Committee Secretary
Standing Committee on Primary Industries
and Regional Services
House of Representatives
Parliament House
CANBERRA ACT 2600
AUSTRALIA

Dear Secretary

I have attached a submission from our company on the Inquiry into infrastructure and the development of Australia's regional areas.

We speak for our more than 3000 shareholder customers and I am sure, much of the Western Riverina community.

Our submission specifically addresses a taxation timing issue which retards raising of capital for rural infrastructure and inhibits further development.

We have separately taken that issue up in political circles via our local member Kay Hull in an effort to get action going on the well known problems we face.

I trust your committee can give the problem due recognition and aid in arriving at an acceptable solution.

In respect of the enquiries process, I would welcome your Committee to visit the area for an on-site inspection and would be happy to arrange that if you feel that is appropriate. I would also welcome the opportunity to make a formal presentation to any public hearings held. Perhaps it would be possible for one of the public hearings to be in the Western Riverina.

1

Yours sincerely

Dick Thompson

Chairman

12 April, 1999

Murrumbidgee Irrigation Limited.

Submission to Standing Committee on Primary Industries and Regional Services, "Inquiry into infrastructure and the development of Australia's regional areas".

INTRODUCTION TO THE COMPANY

Ownership of this former Government owned and operated irrigation scheme was handed over to a local irrigator Company on 12 February 1999. This was in accordance with the national water reform agenda, and in respect of management control, the ultimate step in accordance with the 1995 principles.

The transfer of ownership has been facilitated by a promise from NSW Government to contribute for a period of fifteen years to some of the works identified as necessary to restore the water supply and drainage infrastructure to a fit for purpose condition.

Government is also providing a sum for work to upgrade road bridges and culverts. All of the Government contributions are on the understanding that local irrigators through the Company contribute to ongoing renewal works, and accumulate reserves to meet the costs of future infrastructure renewal liabilities.

The infrastructure we have custody of is the ultimate community infrastructure, and other members of the community have a free ride in that they do not directly fund its upkeep. The road bridges and culverts over our channels especially support the wider community, and tourism is especially dependent on their renewal. We hold the assets in trust for future generations.

We need special tax treatment for this infrastructure.

Its shareholder customers own the company, and the water supply and related components of the relationship between the company and its shareholders is recognised in a Member Contract. There are directors elected by the customers, retaining the balance of influence over the company between the two major water user groups, as well as a staff director, a community director elected by local councils and two independent directors with special management skills.

THE MURRUMBIDGEE SCHEME IN CONTEXT

The Western Riverina contains one of the most productive areas of land in Australia, the Murrumbidgee Irrigation Areas and Districts (MIA).

This extremely fertile area, first developed in 1912, is now undergoing another major stage in its transition to long term prosperity with the handover of the operation and distribution company (Murrumbidgee Irrigation) to local irrigators, and implementation over the next 15 years of a community developed land and water management plan.

The success of the MIA is due to many things - principally a reliable irrigation water supply, but also hot summers, good soils, hard working and productive farmers and the local processing of much of what is produced by the farms. It is this local processing which generates many more jobs, investment opportunities and regional wealth, than would otherwise be possible. This interdependence of the value chain means that much of the Western Riverina community is directly dependent on the scheme infrastructure.

The irrigation area is the premier rice, winegrape, poultry and beef feedlot area in Australia and has pre-eminence in orange juice production, corngrowing and vegetables.

The total farming area in the scheme is 480,000 hectares of which about 120,000 hectares is irrigated each year.

The company provides water to 3,000 shareholder customers who generate over one billion dollars worth of produce each year, much of which is exported to benefit all Australians. The irrigation area is centred on the city of Griffith and the towns of Leeton, Narrandera, Whitton, Goolgowi and Carrathool.

Two thirds of the 3,000 customers are commercial irrigators. The 950 horticulturists grow one or a combination of the following permanent crops - winegrapes, oranges, lemons, mandarins, peaches, apricots, nectarines, grapefruit, cherries, apples, prunes, plums and olives. Their average farm size is 20 hectares.

A further 1150 larger area farmers grow one or a combination of rice, corn, wheat and vegetables, prime lamb, wool and beef cattle. The size of their properties range from 200 hectares to 320 hectares.

