**ANAYTICAL METHODS – JiangXi Jung Yun Non-ferrous Geological Test Ltd Co**

During air core drilling sand and sandy loam samples were retrieved from each meter interval and store in double polythene bags. All these samples were shipped to China for assay by JiangXi Jung Yun Non-ferrous Geological Test Ltd Co, Tong Zhan Road 14, Xiangtong County Nanchang Jiangxi Chian 330201.

**Sample Crushing and Grinding:**

All the samples were sorted and dried in aluminum trays to removed moisture. Up to 3 kg sand/sandy loam samples were crushed and grounded to better than 90% of the sample passing 2 mm. Standard preparation for samples where a representative split will be pulverised.

**Sample Preparation and Assay:**

An aliquot of sample is accurately weighed and fused with lithium meta-borate at high temperature in a Pt crucible. The fused glass is then digested in nitric acid. This process provides complete dissolution of most minerals including silicates. Volatile elements are lost at the high fusion temperatures. This solution is then analyzed by inductively coupled plasma - mass spectrometry. All assayed elements are reported as ppm

Detection limits of REE are given in Table below:

| **Element** | **Symbol** | **Units** | **Lower**  **Limit** | **Upper**  **Limit** |
| --- | --- | --- | --- | --- |
| Cerium | Ce | ppm | 3 | 50000 |
| Dysprosium | Dy | ppm | 0.3 | 5000 |
| Erbium | Er | ppm | 0.2 | 5000 |
| Europium | Eu | ppm | 0.2 | 5000 |
| Gadolinium | Gd | ppm | 0.3 | 5000 |
| Hafnium | Hf | ppm | 1 | 50000 |
| Holmium | Ho | ppm | 0.05 | 5000 |
| Lanthanum | La | ppm | 3 | 50000 |
| Lutetium | Lu | ppm | 0.05 | 5000 |
| Niobium | Nb | ppm | 1 | 5000 |
| Neodymium | Nd | ppm | 0.5 | 50000 |
| Praseodymium | Pr | ppm | 0.2 | 5000 |
| Rubidium | Rb | ppm | 1 | 50000 |
| Samarium | Sm | ppm | 0.2 | 5000 |
| Tin | Sn | ppm | 5 | 50000 |
| Tantalum | Ta | ppm | 0.5 | 5000 |
| Terbium | Tb | ppm | 0.05 | 5000 |
| Thorium | Th | ppm | 0.3 | 5000 |
| Thulium | Tm | ppm | 0.05 | 5000 |
| Uranium | U | ppm | 0.3 | 5000 |
| Tungsten | W | ppm | 5 | 50000 |
| Yttrium | Y | ppm | 3 | 50000 |
| Ytterbium | Yb | ppm | 0.2 | 5000 |
| Zirconium | Zr | ppm | 10 | 50000 |