0450 0055

228

Item 57

STERLING MINE, NEVADA

Production: Reserves of 0.25 million tons at 0.2 g/t. Mainly u/g.

Type: Carlin? (disseminated micron Au in dolomite/siltstone)

Host Rocks: Johnnie (or possibly Wood Canyon) Formation of Lower Cambrian age which overthrusts the Bonanza King Dolomite. The thrust sheet is estimated to have moved 50 miles. The contact between the above formations is clearly seen in the mine.
The thrust sheet is displaced by a normal fault 50' and by a lateral fault 200' in the mine area. These may have produced undulations in the plate and favorable sites for mineralization.

Ore Age: Possibly related to Tertiary porphyry intrusive.

Mineralogy: Submicroscopic Au occurring at the contact of Johnnie and Bonanza King. Au occurs in altered siltstone and silicified limestone of the Johnnie Fm.
Au/Ag ratio changes from 30:1 near the normal fault to 1:1 10 to 20 meters away.
Galena occurs near the lateral fault in the Bonanza King.
Pyrite occurs on bedding and in fractures related to the normal faults.
Stibnite and fluorite occur in fractured Johnnie Fm.

Alteration: Ore is associated with jarosite and silicification.
Siltstone is altered to kaolinite, illite and jarosite.
Alunite occurs nearest the thrust contact, jarosite occurs above alunite and always above this occurs kaolinite.
This zoning is considered to be hypogene but supergene alteration should not be discounted. (deepest workings are only 400' below surface.