Two of the larger properties are intensive beef feedlots. Rockdale, near Yanco, has a 45,000 head cattle feedlot and an abattoir processing mainly for the Japanese market. Australian Meat Holdings (AMH) operates the Prime City Feedlot at Tabbita, west of Griffith which carries 25,000 head of cattle. An abattoir is planned for the year 2000.

One of Australia's largest poultry and egg producers - Bartter Enterprises - owns a number of larger area farms in the area and produces about 28,000,000 chickens and 240,000,000 eggs a year. The chickens are processed through their own abattoir. Bartters has just announced plans to spend \$125 Million over the next decade to double the size of the company.

Bartters, Rockdale and AMH grow their own feed crops but also buy large tonnages of wheat, soybeans and other locally grown grains and hay. A.J. Bush and the Codemo family also operate sheep and cattle abattoirs.

There are another approx 900 small hobby farmers around the urban fringe of Griffith and Leeton whose water use is only for several fruit trees or pasture for a small number of horses, sheep or cows. At the western end of the irrigation system an area of about 240,000 hectares receives water for rural stock and household

purposes and drought proofing. The towns within the system are dependent on the network of channels for urban supplies. They filter and treat the water from the company's channels for reticulation to urban residents.

Rice is milled and packed locally by Ricegrowers' Co-operative Ltd at Leeton, Griffith and Yenda. Over 90% of the crop is sold to 40-50 countries each year. The brands, Sunwhite, Sunlong, Sunbrown and Sungold are famous worldwide. Each year the industry in the MIA earns about \$220 Million in gross sales revenue which includes nearly \$130 Million from exports. Rice is Australia's third largest cereal grain export and the ninth largest agricultural export.

Also famous worldwide are the brand names of the Riverina wineries which process the large, and growing, grape crop. The MIA produces almost 20% of total Australian winegrape production and 70% of the NSW production.

There are about 500 winegrape growers among the horticulturists and while most are family units, many of the local wineries and the major wine companies like Southcorp, now also own vineyards. Grape production is expanding to meet the world wide demand for quality Australian wine.

Citrus has historically been the second most important crop in the MIA, but has suffered poor seasons and returns, and dumping of overseas produce for the past five years, making its farming unprofitable for many. About 70% of the Valencia crop and 25% of the Navel crop becomes fresh orange juice, the remainder is sold as fresh oranges. Improved export opportunities to Asia, Japan, USA and New Zealand and development of greater brand support for locally produced fresh fruit has been of limited assistance.

The area of peaches and apricots has diminished markedly since Letona Cannery closed in 1995. Large scale planting of stone fruit is presently being seriously planned and the ability of the water supply and drainage infrastructure to service the plantings is critical to progress.

Vegetables production is also expanding with the MIA being a major producer of corn, potatoes, tomatoes, carrots. Also produced in substantial quantities are lettuce, melons, pumpkins, garlic, gherkins, broccoli, strawberries and onions. Most sowing and harvesting is mechanical. The crops are planted on raised beds with irrigation running down furrows between each bed, or piped to the beds.

Most produce is destined for the fresh vegetable markets, but local processing also produces tomato paste, dried tomatoes, carrot juice, antipasta, olive oil, prune juice, and a range of gourmet products which have been dried, pickled, par boiled or snap frozen.

Allgold Foods, a division of Green's Foods, has a major and expanding processing plant producing breakfast cereals and other packaged products for the retail and wholesale trades from locally sourced legumes, split peas, mung beans, popping corn and maize.

DEVELOPMENT OF THE REGION AND EMPLOYMENT

We are in a period of enormous change in the irrigation water industry. The MIA scheme and its community are primed for a vibrant future limited only by water availability, infrastructure renewal ability and the creative vision of the community.

The 1986 Powell Report into the economic benefits of irrigated agriculture showed that every \$1 of irrigated production in the MIA, generates \$5.09 in associated activity and flow on effects across the State, and that employment in irrigation farming has a multiplier of 4.74. Thirty six per cent of the economic activity in the MIA is directly attributable to irrigation farming and 31 per cent of total employment in the MIA is directly reliant on irrigation farming. This is due to the more intensive production technology, use of more inputs by irrigation than dryland farming and to the extremely high proportion of production which is processed within the region.

Indirectly, the food bowl of the Riverina is almost totally dependent on irrigation. Without irrigation, the area would be drought prone, marginal cropping and grazing land with very little habitation away from the river. The current population of 50,000 people would be less than 2,000.

