

MINERAL OCCURRENCE DATABASE

OCCURENCE NUMBER:	E08-003
OCCURENCE NAME:	Lochaber Lake (Felmate Pit)
COMMODITIES:	Cu, Fe, Pb, Zn
MINERALS:	bornite, chalcopyrite, galena, malachite, pyrite, sphalerite
STATUS:	Prospect
COUNTY:	Antigonish

CLAIM INFORMATION (Coordinates in UTM NAD83)					
Claim Map	Tract	Claim	Easting	Northing	Zone
11E/08D	22	P	574253	5028142	20

HOST ROCK INFORMATION		
Stratigraphic Unit	Age	Host Rock(s)
Stonehouse Formation	Unknown	Limestone

LOCATION DIRECTIONS

From its intersection with Highway #7 at the village of South Lochaber, drive about 1.1km northwestward on the road up the west side of Lochaber Lake to a gravel logging road leading westward. Drive westward about 1.5km to a lesser logging road leading northward. Drive northward about 1.6km to a small stream flowing eastward. Walk downstream about 600m to the prospect on the north side of the stream (Ervine, 1994).

MODE OF OCCURRENCE

disseminated

SURVEYS

diamond drilling

geochemical survey

pit sunk

trenching

GEOLOGICAL DESCRIPTION

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Host Rocks: The lithology at Lochaber Lake copper, exposed in outcrop, trenches and penetrated by diamond drill holes does not correspond to the Stonehouse lithologies as described in Murphys key section. The section at Lochaber contains approximately 150 m of interbedded limestone, mudstone and siltstone underlain and overlain by maroon shale and siltstone. The carbonate unit consists of dark grey to light greenish grey, thinly laminated, argillaceous micritic limestone with interbedded grey medium to irregularly bedded micritic limestone and light green to white calcareous sandstone. A diabase dyke approximately 2 m thick, approximately parallel to bedding, occurs at or near the base of the section.

Structure: Bedding strikes 40°Az and dip steeply to the northwest. A persistent fault strikes 25°Az and dips 50-70° northwesterly, approximately following bedding. The main effect of the fault is to brecciate the limestone unit outwards for about 30 feet from the structure.

Mineralization: Lochaber Lake mineralization occurs as disseminations and small blebs of sulphides along bedding planes and as sparse disseminations in the matrix of the lower 250 ft of the banded, argillaceous to silty limestone member. The mineralized zone dips an average of 77° northwesterly and is said to plunge to the southwest (Hooper, 1972). Mineralization consists of mainly chalcopyrite, malachite and pyrite. A cursory correlation of lithology to grade of mineralization indicates that the richer mineralization occurs in thin laminated impure argillaceous (chloritic) limestones. The purer cream buff brecciated fault affected limestone intervals are less mineralized suggesting no relationship between mineralization and the faulting. However, an insignificant amount of sulphide mineralization with hematite occurs in quartz carbonate veinlets cutting all lithologies. There is also no obvious relationship between the diabase dykes and grade of copper mineralization.

PREVIOUS WORK

Great Horn (1970): A low grade copper deposit of 2.29 million tons of drill indicated ore at a grade of 0.33% Cu was defined by Great Horn Mining in 1970-72. The survey was prompted by the discovery in 1952 which yielded similar mineralization about 122m to the south, where some trenching was done and a diamond drill hole was put down. Six trenches were subsequently dug (almost always returning copper values) and 16 diamond drill holes were put down. Drill core (2246m) yielded an ore zone of 2.1 million tonnes, grading .33% Cu with an additional 3.1 million tonnes inferred down plunge to 300m.

Bluestack (1982): A geochemical survey was undertaken in 1982 by Bluestack Resources Ltd. in a joint venture with McCulloch (1982). Their findings were as follows: "the mineralization is stratabound and concentrated in dark grey argillaceous zones of limestone with higher grades of mineralization associated with more diagenetically altered limestone. The mineralized zone is cut by a well defined fault striking NNE with a moderately steep dip to the northwest. The fault roughly parallels the bedding and is characterized by a breccia zone 30 feet in width, generally devoid of mineralization. The base of the mineralized zone is cut by a diabase dyke which parallels the bedding. The dyke generally forms a footwall to the main zone of mineralization."

SITE DESCRIPTION

No Data

COMMENTS

These data are a summary of Warren Ervine's (1994) report on mineral occurrences along the Cobequid-Chedabucto Fault system (ref. CC-043).

