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Epithermal gold in Iceland

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Iceland, representing a hotspot, lies astride the mid-oceanic ridge in the North Atlantic. Exploration for gold has been ongoing during the last twenty-five years, focussing on fossil, relatively deeply eroded epithermal systems formed in volcanic complexes [1]. The exploration includes low- to high- density river sediment surveys and rock sampling, as well as exploration drilling in one area. The geological map in Figure 1 shows the prospect areas and main anomalies found to date. As most of the hydrothermal systems in Iceland are recharged by freshwater, the anomalies are mostly low-sulphidization quartz-adularia type. The main anomaly found so far is in Thormodsdalur in South-West Iceland, where values of up to 415 g/t Au are reported. Anomalies of 4-33 g/t Au have been located in three other areas (Figure 1). Wellhead scales deposited from deep aquifer fluids in the active Reykjanes saline high-temperature geothermal field show up to 950 ppm Au. The hydrothermal system is believed to be in some respects analogous to Black Smokers on oceanic ridges.

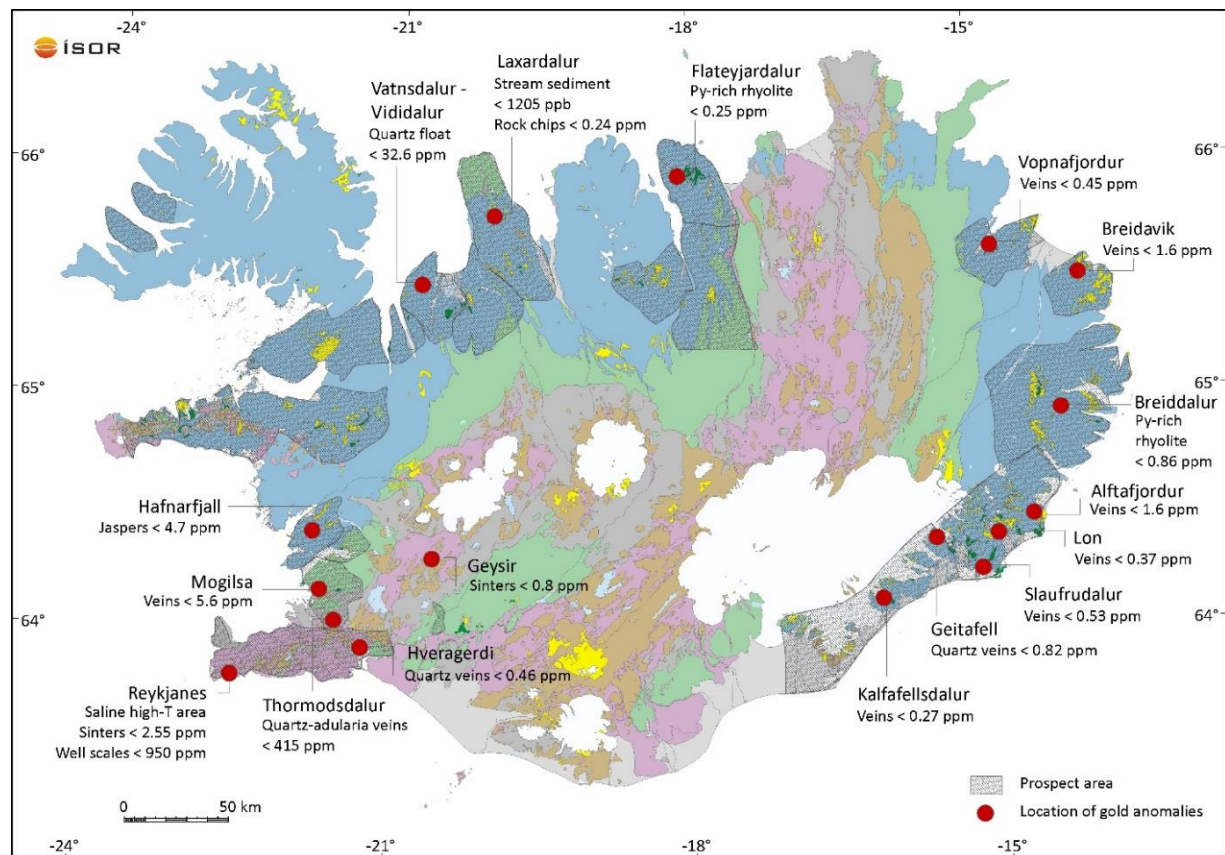


Figure 1: A simplified geological map of Iceland showing the Volcanic zones (pink), Plio-Pleistocene (green) and Tertiary formations (blue), representing ages of 0-0.7, 0.7-3 and 3-15 Ma, respectively. Also

shown are prospect areas for gold exploration carried out between 1990 and the present day, along with the main gold anomalies (ppm).

References:

[1] Franzson H et al. (2016) In: Mineral Resources in the Arctic: Geological Survey of Norway, Special Publication 400p:

