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Table 1:

Source of metals, sulfur, and fluids							
Theoretical Criteria	**Mappable Criteria**	**layer**	**Dataset**	**Rational**	**Fuzzification parameters**		
					Function	Midpoints	Spread
Non-magmatic sources of Fe-Cu-Au, K, REE, U	Source of metals	Au distribution	Till & Lithogeochemistry (ICP/XRF)	Fe, Cu, Au, K, REE, U exhibit depletion in regional Na-Ca alteration zones.	Linear		
		Cu distribution	Till & Lithogeochemistry (ICP/XRF)				
		Fe distribution	Till & Lithogeochemistry (ICP/XRF)				
		Co distribution	Till & Lithogeochemistry (ICP/XRF)				
		Ba distribution	Till & Lithogeochemistry (ICP/XRF)				
		Sm distribution	Lithogeochemistry (ICP/XRF)				
		Te distribution	Lithogeochemistry (ICP/XRF)				
		Th distribution	Till & Lithogeochemistry (ICP/XRF)				
		U distribution	Lithogeochemistry (ICP/XRF)				
		Ce distribution	Lithogeochemistry (ICP/XRF)				
		La distribution	Till & Lithogeochemistry (ICP/XRF)				
		Pr distribution	Lithogeochemistry (ICP/XRF)				
		Nd distribution	Lithogeochemistry (ICP/XRF)				
		Eu distribution	Lithogeochemistry (ICP/XRF)				
		Gd distribution	Lithogeochemistry (ICP/XRF)				
		Ti distribution	Till & Lithogeochemistry (ICP/XRF)				
		P distribution	Till & Lithogeochemistry (ICP/XRF)				
		P_2O_5 distribution	Lithogeochemistry (XRF)				
		TiO_2 distribution	Lithogeochemistry (XRF)				
	Source of sulphur	Proximity to Savukoski Group metavolcanic and sedimentary rocks	Scale-free geological map	significant variation in the S concentrations	Small	2000 (m)	2
		Conductive bodies	Airborne electromagnetic map (Quad)		large	422	5
		S distribution	Lithogeochemistry (ICP/XRF)		linear		
	Alkali-altered (K/ Na/ Ca) distal and proximal regional zones	K distribution	Till & Lithogeochemistry (ICP/XRF)	The IOCG models emphasize the role of distal sodic alteration for the source of the elements	linear		
		K_2O distribution	Lithogeochemistry (XRF)				
		Na distribution	Lithogeochemistry (ICP/XRF)				
		Na_2O distribution	Lithogeochemistry (XRF)				
		Ca distribution	Till & Lithogeochemistry (ICP/XRF)				
		CaO distribution	Lithogeochemistry (XRF)				

Energy/fluid flow drivers							
Theoretical Criteria	**Mappable Criteria**	**layer**	**Dataset**		**Fuzzification parameters**		
					Function	Midpoints	
Large volume, relatively high-temperature crustal melts (450 and 550 °C and the pressure between 1.5 and 3.5 GPa)	Lithodiversity	Proximity to 1,9-1,7 Ga granite	Scale-free geological map	The minimum age for the ores is determined by the undeformed 1,800 Ma granite, deep heat sources driving large-scale fluid flow	Small	3000	2
		SiO_2 distribution	Lithogeochemistry (XRF)		linear		
		Na_2O distribution	Lithogeochemistry (XRF)				
		K_2O distribution	Lithogeochemistry (XRF)				
	Radioactivity	Th distribution	Till & Lithogeochemistry (ICP/XRF)				
		K distribution	Till & Lithogeochemistry (ICP/XRF)				
		U distribution	Lithogeochemistry (ICP/XRF)				
		Th, U, and K radiometric determination	Radiometric maps		Large	8	2
	Intrusive heat sources in mid to deep crust	Proximity to gravity worms	Gravity worm maps		Small	3000	2
Fluid-flow pathways and architecture							
Theoretical Criteria	**Mappable Criteria**	**layer**	**Dataset**		**Fuzzification parameters**		
Crustal architecture, crustal-scale faults or structural intersections in the vicinity of crustal-scale lineaments					Function	Midpoints	
	Crustal architecture	Proximity to thrusts	Structure maps	IOCGs are primarily influenced and controlled by faults and shearing mechanisms in their locations	Small	2000	2
	Crustal-scale faults	Proximity to major faults	Structure maps			2000	2
	Structural intersections and lineaments	Proximity to minor faults	Structure maps			1000	2
Trap							
Theoretical Criteria	**Mappable Criteria**	**layer**	**Dataset**		**Fuzzification parameters**		
					Function	Midpoints	
Favorable host rock, Physico-chemical gradients – pH,X,T,P changes or oxidation, or desulfidation of ore fluid by Fe oxide, and	Lithodiversity (albitised rock)	Proximity to diorite, monzonite, and skarn	Scale-free geological map	Optimal content and composition conducive to efficient precipitation	Small	3000	2
	Iron oxide-rich bodies	FeO distribution	Lithogeochemistry (XRF)		linear		

Thrusting/tectonic event		Magnetic intensity	magnetic map	These bodies can provide strong redox and S gradients for Cu-Au deposition	Large	2000	2
	Potassic alteration (K-feldspar, biotite, sericite)	K Radiometric determination	Radiometric maps	Alteration can represent gradients in pH or temperature	Large	1.7	5