



THE ODOUR
UNIT *m³*



Veolia Environmental Services (Australia) Pty Limited

Clyde Waste Transfer Terminal

Odour Audit XVIII

May 2012

THE ODOUR UNIT PTY LTD

ABN 5309 116 5061

ACN 091 165 061

Australian Technology Park
Locomotive Workshop
Suite 16012, 2 Locomotive St
EVELEIGH, NSW 2015
www.odourunit.com.au

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Project Number: N1473

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Draft V1	28.06.2012	Issued to client for review
Final Report	05.07.2012	Issued to client
Report Preparation		
Report Prepared By: T. Schulz & M. Assal		Approved By: T. Schulz
Report Title: Veolia Environmental Services (Australia) Pty Limited Clyde Waste Transfer Terminal – Odour Audit XVIII		

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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 nineteenth odour audit on the Clyde Transfer Terminal (CTT) on 9 May 2012. This Odour Audit is the ninth to be carried out since the commissioning of the new forced air extraction system within the transfer building. Odour Audit XVIII covers the 6-month period from December 2011 to May 2012. The audit was carried out by TOU Engineer Michael Assal.

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 XVIII 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 an off-site downwind field ambient odour survey.

At the time of this Audit a light wind from the west/northwest was blowing.

2 FINDINGS

2.1 Assessment of General Housekeeping

2.1.1 Transfer Building

There was approximately 250-300 tonnes of putrescible waste on the floor according to VES Staff. This tonnage is considered to be within the normal operational range of the Transfer Station at the time this Audit was being carried out. The transfer building floor area not covered by waste material was observed to be reasonably clean, with no evidence of leachate or aged material. General housekeeping procedures of the transfer building were good, as observed during a truck-unloading sequence. It was also observed that the site's front-end loaders cleared the floor area of putrescible waste on a regular basis, minimising the exposed area of the Municipal Solid Waste (MSW).

As with previous audits, and consistent with TOU's experience at other transfer stations, there was a weak to distinct level of odour observed within the building.

2.1.2 Container Packing Area and Site Roadways

The container packing area and site roadways were clean and well managed with no putrescible waste or leachate exposed at the time of this audit. The container compacting/train packing area had a weak MSW odour present but it was confined to this area only. It was also observed that there was a significant amount of waste build-up on the roof of the compactors, at the point where air vents during a compaction cycle. This can be considered a housekeeping related matter. VES should rectify this as soon as possible and carry out regularly maintenance at this location.

As with previous audits, the Site Manager informed the TOU auditor that the containers are cleaned off site at Veolia's Woodlawn facility. The weight of each container is monitored to determine if there is any waste that has not been removed completely from each container, which in turn reduces the likelihood of the containers contributing to the site's odour levels.

2.1.3 Odour Extraction System Maintenance

Service documentation was provided and inspected for the maintenance of the odour extraction system (refer **Appendix A**). Service logs were provided from December 2011 to May 2012. Each service log provided showed that the required maintenance was taking place and the odour extraction system was operating well.

It was noted by the fan technician during the service visit on 4 May 2012, that the flex connections on both fans were deteriorating, with cracks present leading to air leakage being evident. It does not appear to have had any significant effect in regards to odour as no complaints have been received during this period. It is understood that the required replacement/repairs for this will be undertaken in due course.

The service logs also display that the exhaust airflow velocity through the stack is being maintained at the minimum requirement of 19.1m/s.

2.1.4 Odour Minimising Procedures

The Site Manager informed the auditor that odour minimisation procedures continue to be regularly reviewed at Tool Box meetings and new issues/recommendations are raised with all staff members at these meetings.

2.1.5 Transfer Building

Inspection of the transfer building revealed that most of the rubber mats that seal the breezeways were in place, with four (4) mats identified as fallen down and three (3) requiring repair/replacement. These were located on the eastern and western side of the Transfer Building. TOU has been informed that VES has recorded the fallen breezeway mats in its National Integrated Management System to assist in actioning management steps to address this occurrence (Reference Code 69594 dated 09/05/2012).

All other doors and roller shutters of the transfer building were found to be shut at the time of the odour audit, reducing the likelihood of odour impacts detected offsite.

Similarly, the louvres on the end walls of the Transfer Building were observed to be permanently shut.

