

MEMORANDUM

Date 23 May 2011
To Michelle Astridge
From Ron Wainberg
Subject AA003852 - Dellara Pty Ltd

Michelle,

This memorandum addresses two matters in accordance with directions made by the Court on 12 May 2011:

1. Q5a - Broad intentions for sourcing waste of various types to meet the proposed recycling targets.
2. Q5c - What is the basis for the estimates made in the report for recycling volumes? What confidence level do the recycling estimates have now as estimates and what confidence level as estimates for the future?

These two questions are closely aligned in so far as the broad intentions for sourcing the wastes is of itself the basis for the estimates of recycling volumes.

BROAD INTENTIONS FOR SOURCING WASTE AND BASIS FOR RECOVERY ESTIMATES

Waste by its nature is highly variable. It is not possible to guarantee exactly what mix of materials will be received in any facility unless contracts are in place to receive and process segregated materials from specific waste generators. Dellara intends to enter into contracts with established waste management companies. In this way it will be possible to target wastes with high concentrations of materials which can be recovered – for example wastes from industry sectors such as light manufacturing or property and business services. Waste loads specifically collected as dry materials will minimise the amount of putrescible contamination and support enhanced recovery.

The NSW Government's recent publication *Review of Waste Policy and Strategy in NSW*¹ (the "Richmond Report") noted:

"..... there will need to be significant improvements in either source separation by C&I waste generators or processing, including construction of additional dirty material recovery facilities (MRFs), or other technologies including dedicated energy from waste facilities."

Accordingly, the trend will be towards greater source separation which will enhance the opportunities for greater material recovery.

Dellara propose to source waste materials from the Commercial & Industrial (C&I) and Construction & Demolition (C&D) waste streams. The Modified Preferred Project Report sets out the overall mass balance targets for the facility. This is reproduced in Table 1 below.

¹ Department of Environment, Climate Change and Water NSW on behalf of the Steering Committee for the Review of NSW Waste Strategy and Policy, December 2010

Table 1 - MPPR Mass Balance

	'000 tonnes
Total waste received:	450
Direct landfill disposal:	100
Balance to re-processing:	350
Recovery:	245
Residual to disposal:	105

This mass balance implies a target average of 70% recovery from the materials sent for re-processing.

Dellara's proposed facility will not be licensed to process or dispose of putrescible wastes. Accordingly it will be necessary for Dellara to reject materials containing significant quantities of putrescibles and to implement a rigorous management system to separate, temporarily store and then remove from site any small quantities of putrescibles which are received.

The C&D waste stream will be broadly suitable for processing as will portions of the C&I waste stream.

The latest data on C&I wastes in Sydney is the *Disposal Based Survey of the Commercial and Industrial Waste Stream in Sydney*². This report (Table 17) summarises the mixed C&I waste received at landfills for disposal as a function of the industry sector generating the waste. The data is reproduced in Table 2:

Table 2 - Mixed C&I Waste by Industry Sector

Industry sectors	2007-08	
	Total Tonnes	(%)
Mixed SMEs	781,673	45%
Manufacturing	316,690	18%
Retail trade	111,571	7%
Property & business services	104,750	6%
Construction	91,828	5%
Wholesale trade	57,993	3%
Transport & storage	57,385	3%
*Other sectors (<3.0%)	215,704	13%
Total	1,737,594	100%

² Published by OEH in May 2010

The Richmond Report notes³:

There is potential to recover up to an additional 745,302 tonnes of materials a year from the C&I waste stream, by increasing the recovery of:

- *wood from 16% (2008–09) to 80%; this would recover an additional 217,141 tonnes*
- *food waste from 18% (2008–09) to 50%; this would recover an additional 176,555 tonnes*
- *paper/cardboard from 53% (2008–09) to 76%; this would recover an additional 183,109 tonnes*
- *plastics from 8% (2008–09) to 45%; this would recover an additional 148,560 tonnes*
- *glass from 53% (2008–09) to 70%; this would recover an additional 19,937 tonnes.*

This data shows there are significant opportunities for additional material recovery from the C&I waste stream generated in Sydney.

The Richmond Report states that recovery of material from the C&D waste stream is performing well in relation to the 76% target set for 2014. The Waste Avoidance and Resource Recovery Strategy Progress Report 2010 published by OEH cites⁴ the NSW average recovery from C&D waste to be 73% in 2008-2009. Since Dellara intend to appoint an experienced waste company to operate the facility, there should be no difficulty in equalling NSW current best practice for resource recovery from this stream. Accordingly, an average recovery of 73% is assumed for the purposes of this analysis.

Dellara will be able to meet its diversion targets by processing typical C&D waste together with targeted C&I wastes.

An average diversion of 70% will be achieved in time by meeting best practice on the C&D stream (73%) and targeting C&I waste from appropriate industry sectors producing dry C&I wastes.

According to OEH⁵, "In 2007-08, 2,223,856 tonnes of C&I waste was sent to Sydney landfills. Most of the C&I waste came from mixed loads (1,737,594 tonnes — 78%) and the remaining 486,262 tonnes (22%) were segregated single material loads." Should Dellara be able to secure a portion of the segregated materials, a higher recovery rate from the C&I waste stream is anticipated. This would allow Dellara greater flexibility in determining the relative portions of C&I and C&D wastes while maintaining the target average recovery rate of 70%.

