Isovesi

Occurence type: occurrence

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

Easting EUREF: 272229,869
Northing EUREF: 6847018,575
Easting YKJ: 3272308
Northing YKJ: 6849892

Discovery year: 1967
Discovered by: Outokumpu Oy
Province: Pirkkala (Au)
Comments: Discovered by Outukumpu. A glacial erratic, Au- and As-rich, boulder found by an amateur prospector in 1957 led to the discovery of the deposit after a detailed bedrock mapping.
References: 3, 4, 6

Mineral deposit type

Group: Metallogenic deposit
Main type: Orogenic (metamorphic hydrothermal)
Comments: Sequence of mineralisation: I) pyrrhotite-arsenopyrite-loellingite: "intense fracturing after the main stage of skarn reactions", II) pyrrhotite-arsenopyrite-pyrite-chalcopyrite-sphalerite-titanite: "moderate silicic replacement reactions in fractures", and III) pyrite-pyrrhotite-arsenopyrite-sphalerite-electrum-gold-pilsenite-galena-haematite: "late Au-Bi mineralisation stage with minor replacement reactions".
References: 1

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
Dimension comments: Irregular shape, apparently difficult to estimate the extent of the mineralised blocks.

Holder history

Previous holders:

Company	Years	Holding type	Comments
NewPeak Finland Oy	2020	Exploration permit	NA
Sotkamo Silver Oy	2016-2020	Exploration permit	NA
North American Gold	2004-2007	NA	NA
Outokumpu Oy	1967-2000	NA	NA

EXPLORATION ACTIVITY

Outokumpu Oy

Years	Activity type	Geologist	Exploration result	Ref
1991-2000	core drilling	Olli-Pekka Isomäki, Martti Kokkola	mineral occurrences	1, 2, 7
	Core drilling (reconnaissance drilling): eight diamond-drill holes, total 346 m.			
	Intersections			
	HoleID	NA		
	From-To	NA		
	Length	3,7m		
	gold	5,3ppm		
	HoleID	NA		
	From-To	NA		
	Length	2m		
	gold	4,8ppm		

1986-1987	core drilling	Olli-Pekka Isomäki, Martti Kokkola	mineral occurrences	1
	Core drilling (reconnaissance drilling): 6 diamond-drill holes, total 506 m.			

1957-2000	excavation	Olli-Pekka Isomäki, Martti Kokkola	NA	1, 5, 7

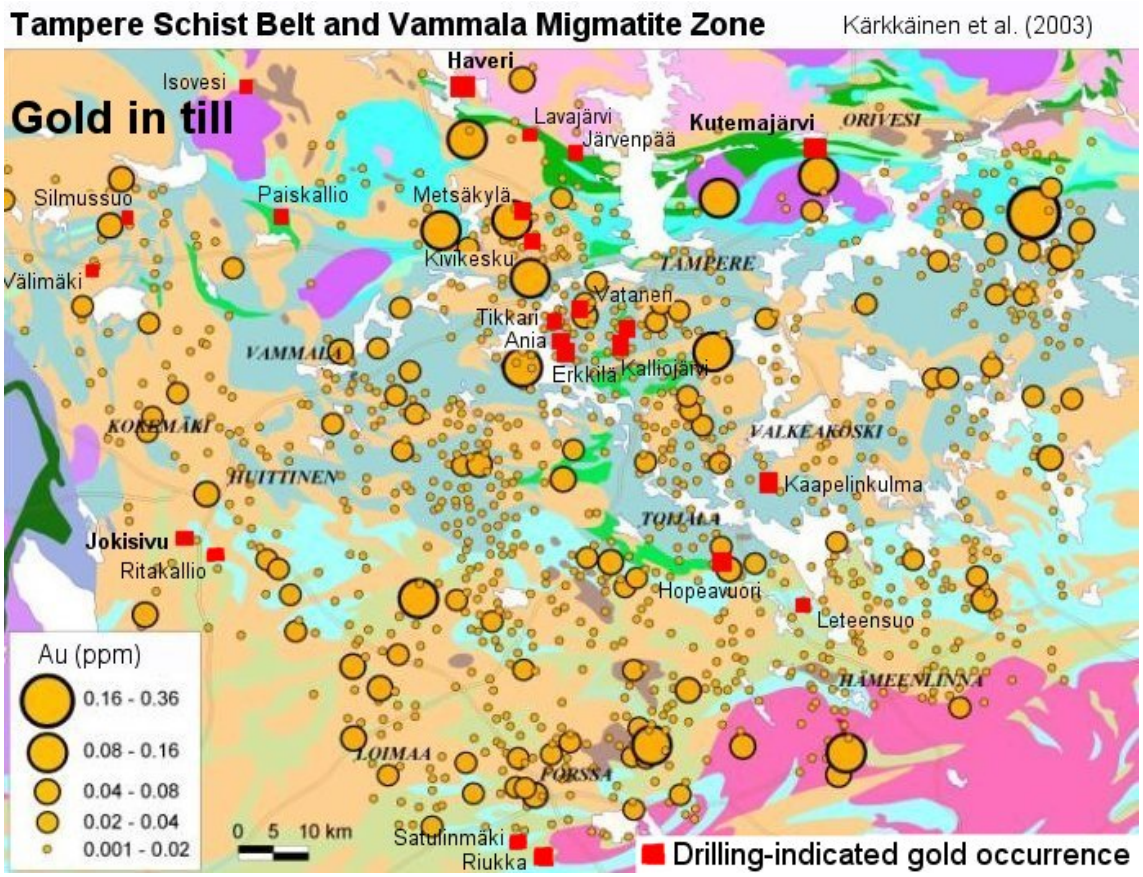
1957-2000	regional geochemistry	Olli-Pekka Isomäki, Martti Kokkola	NA	7
	A distinct Au anomaly in till.			