2.1.6 Truck Entrance Plastic Strips

The truck entrance strips of the Transfer Building, used to reduce odour escaping through the opening, were found to be mostly intact with 3-5 panels missing/requiring repair. Action to rectify this should be taken as soon as possible. Experience has determined that these strips contribute to containing odour within the building and therefore require daily check-ups to ensure they are all intact.

2.1.7 Smoke Testing

As per previous audits smoke testing was carried out within the Transfer Building to assist in determining the effectiveness of the forced air extraction system as well as well as the extent to which the transfer building has been sealed from leaks. Smoke was released from within the building from three (3) different points within the Transfer Building. **Figure 2.1** shows the 3 points where the smoke was released within the Transfer Building. These are identical locations to that used in previous audits.

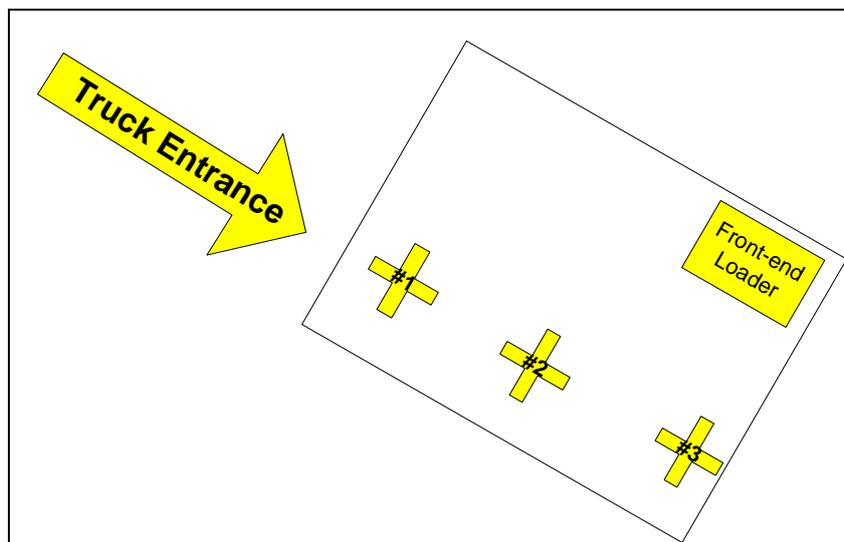


Figure 2.1: Smoke testing release points within the Transfer Building.

Smoke Testing Point #1

Smoke testing was carried out at the truck entrance and the smoke was observed to initially move upwards towards the roof and then towards the extraction fan. There was no observed movement towards the truck entrance.

Smoke Testing Point #2

Smoke released from the second point initially moved upwards in eddies and was gradually drawn into the extraction system.

Smoke Testing Point #3

Smoke released at this point initially rose gradually before being drawn upwards to the extraction system.

The overall finding of the smoke testing was that the extraction system was effective in maintaining the stack as the main emission point of air from the building, with no evidence of any fugitive odour releases.

2.1.8 Stormwater Retention Pond

TOU was advised by VES staff that the Stormwater Retention Pond had been drained on the day. There was no odour detectable at this time of this audit that could be linked directly back to this pond.

2.2 Odour Complaints Handling and Meteorological Data

2.2.1 Odour Complaints Handling

There were no complaints recorded in the complaints register since the last odour audit.

2.2.2 Meteorological Data

The meteorological data provided to TOU for the period from December 2011 to May 2012 was inspected and found to be in good order. As previously, observations were recorded in 15-minute intervals, and included all parameters necessary to develop a meteorological dataset for odour dispersion modelling.

The weather station is located in an accessible area with no vegetation overgrown immediately around the weather station pole, as indicated by the Quarterly Service Documents provided by VES. Servicing and calibrations were carried out as required in November 2011 and February 2012 by Hydrometric Consulting Services. The weather data calibration reports for both service visits are attached in **Appendix B**.

2.3 Field Ambient Odour Assessment Methodology

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 offsite of the Clyde facility on 02/11/2011 (1520 – 1620). The ambient odour assessment focused offsite as required by the Conditions of Consent on “.....*nearby commercial and residential areas*.....” (Section 48 (f)). The TOU assessors firstly determined the wind direction using a compass and then assessed downwind locations of the terminal building.

