

**STANDING COMMITTEE ON
ENVIRONMENT AND PUBLIC AFFAIRS**

ALCOA ALUMINA REFINERY AT WAGERUP

**TRANSCRIPT OF EVIDENCE
TAKEN AT PERTH
ON MONDAY, 8 SEPTEMBER 2003**

Members

**Hon Christine Sharp (Chairman)
Hon Kate Doust (Deputy Chairman)
Hon Jim Scott
Hon Louise Pratt
Hon Frank Hough
Hon Robyn McSweeney
Hon Bruce Donaldson**

Committee met at 2.00 pm

OSBORN, MR WAYNE
Managing Director,
Alcoa World Alumina Australia,
examined:

The CHAIRMAN: Welcome to the official hearing of the Standing Committee on Environment and Public Affairs. You will have signed a document entitled "Information for Witnesses". Have you read and understood that document.

Mr Osborn: Yes.

The CHAIRMAN: As you are probably aware, these proceedings are being recorded by Hansard and a transcript of your evidence will be provided to you. To assist the committee and Hansard, please use the microphone effectively to ensure a good recording. If you refer to any documentation, please refer to its full title so that the committee has a record of exactly what document is being referred to.

Your transcript will become a matter for the public record. If for some reason you wish to make a confidential statement during today's proceedings, you have the right to request that that evidence be taken in closed session. If the committee grants that request, any public and media in attendance will be excluded from the hearing. Please note that until such time as the transcript of your evidence is finalised and agreed to by you as being a true and accurate record, it should not be made public. The transcript will take a week or so to finalise. Premature publication or disclosure of public evidence may constitute a contempt of Parliament and may mean that the material published or disclosed is not protected by parliamentary privilege.

Would you like to make an opening statement to the committee with regard to the inquiry?

Mr Osborn: I would like to make an opening statement, which is titled "Legislative Council Inquiry on Wagerup: Opening Statement: Wayne Osborn, 8 September 2003". I will provide copies of my statement to the committee.

I have been the Managing Director of Alcoa World Alumina Australia since December 2001. I understand that the committee is keen to conclude its inquiry and I appreciate members' time this afternoon. Alcoa has been cooperating with this inquiry and its officers since its inception in 2001. Alcoa has supplied and is still supplying a great deal of detailed technical, operational and contextual information. I appreciate that committee members might want to ask questions that may go into a level of detail that is beyond my knowledge, in which case I am happy to provide the committee with a response on notice. My statement to the committee will focus on what Alcoa has learnt from the events at Wagerup and the efforts it has made to resolve issues within its remit, and also to look to the future.

I want to place on this record Alcoa's unreserved apology for its part in a particularly sad period in an otherwise happy and mutually rewarding 40-year history in Western Australia. Alcoa is committed to restoring the trust and good relations of the community. I believe that the proceedings and the outcome of this inquiry can contribute to the process of rebuilding. Alcoa shares the belief that strong communities grow where sufficient trust exists.

The complexity of the issues faced by Alcoa and the community surrounding the Wagerup refinery have been among the most difficult and challenging for any company and perhaps any community in Australia. It has involved a range of different and sometimes interconnected factors and events,

which have impacted on all of us. It has involved achieving the necessary reduction in emissions, addressing health concerns, pursuing scientific evidence and greater information, dealing with industrial issues and land purchases, and dealing with the community mix and future viability of local townships. All this has been done within the context of deeply felt emotions.

The issues involving the Wagerup refinery have been upsetting for all involved. Alcoa believes it has approached this matter with the utmost sincerity and good intentions of addressing the concerns and expectations of the community and its employees. How did those problems arise?

All alumina refineries have an identifiable odour. What is unique at Wagerup is the lack of an adequate buffer and the close proximity of the refinery to a semi-rural lifestyle and residential landholdings, many of which have been built only in the past 10 years. The Wagerup refinery was commissioned in 1984 without a formal buffer zone. Such a buffer could be established only by state and local government planning authorities. The absence of a coherent, formal land use framework has been a root cause of the problems at Wagerup. Although Alcoa sought to acquire land around the refinery, gradual encroachment of residential development, over which Alcoa had no control, resulted in land uses that rested uncomfortably with refinery operations.

Unacceptable odour and noise from the liquor burning unit during 1996-97 provoked the breakdown in relations between the refinery and its neighbours. Since then, Alcoa has been able to successfully address the odour and emission issues and it has provided a path forward for those employees with health problems. However, the social issues remain.

The land management strategy, which resulted from consultation with the local community, was intended to achieve a resolution. It was meant to allow those who still harboured health concerns to relocate; it achieved this for some. However, the social impact of the controversy on the community, together with the accelerated movement of people in and out of the town, has proved to be a compounding problem rather than the solution it was intended to be. The resulting changes in community structure and composition have impacted on the community in ways in which Alcoa could neither have imagined nor ever intended. Longstanding residents have seen friends and neighbours leave, businesses close and the social fabric of Yarloop change. It has provided a real sense of dislocation in people's lives. Many Alcoa employees and their families live in Yarloop and they too have been impacted upon by these events, including the loss of trust between their community and their employer.

Before these events occurred, Yarloop was already facing many of the issues of future identity and viability faced by hundreds of similar regional communities across Australia. These issues encompass a familiar and long list including, for example, long-term population decline, loss of government and communications services and the lack of local employment opportunities. In this context, Alcoa has always sought to act with the best intentions with the information available to it at the time. With hindsight, the correctness of some of our decisions and their unforeseen consequences could be questioned. However, our motivation cannot be questioned. Where these decisions and actions have caused distress, I personally, on behalf of Alcoa and individuals within the company, unreservedly apologise. We deeply regret the situation. We have done what we can to redress any adverse impact those decisions have had on people's lives. However, as much as we may wish to, we cannot undo the past.

The central message I would like to leave with the committee today is that Alcoa has learnt from these painful experiences and it is working with the community, the Government and planning authorities to move towards a more positive future. It will take time for the community and for those who feel they were adversely impacted upon by the plant to see and verify this for themselves. Hopefully, the new program of independent emissions monitoring should assist this process. The social issues with which we have grappled concerning the impacts felt by the community are more problematic and will require more time to deal with. They will require a sophisticated mix of planning, support programs, government measures and outside social expertise. Alcoa is committed

to working with the community, the Government and other agencies to ensure that these issues are satisfactorily resolved for those who enjoy living and working in this community, so that the community has a sustainable future.

