



10. BURWOOD LANDFILL LEACHATE UPDATE

Officer responsible Waste Manager	Author Eric Park, Solid Waste Engineer
Corporate Plan Output: Solid Waste	

The purpose of this report is to update this Committee on remediation investigations at the Burwood Landfill.

BACKGROUND

A Burwood Landfill Update report, presented to the City Services Committee on 7 March 2000, showed that the leachate plume at one point on the Burwood Landfill has developed more quickly than expected. The leachate is still expected to take in the order of 50 years to reach the coastline, by which time it is expected that neutralisation through natural oxidation processes will result in it causing no significant environmental effect.

The report also outlined work by Woodward-Clyde to investigate the cause and nature of this leachate plume and the Committee requested a progress report in three months.

Investigations are currently being conducted to:

- Assess the likely reasons for and nature of the leachate plume which has recently developed downgradient of Stage 2B of the landfill;
- Develop appropriate trigger levels at which some form of remedial action (such as a leachate abstraction trench) should be considered;
- Assess the remedial action, if any is required, which is likely to be most cost effective to minimise the environmental effects of the Burwood Landfill, (likely to be an abstraction trench).

WORK BEING DONE

Subsequent to the March City Services meeting, the following additional work has been commissioned to provide a significantly better outcome, and could be very cost effectively integrated since the work had not yet commenced on site.

1. Installation of a shallow large diameter leachate abstraction well to assess the ease with which leachate could be abstracted (pumped out) from a well installed in the landfill and to reduce the extent/spread of the existing leachate plume;
2. Conducting a leachate recirculation/irrigation trial could help enhance the biodegradation of waste and/or improve nutrient levels in areas to be planted/rehabilitated. In addition to the above beneficial effects, recirculation of any extracted leachate back onto the landfill is likely to be more cost effective than transportation to the Christchurch Waste Water Treatment plant.
3. Installation of moisture probes which will provide valuable field information on the likely actual rate of generation of leachate (from rainfall) to help calibrate the existing computer modelling predictions conducted to date.

FUTURE REMEDIATION IF REQUIRED

Whilst the leachate plume downgradient of Stage 2B of the landfill has developed more quickly than expected, it is still expected to take in the order of 50 years to reach the coastline (based on current data for Stage 1). By this time it is expected that natural oxidation in the Stage 3 area (which will not be used for landfilling) means it will cause no significant environmental effect in the ocean. All of this will be re-assessed as a result of the above work and ongoing monitoring over the next twelve months.

BUDGET

All the work outlined above, excluding any future remediation work, is being carried out within existing budgets. Further funding will be required if additional remediation work is required. This will be the subject of a further report after the initial results of the above investigations and trials have been evaluated.

NATURAL STEP ASSESSMENT

The Council resolved on 22 July 1999 to use the Natural Step to guide an assessment of the sustainability of activities in the City. The assessment for this initiative is as follows.

The Natural Step Assessment				
Conditions:	Reduce mining and fossil fuel use (extraction rate not greater than redeposit rate to earth's crust)	Eliminate hazardous substances (production rate not greater than treatment rate)	Protect biodiversity and ecosystems	Efficient and equitable resource use
Meets condition	✓	✓	✓	NA
How it helps meet condition	Minimises the extent of remedial works required.	partial compliance beneficial use of leachate on site	Improved growth of vegetation	

SUMMARY

The Burwood Landfill is not currently causing any significant environmental effects, despite the appearance of leachate at one monitoring point in the landfill sooner than expected. Further work is being undertaken to both investigate the nature of the leachate plume including trial leachate abstraction and recirculation at the landfill site. This work is expected to significantly increase our understanding of the generation of leachate and partially reduce the extent of the existing leachate plume. Once the trial has been evaluated a further report will advise the need or otherwise for further remedial work.

Chairman's

Recommendation: That the information be received.