Palokiimaselkä

Occurence type: occurrence

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

Easting EUREF: 510263,738
Northing EUREF: 7555643,358

Easting YKJ: 3510440
Northing YKJ: 7558800

Discovery year: 1952
References: 2, 8

Mineral deposit type

Group: Metallogenic deposit
Main type: Orogenic (metamorphic hydrothermal)
Comments: Orogenic "mesothermal" deposit. Oxidising fluids, as indicated by the abundant haematite. Au possibly transported as chloride complex.
References: 5, 7

Group: Metallogenic deposit
Main type: Magmatic hydrothermal
References: 5, 7

Group: Metallogenic deposit
Main type: IOCG (mixed hydrothermal)
References: 5, 7

Dimension

Expression: exposed
Form: discordant
Shape: NA
Length (m): 560
Width (m): 2
Thickness (m): NA
Depth (m): NA

Area (ha): NA
Dip azim: 90
Dip: NA
Plunge azim: NA
Plunge dip: NA
Orientation method: NA

Holder history

Previous holders:

Company	Years	Holding type	Comments
Tertiary Gold Ltd	2003-2005	Claim (old law)	NA
Geological Survey of Finland	1970	NA	NA

EXPLORATION ACTIVITY

Tertiary Gold Ltd

Years	Activity type	Geologist	Exploration result	Ref
2003-2003	excavation	John Bradley	NA	1
	trenching and sampling; Profile sampling of exposed mineralised breccia revealed grades that were much lower than reported historic grades			

Geological Survey of Finland

Years	Activity type	Geologist	Exploration result	Ref
1987-1987	regional geophysics	NA	key geological features	
	Low-altitude airborne magnetic, electromagnetic and radiometric survey			
1970-1970	detailed geology	Esa Hyyppä, Pentti Ervamaa	NA	5, 9
1970-1970	excavation	Esa Hyyppä, Pentti Ervamaa	NA	5, 9
1970-1970	detailed geophysics	Esa Hyyppä, Pentti Ervamaa	NA	10
	The veins have a good response on ground magnetometric survey. Mineralisation is within a 2 km long, N-S trending magnetic anomaly.			

GEOLOGY

Host rock: Hornblende Gneiss, Quartz vein, Quartz-Sericite Rock, Albite-Epidote Quartz rock

Hornblende Gneiss (Host rock)

Rock type: Host rock
Proportion: major
Grain size: NA
Color: NA
References: 2, 3, 4, 5, 9

Metamorphic description:

Other minerals:

Mineral	Proportion	Mineral texture
Hornblende	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 D2, thrusting during D3 was at least partly post-peak, late metamorphic.					

Quartz vein (Host rock)

Rock type: Host rock
Proportion: minor
Grain size: NA
Color: NA
References: 4, 5, 9
Comments: Less than 50 cm wide, N-S trending, subvertical, quartz-hematite-albite-magnetite veins that cut across the foliation of the wall rocks

Ore minerals:

Mineral	Proportion	Mineral texture
Goethite	present	
Gold	present	
	Chiefly in the veins, minor amounts in the wall rock.	
Hematite	major	
Magnetite	major	
Pyrite	minor	
Pyrrhotite	minor	

Other minerals:

Mineral	Proportion	Mineral texture
Albite	major	
Quartz	major	
	fluid inclusion study; 24 % NaCl eq, oxidising, formed at 2.0 kbar if T was 280° (the minimum temperature)	

Quartz-Sericite Rock (Host rock)

Rock type: Host rock
Proportion: major
Grain size: NA
Color: NA
References: 2, 3, 4, 5, 9

Metamorphic description:

Other minerals:

Mineral	Proportion	Mineral texture
Quartz	present	
Sericite	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 D2, thrusting during D3 was at least partly post-peak, late metamorphic.					