I will now specifically address the emissions issues at Wagerup. The committee has received extensive submissions and detailed technical information on this subject. I will recap a few facts. The emission problems at Wagerup date back to the installation of a liquor burner in late 1996, early 1997, and its subsequent failure to perform as promised. A very long commissioning period initially produced noise and subsequently a significant amount of odour, which had an unacceptable impact on employees and the community. Throughout 1997 Alcoa persevered in trying to get the equipment to perform to its original specifications. All monitoring indicated that although emissions were odorous, the substances being emitted were at very low levels and were well below applicable environmental limits.

However, our employees and some neighbours continued to express concerns about health issues. Alcoa now realises that it placed too much emphasis on scientific and technical issues and not enough emphasis on the human aspect or response. People had genuine concerns and they were being impacted upon. With the clarity of hindsight, Alcoa should have immediately shut down the liquor burner. By the time it did so in 1997, the damage to Alcoa's relationship with some of its work force and the community had already been done. Alcoa intruded on people's daily lives. It stumbled and lost their trust and confidence.

Since 1998, Alcoa has worked hard to address employee and community concerns about odour and health. Alcoa has invested some \$36.5 million on emission reduction projects at Wagerup and it has significantly reduced emissions. It installed the catalytic thermal oxidiser on the liquor burning unit in 1998, and this eliminated around 90 per cent of liquor burning volatile organic compounds and 96 per cent of the liquor burning odour. Although the liquor burner emissions were reduced, residents remained concerned. In response, Alcoa implemented a comprehensive emission reduction program across the refinery. In addition to the liquor burning odour reductions, nitrogen oxide emissions from the powerhouse have been reduced by about 60 per cent and significant reductions in dust and other emissions were achieved. Alcoa shut down the oxalate kiln in 2000, eliminating oxalate emissions at that time. Alcoa has significantly reduced emissions while at the same time expanding production.

Alcoa now believes that Wagerup is a world benchmark refinery for emission controls. The Government mandated an independent audit of odour emissions recently, which confirmed that Alcoa had successfully reduced refinery odour by even more than it had originally expected. Alcoa is confident about the emission reduction outcomes it achieved, but it is conscious that that is something the community must be able to independently verify for itself as we move forward.

The technical problems of reducing emissions were demanding. However, the social challenges were even more perplexing. Finding appropriate and sustainable solutions that best met community needs has proved complex and elusive. There were significant complaints following the start up of liquor burning in 1996. Alcoa thought the measures it had taken to address those emissions should have led to an easing of these complaints by 2001.

[2.15 pm]

However, community complaints jumped sharply in that year compared with the previous year. This sharp rise in complaints occurred during a period when refinery emissions actually fell. Odour levels in 2001 were well below the pre-liquor burner levels. A key influencing event in that period was the controversy surrounding land management. There was considerable community uncertainty and anxiety over the extent of any potential buffer zone and in the area in which Alcoa was willing to purchase. Our complaints data shows seven households accounted for almost half the complaints during that period. A compounding factor was the publicity surrounding the industrial relations issue of managing the rehabilitation of employees diagnosed with multiple chemical sensitivity.

The time was a very unhappy period for everybody involved. There was a breakdown in trust between Alcoa and the community and part of our work force over many issues. We believe we have made significant steps since then in addressing all the issues driving these complaints. Community complaints have reduced dramatically, especially during the critical winter months. Apart from emission reduction, factors contributing to the fall of complaints include that some complainants have left the area. However, complaints from some residents who stayed on after Alcoa purchased their properties have fallen by as much as 100 per cent, and that includes residents who had previously made quite a large number of complaints against Alcoa.

We have had a lot of questions from the committee concerning the outcome of Wagerup employees diagnosed with MCS, and their rehabilitation has been our major priority. Nine of our 650 employees at Wagerup and one contractor were diagnosed as unfit to work in a refinery environment and we face significant challenges in managing their rehabilitation. The lack of accepted diagnostic criteria, differing opinions within the medical field, the intermittent and unpredictable manifestations of symptoms, and the unknown causation and lack of recognition of MCS as an illness were all issues. We did act with due care and with the intent of helping employees to return to productive work. We tried to make every effort to accommodate the needs of individuals in respect of their workplace. Employees' own medical practitioners were included to the extent possible. Alcoa met all rehabilitation and retraining costs, as well as employees' medical and other expenses. We provided salary and leave support for times when employees were not working, including up to five years for some individuals. When internal rehabilitation processes did not achieve the objective, we provided employees with a further ex gratia payment of \$350 000 to cover future external rehabilitation and retraining expenses. These payments were not contingent on the employees' giving up any legal right and the payments were not workers compensation. They were also completely separate from any superannuation issues. The Alcoa employees superannuation fund is managed by an independent trustee comprising eight members, including four elected by employees. As such, the trustee is and has to be completely independent of Alcoa as required by law. Alcoa has no role to play in the trustee's decisions whether to recognise total and permanent disability. I can say that all the trustee's decisions in respect of these employees have been unanimous. Alcoa has been recognised for the high standards it applies to occupational health and safety management. We have one of the lowest occupational injury rates in Western Australia. That is a record that the company and our work force have striven hard to achieve and are determined to maintain.

A long list of claims have been made to this committee and to the media that refinery emissions caused environmental contamination of neighbouring properties and impacted on livestock, flora and fauna. Alcoa has responded to these in detail in our various submissions over the past year. We undertook serious investigations into these claims and Alcoa became even more concerned when these claims were sensationalised in the media, causing unwarranted concern in the local community. Independent experts have found no evidence to support any of these claims. Alcoa runs some 3 000 head of cattle around Wagerup, including around 2 000 breeding cows. The fertility rate is among the highest in the district and the mortality rate is less than two per cent. Extensive flora and fauna surveys were conducted between 1998 and 2002 for native insects, plants, birds, reptiles, frogs and mammals and these surveys identified no issues. A vegetation survey conducted by Monash University in 2001 to investigate residents' claims of fluoride damage to plants found no evidence of fluoride damage. An independent consultant conducted sampling on a key farming property within area A closest to the refinery, which was purchased through our land management strategy. Testing of soil, water, sludge, vegetation and dust showed no evidence of contamination attributable to the refinery. The former owners also commissioned independent laboratory testing on milk samples from the farm. The results showed levels of metals to be low and in compliance with the food standards code. No evidence of contamination from any caustic material was found, and the dairy herd on that key farming property was not subject to chemical exposures from the refinery. All of this confirms the previous monitoring by the Wagerup working

group, which identified no emissions from the refinery at levels that would indicate an environmental or a health risk, and refinery emissions are well below ambient environmental limits. I recognise, however, that this does not remove the fact that following the commissioning of the liquor burner in 1996, the refinery did intrude unacceptably on the lives of our neighbours and members of the community.

