



Occurrence Details

Occurrence Number: 105G 138
Occurrence Name: Pop
Occurrence Type: Hard-rock
Status: Prospect
Date printed: 12/16/2025 6:47:58 AM

General Information

Secondary Commodities: copper, lead, silver, zinc
Deposit Type(s): Volcanogenic Massive Sulphide (VMS) Kuroko Cu-Pb-Zn
Location(s): 61°12'2" N - 130°16'37" W
NTS Mapsheet(s): 105G01
Location Comments: .5 Kilometres
Hand Samples Available: No
Last Reviewed:

Capsule

Work History

In early 1993, R. Berdahl, a prospector brought two newly discovered mineralized showings to the attention of Cominco Ltd. Cominco subsequently entered into an option agreement with Berdahl. In early 1994 Cominco flew an airborne geophysical survey over large parts of Yukon-Tanana Terrane. In Apr/94, the company staked Pop cl 1-26 (YB47372) to cover several of the geophysical targets identified by the survey and one of the showings identified by Berdahl. In Aug/94 Cominco staked Expo cl 1-277 (YB51952), in order to consolidate numerous individual claim groups into 1 contiguous block referred to as the Expo property. During the 1994 field season, Cominco carried out ground HLEM/Mag geophysical surveys and reconnaissance geological mapping and soil sampling programs on the Pop claims.

In Dec/94 Cominco added Expo cl 278-417 (YB56791) to the south. During the 1995 exploration season the company carried out more advanced exploration work including, geological mapping, soil sampling and additional geophysical surveys. Between Aug and Sep/95, Cominco staked Expo cl 418-714 (YB60296) to the north and east.

In 1996 Cominco continued exploration work on the Pop claims. The company completed further detailed geological mapping, soil sampling, prospecting and ground geophysical surveys the results of which were used to locate and drill 2 diamond drill holes (261.5 m).

In Aug/98 Cominco transferred the Expo and Pop claims to R. Berdahl. In 2003 Berdahl prospected and silt sampled creeks in the vicinity of this occurrence.

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 within an area recently re-mapped by Murphy et al. (2004) of the Yukon Geological Survey. The occurrence is located north of the Money Creek Thrust, in the hanging wall of the thrust. The area is underlain by the Upper Devonian Waters Creek Formation (unit DWC) a siliceous felsic metavolcanic rock and lesser intermediate to mafic rock intercalated with carbonaceous phyllite and siliceous rock thought to be a meta-chert. South and west of the occurrence unit CWCg, comprising quartz and quartz-pebble-conglomerate interbedded with lesser carbonaceous phyllite and minor marble occurs. At the southern end of the occurrence area unit DMSgp, Late Devonian to Early Mississippian weakly to strongly foliated quartz-feldspar augen schist intrudes unit DWC. A large granitic pluton (unit MSg) assigned to Early Mississippian Simpson Range Plutonic Suite intrudes much of the southern half of the occurrence area. Although not mapped by Murphy it is likely that small granitic plugs, likely satellite bodies associated with the pluton intrude the metavolcanic rocks in the area.

In 1993 prospecting by R. Berdahl uncovered the Berdahl showing located approximately 1.2 km northeast of this occurrence. The showing consists of a "small hydrozincite-malachite-azurite stained outcrop of brecciated, rusty felsic and intermediate-mafic volcanics with fracture filling calcite-quartz-sphalerite-galena-chalcopryrite". A 1994 grab sample of material from the showing returned 1 3160 ppm zinc, 1 0260 ppm lead, 1 675 ppm copper and 37 g/t silver. Hydrozincite stained float was located approximately 100 m east and downslope of the Berdahl showing. The float specimens contain fine to medium grained galena and sphalerite disseminated within a light to medium green, fine grained siliceous hornfels. Analysis of this material returned up to 7.8% lead, 3.1% zinc and 83 g/t silver. Contour soil samples collected along and across the length of the southeast facing slope hosting the Berdahl showing and the mineralized float outlined numerous moderate to strong copper, zinc and lead anomalies over 2 km of strike length.

The actual occurrence location covers an coincidental airborne EM/mag geophysical anomaly. Follow-up ground surveys outlined 2 parallel HLEM conductors, one with moderate magnetic association. A small gravity survey failed to identify any anomalies. Soil samples collected over the geophysical grid returned numerous moderate to very strong copper (>100; 1 074 ppm max) with coincident zinc (>200; 4 387 ppm max) anomalies. Silver(>1; 5.6 ppm max) and lead (max 53 ppm) values were more subdued.

In 1996, the coincident geochemical/geophysical anomalies were tested with a single diamond drill hole (PO96-01 = 103 m). The hole intersected a sequence of "massive felsic flows and tuffs interbedded with mixed siltstone, mudstone, felsic tuff and minor chert units in the upper half of the hole and a more mafic dominant sequence of mafic sills/dykes and tuffs with lesser felsic tuff and chert in the bottom half of the hole". Trace to 3% sphalerite and chalcopryrite were observed as disseminations along chlorite/sericite/quartz-calcite veinlets and within the felsic flow units. Pyrite and pyrrhotite with occasional sphalerite and chalcopryrite occurs as foliation parallel disseminations and fracture fillings primarily within the chloritic "matrix" to flow fragments. The hole returned elevated zinc, cadmium, copper, silver and arsenic values.