While achievement of Dellara's 70% recovery goal will require targeting the waste streams to be processed, the analysis above demonstrates that the target is realistic and has the potential to meet the NSW target for recovery from C&I wastes.

LEVEL OF CONFIDENCE IN THE RECOVERY TARGET

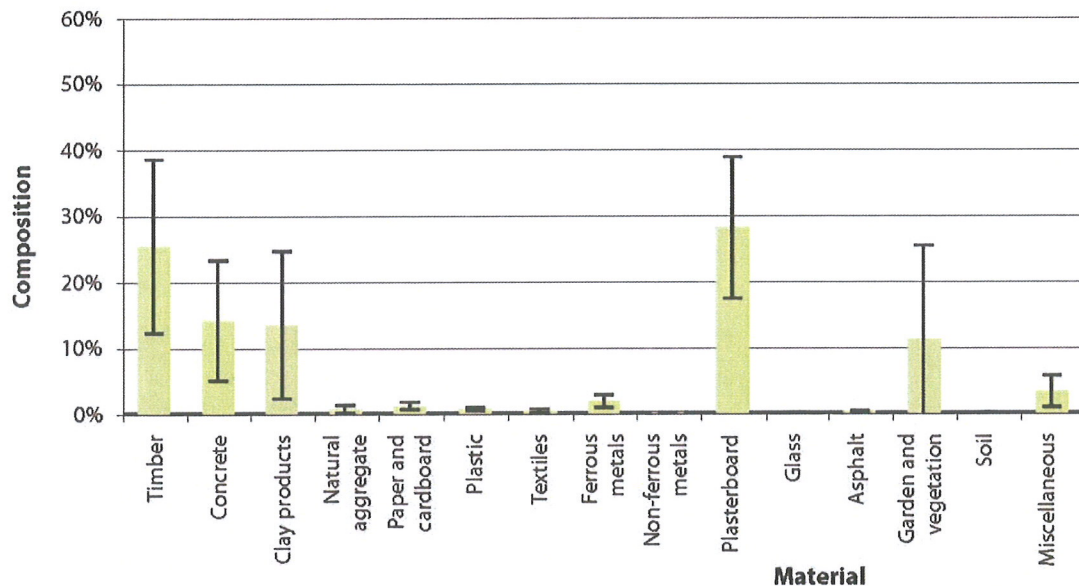
The waste data reported by OEH for C&I waste in the Sydney region does not include an assessment of error or the level of confidence which can be placed on the information. Accordingly, it is difficult to provide a quantitative assessment of the level of confidence Dellara has in the target recovery rate being achieved, as this is directly related to the level of confidence associated with the primary data reported by OEH.

C&D waste data published by OEH does include charts which graphically depict the sampling error at a 90% level of confidence. As an example, the following chart, reproduced from the OEH Report, shows the sampling error of Stockpile Sample Selection for the medium-size fraction at a 90% level of confidence.

³ Op. cit. p35

⁴ Table i, page 4

⁵ Disposal Based Survey of the Commercial and Industrial Waste Stream in Sydney, DECCW, May 2010, page 5.



The chart clearly shows the variability in the percentage composition reported for each material. This is understandable given the inherent difficulties in determining waste audit data. Use of the data necessitates an acceptance of the data quality which in turn will reflect the user's confidence in the result of any calculations, in a quantitative sense.

In practical terms, there will be an inherent variability in a quantitative prediction of the amount of material which can be recovered. Dellara's level of confidence in achieving the target they have set for themselves is qualitative and based on the operational experience of the waste companies with whom Dellara will contract for the supply of feed material and operation of the facility.. It should be noted that the variability in waste data relates to waste composition data. Data relating to the total amount of waste currently landfilled is much more robust as it is derived from actual weighbridge information reported to OEH.

While not part of the current proposal it should be noted that the energy from waste market in the Sydney region may mature if the NSW Government follows through on the Richmond Report's recommendations. Under these circumstances, Dellara's flexibility in targeting waste feedstock while achieving the resource recovery target will be greatly enhanced.

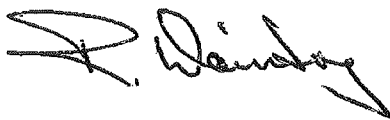
SUMMARY

1. **Q5a - Broad intentions for sourcing waste of various types to meet the proposed recycling targets.**

Dellara will be focus on processing material from appropriate industries which can yield wastes suitable for an average of 70% resource recovery. The C&D waste stream will be the primary waste received at the facility, augmented by selected C&I wastes.

2. **Q5c - What is the basis for the estimates made in the report for recycling volumes? What confidence level do the recycling estimates have now as estimates and what confidence level as estimates for the future?**

A quantitative assessment of confidence in the recovery estimate is not possible because the basic data published by OEH does not specify any associated level of confidence or standard error. Qualitatively, Dellara is highly confident because of the NSW Government's response to the Richmond Report and actions to be taken to facilitate greater resource recovery by Industry.



Ron Wainberg