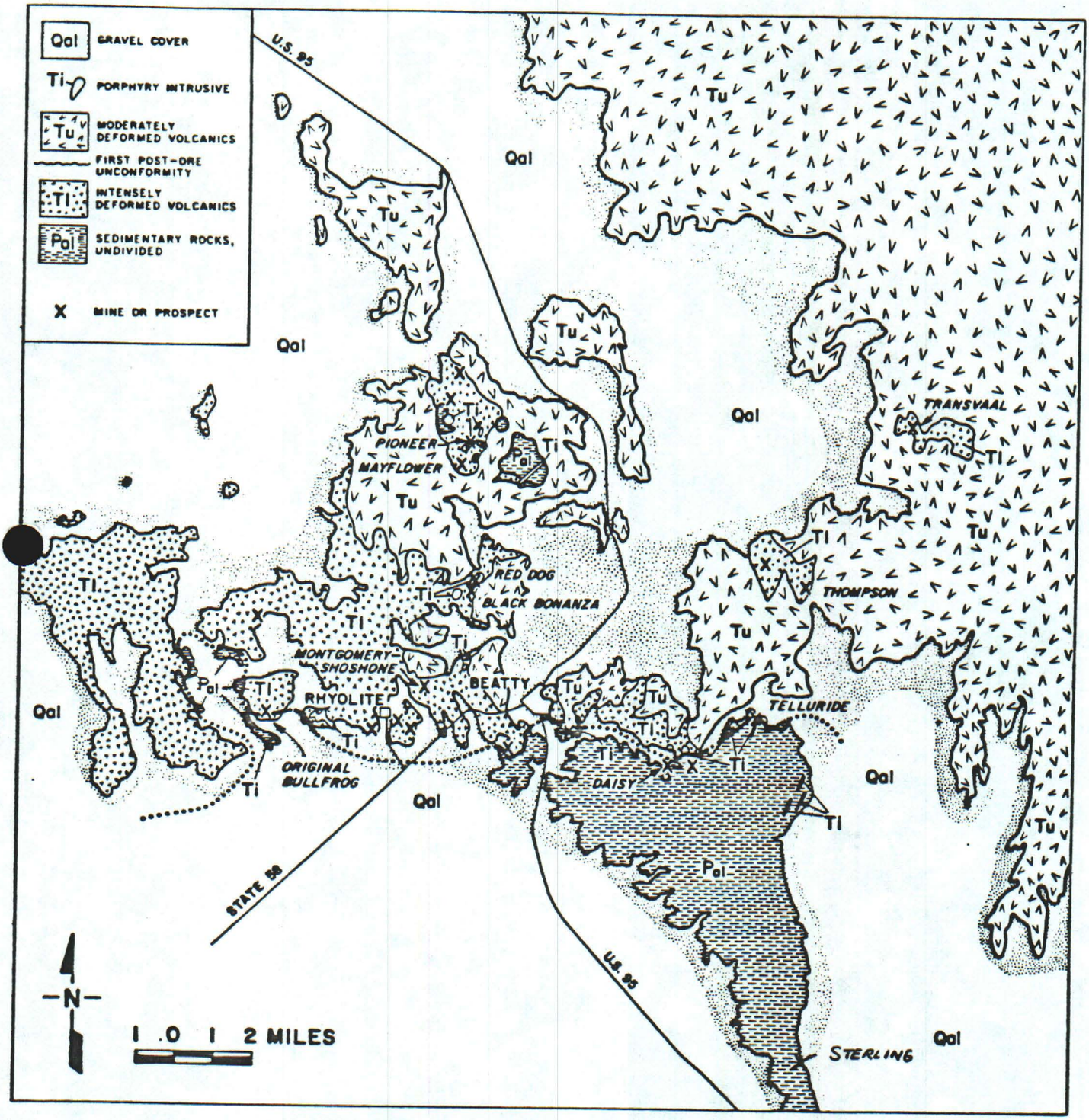
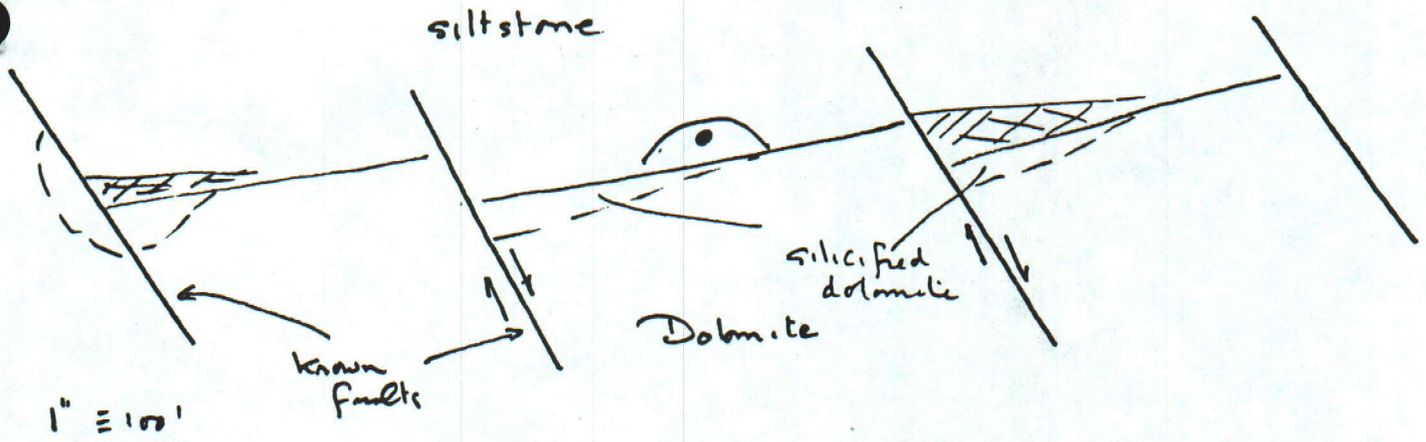


