REPORT OF PROCEEDINGS BEFORE

SELECT COMMITTEE ON SALINITY

At Sydney on Thursday, 6 September 2001

The Committee met at 9 a.m.

PRESENT

Ms P. D. Allan (Chair)

Mr J. Anderson
Mr P. L. Black
Mr K. A. Hickey
Mr D. W. Maguire
Mr G. F. Martin
Mr A. M. McGrane
Mr D. L. Page
Mr A. H. C. Windsor

Transcript provided by CAT Reporting Services Pty Limited

ROBERT UDEN, Founder and Director, Care-Free Water Conditioners, Australia, Unit 3, 73 Dobney Avenue, Wagga Wagga 2650, and

DEREK DON OWENS, National Sales Manager, Care-Free Water Conditioners, Unit 3, 73 Dobney Avenue, Wagga Wagga, New South Wales 2650, sworn and examined:

CHAIR: Did you receive a summons issued under my hand?

Mr OWENS: Yes, I certainly did.

CHAIR: Did you receive a summons issued under my hand?

Mr UDEN: Yes, I did.

Mr OWENS: I would just like to thank the Committee, first of all, for giving us the opportunity to give some evidence here on how we see our company being able to solve some of the solutions in the area of salinity. Given the time constraints, I cannot go into a lot of details but hopefully we will be able to catch some of your interest and maybe pursue some further agendas.

First of all I would just like to state that the Care-Free product is one hundred percent Australian owned, operated and manufactured and has been trading as a going concern for over nearly twenty years. Robert Uden is the founder, and he has developed a product in a considerable fashion over the last twenty years. He has been a real pioneer and has been one of the leading catalytic water treatment persons within Australia, and I think he deserves a bit of credit, because there have been a few of knockers over the years to any sort of product, as the Wright brothers would have found I suppose too. So good on you, Bob.

This is a Care-Free conditioner that we put on a household product. Without going into, again, a lot of the details, basically it is a catalytic water treatment system, it is not a magnet, it is not a filter, there are no chemicals, there is nothing like that added to it. It works on the simple principle of the movement and cohesion that exists between the mineral particles as it passes through the catalytic chamber, through two different things, one being the turbulence and the other being a bombardment of electrons into the water supply. You are more than welcome to have a look at that a bit closer. What we are able to do with our product is actually address the salts issues that are in the soil without creating any residual by-products from our process. It is very inexpensive to run, to maintain and operate without the residual by-products.

As you can see in the first slide, we can actually neutralise the effects of the salts in the water supply. There are four areas that I am going to talk to you about briefly today. One, being able to actually reduce the physical salts that are in the soil, and we have actually proven this, both anecdotally and on sallow levels in laboratory tests, but we will go into that a bit later.

During the conditioning process the mineral particles repel and separate from each other. In effect it limits their ability to attach to the root systems and existing soil structures. This resolves the problem of additional build-up in the soils that are there. This gives you a bit of an idea of how existing salts are in the soil. After you use the Care-Free treated water, it helps to leach the salts through the soil and out of the root systems and the upper soil structures. We have been able to prove that.

This is a farm just near Harden, and he actually dropped the salts in his soil by 42 percent after six months of irrigating with Care-Free. He did nothing different. He dropped the salts in his soil by 42 percent, the chloride dropped 52 percent, electrical conductivity 42 percent and the sodiums 37 percent. We had a full report of this independent study done by a company in Victoria, Sports Turf Consultants, as you can see down here where we have significant before and afters. He was going to actually spend about a quarter of a million dollars on a drainage system that was going to leach the salts through the soil, because that was the only way of doing it and that is killing the turf that he was growing. In effect, we were able to save him about $245,000, for a cost of $5,000. He was pretty happy anyway. He said he is more than happy to talk to people. I have put in a second submission and it has got all the references for the people I am talking to, phone numbers, names, etcetera. I am sure you would agree, it is a pretty good

effort just based on that.

That is the first area, that we can actually reduce the salinity in the soils, particularly in the topsoils, without adding additional salt, using some saline water.

The second area is that we are able to actually use water more efficiently. Because the particles are broken up and much smaller and they are not attracting one another, they are not creating big clumps going into the soil. This was a controlled study done by a laboratory where they took three columns, they put those in the soil and they added 100 mils of water. They let it set for 48 hours. After the 48 hours that is what they found, that the Care-Free actually only had 41 mils left over, the untreated which had 63 left over and the control had 68. Basically what that means is the uptake in the soil, you had a 60 percent virtually, 59 percent, uptake in the soil by the Care-Free, which over the untreated is about a 60 percent increase and over the control is about an 84.4 percent increase. So it is a pretty significant difference. If you can actually make your soil more permeable and get the water in there, first of all you are going to have better growth, you are going to have more developed root systems and saturation. You are not going to have the saline. You are not going to have the evaporation. That is the second area. We will go on to a little bit more.

