Veolia Environmental Services (Australia) Pty Limited

Clyde Waste Transfer Terminal

Odour Audit XIV

November 2009

THE ODOUR UNIT PTY LTD

ACN 091 165 061

Australian Technology Park
Locomotive Workshop
Suite 16012, 2 Locomotive St
Eveleigh, NSW 2015

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Report Prepared By: A. Cantlay		Approved By: T. Schulz
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1 INTRODUCTION

The Odour Unit Pty Ltd (TOU) was commissioned by Veolia Environmental Services (Australia) Pty Ltd (VES) to undertake the fourteenth odour audit on the Clyde Transfer Terminal (CTT) on 27th November 2009. This Odour Audit is the fourth to be carried out since the commissioning of the new forced air extraction system within the transfer building. Odour Audit XIV is current for the 6-month period May 2009 to November 2009. Odour Audit requirements of the Conditions of Consent – *48(f)* are outlined below:

> *48. The Odour Management Plan must address, but is not necessarily limited to, the following issues:*
>
> *(f) An odour audit program which provides for a comprehensive odour audit of the premises and nearby commercial and residential areas, by an independent, appropriately qualified and experienced person, to be conducted 3-monthly for the initial 24 months of receiving un-containerised waste at the terminal, 3-monthly for the 12 months following commissioning the odour control system subject to MOD-133-11-2006, and 6-monthly thereafter, unless otherwise approved in writing by the Director-General.*

As with previous Audits, Odour Audit XIV focused on issues relating to general housekeeping, fugitive odour emissions from the transfer building, ground level odour impacts, meteorological monitoring, complaints handling and actions on past Odour Audit recommendations. The approach included a general inspection and smoke testing of the transfer building, inspection of the container packing area and site access roads; inspection of the complaint register; review of the site meteorological data log and equipment maintenance/calibration; and a site downwind field ambient odour survey.

2 FINDINGS

2.1 Assessment of General Housekeeping

2.1.1 Transfer Building

There was approximately 120 tonnes of garbage on the floor according to the Site Manager. The transfer building floor area that was not storing garbage had little or no puddles of leachate or litter present. General housekeeping procedures of the transfer building was good as seen with a truck-unloading sequence. The site's front-end loaders cleaned the floor area on a regular basis during this observed sequence. There was a low level of odour observed within the building.

2.1.2 Container Packing Area and Site Roadways

The container packing area and site roadways were very clean and well managed with no garbage present. The container/train packing area had a weak-distinct garbage odour present but it was confined to this area only. There was a brief detection of weak garbage on the site roadway.

2.1.3 Odour Extraction System Maintenance

Service documentation was provided and inspected for the maintenance of the odour extraction system (**Appendix A**). A service was carried out in April with the exhaust fans being serviced, operation of the fans checked, belts inspected, Variable Speed Drives and bearing housings wiped down, switchboard wiring and switchgear inspected. Each item was recorded as ok. The Site Manager also informed the TOU representative that any changes to the fan speed can only be performed by the service/maintenance company (TRIPLE M Mechanical Services) as site staff can only turn the system on and off.

2.1.4 Odour Minimising Procedures

Inspection of the document *NSW Clyde Transfer Terminal Minimising Odour Procedure* shows a well planned list of procedures to minimise odour impacts from the Clyde Transfer Terminal. There does not appear to be a check list to show this document is followed for each step listed.

2.2 Fugitive emissions

2.2.1 Transfer Building

Inspection of the transfer building revealed that a number of the rubber mats that act to temporarily seal the breezeways have fallen or become detached. The implication could be increased risk of fugitive odour emissions. All other doors and roller shutters of the transfer building were shut whilst the odour audit was completed which reduces the likelihood of odour impacts detected offsite. Additionally, the louvers on the walls of the Transfer Building were shut during the odour audit.

2.2.2 Truck Entrance Plastic Strips

The truck entrance strips of the Transfer Building, used to reduce odour escaping through the opening, were missing when the odour audit was carried out. The Site Manager informed the TOU assessor that an incident had occurred onsite on 14/11/2009 and that the anticipated date of re-installation of the strips would be either 05/12/2009 or 06/12/2009.

Maintenance of the plastic strips is part of daily operations. As the site is an operational facility these plastic strips are maintained as required.

2.2.3 Smoke Testing

Smoke testing was carried out within the Transfer Building. This was to test the effectiveness of the forced air extraction system as well as how well the transfer building has been sealed from leaks. The predominant wind outside during the testing was a light west to north-westerly. Smoke was released from within the building from the areas of the transfer building.

The smoke was released from the south-west corner of the transfer building near the truck entrance where the smoke initially formed an eddy where it continually mixed up and down as it moved slowly towards the roof. The wind direction outside the building caused the smoke to be blown into the building.

The second point that smoke was released was the northern area of the building near where trucks unload incoming garbage. The smoke was drawn quickly towards the roof and then moved its way towards the odour extraction system despite the wind entering the building at the time.

The final point that the smoke testing was carried out at was the south-eastern corner of the building. The smoke generally headed towards the building's ventilation system however it was disrupted somewhat by the wind blowing in through the truck entrance where the plastic strips were missing. If the plastic strips were not missing the smoke might have moved towards the ventilation system more effectively.

In all instances the smoke was fully contained within the Transfer Building therefore no evidence of any fugitive odour release was observed while this odour audit was carried out.

