

Wet Chemistry SO₂
analysis

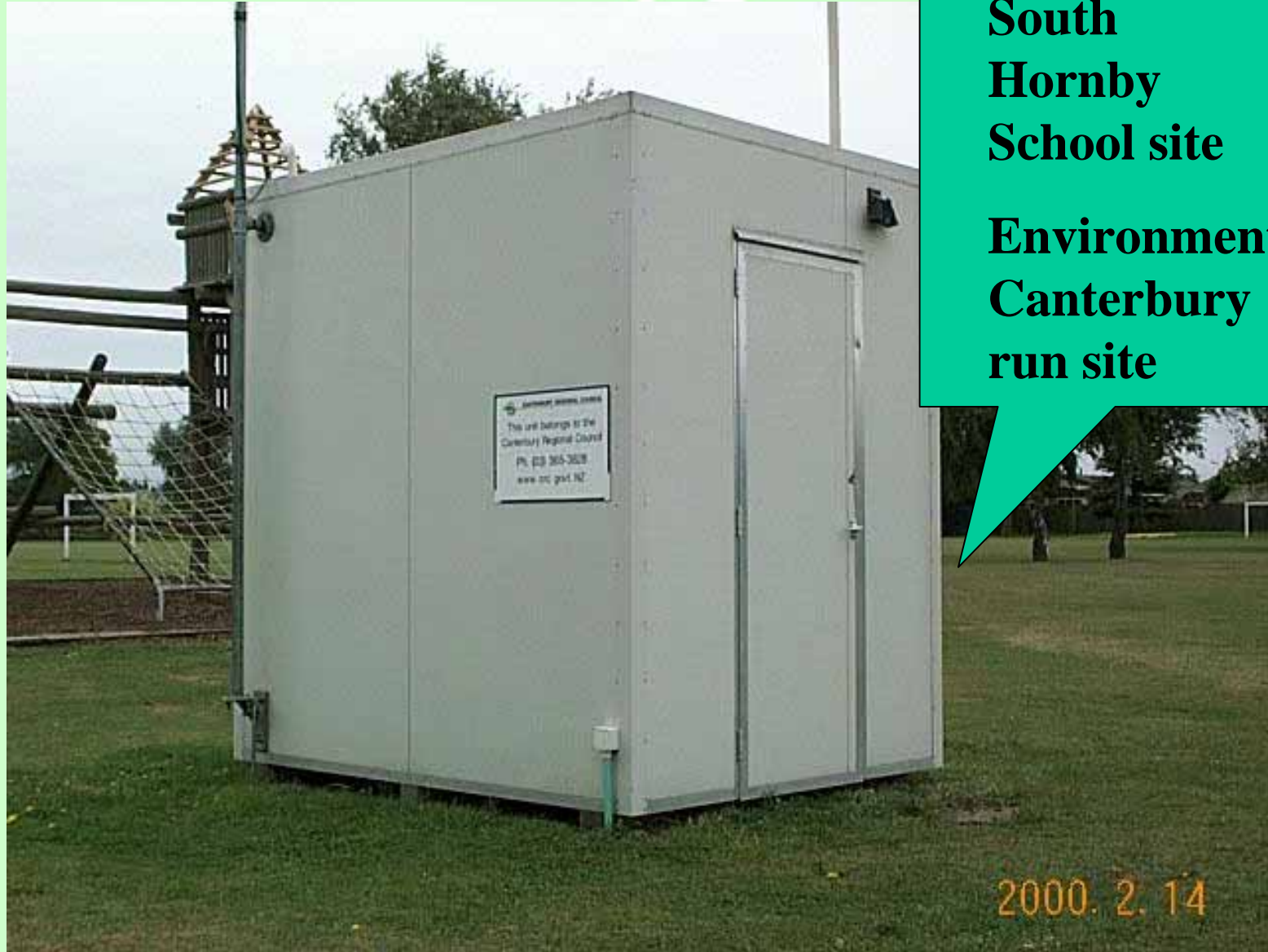
Discontinued Hornby
Feb 2000

Fluoride monitoring
AS3580.13.2-1991



**South
Hornby
School site**

**Environment
Canterbury
run site**







On site weather station

soon to be upgraded, serviced and independently verified by NIWA

(Dunedin has an upgraded unit in place now)

Dust Deposition Gauge

ISO DIS4222.2

Pg 25GPG



Hornby ambient monitoring (voluntary)

- **3 Ambient wet chemistry monitors in the Hornby area for Fluoride**

- **The SO₂ results done by the total acidimetric wet chemistry method were provided to the council for comparison with their infrared monitor at South Hornby School. As the correlation between these sets of data was not great and the wet chemistry SO₂ monitoring was stopped in Feb 2000.(Ravensborne results from their wet chemistry verses instrument compare well) ?**

