

**Acorn Recycling**

**Closure Plan, Environmental Liability Risk  
Assessment (ELRA) and Financial Provision  
(FP) for Ballybeg Composting Facility, EPA  
Licence W0249-01**

**June 2014**

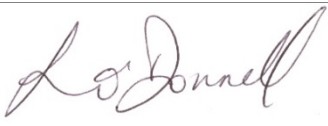
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<b>Client Name:</b>	Acorn Recycling
<b>Client Address:</b>	Ballybeg, Littleton, Co. Tipperary
<b>Report Title:</b>	Closure Plan, Environmental Liability Risk Assessment (ELRA) and Financial Provision (FP) for Ballybeg Composting Facility, EPA Licence W0249-01
<b>Project Code:</b>	AC0102

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## 1.0 Introduction

### 1.1 About this Report

- 1.1.1 Patel Tonra Ltd., Environmental Solutions was commissioned by Acorn Recycling Ltd. to assist with the preparation of a Closure Plan (CP), Environmental Liabilities Risk Assessment (ELRA) and Financial Provision (FP) report for its composting facility at Ballybeg, Littleton, Co. Tipperary (EPA Licence W0249-01).
- 1.1.2 A previous report entitled '*Environmental Liabilities Risk Assessment (ELRA) and Financial Provision (FP) for Ballybeg Composting Facility (EPA Licence W0249-01)*' was prepared by Patel Tonra Ltd., Environmental Solutions for the Ballybeg facility in May 2010.
- 1.1.3 In correspondence to Acorn Recycling dated 7<sup>th</sup> April 2014, the EPA requested the submission of a revised CP/ELRA, in line with the EPA's '*Guidance on Assessing and Costing Environmental Liabilities*' (2014).
- 1.1.4 The CP/ELRA has, therefore, been reviewed in its entirety, with reference to the new (2014) EPA guidance. This report (June 2014) acts to supersede and replace the May 2010 report.

### 1.2 Ballybeg Composting Facility

- 1.2.1 Acorn Recycling Ltd. holds an EPA Waste Licence (ref. W0249-01), granted in October 2009, for the construction and operation of an ABP (Animal By-Products)-compliant composting facility at Ballybeg, Littleton, Co. Tipperary.
- 1.2.2 The facility accepts non-hazardous, biodegradable waste for the production of compost product. The quantity of waste to be accepted at the facility is limited by the EPA licence to 45,000 tonnes per annum. The facility commenced waste acceptance in June 2010.
- 1.2.3 Wastes are received in fully contained vehicles and can only be unloaded in the receiving area located in the primary processing building. The composting operation (primary, ABP and maturation processes) is conducted in enclosed composting bays with forced aeration from underfloor aeration channels. Air is removed from the composting building by means of extraction fans and released to the atmosphere through a biofilter system.
- 1.2.4 The following waste related processes are authorised<sup>1</sup>:
- Composting
  - Mixing/blending of biodegradable wastes
  - Storage of Class 1 Compost and Stabilised Biowaste
  - Storage of waste-'black' bin fines prior to treatment

<sup>1</sup> EPA Licence W0249-01, Schedule A.1

1.2.5 The following waste types are acceptable<sup>2</sup>:

*Non-Hazardous Biodegradable waste, general wastewater sludge include sewage sludge, food and drink industry sludge, as well as source segregated food and garden waste. Additionally, municipal waste that has undergone mechanical treatment (MBT) may be biological treated to stabilise the product.*

### 1.3 Definition of Terms

1.3.1 The following terminology/acronyms are used throughout this report:

**DMP** = Decommissioning Management Plan

**CRAMP** = Closure, Restoration & Aftercare Management Plan

↳ **Closure Plan** = Closure Plan

↳ **RAMP** = Restoration & Aftercare Management Plan

**RMP** = Residuals Management Plan

**ELRA** = Environmental Liabilities Risk Assessment

**FP** = Financial Provision

### 1.4 Methodology

#### EPA Guidance

1.4.1 The EPA published *Guidance on assessing and costing environmental liabilities* in April 2014. EPA authorisations require closure plans, restoration/aftercare plans (e.g. CRAMPs) and environmental liabilities risk assessments (ELRAs) to be prepared to the satisfaction of and agreed with the EPA. The guidance presents a systematic approach for preparing these reports and sets the standard required to meet EPA requirements.

1.4.2 The EPA 2014 guidance presents the following definitions:

- **Closure** refers to relatively short-term measures necessary to close a site satisfactorily, including decommissioning and residuals management. **Closure plan** should be read accordingly.
- **Restoration/aftercare** refers to longer term measures that are necessary where environmental liabilities remain following closure, e.g. contaminated soil and groundwater, landfills, extractive waste facilities, mines, quarries and soil recovery facilities. Measures may encompass activities such as rehabilitation, remediation, restoration, ongoing emissions control and monitoring. **Restoration/aftercare plan** should be read accordingly.
- **Environmental liabilities risk assessment** refers to the assessment and costing of liabilities arising from incidents. Incident generally refers to a change of circumstances from the norm with actual or potential negative consequences. The IED refers to incidents and accidents, but for the purposes of this guidance the term 'incident' only is used, and is taken to include accidents within its meaning.

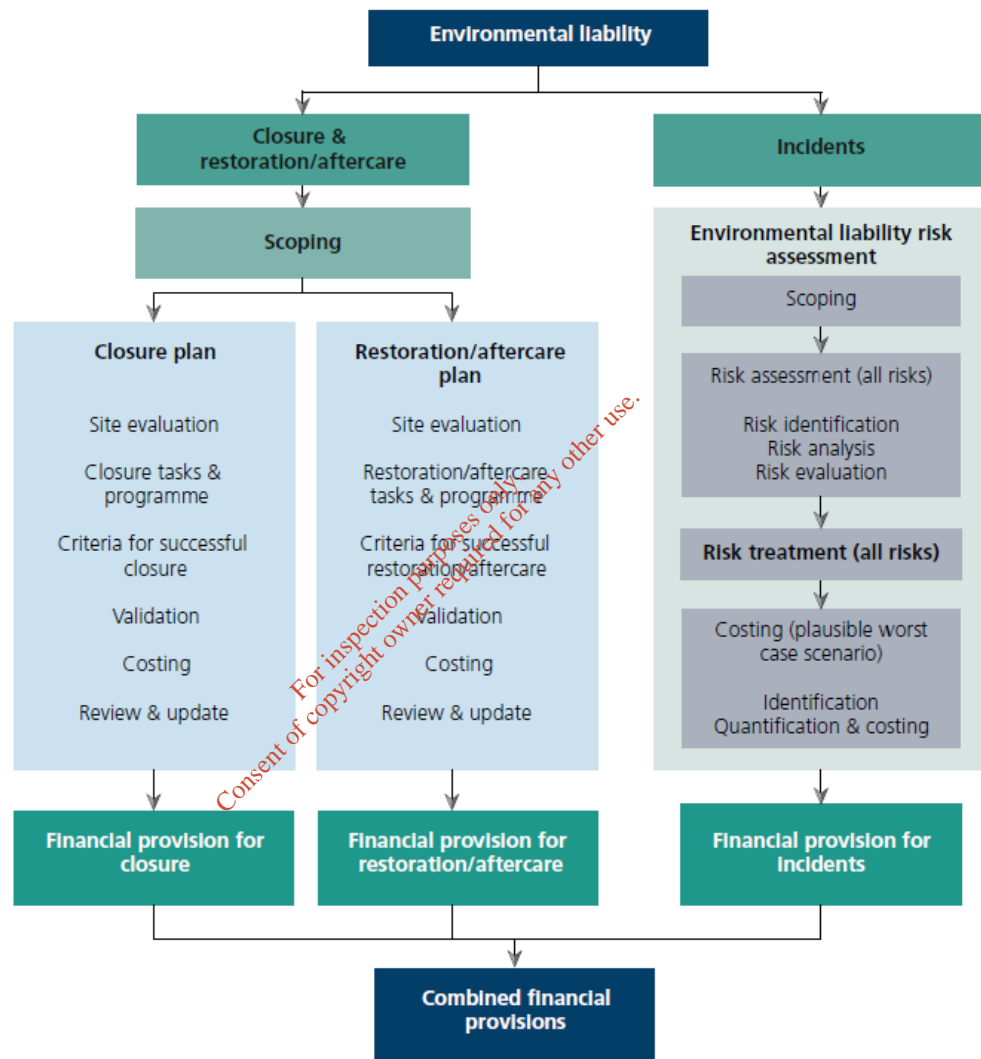
<sup>2</sup> EPA Licence W0249-01, Schedule A.2



- **Financial provision** refers to the putting in place of a financial instrument (such as an insurance, bond, guarantee or fund) to cover the costs of closure, restoration/aftercare or incidents. Other terms referring to essentially the same thing may be seen elsewhere such as financial security, financial guarantee and financial mechanism.

1.4.3 The approach for assessing and costing environmental liabilities is illustrated in **Figure 1.1**.

**Figure 1.1: Assessing and costing environmental liabilities<sup>3</sup>**



**Desktop Review**

1.4.4 Patel Tonra Ltd., Environmental Solutions completed a desktop review of a range of licensing documentation pertaining to the Ballybeg Composting Facility, including Annual Environmental Report (AERs), monitoring data, RBME returns (Methodology for Determining Enforcement Category of Licences), complaints records, incidents records, non-compliance records, site layout and site drainage drawings, as well as licence application/EIS documents.

