



Occurrence Details

Occurrence Number: 106D 079

Occurrence Name: Chieftain

Occurrence Type: Hard-rock

Status: Showing

Date printed: 4/29/2025 4:19:56 PM

General Information

Secondary Commodities: bismuth, cobalt, copper, gold, silver, uranium

Deposit Type(s): Iron Oxide Breccias & Veins (Wernecke Breccias)

Location(s): 64°53'30" N - -134°10'43" W

NTS Mapsheet(s): 106D16

Location Comments: .5 Kilometres

Hand Samples Available: No

Last Reviewed:

Capsule

Work History

Staked as Ser cl 1-36 (YA7068) in Sep/76 by Prism Syndicate (Prism Resources Ltd, Canex Placer, Granby Mining Corporation Ltd & Chieftain Development Corporation Ltd). Noranda Mines Ltd staked Bri cl 1-4 (YA7050) 3.2 km to the southwest in Sep/76 following airborne radiometric and magnetic surveys. Prism explored with mapping and radiometric surveys in 1977. Texaco Canada Resources Ltd added Aduh cl 1-16 (YA41897) 2.4 km to the southwest in Jun/80 and Hail cl 1-4 (YA42025) to the north in Jul/80 and performed mapping and sampling in 1981 and 1982.

Restaked as Mica 1-46 cl (YB28540) and Hail 1-10 cl (YB28564) by Pamicon Developments Ltd between Jul and Oct/92. Pamicon did limited prospecting, sampling and mapping on the Mica claims in August and September, 1992. Pamicon formed a joint venture with Equity Engineering Ltd and Westmin Resources Ltd and performed geochemical surveys, geological mapping and IP and magnetic surveys in 1993. Hail cl 11-18 (YB22503) were added in Aug/93 and Mica cl 47-52 (YB42317) were added in Oct/93. In Jan/94 Pamicon and Equity transferred 100% interest in the Mica and Hail claim groups to Westmin which then formed the Fairchild Joint Venture with Newmont Exploration Ltd. In July and Aug/94, Pamicon and Equity on behalf of the joint venture carried out a program consisting of geological mapping, stream sediment sampling and soil sampling.

Restaked as CH cl 1-20 (YC42405) in Nov/2005 by Fronteer Development Group Incorporated. In Jan/2006 Fronteer (80%) and Rimfire Minerals Corporation (20%) signed an agreement with Newmont Exploration Canada Ltd and NVI Mining Ltd (which bought Westmin's assets) to purchase all claims and exploration data relating to 700 mineral claims owned by the Fairchild Joint Venture in the Wernecke Mountains, Yukon. Fronteer Development was appointed operator of the project. In the summer of 2006 Fronteer Development carried out an airborne gravity survey over their entire claim holdings and carried out limited rock and soil sampling and geological mapping on the CH claims.

Capsule Geology

The occurrence is at the western margin of the Wernecke Supergroup inlier, a metamorphosed and altered sequence of Early Proterozoic clastic and carbonate rocks (Fairchild Lake Group, Quartet Group and Gillespie Lake Group, from oldest to youngest) that are intruded by Early to Middle Proterozoic mafic sills and dykes, and cut by Middle Proterozoic Wernecke Breccia. According to Thorkelson (2000), Wernecke Breccia development is best modeled as a set of hydrothermal and/or phreatic breccias; brecciation being caused by explosive expansion of volatile-rich fluids. Hunt (2005) attributed Wernecke Breccia formation to periodic over-pressuring of dominantly basinal fluids, which lead to repeated brecciation of host strata and mineral precipitation.

The occurrence is located approximately 10 km northeast of the Bear Creek airstrip, on the west bank of the eastern branch of a northly flowing unnamed creek which empties into the Bonnet Plume River. The area was regionally mapped by L. Green (1972) of the Geological Survey of Canada in 1961 as part of a helicopter-supported party known as Operation Ogilvie. The area was remapped as part of a larger bulletin by D. Thorkelson (2000) who was under contract with Exploration and Geological Services Division (now part of the Yukon Geological Survey). In addition Thorkelson worked closely with geologists employed by Westmin Resources which held a large number of claims in the region. The work of these geologists was incorporated into a geological compilation of the Yukon released by Gordey and Makepeace of the Geological Survey of Canada in 2003.