- **We be putting in place an instrumental SO₂ monitor on site**

- **Dust deposition gauges are in place at three sites**

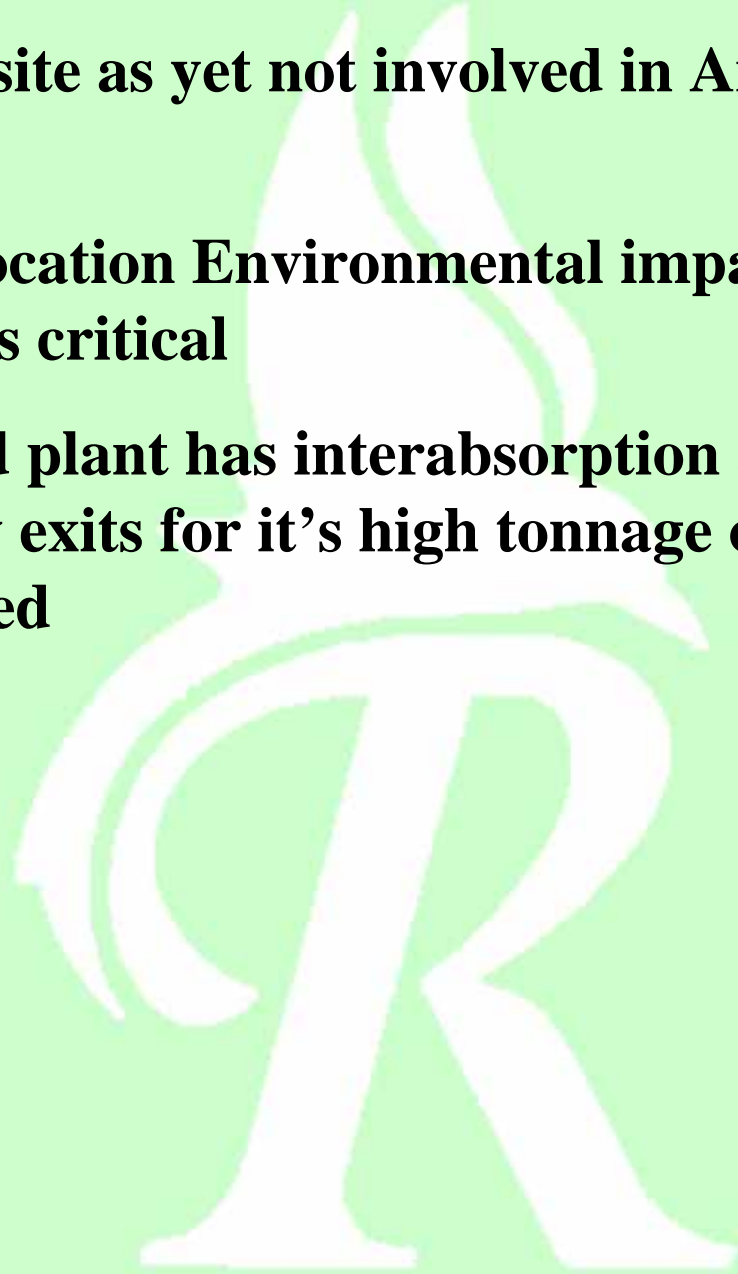
Awatoto (Napier)



The Napier site as yet not involved in Ambient monitoring

Due to it's location Environmental impacts of this plant are less critical

And it's acid plant has interabsorption and therefore has very low exits for it's high tonnage of sulphuric acid produced



Company owned stores (Shown here is Winton)





Company owned stores as yet not involved in Ambient monitoring

**Due to their location
Environmental impacts of this
plant are minimal**

**All store loading is done inside
and therefore environmental
impact is minimised**

4)The Good Practice Guide What it has to offer Ravensdown

- Although the GPG is designed (as per intro in GPG) for monitoring and validating ambient Air quality and not localised sources I think it is extremely useful for that purpose.**
- If comparing a localised effect with a national background then if you are not using the same methods then how can you compare them.**
- The GPG is an invaluable resource for methods and standards.**
- I am also glad to see a level of practicality in relation to ideal verses real world with options for methods**

- **A reference for relevant Aust or USEPA stds as outlined in the GPG to review the requirements and suggested improvements to our current practice.(also using Ravensbourne as a benchmark for all three sites)**
- **H₂S Monitoring using fluorescence is worth investigating although may not be an issue once our biofiltration upgrade is complete.**
- **Fluoride monitoring wasn't mentioned ? As to under hazardous Air pollutant (I did try to have a look at the web page mentioned but had difficulty getting connected ?)**

