



## Occurrence Details

**Occurrence Number:** 105G 112  
**Occurrence Name:** Desoto  
**Occurrence Type:** Hard-rock  
**Status:** Prospect  
**Date printed:** 6/15/2025 11:39:07 AM

## General Information

**Secondary Commodities:** copper, lead, silver, zinc  
**Deposit Type(s):** Unknown  
**Location(s):** 61°32'7" N - 130°24'25" W  
**NTS Mapsheet(s):** 105G09  
**Location Comments:** .5 Kilometres  
**Hand Samples Available:** No  
**Last Reviewed:**

### Capsule

#### Work History

Staked as Desoto cl 1-10 (YB15680) in May/89 by A. Carlos. W. Arnholtz tied on Arm cl 1-8 (YB15752) to the west in Jul/89. In Jun/90 Total Energold Corporation prospected and soil sampled the Arm claims.

In Aug/90, after the Desoto claims expired, J. Martensson a partner with Arnholtz restaked the occurrence as Arm cl 9-12 (YB33538). In Jul/91 Martensson collected a series of soil samples across the entire Arm claim block, the results of which were subjected to factor analysis.

In May/94 Cominco staked the Wol cl 95-156 (YB48825) 2 km southeast of the Arm claims. Cominco surrounded the Arm claims with a large block of Tag claims (1115-1538, YB51332) in Aug/94. During the summer of 1994 Cominco carried out a regional exploration program in the area, including geochemical sampling on the Arm claims. In Oct/94, based on the results of this exploration program, Cominco optioned the Arm claims.

In 1995, Cominco collected 995 soil and silt samples from the Tag claims surrounding the Arm claims. In 1996 Cominco completed HLEM, magnetic and gravity surveys on the Arm claims, following which the company drilled 1 diamond drill hole (139.6 m). In Mar/97 Cominco terminated its option on the Arm claims.

Expatriate Resources Ltd optioned the Arm claims in Mar/97. The company carried out soil sampling, prospecting and hand trenching followed by 3 diamond drill holes (462 m) later in the year.

#### Capsule Geology

The Finlayson Lake region is dominantly underlain by a layered sequence of Devonian to Early Mississippian metavolcanic and metasedimentary rocks of the Yukon-Tanana Terrane (YTT) that have been intruded by Mississippian granitic intrusions and later Jurassic, Cretaceous and Eocene intrusions (Murphy et al., 2001). The YTT is a volcanic-plutonic pericratonic arc assemblage that was strongly deformed and metamorphosed by Late Triassic time. Volcanogenic massive sulphide (VMS) deposits exist at different stratigraphic positions within the YTT including the Fyre Lake deposit (Minfile Occurrence #105G 034) in the Devonian to lower Mississippian(?) Fire Lake mafic metavolcanic unit, the Kudze Kayah deposit (Minfile Occurrence #105G 117) in the Mississippian Kudze Kayah felsic metavolcanic unit, the Wolverine deposit (Minfile Occurrence #105G 072) within the Lower Mississippian Wolverine Succession and the Ice deposit (Minfile Occurrence #105G 118) in Early Permian Campbell Range basalt.

The occurrence is located northwest of Wolverine Lake, 18 km northwest of the Wolverine VMS deposit. According to regional mapping (Murphy et al., 2001), the occurrence is underlain by Mississippian Wolverine Succession metasedimentary and metavolcanic rocks. These rocks are in turn overlain to the east by Early Permian mafic volcanic rocks of the Campbell Range Succession.

The Desoto claims (original occurrence) covered the contact between Campbell Range Succession basalts and underlying Wolverine Lake Succession slate, phyllite and chert pebble conglomerate. Soil samples collected from quartz-carbonate alteration zones occurring along the contact returned anomalous arsenic values.

