

What has been happening?

Mount Maunganui Air Quality

In late 2018 we expanded our air quality monitor network in the Mount Maunganui industrial area. Six new monitors were installed at this time, bringing the total to nine. The additional data is used for Councils ongoing management of air quality in this area.

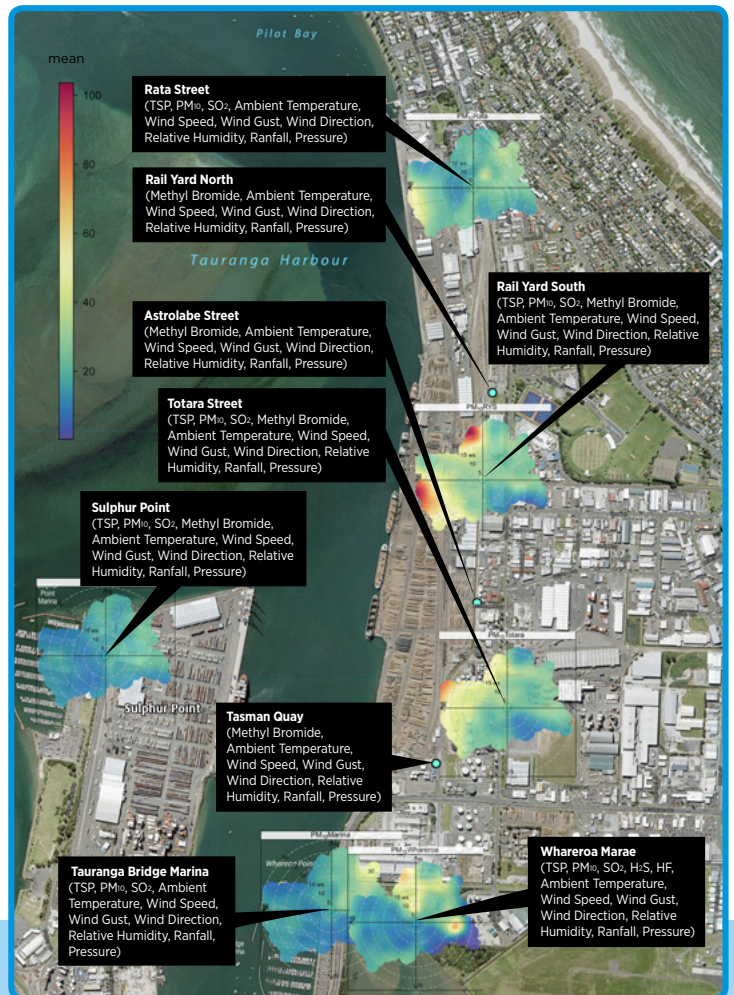
Since August 2018 we have progressively been sharing verified data from these monitors on our environmental data portal. Alarm levels and alerts are being set up for various parameters. You can access this information at www.boprc.govt.nz/environmentaldata

As well as meteorological data, contaminants monitored include: particulate matter 10 microns or less (PM₁₀), particulate matter 2.5 microns or less (PM_{2.5}), total suspended particulate (TSP), sulphur dioxide (SO₂), hydrogen sulphide (H₂S) and hydrogen fluoride (HF).

The first continuous monitoring to investigate methyl bromide levels began in mid- November 2018.

An example of some of the 10 minute PM10 data collected during the 2018/19 summer period is shown to the right. Higher values are associated with certain wind lines and upwind activities.

You can learn more about this project at www.boprc.govt.nz/mountindustrial



Tauranga Emission Inventory

In 2018 Bay of Plenty Regional Council commissioned the preparation of an air quality emission inventory report for the Tauranga area. This inventory supersedes the 2003 region-wide inventory where a large urban area breakdown was also included. The inventory was prepared by Dr Emily Wilton.

The inventory covered the entire Tauranga City area. The year for which data was compiled is 2018 unless otherwise stated.

An emission inventory assesses sources of discharges to air. Sources in the 2018 Tauranga inventory included domestic heating, motor vehicles, outdoor burning, shipping and port activities, aviation, rail and industrial and commercial activities.