ENHANCING THE ENVIRONMENT

MIA farmers have helped develop and preserve wetland habitats, protecting them as feeding and breeding grounds for waterfowl and other wildlife. Each year hundreds of thousands of birds arrive in the area to forage for food, particularly around the rice fields. As many as 150 different bird species have been recorded at a single location. The trees and crops now possible in the area due to irrigation are also a valuable contributor to clean air. They take in carbon dioxide and produce oxygen, retaining the carbon through photosynthesis and can match the carbon dioxide production of 2.6 million people or 987,000 cars.

Individually many farmers are introducing on-farm changes based on recent research and experience.

By identifying threats to the sustainability of the regional area from rising watertables, salinity and excessive drainage, the MIA Land and Water Management Plan aims to extend the adoption of better farm management to the whole area serviced by the company.

In short the plan will improve water use efficiency and reduce irrigation drainage. This in turn will lead to less water flowing downstream and less seepage to the groundwater, therefore to falling watertables and less salt affected land. The biggest problem facing the MIA has been rising watertables, which, once they get to within about two metres of the surface, can reduce the productivity of the land and lead to salinisation. If nothing is done waterlogging and salinity could cost the community over \$100 Million over the next thirty years.

One of the integral components of controlling accessions to groundwater and minimising rises in groundwater levels, is having reliable and adequate drainage

system infrastructure in place to quickly shed rainfall runoff from irrigation farms and the integrated roads and town areas as well as the surrounding lands.

The Plan also aims to assist the local community in protecting our natural resources - remnant vegetation, wetlands, native fauna and aboriginal sites. It has been developed over six years by representatives of community groups and government agencies and will cost in excess of \$250 Million over 15 years to implement. Landholders are expected to contribute \$160 Million of that sum and the local community about \$10 Million with the Government contributing the balance, the latter two because of the benefits which will flow on to the regional and statewide community.

The plan will be implemented by the company which will be responsible under its licences for ensuring that milestones laid out in the plan are achieved. The company will be assisted by a land and water management plan advisory panel comprising community representatives and agency personnel. Government agencies and local government will also be involved in implementing relevant aspects of the plan.

It needs to be remembered that much of the system establishment, on farm irrigation and cropping practices of the past that are now seen to be sub optimal from the viewpoint of environmental sustainability, emanated from Government advisors or were actively encouraged by past Government.

The changed situation in the MIA through irrigation development has brought enormous benefits and the land and water management plans and other environmental activities being undertaken by the regional community acknowledge that some problems exist but they can be minimised or prevented from becoming worse.

NATIONAL REFORM AIMS TO BETTER DEFINE ROLES AND RESPONSIBILITIES

The COAG water reform process is the catalyst for major change in the rural water industry, especially in the irrigation industry. The major thrust is greater efficiency and movement of control and full cost recovery to local irrigators and communities.

In pursuing micro economic reform in all government and semi government utilities the Council of Australian Governments (COAG) in 1995 recommended further policy changes in the water industry which have since been adopted by the NSW Government. These include reforms aimed at achieving greater efficiency in delivery service, full recovery of all costs, integrated management of natural resources on a catchment basis, reform of institutional arrangements, water for the environment, and trading in water allocations.

In its final report the COAG Working group on Water Resource Policy commented on the cost reductions already achieved in the MIA. The company has achieved cost reductions by increasing productivity and efficiency through better planning and scheduling of works; use of modern plant and machinery; greater accent on staff training; flexible work hours, work practices and multi skilling; accountability for performance and recognition of people who perform well; and use of the most modern technologies.

Tax timing imbalances related to prudent collection of funds for and spending on renewal and refurbishment of the irrigation infrastructure put at risk many years of financial planning and negotiations, and suggest that without immediate action to correct the tax environment, the planned move to non profit local ownership of the business will suffer unintended loss of urgently needed infrastructure money. This will result in substantial disruption to the local irrigators, the communities and to the national water reform program.

Clearly, this community co-operative business is an unintended casualty of the tax reform process, and seeks Government intervention to correct the adverse impact on its community.

THE INFRASTRUCTURE

The Murrumbidgee Main Canal has a maximum flow capacity of 6,500 Ml per day. By comparison, the average daily consumption of water in the Sydney metropolitan area is 1736 Ml per day. The Main Canal is part of the irrigation supply network for the community scheme.