I turn now to land management. We have provided extensive material and data to the inquiry concerning the land management issues around Wagerup. Alcoa made the offer to buy houses as a genuine response to people with concerns. They told us that they wanted to relocate but felt unable to do so. The land management strategy aimed to provide choice to those residents. It also aimed to prevent further residential encroachment on the refinery. Despite the best efforts and intentions, land management has had a profound impact. It has split the community and the experience has been very difficult for everybody concerned. The land management strategy changed things in people's lives in ways we and they never intended. Concerns about the refinery emissions have translated into fears about the future viability of Yarloop. We did not appreciate how finely balanced the social fabric of the town was. The challenges that the community faced related not just to Alcoa but also to the sorts of concerns facing thousands of small regional communities across Australia. These were things like long-term population decline, fear of losing government services, the closure of local businesses and a lack of local employment opportunities. We are working hard to support the long-term future of the community. Alcoa provides \$20 million per year to the communities of Waroona, Yarloop, Hamel and Harvey. We provided more than \$250 000 in local sponsorships in 2002. We provided \$100 000 to the Yarloop Primary School to purchase a new classroom, computers and other resources and we are supporting the Yarloop fire brigade, hospital and bowling club. Alcoa is also working with Edith Cowan University in building stronger networks in the local community through full-time support and the drop-in centre at Yarloop, which is funded by Alcoa. We believe this addition to the social fabric of the town has been an important circuit-breaker and a focus for reconstructing relationships in the community. We also sponsor the Alcoa Research Centre for Stronger Communities at Curtin University of Technology. This initiative draws together community, business and government to enable Australian communities to work constructively through increasingly complex challenges. We hope this research centre will benefit all through the learnings and realisation that can be reached from such an event.

Like many in the Yarloop community, we are now looking to the future and the Government has taken up its role in defining the long-term future of Yarloop. The sustainable communities planning study announced by the Government should assist in providing clear future planning for Wagerup and adjacent areas. In addition, the Government has made commitments in respect of health, education, police services and public housing. These issues are important for residents in going forward. We are working with the community and government as part of a tripartite process to develop a new Wagerup refinery licence. An emissions-based licence will give the community greater confidence by being scientifically more rigorous and by placing the focus on refinery emissions rather than on production. The Alcoa Research Centre for Stronger Communities will also provide new insights and real solutions. Alcoa has committed that we would consider expansion of the refinery only when there was broad community and government support. We will continue to work with the Government and the community in the long-term planning for the future of Yarloop and the surrounding region.

In conclusion, looking back it is clear that Alcoa stumbled seven years ago in not addressing emission issues and health concerns. We were not responsive and as a result we lost the trust and confidence of some of our work force and our community. Since then we have worked hard to reduce emissions and address employee and community concerns. We have invested around \$36.5 million to significantly reduce emissions at Wagerup, and these emissions are now well below levels prior to the installation of the liquor burner. Production has increased in that time and

complaints have fallen significantly. Refinery emissions are now subject to the most stringent and comprehensive monitoring of any comparable industrial plant in Australia. We have developed unparalleled knowledge on the composition and nature of refinery emissions. In my view Wagerup is now one of the lowest emitting refineries in the world. Although we have significantly reduced emissions and addressed employee problems, we recognise that resolving the community issues will require long-term planning and commitment by all stakeholders. There will always remain a degree of anxiety about the level of emissions associated with all large industrial facilities. We accept that some residents will continue to have concerns and that their concerns are genuine. We have been open and transparent about our operations. Alcoa understands that the Yarloop community needs time to heal and it will take time for us to regain a constructive relationship. We will continue to work closely with government and residents and to support the community as we look to the future together.

The CHAIRMAN: We have two areas of questions that we will put to you. The first questions are fairly detailed and were provided to you in correspondence about a month ago. We were not sure how you would respond. Do you want to go through those questions in detail today or do you want to provide them in written form?

Mr Osborn: We will probably provide them in written form. This is all I have with me today. The importance of accuracy in our response will be critical, rather than responding off the top of my head.

The CHAIRMAN: You are aware of the list to which I am referring.

Mr Osborn: I think I am aware of some of the questions.

The CHAIRMAN: It is extensive. The committee once again appreciates your time and the company's effort in fulfilling all our requests for information. There were some 37 questions in our correspondence. That letter was sent on 14 August. Since then we have identified another four questions to do with our reporting process. We will presume that over the next couple of weeks you will provide us with written answers. We have received some answers since writing to you, but some we have not; for example, we had hoped that today we would receive a copy of the original land management proposal document. The questions are about how the land management proposal is working, the basis for the land management proposal, noise amelioration, community meetings and the community development fund. We have also asked for a little more detail about the Edith Cowan University project.

[2.30 pm]

In your statement you mention that you have set up a research project at Curtin University. I do not think that the committee is aware of that. Would you mind providing a little more detail on that?

Mr Osborn: We can provide the details. A booklet has been produced for that program as well.

The CHAIRMAN: There is a question on the process of the Foreign Investment Review Board and the outcomes. Some of the detail fills in some of the gaps in the process of the commissioning of the liquor burner, when it closed and so on. It also relates to the oxalate kiln. There are also some copies of some data, which we know are available but of which we do not have copies. I think that is just about it. Those questions were contained in the correspondence we sent to you. Today we have an additional four questions which relate to why a buffer zone was not established at the time the refinery was commissioned. I think you will recognise the thrust of all those questions. We would be very pleased if you could provide a written response within a reasonable time frame. I understand the mammoth task we are asking of you, but the information should be at your fingertips. We are anxious to be able to complete drafting our report in the near future.

Mr Osborn: Sure, we will get back to you as soon as we possibly can.

The CHAIRMAN: In addition to the written cross-examination - I think that is a fair description - we were hoping to have a little bit of an informal question and answer session this afternoon. Members have obviously put in a bit of time doing homework on this issue. We have been looking forward to putting some questions to you and discussing them with you.

Hon FRANK HOUGH: You have answered most of my questions in your statement. How many people received the \$50 000 ex gratia payment?

Mr Osborn: I understand eight of the nine at this point in time. We will come back and clarify that, but that is my understanding.

Hon FRANK HOUGH: Complaints dropped by 100 per cent after the purchase of the houses. How many people moved back in or stayed after you had purchased the houses?