Natural source contributions (sea salt and soil) are not included because the methodology to estimate emissions is less robust. The evaluation focuses on particles in the air less than 10 microns (PM₁₀), particles in the air less than 2.5 microns (PM_{2.5}), sulphur oxides, nitrogen oxides and carbon monoxide.

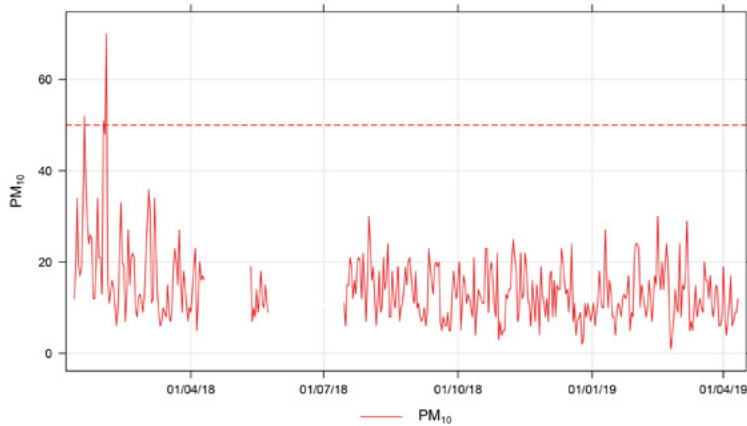
A domestic home heating and outdoor burning survey was completed to determine heating methods and fuels and the prevalence and characteristics of outdoor burning.

Emissions were assessed in terms of contributions to daily (winter) and annual average emissions. The matrix in the table to the right displays annual average emissions in tonnes/year.

Map of air monitors at Mount Maunganui industrial area					
	PM ₁₀ tonnes/year	CO tonnes/year	Nox tonnes/year	Sox tonnes/year	PM _{2.5} tonnes/year
Domestic Heating	174	2217	13	5	174
Motor vehicles	26	1448	381	0.3	20
Industry	84	33	59	232	31
Small scale activities	11				3
Aviation	0	19	29	2	0
Rail	1	1	33	0.01	1
Shipping	83	59	766	745	77
Port Activities	43	0	0	0	10
Outdoor burning	22	115	8	1	22
Total	443	3892	1289	986	337

This 2018 emission inventory is a timely addition to the wide ranging information being collected by Council. The findings will be used to aid Council in managing activities within the Tauranga area and working with stakeholders. It will also be valuable in discussion with central government agencies around contaminants and sources that are not under direct Regional Council control.

Moses Road 24 hour PM₁₀ (µg m⁻³)



Moses Road, Ngāpuna, Rotorua

On 9 January 2018, following discussions with local residents, Council staff installed a PM10 monitor. During this time three exceedances of the National Environmental Standards for Air Quality (NES-AQ) were recorded. For the most part though the readings have plateaued with an average value of 14ug/m2.

This is unlike other locations within Rotorua whereby a strong winter time domestic heating signature is present.

Note, due to instrument malfunction there are two periods of missing records.

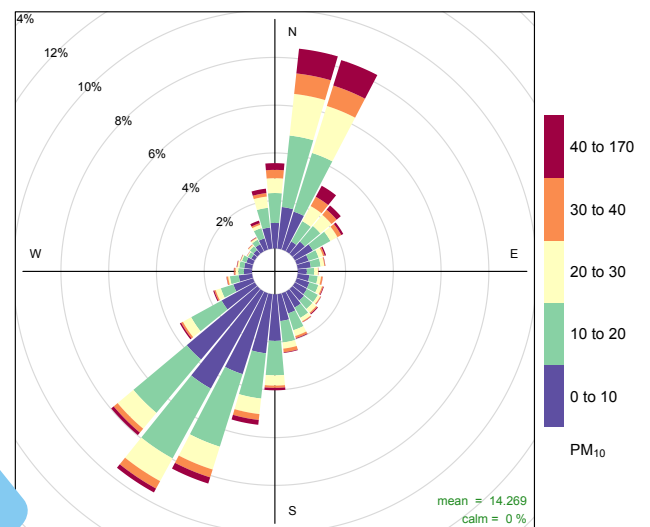
Full 24 hour PM₁₀ timeseries recorded at Moses Road. NES-AQ PM₁₀ standard shown with dashed line.