Albite-Epidote Quartz rock (Host rock)

Rock type: Host rock
Proportion: major
Grain size: NA
Color: NA
References: 2, 3, 4, 5, 7, 9

Ore minerals:

Mineral	Proportion	Mineral texture
Goethite	major	
Gold	minor	
	Chiefly in the veins, minor amounts in the wall rock.	
Pyrite	minor	
Pyrrhotite	minor	

Other minerals:

Mineral	Proportion	Mineral texture
Albite	present	
Epidote	present	Alteration product
Quartz	present	
Sericite	present	Alteration product

Alteration:	Distribution:	Degree:	Relation to mineralization:
albitic alteration	NA	NA	NA
sericitic alteration	NA	NA	NA
pyritic alteration	NA	NA	NA

Metamorphic description:

Type:	Facies:	Degree:	Relation to mineralization:	Min P- Max P (kbar)	MIn T- Max T (°C)

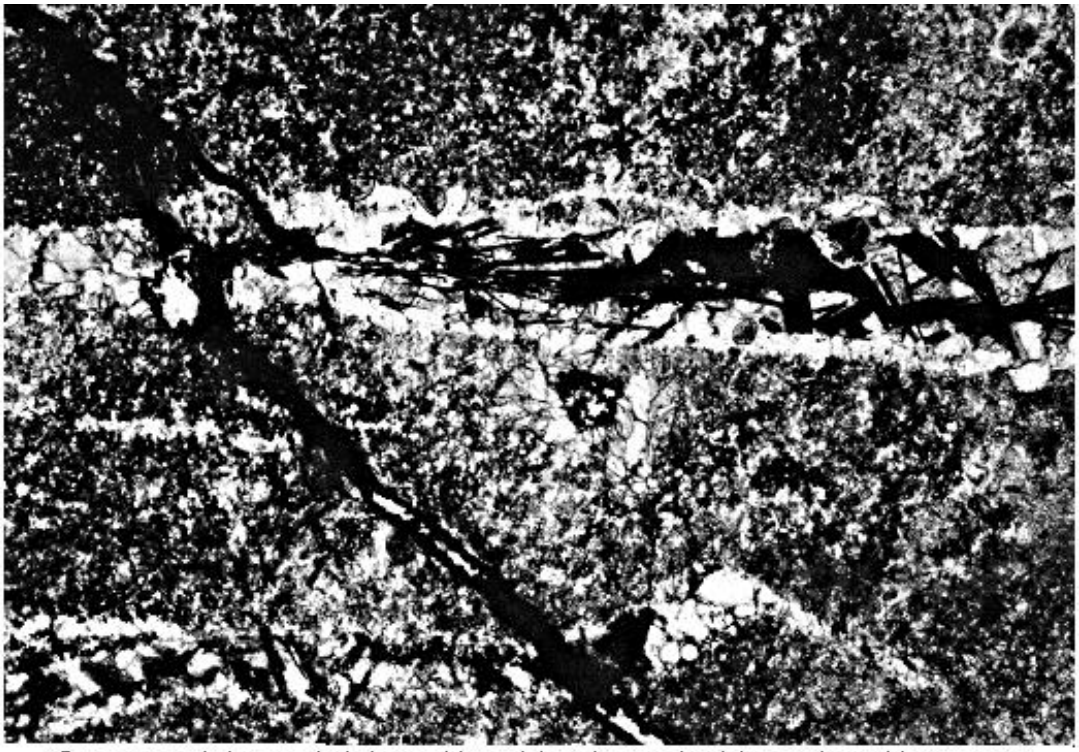
Regional	amphibolite metamorphic facies	medium metamorphic grade	NA
Comments: Metamorphic peak during D2, thrusting during D3 was at least partly post-peak, late metamorphic.			

Geological age:

Geological era:	Max age - Minage (Ma):	Inferred age (Ma):	Age of mineralization:
Paleoproterozoic (2500-1600 Ma)	1770-1800		Y
Comments: Mineralisation pre-date the 1.80-1.77 Ga Nattanen granites.			

Figures

Vein:



Quartz-sericite rock (altered hornblende gneiss) brecciated by quartz-haematite and quartz-haematite-albite veins, Palokiimaselkä. Plane-polarised light, normal thin section. Field of view 3 mm. From Kinnunen (1980).

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