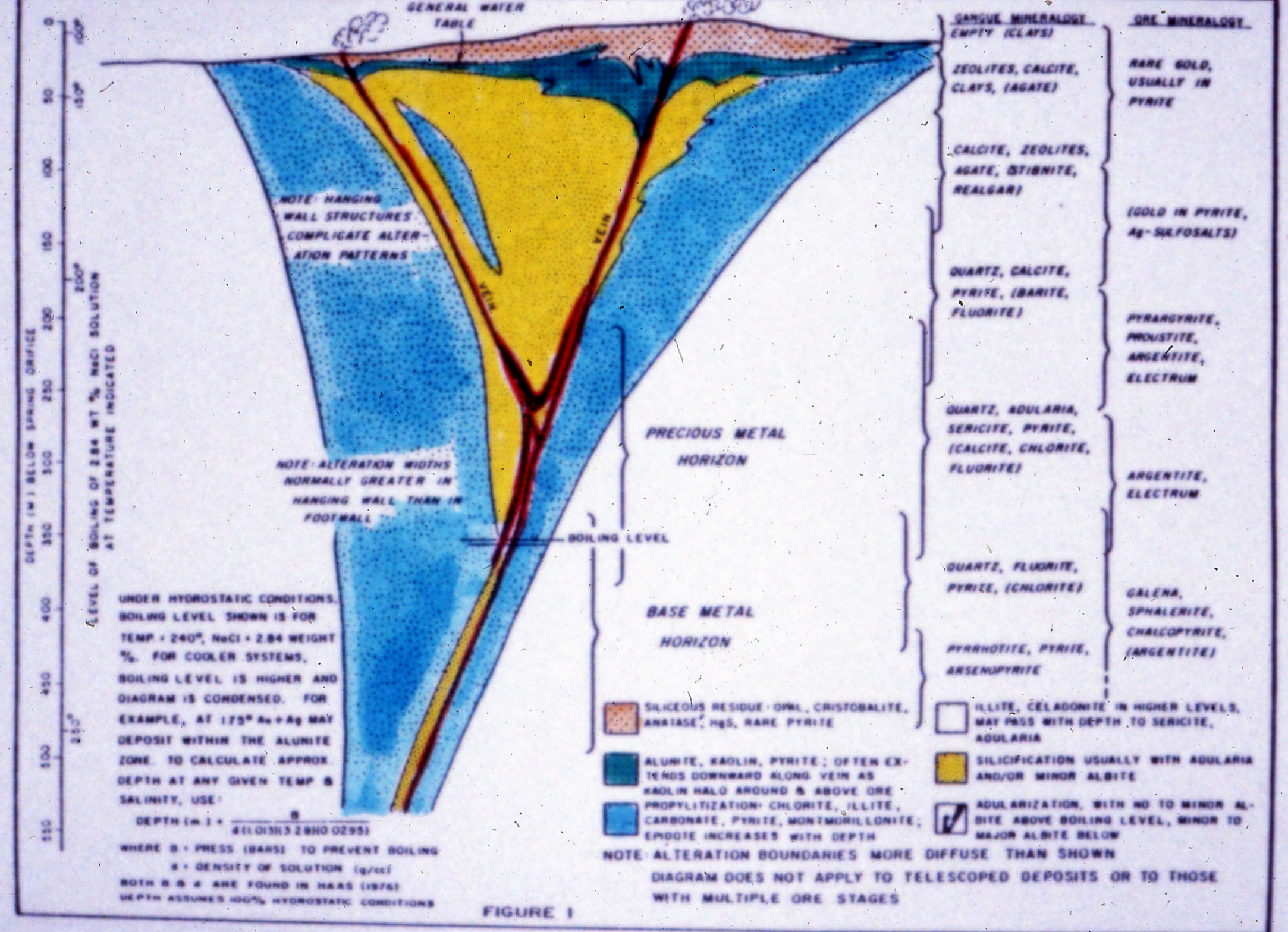
GENERAL WATER TABLE
DEPTH (M) BELOW SPRING ORIFICE
0
50
100
150
200
250
300
350
400
450
500
550
100°
150°
200°
250°
LEVEL OF BOILING OF 2.84 WT % NaCl SOLUTION AT TEMPERATURE INDICATED
NOTE: HANGING WALL STRUCTURES COMPLICATE ALTERATION PATTERNS
VEIN
VEIN
NOTE: ALTERATION WIDTHS NORMALLY GREATER IN HANGING WALL THAN IN FOOTWALL
BOILING LEVEL
PRECIOUS METAL HORIZON
BASE METAL HORIZON
UNDER HYDROSTATIC CONDITIONS, BOILING LEVEL SHOWN IS FOR TEMP = 240°, NaCl = 2.84 WEIGHT %. FOR COOLER SYSTEMS, BOILING LEVEL IS HIGHER AND DIAGRAM IS CONDENSED. FOR EXAMPLE, AT 175° Au + Ag MAY DEPOSIT WITHIN THE ALUNITE ZONE. TO CALCULATE APPROX. DEPTH AT ANY GIVEN TEMP & SALINITY, USE:
DEPTH (m) = B / d(1.015)(3.280.0295)
WHERE B = PRESS (BARS) TO PREVENT BOILING
d = DENSITY OF SOLUTION (g/cc)
BOTH B & d ARE FOUND IN HAAS (1976)
DEPTH ASSUMES 100% HYDROSTATIC CONDITIONS
GANGUE MINERALOGY
EMPTY (CLAYS)
ZEOLITES, CALCITE, CLAYS, (AGATE)
CALCITE, ZEOLITES, AGATE, (STIBNITE, REALGAR)
QUARTZ, CALCITE, PYRITE, (BARITE, FLUORITE)
QUARTZ, ADULARIA, SERICITE, PYRITE, (CALCITE, CHLORITE, FLUORITE)
QUARTZ, FLUORITE, PYRITE, (CHLORITE)
PYRRHOTITE, PYRITE, ARSENOPYRITE
ORE MINERALOGY
RARE GOLD, USUALLY IN PYRITE
(GOLD IN PYRITE, Ag-SULFOSALTS)
PYRARGYRITE, PROUSTITE, ARGENTITE, ELECTRUM
ARGENTITE, ELECTRUM
GALENA, SPHALERITE, CHALCOPYRITE, (ARGENTITE)
SILICEOUS RESIDUE: OPAL, CRISTOBALITE, ANATASE, HgS, RARE PYRITE
ALUNITE, KAOLIN, PYRITE; OFTEN EXTENDS DOWNWARD ALONG VEIN AS KAOLIN HALO AROUND & ABOVE ORE
PROPYLITIZATION: CHLORITE, ILLITE, CARBONATE, PYRITE, MONTMORILLONITE; EPIDOTE INCREASES WITH DEPTH
ILLITE, CELADONITE IN HIGHER LEVELS, MAY PASS WITH DEPTH TO SERICITE, ADULARIA
SILICIFICATION USUALLY WITH ADULARIA AND/OR MINOR ALBITE
ADULARIZATION, WITH NO TO MINOR ALBITE ABOVE BOILING LEVEL, MINOR TO MAJOR ALBITE BELOW
NOTE: ALTERATION BOUNDARIES MORE DIFFUSE THAN SHOWN
DIAGRAM DOES NOT APPLY TO TELESCOPED DEPOSITS OR TO THOSE WITH MULTIPLE ORE STAGES

FIGURE 1