Mr Osborn: From recollection, in area A some 19 people have leased houses that they sold to us. I think that is the current number.

Hon KATE DOUST: Could you be a bit more specific? In your submission you said that seven houses were identified as having a dominant number of complaints. How many of those seven houses were purchased by the company? How many are tenanted by the previous owner?

Mr Osborn: I will have to take that one on notice. I am sorry, I do not have that level of detail. If the question can be recorded, we will add it to the submission.

Hon FRANK HOUGH: My last question was in three parts. The first was if you recognised that there was a problem. Obviously you have said in your statement that you did. The second was whether you had isolated the problem. It would appear so. The last part of the question was whether you were confident with the future of the plant. I am not talking about unforeseen circumstances but what might happen within the parameters we have been examining. Are you fully confident that you can now move forward?

Mr Osborn: We are very pleased with the work that has been done on reducing emissions from the plant overall. We always work on a continuing improvement basis. If we can get emissions lower as technology becomes available, we will continue to do it. We would like to get to the nth state where we have a refinery that produces absolutely no odour. Technically that is beyond our capability at this point in time, but we will continue as we can appropriately to reduce emissions now and again. The changes that have been achieved are on the record. We are pleased with those outcomes. In some cases they exceeded the design.

Hon LOUISE PRATT: In 1997 and 1996 there was a mismatch between the community's experience of emissions and what the regulations allowed the Alcoa refinery to emit. Are there any lessons for government to learn on the role of regulation?

Mr Osborn: I think the lessons for us were that we were not as closely coupled to the community as one would expect in contemporary practice today in allowing formal means of feedback for picking up issues early and that common understanding. Obviously a legislative framework assists in that. If you see some of the best practice licences in application today, some of which I am familiar with in other jurisdictions, they work quite well in allowing you to move through issues and have communication coming back into a facility in a very early phase. It is always hard. When looking back, I guess we have the benefit of hindsight, but having more formal structures in place I think would have been helpful.

The CHAIRMAN: Which jurisdictions did you have in mind?

Mr Osborn: The best practice licences in Victoria had a defined community consultation component associated with them. That seems to work fairly well in keeping communities well in tune with what is happening in a facility and the facility well in tune with the expectations in the community.

Hon LOUISE PRATT: You mentioned problems with the lack of official recognition of multiple chemical sensitivity and the implications of managing it from a work force point of view. Do you have a view about the recognition of MCS or is it something that should be left to the relevant medical authorities?

Mr Osborn: Certainly the visit of Professor Cullen in April 2002 was helpful for me and the management group in addressing the issue and getting, from a layperson's viewpoint, how best to go through it. I think it helped us provide a path through with our employees when prior rehabilitation processes were not being productive for us. In my view Professor Cullen's report, which has been provided to the committee, probably best encapsulates the issues, which are fairly difficult for a layperson to work through.

Hon LOUISE PRATT: You mentioned the way forward and the role of government. You basically said that there is obviously a need for cooperation between the community, government and Alcoa to find a way forward, particularly with significant amenity issues and land management issues. You highlighted the need for government to play a role. Would you express in more detail what you think is required?

Mr Osborn: A lot of the feedback we had around the land management plan - when Alcoa alone was dealing with residents when we were impacting on somebody's major asset of their home or property - was that they felt it was very much a unilateral situation. We went down that path with good advice and good intentions. In retrospect we alone being involved in that has not worked. It seems that some form of formal land use strategy underpinning it which gives people some process of appeal is fairer to them overall. The chair pointed out the lack of a regional buffer strategy. It needs some formal process for moving forward. I would not profess any expertise on community planning. That needs to go to professionals and for them to work through those very complicated community issues, such as those at Yarloop.

Hon KATE DOUST: I suppose the general consensus is that Alcoa has always been perceived as being a good corporate citizen. I had it put to me the other night that perhaps Alcoa had been throwing money at the community and not tackling the real issues of emissions and the problems within the townsite. In your statement today you have made it quite clear where Alcoa is going. We have been provided with a list of the moneys handed out to various local government and sporting groups in the Yarloop area. What mechanisms have you put in place to ensure that you can measure the effectiveness of that community support and perhaps move away from the image that Alcoa is simply throwing money around and not tackling the issues? Thinking ahead, the Legislative Council does not want to be dealing with these sorts of issues 10 years down the track when all the people in this room are no longer here and corporate memory has moved on.

Mr Osborn: On the emissions side, the \$36.5 million is not an inconsiderable sum for those of us involved in understanding what has been done at the plant. It is quite significant. It broke new ground, particularly in the work associated with recycling and emissions from digestion and destruction in the powerhouse. On the community support and sponsorship side, we are looking to a different model at the moment, which can measure the benefit rather than one that has a less - formal is not the right word - strategy associated with the donation. We have tried to work fairly closely with the shires and community groups. There is an aspect of local knowledge in knowing what you support. We felt very strongly about the issues associated with the school and hospital. We wanted to ensure the ongoing support there.

The other thing is that this has forced us to document some of our community support, which I think has been ongoing for quite a period but we did not have it in place. As we look at the issues of triple bottom line and look at the social contribution, this is an area which we are now trying to document in a much more disciplined manner because it was not there as well as we would like. I do not know how you throw off the accusation that you are just throwing money around to resolve

the problem. Clearly, the community wants real issues resolved. Handing out money is not a solution, obviously.

[2.45 pm]

Hon KATE DOUST: My other question goes to some of the other occupational health and safety practices that existed within Alcoa. The company has always been quite high profile, since legislation came into place, in terms of programs it ran for its staff and safety reps. As a result of what has happened for the workers down there and the people who have developed health problems, when we first started this inquiry we were able to identify that there was a breakdown in the communication process and the complaints process for raising these sorts of issues. Has the company had to sit down and reassess how it deals with occupational health and safety in terms of grievance procedures and the resolution of issues? It has been pretty much in-house; it has been unique in that way. Alcoa is one of the few companies that runs its own show. Has the company thought about inviting more external monitoring of its programs and outcomes for health and safety?

Mr Osborn: No, I think - I guess I do not totally understand the issue you raised in terms of the breakdown of complaints procedures and such. One of the recognitions for us coming from this is that just working to a base of limits, even when you may take those limits down well below what contemporary standards are, is not enough in itself. You need to be looking at individual responses overall and have a process in place for managing that. I do not think there is any objection whatsoever to an outside view of practice in that area or verification of an open system of complaint. In fact, I guess if you look at the protracted issue of the small number of employees that did have problems, that may have persisted in that process, in hindsight.

