ORIGINAL

Decision No. W109/94

IN THE MATTER	of the Resource Management Act 1991
AND	
IN THE MATTER	of an appeal under section 120 of the Act
BETWEEN	THE MEDICAL OFFICER OF HEALTH
	(Appeal: RMA 145/93)
	Appellant
AND	CANTERBURY REGIONAL COUNCIL
	Respondent
AND	RAVENSDOWN FERTILISER CO-OPERATIVE LIMITED
	Applicant

BEFORE THE PLANNING TRIBUNAL

His Honour Judge A A P Willy presiding
Mrs N J Johnson
Mrs R Grigg

HEARING at CHRISTCHURCH on the 8th, 9th and 10th days of August 1994

APPEARANCES

Mr J L Woodward for the appellant
Mr G L Wenning for the respondent
Mr N S Marquet for the applicant
Mr J G Walsh for the Hornby School

DECISION OF TRIBUNAL

The Appeal

This is an appeal by the Medical Officer of Health against a decision of the Canterbury Regional Council granting a discharge permit to the applicant. The notice of appeal is dated 14 April 1993 and must therefore be dealt with pursuant to the provisions of the Resource Management Act as they stood before the 1993 amendment.

Procedurally this matter has followed a tortuous course. In the original appeal document the appellant sought variations of the consent in a number of specified ways. In order to facilitate the narrowing of issues His Honour Judge Skelton convened a number of meetings between the parties and raised with Mr Woodward, counsel for the appellant, the possibility that on one view of the matter what the appellants were seeking was in effect a cancellation of the resource consent.

On 19 February 1994 Judge Skelton noted the file as follows:

> *"By consent application to amend notice of appeal granted accordingly. Amended notice of appeal to be served on applicant since respondent has already filed a reply to the amended notice of appeal on 13 May 1994 no further directions are required. This matter is now ready for a hearing."*

It seemed that Mr Woodward reflected upon that matter and following a further meeting between counsel and the Judge held on 24 March 1994, His Honour recorded the following:

> "2. *Mr Woodward, counsel for the appellant, informed me that the appellant now intends to oppose the application for consent to discharge contaminants into the air that is the subject of these proceedings in its entirety and a fixture will be required accordingly:- ..."*

His Honour further recorded that it would be necessary for the appellant to file an amended notice of appeal and noted:

> *"On the basis that the original application for the discharge permit is to be contested in its entirety, Mr Marquet advised that the applicant would be calling four or five witnesses and his case would take at least one day.*
>
> *The case for the Canterbury Regional Council will be supported by one witness and will take approximately half a day.*
>
> *The appellant is to call three witnesses and his case will take approximately one day."*

Following that meeting on 25 March 1994 the appellant filed an amendment to his notice of appeal. Paragraph 7 of which reads:

> *"The relief sought by the appellant is that this appeal be allowed and:*
>
> *a. That the permit to discharge contaminants to air granted to Ravensdown Fertiliser Co Limited be cancelled.*
> *b. That any replacement permit.*
> *i. Be for a period not exceeding five years.*
> *ii. Inter alia contain conditions which require:*
> *a. Ravensdown Fertiliser to record stack emissions and emissions from all other parts of the premises,*
> *b. Allow access by the Canterbury Regional Council officers to verify the recordings,*
> *c. Set measurable limits for the chemical emissions.*
> *iii. Contain further conditions requiring Ravensdown to contribute to the measurement of ambient levels of emitted gases at sites in the receiving environment.*
> *iv. Contain a further condition that the conditions of the consent be reviewed annually for the purpose inter alia to deal with any adverse effect on the environment which may arise from the exercise of the consent which have become apparent as a result of monitoring in the receiving environment."*

On 25 March 1994 in an accompanying memorandum for His Honour Mr Woodward said at paragraph 3:

> *"The amendment to the notice of appeal para. 7 attached to the application for directions filed in this matter has been prepared to clarify the extent of the issues to be canvassed. It is the appellants contention that the grant of the discharge permit is in issue."*

Mr Marquet for the applicant and Mr Venning for the Regional Council both prepared their respective cases on this basis.

During the course of Mr Marquet's opening we raised with Mr Woodward whether or not the appellant wished to put the consent in issue in its entirety. Mr Woodward indicated to the Tribunal that in fact he did not and that all the Tribunal would be called upon to decide were questions relating to appropriate conditions. Both Mr Marquet and Mr Venning expressed immediate and visible surprise at this significant departure from the appellant's stance as recorded in the foregoing minutes.

Notwithstanding that indication from counsel for the appellant, Mr Marquet, not surprisingly, called all the evidence which he had prepared on behalf of his clients on the assumption that the granting of the consent was in issue. It is against that background that we now deal with the amended notice of appeal and the matters of fact and law relevant to it.

Matters of Fact

Background Matters Relating to the Applicant's Activities

Mr J L Anstey the manager of the Hornby works of the applicant company told us that the fertiliser works is established at 312 Main South Road, Hornby. The works were built for the purpose of manufacturing sulphuric acid and superphosphate and for the storage and dispatch of superphosphate and other fertilisers to the surrounding farming regions. The works commenced production in 1922 and had carried out these operations on the present site now for a total of 72 years. The site was originally chosen and developed with the support of the then local council. The area was zoned for heavy industrial and noxious industrial use and was surrounded by similarly zoned areas as well as a rural belt of land to the south side of the Main South Road. There was then no residential development in the area.

The company's factory is established on a site of some 13.56 hectares and is conveniently located for access to major highways and the Port of Lyttelton. It also enjoys the benefit of its own rail siding. Mr Anstey says:

> "*The present site is the best available and occupation for the present purposes must therefore be considered permanent. ...*
>
> *The current zoning of the site is Industrial 3 with the exception of a 30 metre wide boundary strip along the Main South Road being zoned Industrial 1.*"

We were told this was intended at the time to act as a buffer between the sort of activity carried on by the applicant and less noxious industries and other uses permitted in the area.

The original plant and buildings have been upgraded on several occasions to ensure that the plant and methods of production are among the most modern available. This enables the plant to run efficiently with capacity to meet future demand. The current replacement cost of the present buildings and plant is approximately $56m. The original lead chamber process acid plant was replaced in 1967 with the present "*contact plant*". Anti-pollution devices have been modified and upgraded on a number of occasions.

At present the factory produces primarily superphosphate fertiliser. This contains 9% phosphorus as phosphate and 11% sulphur as sulphate. The product is of course used widely in the agricultural and horticultural industries throughout the South Island. Mr Anstey tells us that most soils found in the South Island lack both phosphorus and sulphur in the required quantities to sustain adequate levels of production. The fertilisers produced at the plant are therefore crucial to sustained agricultural production in this part of New Zealand. The works also manufactures what is described as maxi and longlife fertilisers which have higher proportions of sulphur and phosphate respectively.

A wide variety of raw fertilisers are imported to enable the works to offer a complete range of plant nutrients. These imported fertilisers complement the superphosphate produced at the works. In Mr Anstey's view having regard to the nature of the soils in much of the South Island he foresees that the manufacture of superphosphate will continue to be the major activity undertaken at the Hornby works.

Fertiliser Output

Output for the period 1986 to 1994 has ranged from a low of 69,302 tonnes in 1988 to a high of 94,066 tonnes in 1994.

The Plant and Processes Undertaken

At present the factory employs a total of 41 people. Sulphuric acid is manufactured by what is described as a contact process and superphosphate by the continuous Broadfield process. The sulphuric acid plant has a rated capacity of 250 tonnes of acid per day and this is sufficient to support a total output of 230,000 tonnes of fertiliser per annum. It takes 36,700 tonnes of acid to produce the 94,066 tonnes of superphosphate which was in fact produced in 1994. Current daily production of sulphuric acid is in the vicinity of 145 tonnes per day.

The manufacture of superphosphate involves the mixing of sulphuric acid with finely ground rock phosphate. There are no solid wastes or by-products from this process. However the phosphate raw material contains a small percentage of fluorine. A fraction of this fluorine is evolved as the gas, silicon tetrafluoride, which is passed through a scrubbing system where it is absorbed in water. The mixing of the acid and phosphate rock takes place in a device called a Broadfield den. This den is capable of operating 20 hours per day with an output rate of 57 tonnes per hour matching the present acid production output.

Since its establishment the works at Hornby has undergone modification or replacement of almost all parts of the plant and in some cases, more than once. For many years the operations of the company has been subject to scrutiny by chemical inspectors of the Department of Health working under regulations most recently embodied in the Clean Air Act 1972. The applicant currently has a licence under that Act which by virtue of the provisions of the Resource Management Act remains current until 1 October 1994.

We heard considerable evidence from Mr S A Clark, group technical manager of the applicant company relating to the detail of the manufacturing process. In summary he said:

Bulk Material Intake

All bulk raw materials and imported fertilisers are transported to the fertiliser works by road transport either from the Port of Lyttelton or from other Ravensdown Fertiliser works. The materials are discharged into below ground hoppers and then conveyed by covered belt conveyors to the appropriate storage

buildings. The materials received into the plant include phosphate rocks, sulphur, ammonium sulphate, diammonium phosphate, potassium chloride and various granulated fertilisers. All of the materials except for the phosphate rocks have been granulated, prilled or formed in some way to reduce dust.

Sulphuric Acid Plant

The witness describes this plant as ranging from 98.5 - 99.1% efficient by which is meant that the plant discharges at a maximum 1.5% of its product as wastes. The discharge is further cooled then contacted by 98.5% sulphuric acid in the absorbing tower. The sulphur trioxide is absorbed in the sulphuric acid increasing its concentration. Water is added to this sulphuric acid restoring its concentration to 98.5%. The remaining gas consists principally of nitrogen and oxygen but also contains up to 0.12% of sulphur dioxide by volume and traces of sulphur trioxide and acid mist. The gas passes through high efficiency mist eliminators and is then discharged to the atmosphere via a 42 metre high stack.