Each of the original claim groups was staked on occurrences of chalcopryite with minor brannerite, pitchblende and cobaltite that are associated with Middle Proterozoic Wernecke Breccia bodies cutting Lower Proterozoic Quartet Group argillite. The best assays reported were 0.03% uranium oxide (U3O8) from a grab sample on the Ser claim group, up to 0.5% uranium oxide (U3O8) from float samples from Texaco Canada's Hail group, and up to 2.4 g/t gold and 3 100 ppm copper from a specimen collected in trenches on the Aduh claim group. The Hail float was thought to be derived from a narrow shear zone cutting breccia.

The 1993 program carried out on the Mica and Hail claims uncovered several areas of copper mineralization in altered metasedimentary rocks and in hematite rich Wernecke Breccias. A more extensive program carried out in 1994 determined that the copper mineralization is widespread and also occurs in and around altered Middle Proterozoic diorite dykes. The diorite dykes are usually located with or near Wernecke Breccia bodies. A rock sample collected from altered diorite in a strongly faulted area near outcrops of heterolithic Wernecke Breccia and Quartet Group shale assayed 4 900 ppm copper and 15 ppb gold. The 1994 program also found numerous copper +/- gold, cobalt, bismuth, and silver soil geochemical anomalies. Fronteer has not released any data on the CH claims. Preliminary results from the surviving Hail claims appear to verify results obtained by the Fairchild Joint Venture.

References

EQUITY ENGINEERING LTD, Feb/95. Assessment Report #093261 by K.A. Owerko.

FRONTIER DEVELOPMENT GROUP INCORPORATED AND RIMFIRE MINERALS CORPORATION, Apr/2007. Assessment Report #094956 by R.S. Hefferman, R. Black, H. Awmack and D. Baker.

FRONTIER DEVELOPMENT GROUP INC. News Releases, 19 May/2006, 10 Jul/2006; 19 Dec/2006, 17 May/07.

FRONTIER DEVELOPMENT GROUP INC. March/2009. Web Site: www.frontiergroup.com. (contains 2007 Wernecke Exploration report).

GREEN, L.H. 1972. Geology of Nash Creek, Larsen Creek and Dawson Map-Areas, Yukon Territory. Geological Survey of Canada, Memoir 364.

GORDEY, S.P. AND MAKEPEACE, A.J., 2003. Yukon Digital Geology, version 2.0, S.P. Gordey and A.J. Makepeace (comp); Geological Survey of Canada, Open File 1749 and Yukon Geological Survey, Open File 2003-9 (D).

HUNT, J., 2005. The geology and genesis of iron oxide-copper-gold mineralization associated with Wernecke Breccia, Yukon Canada, PhD thesis, James Cook University, Australia, 2 volumes, 120 p.

MINERAL INDUSTRY REPORT 1977, p. 45.

PAMICON DEVELOPMENTS LTD, Feb/94. Assessment Report #093170 by M.A. Stammers.

PRISM RESOURCES LTD, Mar/78. Assessment Report #090299 by J.H. Montgomery and B. Dewonck.

THORKELSON, D.J., AND WALLACE, C.A., 1993. Development of Wernecke Breccia in Slat Creek (106D/16) map area, Wernecke Mountains, Yukon. In: Yukon Exploration and Geology 1992, Exploration and Geological Services Division, Yukon, Indian and Northern Affairs Canada, p. 77-87.

THORKELSON, D.J. AND WALLACE, C.A., 1998. Geological Map of Slat Creek map area, Wernecke Mountains, Yukon (106D/16). Exploration and Geological Services Division, Yukon Region, Indian and Northern Affairs Canada, Geoscience Map 1998-9, 1:50,000 scale.

THORKELSON, D.J. AND WALLACE, C.A., 2000. Geology and mineral occurrences of the Slat Creek, Fairchild Lake and "Dolores Creek" areas, Wernecke Mountains, Yukon (106D/16, 106C/13, 106C/14). Exploration and Geological Services Division, Yukon Region, Indian and Northern Affairs Canada, Bulletin 10, 73 p.

