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Certificate of Analysis, CPF-2020-06-04: Scott-C23c, Single Stamp
(PSAG Cert Number 585693)

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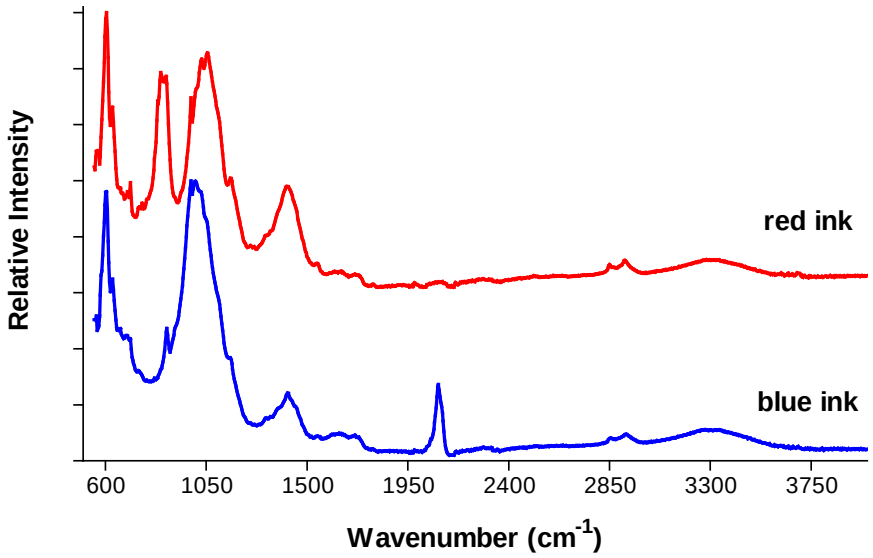
June 25, 2020

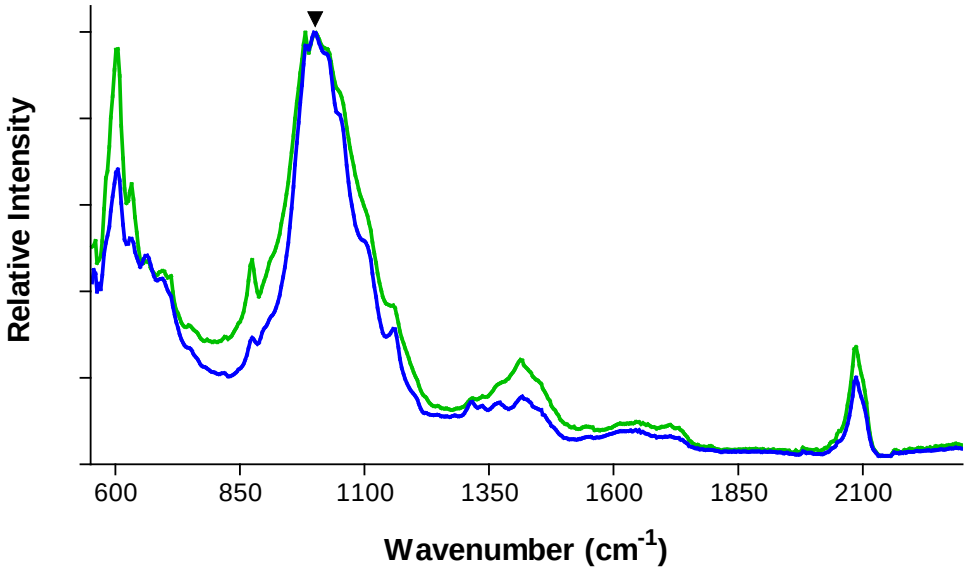
FTIR Spectra of the two colors of the PSAG-585693 Stamp



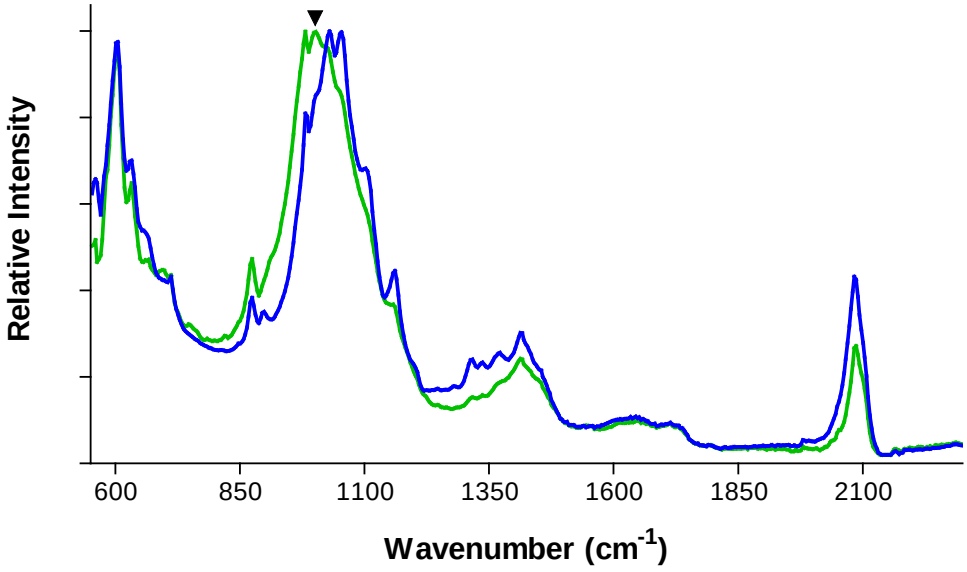
Experimental Details: Fourier-transform infrared absorption (FTIR) spectra were obtained at a resolution of 4 cm^{-1} using a Shimadzu model 8400S spectrometer, with each spectrum being obtained as the average of 40 individual spectra. The data were acquired using the attenuated total reflectance (ATR) sampling mode, where the samples were clamped against the ZnSe/diamond crystal of a Pike MIRacle^{TM} single reflection horizontal ATR sampling accessory. The intensity scale for all spectra was normalized so that the relative intensity of the most intense peak in the spectrum 100%.

