

**INDUSTRIES**



mining



chemicals



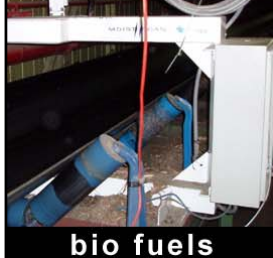
building



food



agriculture



bio fuels

**Rare Earth**

**Material Sample Data Sheet**

**Introduction**

MoistScan® works by transmitting a microwave signal of known power through the material being measured. As the signal passes through the material it loses power. This loss of power is predominantly due to the presence of moisture and the amount of material. To a lesser extent it is also due to the chemical composition and physical characteristics of the material.



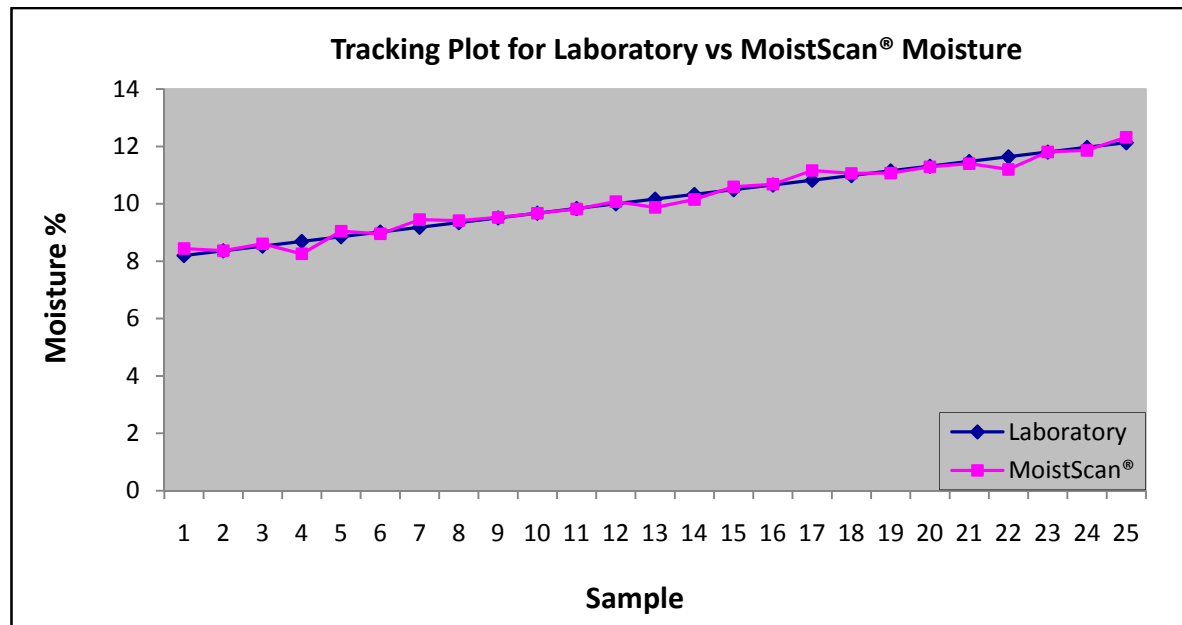
**Test Methodology**

Samples of material are assessed in a static laboratory environment to indicate the suitability of the MoistScan® microwave technique for online moisture analysis. Tests involve transmitting a microwave signal through the material whilst making step-changes to the volume of material and amount of moisture in the material. This is conducted at varying microwave frequencies. By measuring the loss of power of the microwave signal the ideal frequency (hence model of analyser) and maximum bed depth limitation is determined.

**Material Description**

Rare Earths are a red-brown soil-like solid. It is a moderately abundant group of 15 metallic elements known as the Lanthanide series. Rare Earths are found as a mix of metals. These metals are separated for their individual or combined commercial use.

**Results**



**Summary**

The MoistScan® MA-500 online microwave moisture analyser appears suitable for measuring the moisture in Rare Earth. The expected precision of the instrument inferred from the above tests is 0.4% at 1 Standard Deviation (this includes sampling and laboratory error). The analyser appears suitable up to a maximum bed depth of 400mm.