Occurrence Details

Occurrence Number: 105G 135
Occurrence Name: Ellen Creek
Occurrence Type: Hard-rock
Status: Prospect
Date printed: 6/16/2025 1:15:44 AM

General Information

Secondary Commodities: copper, lead, zinc
Deposit Type(s): Volcanogenic Massive Sulphide (VMS) Kuroko Cu-Pb-Zn
Location(s): 61°8'19" N - -130°14'5" W
NTS Mapsheet(s): 105G01
Location Comments: .5 Kilometres
Hand Samples Available: No
Last Reviewed:

Capsule

Work History

Staked as Expo cl 715 - 990 (YB74269) between January and Mar/96 by Cominco Ltd. The claims were appended to an existing large block of claims staked and explored over the previous three years (Minfile Occurrences #105G 082, 083, 136 and 138). In 1996 the company cut a large grid, centred over the occurrence, and carried out detailed geological mapping, and soil sampling. Cominco also carried out regional scale mapping and prospecting programs over the remainder of the claim block.
In 1997 Cominco tested the occurrence with 1 diamond drill hole (194.3 m) and continued geological mapping, soil sampling, and prospecting that year and in 1998.

Capsule Geology

The Finlayson Lake district is underlain by the Yukon-Tanana Terrane: a Late Proterozoic to Paleozoic metamorphosed volcano-sedimentary assemblage. It is regionally bounded to the southwest by the Tintina Fault. This terrane hosts several known volcanogenic massive sulphide (VMS) deposits and occurrences, including Kudz Ze Kayah (Minfile Occurrence #105G 117), Wolverine (Minfile Occurrence #105G 072) and Ice (Minfile Occurrence #105G 118).
The occurrence lies south of the area recently re-mapped by Murphy and Piercey (1999) of the Yukon Geology Program. Cominco suggests that the area is underlain by lower ¿middle unit¿ mixed metavolcanics that have been intruded by Mississippian Simpson Range intrusives. Based on mapping completed to the northwest, by Murphy and Piercey, it would appear that the area is underlain by Devonian to Early Mississippian metamorphic rocks or their equivalent. The oldest unit is probably Dq, biotite muscovite-feldspar schist, micaceous quartzite and psammite. It is probably overlain by the Fire Lake mafic metavolcanic unit, unit DMF, comprised of felsic flows interbedded with strongly foliated felsic crystal tuffs, minor lapilli tuffs, and intermediate to mafic volcanic rocks. Although the Fire Lake mafic metavolcanic unit is predominantly mafic, thick intervals of felsic schist of volcanic and volcaniclastic protolith and siliceous carbonaceous phyllite are known to occur. Mississippian granitic intrusions belonging to the Simpson Range Plutonic Suite intrude the sequence.
The immediate area around the occurrence consists of conspicuous, rusty weathering tuff units interbedded with felsic flows containing fine grained, disseminated pyrite. These tuff units also contain concentrations of copper and zinc mineralization. One specific unit has been traced along strike for 500 metres. The unit is described as being a ¿distinct, steel blue-grey, pyritic felsic quartz crystal tuff ... mineralized by hydrozincite-malachite±azurite (after chalcopyrite disseminations) along with speckled brown Mn stains along foliation surfaces¿. This material returned up to 1.5% Zn and 0.1% Cu.
Grid soil sampling in the occurrence area outlined an area of moderate to strong Pb (>50; 1 287 ppm max), Zn (>100; 1 091 ppm max) and Cu (>50; 290 ppm max) mineralization over the central and southeast portion of the grid. The anomalous area is underlain by interbedded rhyolite flows and calcareous felsic flows and a thick bedded calcareous, quartz phyric felsic tuff (likely part of unit DMF). In 1997, contour soil sampling outlined strongly anomalous copper, lead and zinc values about 500 m to the east, in an area underlain by a skarned mafic flow unit. The skarned mafic volcanic rocks contain trace amounts of chalcopyrite and sphalerite mineralization.
The 1997 drill hole intersected quartz-silica-epidote altered felsic crystal tuff with disseminated pyrite, trace sphalerite and rare galena at the top of the hole. As the hole deepened, the felsic units also contained minor pyrrhotite in quartz-chlorite veins. The best intersection was a 2.7 m interval of sericite altered felsic tuff, containing up to 2% chalcopyrite. No assays were reported.
Mapping and prospecting in 1998 identified a float train of siliceous to strongly chlorite altered, banded magnetite Fe-formation containing laminated to thin bedded massive pyrite, pyrrhotite and trace chalcopyrite. Soil sampling in the area identified a large (0.8 x 1.8 km) multi-element anomaly (peak values of 424 ppm Cu, 436 ppm Pb, 354 ppm Zn and 4.1 ppm Ag) that is apparently coincident with the Fe-formation and the underlying pyritic felsic volcanics.