The phosphate produced at the plant is granulated and conveyed by covered conveyor belt to storage where it remains for a minimum of ten days while the chemical reaction is completed. In the course of the reaction a number of volatile compounds are produced. These include carbon dioxide, water vapour, silicon tetrafluoride, sulphur dioxide, hydrogen sulphide and various organic sulphur compounds. These gases are collected and scrubbed with water and caustic soda to remove the contaminants prior to discharge to the atmosphere through a 31 metre high stack.

Sulphuric Acid Plant Discharge

The witness then deals in detail with the nature of the discharges and the measures taken to control them. First the sulphuric acid plant. The discharge from this plant contains up to 0.12% sulphur dioxide by volume and up to 50mg/m^3 of acid mist and sulphur trioxide. The resulting steam, together with hydrogen sulphide produced during the melting of the sulphur is given off as a moisture which escapes from the sulphur melter. The resulting gas is subject to temperature reduction which produces steam. This is used as a by-product for the generation of electricity within the plant and for on-sale of a significant amount to the local electricity supply authority.

The discharge of sulphur dioxide is controlled by ensuring that the temperatures of the gas stream entering each catalyst bed is optimal. In this way the conversion of sulphur dioxide to sulphur trioxide is maximised. The sulphur dioxide concentration in the gas stream discharged from the plant is recorded continuously by infrared spectroscopy and determined manually by the plant operator at two-hourly intervals. For the period February 1993 to July 1994 the concentration of sulphur dioxide in the gas stream discharged from the acid plant ranged from 0.06% to 0.16% by volume with a mean value of 0.09%.

It is useful to compare these figures with the levels of discharge permitted in the

Clean Air Licence previously referred to. It provided that:

> *"The concentration of sulphur dioxide is not to exceed at any time 0.18% by volume at all loads. The concentration shall be monitored continuously using an appropriate instrument."*

The discharges of this substance for the 1993/1994 year are therefore well within the limit set by the Regional Air Pollution Control Officer in granting the licence under the Clean Air Act.

The discharge of sulphur trioxide is controlled by ensuring optimal concentration and temperature of the absorbing acid. An acid mist is formed in the plant when moisture in the gas stream reacts with the sulphur trioxide. This is routinely checked by the works' laboratory. The company has installed "*candle filters*" to remove acid mist from the gas stream. The removal efficiency is approximately 100% for particles larger than three micrometres and ranges from 92 to 99.95% for particles smaller than three micrometres. The witness says that the gas discharged from the plant is essentially free of acid mist. The emission standard for acid mist in the Clean Air Licence is:

> *"100 milligrams per cubic metre as sulphur dioxide corrected to 0° Celsius 1 atmosphere pressure and a dry gas basis 15 minute average."*

The conversion is to be:

> *"not less than 98.5% at all loads at any time".*

The witness describes the terms of the licence when compared with the discharges in this way:

> *"... The Hornby plant is equipped with equivalent candle filters and the discharge of acid mist would be similar to that at the Ravensborne plant. The current clean air licence permits the acid mist concentration to range up to 50 mgm^3."*

It is not clear whether the witness is there referring to the Ravensdown plant or the Hornby plant but in any event the evidence establishes that the company operates within the parameters set for this discharge by the Clean Air Licence.

As previously indicated hydrogen sulphide is produced from the sulphur melters and molten sulphur tanks. In March 1993 the company installed a soil filter which is designed to remove significant quantities of hydrogen sulphide. This has not yet worked to full efficiency because of blocking of the filter medium by sulphur dust, but the witness says:

> *"... This will be remedied by the installation of a device successfully utilised in the same application at the company's Ravensborne's works."*

The Clean Air Licence requires that hydrogen sulphide levels not exceed 100 milligrams per cubic metre. Having regard to the witness' evidence it is not clear

whether or not he is aware of this level or whether or not the company has been exceeding it.

Dust

Dust is produced when phosphate rock is ground. The only discharge produced from the grinding plant is the moist air vented from each of the two mills to control the humidity of the air. Phosphate rock suspended in the air vented from the mills is removed by reverse pulse jet bag filters. The removal efficiency is 100% for particles larger than 5 micrometres and typically 95 to 99+% for particles smaller than 5 micrometres. The witness says that recent tests on dust concentrations in the air discharged from the bag filters ranges from 22 to 157 milligrams/actual metres. The Clean Air Licence allows for an emission standard of 250 milligrams per cubic metre at 0° Celsius and 1 atmospheric pressure. The discharge of dust therefore is well within the standard set by that Clean Air Licence.

Fluoride

The concentration of fluoride gas discharged from the plant is well within the ranges allowed by the Clean Air Licence. It is from 0.7 to 12.8 milligrams per cubic metre with a mean value of 8 milligrams per cubic metre. The standard set in the Clean Air Licence is 50 milligrams per cubic metre.

In evaluating these figures it must be kept clearly in mind that the applicant company has the potential to be a substantial polluter notwithstanding that it is currently operating well within the requirements of the existing Clean Air Licence. That is so because it is currently discharging 2,448 kilograms of sulphur dioxide into the atmosphere per day. Conscious of that, the applicant is considering a number of steps designed to reduce the discharge of sulphur dioxide. These include:

> "... *Double contact/double absorption, caesium promoted catalyst, feed modulation, tail gas scrubbing.*"

By this combination of processes the applicant says:

> "*The conversion of sulphur dioxide can be increased to typically 99.5%.*"

To further improve this figure the applicant would need to spend approximately $3m on the installation of more sophisticated anti-pollution devices. The witness says that this level of expenditure would be uneconomic in this plant.

It is clear from the evidence that very large sums of money would need to be spent to make minor improvements in the emission standards. For example the cesium promoted catalyst would cost some $220,000 every 20 years and would only reduce the pollution rates from 98.5 to 98.7%. There exist other theoretical models for further improving the emission standards but as far as the witness knows these have never been used commercially in a sulphuric acid plant. From his knowledge

and experience the witness says that in the context of a 27 year old plant an operating conversion rate of 98.5% must be regarded as the best practicable option.

That was the position concerning the applicant's factory as at the time of its application. The Canterbury Regional Council heard the application and all of the evidence which the parties and submitters wished to call. It concluded that the application should be granted subject to a number of conditions, among other things, setting maximum levels of discharge of pollutants, in particular the sulphuric acid plant stack. The condition requires that the discharge of sulphur compounds shall not exceed 1.5% of the sulphur burned and the concentration of sulphur dioxide shall not exceed 0.13% at any plant load. That represents a reduction from that permitted by the Clean Air Licence of 0.05%. There are further conditions relating to emission levels during plant start up. Insofar as dust is concerned the Council specified that the concentration of dust in the discharges from the mill vents shall not exceed 250 milligrams per cubic metre. That is the same standard required in the Clean Air Licence.

As to the superphosphate plant stack, the Council required that the concentration of fluoride in the discharge from the den scrubber stack shall not exceed 70 milligrams per cubic metre. That represents a higher figure than that permitted by the Clean Air Licence and further provided that the total emission of hydrogen sulphide in the discharge from the den scrubber stack shall not exceed 70 milligrams per cubic metre. That is a reduction of 30 milligrams per cubic metre when compared with the Clean Air Licence.

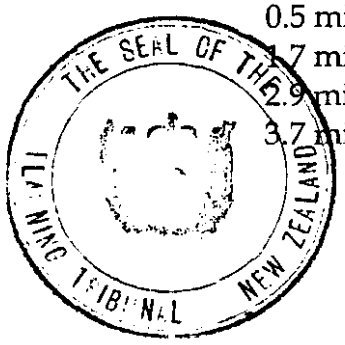
It is therefore clear that with some obvious amendments the Council has generally considered that emission standards set in the Clean Air Licence can safely be relied upon in the present circumstances. In coming to that conclusion the Council had regard to what were then proposed ambient air quality guidelines put out by the Ministry for the Environment. Since the date of the Council's hearing those guidelines are no longer proposed. They have now been published in what we understand to be an amended form. They are as follows:

Sulphur dioxide

50 micrograms per cubic metre annual mean
125 micrograms per cubic metre 24 hour mean
350 micrograms per cubic metre 1 hour mean
500 micrograms per cubic metre 10 minute average

Fluoride

0.5 micrograms per cubic metre 3 month average
1.7 micrograms per cubic metre 7 day average
2.9 micrograms per cubic metre 24 hour average
3.7 micrograms per cubic metre 12 hour average



Hydrogen sulphide

7 micrograms per cubic metre 1 hour average

It is thus clear that in the case of the major pollutant, sulphur set by the Council not to exceed 10 kilograms per tonne of acid produced and which is equivalent to the 98.5% conversion required by the current Clean Air Licence is below the levels proposed by the Ministry for the Environment guidelines for ten minute, one hour and 24 hour sampling periods. It is also true that the annual mean levels are not exceeded. Indeed for the most part the figures establish that the emissions were significantly below those recommended in the Ministry for the Environment guidelines.