The assessors 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 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

VDI 3882 Odour Intensity Categories		
Odour Strength	Intensity Rank (code)	TOU Interpretation (meaning)
Not detectable	0	No odour detected
Very weak	1	Odour detected but not strong enough to be characterised
Weak	2	Odour is weak but just able to be characterised
Distinct	3	Odour is clearly distinct and easily characterised
Strong	4	Strong odour detectable
Very Strong	5	If offensive, observer may consider moving from the area
Extremely Strong	6	Odour is sufficiently over-powering that assessor moves from area

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.

2.3.1 Field Ambient Odour Assessment - Results

The results from the FAOA survey conducted during this Audit found that no odours were detected offsite that could be linked back to the Transfer Station. The field log sheets and odour impact map are attached as **Appendix C**.

3 RECOMMENDATIONS/FOLLOW-UP

3.1 Fugitive emissions

3.1.1 Transfer Building

The on-going need to repair the rubber mats sealing the breezeway around the Transfer Building has been identified in earlier audits. While the previous audit conducted before this found them in good condition, other audits have found failures in the mat systems that needed attention. TOU suggests that the fallen mats identified around the breezeway be returned to the intended position and secured, and that those that are faulty be repaired. Additionally, repair and attention of the missing/damaged truck entrance strips should be carried out.

All necessary follow-up repairs mentioned should be completed as soon as possible (see **Section 2.1.5** for details).

3.1.2 Compactor Area

During this audit, it was observed that there was a significant amount of waste build-up on the roof of the compactors, at the point where air vents during a compaction cycle. This was not observed during the previous audit and can be considered a housekeeping related matter. VES should rectify this as soon as possible and carry out regularly maintenance at this location.

Overall, this audit found that the operation and maintenance of the odour management system at the plant were mostly satisfactory. Some improvements are required however to ensure the building breezeways are sealed and the truck entrance stripes are intact. Additionally, general housekeeping of the compactors should be maintained and monitored to ensure that waste build-up on the roof of the compactors remains minimal.

In the event of any arising odour complaints, VES should consider monitoring odour emissions from the compactor area.



Appendix A –

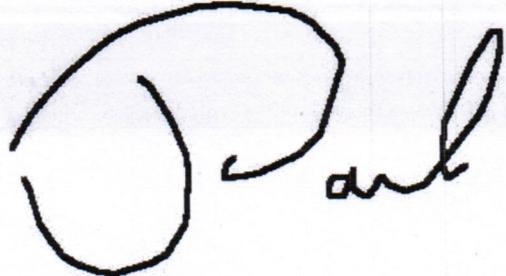
**Odour Extraction System Service Report
(December 2011 – May 2012)**

Craig Doorey

From: Pablo Gonzalez (Resource Recovery)
Sent: Friday, 2 December 2011 1:02 PM
To: Craig Doorey
Subject: FW: New Record - Triple M - NSW - Service Docket

Very impressive...

From: no-reply@iformbuilder.com [mailto:no-reply@iformbuilder.com]
Sent: Friday, December 02, 2011 1:00 PM
To: service@triple-m.com.au; Pablo Gonzalez (Resource Recovery)
Subject: New Record - Triple M - NSW - Service Docket

Triple M - NSW - Service Docket	
ID	50
Time Start	Fri Dec 02 2011 12:45:10 GMT+1100 (EST)
Client Details	Veolia clyde waste transfer station
Address	Parramatta rd Clyde
Type of Service	Preventative Maintenance
Job / Service Call Number	7862
Fault Description	Maintenance october
Description of Work Done	Carried out routine maintenance as per schedule for month of october. Checked unit operation, no issues found. Performed fan/air speed analysis for plant requirements. Found exhaust air speed to be over 19.1m/s inside fan stack which was above required air speed for specification.
Barcode Label Entry Method	Scan
Parts, Materials?	No
Job Status	Completed
Technician's Signature	
Client Signature	