In addition, a drainage system collects surplus rainfall runoff and system excess water. There are 1,440 km of drainage channels giving a total length of supply and drainage channels of about 3,540 km. With some minor exceptions, water flows all the way from Burrinjuck and Blowering dams to each farm boundary by gravitation, and runoff is also collected for reuse downstream.

There is a critical need for contemporary flow control works, including SCADA supervision, remote operation and the like to exercise control over particularly system excesses. As these are seen to be new assets the tax-timing problem also works against these improvements.

Fully developing the irrigation potential of each farm and the amalgamation of farms into larger enterprises have stretched the capacity of many channels, which it must be remembered, were constructed more than 75 years ago. To overcome this constraint farmers roster their water deliveries and keep in regular contact with others on their channels and with channel attendants.

Much of the regional irrigation infrastructure is at or fast approaching the end of its effective life and substantial renewal is necessary.

The irrigation infrastructure rehabilitation will be occurring alongside the farm improvements. Continuing research into salinity risks, wetlands, the use of remote sensing to identify problems and crop development will be undertaken across the region.

GOVERNMENTS & IRRIGATORS ROLES IN PROVIDING THE INFRASTRUCTURE

Generally

Irrigation will become increasingly more important in the future as the only solution to growing the food needs of the world, and will positively contribute to export earnings for Australia.

If we are to genuinely foster development of regional and rural Australia, future government investment in irrigated agriculture, production support and transport infrastructure must be undertaken.

Governments must factor in to its return on investment, all of the indirect returns it benefits from. These returns are not recognised by COAG and this clearly serves to shift Government focus away from regional Australia.

In many cases Government can economically justify this infrastructure investment on that basis where private investors cannot. Governments must rethink their attitude and continue to invest in infrastructure for irrigation, and regional development.

New Infrastructure and New Technology provides Returns to Government

If we are to foster economic development in rural Australia, future Government investment, both State and Commonwealth, must acknowledge direct and indirect returns to Government as part of the return on investment. Some of the areas of increased returns are;

- Increases in Payroll Tax as a result of the additional employment in the scheme area and increases in Stamp Duties from the increased land values resulting from the investment in security for the area,
- Increased production created from water savings used to extend into further production. Some areas where water savings are most likely to be made with proper investment are in seepage minimisation from channels, and from evaporation savings in channels and storages,
- Increased quality of agricultural product which will flow from farmer profitability,
- Employment increases as a result of the building and later operation of the new infrastructure,

If the taxation system is biased to and drives us to avoid technology updates, as shown in the sample later in this paper, the community, the irrigator and the Government will all lose opportunity to grow the nation and its prosperity.

Our Scheme

In our scheme, as part of the handover, irrigators accepted responsibility for future costs in connection with the scheme and renewal of its it's assets, after the Government funding program is completed.

The assets of the scheme are at the later stages of their life cycle and the funding negotiated between the company, the irrigators and Government, is in effect the Government putting the scheme on a relatively even competitive footing with comparable schemes, in respect of the state of their assets as they move to local ownership. It is the condition of the assets that determines the need for capital injections (from either government or the irrigators) and the timing of that need. Table 1 shows in simple terms how the different life cycle states affects the need for funds and the inequitable tax treatment that results.

The ATO have indicated that grants from NSW Government for asset renewal works will be assessable income to the new Company. They have suggested that if an agency relationship continued to exist where the Government continued to carry responsibility and risk, then perhaps the Government contributions would not be assessable. True separation of the operational role and acceptance by irrigators of their responsibility for the scheme, will not permit an agency relationship as defined by the ATO, at the same time a separation. Anything less than separation is a sham. Despite a number of representations to the ATO, it seems they are not able to move from their position on this issue. The agreement we have with the State clearly sets out what assets we are permitted to spend the Government grants on, and is an agency in all respects except for future liability.