In addition to actual testing at the four sites referred to, the applicant company has engaged in extensive computer modelling of likely pollution discharge rates. For this it has adopted what we are satisfied is an internationally acceptable modelling programme known as AUSPLUME. The witness says that although this programme tends to be a "*worst case scenario*" the standards set in the discharge permit proposed by the Regional Council and achieved by the factory are significantly below those disclosed by the modelling programme. The witness concludes:

> "*...the discharge of contaminants from the plant is tightly controlled at levels significantly less than those currently permitted. Current emission levels result in predicted ground level concentrations well within the ambient air quality guideline. The guidelines have been established at levels designed to prevent adverse effects to human health or sensitive vegetation or to prevent nuisance to affected communities.*"

Fluoride

This affects only the health of plant life, at least at anything like the levels which exist in this case. The evidence of Dr Daly establishes beyond any doubt that:

> "*The ambient fluoride levels for both short and long term exposures were clearly lower than those which would cause damage to such plants ...*"

Dr Daly concluded that to the extent there are complaints from local residents which attribute various ailments to exposure to fluoride:

> "*Environmental explanations for such complaints should be sought in terms of moisture stress, pesticide spray injury or the leaf pathogens themselves.*"

He concluded:

> "*I therefore concluded that no evidence of fluoride damage to ornamental shrubs or to pine trees was detected, except on the Works site. The predicted and actual 90 day maximum ambient fluoride levels for Ravensdown Hornby were below plant*

injury levels as were maximum 12 hour levels at discharge rates from the den scrubber during the year's operation."

The measurement of air pollution

We then heard detailed evidence from Dr T J Brady who is a suitably qualified air pollution consultant, about the appropriate ways of measuring air pollution in circumstances relevant to this appeal. In essence the debate covered in Dr Brady's evidence is as to whether or not it is scientifically acceptable to conduct this type of analysis by use of computer modelling programmes or whether it is necessary to carry out actual monitoring of pollution discharges. This question is central to the difference in the view taken by the Medical Officer of Health compared with the relevant experts called by the applicant. Dr Brady quotes the following passage from the United States Environmental Protection Agency (USEPA) as follows:

"*Due to the limitations in the spatial and temporal coverage of air quality measurements monitoring data are not sufficient as the sole basis for demonstrating the adequacy of emission limits for existing sources. Also the impact of new sources that do not yet exist can only be determined through modelling. Thus models while uniquely filling one program need have become the primary analytical tool in most air quality assessments.*"

In Dr Brady's view air quality models have been applied with the most accuracy in situations where the topography is relatively simple or flat. Hornby is such an ideal situation in Dr Brady's opinion. The purpose of the modelling is to simulate the impact of pollution at a given location. It depends upon the availability of local meteorological data. The only data which can be relied upon relevant to the applicant's Hornby site is that collected at a station in the St Albans area of Christchurch. Dr Brady considered that suitably "*screened*" this data can be relied upon as an accurate basis for the modelling programme. As to the use of such a method of determining air pollution in New Zealand the witness goes on to say AUSPLUME, which is the model chosen in this case, is used almost exclusively in permit applications in New Zealand and is the preferred model used by air pollution consultants in New Zealand including the Institute of Environmental Science and Research. It is also the preferred model for the Environmental Protection Agency of the State of Victoria in Australia as well as New South Wales and other states. Dr Brady is satisfied that the use of such models has:

"... *undergone many validation tests to ensure that they provide realistic predictions of what happens in reality.*"

Although Dr Brieseman the Medical Officer of Health took issue with the use of modelling programmes compared with actual monitoring it must be recorded that in cross-examination he agreed with the passages from Dr Brady's evidence previously referred to. Similar concessions were made by Mr Pullen the environmental consultant called to give evidence on behalf of the appellant. We are left in no doubt that modelling is a valuable tool widely relied upon by those concerned with the detection, control and mitigation of air pollution. No doubt there remains a need for physical monitoring of air pollution but regard

must be had to the inherent shortcomings in any monitoring process. These are dealt with in detail in Dr Brady's evidence and we do not propose to rehearse them. Suffice to say we are persuaded that monitoring on its own does not provide sufficient, reliable data upon which important decisions must be made relating to the cost and nature of pollution control standards which are necessary in the public interest. We are satisfied on the evidence before us that it is only by a combination of monitoring and modelling, that there can be any prospect of striking an even balance between the public interest on the one hand and the right of the industrial user to pursue its activities on the other.

Medical Evidence

The applicant called the evidence of Dr F Jenner. She is a highly qualified consultant in public health medicine. That is, the branch of medicine which involves the diagnosis and management of health problems as they affect groups of people in the community rather than individual patients. Dr Jenner has been involved in a significant number of studies of potentially polluting industries similar to the matters in issue in this case. She deals first with the World Health Organisation guidelines which in turn have been translated into the Ministry for the Environment ambient air quality guidelines previously referred to. These she describes as:

> "... *intended to provide background information and guidance to governments in making decisions to set standards for air quality control.*"

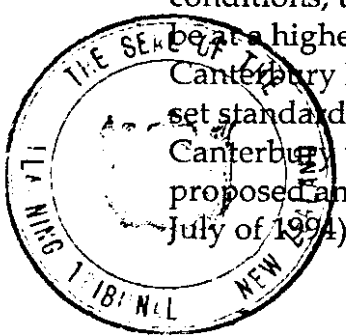
But cautions that before the standards are adopted:

> "*The guide-line values must be considered in the context of prevailing exposure levels and environmental, social, economic and cultural conditions.*"

In Dr Jenner's view the guidelines for Europe represent the best recent endeavours to bring together scientific judgement in relation to air pollutants and are quite properly relied upon in her view by the Minister for the Environment in New Zealand. In particular she considers comparison with Europe is valid because there is:

> "... *the similarity of overall temperate climates. The temperature inversion that arises in Christchurch during the winter is similar to situations that arise in some of the cities of Europe.*"

The guidelines have been drawn so as to take account of those groups in the community with special medical needs such as those with respiratory or heart conditions, the very young, the elderly and those generally who are considered to be at a higher risk from exposure to air pollutants. Dr Jenner notes that the Canterbury Regional Council in its draft regional policy statement has decided to set standards to maintain minimum ambient air quality in urban areas of Canterbury which are based upon the Ministry for the Environment's 1992 proposed ambient air quality guidelines (now actual guidelines and published in July of 1994). She notes that the guideline recommendations for sulphur dioxide,



hydrogen sulphide and particulate matter (dust) are all consistent with those established for Europe by the World Health Organisation. Indeed the Ministry for the Environment has tightened proposed standards in relation to dust emissions in the final document compared with what was proposed in the discussion paper. Dr Jenner then deals with each of the discharges relevant to this case as follows:

Fluoride

As we have noted the levels set in the guideline are set to prevent adverse effects to sensitive vegetation. They are not related to levels for human health effects because humans are in the doctor's view far less sensitive to fluorides than are plants. She notes that in keeping with the relative lack of importance of ambient fluoride to human health, the World Health Organisation European guideline document does not include a chapter for this element.

We think it is appropriate if we conclude at this point in relation to fluoride that on the evidence before us, and at the very low levels emanating from the applicant's factory, fluoride emission is not a live issue other than in the context of a suitably worded condition to ensure that in the future the existing low levels continue to be met.

Sulphur Dioxide

This can and does constitute a significant health hazard because of its combined adverse effects on the human respiratory system in particular for those people who suffer from asthma and related diseases. The witness deposes that in the World Health Organisation review it was concluded that the minimum level of exposure to sulphur dioxide to produce adverse health effects was a 24 hour mean (average) exposure of 250 micrograms per cubic metre. It thus sets its recommended air quality guideline at 125 micrograms per cubic metre. This level expressed over the various relevant periods has been adopted by the Minister for the Environment in New Zealand as follows:

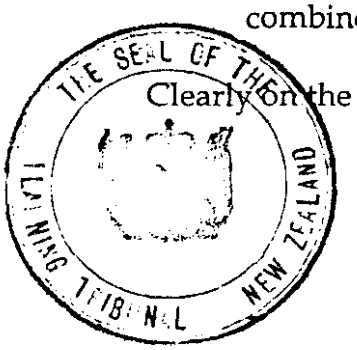
Short term effects:

500 micrograms per cubic metre - ten minute average not to be exceeded
350 micrograms per cubic metre - hourly average of ten minute means
125 micrograms per cubic metre - 24 hour average

Long term effects:

50 micrograms per cubic metre - annual average, taking into account combined exposure to sulphur dioxide and particulate matter

Clearly on the evidence the applicant meets the WHO guidelines.



Sulphur Trioxide

The applicant's factory emits sulphur trioxide and acid aerosols in addition to sulphur dioxide. All three substances may give rise to irritant effects on the lungs similar to those caused by sulphur dioxide in isolation. This association between oxides of sulphur and acid particles has been recognised in setting the guidelines for SO_2 because these substances usually arise together in a moist atmosphere whenever coal/oil burning takes place. Added to this is the fact that the recommended guideline for sulphur dioxide applies to and is ordinarily sufficient for those situations where there is a combination of exposure to sulphur dioxide, sulphur trioxide and acid aerosols.

