decreased dip in the main fault becomes a compression zone which tends to squeeze off the ore-forming fluids. They are then shunted laterally to the ends of the bow in the trace of the fault and upward into the hanging wall split. These dilation zones subsequently become the centers of mineralization.

Vertically, the ore bodies in the Virginia City and Gold Hill districts were distributed over a range of about 2,500 feet, with little ore found below that to the 3,000 foot depth of exploration in some of the mines. The two bonanzas that dominated the total production were near the bottom of the depth range, that is from about 150 feet below the Sutro tunnel to 500 feet above (Buchanan, 1988). All the ore shoots are believed to have been controlled by the depth of boiling at the time and place that they formed. Based on the amount of placer gold found, there was not very much loss of ore in the Comstock district due to erosion.

There has been some argument among geologists that the Kate Peak volcanics are younger than the time of ore mineralization. As these rocks occur at the surface in the Brunswick trend, it is of interest that they are mineralized and do not necessarily constitute overburden. About half way up the hill from the 350 adit on the Occidental Grade, the hanging wall of the Occidental fault changes from Alta to Kate Peak (Plate I). Above this level the host of the alteration zones and the mineralization switches from Alta to the Kate Peak Formation (Hudson, 1986a).

8.2 MINERAL ZONATION

Three different models of mineral zonation have been proposed for the Comstock district in recent years. (Hudson, 1986b; Buchanan, 1988; and Vikre, 1989). All workers agree that alteration and ore mineralization is dominantly in the hanging wall.

The model favored herein for the Brunswick trend is that of Hudson. His work indicates six zones of mineral alteration which may be listed from the center outward as follows:

(1) quartz, calcite, alunite, adularia, pyrite

(2) quartz, pyrophyllite, diaspore (alsic alteration)

(3) kaolinite $\pm$ quartz

(4) illite $\pm$ montmorillonite

(5) propylitic alteration with epidote

(6) propylitic alteration without epidote

In the boiling zone of the vein the super-heated fluid changes to steam, leaving most of the dissolved solids behind. Thus precious metals with quartz, calcite, and adularia fill the vein while gases like steam, hydrogen sulfide, and volatile metals continue upward and precipitate nearer the surface.

Alunite forms near the surface and above the zone of boiling. Adularia occurs mainly as a fine grained milky white mineral in thin quartz veins. Where found, amethyst generally occurs in ore (Hudson 1986b). Alunite is not related to mineralization according to Vikre (1989, p. 1580) but Buchanan says that it is (pers. comm. 1989 and Fig. 4 of this report), and Hudson would probably agree (1986). The difference may be more semantic than real. The alunite is probably not closely associated with the ore itself, but it probably is a near-surface indication of an ore-type hydrothermal system below.

8.3 SILVER - GOLD RATIOS

Total production from the Comstock lode had a silver to gold ratio of 23:1 compared to 11:1 for the Flowery lode (Schilling, 1990, p. i). Silver-gold ratios in bonanza deposits of five mines in the Comstock lode vary from 8:1 to 50:1, based on annual production figures (Vikre p. 1599, fig. 19). Overall, the mines tended to show a decrease in the silver-gold ratio of roughly 5:1 per 1000 feet of depth.

A map from M.T. Skopos of the St. George incline, which lies 1800 feet north of the Occidental Grade, shows 9 assays between the surface and the 350-foot level that average 3.0 feet of 0.132 opt Au. The seven samples with posted silver values average 5.69 opt Ag. Assuming that the two missing values do not change the ratio, it would be 43:1. Assuming no silver in the unposted value, the ratio is 33.5:1.

The silver-gold ratio for the Monte Cristo block on the north end of the Brunswick trend varies from 42:1 for an average grade of 0.038 opt Au to 46.5:1 for an average grade of 0.043 opt Au (La Prairie, 1988). Based on the 610,000-ton reserve of Noland (1983c), the ratio is 0.042/1.25 or 29.8:1. Assay records from the Monte Cristo mine for May 8 and 9, 1913 show an overall average of 30:1 for 140 cars of high grade ore.

9. TARGET AREAS

Areas of exploration interest are discussed in this section beginning with the Monte Cristo properties because this area has the most detailed information available to date.

9.1 MONTE CRISTO

The Monte Cristo properties are located 1.7 miles east of Virginia City on the Sixmile Canyon road. They are comprised of two patented blocks, the Monte Cristo (which includes the Sadie and CB claims) and the Keys group (which includes the Silver Eagle, Virginia Standard, and Rosebud claims).

The most negative consideration on these properties is the requested purchase deal (Bergmann, 1990). The Monte Cristo Mining Corporation wants $200,000 in a payment period of about six months for the Monte Cristo group and C.H. Burchette wants $100,000 over the same period for the Keys group. They will not allow possession of the property until the entire sum is paid, and "in the event any payment was not paid timely, the entire agreement would terminate and be void and all monies deposited would be forfeited."

The host rock is Alta Formation volcanics containing up to 10 percent pyrite. According to Noland (1982, p. 6) "the best megascopic indication of good gold values in vein intercepts is the presence of dark gray to black, fine-grained quartz." Perhaps due in part to the high sulfide content of the rocks, the level of oxidation is not very great.

