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## **Report 02.323**

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Report to Environment Committee  
from Perry Davy, Air Quality Scientist

### **Wairarapa Dust Deposition Investigation**

#### **1. Purpose**

To present the results of dust deposition monitoring undertaken in the Wairarapa Valley to the Committee.

#### **2. Background**

We monitor deposited dust because it can result in a physical nuisance due to the soiling of surfaces. Complaints by members of the public have often been received by the Council due to a dust nuisance from neighbouring activities.

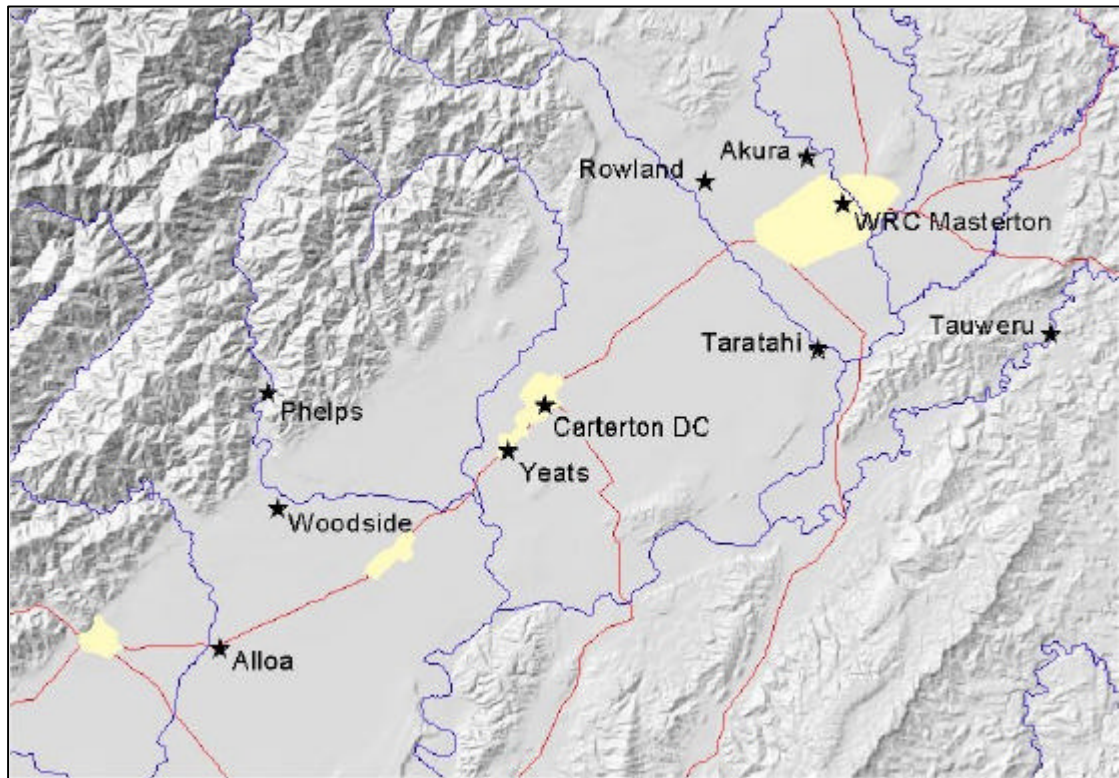
The Wellington Regional Council has conducted dust deposition monitoring since September 1996 to establish baseline information on background deposition rates of dust in various areas of the region. Background dust deposition rates can then be used to assess the impact of dust generating activities. This report presents the results of a recent deposited dust monitoring programme in the Wairarapa Valley.

Deposited particulate matter is the proportion of dust that settles out from the atmosphere under the influence of gravity, or as a result of frictional contact with surfaces. Particles that settle out of the atmosphere tend to be larger and heavier dusts, and are usually not considered to be an inhalation health hazard.

### 3. Results

The location of the dust deposition gauges is shown in Figure 3.1. The dust deposition gauges were sited in a number of different environmental settings. These included pastoral fields (Alloa, Woodside, Rowland), Alluvial Terraces (Phelps, Taratahi, Tauweru), Urban (Carterton DC, Masterton WRC) and Rural-urban fringe areas (Yeats, Akura).

