

## **Attachment H.1 Raw Materials, Intermediates and Product Handling**

The only materials and products used and stored at the facility are diesel, gas oil and adblu (a diesel additive). The diesel and gas oil are stored in above ground steel tanks that are in a steel bund at the south east corner of Building A1. The dispensing pump sits in a drip collection tray. There are no underground fuel lines. Plant and equipment maintenance is carried out by a mobile maintenance crew that also service PANDA's other sites. The lubricants and hydraulic oils used are brought to the site in the maintenance van.

The bund around the storage tanks is tested every three years to confirm they are fit for purpose. The most recent tests, which were completed in 2012, confirmed the tanks and pipework are fit for purpose and working satisfactorily. A copy of the integrity test report is included in this Attachment.

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Rowan

Engineering  
Consultants Ltd.

# Integrity Assessment Report

**Panda Waste Services**

**Waste Licence Register Number: W0261-01**

**Location:**

**Cappagh Road  
Finglas  
Dublin 11**

**Reporting Date:**

**23<sup>rd</sup> November 2012**

**Consultants:**

**Tom Rowan**

**BE CEng MIEI HDipBS**

**John Lynch**

**BSc MSc AIEMA**

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# 1. Integrity Assessment

## 1.1 Introduction

Panda Waste Services, Cappagh Road, Finglas, Dublin 11 obtained their waste licence (W0261-01) from the Agency on the 31<sup>st</sup> August 2010. As part of their waste licence requirements, they are required to carry out integrity assessments in accordance with Condition 6.9 of their waste licence-

*Condition 6.9- 'The integrity and water tightness of all underground pipes, tanks, bunding structures and containers and their resistance to penetration by water or other materials carried or stored therein shall be tested and demonstrated by the licensee. This testing shall be carried out by the licensee at least once every three years and reported to the Agency on each occasion. This testing shall be carried out in accordance with any guidance published by the Agency. A written record of all integrity tests and any maintenance or remedial work arising from them shall be maintained by the licensee'.*

## 1.2 Fuel bund

There was 1 No. bunding structures on site which were required to be assessed. This is the steel oil bund which bunds the oil on site. A map of the bund is provided in Appendix A.

## 1.3 Underground tank

There was 1 No. underground structure which was assessed as part of the integrity assessment. This was the precast concrete foul water storage tank at the facility. A map of the underground tank is provided in Appendix A.

## 1.4 Methodology

The integrity assessments were carried out in accordance with the following:

- EPA's 'IPC Guidance Note on Storage & Transfer of Materials for Scheduled Activities'.

The bund was emptied of water to allow for the visual inspection. It was deemed that a 24 hour hydrostatic test was sufficient for the steel oil bund. The bund was filled up to the required testing level on 19<sup>th</sup> November 2012 and allowed to stabilise for 24 hours prior to the commencement of the 24 hour bund test. The total permissible drop for the bunds on site was deemed to be 10 mm. A reference vessel was used to measure the potential effect of evaporation or precipitation.

The Panda Waste Services CCTV survey 20/09/2011 on file for the underground foul water tank was reviewed to assess the integrity of the underground concrete tank.