Conclusion: As shown in the spectral overlays shown in the next two pages, the equivalence between the spectra of the PSAG-585693 stamp and the reference spectra (both red and blue inks) demonstrates that the stamp is Scott-C23c, and that it is not the more common C23.

FTIR Analysis, Blue-Inked Region

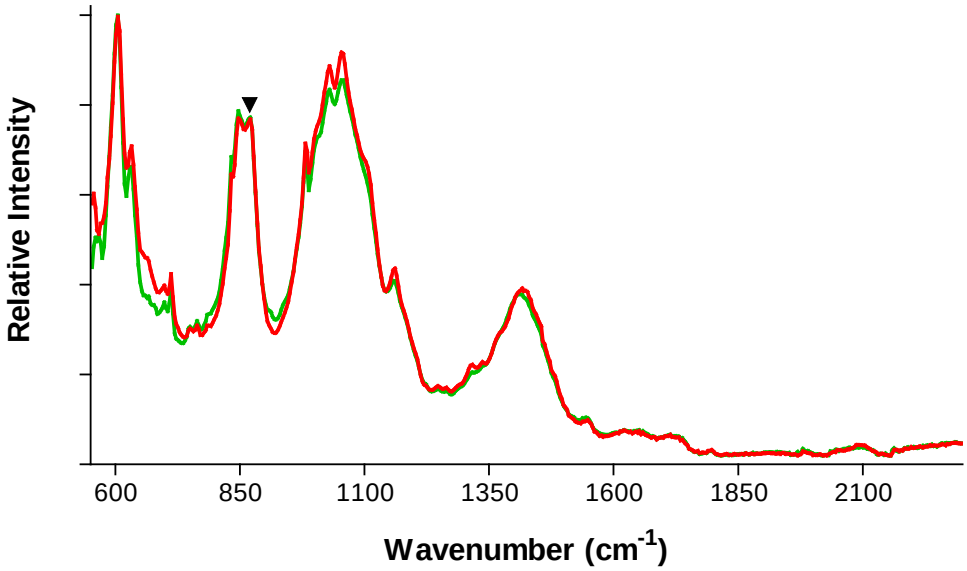


FTIR spectrum in the fingerprint region of the blue-inked portion of the PSAG-585693 stamp (blue trace) showing the equivalence in spectrum with that of the blue-inked region from the **C23c** reference spectrum (green trace). The diagnostic ultramarine peak at 1001 wavenumbers characteristic of the C23c stamp is marked with the solid wedge symbol.

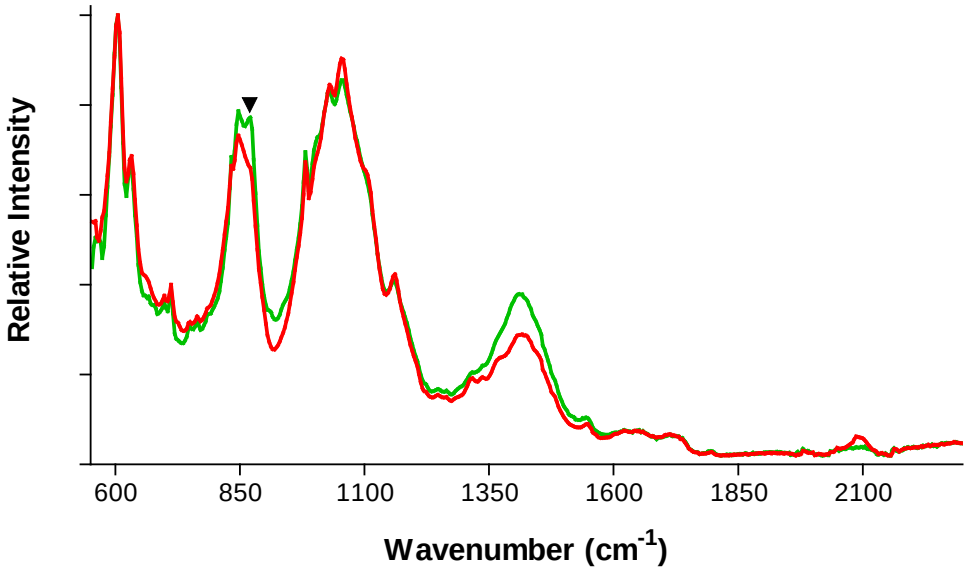


FTIR spectrum in the fingerprint region of the blue-inked portion of the PSAG-585693 stamp (blue trace) showing the NON-equivalence in spectrum with that of the blue-inked region from the **C23c** reference spectrum (green trace). The diagnostic ultramarine peak at 1001 wavenumbers characteristic of the C23c stamp is marked with the solid wedge symbol.

FTIR Analysis, Red-Inked Region



FTIR spectrum in the fingerprint region of the red-inked portion of the PSAG-585693 stamp (red trace) showing the equivalence in spectrum with that of the red-inked region from the **C23c** reference spectrum (green trace). The diagnostic chrome red peak at 870 wavenumbers characteristic of the C23c stamp is marked with the solid wedge symbol.



FTIR spectrum in the fingerprint region of the red-inked portion of the PSAG-585693 stamp (red trace) showing the NON-equivalence in spectrum with that of the red-inked region from the **C23c** reference spectrum (green trace). The diagnostic chrome red peak at 870 wavenumbers characteristic of the C23c stamp is marked with the solid wedge symbol.