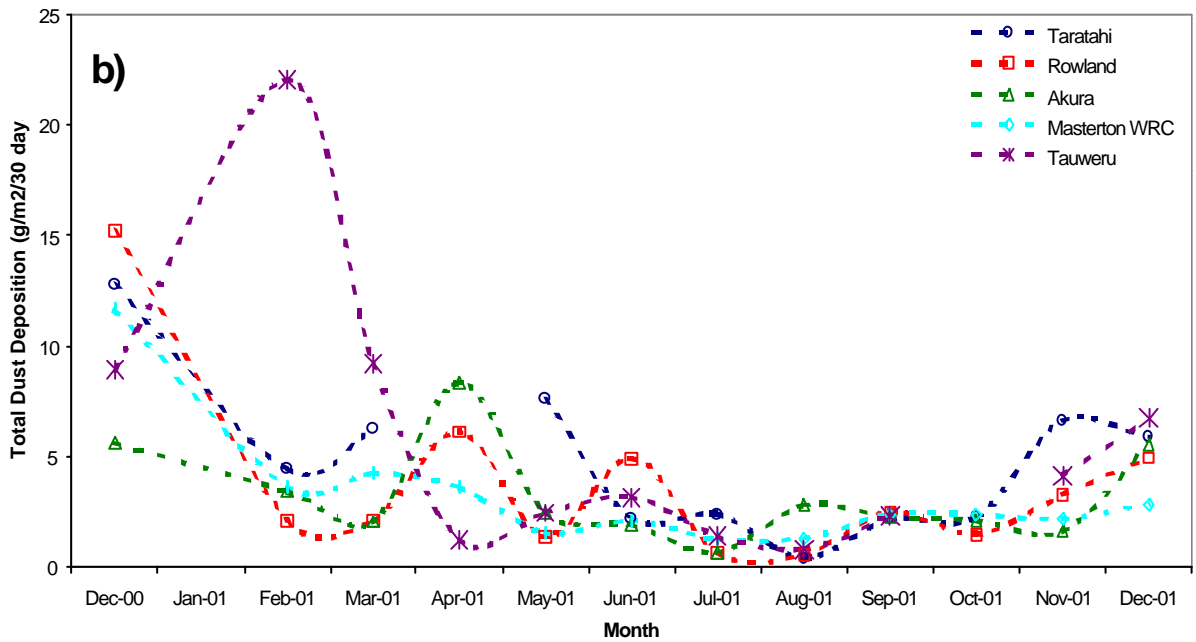
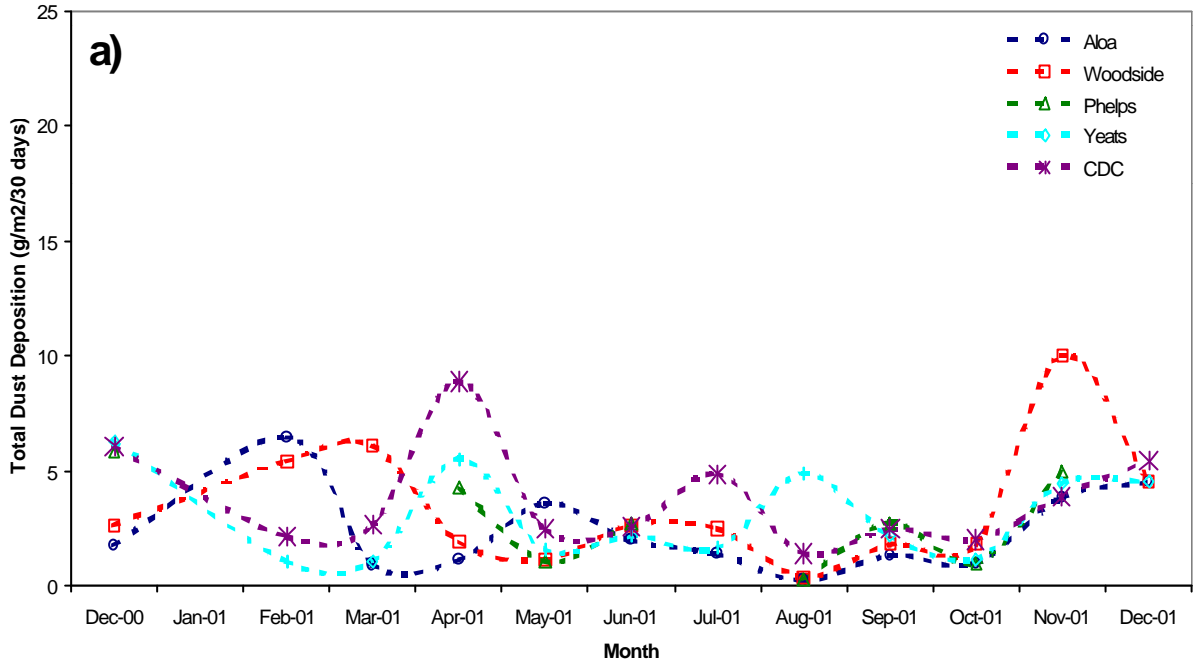
**Figure 3.1** Location of Dust deposition gauges in the Wairarapa.



The results of the dust deposition monitoring in Wairarapa are presented in Figure 3.2. For a particular site, the rate of dust deposition is not only dependent on the supply of dust from natural and anthropogenic sources, but also on the climate. The primary climatic factors that influence the rate of dust deposition are wind and rainfall.

Dust deposition rates varied markedly from site to site. There is also some geographical spread in the results with the sites in the western portion of the Region having lower and more consistent rates of deposition.

**Figure 3.2** Dust deposition rates during the monitoring period  
**a) Western sites**  
**b) Eastern sites**



Generally, deposited dust levels in the Wairarapa are higher during the summer and lower during the winter.

#### 4. **Conclusion**

Overall dust deposition rates determined by monitoring in the Wairarapa are low. Elevated rates of dust deposition generally occurred during periods that experienced stronger winds and longer spells of dry weather. The mean dust deposition rate in Wairarapa of 3.6 g/m<sup>2</sup>/30 days falls within the background rate of 1-4 g/m<sup>2</sup>/30 days expected for most New Zealand environments.

#### 5. **Regional Policy Implementation**

Chapter 8 of the Regional Policy Statement contains policies and methods for air quality management within the Wellington Region. The ambient air quality monitoring programme implements Policies 1-4, relating to air quality management and Methods 2 and 3 in particular.

#### 6. **Communication**

The background dust deposition monitoring results will be used as a basis for assessing and monitoring dust-generating activities in the Wairarapa Valley that may be causing a localised nuisance.

#### 7. **Recommendation**

*That the report be received and its contents noted.*

Report prepared by:

Approved for submission:

PERRY DAVY  
Air Quality Scientist

JOHN SHERRIFF  
Manager, Resource Investigations

JANE BRADBURY  
Divisional Manager, Environment