<sup>3</sup> EPA (2014) *Guidance on assessing and costing environmental liabilities*, Figure 1.1

## Site Visit and Management Team Workshop

- 1.4.5 Vip Patel (BSc(Hons), MSc, MCIWM, CEnv) and Louise O'Donnell (BSc(Hons), MSc, MCIWM) of Patel Tonra Ltd., Environmental Solutions completed a site visit at the facility on 16<sup>th</sup> June 2014 for the purposes of completing the CP/ELRA assessments.
- 1.4.6 A CP/ELRA presentation and workshop was conducted by Vip Patel and Louise O'Donnell of Patel Tonra Ltd., Environmental Solutions with Rónán Beasley, Managing Director and Sam Bowden, Environmental Manager of Acorn Recycling at the facility on 16<sup>th</sup> June 2014.

## 1.5 Requirements of Waste Licence W0249-01

### Decommissioning Management Plan (DMP)

- 1.5.1 EPA Waste Licence W0249-01, Condition 10 on Decommissioning and Aftercare states the following:

*10.1 Following termination, or planned cessation for a period greater than six months, of use or involvement of all or part of the site in the licensed activity, the licensee shall, to the satisfaction of the Agency, decommission, render safe or remove for disposal/recovery any soil, subsoil, buildings, plant or equipment, or any waste, materials or substances or other matter contained therein or thereon, that may result in environmental pollution.*

#### *10.2 Decommissioning Management Plan (DMP)*

*10.2.1 The licensee shall prepare, to the satisfaction of the Agency, a fully detailed and costed plan for the decommissioning or closure of the site or part thereof. This plan shall be submitted to the Agency for agreement as part of the first AER following commencement of the licensed activity.*

*10.2.2 The plan shall be reviewed annually and proposed amendments thereto notified to the Agency for agreement as part of the AER. No amendments may be implemented without the agreement of the Agency.*

*10.2.3 The licensee shall have regard to the Environmental Protection Agency Guidance on Environmental Liability Risk Assessment, Decommissioning Management Plans and Financial Provision when implementing Condition 10.2.1 above.*

*10.3 The Decommissioning Management Plan shall include, as a minimum, the following:*

*(i) a scope statement for the plan;*

*(ii) the criteria that define the successful decommissioning of the activity or part thereof, which ensures minimum impact on the environment;*

*(iii) a programme to achieve the stated criteria;*

*(iv) where relevant, a test programme to demonstrate the successful implementation of the decommissioning plan; and*

(v) details of the costings for the plan and the financial provisions to underwrite those costs.

10.4 A final validation report to include a certificate of completion for the CRAMP, for all or part of the site as necessary, shall be submitted to the Agency within three months of execution of the plan. The licensee shall carry out such tests, investigations or submit certification, as requested by the Agency, to confirm that there is no continuing risk to the environment.

## Environmental Liabilities Risk Assessment (ELRA) and Financial Provision (FP)

1.5.2 EPA Waste Licence W0249-01, Condition 12 on Financial Charges and Provisions states the following:

### 12.2 Environmental Liabilities

12.2.1 The licensee shall as part of the AER provide an annual statement as to the measures taken or adopted at the site in relation to the prevention of environmental damage, and the financial provisions in place in relation to the underwriting of costs for remedial actions following anticipated events (including closure) or accidents/incidents, as may be associated with the carrying on of the activity.

12.2.2 The licensee shall arrange for the completion, by an independent and appropriate qualified consultant, of a comprehensive and fully costed Environmental Liabilities Risk Assessment (ELRA) to address the liabilities from past and present activities. The assessment shall include those liabilities and costs identified in Condition 10 for execution of the DMP. A report on this assessment shall be submitted to the Agency for agreement in advance of the commencement of the licensed activity. The ELRA shall be reviewed as necessary to reflect any significant change on site, and in any case every three years following initial agreement. The results of the review shall be notified as part of the AER.

12.2.3 In advance of the commencement of the licensed activity, the licensee shall, to the satisfaction of the Agency, make financial provision to cover any liabilities identified in Condition 12.2.2. The amount of indemnity held shall be reviewed and revised as necessary, but at least annually. Proof of renewal or revision of such financial indemnity shall be included in the annual 'Statement of Measures' report identified in Condition 12.2.1

12.2.4 The licensee shall have regard to the Environmental Protection Agency Guidance on Environmental Liability Risk Assessment, Decommissioning Management Plans and Financial Provision when implementing Conditions 12.2.2 and 12.2.3 above.

## 1.6 EPA Request for Review of CP, ELRA and FP

1.6.1 In correspondence to Acorn Recycling dated 7<sup>th</sup> April 2014, the EPA requested the submission of a revised CP/ELRA, in line with the EPA's 'Guidance on Assessing and Costing Environmental Liabilities' (2014), and paying particular attention to the following:

### 1.0 Closure Plan

1.1 Update the closure plan Site Evaluation (Section 4.3) to take into account of the following:

- (i) Operations since the commencement of licensable activities and current RBME classification.
- (ii) Provide an update on Operator performance to include information relating to:
- the Environmental Management System (EMS) for the activity;
  - compliance history
  - enforcement history
  - incident history
  - complaint history
  - any relevant results of monitoring and/or site investigations carried out, which may include baseline monitoring/conditions that existed prior to the commencement of site operations.
- (iii) Give maximum storage capacity for raw materials, products and wastes and maximum amount in practice.
- 1.2 Update Section 4.4 Closure Considerations to include an adequate programme (Gantt chart or similar) and timeframe for closure works.
- 1.3 Update Closure Plan Costing (Section 4.6) to take account of all situations that can conceivably apply. For example the closure plan should account for the possibility that, due to unforeseen circumstances, closure may need to be undertaken by a third party. Therefore, labour costs must be included.
- 1.4 Update the Closure Plan as necessary to account for any new site buildings, infrastructure, mobile plant and machinery or any significant modifications or alterations which have occurred since commencement of operations. Update closure costs and contingency as relevant.
- 1.5 The Closure Plan should be based on unplanned closure. The Agency considers that the cost estimation for decontamination and removal for disposal/recycling does not fully account for the potential costs incurred as a result of unplanned closure. Costs should be updated for the maximum, realistic cost of closing a fully operational activity with immediate effect.
- 1.6 The Licensee is advised that all costs included in the Closure Plan should be suitably referenced and verifiable. The licensee is advised to have regard to the EPA's 'Guidance on Assessing and Costing Environmental Liabilities' and, in particular, the accompanying document containing unit rates for verification. Re-submit a table of Estimated Closure Costs, having regard to points 1.3 to 1.5 above. This shall include a breakdown of the costs associated with the costs identified, including quantities where appropriate and unit costs as set out in Table 2.2 of the Agency Guidance. The following additional costs should be included as relevant:
- (i) costs of labour associated with implementing the plan
  - (ii) management costs for closure
  - (iii) site investigation costs
  - (iv) insurance for the site
  - (v) EPA licence surrender fee
  - (vi) removal of residual stock piles of waste for recovery/disposal
  - (vii) site security costs post closure and prior to surrender of the licence.

1.7 Clarify if the planning bond has lapsed.

## **2.0 ELRA**

The Agency requires the following information to conclude on the accuracy of the costing presented.

- 2.1 Update Section 6.3 Risk Identification and Assessment to include a Statement of Measures allocating risk owners to each risk and assigning timeframes for the implementation of each risk mitigation measure (see Section 3.4 of EPA Guidance).
- 2.2 The ELRA costing should be based on the plausible worst case scenario (a plausible scenario is one that poses the maximum environmental liability, i.e., consequence, during the period to be covered by the financial provision). The worst case scenario may be represented by the risk with the highest consequence rating. In that case, this risk should be the basis for financial provision and should be quantified and costed.
- 2.3 For each cost item provide a rationale for the cost. This rationale must be based on real, current cost estimates for the activity and the sources of the costs must be provided.
- 2.4 Where two or more risks are identified as having the maximum consequence, then further analysis should be undertaken to identify the most significant of these for quantification and costing. There may be links/domino effects between individual risks, in which case a number of risks may need to be grouped to represent worst case scenario.
- 2.5 The likelihood of the plausible worst case scenario must not be taken into account in this analysis. Once a risk is considered plausible, it must be included in the risk assessment and the level of financial provision must be based on the consequences alone.
- 2.6 A contingency fee must be applied to the sub-total to allow for uncertainty in the cost estimate.

## **3.0 Financial Provision**

The Licensee is required to propose suitable Financial Provision mechanisms to cover both known and unknown liabilities for Agency consideration. In light of the amendments to the CP/ELRA and associated costings, the Licensee is requested to submit confirmation of the means by which financial provision will be provided.

## 2.0 Closure Plan

### 2.1 Approach

2.1.1 There are three steps to completing closure and restoration/aftercare plans<sup>4</sup>, as follows:

- Step 1: Scoping
- Step 2: Closure
- Step 3: Restoration/aftercare

### 2.2 Scoping CRAMP

2.2.1 The report is prepared for Ballybeg Composting Facility (EPA licence W0249-01). Upon site closure and subsequent decommissioning of the facility, there will be no remaining environmental liabilities.

2.2.2 In accordance with EPA guidance, it is therefore deemed appropriate to complete only a Closure Plan; i.e. there is no requirement for a restoration/aftercare management plan.

