

A Raman Analysis of Rock Sample for Bull Trout Jade, LLC

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February 3, 2015

Method and Equipment

Sample was analyzed using a Raman spectrometer with a 532 μm (green light) laser. The spectra were acquired at 1 second acquisition times, generally taken in a series of 10 acquisitions averaged together. The sample was a thick slab of jade with green areas and grayish lavender/brown areas.

Resulting spectra were compared to standards that are available from several sources at universities in the USA and Europe. At this time, about 65% of the known mineral species are represented by at least one Raman standard, but all mineral species normally found in the nephrite deposits are represented in these standards.

Source of Samples

The samples were provided by Rodney Cook of Bull Trout, LLC.

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Samples and results

BT9-1

Block ($\frac{3}{4}$ x $4\frac{1}{2}$ x 6") green to grayish lavender/brown block of jade.

Analyses

BT9-1a solid green area between grayish lavender areas = tremolite-actinolite

1b grayish lavender area = tremolite

1bb second spot right next to 1b = tremolite + titanite

1c dark greenish black veinlet in grayish lavender = tremolite-actinolite

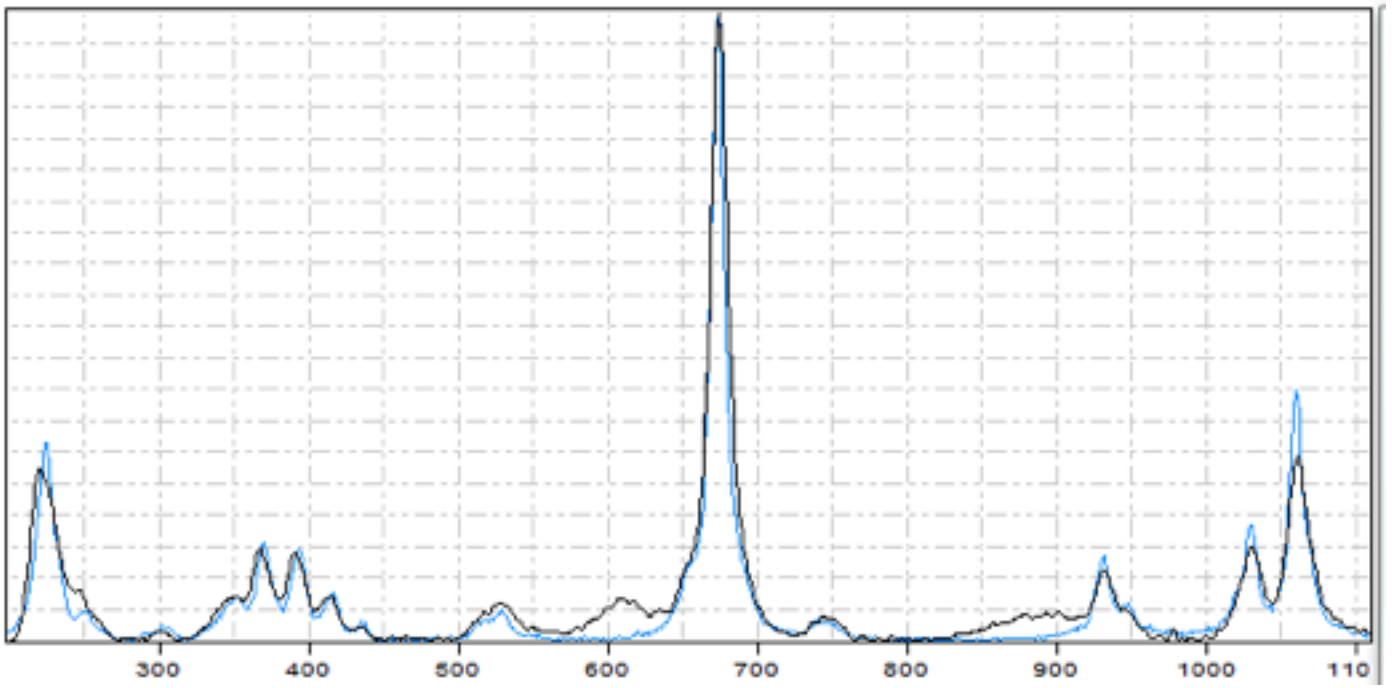
1d cream colored bleb in grayish lavender = titanite

