

Corrective Actions and Rehabilitation Plan Market Road Landfill Brooklyn, VIC



August 2013



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Introduction

Transpacific Cleanaway has begun planning for rehabilitation and aftercare of the Market Road Landfill in Brooklyn, VIC in accordance with EPA Victoria guidelines

The site, which was formerly a basalt quarry, was excavated to a depth of approximately 40 to 45 metres below grade.

It was operated as a solid waste landfill from 1992 and was closed in June 2012

The rehabilitation plan for the site includes:

- A final capping and vegetative cover system**
- A stormwater management system**
- A landfill gas management system**
- Expanded environmental monitoring systems**

Site Review

During a site review, that was performed in June 2013 - localised areas of surface settlement were identified, temperatures within leachate risers appeared higher than normal and that the characteristics of the gas emissions had changed

Based on these findings, monitoring was performed to further assess the site

This monitoring indicated the presence of “hot spots” (>60 degrees C) at 20 to 25 metre depth within the landfill and the presence of carbon monoxide – an indicator that combustion was occurring

Transpacific Cleanaway reported the findings of the site review to the MFB and EPA

Strategic Approach

MFB and EPA characterised the situation as being a “deep-seated” subsurface fire – a situation that can occur in landfills (and is more common in other locations such as the UK)

The agreed strategic approach was for industry (Transpacific Cleanaway) to take the lead in further characterisation of the site and to implement corrective actions

Transpacific Cleanaway was requested to follow UK guidance documents

MFB provided management oversight and EPA Victoria provided technical guidance. Other agencies and the community were informed and updated

Transpacific Cleanaway also brought in an overseas expert to provide specialised support

Site Characterisation

The strategy for the first phase of the project was to characterise the nature and extent of the deep seated hot spots at the site

The site characterisation activities commenced immediately and included:

- Visual surveys
- Aerial thermal and infra-red imaging
- Subsurface temperature monitoring
- Air and emissions monitoring
- Perimeter demarcation
- Daily reporting



The findings of the site characterisation work were used to ensure that appropriate corrective actions would be implemented

Corrective Actions

The strategy for the second phase of the project was to stop air infiltration into the waste mass – essentially suffocating the hot spot areas by starving them from a supply of air, which is necessary to support combustion

The initial corrective action activities, which also commenced immediately, included:

- Sealing and filling areas of surface settlement
- Sealing of perimeter areas (cracks around the edge of the quarry)
- Sealing of leachate risers
- Improving access around the perimeter of the site
- Assessing and improving stormwater drainage

Involves ongoing monitoring and reporting to MFB, EPA, other agencies and the community



Site Rehabilitation

The strategy for the third phase of the project is provide a sound basis for transition into rehabilitation of the site

The long-term corrective action activities will include:

- **Rehabilitation or abandonment of the leachate risers**
- **Recovery of landfill gas (potentially for beneficial use)**
- **Establishment of final grades**
- **Placement of final capping and vegetation**
- **Management of stormwater**

Require management of dust and sediment

Involves ongoing monitoring and reporting to MFB, EPA, other agencies and the community



Summary

The closed Market Road Landfill is being rehabilitated to minimise impacts on the environment and the community in accordance with EPA guidelines

A strategy has been implemented to correct the deep-seated hot spots areas within the landfill

Ongoing monitoring program

The initial monitoring results are positive

The situation is being monitored and is being reviewed by MFB and EPA. Other agencies and the community are being informed



Summary Cont'd

The initial corrective actions have been completed and rehabilitation work will be ongoing

There is a “Plan B” if some of the hot spot areas do not respond as expected – this would involve injecting inert gases (carbon dioxide or nitrogen) into the hot spot areas

Site rehabilitation works have commenced and the works are expected to be completed in mid- to late-2014

The final site configuration will be open space

Aftercare monitoring and maintenance of the site will continue for an expected 30-year period