### 2.3 Closure Plan Requirements

2.3.1 The requirements of a closure plan are as follows:<sup>5</sup>

**Table 2.1: Contents of CP**

Section	Contents
1. Introduction	<ul style="list-style-type: none"> <li>▪ Site description</li> <li>▪ Activities</li> <li>▪ Licence/permit details</li> <li>▪ Closure scenarios covered in the plan</li> <li>▪ Whether restoration/aftercare plan is also required</li> </ul>
2. Site Evaluation	<ul style="list-style-type: none"> <li>▪ Operator performance</li> <li>▪ Environmental pathways and sensitivity</li> <li>▪ Site processes and activities</li> <li>▪ Inventory of buildings, plant and equipment</li> <li>▪ Inventory of raw materials, products and wastes</li> <li>▪ Maximum storage capacity for raw materials, products and wastes</li> </ul>

<sup>4</sup> EPA (2014) *Guidance on assessing and costing environmental liabilities*, Section 2.2

<sup>5</sup> EPA (2014) *Guidance on assessing and costing environmental liabilities*, Section 2.2, Table 2.1

Section	Contents
3. Closure Tasks and Programmes	<ul style="list-style-type: none"> <li>▪ Plant and equipment decontamination requirements</li> <li>▪ Plant and equipment decommissioning requirements</li> <li>▪ Demolition (if necessary)</li> <li>▪ Waste facility closure</li> <li>▪ Raw materials, products and waste disposal and/or recovery requirements</li> <li>▪ Contaminated land treatment, removal and/or disposal</li> <li>▪ Programme (Gantt chart or similar) and timeframes for delivery</li> </ul>
4. Criteria for Successful Closure	<ul style="list-style-type: none"> <li>▪ A benchmark set of criteria to evaluate the success of closure</li> </ul>
5. CP Validation	<ul style="list-style-type: none"> <li>▪ Environmental monitoring</li> <li>▪ Closure validation audit</li> <li>▪ Closure validation audit report</li> <li>▪ Closure validation certificate</li> </ul>
6. CP Costing	<ul style="list-style-type: none"> <li>▪ Plant and equipment decontamination costs</li> <li>▪ Plant and equipment decommissioning costs</li> <li>▪ Demolition costs</li> <li>▪ Waste recovery or disposal costs</li> <li>▪ Environmental monitoring costs</li> <li>▪ Site security costs</li> <li>▪ Validation costs</li> <li>▪ Management and utility costs</li> </ul>
7. CP Review and Update	<ul style="list-style-type: none"> <li>▪ Proposed frequency of review</li> <li>▪ Proposed scope of review</li> </ul>
8. CP Summary	<ul style="list-style-type: none"> <li>▪ Summary information</li> </ul>

## 2.4 Introduction

### Site description

- 2.4.1 The Ballybeg Composting Facility operated by Acorn Recycling, Ballybeg, Littleton, Co. Tipperary commenced waste acceptance on the 21<sup>st</sup> June 2010. The facility is a fully enclosed, forced aeration in-vessel composting facility, with air extraction and biofiltration.
- 2.4.2 The facility is licensed by the EPA under waste licence W0249-01 for the acceptance of 45,000 tonnes per annum of biodegradable wastes.

2.4.3 The total footprint of the site is approximately 3.2 hectares. A Site Layout Drawing and a layout of the Main Composting Building (interior) are included in **Appendix 2.1**.

2.4.4 The facility was a 'new build' construction, developed on a greenfield site. There are, therefore, no legacy issues associated with the site.

2.4.5 The following waste types are acceptable<sup>6</sup>:

*Non-Hazardous Biodegradable waste, general wastewater sludge include sewage sludge, food and drink industry sludge, as well as source segregated food and garden waste. Additionally, municipal waste that has undergone mechanical treatment (MBT) may be biological treated to stabilise the product. Other wastes may be agreed in advance with the Agency.*

2.4.6 Wastes must only be received in fully covered vehicles and can only be unloaded inside the appropriate reception building. All waste is composted in composting bays, with forced aeration from underfloor aeration channels. Air is extracted from the composting building by means of extraction fans and released to the atmosphere via a biofilter system.

#### **Licence/permit details**

2.4.7 EPA Waste Licence W0249-01 was issued by the EPA on 9<sup>th</sup> October 2009.

2.4.8 Licence conditions relating to closure/decommissioning are detailed in **Section 1.5** of this report.

2.4.9 The facility operates under 'Comp 45' Approved Animal By-Products (ABP) Composting Plant, issued by DAFM on 5<sup>th</sup> June 2014 (expires 31/05/2017) (see **Appendix 2.2**).

#### **Planning**

2.4.10 A planning application and EIS was submitted to North Tipperary County Council in December 2007 (Register Ref 07511853) and planning permission was granted, subject to 17 Conditions, on the 1<sup>st</sup> October 2008 to develop the facility to accommodate the biological treatment of organic residue and the production of Class 1 compost.

2.4.11 A copy of the planning permission and conditions are included in **Appendix 2.3**.

2.4.12 Condition 15 relates to a bond for the decommissioning and site restoration of the development. A bond was put in place prior to the commencement of the development; however the licensee has confirmed that the bond has expired, as of January 2011.

<sup>6</sup> EPA Licence W0249-01, Schedule A.2



**Waste Activities carried out at the Facility**

2.4.13 The facility is licensed to carry out the waste activities listed below in accordance with the third and fourth schedules of the Waste Management Acts 1996, as amended. The extent to which the waste activity was carried out during the most recent full reporting year (January to December 2013) is detailed for each activity<sup>7</sup>:

- **3<sup>rd</sup> Schedule, Class 6:** Biological treatment not referred to elsewhere in this Schedule which results in final compounds or mixtures which are disposed of by means of any activity referred to in paragraphs 1 to 5 or paragraphs 7 to 10 of this Schedule.

(Under the Waste Management Act, as amended, this is referred to as waste disposal class **D 8**)

No wastes were accepted for treatment under this activity in 2013.

- **3<sup>rd</sup> Schedule, Class 13:** Storage prior to submission to any activity referred to in a preceding paragraph of this Schedule, other than temporary storage, pending collection, on the premises where the waste concerned is produced

(Under the Waste Management Act, as amended, this is referred to as waste disposal class **D 15**)

Not carried out during 2013.

- **4<sup>th</sup> Schedule, Class 2:** Recycling or reclamation of organic substances which are not used as solvents (including composting and other biological processes).

(Under the Waste Management Act, as amended, this is referred to as waste recovery class **R 3**)

32,239.78 tonnes of biodegradable waste was accepted at the facility for composting in 2013.

- **4<sup>th</sup> Schedule, Class 13:** Storage of waste intended for submission to any activity referred to in a preceding paragraph of this Schedule, other than temporary storage, pending collection, on the premises where such waste is produced.

(Under the Waste Management Act, as amended, this is referred to as waste recovery class **R 13**)

Not carried out during 2013.

**Closure scenarios covered in the plan**

2.4.14 The Ballybeg Composting Facility will achieve clean closure, i.e., upon site closure and subsequent decommissioning of the facility, there will be no remaining environmental liabilities.

**Whether restoration/aftercare plan is also required**

2.4.15 Upon site closure and subsequent decommissioning of the facility, there will be no remaining environmental liabilities. In accordance with EPA guidance, it is therefore deemed appropriate to complete only a Closure Plan; i.e. there is no requirement for a restoration/aftercare management plan.

<sup>7</sup> Acorn Recycling, AER 2013

## 2.5 Site Evaluation

### Operator performance

2.5.1 The following management team is in place at the facility:

- Rónán Beasley, Managing Director
- Sam Bowden, Environmental Manager
- Philip Maher, Operations Manager
- 2 No. site operators

2.5.2 Acorn Recycling has designed and implemented a bespoke Environmental Management System for the facility. The company reports on its Environmental Objectives and Targets in its Annual Environmental Report. The following Standard Operating Procedures (SOPs) are implemented at the facility:

- SOP ARB01 Waste Acceptance and Characterisation Procedure
- SOP ARB02 Cleaning and Hygiene Procedure
- SOP ARB03 Blending/Loading a Bay
- SOP ARB04 Screening and Loading/unloading of ABP sanitisation bays
- SOP ARB05 Batch Traceability Procedure
- SOP ARB06 Handling of Leachate Procedure
- SOP ARB07 Compost Sampling and non-compliance
- SOP ARB08 Non-Compliance and Corrective Action
- SOP ARB10 Awareness and Training Procedure
- SOP ARB11 Emergency Response Procedure
- SOP ARB12 Accident Prevention Procedure
- SOP ARB13 Documentation Procedure
- SOP ARB14 Groundwater Monitoring Procedure
- SOP ARB15 Surface Water Monitoring Procedure
- SOP ARB16 Dust Deposition Monitoring Procedure
- SOP ARB17 Verification of ABP processing temperatures
- SOP ARB18 Management of compost in maturation area
- SOP ARB19 Testing of compost for physical contaminants

2.5.3 Non-compliances and observations noted by the EPA during site inspections since commencement of operations are listed in **Appendix 2.4**.

2.5.4 The following complaints were recorded in the facility's AERs:

- 2010: None
- 2011: 3 No., all relating to odour; appropriate investigation and corrective action, as appropriate.
- 2012: 1 No., re. odour.
- 2013: None
- 2014 to-date: None

2.5.5 The following incidents were recorded in the facility's AERs:

- 2010: None
- 2011: 2 No., re. fire – see details attached in **Appendix 2.5**.
- 2012: None
- 2013: None
- 2014 to-date: None

#### **EPA Enforcement Category**

2.5.6 The Ballybeg Composting Facility is categorised as a 'C1' risk enforcement category, in accordance with RBME returns provided by the licensee.