Forwarding Email pablo.gonzalez@veolia.com.au

Job Safety Analysis

ID	S50
Job/Service Call Number	7862
Work to be done	Maintenance october
Protective Equipment to be Used During Works	Gloves, Safety Glasses, High Visibility Garments, Face/Dust mask, Safety Boots/Shoes
Access / Egress to equipment hazard present?	No
Trips, slips, and falls hazard present?	No
Roof Access hazard present?	No
Working on roof?	No
Remain on walkways and paths	No
Manual Handling?	No
Client/General Public/vehicle control?	No
Electrical works?	No
Mechanical works?	Yes
All isolations complete: electrical, refrigeration, air, water, gas.	1
No work until all moving parts have stopped.	1
Working from heights?	No
Platform adequate for task.	1
Working from a step ladder?	No
Electrical tools & equipment being used?	No
Using HazMat?	No
Welding or oxy cutting?	No
Cooling towers? Bio Hazards?	No
Handling refrigerant?	No

Technician's Signature



Tech Times

ID	S50
Job Number	7862
Name of Tech	Mick Iye
Technician Classification	Tradesman

Email Report

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Craig Doorey

From: no-reply@iformbuilder.com
Sent: Friday, 2 December 2011 1:08 PM
To: service@triple-m.com.au; Craig Doorey
Subject: New Record - Triple M - NSW - Service Docket

Triple M - NSW - Service Docket	
ID	51
Time Start	Fri Dec 02 2011 12:59:59 GMT+1100 (EST)
Client Details	Veolia clyde waste transfer station
Address	Parramatta rd Clyde
Type of Service	Preventative Maintenance
Job / Service Call Number	9737
Fault Description	Maintenance November
Description of Work Done	Carried out routine maintenance for month of November as per schedule. Checked unit operation and greased all bearings as required. No issues found.
Barcode Label Entry Method	Scan
Parts, Materials?	No
Job Status	Completed
Technician's Signature	
Client Signature	
Forwarding Email	craig.doorey@veolia.com.au
Job Safety Analysis	
ID	S51
Job/Service Call Number	9737
Work to be done	Maintenance November
Protective Equipment to be Used During Works	Gloves, Safety Glasses, High Visibility Garments, Face/Dust mask, Safety Boots/Shoes
Access / Egress to equipment hazard present?	No
Trips, slips, and falls hazard present?	No
Roof Access hazard present?	No
Working on roof?	No

Remain on walkways and paths	No
Manual Handling?	No
Client/General Public/vehicle control?	No
Electrical works?	No
Mechanical works?	Yes
Working from heights?	No
Working from a step ladder?	No
Electrical tools & equipment being used?	No
Using HazMat?	No
Welding or oxy cutting?	No
Cooling towers? Bio Hazards?	No
Handling refrigerant?	No

Technician's Signature



Tech Times

ID	S51
Job Number	9737
Name of Tech	Mick Lye

Email Report

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Craig Doorey

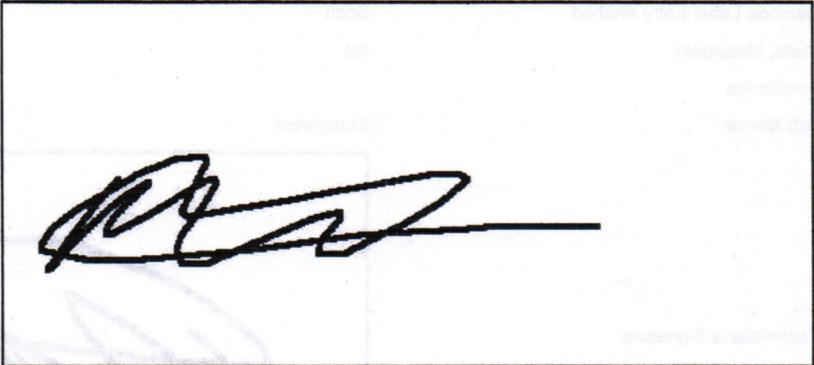
From: no-reply@iformbuilder.com
Sent: Wednesday, 22 February 2012 11:37 AM
To: service@triple-m.com.au; Craig Doorey
Subject: New Record - Triple M - NSW - Service Docket