It is clear from the evidence as set out above that the discharges of sulphur dioxide and sulphur trioxide and acid aerosols from the Ravensdown plant are well below amounts associated with health effects as outlined above. Dr Jenner says:

> *"I have examined the estimated geographical patterns of frequency of occurrence of maximum sulphur dioxide levels prepared by Mr Clark and these do not include any areas where peaks of exposure will be expected to reach exposures associated with adverse effects on respiratory health. Likewise for chronic effects from likely annual exposures."*

The doctor puts into context what on the face of it appears to be the very substantial emissions of sulphur dioxide produced by this factory 250 tonnes per day). She says:

> *"... 250 tonnes per day acid production and 102 kilograms per hour - 2448 kilograms per day sulphur dioxide emissions showed no exceedances of the one hour guideline of 350 micrograms per cubic metre proposed by the Ministry for the Environment. Further, predicted concentrations - in such a situation of maximal production - were mostly well below this guideline. Only five geographical positions showed a 99.9 percentile one hour ground level concentration above 175 micrograms per cubic metre, this being half the recommended guideline concentration. For the predictions of ten minute concentrations for which the relevant guideline is 500 micrograms per cubic metre there were likewise no exceedances and only four locations predicted to have a 99.9 percentile ground level concentration of 251 - 271 micrograms per cubic metre as a maximal scenario from the Ravensdown emissions."*

The doctor then goes on to make the point that these predictions have used:

> *"'worst case' dispersive conditions rather than average or usually expected conditions"*

She concludes in relation to these substances that:

> *"... this conservative modelling approach is that the predicted exposures overestimate actual average exposures, since not every day will be unfavourable to the dispersal of atmospheric pollution.*

> *Therefore use of the ambient air quality guideline standards for protection against short term respiratory effects (Eg asthma), namely 350 micrograms per cubic metre per hour, together with use of the guideline standards for protection against long term respiratory effects (Eg chronic bronchitis), namely 50 micrograms per cubic metre as a maximum annual average, are recommended as appropriate to the discharges of sulphur dioxide."*

In response to a question from the Tribunal the doctor confirmed that she recommended these levels in combination of all three of the types of sulphur based emission and confirmed that in her view the annual maximum figure required by the Canterbury Regional Council of 50 micrograms per cubic metre is *"very restrictive"*.

Dr Jenner then deals with hydrogen sulphide.

Hydrogen Sulphide

It is important to remember in the context of hydrogen sulphide that of itself at the sort of levels produced from this factory it has no adverse effect on health at all. That is because it does not involve the entry of chemicals into the body. The point about hydrogen sulphide is that it gives off a very disagreeable rotten egg-type smell which does have physical effects on some people including reactions such as nausea, retching and sweating. The doctor considers that this is likely because of stimulation of the nervous system and arises as a natural protective mechanism in nature against the eating of rotten foods. Nevertheless a persistent widespread bad smell in any community must be something with which the Regional Council and this Tribunal is concerned. Recognising that concern the Council proposed odour mitigation guidelines similar to those adopted by the World Health Organisation and the Ministry for the Environment. It proposes seven micrograms per cubic metre as an hourly average recognising that hydrogen sulphide smell can be detected at a threshold as low as 0.2 to 2.0 micrograms per cubic metre. At seven micrograms per cubic metre half hour averages there is likely to be substantial complaints of bad odour. However Dr Jenner notes that:

> *"These guidelines are set far below concentrations that can cause injury to humans."*

And notes that before injury or irritation can occur, for example to eyes, the concentration needs to be as high as 15 milligrams per cubic metre (or 15,000 micrograms per cubic metre) compared with the seven micrograms fixed by the WHO guidelines. We conclude from this that there will be some smell, but that it is not in any way a danger to health, and is not such as to comprise a significant detraction from the amenities.

Methyl Mercaptan, Dimethyl Sulphide and Dimethyl Disulphide

In addition to those pollutants the doctor also notes that there are three other significant polluting elements produced by the applicant factory. They are methyl mercaptan, dimethyl sulphide and dimethyl disulphide.

These are all reduced sulphur compounds each of which is odorous at low levels of exposure. They are similar to hydrogen sulphide in that none of these chemicals produce adverse health effects in humans at anything like the low levels emitted by this factory. It is only at levels of hundreds of thousands of micrograms (for example of methyl mercaptan) that there are signs of damage to the respiratory system. Methyl mercaptan is a normal product of mammalian metabolism arising when sulphur containing proteins are degraded.

In the doctor's view based upon research at other similar factories the concentrations of hydrogen sulphide under 100 micrograms per cubic metre, in combination with exposure to similar levels of the other reduced sulphur compounds referred to above are a problem only because of their odour effects and not because of any adverse health effects.

Dr Jenner then comments upon the concerns raised by submitters to the Regional Council hearing as follows.

Odours

In her view the unpleasant smells noted by people resident in the neighbourhood are likely to arise from reduced sulphur compounds from the plant. These smells are definitely not due to sulphur dioxide at the levels discharged and they do not arise from substances that could cause irritation of the throat and eyes unless there are contaminants in the air from another source.

Dust

The doctor concludes that the rock phosphate dust from Ravensdown will not be toxic to people who live nearby and will not be expected to give rise to chemical irritant effects.

Asthma

In the doctor's view the Ravensdown Fertiliser Works will operate in such a manner that discharges will lead to ambient concentrations at all times lower than the guidelines. Taking into account other likely sources described in Dr Brady's evidence adverse effects on human health will be avoided.

Local Susceptibility

Generally as to local susceptibility the doctor notes that difficulties can arise in mixed industrial neighbourhoods where people are exposed to chemicals in combination, for example, formaldehyde and isocyanates which reportedly emanate from other factories in the Hornby area. Both of these substances are well recognised causes of occupational asthma and that must be borne in mind in assessing the impact of the applicant's factory upon the health and convenience of the neighbours.

Various submitters described a variety of symptoms such as smarting eyes, sinusitis, migraines, skin rashes and upset stomachs. In the doctor's view none of the discharges from Ravensdown would account for these particular health experiences.

On the utility of health surveys such as that proposed by the Medical Officer of Health the doctor notes that:

> *"Any surveys of the people resident in the neighbourhood will only be useful if there is also documentation of their degree of exposure to substances in the ambient atmosphere. Otherwise reported symptoms will not be interpretable even with comparison groups who live elsewhere. It is especially difficult to seek patterns associated with industrial exposure for symptoms that commonly occur anyway Eg sinusitis, itchy eyes, asthma."*

Against that background the doctor makes the following recommendations:

1. That it is the discharge of sulphur oxides and related acids that are of concern to human health in this area. The reduced sulphur compounds also give rise to a social problem by virtue of the unpleasant odour but this is not of medical significance.

2. The World Health Organisation and Ministry for the Environment guidelines:

> *"... are recommended as the basis for the setting of guide-line standards to protect the health of the people in the Christchurch urban area".*

The doctor emphasises the fact that these guidelines already incorporate:

> *"... a protective factor sufficient to protect vulnerable members of the community, for example those with asthma and other respiratory diseases. In other words they take account of the likely sensitivity of the receiving environment".*

That is the evidence in support of the application.

Mr Venning for the respondent did have available a witness, Mr Millichamp who was ready to give evidence in support of the stance taken by the Regional Council in its decision and the conditions it imposed. Having considered the matter we directed that Mr Woodward open his case and call his evidence and having heard that we would then consider further whether it was necessary to hear from Mr Millichamp. In the result it was not. We therefore turned to the evidence for the appellant.

Evidence for the appellant

It is in assessing the weight to be given to this evidence that the confused history of the appellant's stance becomes of importance. The principal witness in this context is Dr M A Brieseman. In the course of his evidence Dr Brieseman was

asked by the Tribunal and by counsel whether or not it was ever his intention to suggest that this factory should be closed pending the commissioning of studies recommended by him. The doctor denied that was ever his intention in bringing this appeal. He says that his concerns relate solely to the question of the imposition of suitable conditions including the commissioning of health studies and the monitoring of the ambient air quality. We simply do not know what to make of this sharp division of opinion between what is contained in the papers filed on the appellant's behalf and what he now says is and was his stance throughout. Suffice to say it reinforces the impression that we have gained that there can be no question of denying this applicant the resource consent which it seeks. The only residual question which can arise on the evidence, as distinct from the papers is whether or not the conditions fixed by the Regional Council and as amended by agreement between the Regional Council and Mr Marquet for the applicant in the course of Mr Venning's closing submissions are appropriate and exhaustive. Given that conclusion much of what Dr Brieseman had to say ceases to have any great relevance in deciding that simple issue. Nevertheless in deference to the carefully prepared statement of evidence we think we should at least traverse it in order to make it clear that we have taken its contents into account.

The nub of Dr Brieseman's complaints are:

1. That the WHO and Ministry for the Environment's guidelines must not be taken as a maximum up to which industries such as the applicant are entitled to pollute. In particular he makes the valid point that it would be wrong to allow this applicant to, as it were use up all of the permitted level of pollution in any particular district. We agree with that proposition but there is no evidence before us that such is the case.

2. The doctor considers there is an urgent need for monitoring of the ambient atmospheric pollution levels in this district and that until the result of such a survey is available the sensible and prudent course is to restrict the grant of the resource consent in this case to a maximum of five years.

We have already dealt at some length with the difficulties of making decisions such as this based on the results of physical monitoring and have made our findings in respect of the more appropriate use of computer modelling for this purpose. As we understand it Dr Brieseman agrees with this conclusion. But in addition to those findings we find it surprising that the appellant should be placing such emphasis on this particular requirement as a means of persuading us that the grant of the consent should be restricted to a period of five years (described by Mr Marquet with some force as derisory). Medical Officers of Health have for many years, and certainly since the Health Act 1952 and the Clean Air Act 1972 had wide powers of intervening to protect public health threatened by pollution from industrial activities. On no occasion known to any of the appellant's witnesses has the Minister of Health or any Medical Officer of Health in the Christchurch area ever thought it necessary to carry out the sort of monitoring and population health surveys in this district now recommended by Dr Brieseman, presumably at the cost of the applicant. One can only speculate

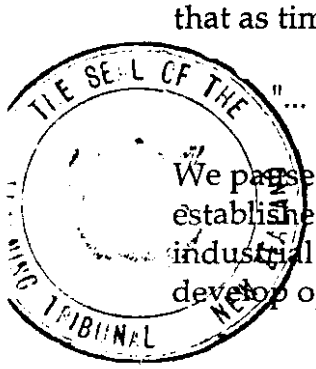
about why that was never done. Certainly it is no speculation to conclude that if any responsible Medical Officer of Health had received complaints which disclosed any serious health problems which might be attributed to the activities of the applicant, they would have been investigated as they arose.

