

Air quality performance targets:

Continue to implement and improve a prioritised State of the Environment monitoring programme based on the Regional Policy Statement and regional plans:

- Monitor ambient air quality in line with the priorities of the National Environmental Standard for Air and the Regional Air Quality Plan – 100 percent compliance with the national environmental standards – **ACHIEVED.**
- Report the results from the SOE monitoring programmes in the annual monitoring report and make available on the council's website at www.nrc.govt.nz/soe by 31 October each year – **NOT ACHIEVED (loaded four weeks late).**

Key points 2010-2011

- PM₁₀ is measured at two sites in Whāngārei and one in Kaitiāia.
- SO₂ is measured in central Whāngārei and at Taurikura.
- CO is measured in central Whāngārei.
- None of the results exceeded NES for air quality.
- Central Whāngārei and Kaitiāia have high air quality.

You can help reduce the amount of air pollution in our region by:

- Using low emission burners;
- Cleaning your chimney at least once a year;
- Never burning rubbish, plastics or treated wood in your wood fire;
- Never using coal in a wood burner;
- Avoid burning rubbish and vegetation in your backyard; and
- Compost vegetation and recycle other materials.

Air is a life-supporting resource that needs to be protected. Although Northland's air is generally of a high quality, there is air pollution from anthropogenic activities – the things humans do – particularly around urban areas.

In order to protect our air quality, the Northland Regional Council developed the Regional Air Quality Plan (RAQP) for Northland. The plan gives guidance to anyone using our air resource and specifies rules about what discharges into air are allowed.

The council has been monitoring air quality in the region since 1996. The main purpose of air quality monitoring is to find out where air pollution might affect human health.

The council has an ongoing programme monitoring pollutants such as particulate matter (PM₁₀) – very small particles that can get into your lungs – carbon monoxide (CO) and sulphur dioxide (SO₂) in places that are suspected of having occasional poor air quality.

The council also monitors activities that involve discharges to air and investigates environmental incidents relating to air.

Burning of prohibited items at an industrial premises in Whāngārei.



Particulate matter (PM₁₀)

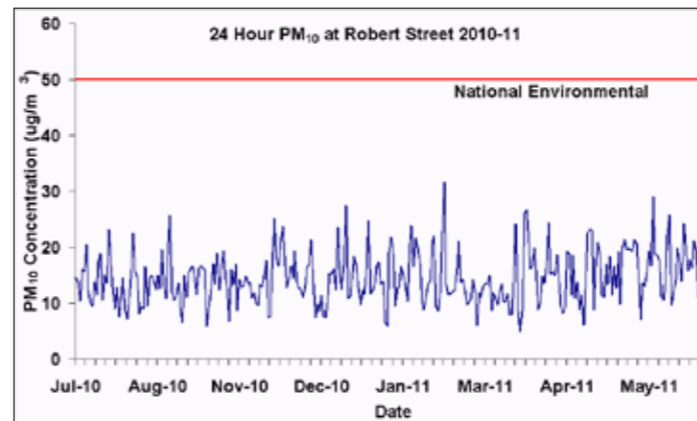
Particulate matter (PM₁₀) is a collective term used to describe very small solid or liquid particles in the air, such as dust, fumes, smoke and fog. PM₁₀ comes from both natural – wind blown dust, forest fires or pollen – and manmade sources including automobile exhausts, solid fuel burning and industrial emissions. Wood burning fires used for home heating are the main source of PM₁₀ in Whāngārei.

Smoke has high levels of PM₁₀, which is easily inhaled and can harm people's health. People most susceptible to the effects of inhaling PM₁₀ include the elderly, those with existing lung problems, weak hearts or infections such as pneumonia, and children.

PM₁₀ was sampled at three locations in Northland during 2010-2011; Water Street and Robert Street in central Whāngārei, and North Road in Kaitiāia. The results collected were compared to the National Environmental Standard (NES) for PM₁₀, which states that PM₁₀ shall not exceed the limit of 50 micrograms per cubic metre more than once in a twelve month period.

