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**J.C. STEPHEN
EXPLORATIONS LTD.**

WEEKLY CAMP REPORT

PROJECT NEWEX CAMP NAME ECHO II - ATLIN MTN.

NTS MAP SHEET 104 N 13 W DATES AUGUST 2-9, 1982

AIR PHOTOS BC 5677 4091 & 093 LAT. & LONG. 59°32'N 133°54'W

SILT SAMPLE SERIES 82NXV-42 TO 82NXV-44

SOIL SAMPLE SERIES _____

TALUS SAMPLE SERIES 82NXET-157 TO 82NXET-165

ROCK SPECIMEN NUMBERS 73712 TO 73716

ECHO II - ATLIN MOUNTAIN GEOLOGY

Rock Units

UNIT 1 - CACHE CREEK VOLCANICS (Spec HAB2-11-8, HAB2-11-9, HAB2-11-10 Basalt Agglom. Contact-serpentinite?)

This variable unit is composed mainly of slightly altered basalt and agglomerate with a few limestone lenses. At its base (assumed to be the western fault contact with Laberge sediments), serpentine and magnetite are very common, and the rock may have been an ultramafic. There is carbonate alteration for a meter's width at the contact (which parallels layering: eg limestone lenses - $\times 152/15NE$) (Spec HAB2-11-10)

To the north-east, away from the contact, basalt is replaced by agglomerate, which is siliceous and light gray, with angular volcanic fragments and some disseminated calcite. (Spec. HAB2-11-9). A small band of pyrrhotite-rich calc-silicate occurs in the agglomerate, oriented O80/85N.

Limestone lenses are rare and occur in both basalt and agglomerate. The limestone is black, crystalline and moderate-grained.

The basalt is olive-green and fine-grained, with quartz-chlorite-diopside (?) alteration common along fractures (Spec. HAB2-11-8).

UNIT 2 - LABERGE SEDIMENTS (Spec. HAB2-11-5)

Laberge greywacke (blue-green to brown, fine-grained, uniform in composition) is interbedded with less argillite (black, fine-grained, minor disseminated pyrite).

Felsic dikes (Spec. HAB2-11-6), up to 10m thick and variably oriented, are common.

Calcite stringers are common.

UNIT 3 - AGGLOMERATE (Spec. HA82-11-3)

The agglomerate is composed of angular to sub-rounded volcanic fragments in a soft dark green matrix. Especially common are clasts of aligned feldspar phenocrysts in a green matrix. (Dikes of this porphyry also occur). A fine-grained crystal tuff (?) ^{of} with sparse feldspar phenocrysts in a hard black matrix ^{locally} commonly occurs instead of agglomerate, (especially at lower levels?). There is no bedding evident. Relationship and relative ages of this unit and Units 1 & 2 are not clear. (Note: This unit probably corresponds to unit 3 of Echo 10).

UNIT 4 - QUARTZ MONZONITE (Spec. HA82-11-2)

The quartz monzonite is moderately-grained and equigranular. A typical mode is 20% quartz, 40% Kspar, 25% plagioclase, 5% biotite and 10% hornblende. The quartz is slightly smoky and interstitial to the feldspars. The quartz monzonite is may be slightly altered, with chloritized, magnetitic mafics and sericitized plagioclase. Rounded dark xenoliths are common. It weathers grey, forming large frost-heaved blocks.

The quartz monzonite is chilled (finer-grained, orange-weathering) at its contact with unit 3 (the volcanic is hornfelsed, with secondary biotite flakes and silicification) (Spec. HA82-11-4). This indicates that the quartz monzonite intruded, and is younger than, the agglomerate. A few narrow ^(5cm) quartz veins occur at the contact, containing very minor galena.

UNIT 5 - FELDSPAR PORPHYRY (Spec. HA82-11-1)

The feldspar porphyry typically contains feldspar and hornblende (^{and} very rarely quartz) phenocrysts in a hard, creamy-white matrix. Magnetite occurs rarely. The unaltered porphyry forms creamy-grey curved plates when it weathers. There are no xenoliths.

Strong alteration of the porphyry occurs locally, throughout the prospected area. The feldspars are completely replaced by a very soft, white (or apple-green or orange stained)

material (which doesn't have the characteristic smell of the clay minerals, but doesn't look much like sericite). Quartz or chalcedony stringers are commonly cut the altered porphyry. Spec 73712 is of chalcedony-brecciated porphyry and 73713 is of porphyry cut by quartz stringers with traces of galena and chalcopryite. The altered porphyry typically weathers orange with white spots (due to the altered feldspar material, which is resistant to weathering).

Narrow dikes of feldspar porphyry occur in both units 3 and 4 near the porphyry's contact with them, indicating that the porphyry is younger than both. The ~~gr~~ Leberge greywacke and argillite are hornfelsed at their contact with the feldspar porphyry. (Spec. HAB2-11-7 is hornfelsed argillite from the contact). Again this indicates that the porphyry was intruded into the Leberge sediments.

From the similar composition, and close ^{spatial} association, I believe that the quartz monzonite and feldspar porphyry are just two phases of the same intrusion.

UNIT 6 - QUARTZ PORPHYRY (Spec HAB2-11-11 and HAB2-11-12)

The quartz porphyry phase of the intrusive covers only a small area to the west of most of the intrusive. Several dikes extend west from there.

The quartz porphyry consists of slightly smoky quartz ~~phenocrysts~~ and chloritized biotite phenocrysts in a siliceous white matrix. There are no xenoliths. It weathers light grey and forms blocks or plates.

Spec HAB2-11-~~8~~¹² is from the main body of quartz porphyry and HAB2-11-11 is from a two-meter dike a few hundred meters west.

STRUCTURE

There is a prominent N-S linear apparent on BC 5677 #093 passing a few hundred meters East of camp. Its southern end is the gully marking the intrusive contact of porphyry and Laberge greywacke. The remainder of the linear ~~occurs in~~ covers the intrusive. ~~The~~ Outcrop close to the linear is not altered especially. The linear may mark an old fault, along which the intrusion occurred.

The contact between units 1 and 2 is a fault, with sheared, serpentized and carbonate-altered rock adjacent.

ECONOMIC POTENTIAL

The altered porphyry is widespread and would be worth doing more work on if the chalcedony carries precious metal values.

Abundant vein quartz float occurs 1600 m NNW of camp. It is uniformly unmineralized but ~~is~~ similar float contains some galena (73715) a few hundred meters north (downhill). The situation is similar to Bralorne: a felsic intrusive cutting basalt (possibly serpentinite).

The pyrrhotite-rich calc-silicate (73714) is narrow, and contains no scheelite, but strongly resembles my thesis rocks, which contain significant tin. The calc-silicate is recessive and it would not be easy to find other similar bands.

Minor galena occurs in a 5 cm quartz vein at the contact of units 3 and 4 1550 m NE of camp. The veining and mineralization are insignificant.

A narrow zone of silicified porphyry borders a dike (HA 02-11-13) and contains a bright blue alteration product of fine black metallic minerals. Significance is unknown.

MISCELLANEOUS

1. Campsite is very adequate, with good drinking water, easy helicopter accessibility, nearby firewood and interesting rocks (also a very friendly porcupine who likes laundry soap).
2. We saw no signs of previous prospecting, though it is so close to Atlin that it must have been thoroughly prospected.
3. If air photos and time permits, it would be worthwhile to take a quick look to the south-east, at the contact of the quartz monzonite (probably the feldspar porphyry phase?) with unit 9a (serpentinite) - another Bralorne situation?

