Intertek GENALYSIS LABORATORY SERVICES

SAMPLING PROTOCOLS FOR "TERRA LEACH TM" PARTIAL DIGESTS:

- **Sample Domains:** All geochemistry is domainal. Sampling domains need to be identified before-hand and orientation work completed for each domain.
- **Sample Site:** Sites should be uncontaminated and undisturbed. Recently arrived wind borne sand, surface organic material and charcoal should be avoided.
- **Sampling Depth:** Dispersed ions are inferred to accumulate significantly within the top 10 cms of the soil profile. Samples below 10 cm are not recommended unless demonstrated otherwise through a specific orientation survey.
- **Sample Volume:** Minimum sample weights for individual samples can be as low as 10gms and up to 200gms. Our nominal digest weight is 50 gms. Some samples are digested in duplicate, so that 100gms of some samples will be consumed. A minimum 200gm sample is therefore recommended if repeat work is required.
- **Sample Preparation:** Soil media is generally digested without being pulverized. Samples can be heat treated for quarantine purposes.
- **Sample Storage:** Paper geochem packets are preferred. Press seal plastic bags are fine but excessively damp samples should be allowed to air dry. Bacterial reduction with subsequent changes to metal speciation may occur in wet samples and this must be avoided. Calico bags which 'bleed' fines should be avoided. Metal tags or metal staples may react with wet or acidic samples and should also be avoided.
- **Size Fraction:** A nominal minus 1mm (minus 20 #) screened sample is generally appropriate. Clean plastic sieves are recommended. In some geochemical domains (eg sand dunes) sieving to finer fractions produces either greater contrast or an identifiable background (although the reverse can also happen in some domains). Fines can be enriched in minerals with enhanced surface adsorbing characteristics. If sieving produces a darker (organic?), redder (haematitic?) or browner (goethitic?) fraction, this is likely to give a better response particularly if the media diluent is quartz. If the sample is composed of a large proportion eg >50% quartz then sieving to the finest practical fraction eg minus 200# may be advisable. A small orientation study and analysis at the beginning of a programme is recommended to determine optimum fraction size. If there is insufficient time for analysis then field sizing and inspection are recommended. If there is insufficient opportunity for this then 200gms of a minus 1mm fraction (coarse fraction) and 40 gms of a minus 80# or minus 200# fraction (the finer the better) are recommended.
- **Wet Samples:** Flooding and major rainfall events have the capacity to remove weakly bound metals in soils. Bacterial reduction in flooded soils can change the oxidation state of Iron and Manganese Oxide/Hydroxide species resulting in dissolution and loss of these species together with their surface adsorbed metal ions. Light showers or heavy dew do not appear to compromise responses. Damp samples should be air-dried only.

Enquiries to John Flynn or Ed Dronseika at Genalysis, 15 Davison St Maddington Perth, 6109. AUSTRALIA. Tel +61 (0) 8 9251 8100. Fax +61 (0)8 9251 8110. Email john.flynn@intertek.com or edward.dronseika@intertek.com.