WESTMIN RESOURCES LTD, Dec/92. Assessment Report #093122 by D.A. Caulfield.

YUKON EXPLORATION AND GEOLOGY 1981, p. 195; 1983, p. 228-229; 2006, p. 34.

Work History

Date	Work Type	Comment
12/31/2006	Geochemistry	Limited program.
12/31/2006	Geology	Limited program.
12/31/2006	Airborne Geophysics	
12/31/1994	Geology	
12/31/1994	Geochemistry	
12/31/1994	Geochemistry	
12/31/1993	Geology	
12/31/1993	Geochemistry	Also rock sampling.
12/31/1993	Ground Geophysics	Also IP survey.
12/31/1992	Geochemistry	Program was preliminary in nature.
12/31/1992	Geology	Program was preliminary in nature.
12/31/1992	Other	Program was preliminary in nature.
12/31/1982	Geology	
12/31/1982	Geochemistry	
12/31/1982	Ground Geophysics	Also VLF-EM survey.
12/31/1982	Other	
12/31/1982	Trenching	
12/31/1981	Geology	
12/31/1980	Geochemistry	
12/31/1980	Airborne Geophysics	
12/31/1980	Trenching	
12/31/1980	Other	
12/31/1977	Ground Geophysics	
12/31/1977	Geochemistry	
12/31/1977	Geology	
12/13/2006	Geochemistry	Limited program.
12/13/1983	Geochemistry	Talus sampling.
12/13/1983	Geology	
12/13/1983	Trenching	
12/13/1980	Ground Geophysics	
12/13/1976	Airborne Geophysics	Also magnetic survey.

Assessment Reports that overlap occurrence

Report Number	Year	Title	Worktypes	Holes Drilled	Meters Drilled
095646	2007	2007 Geological, Geochemical and Geophysical Report on the Wernekes Project	Diamond - Drilling, Rock - Geochemistry, Silt - Geochemistry, Soil - Geochemistry, Detailed Bedrock Mapping - Geology, Regional Bedrock Mapping - Geology, Magnetics - Ground Geophysics, Scintillometer - Ground Geophysics, Prospecting - Other, Backhoe - Trenching, Hand - Trenching, Handblast - Trenching	28	6537.96
094956	2006	2006 Geological, Geochemical and Geophysical Report on the Wernekes Project	Reverse Circulation - Airborne Geophysics, Rock - Geochemistry, Soil - Geochemistry, Bedrock Mapping - Geology, Scintillometer - Ground Geophysics, Prospecting - Other		
093378	1995	Geological and Geochemical Assessment on the Reid 1-104 Claim Group	Silt - Geochemistry, Soil - Geochemistry, Bedrock Mapping - Geology, Prospecting - Other		
093261	1994	1994 Geological and Geochemical Assessment Report on the Mica 1-52,Hail 1-18 and Reid 1-104 Claim Group	Silt - Geochemistry, Soil - Geochemistry, Bedrock Mapping - Geology, Prospecting - Other		
091456	1983	Exploration, 1982, Gold, Silver and Uranium Deposits, Glacier Lake Region	Rock - Geochemistry, Silt - Geochemistry, Detailed Bedrock Mapping - Geology, EM - Ground Geophysics, Scintillometer - Ground Geophysics, Petrographic - Lab Work/Physical Studies, Prospecting - Other, Hand - Trenching		
090868	1980	Exploration Report-Year 1980 on the Bear River Properties	Rock - Geochemistry, Soil - Geochemistry, Bedrock Mapping - Geology, Regional Bedrock Mapping - Geology, Gamma-ray Spectrometry - Ground Geophysics, Prospecting - Other, Hand - Trenching, Handblast - Trenching		
090299	1977	Assessment Report Ser 1-36 Claims	Rock - Geochemistry, Gamma-ray Spectrometry - Ground Geophysics, Prospecting - Other		

Related References

Number	Title	Page(s)	Reference Type	Document Type
ARMC007821	Map - Reef Project		Property File Collection	Geochemical Map