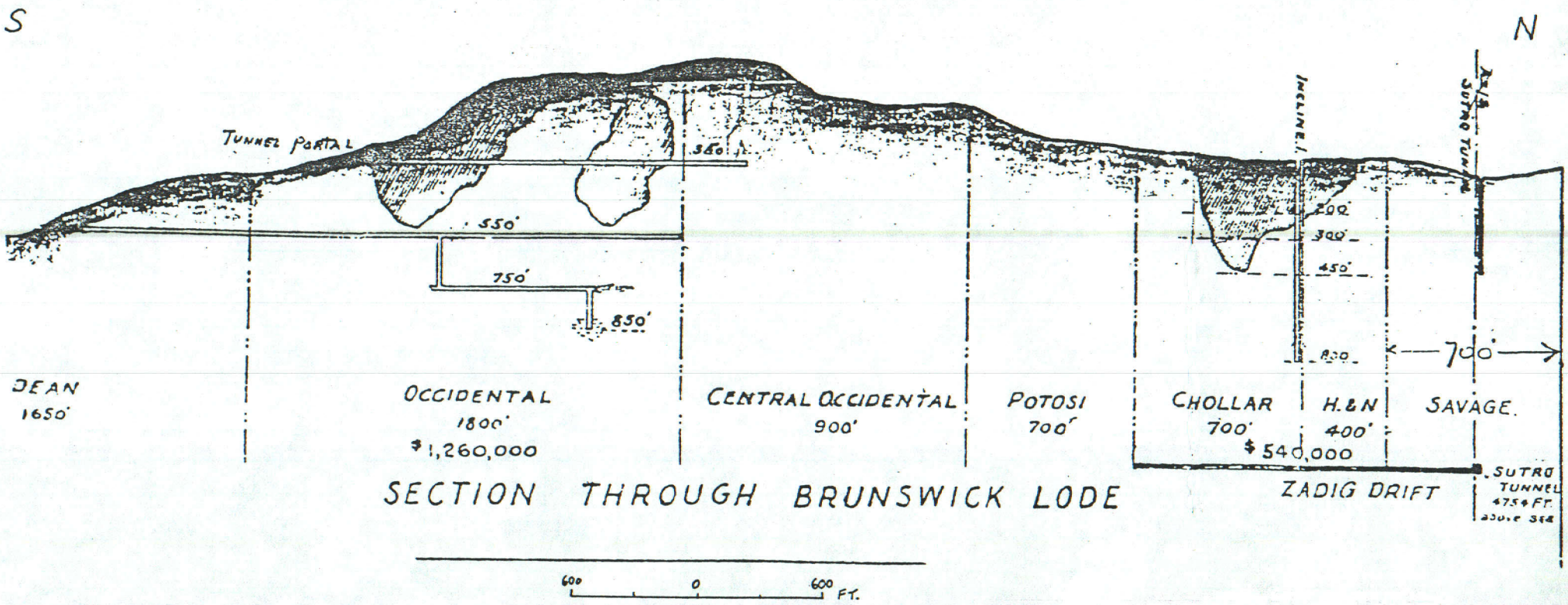
The most detailed report available for the Monte Cristo property at this time is by Noland (1982) who reported on the work of Ray Robinson. Robinson mapped and sampled 4 old tunnels, channel-sampled silicified vein outcrops, and diamond-drilled 21 HQ holes between February 1980 and September 1982. The hole locations for 5,156 feet of drilling were selected for reconnaissance purposes and yielded a low confidence level in reserve calculations.

Noland got some silver and gold values reversed due to a plotting error by his predecessor and the reserves given in his November 1982 and March 1983 reports are erroneous. The May 12, 1983 tabulation is correct (Noland pers. comm. Jan. 4, 1991). He estimates about 610,000 tons of 0.042 opt Au and 1.25 opt Ag over an average thickness of approximately 26.7 feet from the surface down through the drilled block. Most of the drilled block is probably sulfide ore. This resource should not be confused with a subeconomic area adjacent to the north for which we have cross sections. The latter show a 10-hole reverse circulation program (Noland 1983b) that is not included in the calculations.

Some credibility in Noland's estimates may be indicated by the continuity of grade and thickness from the surface through diamond-drilled block. At the same time, it is unlikely that more drilling would change the grade of this ore appreciably. It should also be noted that the ore dips approximately 40 degrees to the east, and the stripping ratio increases gradually as the west side of Sevenmile Canyon slopes in the same direction (see "Mine" on Plate I).

La Prairie (1988) speculatively gives about 50 percent more tons to the property and estimates the stripping ratio at 2.5:1 based on 4 cross sections. He also reports that "there are approximately 15,000 tons of mill tailings grading 0.04 opt Au available on the property. ... The amenability of the ore to heap leaching is unknown as only limited test work has been done."

La Prairie (1988, p.3) states that "limited metallurgical testwork has been done by former owners. Available testwork indicates 96 hr cyanidation recoveries on crushed ore of 43% for gold and 67% for silver. ... A five-day test on the tailings gave recoveries of 77% for both gold and silver." Subsequently, a 96 hr bottle-roll test on 5 samples from 2 diamond drill holes yielded an average recovery of 51.4% gold and 24.46% silver for 80% minus 1/4 inch feed (Macy, 1988).



SECTION THROUGH BRUNSWICK LODE

FIGURE 12. LONGITUDINAL SECTION THROUGH THE BRUNSWICK LODE.