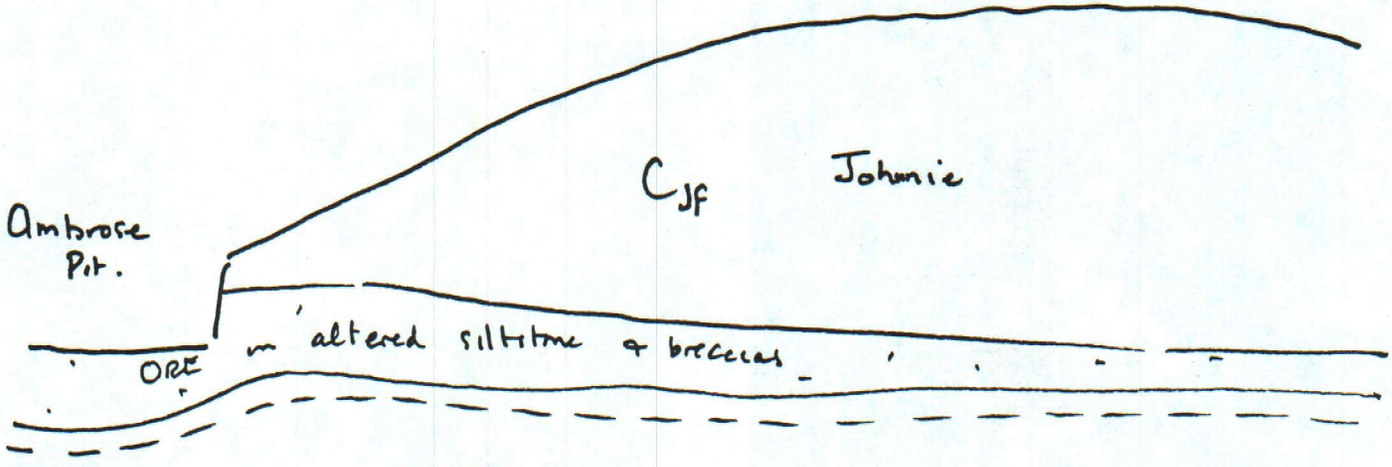
Figure 2. Generalized Geologic Map of the Beatty Area

X- SECTION 47965 N



This section is true for each individual ore zone also.

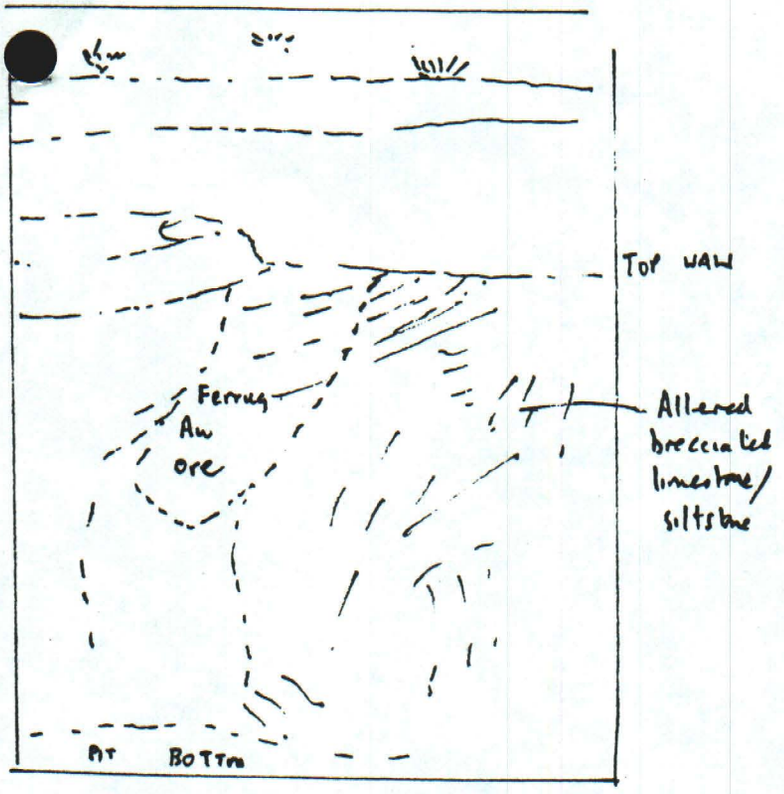
N.- S SECTION



Bonanza King (unaltered)

1" = 100'