2.3 Odour Complaints Handling and Meteorological Data

2.3.1 Odour Complaints Handling

Five odour complaints were received by VES during this period and are listed along with the handling of the complaints in **Table 2.1**.

Table 2.1: Odour complaints received by CTT May 2009 – November 2009

Date	Complainant	Response
31/08/2009	Manildra	• Site manager walked around CTT site and surround for presence of odour (no odour found) • Extraction fans running • Waste level on floor noted (80 tonnes) • Corresponding meteorological conditions logged (South South Westerly)

Table 2.1: Odour complaints received by CTT May 2009 – November 2009 (continued)		
Date	**Complainant**	**Response**
08/09/2009	Manildra	• Site manager walked around CTT site and surround for presence of odour (no odour found) • Extraction fans running • Waste level on floor noted (50 tonnes) • Corresponding meteorological conditions logged (South Westerly)
09/09/2009	Manildra	• Site manager and CTT site and surround for presence of odour (no odour found) • Site visitor also commented that no odour was apparent outside the terminal building • Extraction fans running • Waste level on floor noted (100 tonnes) • Corresponding meteorological conditions logged (South South Westerly)
28/09/2009	Manildra	• Complaint received in the morning but technical problem at complainant's end prevented email complaint being sent until 2.58pm that afternoon. • Site manager walked around CTT site and surround for presence of odour (no odour found) at 3pm. • Extraction fans running • Waste level on floor noted (100 tonnes) • Corresponding meteorological conditions logged (South)
07/10/2009	Manildra	• Site manager walked around the CTT site and walked down the access road towards the complainant's front gate for presence of odour (no odour found) • Extraction fans running • Waste level on floor noted (60 tonnes) • Corresponding meteorological conditions logged (South South Westerly)

Other details that were recorded included time of complaint, time of when complaint was received by VES, and the response date by VES. The previous recommendation for the complaint register has been acted upon and now the status of the extraction fans at the time of the complaint is included in the register. The response by VES on these occasions was seen to be adequate.

TOU's recommendation is to include the odour complainant's response with regard to the strength and character of the odour in addition to the response listed by the Veolia representative.

2.3.2 Meteorological Data

The meteorological data provided to TOU for the six months to November 2009 was in good order. Observations were recorded in 15-minute intervals, included were all parameters necessary to develop a meteorological dataset for odour dispersion modelling.

The weather station site has been relocated from the position that it was previously since the last odour audit was carried out in May 2009. The site seems accessible with no vegetation overgrown immediately around the weather station pole. Maintenance and calibration was carried out as required in July and October by Hydrometric Consulting Services. The weather data calibration reports for July and October are attached in **Appendix B**.

2.4 Ambient Odour Assessment

At present, no Australian Standard exists for field based ambient odour assessment surveys. Consequently, The Odour Unit utilises a method for assessing the ground level impacts of odour emissions using a modified version of the German Standard VDI 3940 (1993) – 'Determination of Odorants in Ambient Air by Field Inspections'.

Field based ambient odour surveys are considered a valuable odour impact assessment tool as previous experience with ambient odour sampling and subsequent

olfactometry testing suggests that accurate and useful ambient odour concentration data is difficult to obtain. Therefore, TOU has adopted a more practical approach based on the field measurement of odour intensity. With this method, calibrated and experienced odour specialists traverse the downwind surrounds of odour sources in a strategically mapped pattern, assessing the presence, character and intensity of any odours encountered and recording these observations along with wind speed and direction.

An ambient odour assessment was performed onsite at the Clyde facility on 27/11/2009 (1615 – 1630). The TOU assessor firstly determined the wind direction using a compass and then assessed downwind locations of the terminal building.

The assessor spent a few minutes at each assessment location in order to gauge the effects of any odour impact. If an odour was detected at a location, the assessor attempted to characterise it. The general aim was to determine the extent of the impact of odours off-site and rank their intensity. The ranking scale for the German Standard VDI 3940 'Determination of Odorants in Ambient Air by Field Inspections' was used for the intensity assessments. The standard's ranking system is based on the following seven-point intensity scale.

VDI 3940 – Intensity Scale

0 Not Detectable
1 Very Weak
2 Weak
3 Distinct
4 Strong
5 Very Strong
6 Extremely Strong

The results of the ambient assessment survey are depicted in two principal ways. The field log sheets completed by the assessor contain the unprocessed data for each

location and the derived result of the survey is illustrated as an odour impact map. The map illustrates the locations assessed, and the level of odour intensity detected. The odour survey results are shown in **Appendix C**.

3 RECOMMENDATIONS

3.1 Fugitive emissions

3.1.1 Transfer building

Reduce the risk of fugitive odour emissions by re-aligning/re-attaching fallen rubber mats so that the inside of the building is sealed as much as possible from the outside atmosphere.

3.1.2 Truck Entrance Plastic Strips

The Site Manager informed the TOU assessor that the truck entrance plastic strips were already planned to be re-installed on either 05/12/2009 or 06/12/2009 and listed as a priority to reduce the chance of fugitive odour emissions being detected off-site.

3.2 Odour Complaints Handling and Meteorological Data

3.2.1 Odour Complaints Handling

TOU's recommendation is to include the odour complainant's response with regard to the strength and character of the odour in addition to the response listed by the Veolia representative.

Appendix A

Odour Extraction System Service Report

Appendix B

Weather Data Calibration Reports

Appendix C

Field Ambient Odour Assessment

Impact Map and Field Log Sheets