References

BOND, J.D., MURPHY, D.C., COLPRON, M., GORDEY, S.P., PLOUFFE, A., ROOTS, C.F., LIPOVSKY, P.S., STRONGHILL, G., AND ABBOTT, J.G., 2002. Digital compilation of bedrock geology and till geochemistry, northern Finlayson Lake map area, Southeastern Yukon (105G), Exploration and Geological Services Division, Yukon Region, Indian and Northern Affairs Canada, Open File Report, 2002-7(D) and Geological Survey of Canada Open File 4243.

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MURPHY, D.C., COLPRON, M., GORDEY, S.P., ROOTS, C.F., ABBOTT, G., AND LIPOVSKY, P.S., 2001. Preliminary bedrock geological map of northern Finlayson Lake area (NTS 105 G) Yukon Territory (1:100 000 scale). Exploration and Geological Services Division, Yukon Region, Indian and Northern Affairs Canada, Open File 2001-33.

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MURPHY, D.C. AND PIERCEY, S.J., 2000. Syn-mineralization faults and their re-activation, Finlayson Lake massive sulphide district, Yukon-Tanana Terrane, southeastern Yukon. In: Yukon Exploration and Geology 1999, D.S. Emond and L.H. Weston (eds.), Exploration and Geological Services Division, Yukon, Indian and Northern Affairs Canada, p. 55-66.

YUKON EXPLORATION AND GEOLOGY 1996, p.17.

Work History

Date	Work Type	Comment
12/31/1997	Drilling	Number of holes drilled: 1 Amount of work done: 194.3 METRES
12/31/1997	Geology	
12/31/1997	Geochemistry	
12/31/1997	Other	
12/31/1996	Geology	
12/31/1996	Geochemistry	
12/31/1996	Other	

Assessment Reports that overlap occurrence

Report Number	Year	Title	Worktypes	Holes Drilled	Meters Drilled
096745	2014	Report on a Helicopter-Borne, Versatile Time Domain Electromagnetic (VTEM) and Aeromagnetic Geophysical Survey, Expo Block and Ellen Creek Block	Electromagnetic - Airborne Geophysics, Magnetic - Airborne Geophysics		
096179	2012	Airborne Geophysical Survey Report, Ellen Creek Block	Gamma-Ray Spectrometry - Airborne Geophysics, Magnetic - Airborne Geophysics		
093816	1997	1997 Assessment Report Expo/Xpo/Pop/Fly (Including Areas of Base, Ball, Bat, Home & Run Blocks) Properties	Diamond - Drilling, Soil - Geochemistry, Detailed Bedrock Mapping - Geology, Prospecting - Other	2	368
093550	1996	Report on a Helicopter-Borne Electromagnetic and Magnetic Survey	Electromagnetic - Airborne Geophysics, Magnetic - Airborne Geophysics		
093581	1996	1996 Assessment Report Expo Property (Including the Pop, Home, Run and Fly Properties) Picketting, Ground Geophysics (HLEM/MAG), Soil Geochemistry and Geological Mapping	Electromagnetic - Airborne Geophysics, Magnetic - Airborne Geophysics, Diamond - Drilling, Silt - Geochemistry, Soil - Geochemistry, Detailed Bedrock Mapping - Geology, EM - Ground Geophysics, Magnetics - Ground Geophysics, Prospecting - Other	6	816.40