Sipilä

Alternative Names: Rautio
Occurence type: occurrence

Commodity	Rank	Total measure	Total production	Total resource	Importance
gold	1	NA	NA	NA	NA
copper	3	NA	NA	NA	NA

Easting EUREF: 363546,971
Northing EUREF: 7109247,411
Easting YKJ: 3363664
Northing YKJ: 7112226

Discovery year: 1986
Discovered by: Geological Survey of Finland
Province: Laivakangas (Au, Cu)
Comments: Discovery: the first indication was an arsenopyrite-rich outcrop sample with 0.5% Co, found by an amateur prospector. The target was drilled in 1986 by GTK

References: 3

Mineral deposit type

Group: Metallogenic deposit
Main type: Orogenic (metamorphic hydrothermal)
Comments: Orogenic "mesothermal" deposit. The strike of the mineralisation is nearly perpendicular to the dominant schistosity of the host rock.
References: 2

Dimension

Expression: exposed
Form: discordant
Shape: NA
Length (m): NA
Width (m): NA
Thickness (m): NA
Depth (m): NA
Area (ha): NA
Dip azim: NA
Dip: NA
Plunge azim: NA
Plunge dip: NA
Orientation method: NA

Holder history

Previous holders:

Company	Years	Holding type	Comments
Mineral Exploration Network (Finland) Limited	2011-2012	Claim reservation (old law)	NA
Belvedere Resources Ltd	2004	NA	NA
Outokumpu Oy	1987	NA	NA
Geological Survey of Finland	1986-1987	NA	NA

EXPLORATION ACTIVITY

Geological Survey of Finland

Years	Activity type	Geologist	Exploration result	Ref
1986-1987	detailed geophysics	Esko Sipilä.	NA	2, 4, 6, 7
	IP ground survey; A 300 m long, ENE-striking IP anomaly			

1986-1987	detailed geology	Esko Sipilä.	NA	2, 4, 6, 7
	An arsenopyrite-rich outcrop sample with 0.5% Co found by an amateur prospector.			

1986-1986	core drilling	Esko Sipilä.	NA	2, 6
	Core drilling (reconnaissance drilling): 4 drill holes, total 213 m			
	Intersections			
	HoleID	R391		
	From-To	NA		
	Length	0,5m		
	gold	5,6ppm		
	copper	9,4%		
	HoleID	NA		
	From-To	NA		
	Length	0,4m		
	gold	3,84ppm		

1984-1984	regional geochemistry	NA	NA	
	Regional geochemical till survey			

1984-1988	detailed geochemistry	E. Iisalo, M. Tenhola	NA	4
	The geochemical sampling survey around the Rautio granodiorite. Regional As, As, Cu, Sb anomalies in till.			

1979-1979	regional geophysics	NA	key geological features	
	Low-altitude airborne magnetic, electromagnetic and radiometric survey			

Outokumpu Oy

Years	Activity type	Geologist	Exploration result	Ref
1960-1981	regional geology	NA	NA	1, 5
	regional exploration, bedrock mapping, glacial erratic survey in 1960's, in 1974-1975 and in 1978-1981			