Some of the benefits that you have, obviously you substantially reduce the run-off if you are able to get the water into the soil without the run-off evaporation. You also get increased water uptake by the soil, which again goes down to the root systems, you get much better root systems, and we have found that you can actually cut the chemical and fertilizer use significantly, improve saturation, healthy and less stressed plants and you have a decreased watering time. Here in Australia in the last 20 years we would have found that it would have been on average about a 20 percent saving across the board with the irrigators, even though there have been some that have been a bit greater and some not quite as great.

Here are some case studies that I can show you at a couple of golf clubs. This is over in Camarillo in California. Care-Free is an international company we sell to in about eight or nine different countries. They were able to save 50 percent on their water supply. In California things are very very expensive as far as water goes. Most of them are on town water and it is very very expensive, and with the way things are going now, that is the way irrigators are finding it here in Australia as well. They are getting closer and closer to that, rather than having the benefits of low cost water that we have had for many years. They have cut their wetting agents by 75 percent and have annual savings of $50,000. They are spending about $143,000 from memory. The Red Mountain Ranch Country Club, this is in Mesa, Arizona, had a 30 percent savings on water, 50 percent reduction in fertilizers and stopped the puddling and run-off just about completely.

This one was an interesting one - I will go back to Las Posas - because when our dealer went to sell the conditioner here, he actually went through and he took about four or five of the board members of the golf club, they went out to a green, they sat there and they watered the green with the sprinklers for an hour. They waited 20 minutes, then he knelt on it and his pants were all wet. The next week they went back and did the exact same thing, watered for an hour, waited 20 minutes and then he knelt down, and this was after putting the conditioner on the second week, he knelt down and his pants were immediately dry. So it has an immediate impact on irrigation, it will start to permeate immediately, and farmers have told us that for years and years.

The Del Mar race track in California, down near San Diego, had a water reduction of 28 per cent and cost savings of $30,000-plus per annum. Again I have full reports on all of those things if you require those.

The third area is actually being able to lower the salt tables, the water tables. What we have done, both in Australia and overseas, is use very, very salty water for irrigating without any negative impact not only on the soil but also on the crops. This is a figure that will give you an idea of, let's say, some of the lower structures where the water table is actually going up, killing off and making land unproductive in some areas. If we are able to actually pump into that ground water and use the Care-Free unit you will find that, through evaporation and transpiration, the water table will go down, it has to, and if we are able to use that not only through watering of crops but also through the livestock, being able to use the livestock - a lot of livestock can scour if the water gets too salty - we have proven over the years

that Care-Free stops scouring in most cases and it is a tremendous dynamic.

I actually took this reference out of the Salt Action that was written by the Department of Land and Water a few years back: Pumping ground water for stock use and irrigation will help drain the excess underground water and reduce its effect on the surface. This draining will come through transpiration of plants and natural evaporation and the cycle, so it is very important to be able to do that and we can do that and we have shown that we can do that.

The fourth area that I will talk about is effluent irrigation. It is a very common practice nowadays. It is an alternative that a lot of councils are using and there is a lot of effluent irrigation going on in a lot of parks and gardens, golf courses, et cetera. The problems that are associated with effluent irrigation are primarily algal growth in water lines and pumping stations. You also get a blockage of sprinkler heads and outlets. The chemicals needed to be injected into the water supply to actually stop (A) and (B) actually go into the soil, which is never a good thing, and (D) is the contribution of perpetual salts into soil. That can be - not in every case - an issue with effluent irrigation.

Solutions to the problems: We have actually shown, at the Gundagai Shire Council, the effluent irrigation that they have used there for the past three and a half years and they had to clean their sprinkler heads on the golf course every week. Every week they irrigated, every single sprinkler head blocked up. It is a small club and it could not afford a $15,000 injection system to put acid and chlorine, et cetera, through it. It put the Care-Free on with the money-back guarantee and since putting it on in September three years ago it has not had to clean one sprinkler head. The ex-superintendent there is now currently at the Wagga Wagga City Golf Club and we are actually doing a test at the moment of some huge salinity problems in one of the fairways there, and if we can do that we will certainly let you know about it, but they rave about it. They do not have to use any chemicals, they use the effluent irrigation on not only the fairways but also on the greens and the Ph levels are perfect, a little bit acidic, which is exactly what they need, about 6.4 to 6.5. When they first put the conditioner on it was actually 7.8, so the conditioner with the whole process actually assists in balancing the Ph as well. They do not have any algal growth, no chemicals, no blockages and no build-up of salt. They have no salt problems there whatsoever.

