

29 October 2017

Our ref: 754-ENAUABTF00751AC-L06

Norton Rose Fulbright Australia
Level 15, RACV Tower,
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Attention: Rory O'Connor – via email

Dear Rory

C129: Comments on Remediation Options Analysis provided in Appendix C of the Remediation Options Report (Coffey May 2014)

1. Introduction

I am advised that two questions were asked at the recent C129 City of Monash panel hearing relating to the Remediation Options Report (ROR) issued by Coffey on 27 May 2014 (ref ENAUABTF00751AA_R04).

Q1. Explain the methodology used in the Remediation Screening Matrix tables in Appendix C of the ROR including the weightings (if any) allocated to each of the Ratings Categories (namely, Probability of Achieving Remediation Goals, Likelihood of Achieving Operational & Logistical Goals, Regulatory Compliance, Financial Costs, Timing/Duration of Works, Ongoing Management Requirements and Community/Environmental Health and Safety Impacts).

Q2. Aside from Financial Costs and Timing/Duration reasons, explain the limitations associated with source removal of landfill waste as an effective remediation option for Zone 1.

I have also been requested to comment on whether the Site Environmental Strategy Plan (SESP) supersedes some or all of the ROR and if the additional assessment completed since the ROR was issued, has addressed uncertainties that were identified in the SESP in relation to landfill gas status and remediation options in Zone 1.

2. Preparation of this letter of opinion.

This letter report has been prepared for NRF. It provides my comment on the above matters in relation to Amendment C129 of the Monash Planning Scheme and is provided in the context of my expert witness report dated 28 July 2017 (ref ENAUABTF00751AC_R01).

3. Advice

3.1. Q1. Appendix C – Remediation Options Report (ROR)

The narrative provided at the start of the Appendix addresses the effectiveness, technical limitations, community and environmental impact and feasibility of each of the four remediation options assessed for Zone 1 and the three remediation options assessed for Zone 2.

In preparing the options assessment, only methods that had (or had the prospect of) regulatory approval were considered, e.g. complete removal of waste from the former landfill and placement in another landfill would most likely not find favour with EPA or at very least be subjected to a detailed and lengthy approval process involving additional community input, so it is included with a rating of 1. This is because it involve relocating very large amounts of waste immediately next to a residential area.

I am aware that relocation of limited amounts of waste from former landfills has occasionally occurred in Victoria in the past. To my knowledge, this has usually occurred where infrastructure such as roads, railway lines or pipelines were constructed, where the route passed through existing landfills and the design levels of the road, rail or infrastructure required relocation of the waste. I am also aware that about 250,000 cubic metres of waste was moved a distance of about 5 km and placed in a specially constructed landfill in the Pilbara, NW Western Australia by Rio Tinto. This was to enable the port facilities at Port Lambert to be expanded. The relocation reportedly cost \$30 million¹.

The volume of waste present in the former landfill at South Oakleigh is estimated to be approximately 500,000 cubic metres; representing about 250,000 tonnes. For comparison, the amount of waste going to landfill for the 31 Melbourne metropolitan council areas in 2013-14 (the most recent year for which data is readily available) was 1.1 million tonnes (VLGAWSR 2016)². This means that if the estimated amount of waste present at South Oakleigh was sent to landfill within one year, it would increase the amount of waste going to landfill in that year by about 25 percent. In my opinion, that would disrupt the operation of metropolitan landfills to such a degree that it would not be approved.

In each matrix 7 factors have been assessed for each remediation option; i.e.:

- Probability of achieving Remediation Goals (labelled G for ease of reference);
- Likelihood of achieving operational and logistical goal (labelled L);
- Regulatory Compliance (labelled R);
- Financial costs (capital, operating, ongoing) (labelled C);

¹ Remediation Australasia, Issue 11; pp20-21; Co-operative Research Centre Clean Up And Remediation of the Environment (2012).

² Victorian Local Government Annual Waste Services Report 2013-14. Sustainability Victoria (2016)

- Timing / Duration of Works (labelled T);
- Ongoing management requirements (labelled M);
- Community / Environmental and Health and Safety Impacts (labelled I).

I understand that these matrices were referred to at the recent Panel hearing. I further understand that some questions were raised about the methodology and also about whether some of the 7 factors could be considered in isolation from or separate to the others in order to draw conclusions about the relative merits of the remediation options proposed.

Methodology

A number of environmental regulators and environmental consulting companies publish remediation screening tools similar to the one used in the ROR; e.g. USEPA, UK Environment Agency and Golder Associates. The remediation options assessment tool used in Appendix C is a Coffey proprietary one. Most remediation screening tools are in the form of a table or matrix which rates a remediation technology against specific contaminant types or rates their applicability to different contamination scenarios.