At the Moses Road monitoring location, winds from the northern quadrant could potentially transport particulate matter from McAlpines Ltd timber processing plant to the monitor, if site processes and practices are not well managed (see plot on the right).

The pollution rose for the full period of record shows the typical pattern of wind direction for this area of the region. Directions depending on the time of year are prevalent from the NNE quadrant and the SW quadrant. Winds are less common from the true W and E quadrants. In general windspeeds on average are typically stronger when associated with these prevailing directions.

Elevated levels of PM₁₀ can be recorded from most quadrants which is a result of the activities within this locale (a mixture of residential and industrial zoning).

Moses Road 30 minute PM₁₀ (µg m⁻³)



Frequency of counts by wind direction (%)

Pollution rose for full 30 minute PM₁₀ and meteorological recorded at Moses Road.

The Councils PM10 monitoring site will continue to operate at Moses Road as the period of operation is relatively short to date.



Particulate matter (PM₁₀)

A summary of PM₁₀ data in relation to the NES-AQ and state indicators are presented below.

Number of PM ₁₀ exceedances within the Rotorua Airshed	
Year	Annual total
2006	23
2007	25
2007	37
2009	23
2010	17
2011	7
2012	21
2013	11
2014	12
2015	13
2016	11*
2017	13
2018	6**

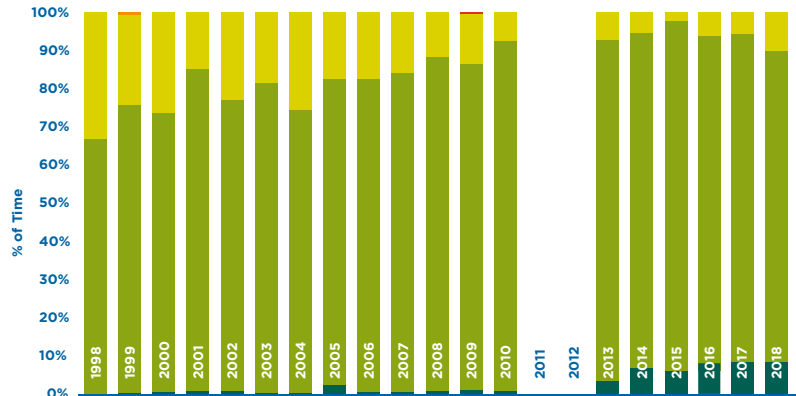
* Due to instrument failure 8 of the exceedances were calculated using PM_{2.5} data and the relationship with PM₁₀

** 3 from Moses Road, Ngāpuna

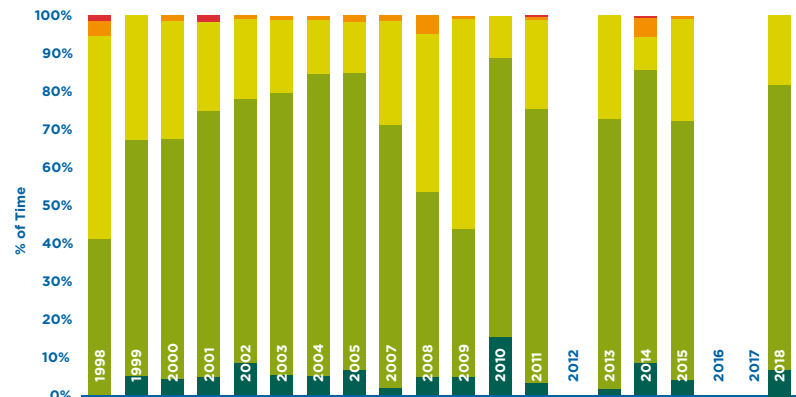


■ Excellent (<10%)
 ■ Good (10-33%)
 ■ Acceptable (33-66%)
 ■ Alert (66-100%)
 ■ Action (100+%)

Otumoetai Road, Tauranga



Kopeopeo, Whakatāne



Edmund Road, Rotorua