1e grayish lavender area = tremolite

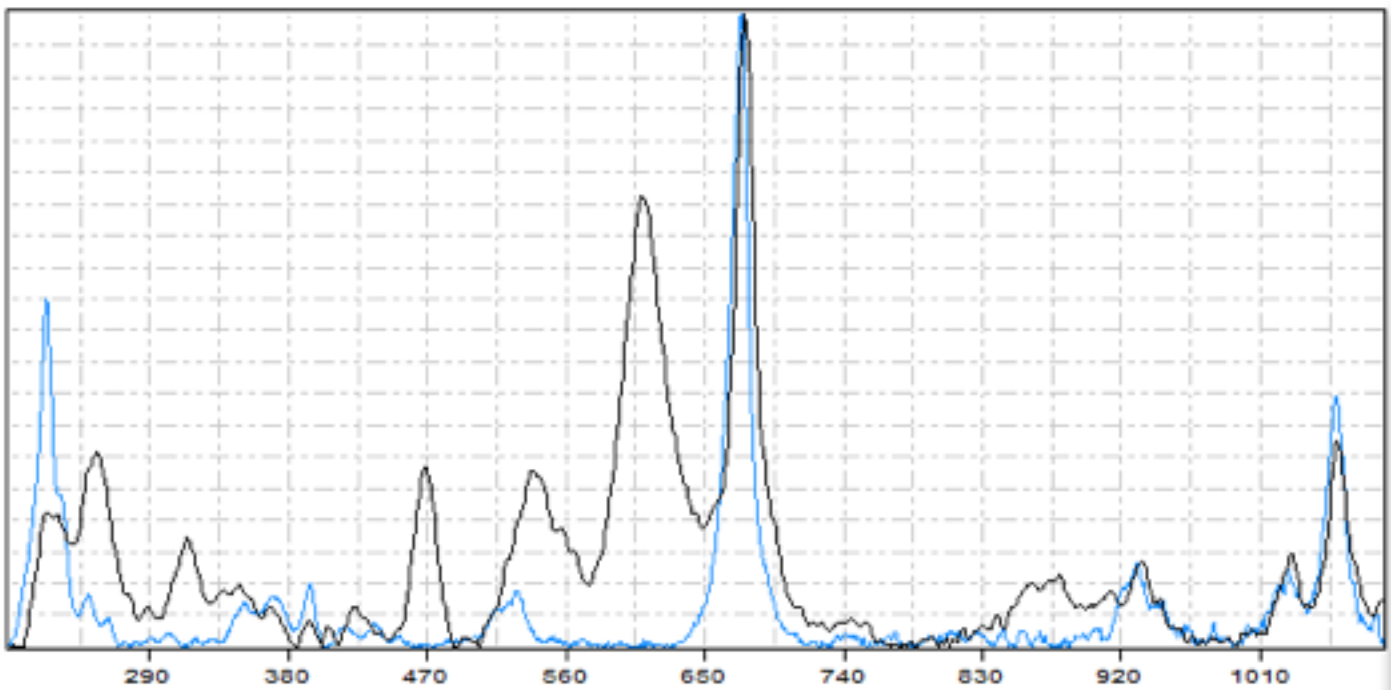
1f green fractured half = tremolite-actinolite with possible trending towards fluor-richterite