The Gold Coast City Council is currently using a number of our conditioners. Bob was there earlier this year meeting with the council and one of the representatives there. They use them in the large recirculating lakes that they have where, before putting them in, you could not see that far into the lake, it was just black. It is right up where the Indy car race starts and they wanted to clear that. They tried everything and they could not do it. They put the conditioner on and three weeks later the only regret that they had was that the return line on the bottom of the lake was white, because they could see all the way to the bottom, and they did not do anything different except put the Care-Free on. They have put another few on and are looking at several more, from what I understand, over the next twelve to eighteen months, so they have had tremendous results.

This is some of the work we were doing in the United Arab Emirates. Basically they start with sterile sand over there. They level about ten or twelve acres of land, put up some fences and put in the irrigation. That is it. It is quite amazing. They put all the nutrients and everything through it. Basically this one is run on about 6,300 EC units, which is fairly selfish for melons. It is just unheard of here in Australia. They could not grow anything the previous year. They tried to but, because of the salt encrustation that was building up, they could not propagate any sort of growth at all.

Mr UDEN: Those plants are about eight days old.

Mr OWENS: Yes. As you can see, it is a bumper crop. The guy was just over the moon. His production was actually tripled. He is growing crop similar to spinach with a water supply that is equal to 17,200 EC units, which is about a third of seawater.

Mr UDEN: That is 11,000 parts per million salt, which is very, very high.

Mr OWENS: So basically his production was tripled. Obviously he is very impressed. This is an example of one of the farms of the undersecretary who we actually sell to over there.

Mr UDEN: We sell directly to the President of the United Arab Emirates, who has a lot of his own personal farms, and the results have been like that. It is absolutely amazing.

Mr OWENS: We had to jump through a few hoops. They did do a number of studies, soil analyses, SAR, and they actually found that it dropped by a minimum of 25 per cent, the salt in the soil, so that is when we first started going ding-ding-ding - this was a few years back - and we found that it was very useful.

This is another good visual. This is something that the Queensland Agricultural College did in Gatton years ago. They used the same water supply; they are the same age plants; they were given the same amounts of water; there were controlled comparative tests done over five months and you can see the obvious difference. This one was going through the Care-Free and this one was untreated.

These are just a few examples of the installations that we have. This is at the Gundagai Golf Club at their pumping station. They just have some disc filters and that is it, they do not have anything else, it comes straight out of a channel.

This is an installation in a domestic unit and I suppose what we are looking at in the next step is saying, well, if we are doing this on the land, why can't we start incorporating it in town water as well, because if we can neutralise any sodium or any salts that are in the soil, whether it be 100 or 200 parts per million or going up, it has to be an advantage.

This one is in Keith, South Australia. He has grown lucerne for many years, but he has about 5,500 parts and his units would be around 7,000-8,000, depending on what sort of language you speak.

This is one of the larger units that we have in the CSIRO in Canberra. They have a number of them there in the cooling towers and industrial sort of applications, so we do have applications other than this, but that just gives you a bit of an idea of what the units might look like: Larger flanged units like this one; four inch conditioners like the one we have floating around here, or that is a three inch one.

Mr UDEN: They put that unit on for a bacteria problem. They had massive bacteria problems there, a high legionella count, and the actual area that it treats would be as big as a small swimming pool and probably about 200,000 litres. Since they have installed that, they have no Legionella problems, they have very low bacteria counts and they have bought many more conditioners from us since, but unfortunately it is not in the salinity area.

Mr ANDERSON: What is the conditioner, what is it made of and how does it actually work? What is the principle of it?

Mr OWENS: Basically the principle is that when the water goes through the conditioner into the catalytic chamber you have a lot of turbulence happening there and, secondly, we use a zinc rod, we actually put this in the ground.

Mr McGRANE: Where does the dirty stuff go?

Mr OWENS: We don't actually take anything out, it is not a filter. Basically what we are doing is neutralising the mineral particles that are in the water, we are breaking them up, and so they go into the conditioner, say, basketball size and they are attracting one another; then they move through the conditioner, and when they come out they are, say, golf ball size and they are actually repelling one another.