FIGURE 13. ALTERATION ZONES ABOVE THE OCCIDENTAL STOPE.
Looking east about 50 feet north of the 800 south geochemical line where the > 2500 ppb (0.164 opt) Au sample was collected. The foreground is a rubble of Alta Formation stockwork in the footwall of the Occidental fault. The hommocky ground beyond is in brownish-yellow highly-altered Kate Peak Formation (Hudson, 1986a) above the main Occidental Stope. An intermediate greenish-grey zone is visible between this and the grey propylitized Kate Peak beyond. The first hanging wall split (Plate 1) lies in the gully between the last two zones.

Total confirmed production from the Monte Cristo is 15,179 tons averaging $11.95 per ton (Noland, 1982, p.4) which is equivalent to 0.60 opt Au at $20 per ounce gold.

Noland (1982, p. 7-9) suspected that two of the diamond drill holes may have inadvertently intersected the Keyes Structure, and felt that more drilling was justified to the northeast. Additionally, the stockwork in MCD-7 deserves to be offset, and most of the strike length of the Monte Cristo vein is untested to the north and south, including prospects marked by old dumps and the large bleached zone east of the Keyes shaft. It is not possible for the author to evaluate the potential of this property for additional ore until the rocks have been examined.

9.2 OCCIDENTAL

The Occidental property has the most obvious drill target in the area covered by this report. According to Hudson (pers. comm. June 2, 1989) the Occidental (and Brunswick?) lode produced about a million tons of 0.35 opt Au equivalent. A significant portion of this production was probably south of the Occidental Grade (Plate I).

North of the Grade, the Occidental mine was stoped to (or nearly to) the surface over a strike length of approximately 1500 feet (Fig. 12). A vein width in tens of feet and hanging wall alteration suggest a good potential for open-pit tonnage. Air track drilling is proposeable at this time based on the preliminary geochemical survey (Figures 8 and 9) and the ore grade outcrop identified by Prochnau (1990). His sample was obtained from the main vein near where Figure 13 was taken.

At this time we have an air track rig available at an extremely low cost as part of a debt reduction agreement with a former contractor. The rig can only drill to about 150 feet, which is not adequate to define the reserves of this area, but will bridge the gap between surface sampling and rotary drilling farther downdip. The holes need to be vertical to minimize the loss of gold as the cuttings come up the hole. The accuracy of drilling results always has to be considered, but Paul Sonerholm reports good results with this driller and rig at the Flowery Mine during the later half of 1990 (pers. comm. Jan. 14, 1991).

Duval (1920's?, p.2) reports that "a considerable number of samples have been taken of the remaining ore bodies, along the strike for something over 1000 feet. The pro rata average of the samples taken on this level give, as a general average of the workable ore bodies, a value of 0.14 ounce gold and 4.80 ounces silver per ton over an average width of vein of 9 feet 3 inches." Prochnau (1990, p. 2) gives an average grade of 0.18 opt Au for "90 odd samples from the 350 level."

The Occidental mine is still open, having recently been abandoned as a tourist attraction. Skopos (pers. comm. Jan. 9, 1991) was struck during his underground inspection by how much of the vein was unmined. This is consistent with the exposure of the stopes at the surface and a scrutiny of the Klaust map. The average horizontal width of the vein based on 11 measurements from his map is 40 feet which represents a true width of 28 feet at a dip of 45 degrees. Estimates for the grade of ore in the upper levels of the Occidental mine are summarized below.

GRADE OF ORE GIVEN FOR THE OCCIDENTAL MINE

	opt Au	Ag:Au	
Skopos,M.S.	0.13	33-43:1	9 channel assays in the St. George incline
Duval, C.F.	0.14	34.3:1	"A considerable number of samples" from the 350 level
Prochnau, J.	0.18	---	"90-odd samples from the 350 level"

From the mining viewpoint it might be anticipated that some of the ore and overburden would be rippable based on the degree of alteration to the rock. For haulage from the Occidental there is an easy and continuous downhill grade to the Flowery by using a small valley along the Sutro Tunnel right-of-way which turns north to the Sixmile Canyon road (Fig. 2). There are also good sites for a pad complex in the vicinity of the property which are out of sight from the Occidental grade. An open pit would also be out of sight from the area of Virginia City.

9.3 SECOND HANGING WALL SPLIT

The second hanging wall split is the second branch fault east of the westward bow in the Occidental fault (Plate I). It is the largest fault in the hanging wall of the main fault (Fig. 6), being downthrown to the east nearly as much. It dominates the structural movement in the hanging wall, and, as explained in section 7.1, it may have been the most important channel of ore mineralization. For lack of a better term, the title of this section refers to the area from the Occidental Grade about 5000 feet north to the Sutro Tunnel and from the Occidental fault about 3000 feet eastward.

Duval (1920's?, p.4) noted that the Edwards patent at the south end of the second split was "virgin ground, well mineralized, and well worth exploration." He groups the Edwards with two other claims of unknown location which may have been along strike to the north.

Hudson (1986a) mapped ten or twelve altered areas -- mainly along fracture trends in the hanging wall block -- up to a width of about 3,000 feet to the east of the Occidental fault. Five

or six of these appear to be centers of mineralization based on the relative position of three to five alteration zones. The alteration on Plate I shows the beginning of a check on this work.

Jim Marin (pers. comm. Dec. 5, 1990) said that Rea Gold was evaluating the open pit potential of this area (summarized in section 3. above) and that he thought the potential was good when his drilling program was summarily terminated by a land title defect. The center of interest at this time was in the Alta claims on the southeast side of the southwest-trending valley of Potosi-Chollar (south of the No. 3 Air Shaft).