The Arm claims were staked to cover the drainage from which an anomalous regional silt sample was collected (#873511; Hornbrook and Friske, 1988). The sample returned the highest analyzed results from the entire map sheet for As (450 ppm), V (470 ppm) Cu (2 820 ppm), Mo (91 ppm) and Cd (46.8 ppm) as well as the highest Zn (1 935 ppm) and U (61.4 ppm) values for the host unit. Early work on the property resulted in the discovery of several ferricrete gossans in the main drainage and minor boxwork float on the flanks of the creek.

The 1990 work failed to locate the source of the largest (300 x 10 x 4 m) gossan, but soil samples returned up to 4200 ppm Zn, 1820 ppm Cu and 7.6 ppm Ag. Martensson's work detected a suite of volatiles (Hg, Sb, Ag, Ba) associated with the carbonaceous phyllite, and anomalous Cu, Zn, As, Pb and V values associated with quartzite (likely unit MWcp).

Cominco's 1994 soil sampling/evaluation program on the Arm claims generally matched previous work, with strongly anomalous values in Ag, Mo, Ba, Cu, Zn, and Fe. However, the work did not identify any specific targets. The 1995 program on the proximal Tag claims produced many multi-element (Pb/Zn/Ag/Mo/Ba) anomalies. The magnetic survey produced no anomalies of merit and, while the HLEM survey outlined a broad zone of conductivity throughout the central portion of the property (also the most geochemically responsive area), the gravity survey which followed provided no additional encouragement.

Cominco's 1996 drill hole on the Arm property appears to have intersected conglomerate, siltstone and argillite (probably unit MWcl), fragmented sediments, tuffs and quartz vein material (probably unit MWf/MWq) and black clastics (probably unit MWcp). Fine disseminated pyrite was reported present in the clastics and in quartz veins. The hole did not return any economic intersections but the black clastics did return anomalous values for Zn and Cu.

Expatriate's geological mapping generally confirms results reported by Murphy and Piercey and earlier mappers. The soil sampling program showed that anomalous zinc, lead and copper values are sporadically coincident while "anomalous silver values, as defined by regional thresholds, occur across 90% of the grid". Expatriate's 1997 diamond drilling program consisted of a single line of three holes equally spaced over a distance of 400 m. The holes were designed to test stratigraphy uphill from the main geochemical anomalies and ferricrete gossans. The drilling returned intersections of black phyllite and grey siltstone with variable concentrations of quartz-healed fractures, tension gashes, veins and veinlets (probably units MWcl, MWf/MWq and MWcp). Pyrite, the only sulphide mineral encountered in the drilling, occurs as fine grained wisps and laminations in the clastic sedimentary rock and as coarser grained cubes in fractures and parallel to foliation. The best intersection was returned from hole ARM97- 03, where a 12.5 metre intersection returned an arithmetic average of 3315 ppm

#### References

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COMINCO LTD, Apr/98. Assessment Report #093735 by D. Hall.

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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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Work History

Date	Work Type	Comment
12/31/1997	Drilling	Three holes, 462 m.
12/31/1997	Geochemistry	
12/31/1997	Trenching	
12/31/1997	Other	
12/31/1996	Ground Geophysics	Also HLEM and magnetic surveys..
12/31/1996	Drilling	One hole, 139.6 m. Work carried out on Arm claims by Cominco.
12/31/1995	Geochemistry	Carried out by Cominco on surrounding Tag claims.
12/31/1994	Geochemistry	Cominco carried out regional exploration program which included soil sampling Arm claims.
12/31/1991	Geochemistry	
12/31/1990	Geology	
12/31/1990	Geochemistry	

Assessment Reports that overlap occurrence

Report Number	Year	Title	Worktypes	Holes Drilled	Meters Drilled
			Rock - Geochemistry Silt - Geochemistry Soil - Geochemistry		

