(109)

1280 0043

Item 41

CORTEZ NEVADA

Production: Reserves given as 3.4MT at 0.29 oz./T Au.

Type: Carlin (disseminated in carbonate sediments?)

Host Rocks: Roberts Mountain Limestone (Silurian)
Laminated to thin bedded (dark to light) grey, silty dolomitic limestone and calcareous dolomitic siltstone.

Ore Age: Alteration is post 34 m.y. (porphyry altered) ~~as is ore~~.

Mineralogy: Introduced chalcedonic silica (jasperoid)
Late post-ore coarse calcite
gold occurs as 1) clusters of particles between silt grains;
2) scattered grains in quartz veins;
3) grains in iron oxides after pyrite.

Alteration: "Limestone" leached and bleached and pyrite altered to iron oxides.
Silicification by ? silica soaking.
No clay minerals

Others:

- Ore zone enriched in arsenic and mercury, with lesser antimony and tungsten.
- Ore is not related to intrusive Jurassic stock but is apparently related to intrusive, altered rhyolite sills.
- There are associated hot springs whivh carry ppm levels of Au, Hg.
- Jasperoid is not well developed.
- The Roberts Mountain Thrust produces fracturing in the limestone and if this permeability is maintained this is favorable for Au precipitation.

MKB:0493b

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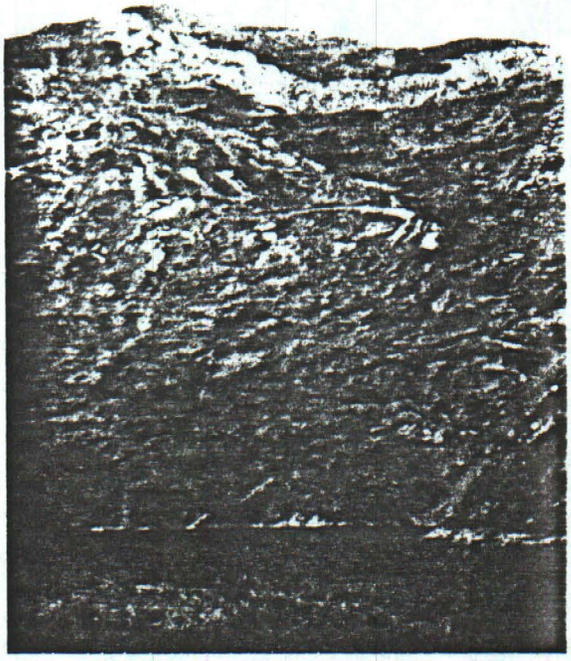
CORTEZ MINE, NEV.

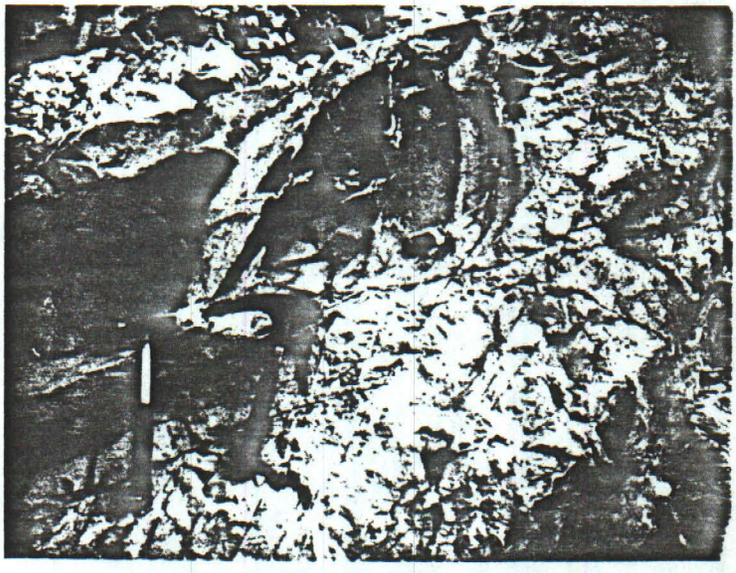


Main pit

Upper pit, silicified mineralized? finger in wall of pit (center)

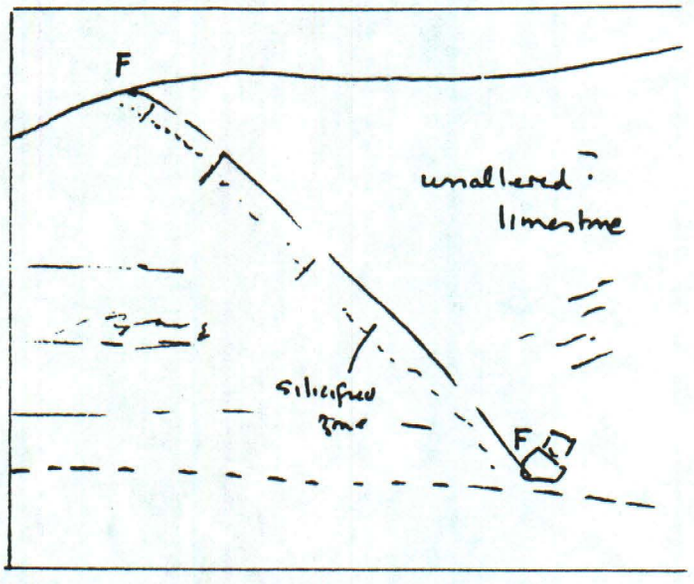
CORTEZ MINE, NEV.