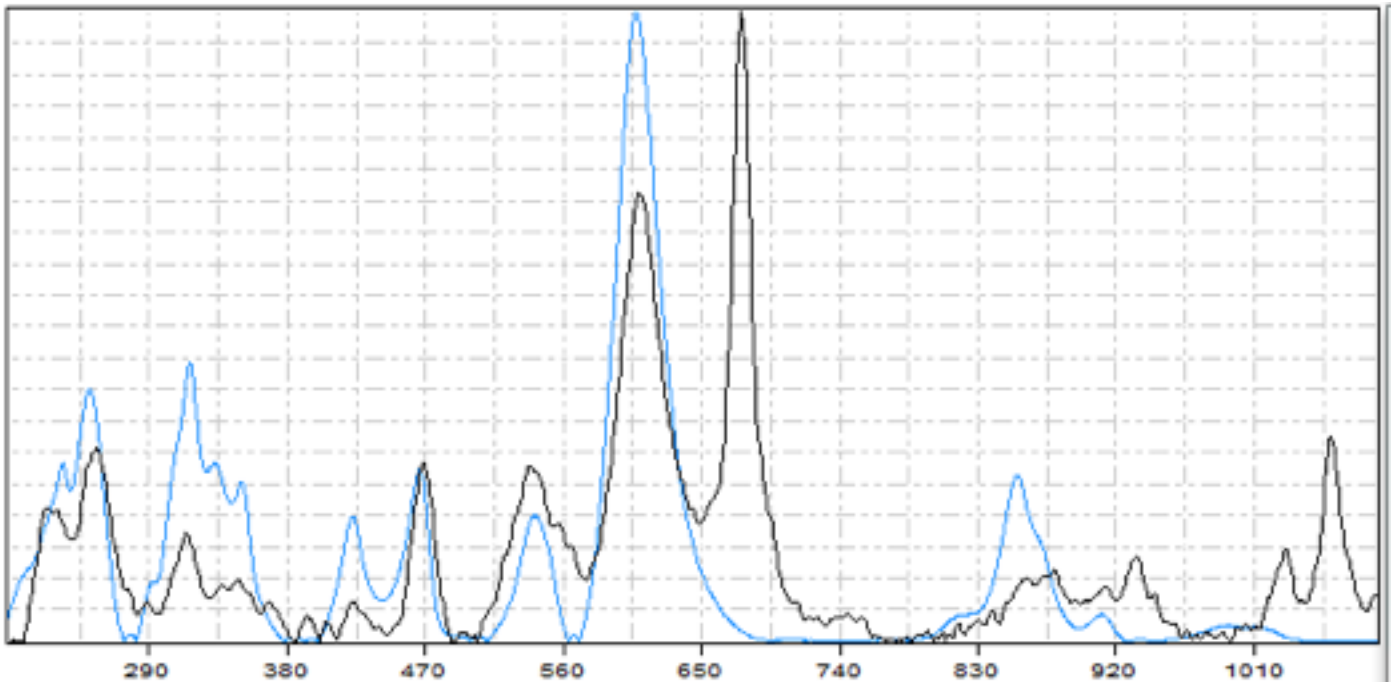
Analysis map of sample BT9-1.



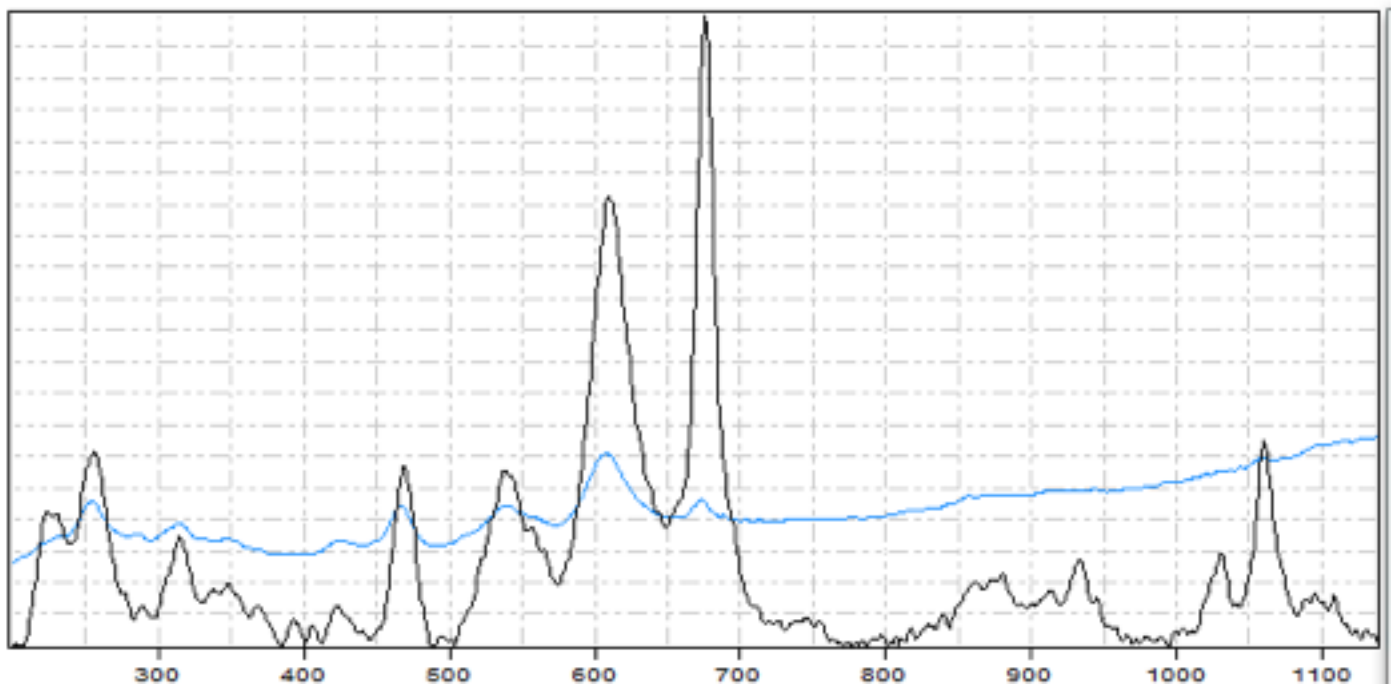
BT9-1 spectrum, black is sample, blue is a tremolite standard.