BIBLIOGRAPHY

Benson, D.G., 1973: Lochaber geology map; Geological Survey of Canada, Map 1360A, Scale 1:50 000

Benson, D.G., 1974: Geology of the Antigonish Highlands, Nova Scotia; Geological Survey of Canada, Mem. 376, p. 92

Bourque, D., 1979: Metallogenesis and mineral deposits of the Antigonish Highlands, Nova Scotia Department of Mines, Open File Report 383, p.78

Ervine, W., 1994: Mineral occurrences along the Cobequid-Chedabucto Fault system; Geological Survey of Canada, Open File 2777, ref. CC-043

Hooper, M.J., 1972: Tonnage and grade calculations on Great Horn Mining Syndicate's Lochaber Lake copper property, Antigonish County; Nova Scotia Department of Mines, Assessment Report 13-B-19 (01)

MuCulloch, P.D., 1982: Report on geochemical Survey of Lochaber Lake area, Antigonish County; Nova Scotia Department of Mines, Assessment Report 13-B-19 (02)

Northcote, K.E., 1989: Selected mineral occurrences of the Antigonish area; Nova Scotia Department of Mines, Open File Report 89-003, p. 23-32

Robert, J.A., 1893: Geology map of Lochaber; Geological Survey of Canada, Map 35, Scale 1:63 360

POSSIBLE RESTRICTIONS

No Data

UPDATED

Field checked by: Warren Ervine, 1987; G. DeMont and K. Northcote, 1988

Updated by: Steven Hughes, 1995

MINERAL OCCURRENCE DATABASE

OCCURENCE NUMBER:	E08-002
OCCURENCE NAME:	College Grant Cu, Fe Mine
COMMODITIES:	Cu, Fe, Pb, Zn, F
MINERALS:	bornite, chalcopyrite, galena, malachite, pyrite, siderite, specular hematite
STATUS:	Past Producer
COUNTY:	Antigonish

CLAIM INFORMATION (Coordinates in UTM NAD83)					
Claim Map	Tract	Claim	Easting	Northing	Zone
11E/08D	22	N	573633	5027847	20
11E/08D	21	M	572113	5027327	20
11E/08D	20	H	571493	5027102	20

HOST ROCK INFORMATION		
Stratigraphic Unit	Age	Host Rock(s)
Knoydart Formation	Devonian	Diorite
Knoydart Formation	Devonian	Sandstone

LOCATION DIRECTIONS

Coordinates (1): From its intersection with Highway #7 at the village of South Lochaber, drive about 1.1km northwestward on the road up the west side of Lochaber Lake to a gravel logging road leading northward. Drive northward about .85km. The prospect is located 30m west of this point on the road (Ervine, 1994).

Coordinates (2): Drive 1.2km southwestward on the road down the west side of Two Mile Lake to a gravel road leading westward. Drive westward 3km to a logging road leading northward. Drive northward 1.4km to a conspicuous farmhouse in an open field on the west side of the road. The prospect is located 350m east of the road in a direction 85°Az from the farmhouse (Holbrook, 1966).

Coordinates (3): As above; the prospect is located 250m southwest of the farmhouse (Ervine, 1994).

ALTERATION

chlorite

MODE OF OCCURRENCE

veining

SURVEYS

diamond drilling
geological mapping
geophysics
shafts sunk
silt geochemical
soil geochemical

GEOLOGICAL DESCRIPTION

MINERAL OCCURRENCE DATABASE

Coordinates (1 & 2)

Structure: The prospect appears to occur in shales and siltstones about 1.5km off the northeastern end of the elongate diabase intrusion ((Benson, 1973). It may also occur on a subsidiary fault which strikes about 70°Az, passing through the main College Grant prospect as well as the Boggs Brook and Felmate pit, a distance of 3km (Cameron, 1952; Holbrook, 1966). However, Kontak (1976) doubts the presence of this fault.

Mineralization: Veins up to 1cm of either (1) specular hematite with minor quartz, calcite and sulphides or (2) carbonate and quartz with minor chalcopryite, bornite and pyrite cut altered gabbro or diabase containing disseminated sulphide blebs (Ervine, 1994).

