

**Macquarie Almond Investment 2009
Initial Establishment Report**

Prepared for : Macquarie Alternative Assets Management Limited

By : Ben Thomas

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1 INTRODUCTION

Scholefield Robinson Horticultural Services Pty Ltd (Scholefield Robinson) was engaged by Macquarie Alternative Assets Management Ltd (MAAML) to prepare an independent expert report on the initial establishment of the Macquarie Almond Investment 2009 project (the 'Project'), located near Robinvale in north east Victoria.

In particular, the report covers the following topics:

- An assessment of the initial establishment of the Project including the area planted;
- An assessment of the management services provided by Macquarie Agricultural Services (MAS);
- Any other observations of a significant or material nature.

Ben Thomas visited the orchard on 24th June 2009 and met with Chris Greig (Orchard Manager), Tracey Conner (Joint Asset Manager) and Nick Katis (Joint Asset Manager) of MAS.

The property on which the Project is being established is named "Margooya". The Project consists of 315 hectares of almonds planted in September 2008 and approximately 211 hectares of almonds to be planted in July 2009.

This report relates to the trees planted at the time of the orchard inspection and horticultural aspects of the Project, with no assessment of management costs or budget performance.

2 ORCHARD DEVELOPMENT

2.1 Land Preparation

The property was surveyed by Sunraysia Environmental Pty Ltd to identify the following areas:

- Areas suitable for almond production that do not require earthworks;
- Areas suitable for almond production following movement of soil and/or preparation of mounds along the proposed tree-line;
- Areas not suitable for almonds.

Land preparation consists of several stages as follows:

Removal of natural vegetation → Contour trenching to provide subsoil drainage → Cutting, filling and grooming of soil in accordance with Sunraysia Environmental recommendations → Ripping of soil along the proposed planting line to depths of 300mm, 500mm or 800mm in accordance with Sunraysia Environmental recommendations → Application of ameliorants (cow manure, superphosphate and gypsum) as a band along the proposed planting line which are then cultivated into the soil → Mounding of soil along planting line in areas specified by Sunraysia Environmental → Marking out and planting of trees.

Both ripping and mounding maximise the available root zone of the trees and are commonly used in the almond industry. As with previous almond projects, wind erosion is a concern especially where mounds are formed in exposed dune areas. MAS are aware of this issue and have retained as much organic matter (weed trash) on the soil surface as possible and sown cover crops to provide protection against wind erosion. Favourable rainfall in recent months has also assisted in minimising wind erosion.

To meet Department of Sustainability and Environment requirements, buffer zones have been established with fencing at the Margooya property. Quotes are being sourced for contractors to revegetate these buffer zones.

2.2 Area Planted

The Project consists of 315 hectares of almonds planted in September 2008 and approximately 211 hectares of almonds to be planted in July 2009. To meet PDS requirements, irrigation infrastructure (mains and submains, valves etc.) was installed prior to June 15, 2009. Drip line has been purchased and is on site.

2.3 Planting Design

Three main varieties have been used in the land planted in 2008 - Nonpareil (50% of trees), Carmel (33% of trees) and Price (17% of trees). This mix of varieties will also be used in the land to be planted in July 2009 and all trees have been established on Nemaguard rootstock which is widely used in the Australian almond industry and is a proven performer. The mix of varieties matches that proposed in the PDS for the Project.

Trees have been or will be planted on a grid of 7 metres by 4.4 metres giving a total of approximately 324 trees per hectare. This planting density is consistent with modern orchard design principles.

2.4 Planting Material

Trees planted in 2008 were sourced from Chalmers Nursery, Growtek and Select Harvests (GF677 rootstocks) nurseries. Trees to be planted in July 2009 will be sourced from Growtek and Tolley nurseries. I was advised that buds for these trees were sourced from the Almond Board of Australia (ABA) certified budwood scheme and that seed for the rootstocks was from an ABA approved source.

The trees planted in 2008 were 2 years old with the exception of the GF677 trial trees which were only 1 year old. MAS rated the quality of the trees from the nurseries as good. In my opinion, the trees planted in September 2008 were of good quality and at industry standard.

2.5 Tree Planting

Tree planting has been and will be conducted by local contractors (AB Horticultural Services). Briefly, this involves the digging of planting holes using a tractor mounted soil auger and planting of trees by a team of planters. Trees are placed in front of the planters no more than 4 rows at a time and the planters move across the field to plant. Using this technique, the trees should spend no more than 15 minutes on the ground.