This area on either side of the second hanging wall split lies between orebodies found in the Occidental and Brunswick mines and is marked by numerous prospect pits and shafts. It is the area most in need of geologic mapping and geochemical sampling. Based on work to date, the potential to find a new or unknown surface-minable ore body is greatest in this area. Most of it is untested by drilling. According to Marin (pers. comm. Jan. 14, 1991), the minor workings include the surface expression of the Bella-Union lode which was intersected in the Sutro Tunnel as a wide fault zone.

9.4 POTENTIAL BONANZAS

In an area as incompletely tested as the Brunswick trend, there is always a possibility of finding another high-grade deposit. In the area of the second hanging wall split, exploration for large low-grade deposits could lead to such a result. The same holds true along strike in the trend and below previously mined deposits. Much of the trend is unexamined for the purpose of this report and additional old mines are yet to be reviewed.

Ore was mined on the Brunswick trend to a much shallower depth than on the Comstock lode. As the amount of vein erosion in both areas is probably similar, the remaining depth potential may be similar. The two largest orebodies on the Comstock produced more than 30% percent of the gold and silver for the whole lode. One is the Deep Crown Point deposit below the Belcher deposit and the other was the Big Bonanza deposit below the Mexican deposit (Sprecher, 1982). Both were near the bottom of the productive zone of the Comstock, with good ore shoots along the trend at all depths between there and the surface.

Buchanan (1988, p.1) states that these two fabulous deposits were not in the main vein on the Comstock but in the hanging wall veins. The Crown Point contained 1,000,000 tons of 1 opt Au and the Big Bonanza produced 1,400,000 tons of 1.82 opt Au and almost 46 opt Ag or more than 2,500,000 ounces of Au and 64,000,000 ounces of Ag.

Although past production on the Occidental/Brunswick lode is much less than the Comstock, the close geologic analogies of these two kindred trends suggest strongly that unexplored portions below known ore shoots and along strike may be expected harbor ore bodies discoverable by today's geologic, geochemical, geophysical, and drilling technology.

10. RECOMMENDATIONS

1. Extend the soil geochemical survey along the Occidental fault south of the Occidental Grade to include the junction with the second hanging wall split.

2. Sample the vein and wall rocks at the surface of the Brunswick and North Brunswick mines to help establish the potential for open-pit reserves. Finish the surface sampling of the Occidental for the same purpose.

3. Map the geology and alteration in the area east of the Occidental mine through the second hanging wall split to the Shannon anomaly.

4. Lease the Silver Star claim which contains the Brunswick Mine and the adjacent Brunswick claims if reasonable terms can be negotiated.

5. Drill with air track (up to a depth of about 100 feet) the Occidental mine, the intersection of the Occidental fault with the second hanging wall split, the Brunswick mine, the North Brunswick mine, and the Shannon prospect.

6. Check the concept that mineralization in the district is related to intrusive centers at Cedar Hill and Flowery by looking at the magnetic map which might provide further evidence for target identification in the Brunswick trend.

11. REFERENCES CITED

Axelrod, D.I., 1956, Mio-Pliocene floras from west-central Nevada: Calif. Univ. Pubs. Geol. Sci., v. 33, p. 91-160.

Bergmann, R.A., 1990, New Monte Cristo Mining Corporation and Keyes Property: letter of Aug. 8, 1990 to Taurus Exploration, 2p.

Blanchflower, J.D., 1983, Report on the ERA and HOM lode mining cliams, Silver Star mining district, Storey County, Nevada: unpublished report for Rea Gold Corp., June 30, 1983, 28p.

____ 1985, Summary report on the Brunswick property, Silver Star mining district, Storey County, Nevada, USA: unpublished report for Rea Gold Corp., May 25, 1985, 19p. plus appendix and maps.

Bohnam, H.F., 1969, Geology and mineral deposits of Washoe and Storey Counties, Nevada: Nevada Bureau of mines and Geology Bull. 70, 140p.

Buchanan, L.J., 1988, Exploration potential on the Garfield lode, Comstock District, Virginia City, Nevada: Sovereign Explorations, Inc. rpt., 14p.

Calkins, F.C., 1944, Outline of the geology of the Comstock lode district, Nevada: U.S. Geol. Survey open-file report.

Calkins, F.C., and Thayer, T.P., 1945, Preliminary geologic map of the Comstock lode district, Nevada: U.S. Geol. Survey Map, scale 1:24,000.

Charlton, D.W., 1983, Phase I completion report, Brunswick property, Comstock mining district, Storey County, Nevada: unpublished report for Rea Gold Corp., Oct. 27, 1983, 60p. plus 7 colored plates.

Cornwall, H.R., Lakin, H.W., Nakagowa, H.M., and Stager, H.K. 1967, Silver and mercury geochemical anomalies on the Comstock, Tonapah and Silver Reef districts, Nevada - Utah; in Geol. Survey Research, 1967: U.S. Geol. Survey Prof. Paper 575-B, p. B10-B20.

Criss, R.E., Champion, D.E., and Horan, M.F., 1989, Oxygen isotope map of the fossil hydrothermal system in the Comstock lode mining district, Nevada; in USGS Research on Mineral Resources -- 1989 Program and Abstracts, US Geol. Survey Circ. 1035, p. 11-13.

Duval, C.F., 1920's?, Report on Occidental Silver Mines and Milling Co. of Nevada: Unpublished, 4p.