5) The good practice guide section by section quick comments



Section 1 Introduction

Prioritys stated in the GPG

- **I like the Correctly, consistently, efficiently**

And my budget will like the cost effectively

- **National consistancy would seem to be a big focus and advantage as you can see with our three Manufacturing sites the differing monitoring requirements for each and what is in place.**

- **Although the guide has been set up to monitor and validate ambient Air quality and not localised sources I think it is extremely useful for that purpose.**

- **If comparing a localised effect with a national background then if you are not using the same methods then how can you compare them.**

Section 2 Why Monitor

- **Regional monitoring programme development**

I don't feel particularly qualified to comment on this

But would have the comment that the cost of implimenting and keeping a monitoring programme going from a business perspective can be difficult. And small businesse may find it cost prohibitive.

- **Should regional councils have funding to furthur their ambient monitoring programmes?**

Section 3 What to Monitor?

- **The Guideline values section and reference to World health Organisation guidelines <http://who.int/peh/>. Useful**
- **Is there a method of prioritising contaminants for monitoring ?**

•Section 4 How to Monitor?

- **This section very useful from a referencing standards point of view. And background for those who haven't had much exposure making a decision about what to use.**
- **Also has some good references to find more information.**
- **I thought it could have had some reference to cost ? Although the costs involved would date quickly**

•Section 5 Where to monitor

- In our case our ambient monitoring sites are set up and placed at a modelled maximum using modelling of our stacks and ground level maximums.**
- It is assumed that if they are below guideline levels there they will be every where else (ie a worst case scenario).**
- In some cases they have been set up in an area where we have had a complaint in the past (complaint resolution).**
- The long term viability has had an effect (having to shift our weaather station at the Hornby site due to site developements)**

Section 6 Equipment Maintenance and inspection.

- In the case of instruments Ravensdown uses expert contractors to Calibrate electronic equipment (ie SO2 monitors) so this is left to external parties.**
- In the case of non electronic equipment ie flow meters they are calibrated on site using an externally calibrated reference unit.**
- Any data logging functions are developed and looked after externally.**
- In the past we have used split samples to prove /disprove the validaty of a method (ie Hornby wet chem SO2 monitoring)**

Section 7 Recording Site and Auxiliary Information

- **Technicians record information as required about our sites for repairs (Ravensdown and external) and unusual events.**
- **The GPG suggested Site information required is more extensive than we currently perform.**

Section 8 Data Management protocols

- **Verification of Data handled by external Parties in the case of electronic monitoring.**
- **In the case of wet chemistry the data is handled in house. Very little data Manipulation other than Graphing and reporting is done.**
- **The GPG stds on units and periods are already followed**
- **The conversions section in the GPG will be great for training/ explaining purposes**

Section 9 Displaying Results

- **In house reports generated in Ravensbourne using Lab database generating reports (this Database is being reviewed for use at the other sites)**
- **Most external data is displayed for review in time series graphs (In house)**
- **All ambient and discharge monitoring reports are sent to the relevant regional council (and some residents in Ravensbourne) on a monthly basis**

Section 10 Storing and Archiving Data

- **Standardised file references are used**
- **And all data backed up**
- **Air quality Database for NZ discussed in the guide looks great for accessing background level information. For comparison of on site data**

Section 11 Calculating and displaying Summary statistics

- **Ravensborne report results**

**Utilising lab database report function
(as mentioned earlier)**

- **Hornby site display results and
provide to EC as raw data only**
- **In house we run yearly time series
graphs to look for trends.**
- **The guideline suggests a number of
ways of reporting beyond current
practice. The advantages of this will
need to be reviewed.**

Section 12, 13 references and appendices

- **Quick reference conversion tables And recommendation 25 on Reporting data very useful**
- **This area = a sort of executive summary a stripped down version of the rest of the document great if you don't have much time to explain the contents.**

6) Discussion points (questions for the group)

- Is it appropriate for business to be involved in the Air quality Database.?**
- How do you ensure unbiased results ?**
- When do you decide there is a need for ambient monitoring ? Does their need to be a risk analysis matrix to decide what to monitor in the GPG (numerical assesment of Risk)**
- In some cases for small operations (ie our company operated stores) does the impact warrant a monitoring programme? How and who do we get to assess this.? (before going to the expense of monitoring)?**

A photograph showing a brown bear in a grassy field. In the background, there is industrial machinery, including large pipes and tanks, suggesting a power plant or refinery. The bear is facing away from the camera, looking towards the industrial area. A red speech bubble is overlaid on the left side of the image, containing the text 'Friendly Biological indicator'.

Friendly
Biological
indicator

The END