#### **Environmental pathways and sensitivity**

2.5.7 Data from the licensee's RBME (2012-2014) notes the following:

- Nearest sensitive receptor is >250m<1km from the facility boundary.
- The closest protected ecological site is >1km from the facility boundary.
- The site is underlain by a Locally Important Aquifer.
- The vulnerability of the site is classified as High.
- The facility is >1km from any Source Protection Zone.
- There are no designated coastal, estuarine, shellfish or bathing waters in the vicinity of the site.
- There are no discharges to water.
- There are no discharges to sewer.
- There are no soil or groundwater contamination issues on the site.

#### **Summary results of environmental monitoring**

2.5.8 Regular environmental monitoring is undertaken, as a requirement of Waste Licence W0249-01, as follows: noise, emissions to water, composting process, air and odour, emissions to air and ambient monitoring of dust and groundwater. A full record of the monitoring results is retained on site and annual summaries are available in the AERs.

2.5.9 Summary information has been extracted from the AER 2013, as follows.

#### **Noise monitoring**

2.5.10 Daytime and night-time noise monitoring was carried out at the facility by an independent consultant on 20<sup>th</sup> August 2013. The results showed no significant noise nuisance being caused by the facility. Daytime and night noise levels at NSL1 & NSL2 above the licence limits were recorded but these were caused by high noise levels at the road and were not caused by the composting facility. There was no noise audible noise from the compost facility.

### Groundwater Monitoring

2.5.11 As per Table C.2.3 of the waste licence, groundwater on site was sampled and tested on 19<sup>th</sup> December 2013 for the parameters below.

**Table 2.2: Groundwater Monitoring Results (Sampling Date: 19 Dec 2013)**

Parameter	GW1	GW2	GW3
pH	7.2	7.7	7.1
Nitrate	<1	<1	2.3
Total Ammonia	3.85	6.08	1.76
Total Nitrogen	6.8	2.6	11.2
Conductivity	549	329	574
Chloride	13.9	15.9	12.1
Organic Compounds	Not detected	Not detected	Not detected

2.5.12 It is noted that a hydrogeological assessment as per Condition 6.24 of the Waste Licence was completed by OGE Hydrogeology in March 2012. The report concluded that:

- GW2 is correctly located as an up-gradient well to monitor groundwater coming onto the site.
- GW1 and GW3 are adequately located to act as down-gradient monitoring wells.
- The very low hydraulic gradients, coupled with the low hydraulic conductivity subsoils and bedrock, results in the groundwater beneath the site being well protected. There is a very low probability of any potential contaminant moving down-gradient and off-site in the groundwater.

### Monitoring of Emissions to Water

2.5.13 One sample was taken from storm water discharging from the site at SW1 during the reporting period (2013).

**Table 2.3: Storm Water Monitoring**

Parameter	25 Oct 2013
Ammonia (mg/l)	4.55
Suspended Solids (mg/l)	<50

### Monitoring of Odour and Bioaerosols

2.5.14 A comprehensive Odour and Bioaerosols monitoring program is carried out on site by independent consultants, Odour Monitoring Ireland Ltd. This program monitors the efficiency of the biofilter on site as well as ambient bioaerosols.

**Table 2.4: Biofilter Monitoring 2013**

Parameter	Q1 (28 Feb 2013)	Q2 (11 Jun 2013)	Q3 (12 Sept 2013)	Q4 (06 Nov 2013)	Limit
Average Odour OUE/m <sup>3</sup>	3941	3941	1689	1564	-
% Odour Removal	93	93	97	97	-
Total Aliphatic Amines	0.86		0.24		-
Hydrogen Sulphide (mg/Nm <sup>3</sup> )	0.004		0.01		<5
Ammonia (mg/Nm <sup>3</sup> )	1.89		1.1		<50
Total Mercaptans (mg/Nm <sup>3</sup> )	<0.1		<0.09		<5
Bed Media pH	6.9		6.5		-
Moisture (% w/w)	48		52		-
Total Viable Counts (CFU/Kg)	6.6*10 <sup>5</sup>		5.9*10 <sup>5</sup>		-

**Table 2.5: Bioaerosols Monitoring 2013**

Location	Aspergillus Fumigatus (CFU m <sup>3</sup> )	Mesophilic Bacteria (CFU m <sup>3</sup> )
Loc Bio1	10	33
Loc Bio2	9	164
Loc Bio3	14	72

**Table 2.6: PM10 Monitoring 2013**

Location	(H1) Average Concentration (ug/m <sup>3</sup> ) (11Jun2013)	(H2) Average Concentration (ug/m <sup>3</sup> ) (06Nov2013)	Limit (ug/m <sup>3</sup> )
PM1	8	5	50

#### Site processes and activities

- 2.5.15 The Ballybeg Composting Facility biologically treats organic waste residues (through forced aeration) and produces a quality compost product. A Site Layout Drawing and a layout of the Main Composting Building (interior) are included in **Appendix 2.1**.

- 2.5.16 The Main Composting Building forms a totally enclosed area with air extraction and a bio-filtration bed immediately to the rear of the main building envelope. The main building is sub-divided into two distinct areas, interlinked with two ABP bays: (i) the primary processing area, where the primary composting takes place in dedicated bays – this is sometimes referred to as the ‘dirty area’; and (ii) the secondary processing area, where the maturation of the composted materials takes place in dedicated bays - this is sometimes referred to as the ‘clean area’. Both these operations are further sub-divided into material handling and designated areas, e.g. input and output storage areas. Material is transferred from the primary processing bays via the 2 interlinked ABP bays and when ABP compliance is achieved in these bays, it is finally pushed through to the maturation side for further processing as required.
- 2.5.17 The facility and operation has been purposely designed to meet and ensure compliance with Animal By-Product Regulations (ABP). In addition to the EPA Waste Licence, the facility operates under ‘Comp 45’, Approved Animal By-Products Composting Plant, issued by DAFM on 5<sup>th</sup> June 2014 (see **Appendix 2.2**). The key aim of the ABP Regulations is to ensure that all meat and other products of animal origin which are treated by composting must meet prescribed standards, which are required to ensure sufficient pathogen removal so the final composted material or product can be applied safely to land in order to prevent animal diseases and any possible cross-contamination.
- 2.5.18 The process is a static pile forced aeration composting with temperature feedback control. The process is carried out within an enclosed building and air from the building is extracted and blown through the woodchip bio-filter. During the waste unloading and product loading operations, which are carried out within the building, the roller shutter doors are closed behind the vehicles to prevent any fugitive emissions escaping the buildings.
- 2.5.19 Vehicles carrying waste enter the facility via the weighbridge and discharge the load in the dedicated waste acceptance area within the enclosed building, without any risk of cross-contamination of the final product. The discharge floor and tipping area has been specially designed with a sloping angle to contain and ensure the flow of waste material in a specific and required direction. The material is then blended/mixed with a bulking agent (mainly woodchip), this process is also known as amendment and the final mixture is laid in the dedicated composting bays which are approximately 30 m long and 2-2.5 m high. The amendment allows air flow to penetrate more readily throughout the static pile and bulk of the material.
- 2.5.20 The bays have underflow aeration holes which will blow controlled air through the static pile to enable optimum growth conditions for the micro-organisms, together with the monitoring of moisture and temperature via probes in order to optimise the composting process.
- 2.5.21 The naturally-occurring micro-organisms within the waste grow rapidly within the warm, moist and aerated conditions created within the composting bays. These organisms break down the organic matter present in the waste and once the material reaches a temperature in excess of 60° Celsius and the initial composting process has taken place, the material is screened and transferred into another dedicated bay within the same building. The material remains in this bay until it reaches 70° Celsius for 1 hour; after this time, the material is then tested for the required standards. Once the required standards have been met, the material is removed to the secondary processing area, where it is left for approximately 6 weeks before leaving the site as a finished product. The whole process from start to completion can take up to 14 weeks.

**Inventory of buildings, plant and equipment**

2.5.22 See **Appendix 2.6**.

**Inventory of raw materials, products and wastes**

2.5.23 See **Appendix 2.6**.

**Maximum storage capacity for raw materials, products and wastes**

2.5.24 See **Appendix 2.6**.

**2.6 Closure Tasks and Programmes**

2.6.1 Closure Tasks and an outline programme of works are included in **Appendix 2.7**. Notes to accompany this document are included in **Appendix 2.9**.

**Plant and equipment decontamination requirements**

2.6.2 All plant and equipment in the Main Composting building, as well as the building itself, once emptied, will be decontaminated (sterilised/sanitised) via a high-pressure wash. In addition, the air extraction system will be decontaminated. Details are included in Closure Tasks and Programme (**Appendix 2.7**).

**Plant and equipment decommissioning requirements**

2.6.3 Following decontamination (where required), all plant and equipment in the Main Composting building, will be decommissioned. In addition, the air extraction system and the biofilter will be decommissioned. Details are included in Closure Tasks and Programme (**Appendix 2.7**).

**Demolition (if necessary)**

2.6.4 The closure scenario is such that demolition is not required. The Main Composting Building will be decontaminated/decommissioned and left in an empty and full clean state.

2.6.5 'Portacabin' units will be removed off site. Details are included in Closure Tasks and Programme (**Appendix 2.7**).

**Waste facility closure**

2.6.6 It is anticipated that a 'planned closure' will be instigated, whereby a date for cessation of waste acceptance is planned in advance and closure activities planned accordingly. Under the planned closure scenario, the licensee will continue all processing operations and remove product to outlets, as per standard operations. Decommissioning/closure tasks will then be implemented, under the management and direction of the licensee.