## 2. Integrity Assessment Results

### 2.1 Oil Bund

<b>Company &amp; address:</b> Panda Waste Services, Cappagh Road, Finglas Dublin 11	<b>Waste Ref. No.:</b> W0261-01									
<b>Bund Reference:</b> Oil bund	<b>Bund Location &amp; Grid Reference:</b> Backyard ITM Grid reference- 0710420, 0740475									
<b>Oil Bund Dimensions:</b> 10.25m long * 3m wide * 1.85m high = 57 m <sup>3</sup> capacity	<b>Primary Vessels (s)- Material of Construction:</b> 2 No. steel tanks situated within the bund									
<b>Bund Material of Construction:</b> The bund is constructed with steel.	<b>Primary Vessels (s)- Total Storage Volume:</b> Motor Diesel Tank- 40m <sup>3</sup> (max fill level 20m <sup>3</sup> ) Gas oil Tank - 15m <sup>3</sup> (max fill level 4.5m <sup>3</sup> )									
<b>Primary Vessels (s)- 110% of Volume of the largest vessel:</b> = 22m <sup>3</sup> (based on motor diesel tank max fill 20m <sup>3</sup> )	<b>Primary Vessels (s)- 25% of the Total Storage Volume:</b> = 6m <sup>3</sup> (based on tank max fill levels)									
<b>Deemed safe/practicable to carry out a hydrostatic test?</b> YES NO										
If no, detail reasoning: N/A										
<b>Description &amp; results of the visual inspection</b>										
The external and internal was visually inspected on the 19 <sup>th</sup> of November 2012. During the inspection there was no evidence of potential bund failure.										
<b>Description &amp; results of hydrostatic Test:</b>										
The bund was filled to the test level on the 19 <sup>th</sup> of November 2012 and was allowed to stabilise. The test commenced on the 20 <sup>th</sup> of November 2012 and was completed 24 hours later on the 21 <sup>st</sup> November 2012. During the hydrostatic test the exterior of the bund was inspected and no evidence of bund failure was observed.										
<table border="1"> <thead> <tr> <th>Date</th> <th>Average measurement to the top of the bund</th> <th>Reference vessel</th> </tr> </thead> <tbody> <tr> <td>19-11-12</td> <td>252mm</td> <td>116mm</td> </tr> <tr> <td>20-11-12</td> <td>249mm</td> <td>117mm</td> </tr> </tbody> </table>		Date	Average measurement to the top of the bund	Reference vessel	19-11-12	252mm	116mm	20-11-12	249mm	117mm
Date	Average measurement to the top of the bund	Reference vessel								
19-11-12	252mm	116mm								
20-11-12	249mm	117mm								
<b>RESULT OF HYDROSTATIC TEST- PASS/FAIL</b>	<b>PASS</b>									
<b>Recommendations:</b>										
It is recommended that the Oil Bund is retested by November 2015.										

## 2.2 Underground Tank

<b>Company &amp; address:</b> Panda Waste Services, Cappagh Road, Finglas Dublin 11	<b>Waste Ref. No.:</b> W0261-01
<b>Reference:</b> Underground foul water tank	
<b>Location &amp; Grid Reference:</b> Backyard ITM Grid reference- 0710413, 0740490	
<b>Tank Capacity:</b> 13.5 m <sup>3</sup> capacity	
<b>Material of Construction:</b> The underground tank is constructed with precast concrete. There is 1 No. manhole that provides access to the tank.	
<b>The Panda CCTV survey 20/09/11 was reviewed</b>	
The CCTV survey (20/09/11) showed no evidence of tank failure.	
<b>RESULT OF CCTV INSPECTION TEST- PASS/FAIL</b>	<b>PASS</b>
<b>Recommendations:</b> It is recommended that the foul water tank is retested by September 2014.	

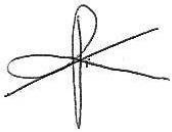
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### 3. Conclusion

This conclusion is my professional opinion based on my findings of the visual inspection and the hydrostatic test carried out on the oil bund. The oil bund passed the integrity assessment in November 2012. It is recommended that the Oil Bund is retested by November 2015.

The CCTV survey showed no evidence of underground foul tank failure. It is recommended that the foul water holding tank is retested by September 2014.

Signed:



