

## Memo

**To: David McKenzie**

**From: Pat Hulme**

**Date : 13 July 2009**

***Re: MIS, Queensland Paulownia.***

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Sustainable Soil Management was employed by Queensland Paulownia Ltd after an initial planting of trees had failed to assess the suitability of soil in their plantations at Forbes for Paulownias. The cursory soil examination by an independent forester found that the soil was "eminently suited" for growing Paulownias.

Our soil investigation, for which we were paid, found that the soil was unsuitable for growing most irrigated crops because it had extremely high sodium levels and was moderately saline. The effect of unsuitable soil was compounded by the poor quality and irrigated volume of the irrigation water that was available.

We then did another \$40, 000 of work, to demonstrate that predictions we made about soil properties were accurate and to explain to Queensland Paulownia executives that there is significant variation in the soil suitability across the landscape and why they had been poorly advised. We were not paid for any of this work as Queensland Paulownia went into receivership before our bills were paid. The situation became farcical when Queensland Paulownia found another "expert" who advised them that their soil was suitable, then a third expert as a tie breaker.

Our experience after working with a number of agricultural developers is that agricultural investments are more likely to fail when the decision makers fail to grasp the biological realities of the system they are working with. In this case, the investors tend to engage numerous advisers until they get the answer they seek. They do not appreciate that nature is the judge and the adviser is an interpreter of the message nature will ultimately convey.

In this regard, it is difficult to protect poor decision-makers from themselves, and it appears prudent that there is a case that the ultimate decision makers in their agricultural investments have demonstrated skills in managing agricultural systems.

**Suitability of Soil on 'Lowen' Forbes for Commercial  
Paulownia Plantation**

**Prepared for: Queensland Paulownia Forests Limited**

**27<sup>th</sup> September, 2006**

**Prepared by: Sustainable Soils Management**

**Suitability of Soil on 'Lowen'**

Sustainable Soils Management have assessed the soil on 'Lowen' and believe it is very poorly suited to the commercial production of plantation Paulownia because it is saline, sodic, alkaline and poorly drained. These properties combined with the poor quality water available for irrigation are likely to result in very poor Paulownia survival and growth. If conditions during any stage of the period from establishment to harvest (12 to 20 years) are such that the trees become waterlogged or salinity increased it is highly likely that the trees will die. The chance of these conditions occurring is high.

**What Can be Done?**

We believe that the best strategy for future management of 'Lowen' is to sell the farm and develop more land elsewhere. Whilst this strategy may carry a financial loss from the costs of development, we believe that the risk of crop failure on 'Lowen' is so high that selling and moving is the best option (Table 1).

Whatever management practices are applied to growing Paulownia on 'Lowen', the productivity will still be less than that from well drained soil. On this basis, we strongly recommend that Paulownia not be grown on 'Lowen'.

# PROJECT FORESTER'S REPORT

## CAPITAL FORESTRY UNITS 2006 AND 2007 FORBES PLANTATION

31 March 2006

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**To: The Directors**  
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### Introduction

This report has been prepared for inclusion in the Product Disclosure Statement (PDS) for the Capital Forestry Units 2006 and 2007 and provides an appraisal of the silvicultural requirements for the successful cultivation of Paulownia species on the tree farm at Forbes, N.S.W. The objective is to provide information for prospective Unit Holders that may assist in analysing this investment opportunity.

The properties named Allawah, Wirrabilla, West Oma/Lowan and Woodlands, located near Forbes in New South Wales, were inspected and certified prior to the purchase of Wirrabilla and West Oma/Lowan by Quality Land Holdings Pty Ltd. The other two properties – Allawah and Woodlands – have an option to purchase that Quality Land Holding Pty Ltd intends to take up prior to 1 July 2006. The latest site visit occurred on 26 – 28 July 2005.

Additionally, QPFL has secured land adjoining the land noted above. These properties are known as Green, Williams and Delvin and have been certified as being suitable for the growth of Paulownia.

### Verification of Expertise

Yulebar Enterprises is a specialist agroforestry consultancy with over 40 years' experience in forestry and agroforestry. We possess particular expertise in Paulownia that is based on both Chinese and local studies. Mr Robin Yule, B.Sc., B.Sc.For., Dip.For.,

has an extensive background in forest research embracing forest research management, land use appraisal (including management plan preparation and environmental impact studies), forest pests research (including management of biological research in Queensland forestry), management of forest research as Principal Research Officer, Department of Forestry, Queensland, agroforestry research into trees on farms, the irrigation of trees with domestic effluent and horticulture. Mr Yule is a Member of the Institute of Foresters Australia (45 years) and the Australian Entomological Society (35 years). In 1969 Mr Yule was awarded an Anzac Fellowship, which provided the opportunity to undertake 12 months' forest research in New Zealand. Mr Yule has extensive overseas experience in forestry, including a visit to China to specifically target the potential application of agroforestry species (particularly Paulownia species) in Australia. This latter visit was as part of a Federal Government Agroforestry Mission.

