

Subject: Panalytical

Date: Monday, December 20, 2021 at 9:26:46 PM Mountain Standard Time

From: Benzel, William M

To: Swayze, Gregg A

X-ray Equipment

Powder XRD scans were collected on PANalytical “X’Pert Pro – MPD X-ray Diffractometer using the following settings: theta/theta geometry, Cu long-fine-focus X-ray tube (Ni filtered), “X’celerator” solid state “strip” detector, X-ray tube setting: 45 kV, 40 mA, 15 mm beam mask, $\frac{1}{2}^{\circ}$ anti-scatter slit, $\frac{1}{4}^{\circ}$ divergence slit, $\frac{1}{2}^{\circ}$ receiving anti-scatter slit, $\frac{1}{4}^{\circ}$ receiving divergence slit, step size 0.033 degrees in continuous scan mode, scan range of 5 to 65 degrees two-theta, sample spinner on, scan rate was 0.167 degree per minute for a total scan time of six hours per sample.

Samples were prepared one of two ways. If sufficient sample was available, the powder was back packed into a Panalytical random powder mount or if necessary top loaded into the mount with a insert to reduce the amount of powder needed. For small sample mass (100-500 mg), the sample was sprinkled onto a zero background slide and inserted into the Panalytical mount.

William Benzel, Physical Scientist
303-204-4754 cell (remote work)
303-236-2444 Office (not currently in use)

For US Postal Service mail

US Geological Survey
Denver Federal Center
PO Box 25046, MS-973
Denver, CO 80225

For Common Carrier (UPS, FEDEX, etc.)

US Geological Survey
Denver Federal Center
Bldg 810, Door E-11, MS-973
Denver, CO 80225