Stakes and tree guards are installed in the afternoon on the day of planting and stakes, ties and guards have been purchased and are on-site. Up to 10,000 trees can be planted each day if required but the contractors have been asked to plant less than this to ensure quality of planting.

MAS are trialling the use of a trellis on 51 hectares of the project with a single wire to provide support to the young trees. This replaces the bamboo stakes normally used. Initial impressions are that the trellis is a viable option but is not suitable for all areas.

2.6 Irrigation System

Dual drip irrigation lines have been installed on the land planted in 2008 and will be installed on the land to be planted in July 2009. As with previous Macquarie Almond Projects, clips have been or will be installed to block emitters between trees in order to reduce water use. MAS

estimate that for the land planted in July 2009, clipping of the emitters will not take longer than 2 weeks following installation of the drip irrigation lines.

Irrigation water for the Project is or will be sourced from the River Murray using 2 x 355kW pumps delivering 430L/s each and a submersible 45kW jacking pump delivering 70L/s. All pumps are serviced and in good working order and the site is secure. An additional 355kW pump has been ordered and will be installed at the river site as back up.

The water is up-lifted to a holding dam on the neighbouring Caernarvon property via a single rising main capable of delivering 860L/s. Irrigation headworks at the dam include 2 x 355kW pumps delivering 420L/s each, a 200kW pump delivering 220L/s and a 45kW submersible jacking pump delivering 70L/s. All pumps at the dam are serviced and maintained and fully operational.

The fertigation and filtration infrastructure on the Caernarvon dam will be utilised for the 2009 project. Eventually, water from the River Murray will be pumped to a new dam on the Margooya property and then re-lifted and delivered to the trees via a filtration and fertigation system on the property. Depending on the finished planted area, this dam is expected to be constructed in 2010.

Mains power was scheduled for connection at the river pumps by August 2007 but was delayed until July 2008. The diesel generator utilised at the river prior to connection to mains power has been relocated to the Caernarvon dam as a backup power source and is fully operational.

One issue raised during orchard visits for previous Macquarie Almond Investment projects was that flexible hose (rather than stainless steel pipe) was used as flush lines from the filters to the filter manifold and had started to deteriorate and fray. The flexible hose has been replaced with more robust hose and no leaks have been observed.

2.7 Irrigation Scheduling

Irrigation requirements for the trees will be based on crop factors and evaporation data. For the land planted in 2008, soil moisture monitoring probes have been installed to allow assessment of soil moisture status which is confirmed with physical inspections of the soil and tree response. For the land to be planted in July 2009, soil moisture probes will also be installed following planting.

Piezometers have been or will be installed to allow monitoring of deep drainage. Test wells will also be installed as required to allow monitoring of possible perched water tables.

2.8 Power

Mains power is provided to the Margooya property via a private line managed by Utilicor. As discussed above, the diesel generator utilised at the river prior to connection to mains power has been relocated to the Caernarvon dam as a backup power source and is fully operational.

MAS are investigating the purchase of an additional diesel generator for installation at the Caernarvon dam site that will provide back-up power for the Caernarvon and Margooya properties.

2.9 Roads

In the land planted in 2008, primary roads have been constructed around the plantings. These roads are well constructed with a strong compacted road metal base and have withstood the development phase of the planting. Additional road construction will be undertaken as required.

The roads surrounding the land to be planted in July 2009 have been formed but not fully finished. In their current state, the roads provide adequate access to the property for machinery and development activities.

2.10 Buildings

The project will utilise the same hub area on the Caernarvon property constructed for the Macquarie Almond Investment 2006 project. Temporary lunch room and toilet facilities have been constructed on the Margooya property and land has been designated for an office, chemical shed and Manager's house. Quotes are being sought for construction of these building. A compound base with security fence has been completed and shed construction was about to commence at the time of the orchard visit.

2.11 Machinery

The Project will rent machinery supplied and maintained by GBC motors. At this stage, machinery will be managed as a pool from the Caernarvon property.