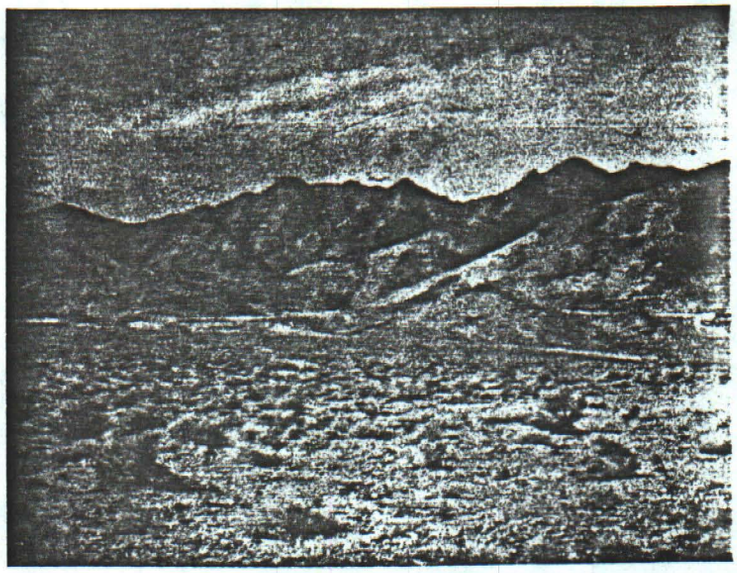
STERLING MINE, NEVADA



ACORN PIT.

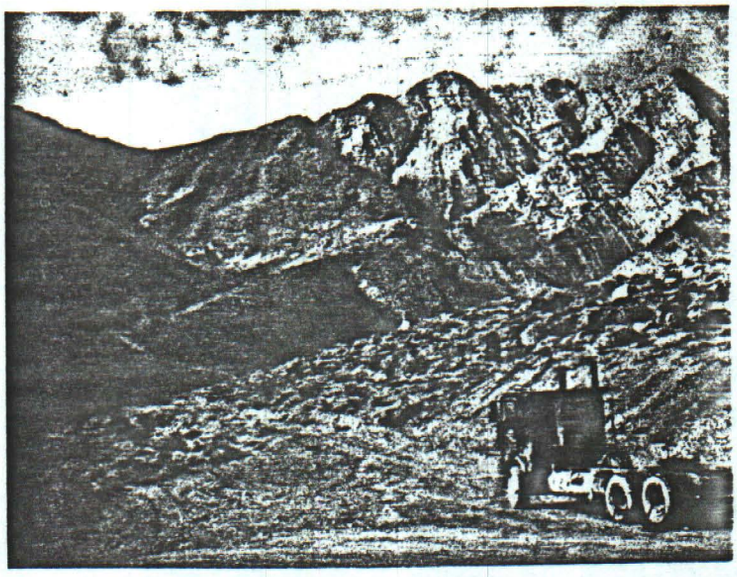
Access roads on southern ridge S of Acorn pit.

STERLING MINE, NEVADA

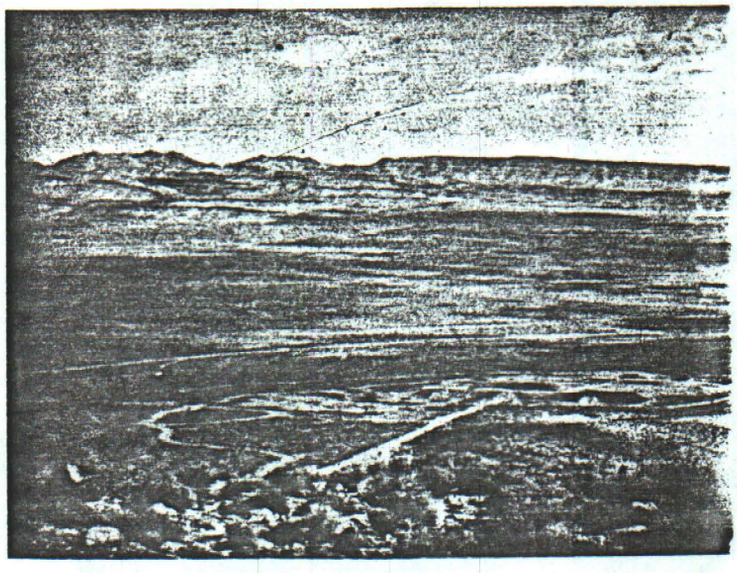


View W to Bare Mountain Ra

Mine workings on mid left centre hill.



Bare Mountain with Johnnie fm/ Bonanza Wng.



View E to heap leach pads for Au treatment.

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.