Gianella, V.P., 1936, Geology of the Silver City district and the southern portion of the Comstock lode, Nevada: Nev. Bur. Mines & Geology Bull. 30., 105p.

Gower, S.C., and Northcote, K.E., July 1984, Interim report on assessment of potential of the Comstock Mine Property, Virginia City Mining District, Storey-Lyon counties, Nevada: Unpublished report contracted by Resources, Inc. (address not given), 74 p. plus Fig's.

Hodgson, J.S., 1983, Preliminary report on the ERA and HOM claims east of Virginia City, Storey County, Nevada: unpublished report for Rea Gold Corp., June 7, 1983, 16p. plus appendix.

Hudson, D.M., 1986a, Geological map of the Comstock district, Nevada, 1"=500'; Alteration and veining of the Comstock district, Nevada, 1"=500'; and cross sections, 1"=500': unpublished.

____ **1986b,** Geology of the Comstock district: Geologic Soc. of Nevada presentation, April 18, 1986.

Klaust, A.J., 1935, Assay maps for the Occidental mine at 350-foot and 550-foot levels: 1"=40', Nov. 11, 1935.

La Prairie, D.S., 1988, Monte Christo project file report: unpublished, Reno, NV, May 26, 1988, 7p.

Macy, F.A., 1988, Metallurgical test on Monte Cristo samples by McClelland Laboratories, Inc.: Unpublished report to Jules La Prairie, Reno, NV., Dec. 6, 1988, 2p.

Noland, P.D., 1982, Summary report on Exploration at the Monte Christo Mine, Storey County, Nevada: unpublished report for New Monte Cristo Mining Corp., Nov. 1982 9p.

____ **1983a,** Cost analysis for open pit mining "outcrop block" and "drilled block" ore reserves at Monte Christo mine; unpublished report for New Monte Cristo Ming Corp., March 23, 1983, 2p.

____ **1983b,** Map and four cross sections of 10 reverse circulation drill holes: unpublished notes for New Monte Cristo Mining Corp., April 1983, 5p.

____ **1983c,** Monte Christo tonnage and grade calculations using corrected drill intercepts: unpublished report for New Monte Cristo Mining Corp., May 12, 1983, 1p and map of ore blocks.

Prochnau, John, 1990, Letter report on Occidental mine property to Swift Minerals Limited of Vancouver, B.C., April 10, 1990, 10p. including maps and cross sections.

Schilling, J.H., 1990, Mineral resources and geology of the Flowery mining district, Storey County, Nevada, USA; report for Miramar Mining Corporation of North Vancouver, B.C. and American Eagle Resources of Reno, NV, 60p.

Smith, G.H., 1943, The history of the Comstock lode, 1850 - 1920: Nev. Bur. Mines & Geol. Bull. 37, 297p.

Sprecher, John, 1982, Longitudinal vertical projection of the Comstock lode: unpublished cross section, 1" = 400'.

Stoddard, Carl, and Carpenter, J.A., 1950, Mineral resources of Storey and Lyon counties, Nevada: Nev. Univ. Bull., v. 44, no.1, Geol. and Min. ser., no. 49.

Thompson, G.A., 1956, Geology of the Virginia City quadrangle, Nevada: U.S. Geol. Survey Bull. 1042-C, p. 45-77.

Vikre, P.G., 1989, Fluid-mineral relations in the Comstock lode: Econ. Geol., v. 84, no. 6, p. 1574-1613.

12. AUTHOR'S CERTIFICATION

I, CHESTER E. NICHOLS do hereby certify that:

1. I am a consulting geologist with an office at 680 Greenbrae Drive in Sparks, Nevada 89431 (702-331-4223).

2. I graduated in Geology from Cornell University in 1960 with a Bachelor of Science degree, in Petrology from the University of Iowa in 1965 with a Master of Science degree, and in Structure and Geophysics from the University of Missouri - Rolla in 1977 with a Doctor of Philosophy degree.

3. I was a geologist and geochemist for Union Carbide Corporation for 15 years, rising to the highest professional rank for a geoscientist.

4. I was elected Councillor for the Association of Exploration Geochemists for the period 1984 through 1988.

5. I was the founding Editor and Publisher of the magazine EXPLORE for the Association of Exploration Geochemist from 1988 through 1990.

6. I have practiced my profession as a economic geologist for 22 years beyond graduate school.

7. I have no direct, indirect, or contingent interest in American Eagle Resources, Inc., Miramar Mining Corporation, or any of the properties in the Brunswick trend; nor do I intend to receive any such interest.

8. This report dated April 11, 1991 is based on my full-time work from October 18, 1990 to the present time, on a study of published and unpublished maps and reports, and on discussions with geologists familiar with this district.

9. I believe the information contained in this report on the Brunswick trend to be accurate, but make no representations or warranties as to the accuracy, validity or completeness, and shall have no liability for any reliance made with respect to any use of the data and information in the Report.

10. I hereby give permission for Miramar Mining Corporation and American Eagle Resources, Inc. to reproduce this report, or any part of it, in a Prospectus or Statement of Material Facts provided, however, that no portion may be used out of context in such a manner as to convey a meaning differing materially from that set out in the whole.

Dated at Reno, Nevada, this 11th day of April, 1991.