1957-2000	detailed geology	Olli-Pekka Isomäki, Martti Kokkola	NA	1, 5, 7
	A glacial erratic, Au- and As-rich, boulder found by an amateur prospector in 1957; this led Outokumpu to discover the deposit after a detailed bedrock mapping.			

1957-2000	regional geophysics	Olli-Pekka Isomäki, Martti Kokkola	NA	1
	Positive anomalies on both magnetic and electromagnetic methods.			

Figures

Secondary anomaly:



GEOLOGY

Host rock: Volcaniclastic sandstone

Volcaniclastic sandstone (Host rock)

Rock type: Host rock
Proportion: major
Grain size: NA
Color: NA
References: 1, 2, 8
Comments: Quartz-epidote-haematite veins

Ore minerals:

Mineral	Proportion	Mineral texture
Arsenopyrite	major	
Bismuth	minor	
Chalcopyrite	minor	
Galena	minor	
Gold	minor	
	Associated both with silicates and arsenopyrite, both in fractures and as inclusions, and commonly with native bismuth, grain size is 1-60 microns.	
Hematite	minor	
Löllingite	minor	
Pyrite	minor	
Pyrrhotite	minor	
Sphalerite	minor	
Tellurobismuthite	minor	

Other minerals:

Mineral	Proportion	Mineral texture
Calcite	present	Alteration product
Epidote	present	
Graphite	present	
Grunerite	present	
Hedenbergite	present	
Hornblende	present	
Quartz	present	
Scheelite	present	
Titanite	present	

Alteration:	Distribution:	Degree:	Relation to mineralization:
carbonate alteration	NA	NA	NA
calcsilicate alteration	NA	NA	NA

Metamorphic description:

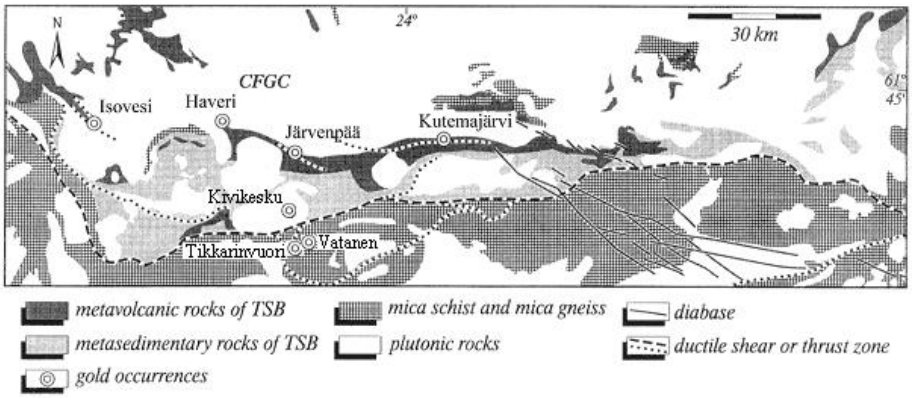
Type:	Facies:	Degree:	Relation to mineralization:	Min P- Max P (kbar)	MIn T- Max T (°C)
Regional	amphibolite metamorphic facies	medium metamorphic grade	NA		
Comments: Plagioclase-hornblende ± epidote, K feldspar, titanite, calcite.					

Geological age:

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

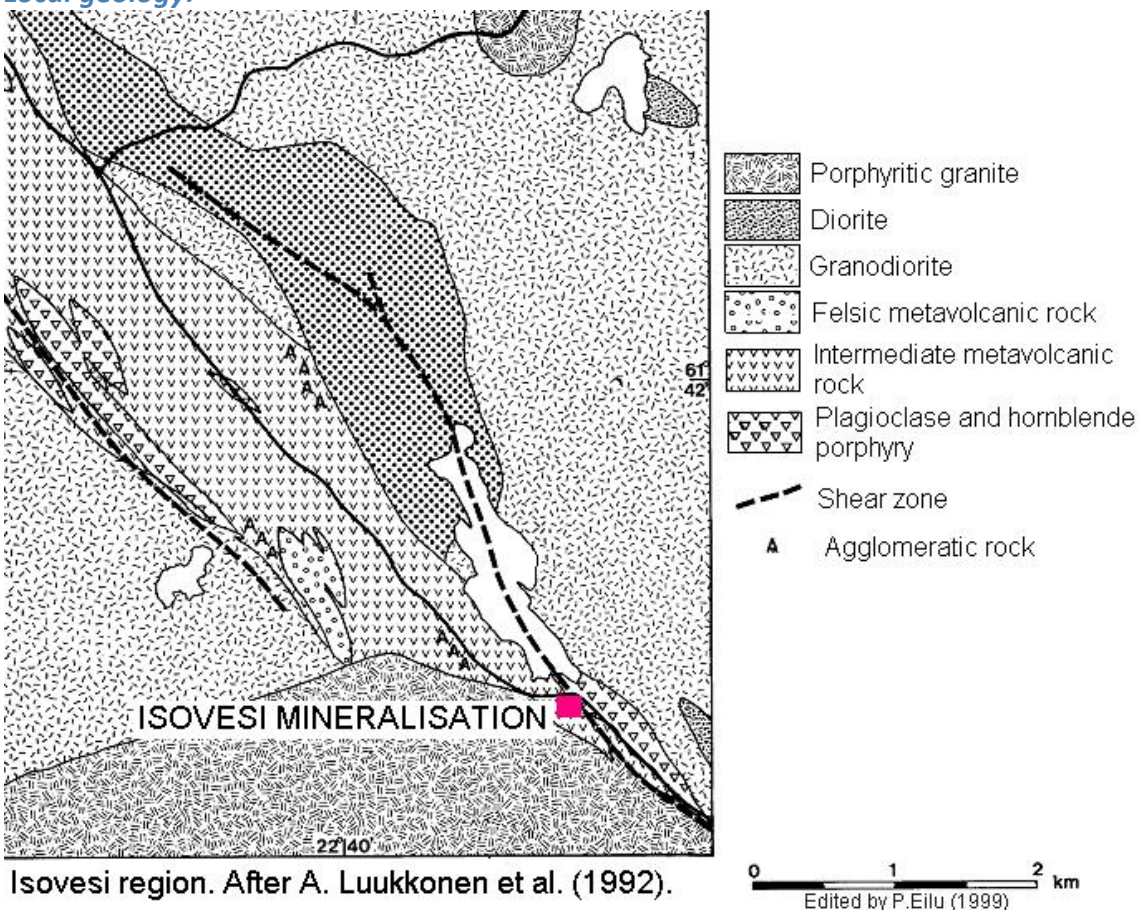
Figures

Regional geology:



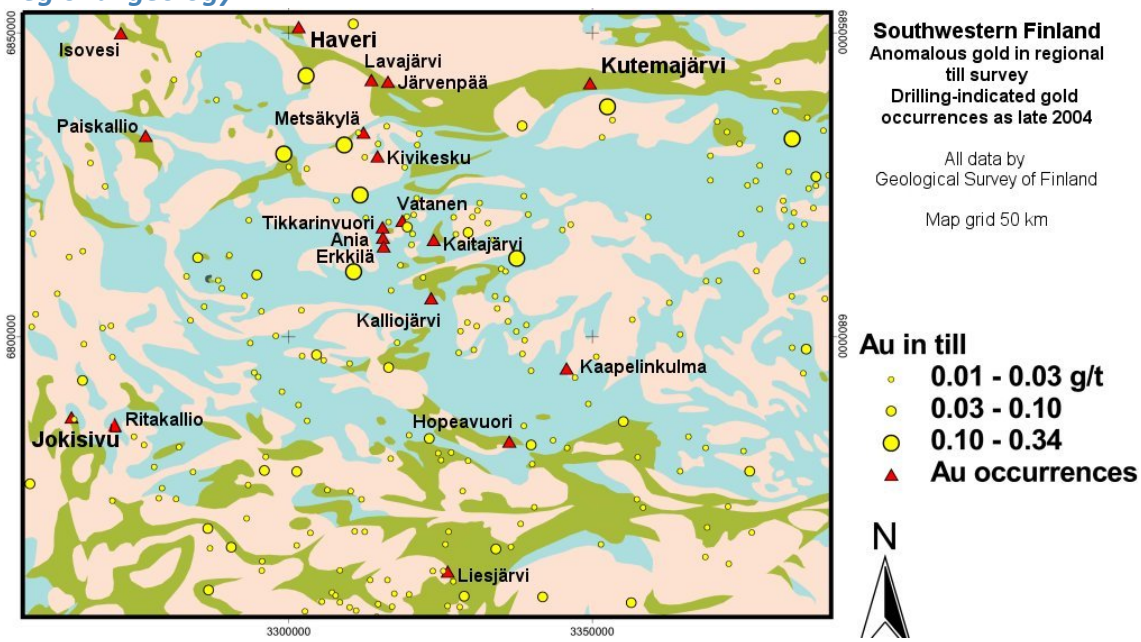
Simplified geological map of the Tampere schist belt (TBS; modified after Koistinen, 1994).
CFGC = Central Finland Granitoid Complex.
From Poutiainen and Grönholm (1996).
Edited by P.Eilu (1999)

Local geology:



Isovesi region. After A. Luukkonen et al. (1992).

Regional geology:



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