

**APPENDIX D-11**  
**Preparation Procedure for Bio-Available Lead (Pb):**  
**Method ASA 21-5**

**Bio-Available Lead**  
**(Water Extractable Lead)**  
**ASA Method 21-5**

1.0 Procedure

Extract 5.0 grams (dry weight) soil with 50 ml water for three hours on a reciprocating shaker at 180 cycles per minute. Centrifuge the sample as needed and then filter the supernatant through a 1-micron syringe filter. Acidify a 10-ml portion of the filtered sample with 10 ml nitric acid and dilute to 50 ml.

Submit for lead analysis by inductively coupled plasma (ICP). Report sample weight, percent moisture, extraction volume and dilution factor to the metals workgroup so that analytical values may be calculated.

2.0 Recordkeeping

Retain all worksheets, calculations, graphs, and notes.

3.0 Quality Control Samples

Duplicate samples may be extracted as quality control samples. Other quality control samples such as matrix spikes may be performed on extracts as required by the metals analytical procedure.

4.0 References

“Selective Extraction,” Section 21-5 in *Methods of Soil Analysis, Part 2, Chemical and Microbiological Properties*, Second Edition, A. L. Page Editor, American Society of Agronomy, Inc. 1982