Vuoksenniska Oy

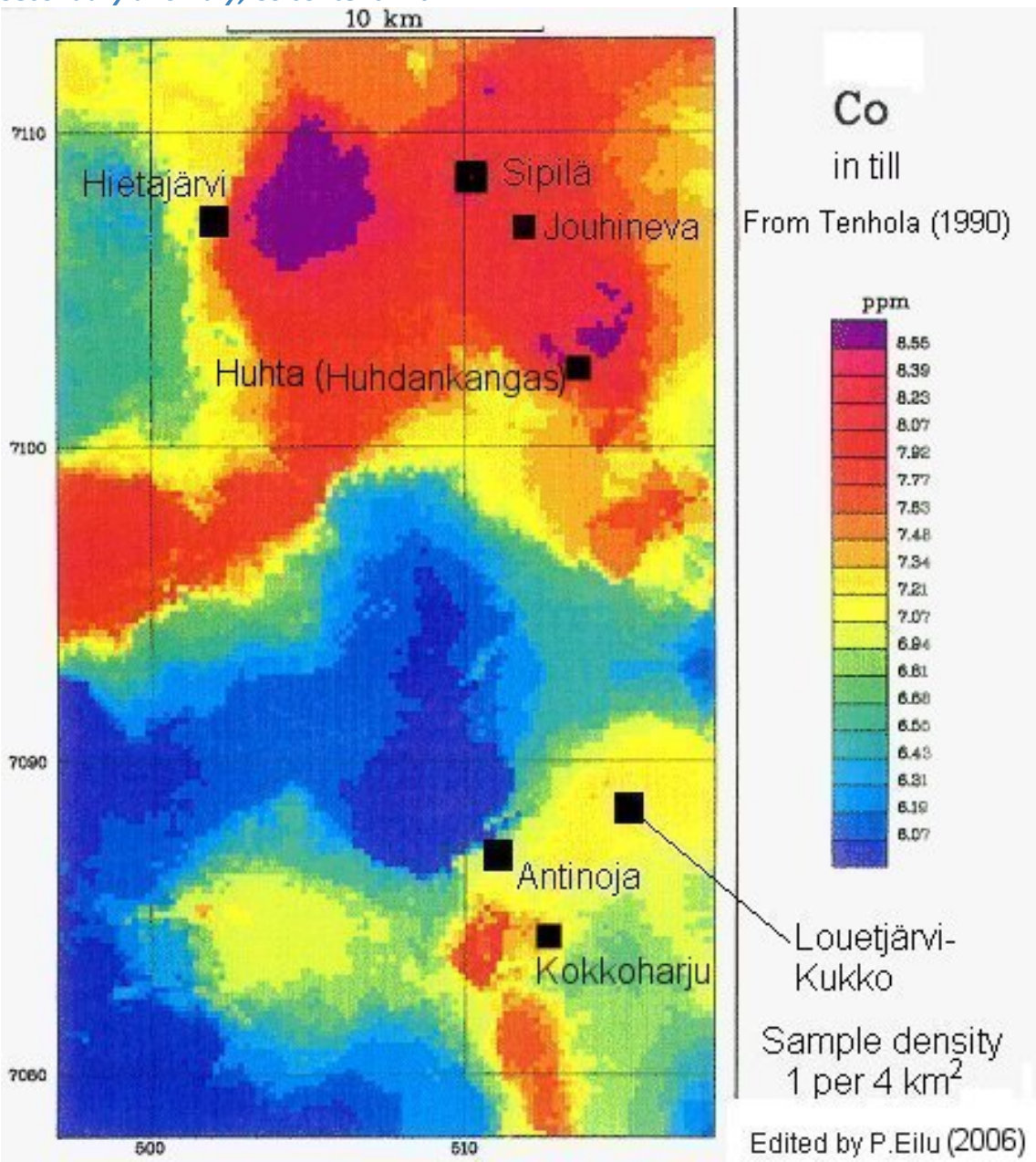
Years	Activity type	Geologist	Exploration result	Ref
1955-1957	regional geology	NA	NA	5