2.6.7 Closure costing (**Appendix 2.8**) makes provision for unplanned closure, as a 'worst-case' scenario.

**Raw materials, products and waste disposal and/or recovery requirements**

2.6.8 Closure requirements for raw materials, products and wastes are considered in detail in Closure Tasks and Programme (**Appendix 2.7**).

**Contaminated land treatment, removal and/or disposal**

2.6.9 There is no contaminated land issues associated with the facility.

**Programme (Gantt chart or similar) and timeframes for delivery**

2.6.10 A Closure Programme is provided in **Appendix 2.7**. It is noted that this is based on best estimates at the time of writing, and in consultation with the licensee. The closure programme will be subject to periodic review, and will be further detailed prior to the closure period.

**2.7 Criteria for Successful Closure****A benchmark set of criteria to evaluate the success of closure**

2.7.1 Acorn Recycling Ltd. has established the following criteria to demonstrate the success of the closure and decommissioning of the facility:

1. The Main Composting Building is empty, clean and safe and left *in situ*:
  - o All input feedstock material has been processed in full through the plant, including ABP tunnels and Stage 2 composting/maturation.
  - o All output compost material has been removed off-site to pre-approved outlets.
  - o The Main Composting Building and related plant/equipment has been decontaminated (high-pressure wash).
  - o Plant and equipment in the Main Composting Building is decommissioned and removed off-site.
  - o The air extraction system has been decontaminated, decommissioned and removed off-site.
  - o The biofilter (and related drainage/pipework) has been decontaminated, and filter media (woodchip) removed off-site. The biofilter storage area has been backfilled to natural ground levels.
  - o Offices cleaned and emptied.
2. Bunded storage area decontaminated and left empty and clean.
3. All mobile equipment moved off-site.
4. Hardstanding areas cleaned, interceptor desludged, surface water drains jetted, sewage holding tank emptied.
5. Electrics and services (incl. firewater ponds, weighbridge, site drainage) inspected and left in working and safe order.
6. Fencing and gates intact and site secured.
7. Round of environmental monitoring completed which demonstrated no residual environmental impacts/emissions.
8. Independent closure audit completed.
9. All relevant site records have been managed appropriately retained in an off-site location.
10. Closure activities completed to the satisfaction of the EPA; surrender of the EPA licence.



## 2.8 CP Validation

### Environmental monitoring

2.8.1 A round of environmental monitoring will be undertaken at the facility upon site closure, as per the requirements of Waste Licence W0249-01, Schedule C:

- Odour monitoring
- Emissions to water
- Dust monitoring
- Groundwater monitoring
- Biofilter monitoring – not applicable as biofilter decommissioned and removed<sup>8</sup>
- Monitoring of compost process – not applicable as composting operation decommissioned and removed<sup>9</sup>
- Noise monitoring – not applicable as site activities ceased

### Closure validation audit, audit report and validation certificate

2.8.2 The licensee will commission a competent organisation to complete an independent validation audit, report and validation certificate. The auditor will supervise, certify and report on the decommissioning and closure plan implementation process and progress to Acorn Recycling Ltd.

2.8.3 Acorn Recycling Ltd. will liaise with the EPA in terms of surrender of its Waste Licence and ensure that the EPA is satisfied with final closure arrangements.

## 2.9 CP Costing

2.9.1 A Closure Plan costing model is presented in **Appendix 2.8** (notes to accompany this document are included in **Appendix 2.9**). The model considers the following items, *inter alia*:

- Plant and equipment decontamination costs
- Plant and equipment decommissioning costs
- Demolition costs (not applicable)
- Waste recovery or disposal costs
- Environmental monitoring costs
- Site security costs
- Validation costs
- Management and utility costs

---

<sup>8</sup> Ongoing monitoring will be conducted for the duration of time during which composting is carried out on site, in line with required frequencies as stipulated in the Waste Licence. This is regarded as operational monitoring and is therefore excluded from closure tasks.

<sup>9</sup> Ongoing monitoring will be conducted for the duration of time during which composting is carried out on site, in line with required frequencies as stipulated in the Waste Licence. This is regarded as operational monitoring and is therefore excluded from closure tasks.

2.9.2 Supporting documentation/validation for proposed closure costs is provided in **Appendix 4.2**.

## 2.10 CP Review and Update

### Proposed frequency and scope of review

2.10.1 It is proposed that the plan will be reviewed and updated every year as part of the AER submission. The AER submission will consider any event of a significant modification or alteration to the facility and site activities, etc., e.g. new Site Office/maintenance building, additional/new processing equipment / technology /plant, storage tanks/areas, pollution control mechanisms/equipment within the licensed boundary, which may impact on the Closure Plan.

2.10.2 It is proposed that the Closure Plan is subject to a more comprehensive review every five years.

2.10.3 The Closure Plan will be reviewed in detail 2-3 years prior to any planned closure.

## 2.11 CP Summary

Item	Summary Details
Activity name:	Ballybeg Composting Facility
Activity address:	Ballybeg, Littleton, Co. Tipperary
Name of the operator:	Acorn Recycling
Licence/permit number:	W029-01
Name and address of person/organisation who prepared the plan:	Patel Tonra Ltd., Environmental Solutions 3f, Fingal Bay Business Park, Balbriggan, Co. Dublin
Classes of activity licensed/ permitted and carried out:	Licensed for D 8, D15, R 3, R 13. Only R 13 active as per AER 2013.
Risk category (RBME):	Category C1
Scope (closure plan only or restoration/aftercare plan also):	Closure Plan only
Overall closure costs:	See <b>Appendix 2.8</b>
Details of any previous closure plans:	This report supersedes and replaces the May 2010 report <sup>10</sup> .
Financial provision mechanism:	To be agreed, in line with EPA guidance.
Review period for the closure plan:	Annual update; CP will be fully reviewed and updated every five years.

<sup>10</sup> Patel Tonra Ltd. (May 2010) *Environmental Liabilities Risk Assessment (ELRA) and Financial Provision (FP) for Ballybeg Composting Facility (EPA Licence W0249-01)*

## 3.0 Environmental Liabilities Risk Assessment (ELRA)

### 3.1 Introduction<sup>11</sup>

3.1.1 Environmental liability risk assessment (ELRA) considers the risk of incidents occurring that could result in liabilities materialising, e.g. fire, fuel spillages. The two key objectives of the ELRA process are:

- to identify and quantify environmental liabilities focusing on unplanned, but possible and plausible events occurring during the operational phase; and
- to provide a mechanism to encourage continuous environmental improvement through the management of potential environmental risks.

3.1.2 The ELRA approach is a standard risk assessment that involves the assessment of the likelihood of occurrence of an event in combination with the consequences of that event. This is followed by the costing of the plausible worst case scenario for the purposes of informing the level of financial provision (cover) necessary. The ELRA procedure is as follows:

- scoping to determine the type of environmental liabilities to be covered;
- risk assessment including the following stages:
  - risk identification, i.e. the systematic identification of plausible risks, the sensitivity of the receiving environment (receptor) and the potential pathway for the activity to impact on the environment.
  - risk analysis consists of determining the likelihood and consequences for identified risk events.
  - risk evaluation is the ranking and presentation of risks to allow for prioritisation of the risk treatment programme.
- risk treatment is a process to mitigate risks, e.g. by removing the risk or minimising the likelihood or consequences; and
- identification, quantification and costing of a plausible worst case scenario for financial provision (FP).

### 3.2 Scoping

3.2.1 The scope of the ELRA covers environmental risks associated with the Ballybeg Composting Facility, which could potentially lead to environmental liability.

3.2.2 There are no legacy issues or liabilities from past activities on site; the Ballybeg Composting Facility was a 'greenfield' development.

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<sup>11</sup> EPA (2014) *Guidance on assessing and costing environmental liabilities*, Section 3.1

- 3.2.3 In accordance with EPA guidance (2014), the purpose of ELRA is to identify and cost risks to the environment (surface water, groundwater, atmosphere, land, flora, fauna and human health). The ELRA does not include risks solely relating to health and safety, e.g. direct injury or death resulting from vehicular collisions. The ELRA analysis and costing excludes non-environmental costs, e.g. legal fees/penalties and business interruption.

### **3.3 Risk Assessment**

#### **Risk identification**

- 3.3.1 ELRA risks were identified by Patel Tonra Ltd., Environmental Solutions, based on their understanding of the facility operations and processes. In addition, a site visit and workshop was held with Patel Tonra Ltd., the General Manager and Environmental Manager of Acorn Recycling on 16<sup>th</sup> June 2014.
- 3.3.2 Risks were identified on a process-based approach, i.e. all site activities were examined in relation to potential environmental risks.
- 3.3.3 Consideration was given to risks identified in a previous ELRA assessment<sup>12</sup>. As part of the 2014 review, and in light of EPA 2014 guidance, risks were considered on the basis of 'plausible incidents'.
- 3.3.4 A Risk Register (list of plausible risks) is included in **Appendix 3.1**.

#### **Risk Analysis**

- 3.3.5 Risk Classification Tables were applied, as per EPA 2014 guidance<sup>13</sup>. 'Likelihood' (likelihood of an event occurring) and 'consequence' (consequence of impact if the event occurred) were rated for each identified risk.
- 3.3.6 The likelihood and consequence ratings are combined to form a risk score for risk evaluation.
- 3.3.7 A Risk Analysis is included in **Appendix 3.2**.
- 3.3.8 The Risk Analysis referenced the facility's historic record of incidents, complaints and non-compliances raised during EPA site inspections (see **Section 2.5**).