3 ORCHARD MANAGEMENT

3.1 Macquarie Agricultural Services

Macquarie Agricultural Services (MAS) have been engaged by MAAML to develop and manage the orchard on behalf of investors. The MAS management team consists of Chris Greig (General Manager), Tracey Conner (Joint Asset Manager), Nick Katis (Joint Asset Manager), Wayne Hazel (Operations Manager), Richard Handreck (Assistant Operation Manager) and Jim Ryan (Irrigation Manager).

In our opinion, the MAS team have shown a high level of skill and management capability in developing the 2006, 2007 and 2008 Macquarie Almond Investment Projects and are more than capable of developing the 2009 Project to a high standard. Scholefield Robinson has also assessed the 2006, 2007 and 2008 Macquarie Almond Investment projects and considers them to be of high quality and at, or above, industry best practice.

3.2 Tree Establishment and Initial Growth

Establishment and growth of trees planted in September 2008 has been very good. Growth is uniform and there were minimal tree losses requiring replanting.

3.3 Nutrition

A combination of urea ammonium nitrate, KKK, potassium nitrate, Libfer and K-humate has been applied via fertigation. Copper, zinc, manganese and multinutrient foliar sprays have also been regularly applied to all blocks.

The appearance of the trees suggests that nutrients have been well managed since planting. Iron deficiency has been a problem in previous Macquarie Almond Projects and this is common in almonds grown in alkaline Mallee soils. MAS are aware of the risk of iron deficiency and are prepared to apply EDDHA-chelated iron when required to treat any iron deficiencies.

3.4 Irrigation

Irrigation requirements are predicted using crop factors and evaporation data. Soil moisture monitoring probes are used to monitor soil moisture status and weekly inspections of soil and

trees are conducted. Test wells and piezometers have been or are being installed to allow monitoring of deep drainage.

Irrigation records provided by MAS indicate that 0.9 ML/hectare of irrigation water was applied to the trees planted in September 2008 during the 2008/2009 season. The volume of water used is considerably less than that proposed in the PDS for the Project for Year 1 trees (3.0ML per hectare). A major contribution to this water saving has been the use of clips to block emitters between trees. Whilst blocking emitters between trees has resulted in reduced water use, the appearance of the trees suggests that the trees have been adequately supplied with water since planting.

Evaporation losses from the dam are allocated to the various Projects based on the total water used by each Project. The Asset Manager has engaged Irrigation 21 of Mildura to conduct an internal irrigation system audit covering pump efficiencies, water meters, supply and reticulation, field pressures and flow rates.

3.5 Weed Control

Weed control is generally good. Some weeds were noticed during the orchard visit but have been controlled. Retention of weed trash following herbicide use has resulted in better control of wind erosion.

3.6 Cover Crops

Cover crops were successfully established in July 2008 and good growth achieved. This provided good protection from wind erosion. In previous seasons, cover crop production has been very difficult due to the lack of reliable winter rainfall.

3.7 Tree Training and Pruning

Training of almond trees is required following the first year of growth after planting and there are many opinions on the best way to train young almond trees. MAS utilise the following process when training young almond trees:

- Remove any cross-over limbs that will negatively impact on final tree structure;
- Remove any low limbs that will be affected by chemical sprays or equipment;
- Encourage growth of 5-7 'scaffold' branches which will then be reduced to 4-5 scaffold branches by year 5 to provide a permanent structure to the tree. Scaffold branches are 'tipped' to promote lateral shoot growth.

In subsequent seasons, additional pruning is conducted with the following criteria:

- Remove any cross-over limbs that will negatively impact on final tree structure;
- Remove any low limbs that will be affected by chemical sprays or equipment;
- Remove a maximum of 2 limbs to create space between limbs and open the centre of the trees.

At the time of the orchard inspection, pruning and training of trees planted in September 2008 was about to commence.

4 OTHER ISSUES

4.1 Water Availability and Requirements

Severe drought conditions in the principal catchment areas of the Murray Darling Basin during the past few seasons have resulted in low storage levels in dams and reduced flows in the River Murray. In a media release dated 15th May 2009, Goulburn-Murray Water has predicted the following allocations for the Murray River based on inflow conditions.

Inflow conditions*	Predicted allocations (% of entitlement)				
	1 st July 2009	15 th August 2009	15 th October 2009	15 th December 2009	15 th February 2010
Wet	0	23	95	100	100
Average	0	4	39	66	81
Dry	0	0	5	11	19

*Inflow conditions are as follows:

'Wet' - Inflow volumes that have 1 chance in 10 of being exceeded.