1955-1957	regional geophysics	NA	NA	6

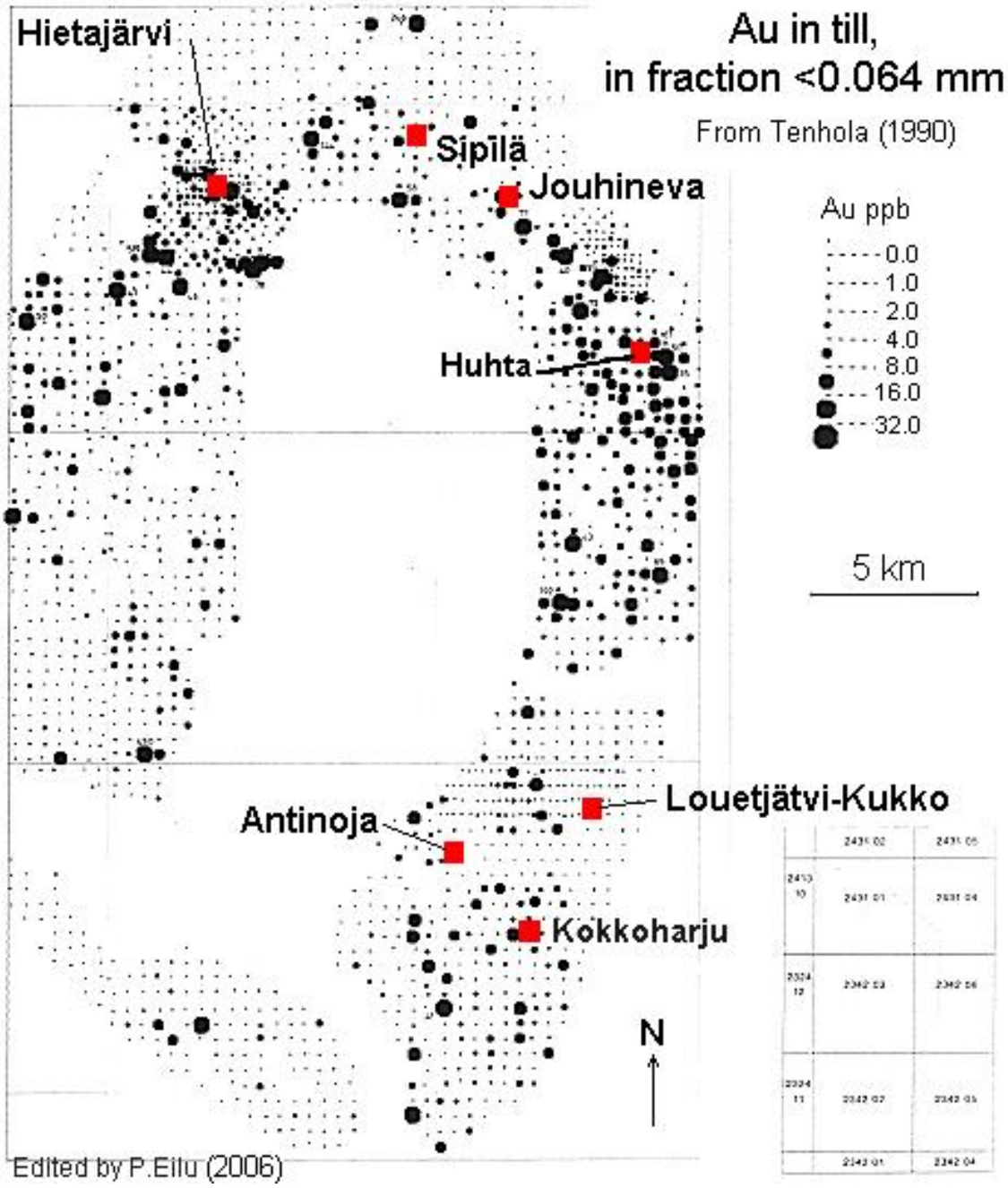
	A 300 m long, ENE-striking IP anomaly.