It is also significant in this context that although the Clean Air Act continues to have some transitional significance, the powers formerly vested in the Medical Officer of Health to investigate and intervene in these matters have been taken away and given to bodies such as the Canterbury Regional Council. It now has responsibility to carry out the sort of public health enquiries regarded as of such importance by Dr Brieseman.

Finally it should be noted that the Resource Management Act confers upon the Canterbury Regional Council powers to review consents such as are sought in this case, and conditions attached to them. It seems that Dr Brieseman has no faith that the Regional Council will discharge those statutory obligations. That is an inevitable conclusion from his complaint that both the statutory powers of intervention by way of review and the review condition included in the resource consent granted to the applicant by the Regional Council are permissive only. It appears that the doctor would be content if we were to impose a condition that the Regional Council must review the conditions of this resource consent at some preordained regular interval. For reasons which will appear later when we come to analyse the review provisions of the legislation we do not consider that is an option open to the Tribunal and if it were it is certainly not one which we would choose to exercise in this case. What Dr Brieseman appears to have overlooked is that in imposing a condition which allows for annual reviews by the Council (as it has) that is a very much tighter supervision of the operation by the applicant of the resource consent than the proposal made by him that the term of the grant be for only five years.

We must view with some scepticism this request by the appellant involving, as it does, a further opportunity for the appellant to interfere directly in this matter after the expiration of five years, something Parliament expressly legislated against by vesting those powers in the Regional Council.

We now deal with the evidence of Mr D R Pullen. He is the officer who granted the extant Clean Air Act licence. He is therefore directly responsible for setting the levels for emission standards contained in that document and which, as we have previously demonstrated, will either be met by the Regional Council conditions or bettered. Mr Pullen traverses the history of the establishment of the plant and points out that at the time it was built there were very few houses in the area but that as time has progressed:



> "... *the area has developed into a major suburb of Christchurch.*"

We pause to observe that this itself is of some significance. The applicant has been established on this site since 1922. At that time this was a largely rural and heavy industrial area. Successive local authorities have allowed a residential area to develop opposite the applicant's factory and other similar industries in the area.

That fact, coupled with the complete absence of any studies such as those now proposed by the appellant's witnesses, militates against the notion that the applicant is an industrial polluter causing significant health problems to the residents of this area.

Against that background Mr Pullen considers that although since the 1970s no attempts have been made to gather air quality information in the Hornby area the acquisition of this information is now urgently required. Mr Pullen's concern is expressed in this way:

> *"At the present level of control there will be effects in the adjoining area - I do not think that this is disputed by any of the parties present. The question to be addressed at present relates to the acceptability of these effects, not all of which may at present be fully documented, or the need to impose more stringent controls on the fertiliser works and other industrial emissions in the area."*

Mr Pullen acknowledges that the conditions imposed by the Canterbury Regional Council appear to relate to the *"best practicable option"* which he agrees is something contemplated by s.108 of the Resource Management Act 1991. He says that while these conditions have reference to the nature of the discharge they do not in his view appear to have considered matters relating to the receiving environment. His concern therefore is similar to that of Dr Brieseman. Put simply he contends that there is not enough known about the state of the receiving environment in order to sensibly fix maximum emission standards. He regards this work as imperative and says:

> *"The collection of this information and the measurement activity is a very large and expensive task which clearly forms part of the 'Air quality management plan' for the Hornby area and greater Christchurch."*

Although that may be a laudable aim it does not with respect assist us in deciding whether or not this application meets the relevant statutory criteria imposed by the Resource Management Act. These are counsels of perfection. We are required to deal with circumstances as they are - the evidence with which we are presented - measured against the relevant statutory criteria.

The other witness for the appellant was Mr Bruce Taylor. He gave evidence about what he understands to be the purpose of the Ministry for the Environment's ambient air quality guidelines. He says that:

> *"The main purpose of the draft guidelines was to meet a demand for guidance on air quality and the control of adverse effects from air discharges. The guidelines were to address the new 'control of effects' approach of the Resource Management Act, as distinct from 'minimising emissions using the best practical means' approach of the Clean Air Act. They were intended to assist regional councils in their new air quality management functions under the Resource Management Act."*

Mr Taylor continues that the guidelines were:

> "... *intended to be a set of baseline values which represent a minimum level of air quality required for the protection of health and the environment in any location.*"

He acknowledges that Regional Councils may incorporate more stringent values in their regional plans. The thrust of Mr Taylor's evidence is:

> "... *it is not appropriate to use the guidelines as a set of maximum permissible concentrations of pollutants in air for individual sources*"

and he gives five reasons for that. To do so he says would be:

> "... *contrary to the purpose and principles of the Resource Management Act and to the duties in that Act to avoid, remedy or mitigate adverse effects.*"

As a general observation there is no doubt some force in that opinion. However in our view it overlooks the practical problem which faces bodies such as Regional Councils and this Tribunal in deciding where to strike the balance between the requirements of public health and the need to allow legitimate industrial concerns to continue in business given that it is now finally clear that the appellant does not wish to close down the applicant. It would be cynical and probably unlawful to achieve that object by the imposition of conditions which the applicant simply cannot meet in any practical way. Judge Skelton was alive to this concern in drawing the possibility to Mr Woodward's attention at the first pre-trial conference resulting as it did in the plain assertion by the appellant that it did in fact wish to persuade the Tribunal that no resource consent relating to the noxious emissions should be granted.

The view also overlooks the plain fact that the WHO and Ministry for the Environment guidelines have built into them a recognition of the needs of special interest groups and in addition provide for a safety factor by reducing the permitted minimum levels to one-half of the level at which there is no known adverse health effects. In discharging difficult tasks such as this Regional Councils must of course act responsibly. In doing that they are in our view entitled to have close regard to such guidelines while of course recognising that the particular circumstances of any case might suggest that the guidelines could be reduced or possibly exceeded.

Thus for example were this factory to be established in an area in which meteorological evidence has shown a very high and prompt dispersion rate it might be possible for the guidelines to be exceeded. On the other hand, if the available evidence shows that the dispersion rate is for climatic reasons significantly worse than in other areas, then it might be necessary to impose even more stringent controls. But at the end of the day if these emanations from the WHO and the Ministry for the Environment are to be of any practical utility to Regional Councils they must serve the purpose by which they are described, that is, as guidelines for the making of decisions. That is how the Regional Council viewed them in this case and we think it was right to do so. We adopt a similar

approach and we do not share the concerns expressed by Mr Taylor, Mr Pullen and Dr Brieseman in this matter.

That then is the evidence for the applicant and the appellant. It is now necessary for us to consider the relevant statutory criteria. We begin by dealing with some preliminary matters.

1. **Planning Instruments**

(a) Christchurch City Council (Paparua County) Transitional District Plan

The land in question is zoned in the above plan as Industrial 3 except for a 30 metre strip fronting the roadway which is zoned Industrial 1. The applicant's use is discretionary under that plan. Reference is made to page 145 section 5(3)1. Fertiliser and manure manufacture is included in Appendix A, that is, Industrial Processes Requiring Segregation Because of Noxious or Dangerous Elements. The plant also has existing use rights by virtue of its historic occupation of the site.

(b) The regional policy statements

There is no operative regional policy statement. The Canterbury Regional Council has notified its regional policy statement on 1 October 1993 and cross-submissions were called for by public notice on Saturday 30 July 1994. Section 13 of the statement is devoted to air. In paragraph 13.1 the following appears:

> *"Winter air quality in all urban areas of the region is affected to varying degrees by smoke from domestic fires and motor vehicle emissions. Industrial emissions are not a major source of ambient quality problems in Canterbury ...*
>
> *Discharges from industrial or trade premises are not allowed unless permitted by a rule in a plan or by a discharge permit."*

Under the heading "Issue Resolution" at paragraph 13.2 there is stated the following:

> *"Issue 1*
>
> *Existing and potential health and nuisance effects of low ambient air quality in the urban and settled areas of Canterbury particularly in and around Timaru and Christchurch."*

There is then objective 1 and a number of policies. The objective is to:

> *"Maintain or improve ambient air quality so that it is not a danger to people's health and safety, and reduce the nuisance effects of low ambient air quality."*

There are then three policies, an explanation and reason which concludes by noting:

> *"The Ministry for the Environment's 1992 proposed ambient air quality guidelines are based primarily on requirements for human health protection. By adopting these as a base level the Council is safeguarding the life supporting capacity of air and avoiding some of the worse effects of air pollution consistent with the purpose of the Act."*

Policy 6 is relevant. It provides as follows:

> *"Applicants for consents to discharge contaminants into air should demonstrate that the proposed discharge will use or incorporate the best practicable option having regard to alternative disposal methods, the nature of the discharge and the existing ambient air quality."*

Mr Marquet submits that having regard to the status of this document and its passage through the planning process it is not to be accorded any great legislative effect for the purposes of this application. We respectfully disagree. Although the Council is yet to consider the cross-submissions and make decisions upon them, and of course there is the possibility of appeals to this Tribunal, we make the general observation that in the matter of something as fundamental as air quality in the region, some provision will need to be made in the plan to deal with the problem of air pollution.