Chester E. Nichols

Chester E. Nichols, Ph.D.
Geologist and Geochemist

1200 0004

GEOLOGY AND MINERAL POTENTIAL OF THE **BRUNSWICK TREND** STOREY COUNTY, NEVADA

for

MIRAMAR MINING CORPORATION
213 West First Street
North Vancouver, B.C.
V7M 1B3 Canada
(604) 985-2572

by

Chester E. Nichols, PhD
680 Greenbrae Drive, Suite 290
Sparks, NV 89431
(702) 331-4223

January 1991
Revised April 1991

LIST OF MAPS

1200 0004 MAPS TO REPORT

1200 0004

STOREY GENERAL [redacted] ITEM 11

GEOLOGY AND MINERAL POTENTIAL OF THE **BRUNSWICK TREND** STOREY COUNTY, NEVADA

for

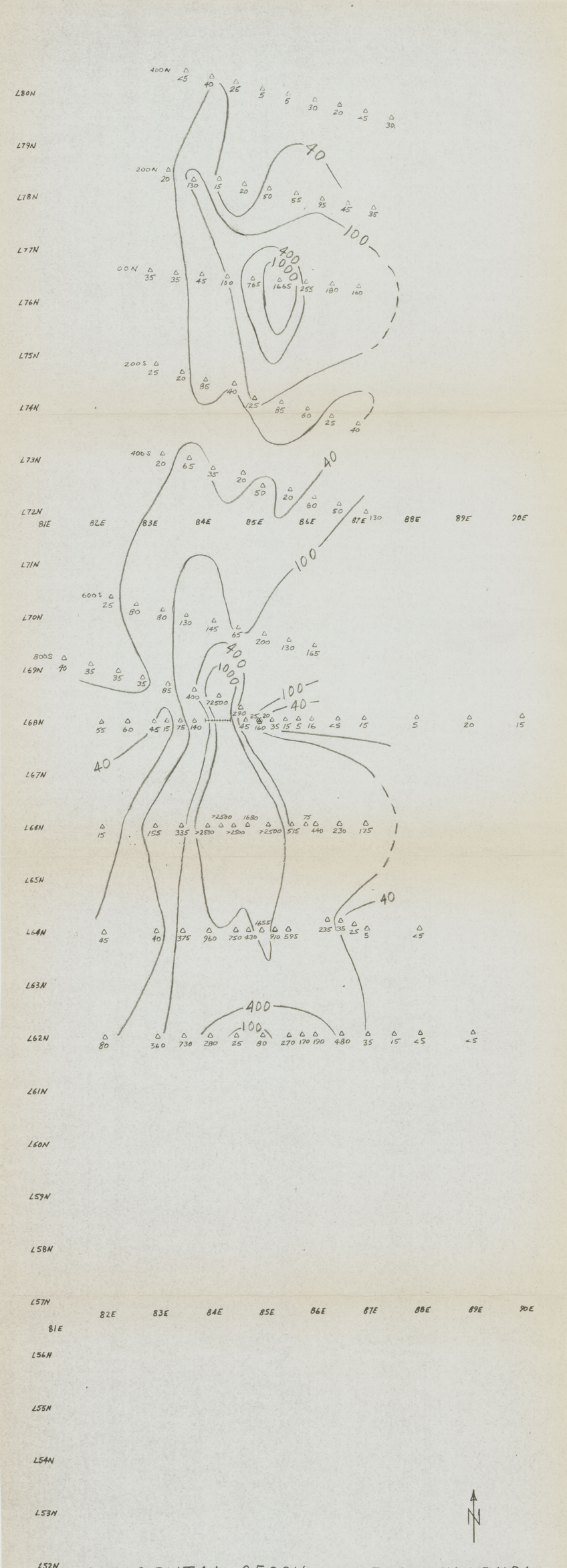
MIRAMAR MINING CORPORATION
213 West First Street
North Vancouver, B.C.
V7M 1B3 Canada
(604) 985-2572