To provide some perspective to the case the company is presenting, it is necessary to point out;

- If the infrastructure had been renovated or replaced over the last few years prior to entering the Federal tax arena, with either Government or irrigators funds, then there would not have been the need for the Government grant now, and the additional value in the assets would have been available to the company to base tax depreciation on, which would have built up a tax loss shield for future raisings.
- If the money had been contributed to the business over the last few years prior to entering the federal tax arena, then there would be no need for further Government grants, and the accumulated money could have come over as an asset of the new Company at rule the books date. Additional value in the assets as a result of doing the renovation or replacement work over the next few years, would have been available to the company to base tax depreciation on, again as a hedge for the future raisings.
- If the infrastructure system was not so old, the Company would not need to raise capital for renovation and replacement, and there would be sufficient remaining value in the assets to establish tax losses as a result of depreciation, to shield the Company against taxation on future raisings of capital.
- The contribution by Government is in recognition of remedial work and renewals that should have taken place over past years which have been deferred. Any past

subsidies that some people talk about were not directed to irrigators, but were wasted in inefficient Government systems and administration instead of being applied to the infrastructure needs.

In the company's case;

- The road bridges and culverts replacement and upgrade work to be carried out on behalf of local government is in response to a Government promise to local councils. It is ridiculous for us to have to pay tax on the Government funds, just because we are controllers of the money.
- The infrastructure assets are almost at the end of their life, and the Company needs to raise capital from either or both of NSW Government or the irrigators, to renovate and replace it, and

As they do that, the ATO position is that tax must be assessed on those amounts raised by way of Government grants.

DEFICIENCIES IN THE TAX REGIME WHICH IMPEDE REGIONAL GROWTH

This presents the Company with a taxation problem, which is a result of;

A low level of initial tax depreciation on the existing infrastructure, due to its age,

A situation where substantial income is to be assessed as it is spent, and

Where depreciation as a result of that spending is only available over a number of years after the income is assessable.

Our submission mentions earlier that we could be driven as a result of the taxation bias to avoiding contemporary technology and sticking with like-for-like renewals. The following sample explains the problem:

"Replace concrete lined channel.

If we replace like for like over a number of years in sections, then it will be immediately deductible as an expense in the year of spending. This will enable us to match income with expenditure and not carry a tax liability.

If we replace the open concrete lined channel with pipes, to lessen seepage, evaporation and overflow and help protect the environment, it will be seen as a new asset, on which only depreciation would be allowed. To meet the tax liability in the short term until depreciation ran its course, would require irrigators to contribute substantially more than was ever envisaged.

\$100,000 job to replace like for like section of channel.

\$120,000 job to replace open concrete lined channel with pipeline.

NSW has agreed to provide \$100,000 on the basis that Irrigators put in the \$20,000.

With the tax position as it now stands NSW still put in \$100,000.

Up to date job cost is \$120,000 net which is approximately \$188,000 gross to pay tax at 36% (\$188,000-\$67,680=\$120,320).

So irrigators must put in \$188,000 minus \$100,000 from NSW or \$88,000, an increase in expected contributions from irrigators as part of the deal of \$68,000 or 340%.

This will drive us back to the cheaper like for like alternative, which has already been recognised as the least compatible with progressive environmental protection and enhancement. This will also make it more difficult for irrigators to make water efficient systems on farm if the on and off farm systems are not compatible.

Land and Water Management funds are also suggested to be assessable. Much larger payments from Government and irrigators will be needed to meet the additional tax liability.

Until we get formal ATO rulings it is impossible to detail the exact amount of taxation which will be payable, however our modelling using an inflation rate of 3% pa, shows an estimated tax payment of \$20 million. If inflation were to increase in that period to over 3% per annum, then tax payments will increase.

The potential for just this situation was clearly seen by the COAG Working Group on Water Reform. In its first report the group noted that for the reform of the water industry to be effective, the tax implications that were foreseen, should be examined by a sub-committee. **They suggested that it may need taxation reform.**

At its meeting in February 1994, COAG agreed that an Expert Group should report to it on asset valuation and cost recovery for water and water services. The COAG Working Group commissioned the Expert Group, and in its report of February 1995, that group reported that;

"It is accepted for long life assets in the water industry...that the replacement cost approach to asset valuation and associated depreciation is the preferred approach...It is equally clear that for taxation accounting, as the income tax law currently stands, that a replacement cost approach is not acceptable. The Expert Group does, however, note the apparent incompatibility especially in the medium to longer term, of taxation arrangements which determine profit subject to tax on the basis of historic cost approaches to depreciation, and charging...based on sustainable service delivery capacity."