Figures

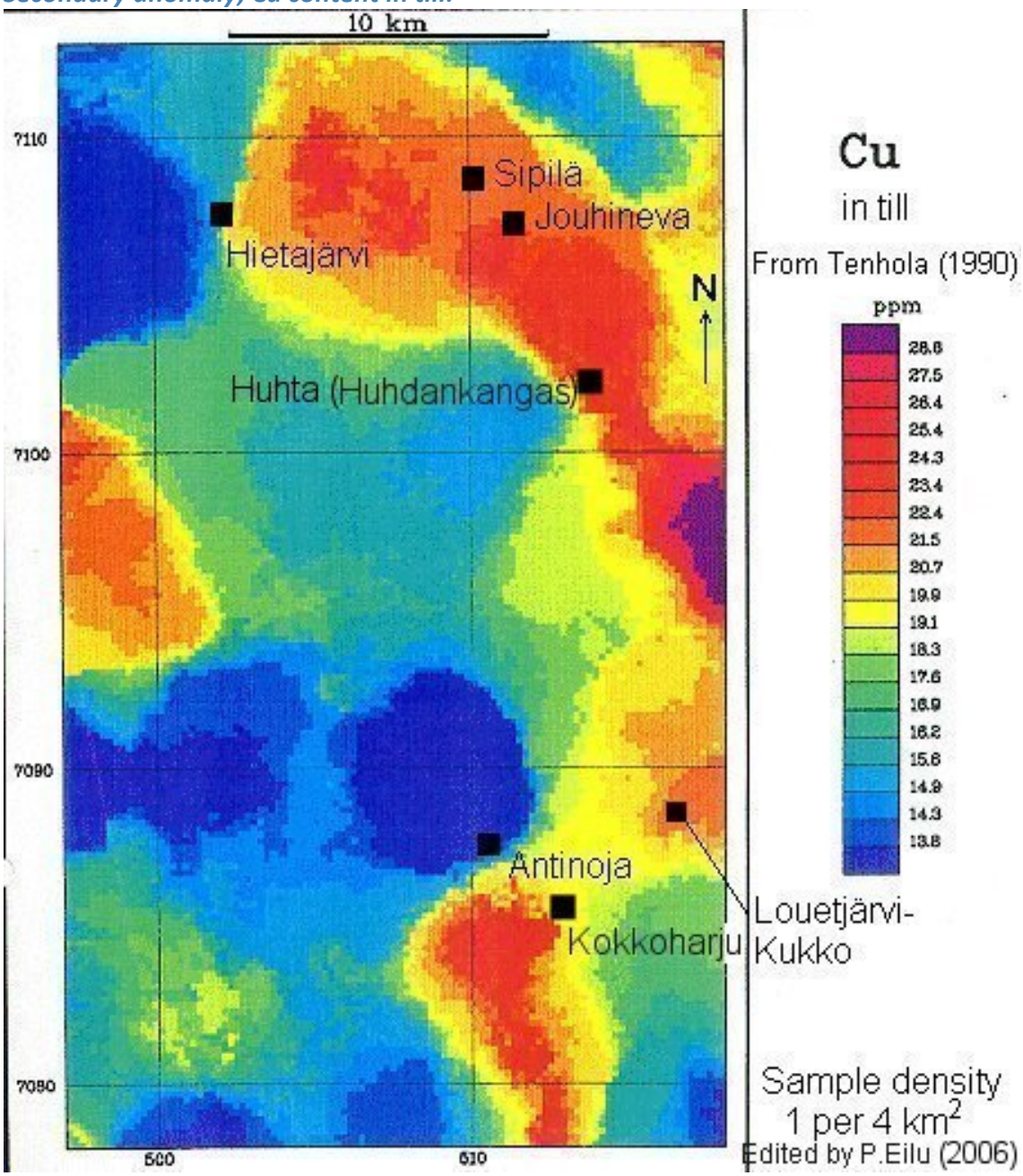
Secondary anomaly; Co content in till:



Secondary anomaly; Au content in till:



Secondary anomaly; Cu content in till:



GEOLOGY

Host rock: Plagioclase porphyrite, Mafic volcanic rock

Plagioclase porphyrite (Host rock)

Rock type: Host rock
Proportion: minor
Grain size: NA
Color: NA
References: 1, 4, 6
Comments: The mineralisation is in shear bands and quartz veins in subvolcanic rocks, formed in island arc environment.

Metamorphic description:

Other minerals:

Mineral	Proportion	Mineral texture
Plagioclase	present	

Type:	Facies:	Degree:	Relation to mineralization:	Min P- Max P (kbar)	MIn T- Max T (°C)
Regional	amphibolite metamorphic facies	medium metamorphic grade	NA		
Comments: Metamorphic peak during D1, which is partially overprinted by the retrograde D2 and D3; Plagioclase-hornblende-biotite-quartz-titanite ± chlorite, epidote, K feldspar.					

Geological age:

Geological era:	Max age - Minage (Ma):	Inferred age (Ma):	Age of mineralization:
Paleoproterozoic (2500-1600 Ma)	1600-2500		N

Mafic volcanic rock (Host rock)

Rock type: Host rock
Proportion: major
Grain size: NA
Color: NA
References: 1, 2, 4, 6
Comments: The mineralisation is in shear bands and quartz veins in subvolcanic rocks, formed in island arc environment.