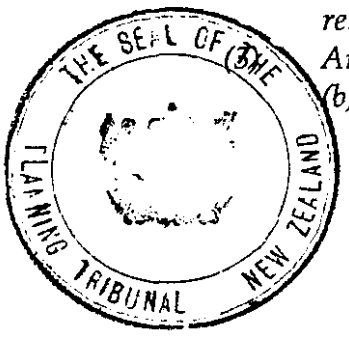
Indeed it is plain to us from the applicant's evidence that it has in fact to date used its best endeavours to meet the *"best practicable option test"* in that it has on a number of occasions installed, upgraded and changed its anti-pollution techniques in the light of advances in scientific knowledge and technical expertise. We therefore do have regard to the provisions of the regional policy statement concerning air pollution.

The Resource Management Act

As we have already noted this appeal must be dealt with in terms of the legislation as it stood before the 1993 amendment (see s.230(5) of the 1993 amending Act).

Mr Marquet submits and we agree that this application is to be dealt with in accordance with s.88(3)(b) of the Act. It provides that:

> *"(1) Any person may in the manner set out in subsection (4), apply to the relevant local authority for a resource consent.*
> *An application may be made for a resource consent -*
> *(b) where there is no plan or proposed plan, for an activity for which consent is required under Part III."*



This is such an application by virtue of the provisions of s.15. It provides:

> "*(1) No person may discharge any -*
> *(c) Contaminant from any industrial or trade premises into air unless the discharge is expressly allowed by a rule in a regional plan and in any relevant proposed regional plan, a resource consent or regulations.*"

It is common ground that the chemicals which the applicant discharges into the atmosphere in the vicinity of its factory are contaminants within the meaning of that term as defined in s.2 of the Act, that is:

> "*Substance (including gases, liquids, solids and micro-organisms) or energy (excluding noise) or heat, that either by itself or in combination with the same, similar, or other substances, energy, or heat -*
> "*(b) When discharged onto or into land or into air, changes or is likely to change the physical, chemical, or biological condition of the land or air onto or into which it is discharged:*"

Section 104 specifies the matters which we are required to take into account in considering an application for a resource consent as that term is defined in s.87. Relevant to the facts of this case s.104 provides that:

> "*(1) Subject to subs.(2) when considering an application for a resource consent the consent authority shall have regard to any actual and potential effects of allowing the activity.*"

Subsection (3) provides:

> "3. *Where an application is for a discharge permit ... to do something that would otherwise contravene section 15 (relating to discharge of contaminants) the consent authority shall, in having regard to the actual and potential effects of allowing the activity have regard to -*
> *(a) the nature of the discharge and the sensitivity of the proposed receiving environment to adverse effects and the applicant's reasons for making the proposed choice; and*
> *(b) Any possible alternative method of discharge including discharge into any other receiving environment.*"
>
> "4. *Without limiting subsection (1), when considering an application for a resource consent, the consent authority shall have regard to -*
> *(a) Any relevant rules of a plan or proposed plan; and*
> *(b) Any relevant policies of objectives of a plan or proposed plan...*"
>
> (c), (d), (e) and (f) are not relevant, but (g) Part II; and (h) "*Any relevant regulations*" are."

In having regard to the combined effects of those sections we find that the evidence establishes that at certain levels the contaminants discharged by the applicant can constitute a danger to the health of the inhabitants of the area in the

vicinity of the applicant's factory (we can put it no more accurately than that on the evidence.) There is no evidence of any particular sensitivity of the proposed receiving environment to the discharges proposed by the applicant and at the levels at which they are proposed.

The applicant's reasons for discharging the contaminants by way of chimneys into the atmosphere are that there is simply no other practicable or known technological way of dealing with the residual contaminants that arise from the applicant's manufacturing processes which in turn means that there are no other possible alternative methods which are open to consideration by us.

Logically we now turn to s.105. Mr Marquet draws attention to the fact that the Tribunal has power pursuant to s.105(1)(b), in granting an application such as this, to:

> "*... include any conditions in the consent*".

Section 108(i)(e) is relevant insofar as it provides that:

> "*(1) A resource consent may include any one or more of the following conditions:*
>
> *(e) ... requiring the holder [of any discharge permit] to adopt the best practicable option to prevent or minimise any actual or likely adverse effect on the environment of the discharge and other discharges (if any) made by the person from the same site or source:*"

Subsection 2 makes it clear that the imposition of a condition such as referred to in s.108(1)(e) does not limit the conditions upon which the resource consent may be granted. Subsection (8) provides:

> "*Before deciding to grant a discharge permit ... to do something that would otherwise contravene section 15 (relating to the discharge of contaminants) subject to a condition described in subsection (1)(e), the consent authority shall be satisfied that, in the particular circumstances and having regard to*
> *(a) The nature of the discharge and the receiving environment; and*
> *(b) Other alternatives, including any condition requiring the observance of minimum standards of quality of the receiving environment*
> *The inclusion of that condition is the most efficient and effective means of preventing or minimising any actual or likely adverse effect on the environment.*"

Those provisions of s.108 are in our view significant in that the legislature clearly contemplates that it is the best practicable option to prevent or minimise actual or likely adverse effects on the environment which is the relevant test, coupled with a consideration of the nature of the discharge and the receiving environment and any conditions requiring the observance of minimum standards of quality of the receiving environment.

Practical effect is given to those requirements by ensuring that the contaminants discharged by the applicant are at a level which on the best scientific and technical

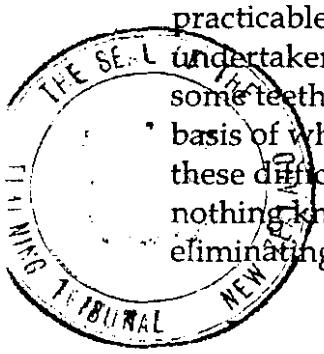
information available constitute the best practicable option of minimising adverse effects on the environment. The key word in our view is "*practicable*". As we have said it would be wrong to grant a discharge permit on conditions which afford the holder no practical means of compliance.

We are satisfied on the evidence for the applicant that the measures which it has taken enable it to meet air quality standards which are well within the guidelines proposed by WHO and the Ministry for the Environment. Those standards accord with or are better than those previously required by the regional air pollution control officer for the purposes of the Clean Air Act 1972. There is no evidence that at those levels the discharges will cause any known health problems to inhabitants of the area and therefore it can properly be said that if such standards are imposed by way of conditions as contemplated by the Regional Council they would have the effect of being the best practicable option of either preventing or at worst minimising the actual or likely adverse effects of the discharge of the contaminants on the receiving environment.

In coming to this view we do not overlook the fact that the term environment is widely defined in s.2 of the Act to include:

> "*(a) Ecosystems and their constituent parts, including people and communities; and*
>
> *(b) All natural and physical resources; and*
>
> *(c) Amenity values; and*
>
> *(d) The social, economic, aesthetic and cultural conditions which affect the matters stated in paragraphs (a) to (c) of this definition or which are affected by those matters:*"

Given that extended definition it is clearly more than just the receiving air which must be considered in the context of s.108. It is also relevant to the facts of this case that it is amenity values and the social, economic, aesthetic and cultural conditions of the people of the surrounding area which must be borne in mind. That is particularly relevant in the case of odour from the factory although it is not a danger to health in any way. Clearly it is capable of adversely affecting the amenity values of the district and the social, economic, aesthetic and cultural activities which take place there. Our duty is to ensure that suitable conditions are imposed which require the applicant to adopt the best practicable option for preventing or minimising the dissemination of that odour into the surrounding community. We are satisfied on the evidence that it has done so, adopting the best practicable option by the installation of a soil filter, something voluntarily undertaken since the Regional Council hearing, while noting that there have been some teething troubles with its implementation, the evidence satisfies us, on the basis of what has taken place at the applicant's Ravensdown plant in Dunedin that these difficulties can be and will be overcome at its Hornby plant. Although nothing known to science and technology at present is capable of completely eliminating the odours from this factory we are satisfied that the applicant has



done all that is practicable at the present time to minimise the adverse effects on the environment of the odour discharge.

Insofar as adverse health effects are concerned we have dealt with these at length earlier. We simply reiterate in the context of considering the provisions of s.108 and the appropriate conditions which must be attached to the grant of this resource consent that we can find no evidence that discharges at the level which will be permitted will result in any adverse effects to the health of the inhabitants of the district. Neither do we have any evidence upon which we could find that the discharges of hydrogen sulphide, acid mist and sulphur dioxide at the levels which will be permitted will adversely effect the amenity value of the inhabitants or their social, economic, aesthetic and cultural conditions.

Mr Woodward draws our attention to s.5 of the Act and in particular s.5(1) recording that:

> "*The purpose of this Act is to promote the sustainable management of natural and physical resources.*"

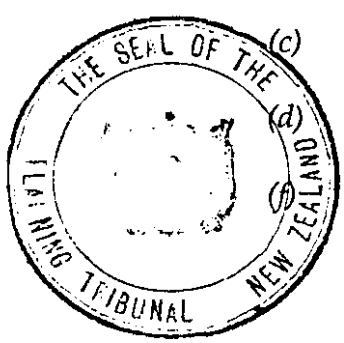
Sustainable management means:

> "(2) *... managing the use, development, and protection of natural and physical resources in a way, or at a rate, which enables people in communities to provide for their social, economic, and cultural well-being and for their health and safety while*
>
> *(b) Safeguarding the life-supporting capacity of air, water, soil, and ecosystems; and*
>
> *(c) Avoiding, remedying or mitigating any adverse effects of activities on the environment.*"

For all the reasons we have given earlier we are satisfied that with suitable conditions the grant of this discharge permit will not be contrary to any of those purposes of the Act and indeed in terms of the economic well-being of the Hornby community in particular and the wider farming community in general we must have regard to the fact that this applicant is a substantial contributor to the well-being of those communities. That is a matter to which regard must be had in giving effect to the purpose of the Act as prescribed in s.5.

