



Location/Identification

MINFILE Number: 082FNE110 **National Mineral Inventory Number:** 082F9 Gem1

Name(s): HELLROARING CREEK
LINDA, LINDA 1

Status: Developed Prospect **Mining Division:** Fort Steele

Regions: British Columbia **Electoral District:** East Kootenay

BCGS Map: 082F060 **Resource District:** Rocky Mountain Forest District

NTS Map: 082F09E **UTM Zone:** 11 (NAD 83)

Latitude: 49 34 00 N **Northing:** 5490779

Longitude: 116 10 33 W **Easting:** 559594

Elevation: 1615 metres

Location Accuracy: Within 500M

Comments: Centre of drill hole 86-13 on the east side of Hellroaring Creek, 18 kilometres southwest of Kimberley (Exploration in B.C. 1987, Figure B32).

Mineral Occurrence

Commodities: Feldspar, Mica, Beryllium, Gemstones, Rubidium, Beryl

Minerals

Significant: Feldspar, Microcline, Albite, Muscovite, Beryl, Tourmaline, Garnet

Associated: Quartz, Pyrite, Pyrrhotite, Galena, Arsenopyrite

Associated Comments: Trace pyrite, pyrrhotite, galena and arsenopyrite.

Mineralization Age: Middle Proterozoic

Deposit

Character: Massive, Disseminated

Classification: Pegmatite, Magmatic, Syngenetic, Industrial Min.

Type: O01: Rare element pegmatite - LCT family, O03: Muscovite pegmatite, O04: Feldspar-quartz pegmatite

Dimension: 4000x1500x0 metres

Comments: Pegmatite stock.

Host Rock

Dominant Host Rock: Plutonic

Stratigraphic Age	Group	Formation	Igneous/Metamorphic/Other
Helikian	Purcell	Aldridge	-----
Helikian	Purcell	Creston	-----
Proterozoic	-----	-----	Moyie Intrusions

Isotopic Age	Dating Method	Material Dated
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Lithology: Medium Grained Pegmatite, Granodiorite Sill, Granodiorite Dike, Argillite, Quartzite, Mica Schist

Comments: Pegmatite of the Middle Proterozoic Hellroaring Creek stock.

Geological Setting

Tectonic Belt: Omineca **Physiographic Area:** Purcell Mountains

Terrane: Ancestral North America

Metamorphic Type: Regional **Relationship:** Post-mineralization

Inventory

Ore Zone: NORTH
Category: Indicated
Quantity: 450,000 tonnes

Year: 1965
Report On: Y
NI 43-101: N

Commodity	Grade
Beryllium	0.1000 per cent

Comments: Grade given for beryllium oxide.
Reference: Assessment Report 13415, page 21.

Capsule Geology

The Hellroaring Creek pegmatite stock is about 20 kilometres southwest of Kimberley and 31 kilometres west-northwest of Cranbrook. The stock has been explored for feldspar, quartz, mica and, in the 1960's, beryllium.

The area is underlain by quartzite and argillite of the Creston Formation and argillite, quartzite and mica schist of the Aldridge Formation, both of the Helikian Purcell Supergroup. These metasediments are intruded by sills and dykes of granodiorite of the Proterozoic Moyie Intrusions, which are in turn intruded by pegmatite of the Middle Proterozoic Hellroaring Creek stock. The east trending St. Mary fault separates this area from the area underlain by Creston Formation metasediments to the south. The Aldridge Formation is folded into an open northwest plunging anticline with the Hellroaring Creek stock emplaced in the core.

The pegmatite stock trends north-northwest for 4 kilometres within the Aldridge Formation and is up to 1.5 kilometres wide. The stock appears to be a series of large dyke swarms. Most of the sampling and diamond drilling is concentrated in an area at the north end of the stock, where drilling encountered thicknesses of up to 150 metres.

The stock is comprised of medium to coarse grained white to light grey pegmatite typically containing 60 to 70 per cent feldspar, 20 to 30 per cent quartz, 0 to 10 per cent muscovite and 0 to 10 per cent tourmaline. Beryl, garnet, pyrite, pyrrhotite, galena and arsenopyrite occur in minor to trace amounts. The feldspar occurs in distinct microcline and albite rich zones. Quartz occurs in massive lenses several metres thick that are free of feldspar. Muscovite forms fine flakes along fractures and books, up to 13 centimetres across, in irregular patches. Thin needle-like tourmaline crystals (3 by 10 millimetres) and blades up to 3 centimetres long occur in patches. Beryl forms erratically scattered very pale bluish green and white crystals and irregular masses up to 7.5 centimetres in diameter and 15 centimetres in length that tend to be associated with plagioclase, quartz and muscovite. Garnet is present as pink to red grains 1 to 2 millimetres across in addition to occasional veinlets of pyrite, pyrrhotite, galena and arsenopyrite. Iron and manganese staining is common on outcrops and in drill core.