Dean Ayres

D. E. Ayres

10 March, 1982

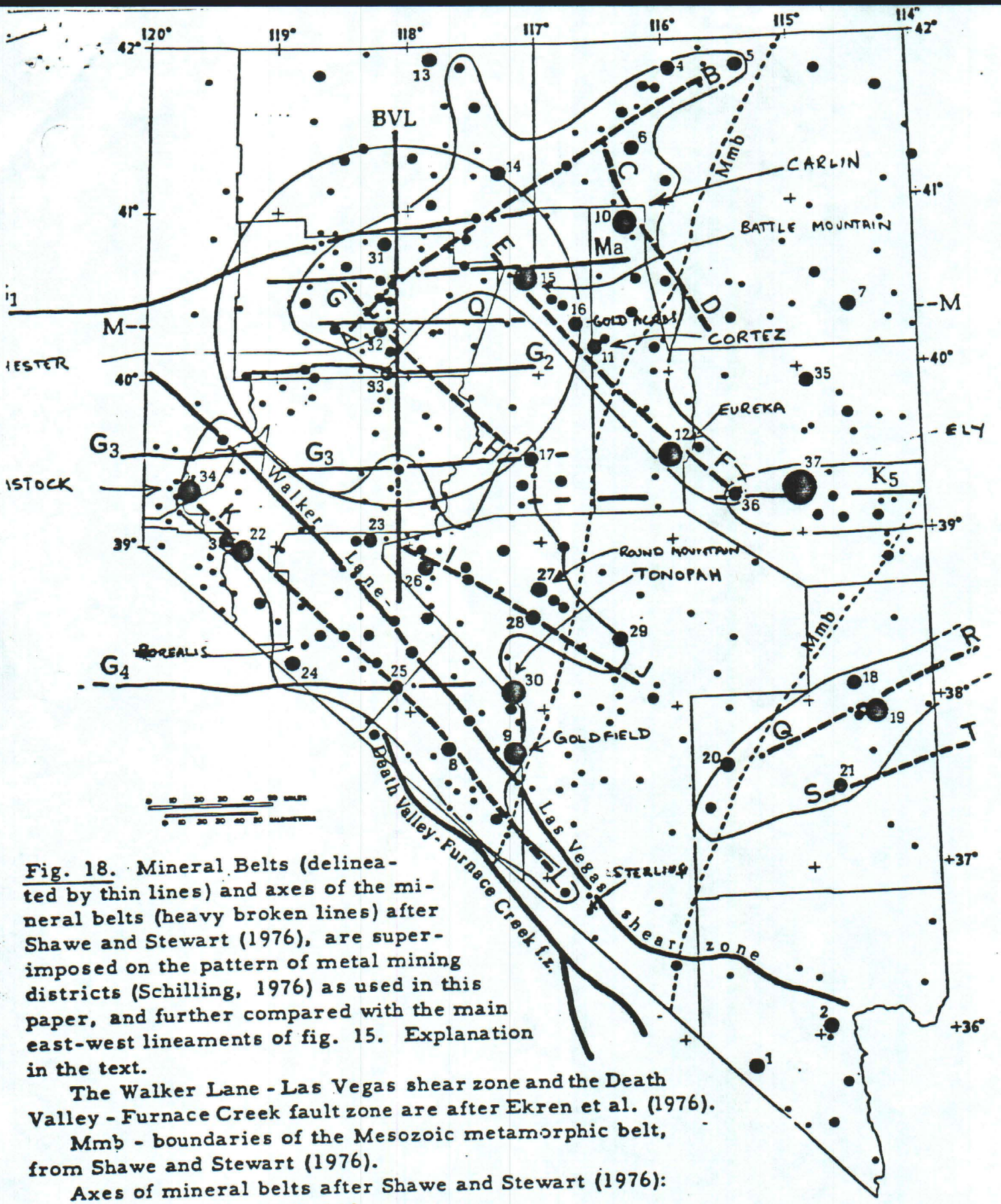


Fig. 18. Mineral Belts (delineated by thin lines) and axes of the mineral belts (heavy broken lines) after Shawe and Stewart (1976), are superimposed on the pattern of metal mining districts (Schilling, 1976) as used in this paper, and further compared with the main east-west lineaments of fig. 15. Explanation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