EXPLANATION

- QTa — **Alluvium (Quaternary and Pliocene)**—Sand, silt, and conglomerate of alluvial, lacustrine, and fluvial deposits; 0–>70 m thick; includes both younger (**Qya**) and older alluvium (**QToa**) units of plate 1
- Tb — **Basalt dikes (Pliocene?)**—Aphyric to sparsely porphyritic basalt with fine plagioclase phenocrysts; dark brown; 1 to 3 m thick
- Tsr — **Rhyolite of Sleeper mine (Sleeper rhyolite)(Miocene)**—Quartz-sanidine-plagioclase porphyry; lavas or flow-dome(?) and dikes; light gray, or tan to red where weathered; 0–>250 m thick. Age is about 17 Ma (Conrad and others, 1993)
- Tlt — **Lapilli tuff (Miocene)**—Massively bedded lapilli tuff, pumice lapilli tuff, and ash; gray to medium green; 0–40 m thick
- Tll — **Intermediate lavas (Miocene)**—Andesite and basalt lavas, aphyric to porphyritic, commonly vesicular, with associated dikes; dark brown-green, commonly tan or beige where weathered; about 150 m thick

HYDROTHERMAL ALTERATION ZONES

[All contacts are approximately located; most are gradational]

- si — **Silicified: opaline or microcrystalline silica, with or without pyrite**
- qsp — **Quartz-sericite-pyrite (not shown in unit Tsr)**
- ar — **Argillic (shown only in unit Tsr, probably gradational into perlitic alteration)**

Contact—Dashed where approximately located, dotted where covered

Fault—Dashed where approximately located, dotted where covered, showing dip of fault plane; if no dip shown it is within 10° of vertical

Sheared or smeared in zone of basin-and-range faults

Hydrothermal breccia

Vein

Base from AMAX Gold, Inc., 1993
Mine topography as of March 26, 1993

Mine area coordinates in feet, from AMAX Gold, Inc.

18½°
TRUE NORTH
MAGNETIC NORTH
APPROXIMATE MEAN DECLINATION, 1995

SCALE 1:2400
0 200 400 600 800 FEET
CONTOUR INTERVAL 10 FEET

NEVADA
MAP LOCATION

MAP SHOWING GEOLOGY AND HYDROTHERMAL ALTERATION IN THE SLEEPER MINE, HUMBOLDT COUNTY, NEVADA

By
J. Thomas Nash, William C. Utterback, and Wayne S. Trudel

1995