\_\_\_\_\_  
**Tom Rowan**  
BE CEng MIEI DipOSH GradIOSH HDipBS



\_\_\_\_\_  
**John Lynch**  
BSc MSc AIEMA

Dated: 23/11/12

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#### 4. Photographs



Photo 1 Locus of the steel oil bund and tank at the facility

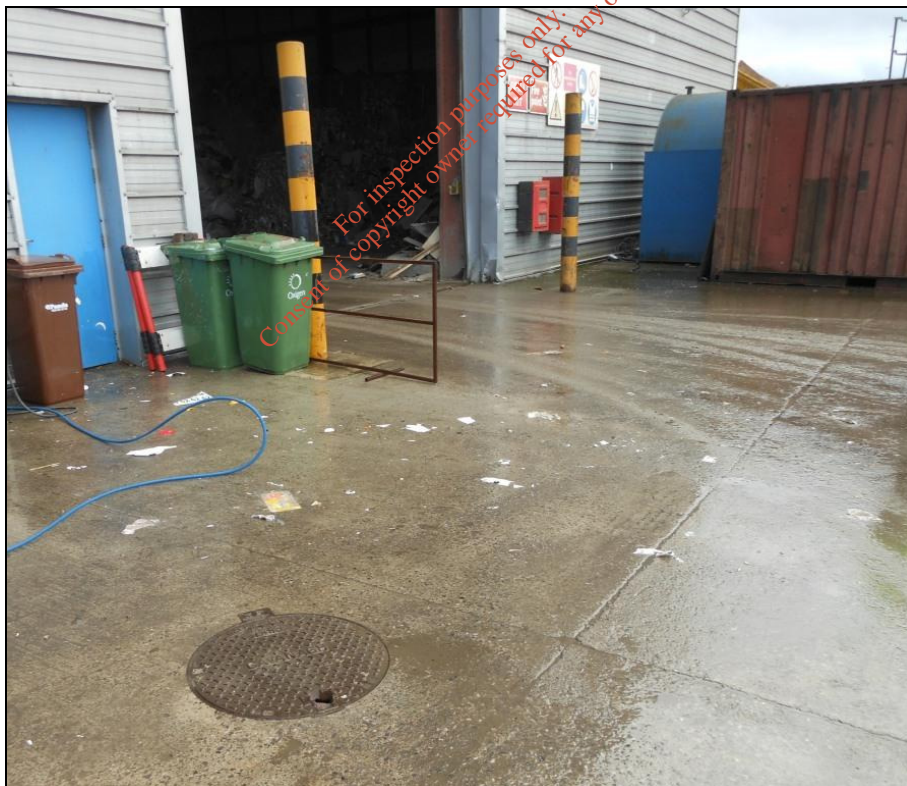


Photo 2 Inside the bund during the visual inspection on the 19/11/12



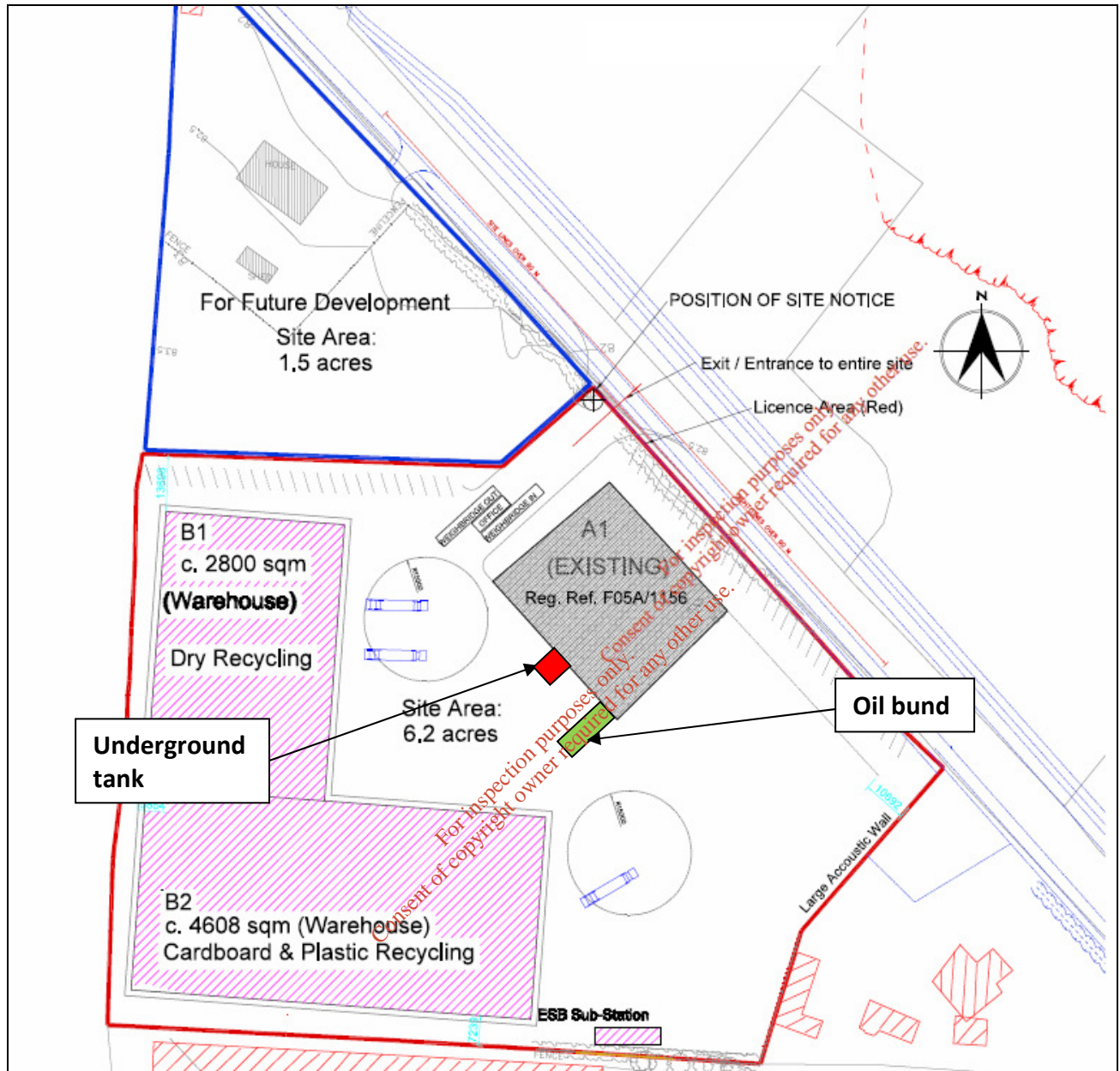


**Photo 3 The bund during the hydrostatic test 20/11/12**



**Photo 4 Locus of the underground foul water tank between shed entrances**

# Appendix 1 Bund & Tank Map



## **Attachment H.2 Waste Prevention**

The facility is designed and operated to maximise the recovery of the materials accepted. As all of these materials are currently classified as waste the only opportunities for waste prevention relate to the small amounts of office and canteen waste generated in the office and welfare facilities.

There is the potential that certain types of paper and cardboard currently accepted could meet the 'end-of-waste' criteria at the locations they are generated. PANDA will engage with its customers to determine if this is feasible.

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### **Attachment H.3 Recovery and Disposal of Waste Generated at the Facility**

Facility operations generate small quantities of office and canteen type wastes. PANDA implements a source segregation policy to maximise the recovery of potential recyclable materials from these wastes.