Lower pit; altered fanglomerate zone

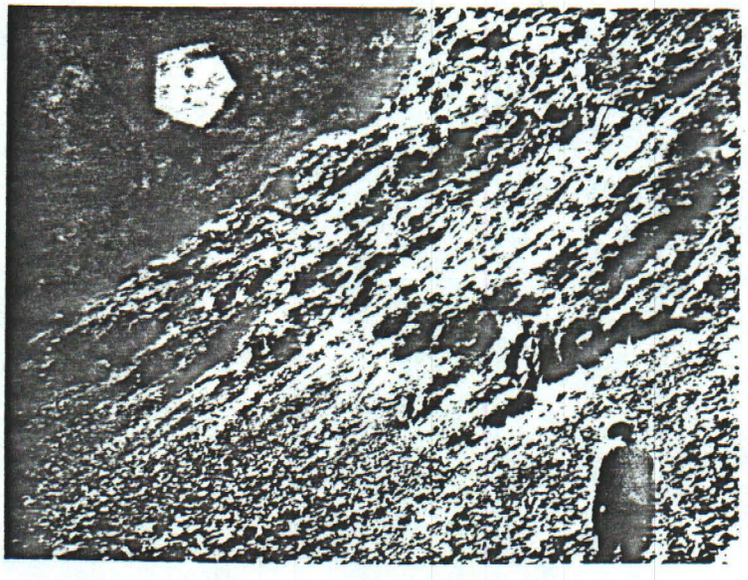


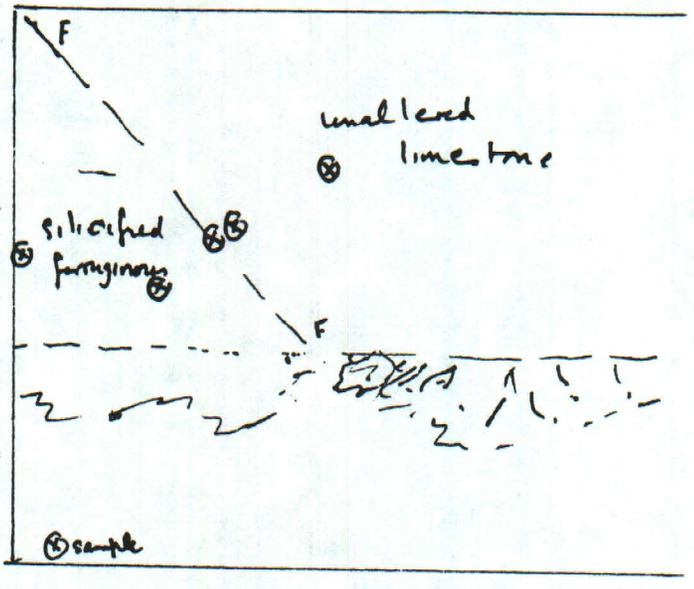
Lower pit, altered limestone

CORTEZ MINE



Lower pit.
Samples taken across fault zone



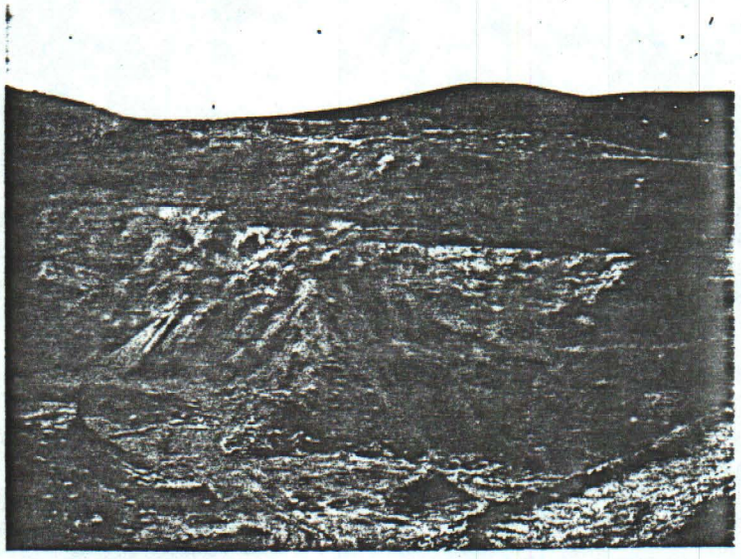


Lower Pit.
(sample locations)