While dealing with Part II of the Act we also notice that s.7 requires that we have particular regard to:

> "*(b) The efficient use and development of natural and physical resources:*
>
> *(c) The maintenance and enhancement of amenity values:*
>
> *(d) Intrinsic values of ecosystems:*
>
> *(f) Maintenance and enhancement of the quality of the environment:*"



Although none of those are expressed to be matters of national importance, they are clearly matters to which we must have regard and as will be clear from the foregoing we do so.

Mr Woodward places some emphasis on the case of Te Aroha Air Quality Protection Appeal Group v Waikato Regional Council (No. 2) (2 NZRMA, 575). That was a case in which the applicants sought to establish a beef by-products rendering plant near to an existing export beef plant in Te Aroha. The plant was situated in a Rural A1 zone and was a non-complying activity. The neighbourhood of the site was relatively closely occupied for a rural area and included a race-course, a motor camp and a cemetery. The plant premises incorporated air control systems to capture emissions of odour and a biological filter to absorb odorous compounds. The application was for a land use consent and permits to discharge contaminants into the air from the bio filter and a boiler flue. The applications were granted by the Waikato Regional Council and the Air Quality Protection Group appealed. The decisive factor in the appeal was the discharge permit allowing for the emission of odours. The appeal was allowed on the basis that odour from the rendering process was offensive and could be nauseating and that occupiers of property and business people in the Rural A1 and Rural B zones neighbouring the site were entitled at all times and without qualification to be free from having to experience that odour. In coming to that view the Tribunal adverted to the provisions of s.3 of the Resource Management Act and in particular an effect which might be of low probability but has a high potential impact. Mr Woodward submits that even in the best designed and best managed plant an accident could occur. The plant could fail through breakdown, human error or an unexpected combination of events and that therefore there could be an event of low probability but high potential impact which "*could rule out the grant of a discharge permit*".

That is with respect too simplistic an approach to a complex problem. It cannot, in our view, be seriously argued that because there is some prospect that inhabitants of the area surrounding the applicant's plant might at some time be subjected to unacceptable levels of odour resulting from some possible breakdown in the plant's control systems then by virtue of that circumstance alone an application such as this for a discharge permit must of necessity be rejected. To approach the matter in that way in our view ignores the provisions of s.108 which expressly enjoins the consent authority to consider conditions which require a holder to adopt the best practicable option to prevent or minimise any actual or likely adverse effects on the environment of the discharge. The legislature clearly contemplates that there must be circumstances where the best practicable option will only minimise the adverse effects on the environment. It will not obviate them entirely. In our view the proper approach is for the consent authority to consider all of the relevant evidence and relevant statutory criteria and to decide whether or not to grant the application.

It must also be recalled that the Te Aroha case was concerned with an application for land use consent to establish a non-complying activity in a Rural zone. It is against that background that the Tribunal expresses the view that it did

concerning the matter of odour emission. At page 582 the Tribunal said:

> *"For both applications the decisive issue is odour emission. The odour from the rendering process is offensive and can be nauseating. Occupiers of properties in the Rural A1 and Rural B zones in the vicinity of the site are entitled to be free from having to experience that odour. Proprietors of businesses on properties in the vicinity of the site are entitled to be able to conduct those businesses without their patrons or customers being deterred by experiencing rendering plant odour.*
>
> *Occupiers, business people and their patrons should be free of rendering plant odour at all times without condition or qualification. It would not be sufficient for the proprietor of a rendering plant to demonstrate that emission of rendering plant odour which reached adjacent properties was the result of an unforeseen or random accident or malfunction. Defences available under s.342 should not be a sufficient response where a rendering plant has been established out of zone on land where the activity is not a permitted activity."*

In this case the applicant has existing use rights and has long been established on land which is suitably zoned subject only to the additional qualifications contained in Schedule A of the transitional district plan. In those circumstances persons living in or coming to the areas adjacent to the industrial zoning cannot expect an environment free from odour from the plant at all times without condition or qualification. To the contrary, in the circumstances which exist in this case the Resource Management Act requires that the consent authority impose such conditions as will result in the most efficient and effective means of preventing or minimising any actual or likely adverse effect on the environment. If, on the known state of science and technology odour cannot be prevented then the consent authority's duty is to minimise it by the imposition of appropriate conditions consonant with the provisions of Part II of the Act and ss.104, 105 and 108. It follows from what we have said that we do not agree with Mr Woodward's submission in the circumstances of this case.

Continuing review of conditions

In the way in which the hearing resolved itself this became the central issue in the mind of the appellant. In essence what Dr Brieseman is concerned about is that although the Resource Management Act allows for a consent authority to impose a condition that the terms of the grant of any resource consent may be reviewed from time to time, he apparently does not have any faith in the integrity of that process. It is for that reason that he has suggested that the term of this resource consent be limited to five years so that the applicant will have to apply afresh after that time and the whole matter can be looked at again, a process in which he will then be able to play a part which is otherwise denied him by the provisions of the Resource Management Act. Dr Brieseman is unimpressed by the argument put forward by the applicant that the conditions attached to the discharge permit in fact give the Regional Council much more effective powers to review on a more regular basis than was his proposed suggestion. As this submission is made by a responsible public officer we must consider it in the light of the provisions of the Resource Management Act.

Beginning at s.128 the Act makes provision for a system of review of previously granted consents. Section 128 describes the circumstances in which a consent can be reviewed. Section 129 sets out the procedure to be followed. Section 130 requires that a review be the subject of a hearing by a hearing committee set up under the nominated sections of the Act. Section 131 deals with matters to be considered in any such review. Section 132 relates to what a consent authority may do in relation to conditions of a resource consent which have been the subject of the review.

It is immediately apparent from that brief summary of the relevant provisions that Parliament recognised that from time to time it will be necessary for a consent authority to revisit a previously granted application and to review any conditions attached to it. Mr Venning in his submissions described this as "*a living process*". We think that to be a very apt description of Parliament's intention in enacting the review provisions.

It is important to keep in mind that a review is not an enforcement proceeding. See New Zealand Rail Ltd v Marlborough District Council [1994] NZRMA 70. At p 91 Greig J in agreeing with the views expressed by Judge Skelton said:

> "*I think care has to be taken to ensure that what is set down by this condition is not just another policing provision to ensure compliance with the conditions and the terms of the consent granted. Its for the purposes of reconsidering the conditions of the consent to deal with matters which arise thereafter in the compliance exercise of the consent activity. It is not, I think, in place of other provisions in the Act for the control and enforcement of the conditions of the consent.*"

It is in our view a mechanism by which a consent authority can ensure that conditions imposed on a resource consent do not become outdated, irrelevant or inadequate. In exercising that statutory function it is, we think, important to keep in mind that it is not a mechanism by which a resource consent can be impugned. We think it clear that in reviewing the efficacy of any particular conditions, the consent authority is not entitled to amend those conditions or impose new conditions which has the effect of preventing the activity for which the resource consent was granted. Those are matters which the consent authority must take into account in deciding whether or not to grant the consent in the first place.

To allow for such a possibility would introduce an entirely unacceptable degree of uncertainty into the resource management process which cannot have been contemplated by Parliament.

With that important caveat we are satisfied that the review provisions are intended to meet the concerns expressed by the Medical Officer of Health in this case. That is, that if developments in science or technology are such that it is reasonably practicable to require an industry such as the applicant in this case to take some further, other or better means of complying with the resource consent from that previously specified, then it may do so by the review process. The holder of the consent of course, has its full rights of objection and appeal.

It should also be noted that paragraphs (a) and (b) of s.128 appear to us to be designed to achieve quite different ends. Paragraph (a) envisages the case where the consent authority imposes conditions on the grant of a consent to meet the circumstances set out in subparagraphs (i), (ii) and (iii) of that subsection. Subsection (b) we think must be read disjunctively. It relates, among other things, to "*discharge permits*" in the context inter alia of "*air quality*" and allows the Regional Council to form an opinion that "*it is appropriate to review the conditions of the permit in order to enable ... standards set by the rule to be met*".

Clearly subparagraph (b) can only apply where the Regional Council has first brought down a rule governing (relevant to this case) minimum standards of air quality and notwithstanding the imposition of conditions of an earlier grant of resource consent, forms the opinion that those conditions no longer meet the terms of the rule subsequently brought into being.

In those circumstances Mr Venning and Mr Marquet (who adopted Mr Venning's submissions in their entirety) submit, and we agree that it is open to the Regional Council to set in motion the review procedure provided for in ss.129 to 133. Construing the review provisions in this way we are satisfied that they are more than adequate to meet the concerns expressed by the Medical Officer of Health in this appeal. Indeed they provide a more rigorous and effective mechanism for ensuring that the applicant company does not adversely affect the air quality of the area surrounding its factory and provides a more efficacious procedure than the somewhat blunt instrument suggested by the Medical Officer of Health, that the term of this resource consent be limited to five years to enable these matters to be looked at afresh after that time. We can see no grounds for the appellant's pessimism concerning the integrity of this process. We must, and do assume that the Regional Council will do its duty according to law in enforcing and monitoring these discharges.

Conclusions

We are therefore satisfied, as we intimated to the parties at the conclusion of the hearing, that the Regional Council was right to grant the resource consent applied for and upon the conditions proposed by it with the amendments set out in counsel's closing submissions, all of which are agreed to by counsel for the applicant and with the exception of the review procedure and the duration of the permit, not criticised by the appellant. Those conditions form an appendix to this decision.

