



**MINERAL PROPERTY EXAMINATIONS**

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**SAM GOOSLY (93L/1E)**

The Sam Goosly copper-silver-gold property is located approximately 40 kilometres southeast of Houston. The property is at an advanced stage of development, following drilling of more than 28 336 metres on both the Main and Southern Tail Zones and 177 metres of underground bulk sampling on the Main Zone. In addition, pilot plant concentrate production from both the Main and Southern Tail Zones and pilot plant operation of an antimony leaching and recovery circuit were carried out.

The reserves as defined by 2.0 ounces silver equivalent cutoff are estimated at:

	<b>Tonnes</b>	<b>Copper per cent</b>	<b>Silver ppm</b>	<b>Gold ppm</b>	<b>Antimony per cent</b>	<b>Stripping Ratio</b>
MAIN ZONE	29 934 878	.30	87.5	0.719	0.084	2.1:1
SOUTHERN TAIL	9 538 301	.42	84.38	1.094	0.087	2.3:1
TOTAL RESERVE	39 473 179	.33	86.88	0.813	0.085	2.1:1

These are open pit reserves and the potential for expanding reserves at depth as well as in other parts of the property remain excellent.

Exploration on the property in 1976 was confined to the Southern Tail Zone where four test pits averaging 75 square metres in length and depths of 4 metres were excavated for the purpose of supplying an 18-tonne per day pilot mill. The pits were dug on a north-south line with the more spectacular ore coming from the most southerly pits. The host rock is a highly fractured and veined cream-coloured tuff with varying amounts of coarse-grained pyrite, tetrahedrite, and chalcopyrite. Stripping has shown that overburden depths are very shallow (for example, 1 metre) and that oxidation has been intense for a depth of about 3 metres. A grab sample of high-grade ore from the southernmost pit assayed:

	<b>Gold ppm</b>	<b>Silver ppm</b>	<b>Copper per cent</b>	<b>Zinc per cent</b>	<b>Lead per cent</b>	<b>Antimony per cent</b>
SG-10	6.25	5646.88	11.12	1.37	.25	7.65

Approximately 900 tonnes of ore was put through a crusher and pilot mill yielding a silver-copper concentrate of about 27 tonnes, of which approximately 18 tonnes was shipped to several smelters for test processing.

Clearing of land for plantsite location was completed and a new road from Houston to the property along Dungate Creek was initiated.

**References:** *B.C. Dept. of Mines & Pet. Res.*, GEM, 1969, pp. 142-148; 1970, pp. 126-129; 1973, pp. 333-338; *B.C. Dept. of Mines & Pet. Res.*, Geological Fieldwork, 1974, p. 79.

#### **POPLAR (93L/2W; 93E/15W)**

The Poplar property, situated on the north side of Tagetochlain Lake approximately 50 kilometres southwest of Houston, consists of approximately 389 claims located by F. Onucki, C. Critchlow, and M. Callaghan (optioners) and Utah Mines Ltd. (operator) between 1971 and 1974.

During 1976, Utah continued to explore claims not examined previously and diamond drilled the Main Zone and a highly altered zone to the southeast of the Main Zone. An access road and limited trenching were completed on a zone approximately 3 kilometres to the east of the Main Zone.

The area is underlain by volcanic and sedimentary rocks of the Hazelton Group which have been intruded by several stocks and dykes of granodiorite and biotite feldspar porphyry. A late barren rhyolitic porphyry dyke system intrudes all rocks.

The Hazelton Group with a general attitude of 060 degrees/75 degrees southeast can be divided into three units:

- (1) **Lower Volcanic Unit** consisting of andesitic tuff and lapilli tuff, agglomerates, and andesite-dacite flows located in the northwestern part of the property.
- (2) **Middle Sedimentary Unit** consisting of well-banded, hornfelsed argillites, with occasional interbeds of sandstone located in the south-central part of the property.
- (3) **Upper Volcanic Unit** consisting of purple porphyritic andesite and minor agglomerate in the southeast part of the property.

Intrusive rocks include varieties of granodiorite and feldspar porphyry as well as younger andesitic and basaltic dykes. The main mineralized body is contained in a biotite feldspar porphyry body which is up to 150 metres wide locally and has been emplaced along a major north-northwest structure now occupied by Canyon Creek. It is in this area that most of the 1976 diamond drilling was concentrated over 750 square metres straddling Canyon Creek.

Block faulting is common with dominant fault and shear directions trending north-northwest, northeast, northwest, and east-west. Canyon Creek has apparently controlled the emplacement of quartz feldspar porphyry and rhyodacite dykes.

Intrusive rocks have been moderately to intensely sericitized and silicified. Quartz-sericite-pyrite is the typical assemblage. Outward from this zone there is a rapid alteration

gradient from moderately argillized (feldspars altered to clay) to propylitized rock which is widespread. Gypsum is also a common vein mineral.