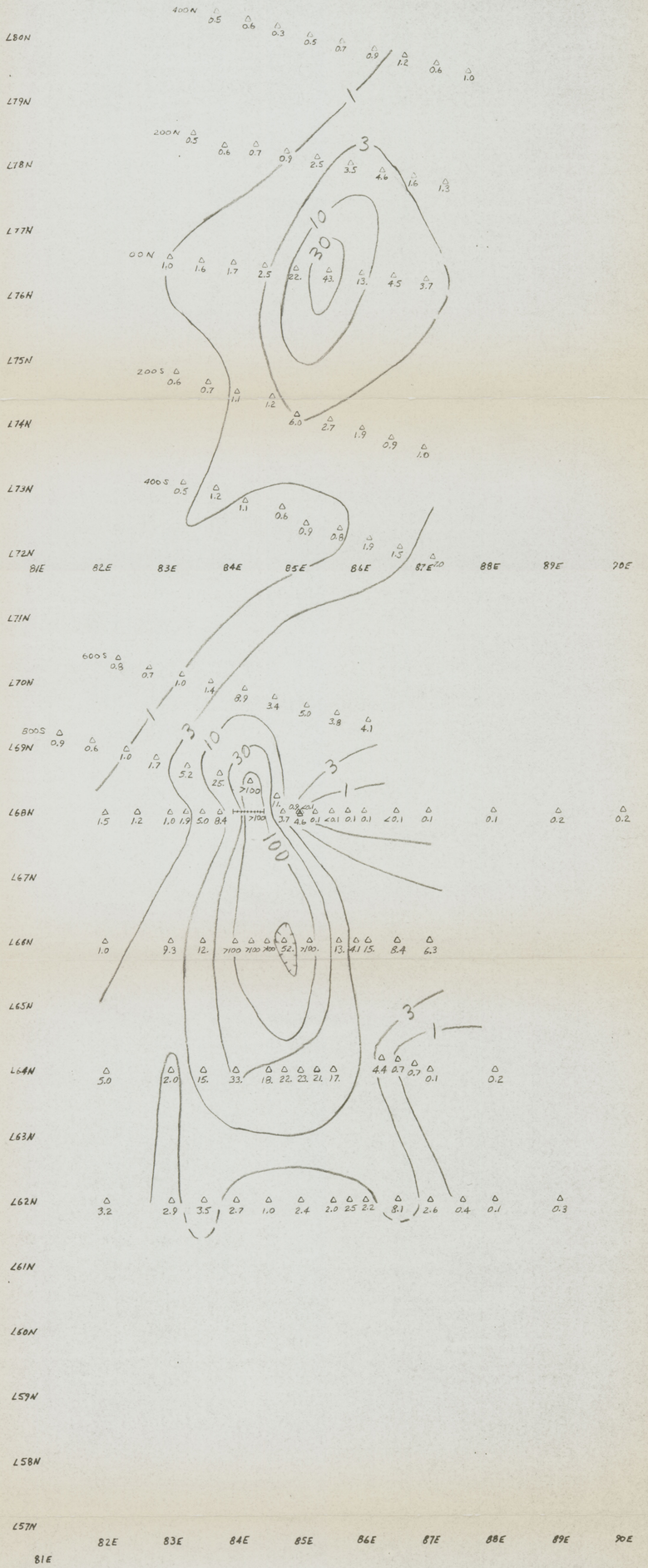
by

Chester E. Nichols, PhD
680 Greenbrae Drive, Suite 290
Sparks, NV 89431
(702) 331-4223

January 1991
Revised April 1991

LIST OF MAPS


L80N
L79N
L78N
L77N
L76N
L75N
L74N
L73N
L72N
L71N
L70N
L69N
L68N
L67N
L66N
L65N
L64N
L63N
L62N
L61N
L60N
L59N
L58N
L57N
L56N
L55N
L54N
L53N
L52N
81E
82E
83E
84E
85E
86E
87E
88E
89E
90E
400N
200N
00N
200S
400S
600S
800S
OCCIDENTAL GEOCH.
STOREY COUNTY, NEVADA
LEGEND
Au (ppb) in Soil
Sample location
Channel samples
SCALE
0 100 200 300 FEET
1" = 100'
C.E. Nichols
April 1991
PLATE III.
1200 0004



OCCIDENTAL GEOCH. STOREY COUNTY, NEVADA

LEGEND Ag (ppm) in Soil

△ Sample location

⊢ Channel samples

SCALE

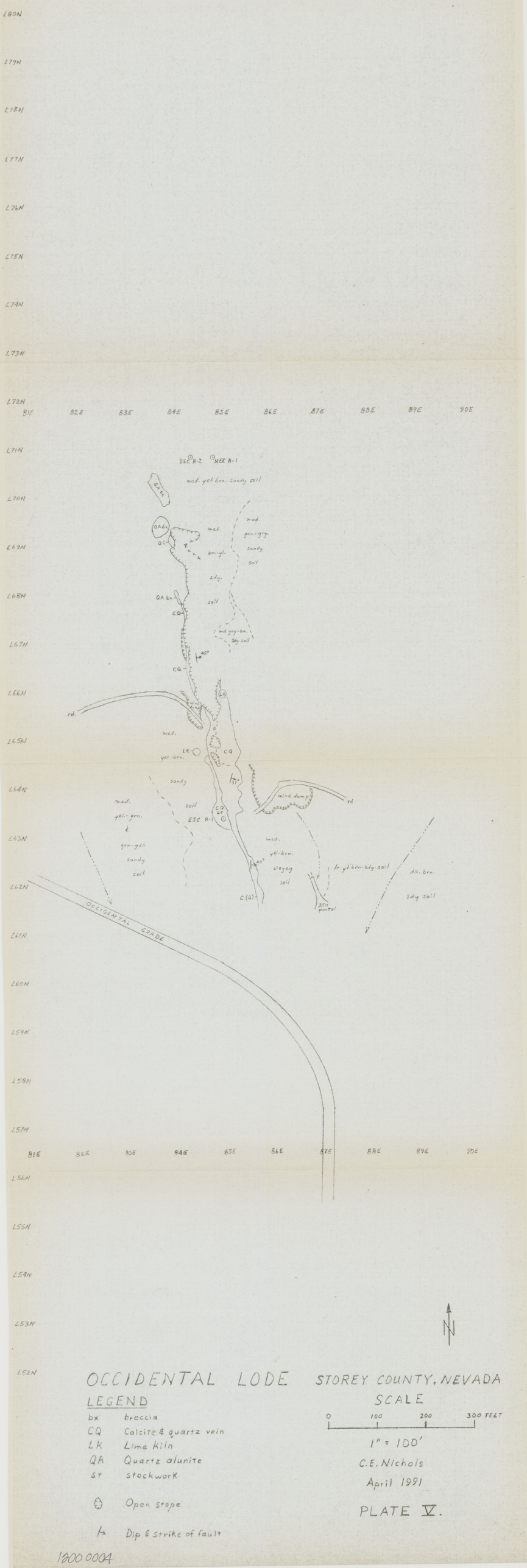
0 100 200 300 FEET

1" = 100'

C.E. Nichols

April 1991

PLATE IV.



