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PROJECT FILE

Dear Larry

I would like to thank you for the opportunity to consult for Chevron in the Bridge River area, B.C. last week. Our tour of the geology and mineral deposits prompted some stimulating discussions and was educational for us all, myself included.

Having had a week to gather my thoughts, I would like to put on paper some facts and concepts that are pertinent to Chevron's exploration program on the Wayside property. In particular, I will discuss the roles of host rock (stratigraphy), source rock (intrusions), ground preparation (structure), alteration, and mineralization; on the regional, property and local scales; using the Bralorne-Pioneer and Congress-Minto deposits as models to guide exploration for gold on the Wayside claims.

GEOLOGY

Gold deposits of the Bridge River area can be subdivided into two main types: Bralorne-Pioneer-type, gold-silver quartz veins following narrow fissures in Cadwallader Group diorite, andesite and granite near late? siliceous, albitic and porphyritic dikes; and Congress-Minto-type, gold-silver-arsenic-antimony-lead-zinc sulfide replacements following broader shears in Bridge River Group gabbro, basalt, and cherts near late? quartz, feldspar and hornblende porphyry dikes.

The two deposit types are broadly similar in modes of occurrence but they differ in ore mineralogy, suggesting that they may have a common origin but form separate zones spatially and temporally. Since the Wayside property covers both Cadwallader and Bridge River Group rocks, and includes both Bralorne- and Congress-type gold prospects, the following summary is relevant to your exploration program:

BRALORNE-PIONEER

Host Rocks

Triassic volcanic arc assemblage
Cadwallader Group
diorite > andesite > granite

Source Rocks

Late Cretaceous? felsic dikes
Unnamed Intrusions
siliceous > albitic > porphyritic

Ground Preparation

Jurassic listric? crustal break
Tertiary strike slip remobilization
Cadwallader - Fergusson faults
major, wide, crustal faults

Triassic oceanic crust slivers
President Intrusions
sheared serpentinite bodies

Cretaceous? shear, tension fractures
competent fault bounded block
vein shears 15 to boundary faults
55, 77, Main veins
shear faults 15 to boundary faults
Empire, E faults
vein faults 75 to boundary faults
minor faults
tension veins 75 to boundary faults
27 vein, 85 vein

shear, gash, fault intersections
pinch and swell structures
well-banded quartz veins
veins turning or steepening

Alteration

serpentinization of major faults
silicification of late dikes
ankeritization of wall rocks
ankerite, quartz, calcite, fuchsite,
sericite, talc, chlorite, clay

Mineralization

gold, silver,
pyrite, arsenopyrite, galena, sphalerite
tetrahedrite, stibnite, scheelite, moly.
3 generations gold:
early sulfide, main fine, late coarse

Au, As, Pb, Zn, Cu, Sb, W, Mo

CONGRESS-MINTO

| | |
|---------------------------|--|
| <u>Host Rocks</u> | Permian-Jurassic ocean floor assemblage Bridge River Group gabbro > basalt > chert |
| <u>Source Rocks</u> | Early Tertiary felsic dikes Unnamed Intrusions feldspar > hornblende > quartz porphyries |
| <u>Ground Preparation</u> | Jurassic listric thrusts Tertiary strike slip remobilization sheared serpentinites Cretaceous shear, tension fractures competent basalt "knockers" primary shears Congress, Howard veins secondary shears Congress, Howard faults intersections, pullaparts |
| <u>Alteration</u> | listwanitization of thrust faults silicification of vein zones ankeritization of wall rocks, dikes ankerite, quartz, calcite, sericite, fuchsite, chlorite, graphite, clay |
| <u>Mineralization</u> | gold, silver pyrite, arsenopyrite, stibnite, tetrahedrite, sphalerite, galena |
| <u>WAYSIDE</u> | <i>As, Ag, As, Cu, Sb, Pb, Zn</i> |

The presence of host rocks, source rocks, ground preparation, alteration and mineralization identical in many ways to the Bralorne-Pioneer and Congress-Minto deposits indicates very clearly that the Wayside claims have excellent exploration and mining potential. The possibility that the Wayside mine was offset by the Church fault to an area east of the quarries is especially intriguing.

In particular, the Cadwallader Group sequence, from west to east, of diorite, granite, andesite, argillite, conglomerate and argillite, is very similar to both the BRX and Bralorne properties. The two boundary faults, marked by serpentinites or listwanites, strongly resemble the Cadwallader and Fergusson faults at Bralorne. Late siliceous-albitic dikes, ankerite-fuchsite alteration and gold-quartz mineralization are identical to the Bralorne area.

