

Meteorological Information

Observations of local meteorological conditions are becoming more important when assessing air quality data and assisting in specific airshed management programs. The analysis of air pollution data is dependent on local meteorological conditions. Meteorological conditions can vary between locations which may only be a few kilometers apart.

Meteorological data must be integrated into air monitoring networks to assess potential point source emitters and provide air quality assessment. The following parameters should be considered;

- Wind Direction
- Wind Speed
- Temperature
- Rainfall
- Barometric Pressure
- Relative humidity
- Solar radiation

Based on the complexity of a particular airshed requiring assessment a number of meteorological stations may be required. In most applications, a 10 metre tower located at an air monitoring station or nearby location is required. In complex airsheds, information from 100 meter towers with multi-level meteorological sensors are required to determine local inversion conditions. (Figure 1)



Figure 1 - 100m Tower

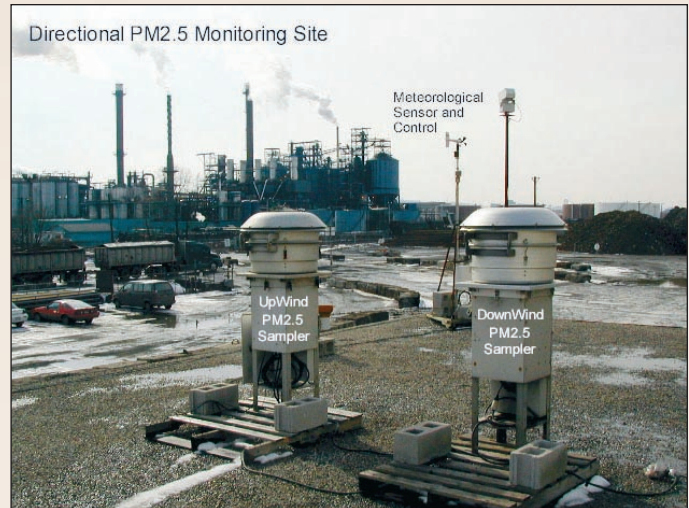


Figure 2 - Upwind/downwind Activated Samplers

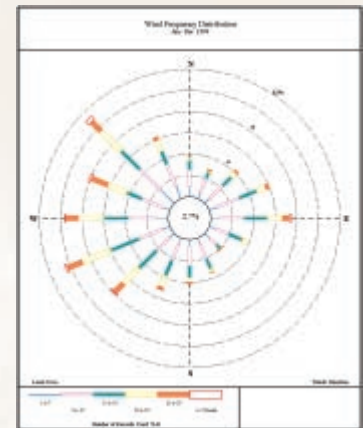


Figure 3 - Wind Frequency Distribution

Portable meteorological stations can be used for shorter sampling surveys. Integrated data acquisition systems with radio or cellular communications can be used to obtain data remotely.

Rotek Environmental Inc. will supply, install, commission, service and maintain the required meteorological sensors in support of ambient air monitoring programs. To correlate meteorological data with air quality data an appropriate real-time data acquisition system is essential. Along with collecting the required meteorological data, Rotek can provide client specific applications such as;

- trigger air monitoring samplers to collect data for selective wind vectors (Figure 2)
- assess upwind/downwind contribution impacts
- assess wind frequency distribution (Figure 3)
- assess pollution rose distribution
- provide hourly air quality assessment