They go on to say that;

"It is not difficult to envisage a situation where... revenue needed to provide for eventual replacement of assets will be treated as profits from the view of taxation and taxed...The Expert group is of the view that this

matter be considered by those responsible ... with the aim of facilitating...without undue loss of funds to taxation."

In its 1997 study, consultants Ernst & Young, when dealing with the Water Industry Asset Valuation Study for the Standing Committee on Agricultural Resource Management (SCARM), noted a number of taxation issues that would adversely affect the implementation of reforms in the industry.

In their papers they recommend specific legislation to address a number of issues, including classification of deductible items, the deeming of entities as primary producers or providing similar benefit, taxation treatment of contributed assets, definitional issues in repair and maintenance, as well as the lack of tax depreciation shelter for entities with significant need for funds for renovation and renewal of infrastructure. In their report they recognise that existing tax law "does not appear to deal with the problems relating to lack of tax depreciation shelter for funds gathered for replacement works."

The report suggested that COAG could recommend a new division of the ITAA specifically for the water industry.

Initially these many eminent groups recognised the timing problem in respect of the assessability of raisings to renovate or replace infrastructure. They also recognised that irrigators need to be able to move on with some surety and without undue loss of taxation on paper or timing profits. It seems the tax legislative change seen as necessary (other than the recent rule the books legislation) was not addressed.

In view of the ATO's indications that the NSW Government grants and most likely irrigator contributions to annuities for infrastructure renewal will be assessable, the Company believes that legislative change is the only avenue to now redress the situation.

The company operates on the COAG pricing principle of recovering running costs plus provisions for future replacement of service capacity, which leads to an effective eventual no profit situation. It will make a substantial taxation loss over the next 25 years, but because of its special need for funds up front and the timing mismatch between the tax assessment of income and the allowability of depreciation deduction, will pay tax on imaginary profits in a number of those initial years.

IMPACT ON GOVERNMENT

The problems for this business arise as it translocates from decades of former Government ownership which provided no opportunity to tax plan for the future, into the Commonwealth tax arena.

There is no tax loss to the Commonwealth, as there is no prior revenue stream to be lost and if there was a legal agency arrangement, tax would not be payable. Past tax losses of the entity over past decades disappear with ruling the books.

It seems that the outcomes are the unintended result of reform aimed at other areas of "privatisation's" of profit making businesses. This is entirely different to our move, in accordance with the COAG water reform agenda, to empowerment of local landholders and the transfer of future responsibility for environmental infrastructure and financial survival into their hands.

SUMMARY

TAX OUTCOMES NEEDED

- In respect of the Land and Water Management Plan works, funds from Commonwealth, State and Local Government as well as irrigators and the local urban communities must be non-assessable in the hands of the Company, which is in effect the agent of those parties in implementing the plan.
- In respect of the raising of ongoing annuities for water supply and drainage infrastructure renewal from Government or irrigators, tax concessions to funds put into these significant rural infrastructure schemes are a necessity. Alternatively, a modification of the revised rule the books position announced by Treasurer Costello on 4th August 1997, to permit a greater value to be adopted and thus a greater depreciation shield could provide a similar outcome.
- Special taxation treatment of funds used for investment in environmental works or water saving works, might also be an appropriate way of overcoming our dilemma, given the espoused Government commitment to those measures from an environmental perspective.
- Alternatively, the Commonwealth Government could grant a sum of money to NSW to cover funds lost by the Company in taxation on these arrangements, and NSW could pass it on to the company. This would be budget neutral to the Commonwealth and compatible with an agency agreement. It would not need any change to tax law.

We need urgent Government intervention to correct this unfortunate and unplanned outcome, otherwise irrigation infrastructure on which the community depends will continue to deteriorate and impede the continued development and prosperity of the region.

WHERE INFRASTRUCTURE FUNDING IS NEEDED

- On route storages for the valley,
- Integration with a channel to the river from the Murrumbidgee Scheme area,

- Encouragement of pressurised on and off farm irrigation water supply systems, and
- piping the western stock and rural household open channel systems.

This will deliver environmental benefits in wetland watering, fish breeding, and additional flows in the river.

It will realise water savings that can be converted to additional production.

It will lessen the flooding problems experienced in the lower Murrumbidgee Scheme area, caused by incomplete drainage systems.

It will result in lower watertables.