#### **Risk Evaluation**

- 3.3.9 On the basis of the Risk Analysis, risks were tabulated in a Risk Matrix, included as **Appendix 3.3**. The Risk Matrix is colour-coded to provide a broad indication of the critical nature of each risk.

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<sup>12</sup> Patel Tonra Ltd. (May 2010) *Environmental Liabilities Risk Assessment (ELRA) and Financial Provision (FP) for Ballybeg Composting Facility (EPA Licence W0249-01)*

<sup>13</sup> EPA (2014) *Guidance on assessing and costing environmental liabilities*, Section 3.3.2

### 3.4 Risk Treatment

- 3.4.1 The risk treatment process involves the identification and prioritisation of management and mitigation measures to mitigate risks identified in the risk evaluation process, e.g. by removing the risk or minimising the likelihood or consequences. The output of the risk treatment stage is a *Statement of Measures* taken or adopted in relation to the prevention of impact to the environment.<sup>14</sup>
- 3.4.2 Management/mitigation measures have been considered; see Statement of Measures in **Appendix 3.4**. A list of Acorn Recycling's Standard Operating Procedures (SOPs) are included in **Section 2.5**. Acorn Recycling has an Emergency Response Procedure in place – see **Appendix 3.6**.

### 3.5 Costing

#### Identification of the plausible worst case scenario<sup>15</sup>

- 3.5.1 The plausible worst case scenario refers to the plausible event that poses the maximum environmental liability, i.e. consequence, during the period to be covered by the financial provision.
- 3.5.2 The plausible worst case scenario may be represented by the risk with the highest consequence rating. In that case, this risk should be the basis for financial provision and should be quantified and costed. Where two or more risks are identified as having the maximum consequence, further analysis should be undertaken to identify the most significant of these for quantification and costing.
- 3.5.3 There may be links/domino-effects between individual risks, in which case a number of risks may need to be grouped to represent a plausible worst case scenario.
- 3.5.4 The likelihood is not taken into account in this analysis. Once a risk is considered plausible, it must be included in the risk assessment and the level of financial provision is based on the consequences alone.
- 3.5.5 In relation to fire incidents, reference was made to two previous fire events on site, as detailed in **Appendix 2.5**.

#### Quantification and costing

- 3.5.6 The ELRA costing model for the plausible worst case scenario is included in **Appendix 3.5**.
- 3.5.7 The costing exercise has been prepared in line with EPA guidance (2014). The ELRA has been costed on the basis of 'best estimates' available at the time of writing. Unit cost rates have been sourced from: (i) direct experience at Acorn Recycling, (ii) published sources, or (iii) EPA information.
- 3.5.8 Supporting documentation/validation for ELRA costs is provided in **Appendix 4.2**.

<sup>14</sup> EPA (2014) *Guidance on assessing and costing environmental liabilities*, Section 3.4

<sup>15</sup> EPA (2014) *Guidance on assessing and costing environmental liabilities*, Section 3.5.1

**Acorn Recycling Firewater Risk Assessment (6<sup>th</sup> April 2011)**

3.5.9

The following information has been used from the above report submitted to the EPA in the preparation of the quantification and costing of the ELRA. The report in particular identifies the fire risk areas of the facility, sources of contaminated fire water, prevention measures taken to stop the fire spreading and the firewater calculations assuming these risks. The following points were noted:

- A valve leaving the interceptor can be activated to bypass the drains and flow to the HDPE lined firewater lagoon.
- The primary and secondary processing areas have been designed with a fire block wall between each section to decrease the possibility of any potential fire spreading through the plant.
- Fire doors are located between the ABP bays and the secondary composting area.
- 1 hour rated doors separate the ABP product bays and this provides fire breaching either side of the composting facility.
- The potential sources of firewater at the composting facility include the following:
  - Composting processing residue
  - Woodchip storage
  - Compost maturation
  - Inorganic materials by products from screening
- Sources of contaminated firewater (Table 3.1 below)

**Table 3.1: Storage volumes**

Location	Materials Stored	Volume of material stored (m <sup>3</sup> )
Primary Processing Tunnels	Immature Compost	4050
ABP Tunnels	12mm immature	360
Clean Area	Mature Compost	450

- The nature of the compost tunnels construction are such that it significantly lessens the quantity of contaminated firewater which would be required to be diverted to the lagoons at any one time.
- As a result of this and the fact that a fire block wall is constructed between the primary and secondary processing areas the firewater retention calculations are based on a fire occurring in one of the two processing areas.
- The fire would only occur at 1 No. processing area as the areas have been designed with a fire block wall between each location to prevent fire spread.
- The fire would be under control in 120 minutes.

### **3.6 Outcomes and Next Steps**

- 3.6.1 The ELRA status shall be reported annually to the EPA through a statement of measures.
- 3.6.2 ELRA will be reviewed in the event of a significant amendment to site activities.
- 3.6.3 It is proposed that the ELRA will be reviewed and updated every three years.

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## 4.0 Financial Provision (FP)

### 4.1 Calculation of FP

- 4.1.1 The amount of financial provision required for the Acorn Recycling composting facility (EPA licence W0249-01) has been determined using the CP and ELRA assessment protocol outlined in this document.
- 4.1.2 **Appendix 4.1** summarises the financial provisions proposed for closure and ELRA liabilities relating to the facility.
- 4.1.3 Supporting/validation documentation for costs is included in **Appendix 4.2**.

### 4.2 Mechanism for FP

- 4.2.1 ELRA liability is addressed by insurance provisions in place at the facility (see current insurance certificate attached in **Appendix 4.3**).
- 4.2.2 It is noted that the Agency intends to issue new guidance on Financial Provision (FP) in 2014.
- 4.2.3 The financial provision mechanism for closure costs will be addressed in line with EPA requirements, and with due consideration for financial/commercial business constraints.

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## APPENDICES

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## Appendix 2.1: Site Layout Drawing and Main Composting Building (Interior)

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### Notes.

- All dimensions are in millimetres.
- All levels are in metres.
- This drawing is to read in conjunction with all other relevant drawings and specification.
- The contractor shall inform the engineer of any discrepancies found in relevant documents.

### Legend.

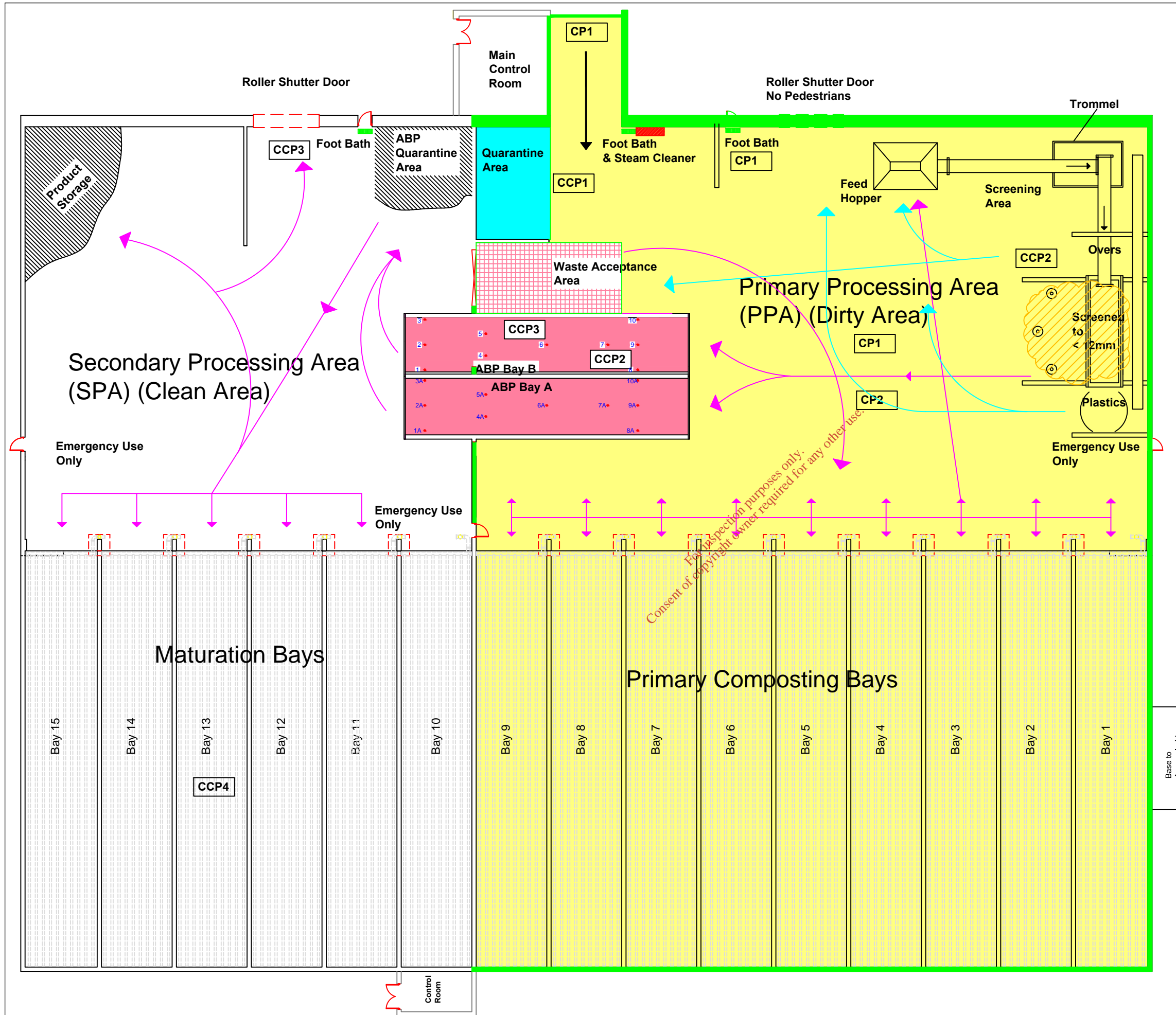
- - - - - Surface Water Drain
- - - - - Foul Drain
- - - - - Pumped Line
- - - - - SW Gully Collection Pipeline



