



Collex Pty Limited

Clyde Waste Transfer Terminal

Odour Audit VI

Final Report

August 2006

THE ODOUR UNIT PTY LTD

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1 INTRODUCTION

The Odour Unit Pty Ltd (TOU) was commissioned by Collex Pty Ltd (Collex) to undertake the sixth odour audit on the Clyde Waste Transfer Terminal on 28th June 2006.

The sixth odour audit for the months March, April and May 2006 was carried out on June 2006 required under the Conditions of Consent – 48(f) 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, and 6-monthly thereafter, unless otherwise approved in writing by the Director-General.

In discussions with Collex, it was agreed that Odour Audit VI would be focused on issues relating to general housekeeping, fugitive odour emissions, ground level odour impacts and complaints handling. The approach included a general inspection of the tipping floor, container packing area and site access roads; smoke testing inside the transfer building;

inspection of the complaint register and site meteorological data log; and field ambient odour surveys both on- and off-site.

2 ODOUR AUDIT VI FINDINGS AND RECOMMENDATIONS

2.1 General Housekeeping

An inspection of the container packing area suggested that this area is kept clean and tidy with operators on hand to ensure any spilled waste is cleaned up as soon as possible. The containers themselves appeared to be in excellent condition. It is clear that the container packing area would be a source of minor and localised odour only.

General housekeeping appeared to be of a high standard with the tipping floor being cleared as soon as possible and site access roads kept clean. Collex advised TOU that these roads are hosed down and washed every night.

2.2 Smoke Testing

Smoke testing was again carried out as part of Odour Audit VI to further investigate natural air flow patterns into, within and out of the building.

It has been acknowledged in previous odour audits that the Clyde facility and the large number of truck movements could 'pressurise' the Transfer Building due to wind pressure on the open doorway. It is therefore essential that continued work be performed on improving the sealing of the breezeways and other 'gaps' in the building.

The weather conditions during the testing were cool and sunny, with a 1-2 m/s wind blowing from the west (~ 260 degrees). There was a noticeable flow of air through the doorway, into the building. The surging and changing airflows prevented accurate measurement of wind velocity through the doorway.

The smoke was released at floor level at several locations in the building and is shown in

Figure 2.1.