The appeal is therefore dismissed and the resource consent applied for is granted upon the conditions set out in Appendix A.

Costs

At the conclusion of the hearing counsel for the applicants contended that if the appeal was to be dismissed then in all the circumstances the applicant was entitled to seek costs against the appellant. Mr Venning for the Canterbury Regional

Council took instructions on the matter and informed the Tribunal that somewhat unusually his client had directed that he make a similar application. We adjourned the matter for Mr Woodward to take instructions and then heard submissions from counsel.

Mr Marquet submits that costs should be awarded on the conventional basis that they follow the event. In making that submission Mr Marquet is conscious that in resource management applications such as this there is no such general rule particularly where the appellant is a public officer discharging what may properly be described as a duty to protect the public interest.

Notwithstanding that obvious difficulty Mr Marquet submitted that the Medical Officer of Health had from the outset adopted an ambiguous position. We have traversed in some detail the chronology of events concerning that matter and we agree. It is in our view clear beyond any doubt from the text of the minutes recorded by Judge Skelton, and not controverted by any counsel that until Mr Marquet's opening of the applicant's case in this appeal both the applicant and the Canterbury Regional Council were under the impression that they were facing an appeal in which the appellant would seek to persuade the Tribunal that no resource management consent in the form of a discharge permit should be granted to this applicant. That of course is a very serious matter for an industry such as the applicant with an investment of something in excess of $50m at the Hornby site.

It is also a matter of significant public concern to the Canterbury Regional Council. As we understand it, this is the first of the major discharge to air permit cases to come before it since the passing of the Resource Management Act. It is obviously closely concerned in the outcome and in the Tribunal's view of the proper construction of the relevant statutory provisions. To that end Mr Venning had briefed and had available, detailed evidence to assist the Tribunal.

Against that background both Mr Marquet and Mr Venning submit that it is as a direct consequence of the appellant's ambivalent stance that their respective clients have been put to the expenses detailed in the memoranda filed on behalf of their clients.

Mr. Woodward was given the opportunity of commenting by way of written memorandum on the submissions of counsel, and their memoranda setting out the amount of costs and disbursements incurred. He submits correctly that there is no general practice in this Tribunal of awarding costs to a successful party, against another party and that his client is a public officer carrying out a statutory duty important to the general public interest. It is also true to say, as counsel does that the objection was not made with any ulterior motive or frivolously.

The Tribunal's power to award costs is set out in s.285 of the Act:

> "285. *Awarding costs-*
> *(1) The Planning Tribunal may order any person appearing before it to pay-*
> *(a) To any other person appearing before it, any costs and expenses (including witness expenses) incurred by that other person:*
> *(b) To the Crown, the Tribunal's costs and expenses according to the scale of costs set out in regulations.*
> *(2) If any person fails to proceed with a hearing at the time arranged for it by the Planning Tribunal, or to give adequate notice of abandonment of proceedings, the Planning Tribunal may order the person in default to pay-*
> *(a) To the Crown; or*
> *(b) To another party-*
> *any of the costs and expenses incurred by the Crown or the other party."*

Principles governing the award of costs

Because of the amount of costs involved in this case and the circumstances in which they are claimed, we think it appropriate to summarise the relevant principles by which we propose to be guided. We do so as follows:

1. The practice note of this Tribunal dated 29 July 1992 makes it clear that in the matter of resource consent applications the Tribunal will not normally award costs against a public body who's decision is the subject of an appeal. In this case it is the Director General of Health who appealed from a decision of the Regional Council, but we nevertheless think it appropriate to keep in mind that we are considering an award of costs against a public official carrying out public duties.

2. It has never been the norm in proceedings under either the Town and Country Planning Act or the Resource Management Act for costs to follow the event. Westway Contractors Limited v Christchurch City Council (C 97/93).

3. There are cases in which it is appropriate to award costs against public bodies and guidance as to the circumstances may be had from cases such as Darrick v Northland Regional Council (1993) 2 NZRMA 637 and Taylor v Manukau City Council (C 119/92).

4. Guidance is also to be had from the decision of the High Court in DFC New Zealand Limited v Bielby [1991] 1 NZLR 587, where the Court set out five relevant circumstances to be taken into account in making significant awards of costs. They may be summarised as:

   (a) Where arguments are advanced which are without substance.

   (b) Where the process of the Court is abused.

(c) Where the case is poorly pleaded or presented, including conducting a case in such a manner as to unnecessarily lengthen the hearing.

(d) Where it becomes apparent that a party has failed to explore the possibility of settlement where compromise could have been reasonably expected.

(e) Where a party takes a technical or unmeritorious point of defence.

See also the decision of Hammond J in Hamilton City Council v Waikato Electricity Authority Hamilton CP21/93, where His Honour elaborated further on these categories, but did not differ from them.

To that we would add that it is important that litigants before this Tribunal exercise a degree of discipline over their case. That is the purpose of the pre trial procedures such as were undertaken in this case. They were intended to narrow the issues, and ensure that all parties knew in advance the case they had to prepare, or meet. It is simply not good enough for a party to lead all others to the litigation to believe that an objection will be fought in one way, and then materially alter that stance at the opening of the case without any prior notice to the other parties. We have expressed on a number of occasions how expensive litigation under the RMA is becoming. This case illustrates the point. It behoves all parties to ensure that only the matters truly in issue are litigated. A party who does not exercise that minimal degree of discipline can hardly complain if the are called upon to contribute to costs thereby thrown away by other parties, particularly when offered the opportunity to participate fully in a number of pre-trial conferences to avoid that outcome.

It is clear beyond any doubt that if the appellant had made it plain from the outset that he was only challenging one or other of the conditions imposed by the Canterbury Regional Council the course of these proceedings including the hearing would have been quite different and significantly less expensive to the parties. It did not and the parties were therefore obliged to prepare for a fully defended hearing in which the whole question of the resource consent was in issue.

In those circumstances we are satisfied that an award of costs and witness expenses against the appellant relevant to the amount claimed is appropriate.

The amount claimed by the applicant is $56,808.93 made up of legal costs and disbursements $24,565.05 and witness expenses $32,243.88. We have no doubt that some of these costs would have been incurred in any event and we must make some apportionment for that fact. Neither do we think this is a case for full reimbursement of solicitor client costs.

The costs incurred by the Canterbury Regional Council are $14,213.16. Made up of legal costs and disbursements $9,597.29 and witness expenses $4,615.87. Having regard to the contents of the notice on appeal, and the clear intimation by counsel

that all matters were in issue we consider that the witness expenses were properly incurred. We take a similar view about the question of apportionment as we did in the case of the applicant.

Balancing those matters as best we can, we order that the appellant pay to the respondent Canterbury Regional Council the sum of $8,000 by way of costs, disbursements and witness expenses incidental to this appeal and we order that the appellant pay to the Applicant, Ravensdown Fertiliser Co-operative Limited, the sum of $25,000 as a contribution to its costs, disbursements and witnesses expenses incidental to the appeal.

DATED at WELLINGTON this 15th day of November 1994

THE SEAL OF THE PLANNING TRIBUNAL NEW ZEALAND

A A P Willy
Planning Judge

rvnsdown.doc (mo)

PROPOSED CONDITIONS:

SULPHURIC ACID PLANT STACK

(i) The discharge of sulphur compounds should not exceed 1.5% of the sulphur burned.

(ii) The concentration of sulphur dioxide shall not exceed 0.13% at any plant load.

(iii) For a period of up to one hour after sulphur ignition during a cold start, the concentration of sulphur dioxide shall not exceed 0.5% by volume.

(iv) For a period of up to one hour after sulphur ignition during a cold start, the emission of acid mist and sulphur trioxide shall not exceed 150 mg/m^3 expressed as sulphur trioxide (SO_3) corrected to 0°C, 1 atmospheric pressure, dry gas basis.

(v) The plume from the acid plant stack shall be clear within two hours from sulphur ignition during a cold start.

(vi) A minimum of at least five full working days notice shall be given to the Group Manager, Regulations and Consents, Canterbury Regional Council of a proposed cold start. Should the cold start not proceed as proposed then variation of the above notice requirement for recommencement of the cold start shall be at the discretion of the Group Manager, Regulations and Consents.

(vii) The concentration of dust in the discharges from the mill vents shall not exceed 250 mg/m^3 corrected to 0°C, 1 atmosphere pressure and a dry gas basis, averaged over one hour.

SUPERPHOSPHATE PLANT STACK

(viii) The concentration of fluoride in the discharge from the den scrubber stack shall not exceed 70 mg/m^3, expressed as F at 0°C 1 atmosphere pressure, dry gas basis.

(ix) The total fluoride emission from the den scrubber stack and the granulation plant hygiene vents shall not exceed 2kg/hr.

(x) The total emission of hydrogen sulphide in the discharge from the den scrubber stack shall not exceed 70 mg/m^3 0°C expressed as H_2S, 1 atmosphere pressure, dry gas basis.

SULPHUR MELTING BATHS

(xi) The sulphur melting baths shall be enclosed and the gases collected shall be discharged to a biofilter. The biofilter shall be designed, installed and maintained to ensure that no sulphur odours are identifiable from the filter bed.

REVIEW

(xii) The Canterbury Regional Council may on 30 November each year during the term of this consent serve notice on the consent holder of its intention to review the conditions of this consent for the purpose of:

a. Dealing with any adverse effects on the environment which may arise from the exercise of the consent; or
b. Requiring the adoption of the best practicable option to remove or reduce any adverse effect on the environment as a result of the exercise of the resource consent; or
c. Providing for the development of improved odour measurement technology and odour monitoring standards.

OUR REF: GJV4572

conditions noted
13/7/95