Some screening tools use 'yes' / 'no' ratings while others use a graduated rating scale or give higher weightings to some factors than others.

The way that the Rating Summation in the ROR provides a ranking of options is summarised as follows:

It is formed of three parts that have equal weighting:

- G
- (L+R+C)
- (T+M+I)

Professional judgement is used to assign a score to each of the factors.

The three parts are multiplied to give the Rating Summation value.

The factor (G) can have a value from 0 to 5, while C can be from 1 to 5, L and R from 1 to 4 and T, M and I from 0 to 3. If G is assigned a value of 0, the Rating Summation score must be 0, whereas if any of the other factors are 0 or 1, a positive Rating Summation value will still be obtained. Conversely, to obtain the highest Rating Summation scores, all factors including G must have high values. If all factors but G are high, a low Rating Summation score will be the result. The above description indicates that the score assigned to the probability of achieving the Remediation Goals (G) is the most important feature of this Remediation Screening; i.e. it is not dominated by cost factors but an assessment of whether the option "will do the job required".

The Rating Summation outcomes can be simplified as follows:

- If all other ratings are equal, the higher the probability of achieving the remediation goals the higher value the Rating Summation score.
- Similarly, if the Cost score is high (i.e. cost of the option is lower than other options), then the Rating Score is higher than otherwise would be the case.
- Similarly, if the time score is high (i.e. time to complete remediation of the option is lower than other options), then the Rating Score is higher than otherwise would be the case.

Excluding some of the factors or assessing them in isolation

While it is theoretically possible to exclude items C and T for example and consider what the rating of remediation options would then be, it is not considered good practice. EPA Victoria does not provide a regulatory tool to determine which remediation options should be used for cleaning up soil or gas on contaminated sites. However, it does have a procedure for determining if groundwater has been cleaned up to the extent practicable (CUTEP). That procedure specifically includes consideration of financial and logistical factors as well as technical ones; i.e. excluding items C and T would be contrary in principle to an existing EPA remediation assessment practice.

The reason that financial and logistical factors (such as time) are taken into account in all environmental management procedures, including soil, groundwater and gas remediation is because there are internationally adopted principles of environmental sustainability³ that specifically include those aspects. All State Environment Protection Policies and Waste Management Regulations; the primary tools used by EPA Victoria to manage environmental impacts and waste are based on these principles

This serves to indicate that it is not appropriate to apply environmental solutions to problems without considering the financial resources and time required to implement the solution.

3.2. Q2: Complete source removal

The introduction to Appendix C sets out the advantages and disadvantages of complete source removal in narrative form.

This part of the Appendix focusses on the positive and negative aspects of excavating and removing approximately 500,000 cubic metres of waste and waste soil and then replacing it with imported fill.

While the removal of the source (the waste) could largely be achieved by that approach, it would take more time, involve more vehicle movements, noise, dust and odour, as well as require greater expenditure than the other options considered. As indicated above, removal of the source would likely disrupt the whole of the Melbourne metropolitan waste disposal system if it were all completed within a year or two, as there would not be enough approved and constructed landfill airspace to accept the very large additional volume of waste. For this reason, I do not expect it would achieve regulatory support.

3.3. Site Environmental Strategy Plan, Remediation Options Report and more recently obtained site assessment data

At the time the ROR was prepared, the likely path followed by the planning approvals for the site were not the same as the ones now being followed. Subsequent to preparation of the ROR, discussions with Council, the auditor, Metropolitan Planning Authority (now Victorian Planning Authority) resulted in Coffey preparing a Site Environmental Strategy Plan, (SESP) which has been the subject of submission and discussion in the panel hearings.

The Sections 7, 8 and 9 of the SESP address remediation, site development and ongoing management of environmental issues at the site in more detail than the ROR, so while building on the ROR, supersede its content for those issues.

The SESP also aligns with the use of Site Remediation Strategy Plans used elsewhere in Victoria as the basis for planning decisions on large development sites with complex remediation requirements.

³ Our Common Future. United Nations World Commission on Environment and Development 1987.

Section 3 of the ROR also identified a number of data gaps related to soil, landfill gas, groundwater, surface water and sediment. Those data gaps have subsequently been addressed as covered in Section 3.2 of my Expert Witness Report (ref ENAUABTF00751AC-R01 dated 28 July 2017), meaning that some of the assessment completed in the ROR is not contemporary and can be considered as superseded. I note that groundwater and landfill gas monitoring are continuing.

For and on behalf of Coffey



Phil Sinclair
Principal Environmental Scientist

