

**Table A1**

Characteristics of the analyzed samples from the Qiucun gold deposit.

Sample No.	Stage	Description	Mine level	Sulfides	EPMA	LA-ICP-MS spot	LA-ICP-MS map	In-situ S isotope
NFJ-196	I	Quartz-chalcedony-pyrite vein and adjacent sulfidation wallrock	712-m	Py <sub>1a</sub> , Py <sub>1b</sub>	√	√		√
NFJ-199	I	Quartz-chalcedony-pyrite vein and adjacent sulfidation wallrock	712-m	Py <sub>1a</sub> , Py <sub>1b</sub>	√	√		√
NFJ-200	I	Quartz-chalcedony-pyrite vein	712-m	Py <sub>1a</sub> , Py <sub>1b</sub>	√	√		√
NFJ-207	I	Quartz-chalcedony-pyrite vein	742-m	Py <sub>1a</sub> , Py <sub>1b</sub>	√	√	√	√
NFJ-211	I	Sulfidation wallrock	742-m	Py <sub>1a</sub>	√	√		√
QC-11	I	Quartz-chalcedony-pyrite vein and adjacent sulfidation wallrock	802-m	Py <sub>1a</sub> , Py <sub>1b</sub>	√	√		√
QC-12	I	Quartz-chalcedony-pyrite vein	802-m	Py <sub>1a</sub> , Py <sub>1b</sub>	√	√		√
QC-17	I	Quartz-chalcedony-pyrite vein	802-m	Py <sub>1a</sub> , Py <sub>1b</sub>	√	√		√
NFJ-185	II	Quartz-sulfde vein	712-m	Py <sub>2a</sub> , Py <sub>2b</sub> , Sp, Gn, Cpy	√	√		√
QC-10	II	Quartz-sulfde vein	742-m	Py <sub>2a</sub> , Py <sub>2b</sub> , Sp, Gn, Cpy	√	√	√	√
QC-15	II	Quartz-sulfde vein	802-m	Py <sub>2a</sub> , Py <sub>2b</sub> , Sp, Gn, Cpy	√	√	√	√
QC-19	II	Quartz-sulfde vein	802-m	Py <sub>2a</sub> , Py <sub>2b</sub> , Sp, Gn, Cpy	√	√		√

**Abbreviations:** Cpy-chalcopyrite, Gn-galena, Sp-sphalerite, Py-pyrite.