Work in 1965, by Richfield Oil Corporation, indicated the north end of the stock contains 450,000 tonnes of 0.1 per cent beryllium oxide (Assessment Report 13415, p. 21). Diamond drilling in 1985 and 1986 by Lumberton Mines Ltd. encountered zones containing in excess of 1 per cent tourmaline (Assessment Report 15760, p. 12). Nineteen samples of feldspathic pegmatite analyzed as follows in per cent (Exploration in B.C. 1987, p. B111):

SiO ₂	64.86 to 76.72
Al ₂ O ₃	12.61 to 19.00
K ₂ O	0.45 to 12.45
Na ₂ O	1.95 to 6.44
CaO	0.05 to 0.64
Fe ₂ O ₃	0.05 to 4.24

Tests carried out by CANMET indicate that the pegmatite can be processed to produce feldspar and mica concentrates that meet industry standards with full liberation at 50 mesh.

This stock was first staked in 1958 as a beryllium prospect. Subsequent exploration, by various operators in the 1960's and by Lumberton Mines Ltd., in 1984 and 1985 failed to discover beryllium reserves of sufficient grade to warrant further development as a beryllium prospect. However, this work combined with further sampling and diamond drilling by Lumberton Mines in 1986 indicates that the stock contains a considerable amount of glass and ceramic

grade feldspar.

The property is located on the east side of Hellroaring Creek between the 1,219 and 1,524 metre elevations, 33.7 kilometres due south of the east end of St. Mary Lake.

In 1958 H. Bennett of Cranbrook located the Linda and Linda No. 1 claims on a pegmatite showing in which he found beryl crystals. International Beryllium Corporation was formed in 1961 to prospect the property, which had been expanded to 32 claims. Some 1,219 metres of trenching was done before the project was abandoned.

The property was acquired by Canuck Beryllium Corporation and a small amount of stripping and open-cutting was reported done by the company in 1963. An agreement between Canuck Beryllium, a subsidiary of Peace River Petroleum Ltd., and Richfield Oil Corporation of California for prospecting and development work on the property was announced in August 1, 1965. Under the terms of the agreement, Richfield Oil will have control over operations. Work in 1965 was limited to blasting and sampling some 365.7 metres of trench. This work is reported to indicate 500,000 tons averaging 0.1 per cent Beryllium oxide (Bearcat Explorations Ltd. News Release., 1/02/1984).

Some 4,550 acres of mineral claims covering these showings were acquired in early 1984 by Bearcat Explorations Ltd. (80 per cent) and Colt Exploration (Western) Ltd. (20 per cent). A joint venture agreement that same year with Fairholme Development Ltd. and Barnwell industries, Inc. provided financing for an initial stage of exploration. Work carried out in 1984 by Lumberton Mines Limited, Bearcats 100 per cent owned subsidiary, included trenching and 500 m of diamond drilling in 7 HQ drill holes; subsequent joint venture interests were: Colt (15 per cent), Fairholme (5 per cent), Barnwell (25 per cent), Bearcat (55 per cent). Further work in 1985-86 included 2584 metres of diamond drilling in 29 holes, and bulk sample flotation tests.

This work delineated three surface areas with significant high-grade ceramic feldspar; potential by-products are high-grade mica, high-grade silica, and a minor amount of beryllium in the form of beryl.

Surface prospecting by Chapleau Resources Ltd. in 2000 revealed a number of new untested outcrops of beryl-rich pegmatite. The work is reported to have extended "the old Richfield zone south for 500 metres and 500 metres east". Values high in beryllium and rubidium are reported from grab samples taken by Chapleau (George Cross Newsletter, August 1, 2000 (No. 147).

Bibliography

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Date Coded:	1985/07/24	Coded By:	BC Geological Survey (BCGS)	Field Check:	N
Date Revised:	2014/11/27	Revised By:	Laura deGroot (LDG)	Field Check:	N