Triple M - NSW - Service Docket

ID	304
Time Start	Wed Feb 22 2012 11:27:27 GMT+1100 (EST)
Client Details	Veolia Enviromental Services
Address	CLYDE WASTE - CLYDE
Site Contact Name	Craig Doorey
Site Contact Telephone Number	02 8868 7401
Type of Service	Preventative Maintenance
Job / Service Call Number	15065
Fault Description	CLYDE WASTE - PM Requirements for January
Description of Work Done	Carried out routine maintenance for month of January. Checked unit operation, belt condition and greased all bearings. Found that flexible connections between fans and air stack have started to crack and and air leakage is evident. Will get a quote to replace flex and submit.
Barcode Label Entry Method	Scan
Parts, Materials?	No
Ancillaries	
Job Status	Completed
Technician's Signature	
Client Signature	
Forwarding Email	craig.doorey@veolia.com.au

Job Safety Analysis

ID	S304
Job/Service Call Number	15065
Work to be done	CLYDE WASTE - PM Requirements for January
Protective Equipment to be Used During Works	Gloves, Long Pants, Safety Glasses, Face/Dust mask, Safety Boots/Shoes

Access / Egress to equipment hazard present?	No
Trips, slips, and falls hazard present?	Yes
Keep work area tidy and clear.	1
Roof Access hazard present?	No
Working on roof?	No
Remain on walkways and paths	No
Manual Handling?	No
Client/General Public/vehicle control?	No
Electrical works?	No
Mechanical works?	Yes
All isolations complete: electrical, refrigeration, air, water, gas.	1
No work until all moving parts have stopped.	1
Working from heights?	No
Working from a step ladder?	No
Electrical tools & equipment being used?	No
Using HazMat?	No
Welding or oxy cutting?	No
Cooling towers? Bio Hazards?	No
Handling refrigerant?	No
Technician's Signature	

Tech Times

ID	S304
Job Number	15065
Name of Tech	Mick Iye
Technician Classification	Tradesman

Email Report

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Craig Doorey

From: no-reply=bsa.com.au@iforbuilder.com on behalf of no-reply@bsa.com.au
Sent: Friday, 4 May 2012 12:55 PM
To: service@triple-m.com.au; Craig Doorey
Subject: Field Data Capture Notification - Triple M - NSW - Service Docket



Technical Maintenance Services

'A BSA Limited Company'

Triple M Fire ABN 37 101 246 351 | QLD ABN 81 096 895 288
NSW ABN 50 063 395 013 | Arctick Licence AU03033

Triple M - NSW - Service Docket

ID	424
Time Start	Fri May 04 2012 12:45:59 GMT+1000 (EST)
Client Details	VEOLIA ENVIRONMENTAL SERVICES
Address	CLYDE WASTE
Site Contact Telephone Number	02 8868 7401
Type of Service	Preventative Maintenance
Job / Service Call Number	19069
Fault Description	CLYDE WASTE - PM
Description of Work Done	Carried out routine maintenance as per schedule. Greased all bearings and checked belts. All belts still in good condition. Cleaned off all belt cages with wire brush to remove build up of dust.
Barcode Label Entry Method	Scan
Parts, Materials?	No
Ancillaries	
Job Status	Completed

Technician's Signature

Client Signature

Forwarding Email

craig.doorey@veolia.com.au

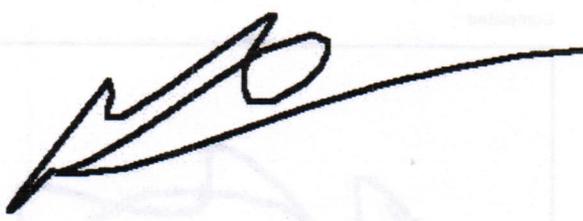
Job Safety Analysis

ID

S424

Job/Service Call Number	19069
Work to be done	CLYDE WASTE - PM
Protective Equipment to be Used During Works	Gloves, Long Pants, Safety Glasses, High Visibility Garments, Face/Dust mask, Safety Boots/Shoes
Access / Egress to equipment hazard present?	No
Trips, slips, and falls hazard present?	No
Roof Access hazard present?	No
Working on roof?	No
Remain on walkways and paths	No
Manual Handling?	No
Client/General Public/vehicle control?	No
Electrical works?	No
Mechanical works?	Yes
All isolations complete: electrical, refrigeration, air, water, gas.	1
No work until all moving parts have stopped.	1
Working from heights?	No
Working from a step ladder?	No
Electrical tools & equipment being used?	No
Using HazMat?	No
Welding or oxy cutting?	No
Cooling towers? Bio Hazards?	No
Handling refrigerant?	No