Mr UDEN: Inside the brochures I have provided there is actual micrograph of what happens to the particles and it is very clearly seen under a microscope that the particles actually separate. You will see the particles are locked together and they are locked together by silica, alumina and calcium sulphate. Our conditioner actually breaks the bonding as it flows through the system, just like a catalytic converter in your motor car changes carbon monoxide to carbon dioxide. We separate those particles and they do not come back together and once they have been conditioned they stay in that state and they are able to flow through the system with virtually no interference.

Mr OWENS: These samples here are about three years old. This was taken from a farm that had iron problems. You can pass those around and you will actually get a better idea of it.

Mr UDEN: If you did a water analysis on those two samples, they would be identical, but visually, this is ferrous, this is ferric iron. We have changed the structure of the water.

Mr ANDERSON: How long does that process last?

Mr UDEN: Permanently.

Mr ANDERSON: The water does not change with the level of pressure that is used?

Mr UDEN: No. We have sold quite a lot to the cotton industry in Queensland, and I have some photographs in my briefcase. They experience a lot of salt encrustation on the ground. What they do is harvest the water through bores, they store in massive dams and then they irrigate when the time is due and they might keep that water for several months before they use it. It has been on there for about three years, I guess, and the agronomist is beginning to open his mouth, he is beginning to speak to people and all his neighbours are starting to buy our product now because his production has gone up. What he would find previously, if they got heavy rain, the salts would come up and affect the crop or affect anything that was growing there, the salt table would rise. Since they have had our system on, the salts have been pushed down and the crops are thriving. We find that everywhere we go.

Mr PAGE: It sounds fantastic. If you could get into a larger scale, where you have got these weirs, you go down stream on rivers, what is to stop you from putting this technology into the weirs so that all the water that flows through takes the salt out as you reduce your salt level in the river?

Mr UDEN: You could do that. You would need a big one. I have a formula to build them as big as you want. I know how to build them as big as you want. At the present time the only size we have built is about six inches, about 100,000 gallons an hour, and what we do if we have bigger flows than that, we just manifold them together.

Mr PAGE: Have you done any work to find out whether there is a limit to what you can do with that?

Mr OWENS: Volumes?

Mr PAGE: Yes.

Mr UDEN: There is a certain formula that we use as far as it flows through the system. This system is about the exact right size. It is exactly right. We have tried putting them one after the other and it doesn't seem to make any difference. That is about perfect. The water flows through here and comes out the other end different. You could put it on your house, it takes most of the chlorine taste out of your water immediately.

Mr MAGUIRE: Could you apply that to the discharge from salt water swimming pools?

Mr UDEN: Yes, you could. I have a salt water pool at home and it runs at about 5,000ppm salt and when we discharge out - I have got a few acres out of town - it just goes down the paddock and that paddock has not been salt affected for the last 14 years.

Mr MAGUIRE: Have you tested what the discharge is after you put it through the -

Mr UDEN: The salt level is virtually the same, but it has changed. We have actually in effect neutralised the effect of the salt. It amazed me when I was in the United Arab Imirates to see crops growing in a third sea water. The guy's income in that case went from $40,000 to $136,000 for an investment of $5000. That is not a bad return.

CHAIR: Why are you doing well over there but you are not doing well here? They are taking it up overseas. What is happening to the Australian input, because it is happening a lot overseas?

Mr UDEN: It is like the old story, a prophet is not without honour except in his own country, and most of our technology in Australia is usually shipped offshore and they make it over there and they send it back to us, even though it was developed in Australia, and unfortunately we have had criticism from people – who call it a black box. I have been in business for 20 years. We do not advertise very much and yet all our international people have come as a result of word of mouth, and it is just awesome.

Mr ?: What is your response from the scientific community?

Mr UDEN: Black box. Because they cannot understand why it works.

Mr OWENS: They do not want to know about it, and I have been part of a number of micro-irrigation chat forums on the internet. I am currently doing studies at Charles Sturt University in Wagga. We are doing some propagation tests, as well we are doing some electro-chemical reactions, trying to find out. If you can appreciate, for the last 20 years we have not really worried about what was happening because we are getting results. The customers do not care what is happening in there. They want to know if they are going to be able to use their bore water.

Mr HICKEY: You can understand why they are skeptical, because if you are not removing the salt from the waterways, it is still impacting onto the soil, permeating into the soil more and you are saying that the salt is not having an effect.

Mr OWENS: That is right.

Mr HICKEY: Sooner or later the salt has to have an effect then down the track.