Ore minerals:

Mineral	Proportion	Mineral texture
Arsenopyrite	major	Dissemination, Vein
	Invisible gold in arsenopyrite	
Bornite	minor	Vein, Dissemination
Chalcopyrite	major	Vein, Dissemination
Löllingite	major	Dissemination, Vein

Marcasite	minor	Vein, Dissemination
Pyrrhotite	minor	Vein, Dissemination

Structures
Veined

Metamorphic description:

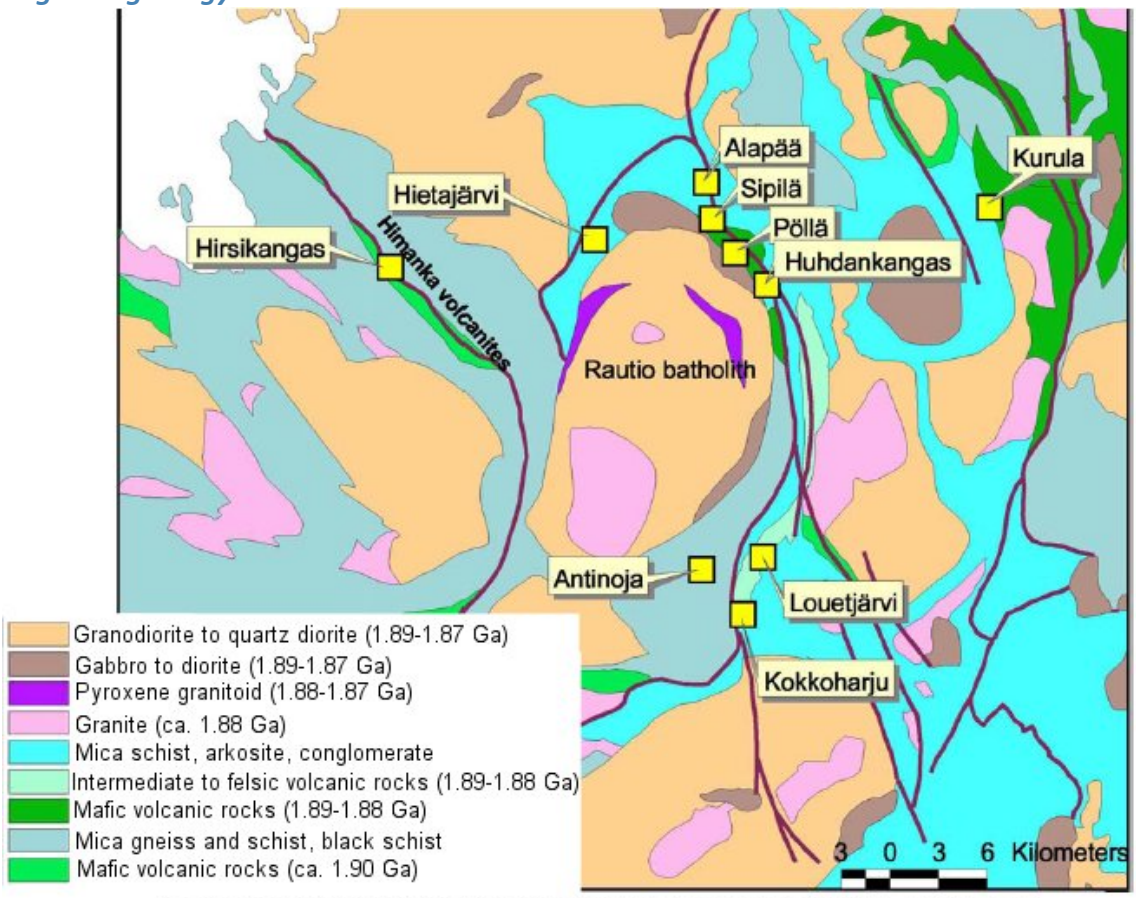
Type:	Facies:	Degree:	Relation to mineralization:	Min P- Max P (kbar)	MIn T- Max T (°C)
Regional	amphibolite metamorphic facies	medium metamorphic grade	NA		
Comments: Metamorphic peak during D1, which is partially overprinted by the retrograde D2 and D3; Hornblende-diopside-plagioclase.					

Geological age:

Geological era:	Max age - Minage (Ma):	Inferred age (Ma):	Age of mineralization:
Paleoproterozoic (2500-1600 Ma)	1600-2500		N

Figures

Regional geology:



Gold showings and occurrences in the vicinity of the Rautio batholith. Deformation zones (mostly shear zones) are shown by purple lines. Geology after Korsman et al. (1997).
Figure from Kontoniemi & Mursu (2006)

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