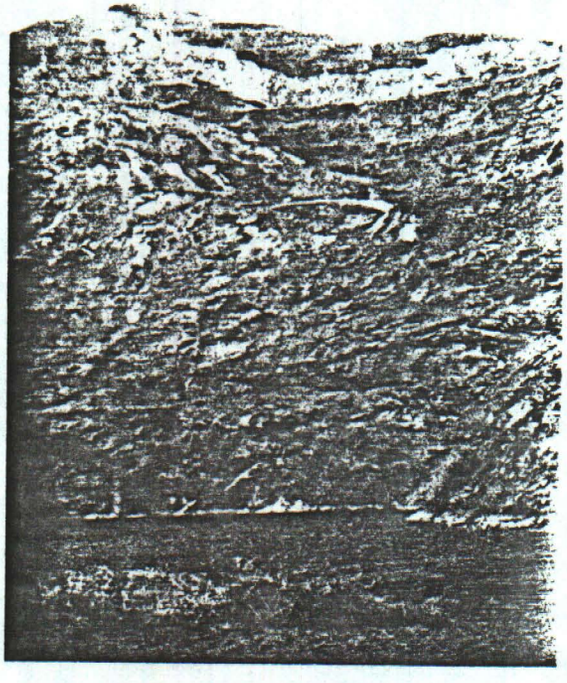
CORTEZ MINE, NEVADA

} altered porphyry sill.

Top of open pit

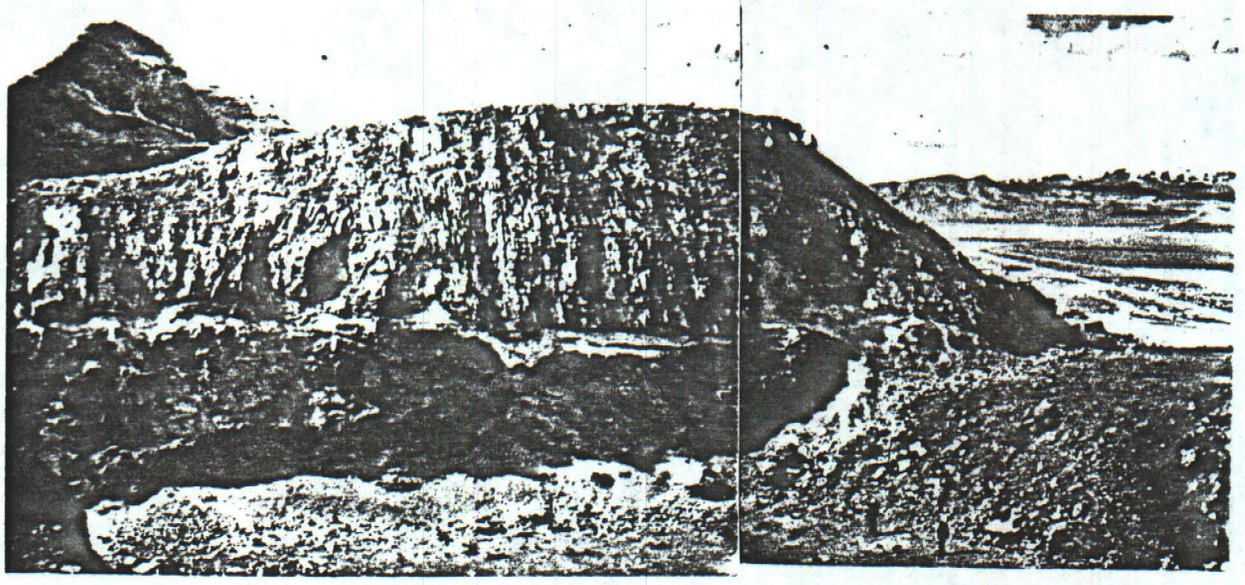


Top pit to E of main pit.



Main pit

CORTEZ MINE, NEVADA



Porphyry in pit at top of main pit

Alteration at contact

Altered porphyry

TO: J. L. Walker

FROM: D. E. Ayres E. P. R.

SUBJECT: Nevada gold deposits field trip, March 1- 5, 1982.

This field trip was arranged by Fred Warnaars and Tony Greenish of the International Explorations Department. Max Boots of that department and Jean Lawler participated also. Visits were made and samples collected from the "Carlin-type" deposits at Cortez, Gold Acres and the Sterling Mine, a "porphyry" related deposit at Round Mountain, and an epithermal hot springs deposit at Borealis. Locations of these deposits are shown on the accompanying map.

