Plant fossils (reeds) were located in the area of the junction of the water tower right-of-way (western end) and the Bessemer Creek diversion ditch within the sedimentary-volcanic division (Fig. 37). In the Bessemer Creek diversion ditch, quartz veinlets with pyrite, sphalerite, and minor chalcopyrite occur within pyroclastic rocks and pyritized sedimentary rocks.

The diversion dam on Lu Creek (west end) is underlain by pyritized volcanic sedimentary rocks and tuffs. The starter dam on Lu Creek (east end) is underlain by grey to maroon-coloured andesitic Goosly Lake rocks.

Construction of the millsite exposed numerous sub-outcrops of well-bedded intermixed pyroclastics and welded tuffs with abundant tourmaline-pyrite alteration and later dykes. Dumortierite was observed in the foundation for the coarse ore storage. A 7.6-centimetre vein of massive chalcopyrite and tetrahedrite was observed in the same foundation.

Three new K/Ar age determinations were obtained during a thesis study completed during the summer of 1978 and winter of 1979 by Dennis Wetherell at the University of British Columbia and are reported as follows:

Location	Minerals	Type	Age (Ma)
Tourmaline-breccia alteration, DDH 54 (250 m)	sericite-tourmaline-pyrite-chlorite	whole rock	58.5±2.0
Southern Tail alteration, DDH 61 (19.2 m)	sericite-quartz	whole rock	58.1±2.0
Main zone alteration, DDH 28 (77.4 m)	sericite-quartz-chlorite	whole rock	48.3±1.7

These dates point to a correlative mineralizing event with the quartz monzonite stock (57.2±2.3 Ma). The apparent age of alteration in the Main zone is identical to that of the gabbroic pluton and suggests that the age has been reset by contact metamorphism.

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LUCKY GOLD (93L/10E)

The Lucky Gold (Free Gold) property is approximately 40 kilometres east of Smithers. During 1979 Kryco Mines Ltd. constructed a 2.5-kilometre access road from the Fulton Lake main logging road south to the property and the old workings were rehabilitated. The company continued drifting along vein 3 to hook up with the workings below shaft 2. Approximately 45 tonnes of ore mined in the 1930's are stockpiled outside the portal (main dump) and another 45 tonnes of newly broken ore has been stockpiled (new

dump) from a surface exposure located approximately 55 metres south of the portal. Another 45 to 91 tonnes of ore exists in a number of small dumps along the surface expression of the vein system which has been traced by trenches and shafts over a length of over 180 metres.

The property is underlain by altered andesitic rocks of the Hazelton Group which have been intruded in the vicinity of the showings by an irregular mass of quartz porphyry. The showings consist of a series of several quartz veins and quartzose shear zones, ranging in width from a few centimetres to 0.75 metre. These are exposed in a section about 180 metres long and 137 metres wide. The veins strike generally northwest and dip steeply northeast. The veins are irregular in both strike and dip, and pinch and swell and locally split into stringers. Mineralization consists of pyrite, sphalerite, galena, tetrahedrite, chalcopyrite, and native gold within the quartz veins.

The following samples were collected by the writer.

Sample No.	Description and Location	Au	Ag	Zn	Cu	Pb
		ppm	*ppm*	*per cent*	*per cent*	*per cent*
LG– 3	ZnS+py+tetrahedrite in 15-cm quartz vein, main dump	116.4	248	>5	0.4	0.5 - 1
LG– 6	Py-ZnS+tetrahedrite in 7.6-cm quartz vein, main dump	71	187	2 - 3	0.6	.25
LG– 9	Py-PbS+ZnS+tetrahedrite in 10-cm quartz vein, main dump	41	263	>10	0.6	>5
LG–12	Py-ZnS+PbS in 10-cm quartz vein, main dump	48	212	>10	0.6	.25
LG–15	Py-PbS-cpy in 15-cm quartz vein, 'new' dump	57	126	>10	0.4	>2
LG–16	Py in 13-cm quartz vein, surface dump near shaft 3	11	>10	0.3	0.05	0.2
LG–18	Fine-grained PbS+ZnS in 8-cm quartz vein, surface dump near shaft 3	105	235	>15	0.2	>5

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BOYA (94M/3W, 4E, 5E, 6W)

The Boya molybdenum-tungsten prospect, being explored by Texasgulf Inc., is located 125 kilometres southeast of Watson Lake, approximately 10 kilometres northeast of the confluence of the Kechika and Turnagain Rivers. During 1979, a 15-person camp was set up on the north shore of Graveyard Lake. Geochemical, geophysical, and geological surveys were conducted, and six diamond-drill holes totalling approximately 1 380 metres were completed.

Several zones of mineralization are exposed over a northwesterly trending ridge for a length of over 2 500 metres. Molybdenite is best observed in the Main Face showing. Other (dominantly tungsten) showings include West Hill, Nighthawk Hill, and Paint Can Hill.