Technician's Signature



Tech Times

ID	S424
Job Number	19069
Name of Tech	Mick Iye
Technician Classification	Tradesman

Email Report

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Craig Doorey

From: no-reply=bsa.com.au@iforbuilder.com on behalf of no-reply@bsa.com.au
Sent: Friday, 4 May 2012 12:58 PM
To: service@triple-m.com.au; Craig Doorey
Subject: Field Data Capture Notification - Triple M - NSW - Service Docket



Technical Maintenance Services

'A BSA Limited Company'

Triple M Fire ABN 37 101 246 351 | QLD ABN 61 096 895 268
NSW ABN 50 063 395 013 | Arctick Licence AU03033

Triple M - NSW - Service Docket

ID	648
Time Start	Fri May 04 2012 12:49:48 GMT+1000 (EST)
Client Details	VEOLIA ENVIRONMENTAL SERVICES
Address	CLYDE WASTE MANAGMENT
Site Contact Telephone Number	02 8868 740 1
Type of Service	Preventative Maintenance
Job / Service Call Number	22806
Fault Description	CLYDE WASTE - PM
Description of Work Done	Carried out routine maintenance as per schedule. Checked belts and bearings. Flex connection on both fans still deteriorating and will be replaced after plant is cleaned. No other issues found.
Barcode Label Entry Method	Scan
Parts, Materials?	No
Ancillaries	
Job Status	Completed

Technician's Signature

Client Signature

Forwarding Email

craig.doorey@veolia.com.au

Job Safety Analysis

ID: S648

Job/Service Call Number	22806
Work to be done	CLYDE WASTE - PM
Protective Equipment to be Used During Works	Gloves, Long Pants, Safety Glasses, Face/Dust mask, Safety Boots/Shoes
Access / Egress to equipment hazard present?	No
Trips, slips, and falls hazard present?	No
Roof Access hazard present?	No
Working on roof?	No
Remain on walkways and paths	No
Manual Handling?	No
Client/General Public/vehicle control?	No
Electrical works?	No
Mechanical works?	Yes
All isolations complete: electrical, refrigeration, air, water, gas.	1
No work until all moving parts have stopped.	1
Working from heights?	No
Working from a step ladder?	No
Electrical tools & equipment being used?	No
Using HazMat?	No
Welding or oxy cutting?	No
Cooling towers? Bio Hazards?	No
Handling refrigerant?	No

Technician's Signature



Tech Times

ID	S648
Job Number	22806
Name of Tech	Mick Iye
Technician Classification	Tradesman

Email Report

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Appendix B -

Weather Data Calibration Reports

(November 2011 & February 2012)

Hydrometric Consulting Services Pty Ltd

ABN 16 091 437 071

30 November 2011

Stephen Bernhart
Environmental Monitoring Officer
Veolia Environmental Services

Re – Quarterly service of weather stations

Dear Stephen,

As per our service agreement, on the 29/11/11 HCS undertook the service, calibration and maintenance of the weather stations located at the Clyde and Horsley Park sites. Field readings were obtained by a combination of a Kestral 3500, compass, Monitor Solar Radiation field unit and HS TBRG calibration device. Details are as follows

Clyde

Sensor	Actual (field)	Logger
Temperature – 10m	28 deg *	26.9 deg
2m	28 deg *	27.8 deg
Relative Humidity	57%	55%
Wind Speed	2.0 m/sec at ground	2.5 m/sec at 10m
Wind Direction	360	360
Solar Radiation	800 w/sq.m	790 w/sq.m
TBRG	10mm	20 tips (0.5mm per tip)
Battery	13.7v Solar 19.8v	

* Note 1: field reading is not inside the radiation shield

Note 2: ignore rainfall tips logged on the day as these were testing and calibration.

Note 3: a new Wavecom GSM modem supplied by Veolia was configured at site and connected to the data logger. The site was polled from the Veolia computer and connection was successful.

Note 4: a small amount of moisture (condensation) was removed from inside the cabinet.

Note 5: data was downloaded from the site by direct connection of HCS laptop to logger.