Mr UDEN: I have people who have been irrigating now for 16 years with our system in Queensland who could not grow lucerne very well. It has been operating for 16 years and the lucerne is still thriving. That gentleman you saw where there was initially a blue pump, he has been irrigating for about seven years with [salty] water. It was killing his lucerne on two waterings of flood irrigation. He put our system on and within six weeks he is harvesting lucerne as good as the district average. All he has used is our product and he is still growing lucerne on that same paddock. It used to get salt encrustation and sodium deposits right across the ground. It has disappeared, it has gone.

Mr ANDERSON: I assume it is in your interests to analyse the sodium and the salts.

Mr UDEN: We have done that.

Mr ANDERSON: And be able to prove that what has happened is the molecular structure has changed.

Mr UDEN: We are doing that now.

Mr OWENS: I was hopeful of having the test results back before I came here, but it looks like it will be next week. They did a test with a certain amount of resin on treated and untreated water where they were pouring it through, they were driving out the ions that are in the water, then they were going to check the EC, the electrical conductivity, and that would tell us, because what I have been told by Professor Craig Russell at Charles Sturt University - he has done a lot of stuff for us in seed propagation as well as many different tests over the last 12 months. He heads a lot of the propagation work for the rice industry in the Riverina. What he suspects, and we are hopeful of proving, is that the actual charge of the salts is reversing. That would explain why the water analyses are very much the same, but the effects of the salt have been negated. They are still there, they are in a different form, they have got a different charge. Whether they go from the ferrous to the ferric state, we do not know. Whether they are going from positive to negative, I cannot come up here and say, yes, that is definitely what is happening. That is what we suspect. That is what we are doing tests for right now.

Again, I go back to the fact that it has not been a priority for the company because the farmer doesn't give a stuff whether it is positive or negative, any more than you and I care about how an internal combustion engine works when you go to buy a motor car. We just want to know what it is going to do for us.

Now that we have thrown our hat in the ring in some new areas, such as Government, yes, we understand we have got to get a few professors around the place doing some work for us. We are prepared to do that to a certain extent but we are certainly not going to spend the kids college funds to try and satisfy five people in some laboratory, when we sell 50,000 or 60,000 conditioners. We will continue to do that and we will grow in many areas, but we are simply here saying we think we can help with the salinity issues and we can help with the solutions. We are not the solution, but I think we can go a long way in a lot of the things that we do, incorporating them into some of the existing strategies that have been in place over the last 12 to 18 months.

Mr UDEN: I discovered this as a businessman, that people are not predominantly interested in how it works, they are interested in what it does, what it does for me, and we have proven that over 20 years in business.

One of the major breakthroughs we had - actually it was only about three years ago - we started to use this zinc rod, putting it into the ground to supply electrons into the conditioner and the performance went through the roof. It gave off about 100 times more electrons than we had previously used.

I have just developed a new system now for motor homes, and we have got to go to a motor home show in a few days time, and we can plug this thing into the power point. We hook it onto both ends of the conditioner, we charge it with about 3 milli-amps, scale deposits are gone, taste has changed. That is it; it is so simple. We can do that inside a building. We have only just developed this. It took us years to do that.

Mr OWENS: We are also working with Greening Australia and Bush Care, and Mr Black would have been interested in this because it is up in his area in Whitecliffs, where they are actually using bore water that the Department of Land and Water Conservation said you could not use for anything, and they are using it to actually grow a bush tucker project up there, and so far so good. We are in their newsletter. We have been in a few articles up that way as well.

[Documents tabled]

(The witnesses withdrew)

JOHN STANLEY DAVIS, Project Manager, Sydney Metropolitan - Dubbo Regional Organic Resource Management Project, representing the Central Economic Zone, PO box 286 Dubbo, sworn and examined:

CHAIR: Did you receive a summons issued under my hand?

Mr DAVIS: Yes, I did. I am coming from the other end of the salinity problem here. The guys to whom we have just listened were particularly interesting I thought. They are looking at treating the water at the other end. The project we are looking at here is looking at waste management change, particularly in relation to salinity, and it is a very simple project, but it is very complicated by the number of stakeholders involved, as you would possibly see by turning to the second page of the documentation that I provided to you. The project has been under way since December of last year and we are now, as I say, nine months into the project and we are in the process of preparing our business plan for presentation to Government.

The project itself started in a number of ways. It started when we were looking at waste issues in sawdust mills in western New South Wales and how we could handle the particular issues of disposing of all the sawdust waste, particularly with the restrictions that were - and still are - being put in place by the New South Wales EPA. We are also coming from the point of view of the organic waste problem within the Sydney metropolitan area. As we all know, the waste situation in Sydney is getting worse, landfills are getting scarcer and we consider that the organic fraction of the waste stream in Sydney is in fact a resource that should be used appropriately and, in this particular case, in land use management.

