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GEOLOGICAL AND MAGNETOMETER SUMMARY REPORT
ON THE
LEXINGTON PROJECT
(CITY OF PARIS, LEXINGTON AND LINCOLN CLAIMS
AND VACHER ZONE LOT 1095 NOTRE DAME DES MINES)

GREENWOOD MINING DIVISION
SOUTHEAST BRITISH COLUMBIA
Latitude 49°00'54" N, Longitude 118°37'12" W
NTS: 82 E/2E

FOR
BRITANNIA GOLD CORP.
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Fieldwork completed between September 15 and October 30, 1992

GEOLOGICAL MODELS AND MINERAL DEPOSITS OF SIMILAR METALLOGENIC AFFINITY

The Lexington Project Main Zone Deposit is similar to the Overlook and Key Deposits of Echo Bay Mines/Crown Resources located near Republic, Washington. These deposits are considered to be epigenetic replacement and clastic hosted flat-lying quartz/sulfide vein swarms proximal to Tertiary (?) sills of felsic to intermediate composition (Scatter Creek intrusive compositional affiliation).

The Overlook deposit consists of subhorizontal lenticular bodies arranged symmetrically around a detachment contact between Permo-Triassic limestones and greywackes. The felsic sills and mineralization are controlled by low-angle cataclastic/mylonitic shears. Gold-rich, base-metal-deficient, massive magnetite in association with an unusual gangue of iron silicates and the occurrence of quartz-sulfide veinlets, distinguish the Overlook Deposit as a unique type of gold occurrence. The iron silicates consist of talc, iron chlorite and iron-rich greenalite (serpentine).

Massive sulphide lenses consisting of pyrrhotite, pyrite and chalcopryrite occur within the magnetite portion of the deposit. Copper content is generally less than 0.25%. Total minerable gold reserves of the Overlook Deposit are 2.45 million tons at 0.19 oz./ton gold.

Two-thirds of the gold reserves occur in the massive oxide-sulfide zone which consists of tabular to lenticular bodies of magnetite, pyrrhotite, pyrite and hematite in association with minor amounts of quartz, calcite and iron silicates. Gold in these massive ores is finely disseminated but unevenly distributed, averaging 0.3 oz./ton gold. Gold in the veined clastic rocks averages 0.12 oz./ton over thicknesses up to 100 feet. The discovery of the Overlook Deposit was the result of geochemical and ground magnetic surveys. The uppermost ore grade mineralization is approximately 250 feet below the surface.

The Key Deposits are replacement bodies in limestone and consist primarily of magnetite with associated pyrite, pyrrhotite and chalcopryrite. The original

deposit was sufficiently high in magnetic content to be mined as a flux. One replacement body mined during 1907 to 1915 was 100 feet long, 100 feet wide and 25 feet thick. The mineralization contained 0.08 to 0.25 oz./ton gold and less than 1% copper and 40% iron.

oo ||| The classical metallogenic model for the area, Figure 40, has been postulated by early workers such as LeRoy, McNaughton, Seraphim and Little. It relates mineralization in a wide range of host rocks to igneous intrusive events, especially the emplacement of granodiorite plutons (Church, 1986). However, this simplistic model does not adequately explain the anomalous coherence of lead isotope results which is characteristic of mixing and convergence of diverse hydrothermal plumbing systems. The Lexington Project probably represents an early hydrothermal system related to the early faulting and cold intrusion of the ultramafic rocks and then overprinting of other hydrothermal systems related to the intrusion of the "dacite" and Tertiary dykes. Clearly, most, if not all, mineralization on the Lexington Project is structurally controlled where the igneous intrusions served principally as heat engines in the process of convection and dispersion of hydrothermal solutions.