<a href="#">096574</a>	2013	Geochemical Sampling, Hand Trenching, Prospecting and Geological Mapping at the Arm Property	Rock - Geochemistry, Silt - Geochemistry, Soil - Geochemistry, Detailed Bedrock Mapping - Geology, Prospecting - Other, Hand - Trenching		
<a href="#">095401</a>	2010	Assessment Report Describing Geochemical Sampling and Diamond Drilling at the Arm Property	Diamond - Drilling, Diamond - Drilling, Drill Core - Geochemistry, Drill Core - Geochemistry, Soil - Geochemistry, Soil - Geochemistry	2	545.60
<a href="#">094695</a>	2005	Assessment Report Describing Prospecting on the Jack Property	Rock - Geochemistry, Silt - Geochemistry, Soil - Geochemistry, Prospecting - Other		
<a href="#">093757</a>	1997	Assessment Report Describing Geological Mapping, Prospecting, Soil Sampling, Hand Trenching and Diamond Drilling at the Arm Property	Diamond - Drilling, Soil - Geochemistry, Bedrock Mapping - Geology, Prospecting - Other, Hand - Trenching	3	462
<a href="#">093735</a>	1997	Assessment Report HLEM, Magnetic and Gravity Surveys on the Arm Property	EM - Ground Geophysics, Gravity Survey - Ground Geophysics, Magnetics - Ground Geophysics		
<a href="#">093712</a>	1996	1996 Assessment Report Kudz Ze Kayah Property Linecutting, Soil Geochemistry, Geological Mapping, Geophysical Surveying and Diamond Drilling	Diamond - Drilling, Regional Bedrock Mapping - Geology, EM - Ground Geophysics, Gravity Survey - Ground Geophysics, Magnetics - Ground Geophysics, Line Cutting - Other, Prospecting - Other	1	99.20
<a href="#">093584</a>	1996	Dighem V Survey for Westmin Resources Limited Wolverine Lake Project Yukon	Electromagnetic - Airborne Geophysics, Magnetic - Airborne Geophysics		
<a href="#">093374</a>	1995	Assessment Report Geochemistry Tag Claim Group	Silt - Geochemistry, Soil - Geochemistry		
<a href="#">093317</a>	1994	Assessment Report Geochemistry Arm Claim Group	Rock - Geochemistry, Silt - Geochemistry, Soil - Geochemistry		
<a href="#">093006</a>	1991	Arm Claims Property, Yukon Factor Analysis of Soil Geochemical Data	Process/Interpret - Pre-existing Data		
<a href="#">092891</a>	1990	Geological and Geochemical Report on the Arm 1-8 Mineral Claims	Rock - Geochemistry, Soil - Geochemistry, Bedrock Mapping - Geology		

## Related References

Number	Title	Page(s)	Reference Type	Document Type
<a href="#">ARMC016591</a>	Geochemical map - 105G/9 - McEvoy Creek		Property File Collection	Geochemical Map
<a href="#">ARMC014033</a>	Geology work sheet on map of McEvoy Creek		Property File Collection	Geoscience Map (General)
<a href="#">ARMC017621</a>	Geochemical map of McEvoy Creek - Cu, Pb, Zn, Mn		Property File Collection	Geochemical Map
<a href="#">ARMC014035</a>	Geology and geochemistry of south part of Sheldon area- McEvoy Creek		Property File Collection	Geoscience Map (Geological - Bedrock)
<a href="#">ARMC016580</a>	Geology map - 105G/9 - McEvoy Creek		Property File Collection	Geoscience Map (Geological - Bedrock)
<a href="#">ARMC018668</a>	Field map of Pelly Mountain area		Property File Collection	Geoscience Map (General)
<a href="#">ARMC014031</a>	Field sheet of McEvoy Creek with field notations		Property File Collection	Geoscience Map (General)
<a href="#">ARMC014034</a>	Field sheet with notations on map of McEvoy Creek		Property File Collection	Geoscience Map (General)

## Drill core at YGS core library

Number	Property	Year Drilled	Core Size	Photos	Data
<a href="#">ARM-10-01</a>	Arm	2010	NTW-BTW	0	6
<a href="#">97-AR-01</a>	Arm	1997	HQ-NQ	0	1
<a href="#">97-AR-02</a>	Arm	1997	HQ-NQ	0	1
<a href="#">97-AR-03</a>	Arm	1997	HQ-NQ	0	1