The project also stems from a number of environmental initiatives that have been undertaken by Dubbo City Council, including work with land care groups and trying to ensure that our land management practices and the land use that the council is responsible for is in fact in tune with sustainable development. I might just add there that in normal life I act as manager of environment health with Dubbo City Council. At the moment I am on a year's leave to work on this particular project.

I have given you a schematic diagram in the hope that it will become clear to you what the project is all about and where salinity and salinity management fits into the particular project. The intention is to access 60,000 tonnes of garden organics, in the first instance, from the Sydney metropolitan area; to chip those into rail freight containers and, from Sydney, they will be rail freighted to a facility we intend to build in Dubbo. At the facility the material will be composted and compost material used in land use applications such as land use change and salinity management.

Alongside that particular aspect of it there is a number of secondary industries in the particular area in Dubbo where we intend to locate the facility and those industries, such as sale yards, abattoir, piggery and a sewerage treatment plant, all have the problems that we have in regional New South Wales with disposal of effluent.

Country Energy has indicated to us that they would be very interested in investigating the feasibility of incorporating into the particular composting facility an energy from waste facility which will be to the tune of, I think, if it goes ahead, some $40-50 million, which will be looking at drawing gases from the digestion of those liquid wastes that we can attract from local industries and the output of that is a sludge material. That sludge material would be then mixed together with more of the liquid waste that we can achieve from the area and solid organics to create the compost.

The process that we are looking at at the moment - and it is a bit of a cliche - is a win-win situation. We have the opportunity to address part of the Sydney waste problem. We can increase rail transport which provides benefits, as the rail infrastructure has grown by nearly twenty percent in the last two years, the use of rail, and I know this particular Government is keen to promote rail and I personally feel that rail is the most preferred option for transport in regional New South Wales, and keeping the rail freight lines alive will help smaller communities in other ways as well, such as moving produce around the place. Also the Dubbo facility itself is estimated to provide employment for up to twenty people. If the power plant goes in, that number will increase significantly. There are also spin-offs in relation to employment in the transport industry and the land use application industry. Obviously there is going to be more activity on farms and in those sorts of areas.

Where it fits in with salinity, we have been working quite closely with the Department of Land and Water Conservation. It is undertaking the Target program in two of the catchments within the Dubbo area, the Little River catchment and mid Talbragar. For that particular Macquarie area of the catchment, which is some 92,000 square kilometres I believe, the Target program is addressing at this particular point in time around about 10,000 hectares, which is quite a minuscule proportion of the land in that particular catchment. The areas they are targeting around Dubbo are particularly highly saline, up to two-thirds of seawater in some of those catchments, so they need to be restored. The Target program is targeting tree planting, land use change, native grasses, perennials, those sorts of things in the landscape in various places to see if they will work and there is research being undertaken.

One of the reasons that these things do not take off and they have not been accepted commercially in western New South Wales is the fact that there is very low rainfall comparatively, there are very poor soils in those areas and typically things do not grow very well. It has been demonstrated here, through the Department of Agriculture, and through extensive research overseas, that the addition of soil amendments such as compost has a positive effect on moisture retention. They have a positive effect on increasing soil biota; they have the effect of negating the need for chemical application, which is very important for the whole of the environment, and they also have an effect of reducing the amount of weeds and pesticides around the place. So compost itself I do not think needs to be sold.

The issue that we have is that there are a number of critical steps in this particular process and that is the reason I am here today, to talk to you about it and ask for your assistance. We need the resources, in the first instance, we need to tie up the resources within the Sydney basin and within the local area so that we can get this facility up and running and actually get this stuff back on the land. That is not going to affect you; we are doing that through Resource New South Wales and we are working with them at the moment in that regard. Another one, of course, is the Dubbo facility. We need to build a Dubbo facility and we have affected parties, both private and public sector, who are interested in perhaps pursuing that line, and Country Energy of course is looking at its particular side, which is a rather hefty investment for regional New South Wales.

Where I am looking for assistance from the particular Committee is in marketing the product, which has typically been the problem over the years and that is the reason it is not being done now, why the stuff is not being taken out of Sydney, or one of the reasons why it is not taken out of Sydney is the marketing. At this particular point in time biosolids are practically being given away to farmers in broad acre applications and, at a cost of approximately $45 a tonne at the gate, farmers are not prepared at this particular point in time to change land use practices, to adopt the use of compost.