Whāngārei airshed

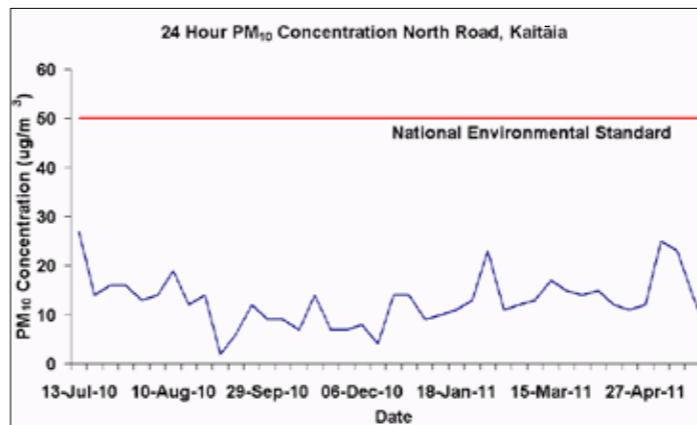
Monitoring results from 2010-2011 show PM₁₀ levels were slightly elevated over the winter months due to cool, calm conditions that allowed air pollution from domestic fires to build up. Despite this, PM₁₀ levels were 100 percent compliant with the National Environmental Standard (NES) at both Water Street and Robert Street.



Kaitiāia airshed

PM₁₀ monitoring in the Kaitiāia airshed began in July 2010 at North Road. Like the Whāngārei airshed, Kaitiāia experienced slightly elevated levels of PM₁₀ over the winter months but levels were still well within recommended guidelines with 100 percent compliance with the NES.

If the Kaitiāia airshed continues to meet the guidelines the monitoring equipment may be moved to investigate PM₁₀ levels at another site.



Sulphur dioxide (SO₂)

Sulphur dioxide (SO₂) is a colourless gas that has a strong smell. It is mainly produced by the burning of fossil fuels containing sulphur however it can also be produced by some industrial processes.

SO₂ is harmful when inhaled at high concentrations and acts directly on the upper airways (nose, throat and lungs) producing a response within minutes. It is particularly harmful to people with existing respiratory problems, such as asthmatics or people suffering from lung disease. The symptoms of SO₂ inhalation include wheezing, chest tightness, shortness of breath and coughing.

Results from SO₂ monitoring

In Northland, the most significant industrial source of SO₂ is the New Zealand Refining Company, located at Marsden Point. The prevailing wind in this area frequently blows emissions from the refinery towards Whāngārei Heads, a largely rural, residential area. The council monitors ambient SO₂ concentration using a continuous monitor stationed at Taurikura Bay.

In 2010-2011, results from the monitoring station at Ody Road indicated SO₂ concentrations were 100 percent compliant with both the NES of 350 micrograms per cubic metre (µg/m³) over a one hour average, and also well below the current 24-hour ambient air quality standard of 120µg/m³.

The council also began monitoring SO₂ at Robert Street, Whāngārei from July 2010 but the record is incomplete due to instrument failure. However, results obtained until the end of 2010 were well below the NES. A new SO₂ monitor will be deployed at this site soon.

Carbon monoxide (CO)

In July 2010 the council started carbon monoxide (CO) monitoring at Robert Street in Whāngārei. CO is a colourless and odourless, yet highly toxic gas produced by the incomplete combustion of carbon-based fuel. Motor vehicle exhaust is believed to be the main source of CO in the Whāngārei airshed with minor contributions from industrial and domestic emissions.

CO concentrations for 2010-2011 at Robert Street were well within the National Environmental Standard of 10 milligrams per cubic metre over eight hour running averages.

Find out more www.nrc.govt.nz/backyardburning or for more information on the Regional Air Quality Plan go to www.nrc.govt.nz/raqp



Rural burning can cause smoke nuisance and dust deposits in neighbouring properties.