Coordinates (3)

Structure: This prospect occurs in a small body of diabase (2 sq. km in area) which intrudes the surrounding siltstone and shales of the Lower Devonian Knoydart Formation (Benson, 1973). The prospect is in the intrusive, but less than 100m from its contact and about 150m from the St. Mary's Fault (considered part of the Cobequid-Chedabucto Fault system).

Mineralization: Quartz-carbonate veins cut the diabase or fine grained gabbro and are known to occur in the surrounding sedimentary rocks. The veins are up to 1.8m thick and contain abundant chalcopryite and calcite with some siderite, specular hematite and pyrite. Selected samples of vein material gave as much as 31.9% Cu, and an assay of 318kg gave 19.87% Cu (Piers, 1906; Messervey, 1929).

Past Observations:

Gilpin 1877: "The deposits form a series of veins, cutting at oblique angles black and red shales and quarzites, and thrown for a short distance 30 ° out of an east-west course by a dyke, apparently a diorite containing talc and serpentine. The first vein met going east is about 2 feet wide. I have no details of its content. The second vein 80 feet distant, has been proved to a depth of 85 feet; it varies in width from 5 feet 6 in to 6 ft 3 in, and holds about 20% copper pyrites evenly distributed in talcose slate, greenstone, and quartz and micaceous iron ore. The third vein, 216 feet distant, is from 1 ft 6in to 2 ft wide, and holds copper pyrites with embescite in bands, with quartz and talcose greenstone. The fourth vein, 130 ft distant, is about 5 feet wide, and carries about 10 percent of rich ore with much quartz. The fifth and sixth veins are respectively 50 and 150 feet further east: they are each 3 ft wide. These leads also contain large percentages of ore, but have yet to be examined. In the last veins the micaceous ore has been to some extent replaced by carbonate of iron. The sixth vein is gradually returning to its east and west course and at a further distance of 300 yds. It has been opened again, and proved to be 4 ft 6 in wide. Nearly half a mile to the east on the strike of the vein, two small veins have been found bedding very good ore, and large boulders proving the passage of the large vein."

Fletcher 1886: "Iron pyrite is sparingly present, and spathic iron is mixed with quartz as the veinstone in one or two places. Some of the veins are three feet thick, of quartz diorite mixed; in them are vugs containing long crystals of quartz and beautiful leafy aggregations of specular ore. In many of the neighboring pits purple Devonian argillite has been cut."

PREVIOUS WORK

No Data

SITE DESCRIPTION

Coordinates (1): There is a pit 5m in diameter, 3m deep in the area.

Coordinates (3): There are many small pits in the northern portion of the prospect and two large pits just south of these. There is a shaft just south of the large pits (see map of CC-046 in Ervine's report).

COMMENTS

These data are a summary of Warren Ervine's (1994) report on mineral occurrences along the Cobequid-Chedabucto Fault system (ref. CC-044 to CC-046). The prospect located at coordinates (2) was not located by Ervine.

BIBLIOGRAPHY

Benson, D.G., 1973: Lochaber geology map; Geological Survey of Canada, Map 1360A, Scale 1:50 000

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Ells, R.W., 1904: Bulletin on the ores of copper in the provinces of Nova Scotia, New Brunswick and Quebec; Geological Survey of Canada, Publication 882

Ervine, W., 1994: Mineral occurrences along the Cobequid-Chedabucto Fault system; Geological Survey of Canada, Open File 2777, ref. CC-044-046

Fletcher and Faribault, E.R., 1887: Report on geological surveys and explorations in the counties of Guysborough, Antigonish, Pictou, Colchester and Halifax; Geological Survey of Canada, Annual Report, v. 2, Part p,

Holbrook, G.L., 1966: Map of College Grant area for Heathridge Mines Ltd.; Nova Scotia Department of Mines, Assessment Report 13-B-09 (00)

Kontak, D.J., 1976: The College Grant copper mine and its geologic setting; B.Sc. Thesis, Department of Geology, St. FX University

Messervey, J.P., 1929: Copper in Nova Scotia; Department of Public Works and Mines, Pamphlet #7

Piers, H., 1906: Economic minerals in Nova Scotia; Department of Public Works and Mines, Nova Scotia

Robert, J.A., 1893: Geology map of Lochaber; Geological Survey of Canada, Map 35, Scale 1:63 360

POSSIBLE RESTRICTIONS

No Data

UPDATED

Field checked by W. Ervine, 1994.

Updated by G. J. DeMont and K. Northcote, 1988; S. G. Hughes, August 1995.