We believe, and we have a number of marketing people working with us, that over a period of five years from the implementation of this process we will be in a position to develop markets which look at positive land use change and that is not only with respect to tree planting and forestry, which is what we are targeting here, but also to stimulate organic and fresh food growth which can take advantage then of the fast train link that is coming through to Brisbane and provide the access to Asian markets and American markets, which are at the moment not easily accessible to the materials that are coming out of western New South Wales.

So the proposal that we are going to be putting to government, or part of the proposal, is stated on one of the sheets and that is that the Sydney Metropolitan-Dubbo Regional Organic Resource Management Program will be recommending to the State Government that the sum of $9 million per annum for five years from the commencement of compost manufacture at the Dubbo site be provided for an extension of the current Target program within the Macquarie River catchment. The investment is to include the purchase and application of 60,000 tonnes of compost per year to increase soil biota and water holding capacity and enhance plant growth and survival. It will be proposed that this investment, to be put to industry and corporate investors, be underwritten by the State Government through salinity and waste funds. That is basically what I am here for today.

I believe that the particular project that we are talking about has merit, it has a lot of positives. As you can see from the list there, we have many positive stakeholders involved that see the potential benefits of this project. I cannot think of anybody who has said anything negative about it yet, except one

lady at Brocklehurst who said, "I wouldn't trust anything that the council was involved in", but, other than that, the project offers lots of rewards and we believe that it is going to have an effect on salinity as well as the other issues that we have talked about.

Mr ANDERSON: Your proposal to transport this waste, how does it help in the fight against salinity?

Mr DAVIS: The growth factors in relation to trees are important to the return that farmers and investors will get from their product. Typically investors have been reluctant to invest money in western New South Wales because of those issues: The slow return and the uncertainty because of the climatic conditions that they will get a return down the track. By the application of compost, particularly with trees, in the first instance, we will find that we will have higher survival rates; the growth rates will be improved; the need to have initial control in relation to weeds and those issues is reduced and we will find that we will get more investment into that particular area. That not only is true of trees but also of other crops that you want to grow in that particular area. If you are going to lucerne or native grasses you will find that the application of compost will have a positive effect and will encourage investment.

Mr ANDERSON: Have you tested your figures about enough supply to keep the facility working and viable?

Mr DAVIS: Yes, particularly in relation to the Sydney metropolitan area, there are at least 400,000 tonnes of garden organics produced each year. We were initially working with the Southern Sydney Waste Board and the Southern Sydney Waste Board anticipates somewhere between 45,000 and 60,000 tonnes per annum from its particular area. Now that we are looking at Resource New South Wales I think we would be in a position to ensure that that area or that quantity that we are looking for, 60,000 tonnes, will be available to the project from throughout the metropolitan area.

Mr PAGE: Are you totally satisfied that the technology exists to ensure that there are no health or medical issues in relation to the spreading of the compost across broad acres, in other words all the sludge and everything that goes into the system and transforms itself into compost, you can guarantee the technology is there to ensure that there are not going to be ongoing problems down the track?

Mr DAVIS: Yes, what you get out is what you put in. We are not talking about putting sewerage sludge into the particular compost at this stage. The technology that is involved with the up-front process that Country Energy is referring to is proven technology which will destroy pathogens in the material. The composting process itself has been demonstrated, because of the temperature it is retained at for a certain period of time, to destroy pathogens that could be of concern and also will destroy weed seeds, grass seeds and those things that you do not want in the material.

Mr PAGE: You mentioned earlier the problem of marketing at the end of the chain. Obviously this is a very important issue because, if people do not want the compost, the viability of the project is questionable.

Mr DAVIS: Yes, it is one of the key issues.

Mr PAGE: Did you mention $40 a tonne?

Mr DAVIS: $45 a tonne, that is correct. For tree planting we would be looking at around 10 tonnes per hectare, so it looks at $450, once-off application on tree plantations.

Mr ANDERSON: What types of trees are we talking about?

Mr DAVIS: They are currently being investigated by State Forest. There could be any of a number of trees that are suitable for a particular landscape. It is not a broad brush. You would not just say you can plant eucalypts everywhere, you would not do that. Each landscape has its own idiosyncrasies.

Mr McGRANE: Can I come back to the question that Don asked in regard to the screening of

the rubbish at the beginning. How do you know you are not going to get some nasties in that? That is the worry I think, because that could stay there for a long time and the end user does not want the nasty either. He is worried about that.

Mr DAVIS: He might be, understandably. The composting process is an Australian Standard process and it requires that all compost at the end of the day is tested and the batches are tested for various levels to make sure it matches the requirements of the Australian Standard.