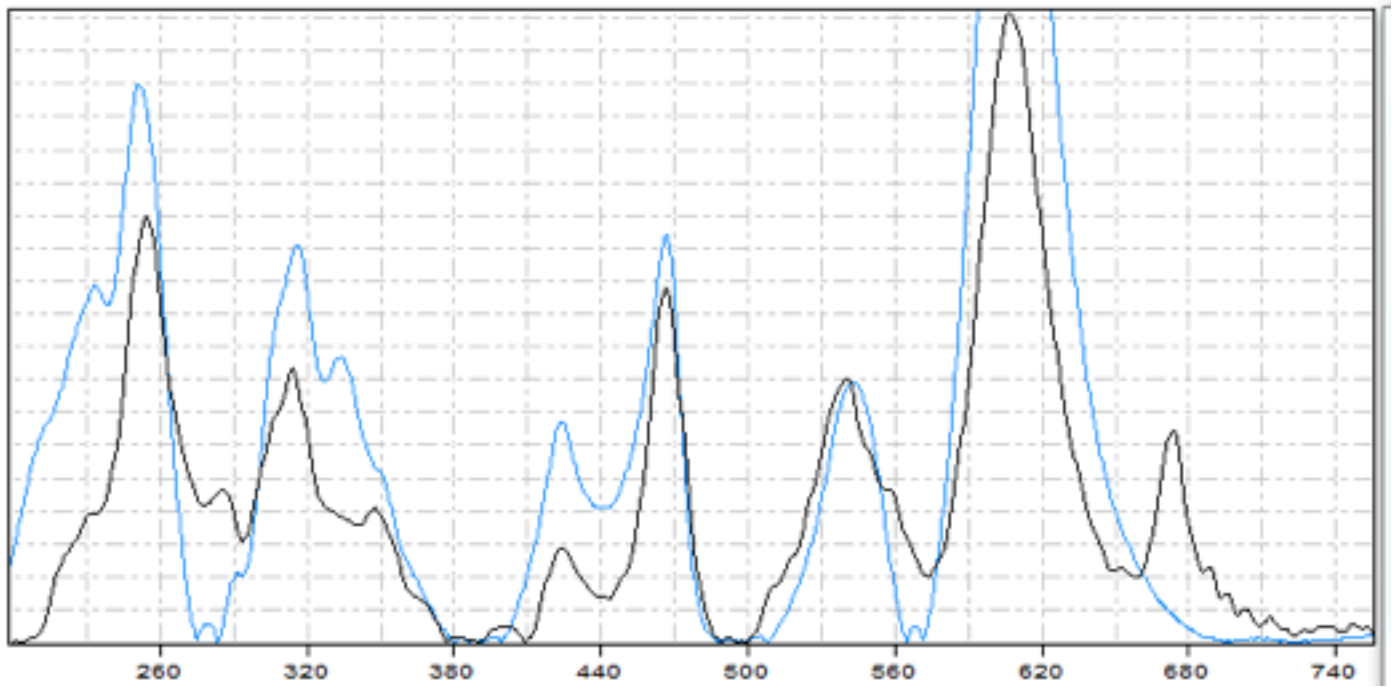
BT9-1bb spectrum, black is sample, blue is a tremolite standard.



BT9-1bb spectrum, black is sample, blue is a titanite standard.



BT9-1bb & 1d, black spectrum is 1-bb, blue is 1d spectrum, note how peaks of this titanite sample also match the peaks of the the titanite portion of the 1bb spectrum.



BT9-1d spectrum, black is sample, blue is a titanite standard.