Hon KATE DOUST: Again, in relation to health and safety, in terms of the statistics you keep, have there been any changes to on-site allocation of work duties that might be given to, say, employees of the company or to contractors? In that regard, I wonder whether you keep statistics on lost time for contractors on site?

Mr Osborn: Yes, we do. The measurement process we use is the US OSHA process, both for recordable and lost time injuries.

Hon KATE DOUST: Okay. Another thing I was wondering was whether, out of all of this, the company has been able to identify any sort of general issues in relation to occupational health and safety on-site that may be of benefit to other parts of the industry? One thing I have been interested in has been the exposure limits for contaminants. I wonder whether the company has looked at that as well, because we tend to take it as each individual contaminant and come up with the issue of the cocktail. Has the company looked at how it deals with that or do you think it is an issue that more work should be done on?

Mr Osborn: I think that is something I would have to leave to the experts. I have not seen anything that changes that. If you would like to put that as a footnote question I think we can respond to it in a more thoughtful manner than just off-the-cuff.

Hon KATE DOUST: I suppose I say that because we keep saying that everything that has happened has been within the acceptable exposure standards.

Mr Osborn: Yes.

Hon KATE DOUST: The difficulty I have had is that our standards are developed elsewhere, usually in the United States, and quite often are not updated on a regular basis. Perhaps this is an overriding issue across industry that we need to have a good look at for the type of work that is conducted down there. That is what I am getting at.

Mr Osborn: I understand that. I guess it does go back to the nature of multiple chemical sensitivity. Professor Cullen's advice was you would not find a cause; you need to manage the

situation with an individual. With regard to working to lower standards than perhaps are required by a particular State or country, we actually set ourselves below an overall standard that we have looked at globally. Many of our standards are, in fact, well under what is required in Western Australia.

The CHAIRMAN: Can we take that on notice -

Mr Osborn: I am happy to take that on notice.

The CHAIRMAN: About whether there is any occupational health and safety work being done in terms of dealing with the cocktail issue and exposure?

Mr Osborn: I think that is something I would put back to our professionals to come back on perhaps.

The CHAIRMAN: Thank you.

Hon KATE DOUST: Other than a reduction in the lost time injuries, which I see you have noted in this document that came through to us today from Bill Knight, I assume that the data in the table for Alcoa's OH and S performance is taken from the WorkSafe document? I wonder what the source was?

Mr Osborn: Published documentation is usually a little bit behind; maybe a year or so behind the data. If you would like the source of that clarified, we can provide that.

Hon KATE DOUST: I looked at it and it seemed very familiar. I wondered whether that was where it was from. I wanted to know the period of time that it covered.

Mr Osborn: In fact, it would be incomplete if that is not the case. We should add that.

Hon JIM SCOTT: Further to the health study, I have been given to understand that your contractors are not actually part of the Healthway study. It is that right or wrong that the contractors have not been assessed in the Healthway study conducted at the plants around Australia?

Mr Osborn: No, the original Healthwise study was for Alcoa employees. There was an agreement last year for that to be worked through with contractors in Western Australia and I am not quite sure where that is at the present time.

Hon JIM SCOTT: You are saying that you are still looking at whether to include them in the future studies?

Mr Osborn: I am not sure exactly where that is, Jim. Will have to come back on that one.

The CHAIRMAN: You will take that one on notice?

Mr Osborn: Yes.

The CHAIRMAN: Thanks.

Hon JIM SCOTT: I think you have supplied us with the percentage of workers who are contractors. Roughly, what is the percentage of workers who are on contract these days?

Mr Osborn: I really could not give you that off the top of my head. I am sorry; I am not close enough to that to give you a comment.

Hon JIM SCOTT: Have you looked at specific places on-site where you had the most work time lost; where there are more reported impacts from emissions rather than from injury?

Mr Osborn: Any of our accident data is analysed for a whole range - both location, type of injury and so forth. That is one of the ways in which you can look at particular areas that need further attention, obviously.

Hon JIM SCOTT: In terms of the contractor question, is there anyone else at the site who is not included in the Healthway study, such as those working in the office and so on?

Mr Osborn: Yes, everyone on location is included in the Healthwise study.

Hon JIM SCOTT: One of the issues that came up in the Waroona inquiry still concerns me. I have not actually seen any response from Alcoa at this point in time. During the inquiry one worker claimed that he had been induced, in order to get a quick settlement of superannuation issues, to say that he had injured his back rather than the problem he was suffering, which was a blood nose, nausea etc. He said that both Alcoa and his union had pressured him to put down that it was a back injury. That is certainly of concern to me. Have you taken note of what was said by that particular worker and have you put in place any practices to ensure that that sort of thing does not happen in the future?

Mr Osborn: That was in relation to evidence with this inquiry?

Hon JIM SCOTT: That is right. When we sat at Waroona.

Mr Osborn: Okay. I am sorry; I have no knowledge of that. If you give us some details we will try to respond.

Hon JIM SCOTT: Okay. Will you look at that and give some sort of response?

Mr Osborn: Absolutely.

Hon JIM SCOTT: The other thing is this side issue about which we have had correspondence. It was the sending of oxalate to Windimurra. Are you still producing oxalate at the site?

Mr Osborn: No, the transport of oxalate to Windimurra has ceased from Wagerup. We are now storing that and looking at alternative treatment processes for oxalate.

The CHAIRMAN: How much volume does that involve?

Mr Osborn: I am sorry, I do not have that off the top of my head. We would be able to give you the production rates.

The CHAIRMAN: When did you cease removing it from the site to go up to Windimurra?

Mr Osborn: Again, let me come back to you on that. It is in the last three months.

The CHAIRMAN: Obviously, quite recently.

Mr Osborn: It is recent.

The CHAIRMAN: Because the vanadium mine is not going ahead there, is it?

Mr Osborn: That is correct.

The CHAIRMAN: Thanks, we would appreciate that as well.

Hon BRUCE DONALDSON: Given the formal process with the employees on-site, is there any formal process between the company and the employees on a regular basis to talk about different issues, whether it is emission controls or whatever?

Mr Osborn: The health and safety committees at the sites meet regularly. That sort of information is covered with people. If people are not satisfied with the information they are getting, if they go to their supervisor and cannot get an adequate answer they also have a contact officer who looks after any issues of discrimination, equal opportunity or any other concerns they want to have or may have.

