

KLINKER, PRECIOUS OPAL DEPOSIT, OKANAGAN AREA, BRITISH COLUMBIA, CANADA.

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Opal deposits can be classified into two major categories: "Volcanic-hosted" and "Sediment-hosted" (Paradis *et al.*, 1999a,b). The Klinker, a volcanic-hosted deposit, owned by Okanagan Opal, is located approximately 10 kilometres from Vernon within a paleo-basin that extends 150 kilometres from the west side of Okanagan Lake to East of Kamloops. Clast- and matrix-supported lahars and tuffs of Eocene or Miocene age host the deposit. The precious opal coexists with jelly opal, common opal and agate that occur as vesicle and fracture fillings over a 280 by 110 metre area. Other fracture filling and alteration minerals spatially associated with precious opal are celadonite, amorphous manganese oxides, zeolites, jarosite, bentonite and other clays (Simandl *et al.*, 1997). Doublets, triplets, solid, and boulder opal produced from the deposit are sold within British Columbia, and the market is steadily improving.

Although hydrothermal activity is commonly believed to be responsible for the formation of precious opal in volcanic rocks, the origin of this deposit is still not well understood. It is possible that the Klinker deposit is instead genetically related to weathering and the unconformity that lies between the opal-bearing sediments and overlying mid-Miocene tuffaceous rocks.

If this is true, Klinker would be analogous to the sediment-hosted precious opal deposit described by Paradis *et al.* (1999a).

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METALS CONTAMINATION IN A LIMESTONE QUARRY

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To satisfy chemical and cement grade specifications, limestone deposits must consist of high purity calcium carbonate. Although impurities such as silica and alumina can be incorporated in the industrial feed, metal contaminants are of major concern. During excavation of limestone deposits, great care must be

taken to avoid resources with high metal content. This results in production of significant amounts of waste material. A variety of methods may be applied to isolate and remove areas of metal contamination in chemical and cement grade limestone quarries.