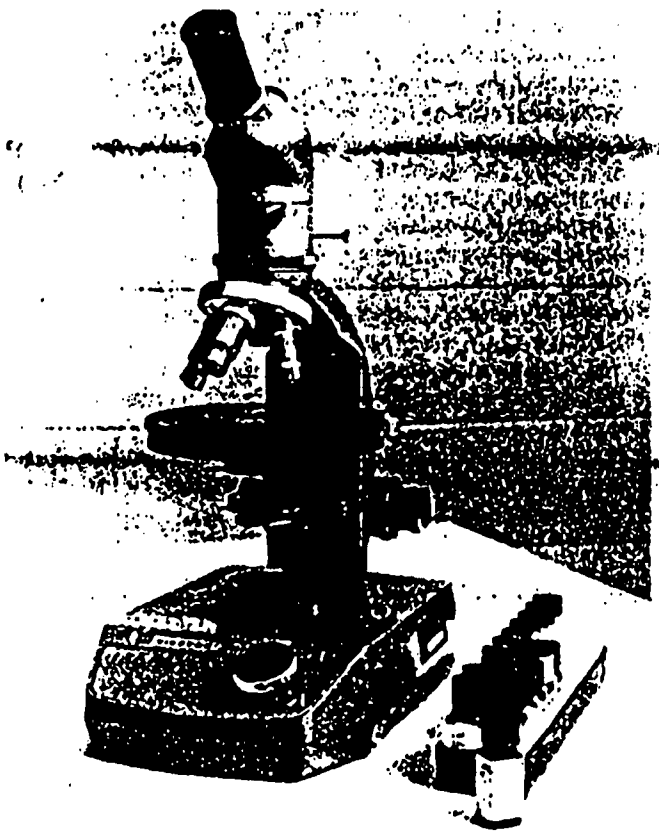
# C apter 6: Analysis of Bulk Samples

It is important that analyses of bulk samples are performed by the recommended technique. In choosing a laboratory, assistance from the State Asbestos Program contact or the EPA Regional Asbestos Coordinators is recommended.

**What kind of analysis should be requested?**

Analysis of friable material bulk samples by the following techniques should be requested:

1) Polarized Light Microscopy (PLM)
2) X-Ray Diffraction (XRD) as necessary to supplement the PLM method.



*P 'zed Light Microscope*

**Why are PLM and XRD recommended for bulk sample analysis?**

Polarized Light Microscopy (PLM) is a technique used to identify asbestos fibers by their shape and unique optical properties. It is a relatively inexpensive and quick method for identifying asbestos in bulk samples. PLM is particularly suitable for examination of the complex mixes of friable construction materials.

X-Ray Diffraction (XRD) is recommended where a second, independent analytical technique is necessary to confirm an analysis by PLM. It is a more expensive analytical method than PLM.

*For more information on these analytical techniques, see pages I-4-2 to I-4-3 of Part 2.*

**Is Electron Microscopy recommended for bulk sample analysis?**

Electron Microscopy (EM) is not a recommended analytical technique for bulk sample asbestos analysis. EM is costly, time-consuming, and limited in availability.

*For more information on Electron Microscopy, see pages I-4-3 of Part 2.*

**Is Phase Contrast Microscopy recommended?**

Phase Contrast Microscopy is a technique used to count fibers present in air samples. It is unacceptable for identification of asbestos in bulk samples. Do not accept analysis of bulk samples by Phase Contrast Microscopy.

*For more information on Phase Contrast Microscopy, see pages I-4-5 to I-4-6 of Part 2.*

**Is there a standard analytical protocol for bulk sample asbestos analysis?**

A standard protocol for bulk sample analysis is not currently available. However, guidelines have been prepared for bulk sample asbestos analysis using PLM and XRD. These guidelines are included as Appendix H to this manual and should be made available to the laboratories which perform the analyses of bulk samples.