**Acorn Recycling**  
Waste Management for the next generation

Acorn Recycling Ltd.,  
Archerstown Industrial Estate,  
Thurles, Co. Tipperary  
Tel: 050457841  
Fax: 050457842  
Email: info@acornrecycling.com  
Web: www.acornrecycling.com

Project: Ballybeg Composting Facility	
Drawing Name: DRAINAGE SITE LAYOUT	
Drawn By: GP	Scale: Not to Scale
Drawing Number: ABCF - 01	Rev:



Critical Control Points	
CCP1	Waste Acceptance
CCP2	Screening Before ABP Sanitisation
CCP3	Failure to Meet EU ABP Processing Standard
CCP4	Microbiological Sampling During Storage or Prior to Dispatch
Control Points	
CP1	Dirty Area Operations
CP2	Loading and Unloading ABP Processing Bays
CP3	Product Put To Appropriate Use

Acorn Recycling Ltd.,  
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 Thurles, Co. Tipperary  
 Tel: 050457841  
 Fax: 050457842  
 Email: info@acornrecycling.com  
 Web: www.acornrecycling.com

Project: Ballybeg Composting Facility	
Drawing Name: ABP Process Flow Diagram	
Drawn By: GP	Scale: Not to Scale
Drawing Number: ARB-D01	Rev:

## Appendix 2.2: Animal By-products Approval

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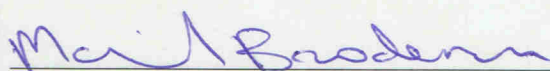
**Approval as a Composting Plant under the European Union  
(Animal By-Products) Regulations (S.I. No 187 of 2014) and in  
accordance with Regulation (EC) No. 1069 of 2009  
and Regulation (EU) No. 142 of 2011**

<b>Company</b>	Acorn Recycling Ltd		
<b>Address</b>	Archerstown Industrial Estate, Thurles, Co. Tipperary		
<b>Approval no.</b>	Comp 45		
<b>Plant address</b>	Ballybeg, Littleton, Co. Tipperary		
<b>CRO No.</b>	384234		
<b>VAT No.</b>	06404234F		
<b>Map coordinates</b>	(618887, 651964)		
<b>Contact details</b>			
<b>Operator</b>	Mr. Ronan Beasley	<b>Title</b>	Managing Director
<b>Phone</b>	0504 57841	<b>Mobile</b>	086 0401832
<b>Email</b>	<a href="mailto:Ronan@acornrecycling.com">Ronan@acornrecycling.com</a>		

<b>Plant description</b>	Section VII: Approved composting plant in accordance with Article 24 (1)(g) of Regulation (EC) No. 1069 of 2009
<b>ABP/derived product used in the plant</b>	Category 2 and Category 3 animal by-products as set out in the Ministerial conditions attached.
<b>Activities</b>	COMP: Composting plant  All feedstock accepted into the plant must be transformed to the following EU transformation parameters; (a) Maximum particle size before entering the composting reactor/pasteurisation unit: 12mm (b) Minimum temperature in all material in the reactor: 70°C (c) Minimum time in the reactor at 70°C (all material): 60 continuous minutes
<b>Product</b>	COMR: Compost after composting
<b>Remarks</b>	This approval is subject to the specific and general Ministerial Conditions attached together with the conditions set out in the enclosed document <i>Approval and Operation of Composting Plants Transforming Animal By-Products and Derived Products in Ireland.</i>
<b>Valid from</b>	1 June 2014 to 31 May 2017

Dated this 5<sup>th</sup> day of June, 2014

For the Minister of Agriculture, Food and the Marine



Mairéad Broderick

An Officer Authorised by the said Minister



## Appendix 2.3: Planning Permission and Conditions

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NORTH TIPPERARY COUNTY COUNCIL



**PLANNING AND DEVELOPMENT ACTS, 2000 - 2002**

**NOTIFICATION OF DECISION TO GRANT PERMISSION  
WITH CONDITIONS**

**TO:** Acorn Recycling Limited  
c/o. Bluett & O'Donoghue Architects  
No. 2 John Street  
Kilkenny  
Co. Tipperary

Ref No. 07511853

Application Received: 14/12/2007, 24/04/2008, 25/04/2008,  
02/05/2008, 20/06/2008, 11/07/2008  
and 08/08/2008

In pursuance of the powers conferred upon them by the above mentioned Acts, North Tipperary County Council has by Order dated 01/10/2008 decided to grant you PERMISSION for development of land namely:- **facility to accommodate Biological Treatment of organic residues and production of Class 1 compost comprising (a) Landscaped Fenced c.3.2 Hectare complex; (b) Main Building c.3870sqm. Housing Storage, Equipment & treatment activities; (c) Marshalling yard; (d) Office & staff building; (e) Effluent storage tank (Domestic, serving staff facilities only); (f) Entrance Road & Weighbridge; (g) Bio-filter & associated Plant; (h) Tree plantation (Willow & similar species); ESB substation and all ancillary works. An Environmental Impact Statement (EIS) is included with the application documents at Ballybeg, Littleton,** FOR THE REASON(S) STATED IN SCHEDULE 1 AND SUBJECT TO THE CONDITION(S) STATED ON SCHEDULE 2 (1 TO 17, PAGES 1 TO 4)

If there is no appeal against the said decision, a Grant of PERMISSION in accordance with the Decision will be issued after the expiration of the period within which an appeal may be made to An Bord Pleanala. (See Footnote).

**It should be noted that until a Grant of a Permission has been issued the development in question is NOT AUTHORISED.**

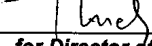
The applicant is advised that unless the development described above is carried out within five (5) years from the date of Grant of PERMISSION, planning permission will cease to have effect. See Section 40 of the Planning and Development Act, 2000.

**FOOTNOTE:** An appeal against a decision of a Planning Authority under the Planning and Development Acts 2000 - 2002 may be made to An Bord Pleanala, 64 Marlborough Street, Dublin 1 (Tel. (01) 8588100). All Appeals either by the applicant or a third party must be received by An Bord Pleanala within four weeks beginning on the date of the making of the Decision by the Planning Authority. Appeals posted within the permitted period but received after the latest date will be invalid. (Note: Where the latest date for receipt of an Appeal falls on a day when the offices of the Board are closed (Week-Ends, Public Holidays, etc.), the latest date for receipt will be the next day on which the offices are open).

An appeal must be made in writing and be accompanied by (a) the name and address of the applicant, (b) the subject matter of the Appeal, (c) the full grounds of appeal and the reasons, considerations and arguments on which they are based, (d) the appropriate fee as set out on attached schedule, and (e) in the case of a third party appeal, the acknowledgement from this Planning Authority of receipt of submissions/observations made by the third party. Any appeal which does not meet all the legal requirements will be invalid and cannot be considered by the Board. Further details are available on the Board's Website [www.pleanala.ie](http://www.pleanala.ie)

A commercial development means development for the purposes of any professional, commercial or industrial undertaking, development in connection with the provision for reward of services to persons or undertakings, or development consisting of the provision of two or more dwellings, but does not include development for the purposes of agriculture.

N.B. An appellant is not entitled to elaborate upon or make further submissions in writing in relation to the grounds of Appeal unless requested to do so by the Board.

Signed on behalf of the said Council  Date: 01/10/2008  
for Director of Services  
Planning and Community & Enterprise



**North Tipperary County Council**

***Schedule of Conditions – File Reference Number 07511853***

**SCHEDULE ONE**

It is considered that the development complies with the policies and objectives of the County Development Plan 2004 and that the development does not have an adverse impact upon the character of the area or the amenities of adjoining properties.

**SCHEDULE TWO**

- (1) Save where modified by the following conditions, the proposed development shall be carried out in accordance with the drawings and documentation submitted with the planning application on 14/12/07 and further information submitted on 24/04/08 and 08/08/08.  
**REASON:** To clarify the permission and in the interest of proper planning and sustainable development.
- (2) Prior to commencement of development details of the external finishes of the proposed composting building shall be submitted to the Planning Authority for written agreement.  
**REASON:** In the interest of visual amenity.
- (3) (a) The entrance, access, roadways, parking, turning areas, yard areas within the site and road markings/road traffic signage on the public road shall be fully completed prior to the bringing into use of the development. Final details of traffic signage and road markings shall be agreed with the Roads Section of the County Council prior to the commencement of development. The roadways and parking and turning areas shall be constructed with a fully bonded surface.  
(b) Surface water arising from the roadways, parking, turning and yard areas shall pass through a Class 1 Bypass Interceptor (EN858 Parts 1 and 2) prior to discharge from the site.  
**REASON:** In the interest of orderly development and environmental amenity.
- (4) The landscaping details submitted as part of the application shall be carried out during the first available planting season following construction of the development and thereafter maintained during the life of the facility. Existing trees and shrubs on the site boundaries shall be maintained as part of the development works.  
**REASON:** In the interest of visual amenity.
- (5) Prior to the commencement of development the location of the site compound including parking, storage and huts shall be submitted to the Planning Authority for written agreement.  
**REASON:** In the interest of orderly development.
- (6) (a) The developer shall take adequate steps to ensure that no material of any sort can fall or be blown onto the public road or adjoining lands, from vehicles exiting or entering the site. The developer shall ensure that a mechanical road sweeper is available on site at all times, while the site is open, so as to effect the removal of any material deposited on the public roadway for a distance of 500m either side of the sites main operational entrance and that all vehicles that leave the site pass through a wheel wash.  
(b) In dry weather periods dust emissions from the site shall be prevented from occurring by the dampening down of access road, public road, stockpiles, waste piles and lorries leaving the site, which process shall be carried out by the utilization of vacuum tanker/splash plate or tractor/spray-bar, hoses of adequate capacity and/or wheel wash located near the site entrance.  
(c) Any damage to the public road outside the site arising from construction of the development shall be made good at the developer's own expense under the supervision of the Roads Section of the County Council  
**REASON:** In the interest of traffic safety and orderly development.