The plant and equipment are serviced by PANDA's mobile maintenance crew. Waste oils and batteries generated during maintenance are removed off-site for disposal/recovery at licensed treatment/recovery facilities.

The oil interceptor on the surface water drainage system is routinely cleaned and emptied and the contents removed off-site for disposal/treatment at an appropriately licensed facility. Sanitary wastewater collected in the storage tank is also sent off-site for treatment in a municipal wastewater treatment plant.

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## Attachment H.4 Waste Hierarchy

The foundation statement on national waste management policy “Changing Our Ways” was issued by the Department of the Environment and Local Government in September 1998. The statement firmly based national policy on the EU Waste Management Hierarchy, which in descending order of preference is: -

- Prevention;
- Preparing for Reuse;
- Recycling;
- Other Recovery (including energy recovery), and
- Disposal.

The statement was based on and supported by EU legislation that required the reduction in the volume of biodegradable waste disposed to landfill. EU Landfill Directive 99/31/EC set out the following reduction targets, which are based on 1995 figures:-

- Minimum 25% reduction by 2010 (includes 4 year derogation);
- Minimum 50% reduction by 2013 (includes 4 year derogation)
- Minimum 65% reduction by 2016 (derogation available but not taken).

The 2002 government policy statement ‘Preventing and Recycling Waste - Delivering Change’ identified initiatives to achieve progress at the top of the Waste Hierarchy to prevent waste arising and increase recycling rates.