Soil sampling over the southern half of the Pop claims (south of the occurrence) outlined significant areas of strongly anomalous copper, zinc and silver values. The best results were reported from the east side of the claims, along a steep east facing slope underlain by talus derived from predominantly massive felsic flows and mixed felsic tuffs and argillaceous metasedimentary rocks. Ground HLEM/mag geophysical surveys outlined 2 north trending, >1000m long, conformable HLEM conductors in an area of strong zinc, copper silver +/- lead response.

Cominco tested the coincident geophysical/geochemical anomalies with a (PO02 = 158.5 m diamond drill hole. The hole intersected a sequence of siliceous felsic flows and tuffs and very fine grained, dark coloured, siliceous lapilli tuffs with trace to 3% disseminated pyrite-pyrrhotite-sphalerite. These rocks are interbedded with minor siliceous and carbonaceous mudstone/argillite. The best result was obtained from a two metre intersection of interbanded/bedded argillite with lesser calcareous wacke which returned 2 763 ppm zinc, 1 694 ppm lead and 19.6 ppm silver.

Berdahl's 2003 exploration program did not return any significant results in the vicinity of this occurrence.

References

BERDAHL, R.S., Oct/2004. Assessment Report #094474 by R.A. Berdahl.

COMINCO LTD, Feb/96. Assessment Report #093338 by P.A. MacRobbie.

COMINCO LTD, Apr/96. Assessment Report #093426 by P.A. MacRobbie.

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JACKSON, L.E., Jr., 1993. Surficial geology, Rainbow Creek, Yukon Territory; Geological Survey of Canada, Map 1797A, scale 1:100 000.

MURPHY, D.C. and PIERCEY, S.J., 1999. Geological map of parts of Finlayson Lake (105G/7, 8 and parts of 1, 2, and 9) and Frances Lake (parts of 105H/5 and 12) map areas, southeastern Yukon (1:100 000-scale). Exploration and Geological Services Division, Yukon, Indian and Northern Affairs Canada, Open File 1999-4.

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.

MURPHY, D.C. ET AL., 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.

MURPHY, D.C. ET AL., 2002. Finlayson Lake Targeted Geoscience initiative (southeastern Yukon), Part 1: Bedrock geology. In: Yukon Exploration and Geology 2001, D.S. Emond, L.H. Weston and L.L. Lewis (eds.), Exploration and Geological Services Division, Yukon Region, Indian and Northern Affairs Canada, p. 189-207.

MURPHY D.C., 2004 Devonian-Mississippian metavolcanic stratigraphy, massive sulphide potential and structural re-interpretation of Yukon-Tanana Terrane south of the Finlayson Lake massive sulphide district, southeastern Yukon (105G/1, 105H/3, 4, 5). In Yukon Exploration and Geology 2003, D.S. Emond and L.L. Lewis (eds.), Yukon Geological Survey, p. 157-175.

MURPHY, D.C., ET AL. 2004. Geological map of part of Waters Creek and Fire Lake map areas (part of NTS 105G/1 and 2), southeastern Yukon (1:50 000 scale).

YUKON EXPLORATION AND GEOLOGY 1996, p. 17

YUKON MINING AND EXPLORATION OVERVIEW 1988, p. 25.

Work History

Date	Work Type	Comment
12/31/2003	Other	By Berdahl.
12/31/1996	Drilling	Two holes, 261.5 m.
12/31/1996	Geology	
12/31/1996	Geochemistry	
12/31/1996	Ground Geophysics	Also HLEM survey.
12/31/1996	Other	
12/31/1995	Geology	
12/31/1995	Geochemistry	
12/31/1995	Ground Geophysics	Also HLEM survey.
12/31/1994	Geology	
12/31/1994	Geochemistry	
12/31/1994	Airborne Geophysics	Also magnetic survey.
12/13/2003	Geochemistry	
12/13/1994	Ground Geophysics	Also HLEM survey.

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		
096178	2012	Airborne Geophysical Survey Report on the Expo Block	Gamma-Ray Spectrometry - Airborne Geophysics, Magnetic - Airborne Geophysics		
095512	2011	Geochemical Assessment Report for Work Performed on the Expo Property	Soil - Geochemistry		
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
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
093426	1995	1995 Assessment Report Expo Property (Including the Pop, Home, Run, Fly and Bat Properties) Linecutting, Ground Geophysics (HLEM/Mag and Gravity), Soil Geochemistry and Geological Mapping	Soil - Geochemistry, Bedrock Mapping - Geology, EM - Ground Geophysics, Magnetics - Ground Geophysics, Line Cutting - Other		
			Gravity - Airborne Geophysics, Rock - Geochemistry, Soil -		

093338	1994	1994 Assessment Report, Pop, Base, Home, Run, Ball, Fly and Bat Properties (Expo Property)	Gravity - Airborne Geophysics, Rock - Geochemistry, Soil - Geochemistry, Bedrock Mapping - Geology, EM - Ground Geophysics, Magnetics - Ground Geophysics		
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