



## LEADCHECK SOIL PERFORMANCE CHARACTERISTICS

Early production lots of LeadCheck for Soil were used to determine the sensitivity of the test system.

### Quantitative Testing Methods:

Total lead content for various soils was determined by the methods described below. These soils were then used to test the sensitivity range of LeadCheck Soil.

1. ASTM Method: E 1727-95 Standard Practice for Field Collection of Soil Samples for Lead Determination by Atomic Spectrometry.
2. EPA Method: EPA 600R-93\200 SOP for the Field Analysis of Lead in Paint, Bulk Dust, and Soil by Ultrasonic Acid Digestion and Colorimetric Measurement. EPA Research Triangle Park, NC 1993. The procedure for acid digestion was followed, lead content was determined using GFAAS.

### LeadCheck Soil Method:

Standard LeadCheck extractions were done on both wet (25% water content by weight) and dry soils to simulate a range of field conditions.

### Samples:

1. Certified Reference Material (CRM):

A Soil Certified Reference Material sample was purchased from the Research Technology Corporation. The sample was from a contaminated waste site in the Western United States and was analyzed by a minimum of twenty laboratories in a round-robin to meet the requirements specified by the EPA Cooperative Research and Development Agreement (CRADA). Lead content of this sample was certified at 414.7ppm.

2. Field Samples:

Field samples with high lead content were obtained from the certified testing laboratory and residences in Eastern Massachusetts. Values for lead content from the laboratory supplying the samples were used to confirm the analytical laboratory methods used by Hybrivet Systems Inc., as well as to confirm the sensitivity of LeadCheck Soil.

Results:

| Sample | Extraction Method |       | LeadCheck Results |            |
|--------|-------------------|-------|-------------------|------------|
|        | ASTM              | EPA   | Soil (Wet)*       | Soil (dry) |
| CRM    | 415               | 398   |                   | +          |
| 1      | 442               | 399   | +                 | +          |
| 2      | 705               | 966   | +                 | +          |
| 3      | 457               | 408   | +                 | -/+        |
| 4      | 329               | 388   | +                 | +/-        |
| 5      | 589               | 642   | +                 | +          |
| 6      | 990               | 871   | +                 | +          |
| 7      | 1,602             | 905   | +                 | +          |
| 8      | 502               | 459   | +                 | +          |
| 9      | 552               | 597   | +                 | +          |
| 10     | 448               | 698   | +                 | +          |
| 11     | 1,100             | 1,067 | +                 | +          |

All values are parts per million (ppm)

Summary:

LeadCheck for Soil was used to test for the presence of lead in soils with a range of concentrations (294ppm to 1674ppm) and moisture content. LeadCheck for Soil indicated the presence of lead in all of soils and conditions tested.