[3.00 pm]

A compliance line was recently put in place. It is a 1800 number, which means that anybody can ring in with a concern, a complaint or an issue and that will be addressed through our legal people. There is a hierarchy of ways in which somebody can have a concern addressed. We hope that if somebody had a problem he would first go to his supervisor and it would be resolved there. There is also a process of going to the union representative for the resolution of issues. There is a range of different paths. In terms of keeping people informed about what is happening, there would

normally be some sort of meeting during the shift to cover contemporary issues of the day or particular safety hazards or whatever. Routine safety meetings are held approximately on a monthly basis. There are those other contact processes I mentioned also.

Hon BRUCE DONALDSON: In the evidence given to us so far by the unions, they have been quite supportive of what has happened and the steps that Alcoa has taken. Their role, of course, is to ensure the safety of their members. What has been the consultation arrangement between the unions and the company since the troubles really developed and on the ongoing changes that Alcoa has put in place? What is the company's linkage with the unions? Is it on a regular basis? Is it formal, or do you just meet when needed?

Mr Osborn: It is both. It may be on an issues basis, about which people would sit down and talk at the time. Generally, there are routine meetings. From time to time our senior management meet at a state level with union officials as well, depending on the issue. I could not catalogue for you the number of meetings that have been held on this issue over time, but let me assure you that there have been many of them. It is a fairly frequent process of consultation.

Hon BRUCE DONALDSON: I turn now to the buffer zone. You mentioned that 19 have returned on those lease arrangements within the buffer zone. How many residences does Alcoa have available for lease in the buffer zone? Is that the total number in the buffer zone?

Mr Osborn: No, it is not. I would have to come back to you with documentation on that. I do not know those numbers off the top of my head.

Hon BRUCE DONALDSON: Did the 19 who returned to those leases relinquish their rights when they signed up the contracts for the leases?

Mr Osborn: No. Nobody relinquishes any rights in terms of signing a contract. Any rights that a person may have as an individual or whatever still obviously remain after signing a contract.

Hon BRUCE DONALDSON: So they go back there, but not at their own risk obviously?

Mr Osborn: No, they do not.

Hon BRUCE DONALDSON: This is a hypothetical question in one sense. I believe that a buffer zone should be a buffer zone and that nobody should be in there. I would like to have seen Alcoa run 3 000 cattle in there and that no residences be utilised again. I say that because one can look at Yarloop and ask the question that if it were not for Alcoa, would Yarloop have disappeared anyway? Yarloop, like Harvey and a lot of those areas, was made up of small farms that have now diversified into other functions. Many would not be viable to run as farms. You made a valid point about the decline in rural populations around the place and this is very similar to it. The only thing is that Yarloop has had the crutch of being able to use Alcoa to maintain a population base. I wonder about the whole arrangement. If Alcoa was not there, what would have happened to Yarloop? Have you ever given any thought to that?

Mr Osborn: No. That is a fairly hypothetical question. From my viewpoint, we are trying to be an alumina refiner and we take advice on social and developmental issues. Just in terms of the buffer zone, as we speak there is no buffer zone per se. What we did was to purchase a number of properties within a set of guidelines. As of today, there is no formal buffer zone around the refinery per se.

Hon BRUCE DONALDSON: Do you think that was a failing from the start from Alcoa's point of view or from a planning arrangement? Most of the new industrial sites now have extensive buffer zones and nobody lives within them.

Mr Osborn: I think I have covered that in the statement. We saw that as one of the core issues from the beginning. We saw residential encroachment occur over time. There is no right or wrong with that, it is just that it occurred. One can look back and say, "Yes, had that been established differently, we perhaps would have a different outcome today."

The CHAIRMAN: I remind everybody that we have some specific questions for Mr Osborn on the issue of the buffer zone and, for example, whether he endorses a town planning scheme amendment process. Those questions have been provided so that Mr Osborn can provide us with a written reply.

Hon BRUCE DONALDSON: I want to discuss the quality of the bauxite that Alcoa mines and that is refined at Wagerup. I understand that the bauxite that Alcoa mines there has a great amount of contaminants within it from the forest floor etc or within the structure of where the bauxite is mined. There have been additional problems. Would it be correct to say that the quality of the bauxite that Alcoa mines has led to some of these issues?

Mr Osborn: The quality of the bauxite is low grade by world standards and comes with a degree of organic material that must be removed in the refining process. That is the case perhaps more so for Western Australian refineries than for refineries in the Caribbean.

Hon BRUCE DONALDSON: The next question - this is all a matter of hindsight too - involves the siting of the plant. The Darling escarpment has figured in a great number of problems, including with aircraft that come in to Perth airport. We are told that pilots face one of the most dangerous airports in the world for landing because of the wind sheer that comes away from the Darling escarpment. In hindsight, is the siting of the plant a real worry to a company such as Alcoa in that emissions, odours etc are exacerbated by the siting of that plant?

Mr Osborn: I am not an expert on the meteorology or geography in that sense. Our view would perhaps be that it is more the issue of a buffer per se than the siting of the plant.

Hon BRUCE DONALDSON: You mentioned the \$36.5 million that Alcoa has spent on emission control. What other capital outlays has Alcoa made for the Wagerup plant on top of the outlay on emission control? Does that include the extension of the stacks as far as emission control is concerned? Is that all part of the \$36.5 million?

Mr Osborn: Yes, it is.

Hon BRUCE DONALDSON: Has Alcoa utilised any other outlays to satisfy some of the demands that have been placed on it?

Mr Osborn: An additional \$6 million was spent on noise abatement during the recent period, in addition to the \$36.5 million.

Hon BRUCE DONALDSON: What is the decibel reading now?

Mr Osborn: The required limit at the boundary is 35 dBA with a five dB penalty if there is a tonal component. I believe we are sitting just above that at the present time. I cannot give you the exact reading.

The CHAIRMAN: I want to cover several areas. First, and perhaps the simplest question, am I right in assuming that because Wagerup is covered by a state agreement Act, Alcoa does not pay rates?

Mr Osborn: We pay rates, but on the unimproved value of the land, as it would be for a rural property.

The CHAIRMAN: You mentioned Professor Cullen's visit a couple of times. I note that in Dr Cullen's written work on multiple chemical sensitivity he has outlined the characteristics of MCS. In that outline, and indeed in the work of other medical authorities, the symptoms referred to typically occur after a definite and characterisable toxic event which triggers, if you like, the body's sensitivity, and that subsequent sensitivities may be to very low levels of exposure. Given that that seems to be a general description of MCS, do you accept that Alcoa is in fact responsible, at least through the functioning of the liquor burner through the period of 1996-97, for the emissions from the plant which for certain persons - not only those in the work force but also others living nearby - appears to be the trigger factor?