Mr HICKEY: Coming from the vineyard area as I do, the problem with grape cuttings from the Sydney area, phylloxera and all those other nasties from that area. How do you expect to get rid of that? That can lay dormant for seven years; it is microscopic; heat does not really finish it off; it can survive quite large doses of heat. It is a pretty important issue because if you start spreading this stuff around the areas where grapes are growing, it could destroy the whole - it is a major issue in my electorate. It is raised every time there is some sort of garbage dump being raised or any other issue.

Mr DAVIS: Yes, I have no problem with that at all. The issue of phylloxera has been discussed with the Wine Industry Association. They found it quite tricky to approach it, the New South Wales Wine Industry Association in the first instance. They sent us back to Orange, because Dubbo is not a declared phylloxera free area, but some of the places that it will be railed through are. The Australian Wine Industry Association, the particular view of the president of that particular area was that phylloxera itself is not really an issue. The issue that concerns the wine industry is the statutory provisions which have phylloxera free areas, and if they lose their phylloxera free status, then it could cost that particular area $50 million.

The response that we had to that, through this meeting that was facilitated by the Premier's Department, was we are undertaking a risk assessment on the movement of this material through there and we are developing protocols with the Wine Industry Association to ensure that they are satisfied. Beyond that, it has been determined that there is a very very small area of phylloxera in the Sydney basin that was affecting the phylloxera free status of the whole State. Chris Wilson of the Premier's Department was very astute. He recognised that at the meeting and said, "Well, why not get rid of that particular problem and then we can get rid of the phylloxera problem within New South Wales", and the Premier's Department is now working on an initiative.

Obviously, we are not going to be able to transport materials unless we have the okay of the Wine Industry Association, and we are working through that process now.

Mr PAGE: You say in the paper here that you are looking for a financial commitment of $9 million per year for five years which is required to encourage landowners and investors to adopt farm and agriforestry for profit and environmental management. Can you tell us a little bit more about how you propose to use that money? Are you proposing to subsidise the use of compost on farms to enable these benefits to be demonstrated to other farmers? Is that what you are looking at or how do you propose to spend $9 million dollars every year?

Mr DAVIS: We will not be getting the $9 million. $6 million of that is looking towards an extension of the existing Target program, and if we stick with forestry, that is the upper figure, the $6 million, because at the moment that particular program is paying $1000 per hectare to landowners to plant trees, do the ripping, provide the trees and that sort of stuff around them, and the total cost to the Department of Forestry is in the order of $1400 a hectare. So the Target program is being approached in that method and it is being well received by the local landowners. They can see there is an opportunity there for them to change their management practices. So we are looking for an extension of that particular process.

The further $3 million is to subsidise or invest in the use of that compost material to enhance that Target program, and you are dead right, the only way we can ensure that this is a long term, viable option is to ensure that we have research undertaken during that process. In that research we will be looking at demonstrating the values of composting, extending the demonstration sites within the region to encourage other landowners to change.

I have been approached personally by one or two corporate entities who are just sniffing around to see if there is anything worth doing in the way of getting involved with forestry, because carbon credits are now potentially becoming a reality and there are other things down the track. Some of these bigger companies are looking to get involved and we intend to pursue that. We are asking the State Government to underwrite this process, but what we are really trying to do is to encourage private investment to ensure that this goes ahead and get involved in the forestry side of things.

Mr ANDERSON: Have you spoken to the current waste boards about their involvement in this project?

Mr DAVIS: Most definitely, yes.

Mr ANDERSON: What sort of response did you get from them?

Mr DAVIS: They are very, very sympathetic to the project. They are working hand in glove with us, and Darren Bragg from the Central Coast Waste Board, who is the organics co-ordinator for the waste boards, is working on the phylloxera issue with us. We have had direct support from John Patterson and Peter Rimmer from the Southern Sydney Waste Board. John Patterson is General Manager there and he is speaking with Graham Head, who is the EPA officer in charge of the changeover to Resource New South Wales, discussing the project with him. He has given us the okay to continue to work with those officers as we develop this project.

We are going to go to Resource New South Wales in the very near future. In fact, I have a meeting later this morning with the Minister's adviser to arrange a meeting with Resource New South Wales to ensure that we can keep this project rolling and we are very confident. Everybody that is involved in the project is so positive that the outcomes all the way along are good provided we can get the phylloxera issue under control and we can get the money at the other end.

Mr PAGE: It sounds exciting. Are you aware of this happening anywhere else in the world, this kind of project?

Mr DAVIS: Not like this, no.

(The witness withdrew)

(The Committee adjourned at 10.15 am)