



Occurrence Details

Occurrence Number: 106E 003

Occurrence Name: Quartet

Occurrence Type: Hard-rock

Status: Showing

Date printed: 4/29/2025 2:29:29 AM

General Information

Secondary Commodities: barite, gold, thorium, uranium

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

Location(s): 65°7'44" N - -134°22'58" W

NTS Mapsheet(s): 106E01

Location Comments: 1 Kilometres

Hand Samples Available: No

Last Reviewed:

Capsule

Work History

Staked in Jul-Oct/75 by Wernecke JV (Chevron Can L & Aquitaine) as Wernecke cl (Y97944), which were explored with mapping, sampling and a radiometric survey in 1975; mapping and radiometric surveys in 1976 by Eldorado Nuclear L under a brief option: ground and airborne radiometric surveys in 1978 and chip sampling and prospecting in 1981. In 1982, Eldorado changed its name to Eldor Res Ltd.

Fringe staking in 1976 included QUA & Bon cl (YA1594) to the southwest in Feb by Hesca Res L, which performed geochem sampling and trenching in 1977; Kid cl (YA1881) to the northwest in March and Rin cl (YA14799) to the west in Dec by Rio Alto EL, which conducted a track-etch radon survey in 1976 and optioned its claims to Marline O (Alberta) in 1977, which explored by airborne radiometric surveys in 1978; and MTR cl (YA1546) to the northeast in Feb by Sioux Mountain ML (west half) and New Minex Res L (east half). New Minex explored with geochem and radiometric surveys and hand trenching in 1976 and 1977.

Capsule Geology

The region is underlain by a metamorphosed and altered sequence of Early Proterozoic Wernecke Supergroup 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. To the east, Wernecke Supergroup rocks are unconformably overlain by Middle Proterozoic Pinguicula Group rocks. 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 claims contain at least five separate brannerite occurrences near the margin of Wernecke Breccia bodies that cut Quartet Group limy argillite. The best zone, situated at the north end of the mountain, consists of coarse disseminations with minor thorite and uranorhite in a 150- by 10-m zone of bleached, silicified argillite at the breccia contact. Gold, barium and copper are associated with the radioactive zone in minor quantities. Age dating by Wernecke JV gave a date of 745 Ma (U-Pb) from the brannerite, significantly younger than either the Wernecke Breccia or Wernecke Supergroup rocks, and likely reflects later remobilization of uranium by a thermal or tectonic event.

Hand specimens from the zone returned assays up to 1.12% U3O8 and 1.2 g/t Au but the average grade is less than 0.03% U3O8 and trace Au. Two uranium and one copper-uranium geochem anomalies were reported by New Minex while Hesca also obtained anomalous uranium values.

Prospecting by Rio Alto located a small area of mineralization assaying 0.07% U3O8.

References

ELDORADO NUCLEAR LTD, Sep/76. Assessment Report #061618 by C.J. Riley.

ELDORADO NUCLEAR LTD, 1976. Assessment Report *#061624 by C.J. Riley and D.F. Schutz.

ELDORADO NUCLEAR LTD, 1976. Assessment Report *#090152 by C.J. Riley.

GEOLOGICAL SURVEY OF CANADA Paper 77A, p. 33-37.

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).

HESCA RESOURCES LTD, 1977. Assessment Report *#090280 by C.K. Ikona.

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

MINERAL INDUSTRY REPORT 1975, p. 65; 1976 p. 130-132; 1977, p. 46, 48; 1978, p. 17-18.

NEW MINEX RESOURCES LTD, Oct/76. Assessment Report #090172 by C.K. Ikona.

NEW MINEX RESOURCES LTD, Jan/78. Assessment Report #090301 by A.E. Nevin.

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.

WERNECKE JOINT VENTURE, Mar/76. Assessment Report #090099 by A.R. Archer.

WERNECKE JOINT VENTURE, Jul/78. Assessment Report #090311 by A.R. Archer.

WERNECKE JOINT VENTURE, 1978. Assessment Report *#090371 by A.R. Archer.

WERNECKE JOINT VENTURE, Jan/82. Assessment Report #090766 by W.D. Eaton.

YUKON EXPLORATION AND GEOLOGY 1987, Vol. 2, p. 41-50.

Work History

Date	Work Type	Comment
12/31/1981	Geochemistry	Chip sampling.
12/31/1981	Other	
12/31/1978	Ground Geophysics	
12/31/1978	Geology	
12/31/1978	Airborne Geophysics	
12/31/1978	Geochemistry	
12/31/1978	Other	
12/31/1977	Geology	
12/31/1977	Geochemistry	
12/31/1977	Ground Geophysics	Ground scintillometer survey. Also Track Etch Radon Survey.
12/31/1977	Trenching	
12/31/1976	Geology	
12/31/1976	Geochemistry	
12/31/1976	Trenching	
12/31/1976	Ground Geophysics	Track Etch Radon Survey.
12/31/1975	Geology	
12/31/1975	Airborne Geophysics	
12/31/1975	Geochemistry	
12/13/1975	Ground Geophysics	

Assessment Reports that overlap occurrence

Report Number	Year	Title	Worktypes	Holes Drilled	Meters Drilled
095646	2007	2007 Geological, Geochemical and Geophysical Report on the Werneckes 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
094954	2006	Mineral Exploration Report for the Curie Property, North Central, Yukon Territory	Electromagnetic - Airborne Geophysics, Gamma-Ray Spectrometry - Airborne Geophysics, Magnetic - Airborne Geophysics, Rock - Geochemistry, Silt - Geochemistry, Soil - Geochemistry, Bedrock Mapping - Geology, Gravity Survey - Ground Geophysics, Research/Summarize - Pre-existing Data, Backhoe - Trenching		
094956	2006	2006 Geological, Geochemical and Geophysical Report on the Werneckes Project	Reverse Circulation - Airborne Geophysics, Rock - Geochemistry, Soil - Geochemistry, Bedrock Mapping - Geology, Scintillometer - Ground Geophysics, Prospecting - Other		
062055	1980	Report on Geology an Exploration of the Bonnet Plume Basin Yukon Territory	Diamond - Drilling, Bedrock Mapping - Geology, Regional Bedrock Mapping - Geology, Environmental Assessment/Impact - Studies, Resource Estimate - Studies	53	10700
090371	1978	Report on Detailed Radiometric Grid Survey and Airborne Radiometric Survey	Gamma-Ray Spectrometry - Airborne Geophysics, Gamma-ray Spectrometry - Ground Geophysics		
090311	1978	Assessment Report on Orthophoto Mapping Wernecke 1-82 Claims	Orthophoto - Airphotography		
090152	1976	Report on Geology and Detailed Radiometric Survey Wernecke 1-82	Bedrock Mapping - Geology, Gamma-ray Spectrometry - Ground Geophysics		
090099	1976	Report on Soil Geochemistry, Geology and Radiometric Surveys	Gamma-Ray Spectrometry - Airborne Geophysics, Rock - Geochemistry, Soil - Geochemistry, Bedrock Mapping - Geology, Gamma-ray Spectrometry - Ground Geophysics		
061624	1976	Report on Geology and Detailed Radiometric Survey Wernecke 1-82	Gamma-Ray Spectrometry - Airborne Geophysics, Gamma-ray Spectrometry - Ground Geophysics		
061572	1976	[1976 U/Pb Assay Results for Igor, Gnuclles, and Otis Claims in the Wernecke Range]	Silt - Geochemistry		