Approximately 50 samples were collected, mainly from the Cortez, Sterling and Borealis deposits. These appear suitable for clay mineral and possibly fluid inclusion analysis. The Sterling mine, in view of its size, geological setting, ease of access and the interest shown by the staff, has potential for research studies on Carlin-type mineralogy and alteration.

D. E. Ayres

10 March, 1982

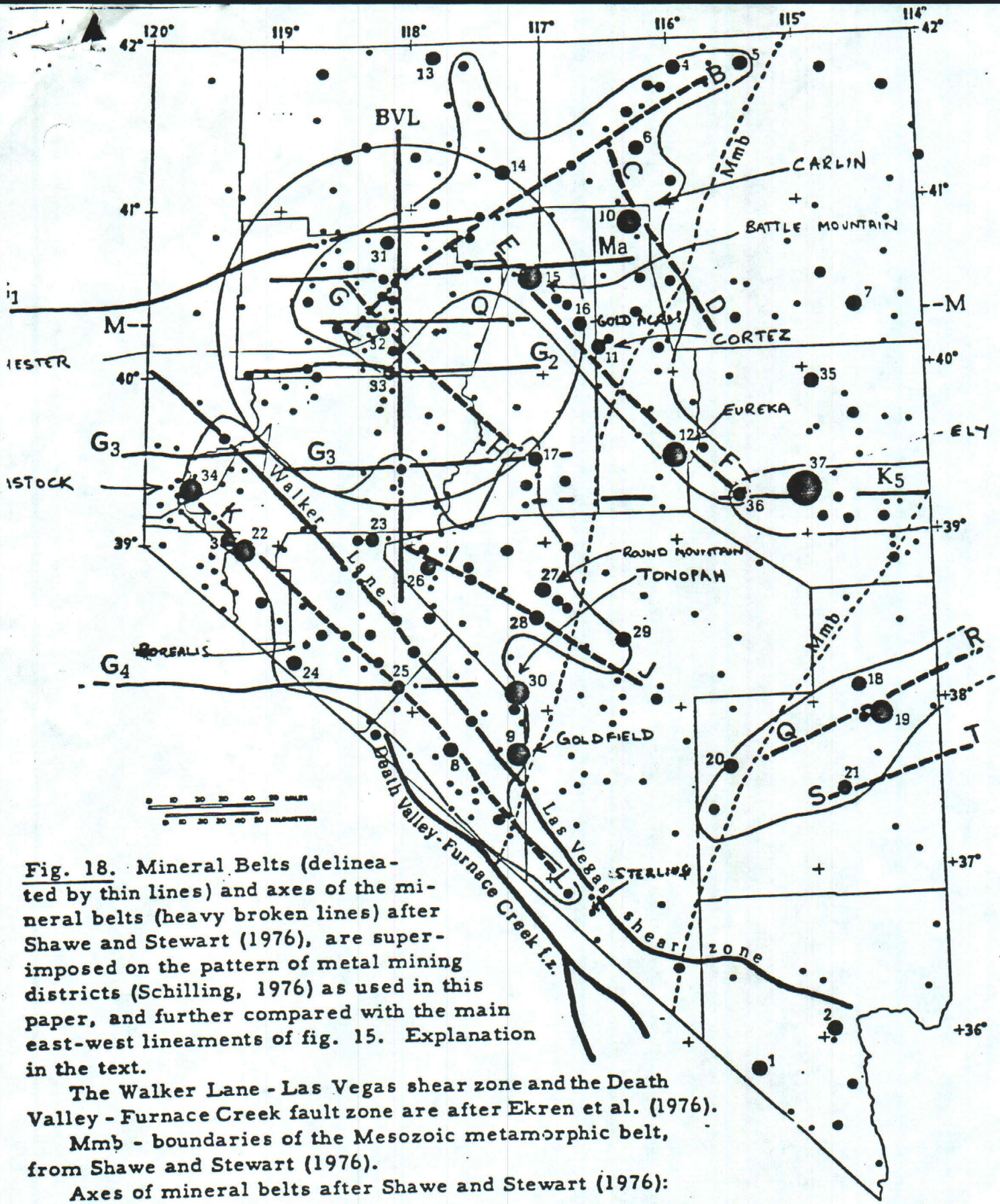


Fig. 18. Mineral Belts (delineated by thin lines) and axes of the mineral belts (heavy broken lines) after Shawe and Stewart (1976), are superimposed on the pattern of metal mining districts (Schilling, 1976) as used in this paper, and further compared with the main east-west lineaments of fig. 15. Explanation in the text.

The Walker Lane - Las Vegas shear zone and the Death Valley - Furnace Creek fault zone are after Ekren et al. (1976).

Mmb - boundaries of the Mesozoic metamorphic belt, from Shawe and Stewart (1976).

Axes of mineral belts after Shawe and Stewart (1976):

A - B : Shoshone - Jarbidge

(continued on next page)