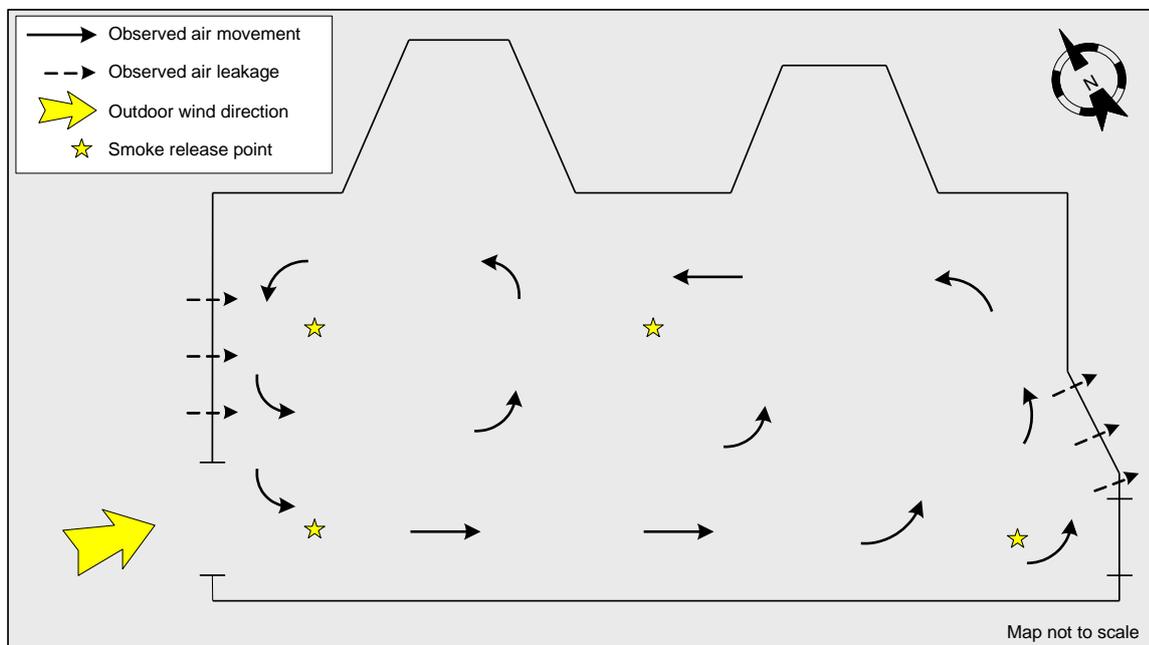


Figure 2.1 – Transfer Building smoke release locations and observed air flow patterns.

The principal finding of the smoke testing re-confirmed what was found in previous odour audits; that there was minimal visible airflow towards the extraction fans. The bulk of the smoke dispersed inside the building as if there were little mechanically induced air movement, circulating slowly around the building in a counter-clockwise direction (see

Figure 2.1). The predominantly westerly airflow through the doorway was the main influencing factor in this airflow pattern.

The smoke was observed to rise above the breezeways of the western wall indicating that there was air movement into the building through gaps, helping to pressurise the building. The smoke descended from above the open doorway and returned into the main westerly flow near the surface. The recent installation of a plastic strip curtain covering the upper-third of the open doorway has effectively prevented the smoke exiting from out the top of the doorway.

In addition, smoke released at the southeastern corner showed clearly that air was escaping the building through gaps in the sealed breezeway of the eastern wall, in particular the un-sealed breezeway directly north of the roller-door.

The proposed new extraction system, using a single tall stack, will result in the changes to the airflows within the building. The effect of this system will need to be assessed, once this system is commissioned.

2.3 Odour Complaints Handling and Meteorological Data

TOU determined that the Collex complaints handling procedure is responsive. It was evident that complaints were immediately logged and investigated as soon as was practicable by the Collex Site Manager with comments on general weather conditions,

observations made during inspection and action taken. In addition, a detailed and comprehensive record of meteorological data, with a wide range of parameters, is logged at 15-minute intervals by an automatic weather station and is stored on a separate database.

It is recommended that future entries have corresponding meteorological data (including, but not limited to: wind speed (m/s), wind direction (°) and temperature (°C)) and transfer building waste levels ('tonnes on floor') logged into the register. This should more immediately highlight relationships that may occur between complaints and meteorological and/or waste level conditions. Further, the complainants should be encouraged to include an odour intensity and odour character description with every complaint they lodge to be recorded in the register. Finally, comments on the action taken need to be more specific in regards to "increased housekeeping duties".

Table 2-1 shows the total number of documented complaints received by Collex in the months March through to May 2005.

Table 2-1: Odour Complaints Summary (March-May 2006)

Month	Dates	Complainants
March	06/03/06, 20/03/06, 24/03/06, 28/03/06, 31/03/06.	Manildra, Mitsubishi
April	04/04/06, 05/04/06, 06/04/06, 13/04/06	Manildra
May	01/05/06, 08/05/06, 08/05/06, 16/05/06, 25/05/06	Manildra
Total	14	

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.

Two ambient odour assessments were performed downwind of the Clyde facility on 16/06/2006 (1210 – 1240) and 28/06/2006 (0945 – 1020). TOU assessors firstly determined the wind direction and then assessed downwind locations attempting to cover as much territory as possible, given that the area was essentially private industrial land or rail tracks. This restricted the survey's assessment locations to the site access roads and the surrounding public roads.

The assessors spent between a few and several minutes at each assessment location in order to gauge the effects of any odour impact. At each location, wind velocity was measured using a TSI Model 8330 Velocichk anemometer, while wind direction was determined using a compass. If an odour was detected at a location, the assessors 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 surveys are depicted in two principal ways. The field log sheets completed by the assessors 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 downwind of the Clyde facility.

As **Appendix A** illustrates, the characteristic garbage smell was localised to the access roads around the transfer building, eliciting a peak intensity score of 3 (distinct). Very weak

to weak intensity (score: 1 – 2), intermittent garbage odour was also detected along Parramatta road on both occasions.



Appendix A

Ambient Assessment Log Sheets and Location Map



