



## **X-ray Diffraction Analysis of One Sample**

W.O. # A18-09639  
Invoice # A18-09639

Client: Atkinson Geoscience

Attn: Brian Atkinson

Date Reported: August 17, 2018

## Method

One sample was submitted for semi-quantitative X-ray diffraction analysis. A portion of the powder sample was packed into a standard holder. The X-ray diffraction analysis was performed on a Panalytical X'Pert Pro diffractometer, equipped with a Cu X-ray source and an X'Celerator detector, operating at the following conditions: voltage: 40 kV; current: 40 mA; range: 5 - 70 deg 2 $\theta$ ; step size: 0.017 deg 2 $\theta$ ; time per step: 50.165 sec; divergence slit: fixed; angle 0.5°; sample rotation: 1 rev/sec. The quantities of the crystalline mineral phases were determined using the Rietveld method. The Rietveld method is based on the calculation of the full diffraction pattern from crystal structure information. The X'Pert HighScore Plus software along with the PDF-4/Minerals ICDD database were used for mineral identification and quantification.

## Results

The minerals identified in the sample and their abundances are in Table 1 and the diffraction pattern is in Appendix 1. The sample may contain trace zircon and X-ray amorphous material.

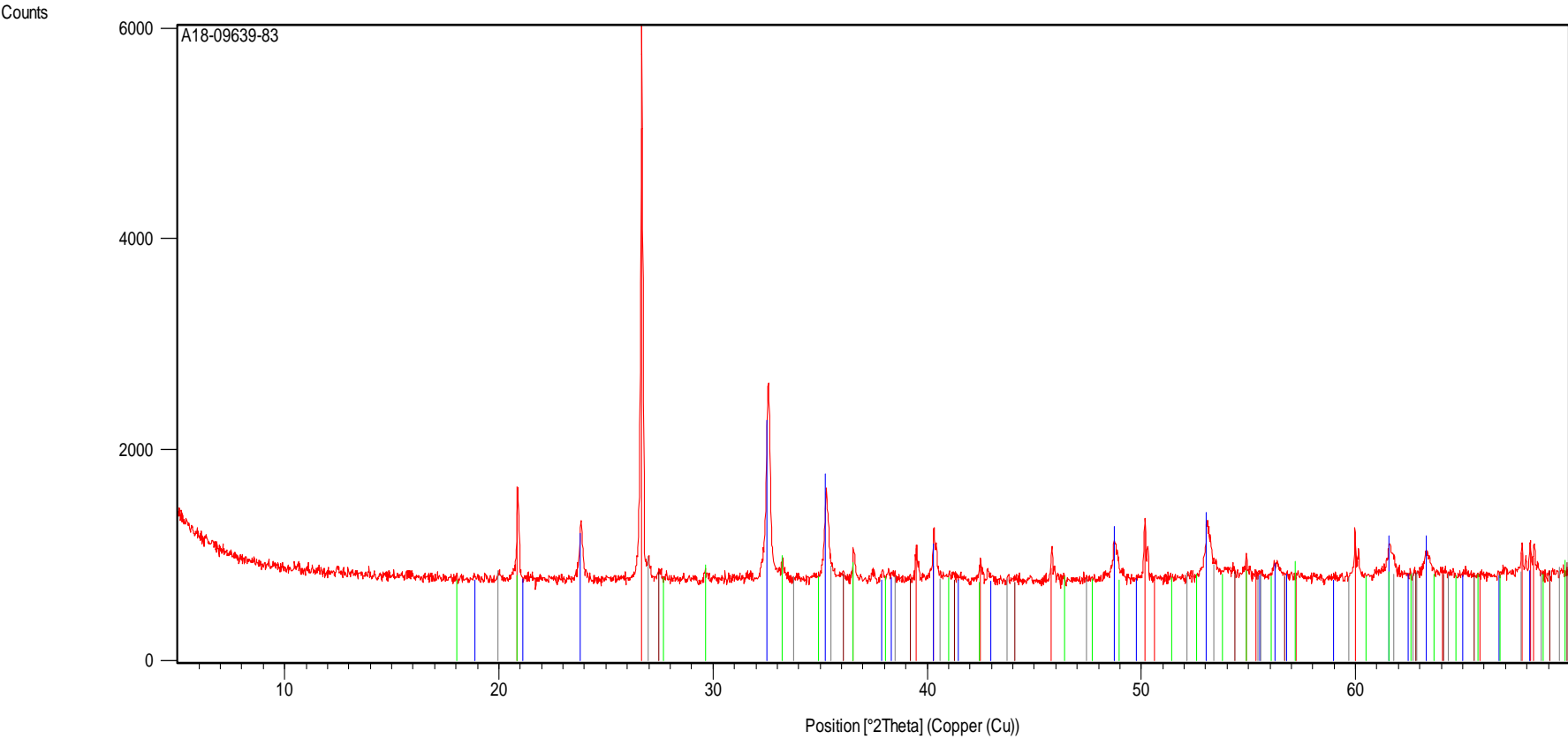
**Table 1.** Mineral abundances (wt %)

Client ID	Actlabs ID	Quartz	Ilmenite	Garnet	Rutile
N-20171	A18-09639-83	49.3	47.3	2.2	1.2

Reported by:  
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## **APPENDIX 1**

Diffraction pattern



Peak List
Quartz; Si O2
Ilmenite, syn; Ti Fe O3
Andradite; Ca3 Fe2 ( Si3 O12 )
Zircon; Zr ( Si O4 )
Rutile, syn; Ti O2