The Wayside, Commodore and 3T veins could in fact represent faulted sections of the same vein system. Observed faults strike WNW and dip NNE with left hand strike slip motion (quarry fault), or strike ENE and dip SSW with

left hand strike slip movement (Church fault). Observed veins trend NNW, dipping ENE, (Wayside vein) and N dipping E (Notman shear), intersecting along the SE plunge observed for the ore shoots.

Other potential ore shoots could occur where the Wayside - Notman system intersects the serpentinitized fault to the north, where it intersects the Church fault to the south, where it is predicted to occur near the buried adits east of the quarries and where any other structures may intersect the vein system. A NW-striking, NE-dipping tensional vein direction can also be predicted (see diagram).

Some differences to Bralorne include the association of gold with tetrahedrite in the upper levels at Wayside mine, the well developed Notman shear with pervasive ankerite alteration and stringer quartz veins but low gold values, and the narrowness of the veins. Never-the-less, the Wayside property holds excellent potential for extending known veins and finding new veins of the Bralorne-Pioneer-type.

The 2Bob vein is definitely a Congress-Minto-type deposit, with quartz-sulfides replacing an ankerite-altered shear zone in cherty argillites and listwanitized serpentinites near a porphyry dike. However, the only exploration potential for this vein system lies south and north of the trenches where it may run into volcanics instead of sediments. Again, look for cross structures to control ore shoots. There is some potential for new discoveries of the Congress-Minto-type on the Wayside property, especially if the sample in Al Chunicks office can be relocated on the ground.

ORIGIN

If I may speculate on the origin of gold deposits in the Bridge River area, I would conclude that they all have a common origin but the two main deposit types are zoned spatially and temporally. The host rocks form a volcanic arc - oceanic floor complex that was rafted northeasterly onto the North American continental margin in Jurassic time.

Thus started the ground preparation which culminated in right hand strike slip remobilization of old faults and development of faults, shears and veins in competent fault blocks. A hot spot generated plutons (Cretaceous Coast Intrusions 100 - 70 Ma) to the west, passed beneath the Bralorne belt, partially melting its roots to form felsic plutons (Bralorne soda granite) and recrystallized mafic restite (Bralorne augite diorite), produced high level felsic dikes (unnamed dikes 70 - 60 Ma), the Bendor Intrusions (60 - 50 Ma), and the Rexmount Intrusions (50 - 40 Ma).

Shear movement, dike emplacement, wallrock alteration and vein mineralization are all essentially penecontemporaneous within each deposit type but the Bralorne deposits may be slightly older than the Congress deposits, as suggested by their more westerly position with respect to an easterly moving hot spot. The different ore mineralogies of the two deposit types probably reflect the slightly different host and source rock chemistries, as well as slightly higher level of emplacement in the crust of Congress type veins. Needless to say, the gold-quartz veins are much more appealing economically because of their higher grades and simpler metallurgical characteristics.

Metal zoning in the camp appears to telescope and young to the northeast, from Cu-Mo porphyries to Mo-W-Au-Ag veins to Au-Ag-As-Sb-W-Pb veins to Au-Ag-As-Sb-Pb-Zn shears to Sb-Hg replacements. Again, this may reflect the increasingly higher levels of emplacement of hydrothermal deposits in the crust relative to the hot spot. The occurrence of Sb-Hg deposits to the north of the Bridge River area also suggests a northerly plunge to the mineralized system, which would place the Wayside property at a higher level than the Bralorne camp. Keeping in mind that the Bralorne and Pioneer mines both went through 600 - 800 vertical feet of low grades in the upper levels before they hit their main producing veins, the Wayside must have strong exploration potential at depth.

EXPLORATION

Chevron is currently employing the most useful exploration techniques for finding gold in the Bridge River area, including geological mapping and soil sampling. Other methods such as biogeochemical sampling, VLF-EM and PP-MAG surveying do have specific but limited applications.

I suggest that detailed mapping on surface and underground of all veins and shears will be very productive in working out the structural picture of the Wayside property. Soil sampling should discover some new veins and extend known ones if followed up by backhoe trenching.

Surface geophysics would help to interpret the geology but probably won't find new veins. Biogeochemistry could be useful in tracing veins north below thick overburden. Ultimately, deep diamond drilling from surface or underground will be necessary to properly test the depth potential of Bralorne-type veins on the Wayside property.

Should you have any further need for my services, please do not hesitate to contact me in future. I look forward to hearing from you.

Yours truly



Bradford J. Cooke, F.G.A.C.
Consulting Geologist

SCHEMATIC
STRUCTURAL
DIAGRAM