OCCIDENTAL LODE

STOREY COUNTY, NEVADA

LEGEND

bx	breccia
CQ	Calcite & quartz vein
LK	Lime kiln
QA	Quartz alunite
st	stockwork
	Open stope
	Dip & strike of fault

SCALE

0 100 200 300 FEET

1" = 100'

C.E. Nichols

April 1991

PLATE V.

1300 0004

1800 0004

1" = 500' CI = 40'

BRUNSWICK CLAIM MAP

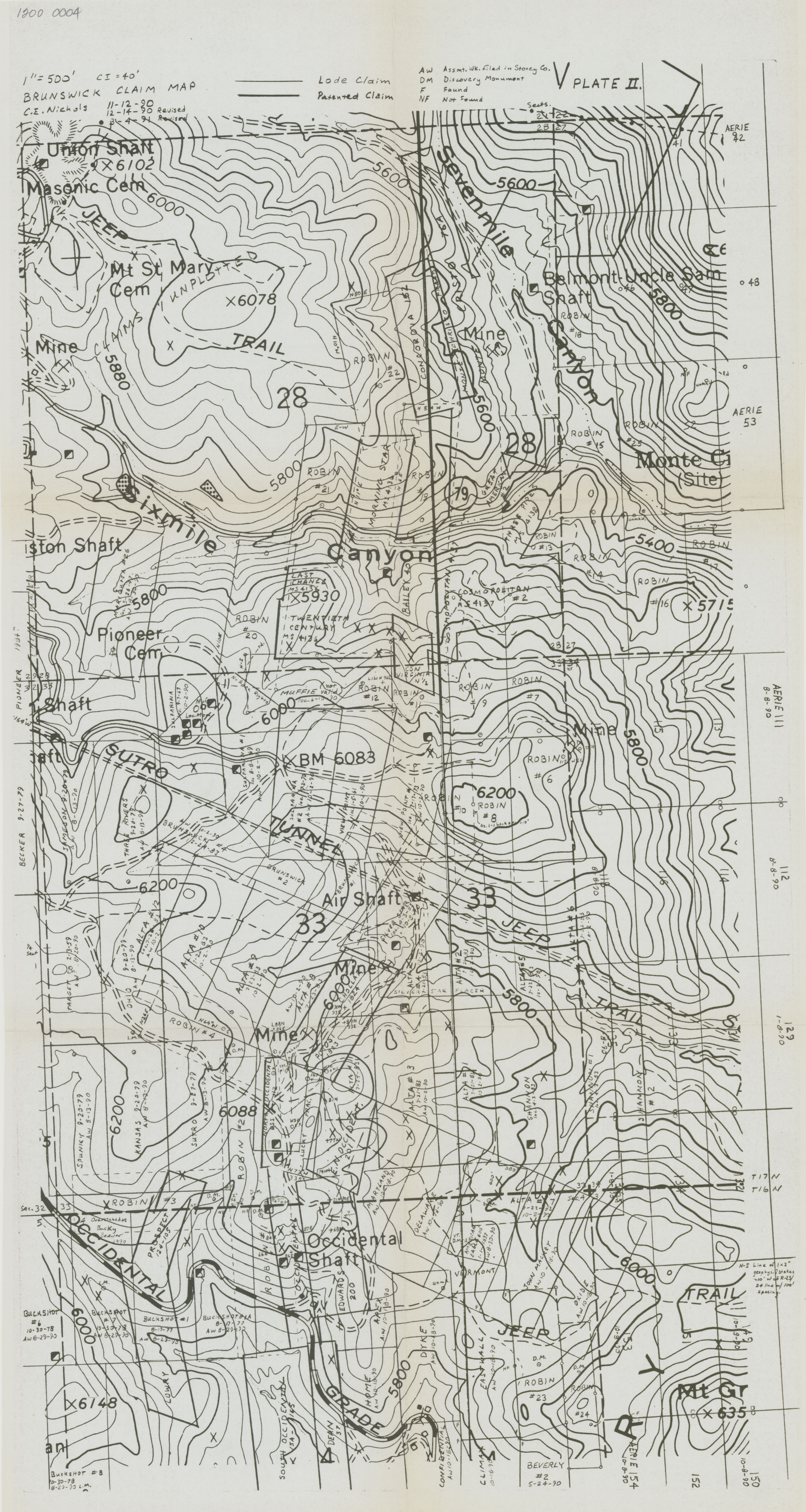
C.E. Nichols 11-12-90 Revised 12-14-90 Revised 3-4-91 Revised

Lode Claim

Patented Claim

AW Assmt. Wk. Filed in Storey Co.
DM Discovery Monument
F Found
NF Not Found

PLATE II.



PRELIMINARY GEOLOGIC MAP OF THE BRUNSWICK TREND
STOREY COUNTY, NEVADA

C.E. Nichols after D.M. Hudson

LEGEND

— Normal fault, ball on downthrown side

Tkp Kate Peak Formation (Miocene)

Taf Alta Formation flows (Miocene)

Ar Argillic alteration
C Calcite vein
Q Quartz vein
Si Silicification & argillic alteration
St Stockwork
K Kaolinitic alteration

QAbx Quartz-alunite hydrothermal breccia

N

SCALE

0 500 1000 1500 2000 FEET

1" = 500'

December 1990
Revised January 1991

PLATE I.

1200 0004