### Relationship with the Responsible Entity

Other than my role as Project Forester of QPFL, I act in no other capacity for the Responsible Entity and take no responsibility for information in this PDS other than that given in this report. I have been engaged to certify that prospective sites chosen for the purpose outlined in the PDS will be suitable for that purpose. I have also been engaged to monitor the

productivity of the site throughout the term of the rotation and to prepare reports to ensure that Unit Holders and the company are independently informed of the progress of the Project annually. I have no financial interest in the Project or the companies associated with it. I receive remuneration at the accepted consultancy rates for any work I undertake for the Responsible Entity.

I have been associated with QPFL since 1998 and have certified land since the Prospectus for Queensland Paulownia Forests Project No. 3 was issued.

### The Species

All nine Paulownia species are confined to mainland China with the exception of *P. fortunei*, which extends into Vietnam and Laos, and *P. tomentosa*, which also occurs in Japan and Korea. Paulownia species have been grown in Australia for in excess of 50 years; however, it is only in the past approximate 20 years that they have received attention as a potential timber producer in this region. The trees are particularly fast growers, producing light weight and dimensionally stable timber that is pale in colour with a fine straight grain and lustrous texture. The timber is easy to work and is considered suitable for cabinet making, furniture, musical instruments, architraves and cornices. These characteristics provide it with the potential to replace the dwindling resources of 'Diptrocarp' species, such as Meranti and Pacific Maple, now imported from South East Asia and to favourably compete with Western Red Cedar for internal uses such as decorative blinds and shutters. Paulownia species are deciduous trees with compact crowns of large, palmate leaves and they produce dense masses of blossoms in spring immediately before the following leaf flush. The flower nectar

produces a high quality honey and the leaves may be utilised as high quality fodder for animals. Paulownia trees are deep rooted and best suited to sandy clay loams, with a depth in excess of 1.0 metre to the water table and a soil pH of 5.0 to 8.0. *P. fortunei* is more tolerant of clayey soils than the other species. None of the species will tolerate waterlogging, poor drainage sites, heavy clays, high soil alkalinity or salinity. These latter conditions are and will not be found in any certified plantation sites chosen for this project.

*P. fortunei* is the species to be used and any reference to 'Paulownia' in this report will mean that species.

### Sites – Suitability of Selected Sites

The sites for the Project are located near to Forbes in landscapes described in the Native Vegetation Resource Package for the Mid Lachlan Region as the Jemalong – Wyldes Plain and the Bundaburrah – Grawlin Plains. The locations are within the Lachlan River catchment and all of the properties that will be selected will possess approved water allocations that satisfy the irrigation requirements for the intended crops.

Since it is intended to furrow irrigate the chosen properties, an important selection criterion has been the need to accommodate this requirement. Accordingly, the magnitude of laser levelling and vegetation clearing has been an important consideration.

The soils vary from property to property and within each property. There is a mixture of brown clays, grey clays and red solodics, red brown earths and red earths. They are primarily self-mulching alluvial soils overlying quaternary alluviums, which are eminently suited to the intended land use. In fact, as some of the soils may be subject to compaction in the upper

profile under the usual cultivation systems, the establishment of a tree crop will avoid the potential for this development to occur.

My inspection of the properties has revealed no impediment to the successful cultivation of Paulownia provided appropriate management strategies are employed. In fact, it is a land use that will ameliorate and avoid some of the serious problems of concern in the catchment such as salination.

### Land Selection

The key elements considered in selecting land for Paulownia plantation projects embrace the following items:

- **Slope** – slopes in excess of three degrees are rejected.
- **Soils** – soils must possess an unimpeded drainage profile of at least one metre. Since all tree rows are mounded to produce consolidated mounds of 0.5 metres, this provides a free draining profile of 1.5 metres. Soil type is not a major concern if this characteristic applies, since appropriate amendments and management strategies to suit the species will accommodate perceived and subsequently proven deficiencies as determined by appropriate soil analyses.
- **Drainage** – surface drainage will be accomplished by the laser levelling procedure and is a key to the successful use of flood irrigation. Soil profile drainage is the first determinant of land suitability.
- **Previous land use** – the initial examination of the sites involves the examination of 1.5–2.0 metre soil pits to ascertain the impact of previous land use on the physical nature of the soils.
- **Rainfall** – meteorological records are carefully studied prior to confirming the suitability of a site.