Roughly coincident with alteration zoning is a pyrite distribution of 2 to 4 per cent with local concentrations greater than 10 per cent, especially adjacent to shear zones. Pyrite occurs as disseminations and in veinlets in most rock types. Chalcopyrite and molybdenite are locally concentrated and are associated with veinlets and disseminations of pyrite and veinlets of quartz. Trace amounts of tetrahedrite, covellite, bornite, sphalerite, and galena were observed. Secondary copper minerals include malachite, azurite, and tenorite.

**References:** *B.C. Dept. of Mines & Pet. Res., GEM, 1972, p. 373; 1974, pp. 256, 257; Assessment Reports 5360, 5586, 5679.*

#### **MORICE MOUNTAIN (93L/7E)**

Morice Mountain is located 18 kilometres south of Houston. Two styles of mineralization are known to occur:

- (1) Chalcopyrite and molybdenite in fractures and as disseminations in quartz porphyry and granodiorite.
- (2) Chalcopyrite, tetrahedrite, and pyrite in epidote-rich zones with folded and fractured volcanic rocks, especially grey-green dacite horizons.

Amax Exploration Inc. explored the porphyry potential of the property between 1963 and 1967 and Falconbridge Nickel Mines Limited investigated the 'massive sulphide' potential in 1970. In 1976 the area was staked by John Bot and several new occurrences of copper and silver were located, mainly within the volcanic rocks. The porphyry potential and 'massive sulphide' potential were again tested by a number of major companies using geochemical and geophysical techniques.

**References:** *B.C. Dept. of Mines and Pet. Res., GEM, 1970, pp. 155, 156; Assessment Reports 797, 2844.*

#### **UTE (FRENCH PEAK) (93M/7E)**

Aalenian Resources Ltd.'s French Peak high-grade vein silver-lead-zinc-copper-gold property is located on the southeast flank of French Peak, approximately 65 kilometres north-northeast of Smithers. In 1956 Rio Tinto Canadian Exploration Limited diamond drilled 530 metres and trenched narrow silver-lead mineralized structures in bedded volcanic rocks over a length of 365.8 metres. In 1964, approximately 2.5 tonnes of selected ore was shipped from surface cuts by S. Homenuke and 25.5 tonnes of hand-sorted ore was shipped in 1974.

The main mineralized vein containing coarse-grained galena and tetrahedrite occurs in shear zones in bedded volcanic rocks of the Hazelton Group. It is variable in width having a maximum mineable width of 35 centimetres. The mineralized vein has been traced for 36 metres along strike.

During Phase I of the 1976 program by Aalenian, approximately 215 metres was diamond drilled in 11 holes to test the continuity of known exposures at depth and along strike. Massive tetrahedrite and/or galena and/or chalcopyrite with disseminated pyrite was confirmed at depth along the vein structure which appears to lie in a volcanic sequence of rhyolitic and andesitic flows and tuffs. Mineralized vein sections vary in width from less than 2 centimetres to zones of 1 metre.

Phase II of the 1976 program consisted of diamond drilling of eight short holes on the newly discovered South Zone located 122 metres to the south of the Main Zone, and three more holes on the main mineralized structure. The South Zone consisting of massive banded vein mineralization of chalcopyrite, tetrahedrite, and pyrite within a bedded rhyolite unit has been traced along a length of about 5 metres and an apparent width of 0.5 metre.

The road to the property has been upgraded and an all-weather camp was constructed during 1976. The proposed underground program of drifting along the main vein has been postponed.

**References:** *Minister of Mines, B.C.*, Ann. Rept., 1956, p. 29; 1964, p. 50; *B.C. Dept. of Mines and Pet. Res.*, GEM, 1974, p. 272; *B.C. Dept. of Mines & Pet. Res.*, Geological Fieldwork, 1974, p. 82.

#### **BELL MOLYBDENUM (103P/6W)**

The Bell Molybdenum property is located 10 kilometres southeast of Alice Arm. During the past year Climax Molybdenum Corporation of British Columbia Limited optioned the property and this summer diamond drilled eight holes totalling approximately 2 728 metres. One hole (DDH 76-8) was drilled on the northeast part of the Main Zone and the other seven were drilled on a newly discovered zone located approximately 1 370 metres to the southwest of the Main Zone in an area of hornfelsed sedimentary rocks overlain by a capping of flat-lying Quaternary basalts. The lava appears to be underlain by a thin (approximately 15 metres) layer of angular breccia and unconsolidated silty material (up to 30 metres thick). Drill holes collared in basalt went through this sequence and into mineralized hornfels and intrusive at depth. The intrusive is a leucocratic quartz monzonite but its geometry is not known. Post-mineral basic dykes cut both the sedimentary and plutonic rocks. Molybdenite mineralization in the form of selvages in quartz veinlets occurs in both the quartz monzonite and biotite hornfels similar to that in the Main Zone. Significant amounts of pyrrhotite and pyrite occur as disseminations and as fracture fillings.

**References:** *B.C. Dept. of Mines & Pet. Res.*, Ann. Rept., 1967, pp. 44-47.