In 2004 ‘Waste Management – Taking Stock and Moving Forward’, the significant improvement in recycling rates achieved since 1998 was recognised, but the need for further expansion was emphasised. The statement confirmed that Ireland’s national policy approach remained ‘grounded in the concept of integrated waste management, based on the internationally recognised waste hierarchy, designed to achieve, by 2013, the ambitious targets set out in Changing Our Ways’.

The EU Waste Framework Directive 2008/98/EC was introduced to coordinate waste management in the Member States so as to limit the generation of waste and optimise the organisation of waste treatment and disposal.

The Directive, which also established the first EU wide recycling targets, was transposed into Irish Law by the European Communities (Waste Directive) Regulations 2011 (S. I. No.126 of 2011). By 2020, Member States must reuse or recycle 50% of certain categories of household waste and reuse, recycle or recover 70% of non-hazardous C & D waste.

The most recent Policy Statement ‘A Resource Opportunity Waste Management Policy In Ireland 2012’ is also predicated on the EU Waste Management Hierarchy and encompasses a range of measures across all tiers namely, prevention, preparation for reuse, recycling, other recovery and disposal.



The Statement sets out how the higher tiers can reduce Ireland's reliance on finite resources, virtually eliminate reliance on landfill and minimise the impact of waste management on the environment. It is a policy objective that when waste is generated, the maximum value must be extracted from it by ensuring that it is reused, recycled or recovered.

The current Waste Management Plan for the Dublin Region (Fingal, Dublin City, Dun Laoghaire Rathdown & South Dublin) was made on November 11<sup>th</sup> 2005 and remains in place until a new Regional Plan is made. The Plan recognises that source separation of household, commercial and industrial waste is crucial to the successful development of sustainable markets for recyclable materials and recommends the introduction of source segregation of household waste

The Plan has specific objectives in relation to the introduction and promotion of source separation of the organic waste component of both household and commercial and industrial wastes. The introduction of separate collection of food waste, in conjunction with the separate collection of dry recyclables will result in residual MSW. Such waste is amenable to mechanical treatment to produce materials suitable for recycling and energy recovery.

The existing facility is designed and operated to maximise the recovery of recyclables from the incoming wastes. The proposed changes are consistent with the Waste Hierarchy as the production of SRF/RDF using non-recyclable materials will gain the maximum value from the waste.

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## Attachment H.5 Waste Recycling & Recovery

The facility was developed in 2006 to allow PANDA to compete for commercial business the Dublin Region; in particular Fingal, which was contiguous with PANDA's then main customer base in the North East Region and as a base from which PANDA could provide household waste collection services in Fingal. PANDA rolled out this household waste collection service in 2008 and, in 2011, PANDA won the tender to collect household waste in Fingal awarded by Fingal County Council. PANDA currently services in the region of 70,000 households in Fingal.

PANDA currently operates fifteen (15 No.) household waste collection trucks daily out of the Cappagh Road MRF. The current breakdown of the household wastes collected is:

Dry Recyclables	16,200 tonnes
Food Waste	18,900 tonnes
Residual Waste	28,000 tonnes

It is proposed to construct a new building (Building A2) adjacent to A1. The current C&D and C&I processing will be transferred to the new building and it is proposed to use A1 to accept and transfer source segregated food waste (brown bin) source segregated residual waste (black bin). The food waste will be bulked up and transferred to biological treatment plants in accordance with the Waste Management (Food Waste) Regulations 2009.

Initially, the residual waste will be treated by first shredding the bin bags that contain the waste to allow the recovery of the recyclable metals (food and beverage containers) that are inadvertently placed in 'black bin' by householders. The remaining waste will then be compacted into bales that are wrapped in plastic and stored pending export to overseas based recovery plants.

The treatment process will be expanded to increase the amount of recyclables recovered from the waste and to manufacture refuse derive fuel (RDF). This will involve increasing the calorific value by removing non and poorly combustible materials, in addition to the metals. The RDF will be suitable for use as a replacement for non-renewable fossil fuel in cement kilns and waste to energy plants. This end use is classified as a recovery activity.