Mr Osborn: It would be way beyond my competence to give you any response to that. That is something for medical experts to have a view on. What we have done is that we have said that there is an issue concerning employees and the community and that we need to address that. That is the basis on which we have gone forward.

The CHAIRMAN: I note that there are, I think you said, eight people who it has been accepted by the company have become permanently disabled through occupational exposure. What about those persons who are not part of the work force but who have certainly raised with this committee that they are suffering from that kind of permanent disability and that this is affecting their lifestyle? How do they respond when you are unequivocally apologising for what is happening? Can we say, then, that Alcoa accepts responsibility for the health impacts that they continue to suffer?

Mr Osborn: Alcoa has accepted that there was an issue that had to be addressed through a range of measures. We do not understand the mechanisms. Our path has been to reduce emissions as much as we could from the refinery, but I do not think I can give you a response that is any more informed than that because I am not qualified to make such a response.

The CHAIRMAN: I have a real concern that this goes to the heart of clearing up some of the issues that have been raised with us. There are certain individuals who, through your enlightened land management policies, have now been removed from exposure. Nevertheless, they continue to carry, in terms of their physiology, the effects of the period when they were living very close to the plant. You quoted Professor Cullen earlier today as saying that it is not necessary to find the cause. That is perhaps scientifically realistic because we know that considerable but unsuccessful effort has been put into finding the cause. Nevertheless, that is also rather convenient in the sense of actually ensuring that these people are looked after and compensated for the rest of their lives. How do you deal with that? How will you deal with those people?

[3.15 pm]

Mr Osborn: I just go back to the fact that it is beyond my competence to give a view on the individual circumstances of those people. I guess we have expressed regret and apologised for that issue. It really is a question for experts rather than for me to deal with.

The CHAIRMAN: Would you recommend that those people seek a remedy through the court process?

Mr Osborn: Litigation is pending with a number of residents or past residents at this time.

The CHAIRMAN: How many people are involved in litigation?

Mr Osborn: I think the number is 19.

The CHAIRMAN: Presumably at that stage the medical experts will express their views on what may have been the cause of ongoing health effects.

Mr Osborn: I would assume so in the process of that going forward, yes.

The CHAIRMAN: You mentioned also that you personally found Dr Cullen's visit useful and that quite a few company processes had changed. Can you be more specific? What did you get out of it?

Mr Osborn: It was really the issue of the futility of looking for a cause that was only going to exacerbate the condition of individuals who not only felt ill but also felt that they were not believed in that process of investigation. The issues expressed by employees were accepted on face value and Alcoa tried to put in place as much as it could the proper clinical support and a rehabilitation process for individuals overall. It was a matter, I guess, of recognising that further investigation was not going to yield any more information. If it was to be beneficial, we had to deal with the situation as it presented itself.

The CHAIRMAN: Did that not come back to my earlier question that you had a convenient response regarding liability? Who is responsible for people getting sick? How should those individual cases of people who are continuing to suffer be dealt with?

Mr Osborn: That is a question for the best medical resources we can buy. I do not know how I can add to it.

The CHAIRMAN: Are you saying that Alcoa does not have a position on that?

Mr Osborn: If you want a response to that as a specific question we could provide that through Professor Cullen.

The CHAIRMAN: Thank you. We would appreciate a response on that from Professor Cullen. Clearly, he has a lot of expertise and may be able to include information on some experiences from elsewhere.

The next matter cuts across questions other than those I have put to you. Why does Alcoa have a liquor burner at Wagerup but not at Pinjarra? Why has it not been necessary to install one at Pinjarra?

Mr Osborn: It is due to a slight difference between the bauxite in Pinjarra and Wagerup. There is a level of impurity build-up at Wagerup that does not occur to the same extent at Pinjarra.

The CHAIRMAN: If you expand the facility at Pinjarra, will the bauxite be sourced from areas that otherwise would go to Wagerup?

Mr Osborn: No. The bauxite would be sourced from areas that we usually supply to Pinjarra.

The CHAIRMAN: You also mentioned in your statement that Wagerup was unique in not having a buffer zone around it. What is the buffer situation at the Pinjarra and Kwinana refineries?

Mr Osborn: Pinjarra has a much larger buffer. I do not have the figures with me at the present time.

The CHAIRMAN: Is it company-owned farmland?

Mr Osborn: Yes. The Kwinana refinery is within the existing Kwinana strip but has no specific buffer to the extent that other refineries have.

The CHAIRMAN: Is the population around Kwinana quite dense?

Mr Osborn: I am not sure.

Hon KATE DOUST: Not where that plant is.

The CHAIRMAN: Does it work because there are no residents?

Hon KATE DOUST: It does have residents. The sea breeze blows it straight out.

The CHAIRMAN: Certainly the location is better.

Hon KATE DOUST: Much better. It is a very different situation.

The CHAIRMAN: The committee has been listening to you refer to the difficulties you have been experiencing and the need to resolve the issues surrounding the land management strategy, with the assistance of government. We have been hearing that very clearly. One of the things that is perplexing me is the boundaries through your land management process areas A and B, which are based I believe on noise emissions. The problem is that the boundary cuts through Yarloop and has literally divided the town in half. How do we resolve that issue given that that in itself seems to have exacerbated some of the social problems?

Mr Osborn: It is one of the major concerns that has been fed back to us. I go back to the issue that I think it needs a formal well-thought through land use plan that allows us to either validate that as a buffer or look at another arrangement. It is something that requires a formal land use plan. Without

a formal land use strategy I am greatly reluctant to make ad hoc changes to what is there because I think that would create a potential for further unintended consequences than those we face today.

The CHAIRMAN: I guess I am seeking some feedback from you. Am I on the right track in saying that that is one of the issues that must be resolved in a long-term planning solution, which, in some sense, is to provide a resolution for both sides of the town?

Mr Osborn: That is quite right. The issue needs to be addressed.

The CHAIRMAN: It divides people. It is one of the real worries at the moment that should be worked through.

Hon KATE DOUST: Hon Bruce Donaldson and Hon Chrissy Sharp have touched on this issue and you talked about it in your statement about future expansion at Wagerup. You said that expansion would proceed only if it had both government and community support. We understand that no buffer zone is there now. If down the track you have that support and move towards expansion, would you create a buffer zone to surround your expanded part of the plant? How would you deal with that?

