

## Attachment 2: Lead (Pb) Ambient Air Monitoring Plan

The Federal Register National Ambient Air Quality Standards for Lead; Final Rule (November 12, 2009) changed the value for Lead in Ambient Air from 1.5 ug/M3 per calendar quarter (eg. January, February, March) average to 0.15 ug/M3 per running 3 month (eg. March, April, May or April, May, June). This rule requires that ambient monitoring be conducted for Lead in Metropolitan Areas with populations over 500,000 beginning in January, 2011. We also are required to start monitoring in January, 2010, near facilities that emit one (1) ton or more of Lead.

MassDEP has continuously monitored Lead (using a High Volume Sampler) at the Kenmore Square site continuously for over 25 years. Because measured Lead values have dramatically decreased, after the phasing out of vehicles requiring leaded gasoline, this has been the only site required to measure Lead in New England, and only as the means to assess long term lead concentration trends. For the 2007 Network review MassDEP proposed and USEPA approved, the moving of the Kenmore Square TSP (Total Suspended Particulates)/Lead sampler to the Harrison Avenue site, because of the anticipated down sizing of the Kenmore Monitoring Station. That project is imminently scheduled to commence in June, 2009, after a two year delay. From June, 2009 until January, 2011, Lead monitoring will be conducted at Harrison Avenue, as a substitute for the current Kenmore measurements.

The following is a summary of results from Lead measurements for the last three years at Kenmore Square.

Year	Quarter 1 Mean	Quarter 2 Mean	Quarter 3 Mean	Quarter 4 Mean	Max. Value*
2006	0.0050	0.0058	0.0050	0.0053	0.011
2007	0.0024	0.0074	0.0101	0.0071	0.028
2008	0.0112	0.0152	0.0082	0.0106	0.026

\*Maximum Value from an individual 24 hour sample.

The values in this table indicate a small likelihood that the new ambient standard of 0.15 micrograms per cubic meter will be exceeded in Boston.

### Ambient Lead Monitoring Strategy

Massachusetts has three (3) Metropolitan Areas with populations greater than 500,000. They include Boston, Worcester and Springfield. Additionally, the South Shore New Bedford/Fall River Area is considered part of the Greater Providence Metropolitan Area. EPA has indicated that the State of Rhode Island will conduct Lead measurements in the Providence Area. The Boston Metropolitan Area includes a small part of New Hampshire (Salem) for the purpose of Lead monitoring.

The new Lead Monitoring regulation for community ambient Lead measurement, prescribes the collection of the PM<sub>10</sub> (particles 10 microns in diameter or smaller) particulate fraction on Teflon filters, using a low volume sampler, followed by X-Ray fluorescence analysis. There are already PM<sub>10</sub> samplers at Kenmore Square (Boston), Summer Street (Worcester) and Union News (Springfield). These sites are all center city locations. Samples from these sites will be submitted for Lead analysis, as soon as they are gravimetrically assessed for PM<sub>10</sub>.

The June, 2009 relocation of the current Total Suspended Particulate Sampler (for Lead) to Harrison Avenue is temporary, in order to continue to collect Lead data for Boston until the new mandated

community Lead monitoring commences in January, 2011. The new Kenmore Square shelter will not accommodate the current sampler, due to size restrictions. However, the low volume sampler, needed for future Lead samples (beginning January 2011) will be an integral part of the new Kenmore station.

### **Source Ambient Lead Monitoring Strategy**

As indicated above, ambient air monitoring in the vicinity of sources emitting one ton or more per year of Lead is required starting January 1, 2010. These samplers must be of the high volume/total suspended particulate type, the same as the one now operating at Kenmore Square.

With help of MassDEP regional staff, we have investigated emissions figures regarding potential Lead emitting sources in Massachusetts and we are currently not aware of any sources emitting one ton or more.

Currently, MassDEP is not planning to deploy any high volume samplers to collect source oriented Lead samples on January 1. However, the Air Assessment Branch will be prepared to purchase equipment and find sampling locations, should a source of that size be verified. It is our understanding that USEPA may be considering a revised emissions threshold, lower than the current 1 ton per year requirement, for source monitoring. When a final decision is made, MassDEP will assess its sources and make additions to the Lead ambient network, as appropriate.

In contrast to ambient monitoring, source oriented monitoring will require the monitoring site to be in a specific direction from the emitting facility (downwind from the predominant direction) and at a specific distance from the source. This type of location may not be available for a monitoring site for every source under consideration.