'Average' - Inflow volumes that have 5 chances in 10 of being exceeded.

'Dry' - Inflow volumes that have 9 chances in 10 of being exceeded.

My understanding is that as at 30th June 2009, total water entitlements held by Macquarie for the 2006, 2007, 2008 and 2009 Macquarie Almond Investment Projects including pending transactions are 10695ML. Carryover water entitlements have been secured to provide sufficient water for all projects until 15th October. Therefore, predicted allocations for Macquarie in 2009/2010 are as follows:

Inflow conditions	Predicted allocations (ML)				
	1 st July 2009	15 th August 2009	15 th October 2009	15 th December 2009	15 th February 2010
Wet	0	2460	10160	10695	10695
Average	0	428	4171	7059	8663
Dry	0	0	535	1176	2032

The predicted water requirements for the 2006, 2007, 2008 and 2009 Macquarie Almond Investment Projects for 2009/2010 are as follows:

Project	Year planted	Area planted (hectares)	PDS water requirement (ML/hectare)	Predicted water requirement* (ML/hectare)	Predicted total water required for 2008/2009 (ML)
2006	2006	313	10	8	2504
2007	2006	187	10	8	1496
	2007	194	8	6	1164
2008	2008	86.5	5.5	2.7	234
2009	2008	315	5.5	2.7	851
	2009	211	3	1.5	317

* - Predicted water requirement takes into consideration clipping of emitters and so is less than that proposed in the PDS.

Therefore, the combined predicted total water requirement for 2009/2010 for the 2006, 2007, 2008 and 2009 Macquarie Almond Investment projects is 6566ML. This will be met if inflow conditions are average. If inflow conditions are dry, there will be insufficient water available in the current entitlements held by Macquarie. It is my understanding that Macquarie will purchase additional water on the open market if required to meet the needs of the 2006, 2007, 2008 and 2009 Macquarie Almond Investment Projects for 2009/2010 and into the future.

5 SUMMARY

The Macquarie Almond Investment 2009 Project was inspected on 24th June 2009 and this Initial Establishment Report presents the observations made on that date. The project consists of 315 hectares of almonds planted in September 2008 and approximately 211 hectares of almonds to be planted in July 2009.

The almond orchard has been well developed. Soil surveys, land preparation, irrigation system, planting design, nursery trees, orchard management and infrastructure have been conducted or are at a good industry standard.

MAAML have advised that their total water entitlement for the 2006, 2007, 2008 and 2009 Macquarie Almond Investment projects is 6566ML. If the predicted water allocations by Goulburn-Murray Water under 'average' inflow conditions are achieved, there will be sufficient water for the combined almond projects in 2009/2010. If inflows and water allocations are lower than that required, MAAML have indicated that the required extra water will be purchased.

DISCLAIMER

1. Scholefield Robinson Horticultural Services Pty Ltd (Scholefield Robinson) is not operating under an Australian financial services licence in providing this report.

Professional services for the preparation of this report plus any out of pocket expenses is all the remuneration (including commission) or other benefits that any "relevant person" is to receive that might reasonably be expected to be or have been capable of influencing Scholefield Robinson in providing this report.

In this context, a relevant person is: (i) Scholefield Robinson; (ii) a related body corporate of Scholefield Robinson; (iii) a director or employee of Scholefield Robinson (iv) an associate of any of the above.

Otherwise, there are:

- no other interests, whether pecuniary or not and whether direct or indirect, of Scholefield Robinson or of any associate of Scholefield Robinson;
- no other associations or relationships between Scholefield Robinson (or any associate of Scholefield Robinson) and Macquarie Alternative Assets Management Limited (MAAML);

that might reasonably be expected to be or have been capable of influencing Scholefield Robinson in providing this report.

Scholefield Robinson may undertake future consultancy work for the Project of a technical horticultural nature, on a fee for service basis.

2. In preparing this report, Scholefield Robinson has assumed that:
 - 2.1 The information given to us by the Project Manager, MAAML, their staff, and third parties is complete and accurate; and
 - 2.2 The Project Manager will carry out good management practices in relation to the orchard.
3. Scholefield Robinson does not, by preparing this report, endorse or recommend participation in the Project and can give no assurances or guarantee as to its success or performance (financial or otherwise).

SCHOLEFIELD ROBINSON HORTICULTURAL SERVICES PTY LTD



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