Mr Osborn: In going forward, I assume that we would need a buffer zone and the community would want it. Our first priority was to go back and build a constructive relationship with the community. I have been concerned on a number of occasions that articles appeared in the media speculating that Alcoa was about to expand a facility and put in a third unit. I thought that was very unhelpful. Alcoa's focus is very much on resolving the present issues and looking to the future from there. It really depends on whether the community believes that is something of value, whether the Government of the day believes it is of value to it and whether the opportunity exists from an investment viewpoint to do that. It is not the first priority for Alcoa.

Hon KATE DOUST: You referred earlier to the various avenues that your workers can use to raise issues. I want to get a better idea of how it all fits. You said in the first instance they should go to the supervisor, which, of course, is the best way to deal with problems. You said they have the option of going to a union delegate. At what point does the safety representative kick in?

Mr Osborn: It is the same issue. They always have access to a safety representative.

Hon KATE DOUST: You also referred to safety committees on site. Do you have a number of safety committees operating at Wagerup on various parts of the plant or one committee where all the safety reps come together with management to go through issues?

Mr Osborn: There is usually a hierarchy of structures. It may vary from plant to plant. I cannot tell you exactly what is in play at Wagerup today. Usually there is an area health and safety committee and a plant safety and health committee.

Hon KATE DOUST: How do you make the connection between the two?

Mr Osborn: Issues that are plant wide tend to be dealt with by the plant safety committee and issues relating to the area are dealt with at an area level. Many of the same people attend the meetings.

Hon KATE DOUST: I assume that the area level safety committee consists of elected safety representatives and some members of management.

Mr Osborn: Elected safety representatives.

Hon KATE DOUST: And some members of management.

Mr Osborn: Some members of management and additional employers from that area.

Hon KATE DOUST: Does the plant safety committee effectively mirror that? What is the break-up of elected safety representatives and management on the plant safety committee?

Mr Osborn: I cannot give you the structure of that. We can come back to you with exactly what works at Wagerup today. It varies a little from plant to plant but there is generally a hierarchical structure.

Hon KATE DOUST: What is your understanding of the issues dealt with by the representatives and management at that plant safety committee level?

Mr Osborn: They deal with pretty much all the major health and safety issues that a location deals with. We would expect hygienists, for example, to present exposure data to it; it would examine results of audits of areas; it would consider safety performance per se; and it would raise issues and talk about resolutions of issues.

Hon KATE DOUST: Is that committee also used as a guide to assist the company with a direction for changes in health and safety measures at the plant?

Mr Osborn: New initiatives are normally introduced through that committee in a communication.

Hon KATE DOUST: Are they instigated by that committee or just approved by it?

Mr Osborn: They could be instigated by that committee or it may be a company-wide initiative in a particular area that would then come through that committee.

Hon KATE DOUST: If a safety issue had worked its way up through the various levels to the plant committee and no resolution occurred, where would it go to then?

Mr Osborn: I do not know because I am not aware of where it would go. I think at that stage it has the potential to become an industrial issue or whatever.

Hon KATE DOUST: I am trying to work out the layers involved and how workers can raise issues. It comes back to the issue I raised earlier of communication. Thank you for that.

Hon JIM SCOTT: One of the interesting things that has arisen in this issue is the hotchpotch of regulatory mechanisms to control situations within the borders of the refinery. The Department of Industry and Resources - the old Department of Minerals and Energy - controls some areas; whereas outside the Department of Health looks after health issues.

[3.30 pm]

Because it is a mine site you do not have WorkSafe in there, but the Department of Environmental Protection is involved, and so on. There are a range of regulatory agencies and a range of occupational health and safety levels of emissions compared to public health levels, that you must juggle around with. The other thing that has been interesting is that, prior to all these issues being raised there seems not to have been a very good cooperative approach between the different agencies in resolving this. From where you are sitting, do you see, first of all, whether that must be improved, or whether it has already been improved in the interim period while the inquiry has been going on? Secondly, do you see where the cooperation between those agencies might be improved to come up with solutions to the cross-boundary issues?

Mr Osborn: That is a very interesting question. I am not involved enough at a detailed level at the plant to see a great deal of that interface. I think that is really a question for somebody who has the expertise in that area. I really do not have a good feeling of that.

Hon JIM SCOTT: It must have raised for you some difficulties, because you have no buffer zone, so you have certain standards that must be met for the work force, but because the emissions do not stay in the right places, other standards also apply to you. If new systems are put in place, which I believe are being looked at, where there are multiple chemicals and so on, it will be difficult for you in the future, located close to a small town, to always be sure that you are meeting the requirements of both these standards. There seems to me to be some need for somehow bringing those standards together in a coherent way, so that they can be managed, not just from the government side, but also from your side of industry.

Mr Osborn: We certainly would not have any objection to what you are suggesting. I am just saying that I really do not have any great expertise to comment on how efficient or inefficient that is at the present time.

The CHAIRMAN: As politicians ourselves, we feel that is where our expertise may be helpful, in making recommendations to the Government about its performances on this matter.

Hon BRUCE DONALDSON: You mentioned in your opening speech to us that seven per cent of the households provided the majority of the complaints. I cannot remember whether you gave a percentage of the complaints -

Mr Osborn: Seven households provided 50 per cent of the complaints, not seven per cent.

Hon BRUCE DONALDSON: So how many households are there?

Mr Osborn: I think the figure is about 350 in Yarloop, from memory. Do not hold me to that.

The CHAIRMAN: In areas A and B?

Mr Osborn: I think that is the case, yes.

Hon BRUCE DONALDSON: So we cannot just say it is by location only. Are those seven somewhere in line with where the emissions were occurring through the prevailing atmospheric conditions etc or are they sprinkled through the area? Were the complaints coming from outside the refinery gate, or were some of the complaints coming from people living outside the refinery, but working within the refinery, and contracting certain symptoms of sickness?

Mr Osborn: In terms of the seven households, I am not sure whether we have provided the scatter of where the complaints have come from.

The CHAIRMAN: We would like to receive that on a map if you can locate it.

Mr Osborn: There is some information around that, but I cannot give you the geography of it.

Hon BRUCE DONALDSON: It would be good to know where these households are situated.

Mr Osborn: I cannot give you the geography of health versus other complaints, but that information would be available.

The CHAIRMAN: So would you be able to provide us with information about where those seven households are physically located?

Mr Osborn: I think so. We may need to protect the privacy of the people involved.

Hon BRUCE DONALDSON: We would just need dots on a map -

The CHAIRMAN: - or circles. However you think it is appropriate, we would appreciate that information.

We have finished, and we really do appreciate your time, energy and cooperation, so that together we can resolve these matters. Thank you very much.

Committee adjourned at 3.35 pm