Additional Items

1. Installation sprayed for insects.
2. Weeds and bush trimmed.

Hydrometric Consulting Services Pty Ltd

ABN 16 091 437 071

21 February 2012

Stephen Bernhart
Environmental Monitoring Officer
Veolia Environmental Services

Re – Quarterly service of weather stations

Dear Stephen,

As per our service agreement, on the 21/02/12 HCS undertook the service, calibration and maintenance of the weather stations located at the Clyde and Horsley Park sites. Field readings were obtained by a combination of a Kestral 3500, compass, Monitor Solar Radiation field unit and HS TBRG calibration device. Details are as follows

Clyde

Sensor	Actual (field)	Logger
Temperature – 10m	23 deg *	22.8 deg
2m	23 deg *	22.3 deg
Relative Humidity	73%	72%
Wind Speed	3.0 m/sec at ground	3.5 m/sec at 10m
Wind Direction	140	140
Solar Radiation	310 w/sq.m	310 w/sq.m
TBRG	10mm	20 tips (0.5mm per tip)
Battery	13.2v Solar 20.0v	

* Note 1: field reading is not inside the radiation shield

Note 2: ignore rainfall tips logged between 1020 to 1030 as these were testing and calibration.

Note 3: a small amount of moisture (condensation) was removed from inside the cabinet.

Note 4: the site was polled prior to the visit and was operating satisfactorily.

Additional Items

1. Installation sprayed for insects.
2. Weeds and bush trimmed.



Appendix C –

Field Ambient Odour Assessment Plot and Field Sheets (May 2012)



Light conditions with west/northwest winds



DESCRIPTION
Field Ambient Odour Assessment Survey
 Modified German Standard VDI 3940

- LEGEND**
 German Intensity Scale VDI3882
- 0 Not detectable
 - 1 Very weak
 - 2 Weak
 - 3 Distinct
 - 4 Strong
 - 5 Very strong
 - 6 Extremely strong



CLIENT/PROJECT

Veolia Environmental Services
 Clyde Transfer Terminal, Clyde NSW
 Field Ambient Odour Assessment Survey

Date: 09/05/2012
 Time: 1122-1154

	THE ODOUR UNIT PTY LTD Aust Tech Park, Locomotive Workshop, Suite 16012, 2 Locomotive Street, EVELEIGH, NSW 2015 Phone: (02) 9209 4420 – Fax: (02) 9209 4421 www.odourunit.com.au	DRAWN BY	M.ASSAL 09/05/2012	Veolia Environmental Services Field Ambient Odour Assessment	DRAWING No. N1473-XVIII
		CHECKED	J. SCHULZ 26/06/2012		JOB No. N1473L
		APPROVED	T. SCHULZ 27/06/2012		



THE ODOUR UNIT PTY LIMITED

Australian Technology Park Phone: +61 2 9209 4420
 Locomotive Workshop Facsimile: +61 2 9209 4421
 Suite 16012 Email: info@odourunit.com.au
 2 Locomotive Street Internet: www.odourunit.com.au
 Eveleigh NSW 2015 ABN: 53 091 165 061

Form 22 - Field Ambient Odour Assessment Log Sheet

DATE: 09/05/2012 ASSESSOR: Michael Assal WEATHER CONDITIONS: Light conditions with west/northwest winds

GRID REF. POSITION	TIME (hrs)	WIND DIRECTION	WIND SPEED (m/s)	ODOUR PRESENT Y / N	ODOUR CHARACTER	VDI 3940 INTENSITY SCALE 0-6	COMMENTS
1	1122	NW	1-2	N	-	0	-
2	1126	W/NW	1-2	N	-	0	-
3	1129	W/NW	2-3	N	-	0	-
4	1132	W/NW	2-3	N	-	0	-
5	1137	W/NW	1-2	N	-	0	-
6	1140	W/NW	1-2	N	-	0	-
7	1143	W/NW	3-4	N	-	0	-

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GRID REF. POSITION	TIME	WIND DIRECTION	WIND SPEED	ODOUR PRESENT Y / N	ODOUR CHARACTER	VDI 3940 INTENSITY SCALE 0-6	COMMENTS
8	1146	NW	1-2	N	-	0	-
9	1148	W/NW	1-2	N	-	0	-
10	1151	W/NW	1-2	N	-	0	-
11	1154	CALM	CALM	N	-	0	-