**North Tipperary County Council**

***Schedule of Conditions – File Reference Number 07511853***

- (7) (i) Any excavated top soil and rubble from the existing road in order to facilitate the proposed development, shall be re-used in the proposed development.
- (ii) As an alternative to part (i) of this condition, the excavated material shall be re-used in an environmentally sustainable manner. No disposal of this material to any landfill site shall be permitted.
- (iii) An Environmental Report shall be drawn up wherein adverse nuisances, emissions and other environmental impacts shall be identified in relation to the proposed operational stage of construction, e.g. pollution of watercourses, noise, fumes, dust, grit, litter/waste on adjoining lands/public roads, wheel wash, designated safe site exit/entry, etc. The report shall also propose mitigation measures so as to offset any adverse impacts so identified.
- (iv) A waste plan in relation to the disposal of generated construction and demolition (C & D) waste shall be proposed and submitted to the Planning Authority for written agreement, prior to any development-taking place on site.
- REASON:** In the interest of sustainable development.
- (8) (a) Site Construction Noise mitigation measures shall be adopted and subsequently applied to all or any construction works associated with the proposed development or any part thereof.
- (b) During the construction phase of the proposed development, the noise level within the site (unless otherwise agreed in writing by the Planning Authority), measured at noise sensitive locations in the vicinity, shall not exceed:  
An Laeq T value of 55 dB(A) during the period 0800 to 1700 hours Monday to Friday (inclusive), and between 0800 to 1300 hours on Saturdays, excluding Public Holidays.  
An Laeq T value of 45 dB(A) at any other time.  
Note: (i) Measurement time intervals typically used are 1 hour by day and 15 minutes by night.  
Noise sensitive locations: Any dwelling house.  
All sound measurements shall be carried out in accordance with ISO recommendations A1996, "Assessment of Noise with Respect to Community Response" as amended by ISO Recommendations R 1996/1, 2 and 3, "Description and Measurement of Environmental Noise", as appropriate.
- REASON:** In the interest of public health.
- (9) Prior to the commencement of development details of any signage proposed to be displayed at the site or on the proposed buildings shall be submitted to the Planning Authority for written agreement and not withstanding the provisions of the Planning and Development Regulations 2001 or any re-enactment thereof no other signage other than agreed by the Planning Authority may be displayed.
- REASON:** In the interest of visual amenity.
- (10) Prior to the commencement of development full details of external lighting to be erected at the site shall be submitted to the Planning Authority for written agreement.
- REASON:** In the interest of visual amenity.
- (11) The developer shall engage an archaeologist licensed under the National Monuments Acts 1930 – 1994 to monitor all ground disturbance associated with this development. If archaeological monitoring of the site reveals archaeological material, preservation in situ or excavation may be required and the archaeologist shall be empowered to halt development works in order to record exposed archaeological material. The Department of Environment, Heritage and Local Government (Heritage and Planning Division) and the Local Authority shall be furnished with a report on the archaeological monitoring when completed.
- REASON:** To ensure the preservation (either in-situ or by record) of places, sites, features or other objects of archaeological interest.
- (12) The haul route for heavy traffic coming to and going from the site from the west shall be via county road L4101 from the N8 national Primary Road (or as renumbered in the future) and such traffic shall not pass along any other county roads between N8 and the site in accordance with the recommendations of the submitted traffic impact assessment.
- REASON:** In the interest of traffic safety and management of heavy traffic.

**North Tipperary County Council**

**Schedule of Conditions – File Reference Number 07511853**

- (13) (a) Incoming waste streams (as per Table. 1 European Waste Catalogue) shall be processed and stored within the confines of the proposed composting facility building. Areas within the confines of the site and external to the composting facility building shall not be used for the storage of either incoming waste streams or product containing composted material i.e. final product.  
 (b) All [external to facility building] overground oil/fuel tanks shall be imperiously banded (reinforced concrete walls/bases) to a volume not less than 110% of the largest tank in question.  
 (c) The storage/handling of leachate and provision of leachate collection drainage system shall be subject to the written agreement of the Planning Authority and proposals in this regard including drawings/calculations shall be submitted the Planning Authority prior to any development occurring on site.  
 (d) The operation of the proposed composting facility, is not authorised nor shall it continue in operation over any period until such time as the developer is in receipt of a current Waste License as issued by the EPA or, alternatively, is in receipt of a current Waste Permit/Registration as approved by the Local Authority.

**REASON:** In the interest of public health and amenity.

- (14) Notwithstanding the submitted details wastewater treatment facilities shall be provided on site in accordance with the EPA Manuals “Single House Treatment” (<10 P.E.) and “Small Communities ...” (10-500 P.E.) and proposals in this regard shall be submitted to Planning Authority for written agreement prior to any development works occurring on site unless alternatives are applied for and agreed as part of the EPA Waste Licence. Note: Alternative methods of disposal of treated wastewater and wastewater sludges may form part of an application for an EPA Waste License and subject to such license being issued, the developer shall submit proposals to Planning Authority for written agreement, prior to any works occurring onsite.

**REASON:** In the interest of public health.

- (15) Prior to the commencement of development the developer shall submit to the Planning Authority for written agreement a bond in relation to the Decommissioning & Site Restoration of the proposed development (in accordance with the proposals set out in the submitted Restoration Plan, Acorn Recycling Report 24<sup>th</sup> April, 2008). In order to determine the adequacy of such bond amount a detailed estimate (plant, material and labour costs) based on an aftercare/restoration programme-of-works, as certified by an indemnified Chartered Quantity Surveyor shall be submitted as part of the submissions.

**REASON:** In the interest of the proper planning and sustainable development.

- (16) Before development commences, the developer shall pay to the Planning Authority a financial contribution in respect of public infrastructure and facilities benefiting development in the administrative area of North Tipperary County Council that is provided, or intended to be provided, by or on behalf of the Authority in accordance with the terms of the North Tipperary Development Contributions Scheme 2004 made under Section 48 of the Planning and Development Act, 2000.

(i) The amount of the development contribution under this condition is €115,327.35 which is calculated as follows:

<b>Industrial</b>	<b>(€ per sq. m.)</b>	<b>Gross Floor Area (sq. m)</b>	<b>Total Cost</b>
<b>(a) Public water supply</b>	€0.00	3,950.92	€0.00
<b>(b) Waste water drainage</b>	€0.00	3,950.92	€0.00
<b>(c) Road infrastructure</b>	€15.79	3,950.92	€62,385.03
<b>(d) Recreation Community Facilities</b>	€13.40	3,950.92	€52,942.33
<b>(e) Car parking € per space</b>	€3,000.00	0	€0.00
<b>Total</b>	<b>€29.19</b>	<b>Total</b>	<b>€115,327.35</b>

**North Tipperary County Council**

***Schedule of Conditions – File Reference Number 07511853***

(ii) The Scheme provides for the adjustment of contributions payable in accordance with the Wholesale Price Index with effect from 1 January, 2005 and at six-monthly intervals thereafter. The amount payable (i.e. at the date of commencement of development) will, therefore, be adjusted as appropriate.

(iii) Where the contribution remains unpaid after the date of commencement of the development, any outstanding amounts due shall be paid together with such interest that may have accrued in respect of the period in question.

(iv) In accordance with Section 48 (10) of the Planning and Development Act 2000 no appeal shall lie to An Bord Pleanála in relation to the contribution required under this condition except where it is considered by the applicant that the terms of the Scheme have not been properly applied by the Planning Authority.

**REASON:** It is considered reasonable that a contribution be made in accordance with the North Tipperary County Council Development Contributions Scheme 2004 made under Section 48 of the Planning and Development Act 2000.

- (17) In the event of connection to a public water supply, the developer shall pay to the Planning Authority a sum of money as a contribution towards expenditure incurred by them or to be incurred within 5 years in respect of the provision of public water supply in the area which will facilitate the proposed development; the amount of such contribution shall be calculated under Class 1 of the Development Contributions Scheme.

**REASON:** It is considered reasonable that the developer should contribute to the cost of services which will facilitate the proposed development.

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File

.....DIRECTOR OF SERVICES ORDER NO. ....

**Subject: PERMISSION for carrying out of development at Ballybeg, Littleton.**

**File No 07511853**

**I, Matt Shortt, Director of Services, North Tipperary County Council, by virtue of the powers conferred on me under Section 154 of the Local Government Act, 2001 hereby order**

11  
that pursuant to the provisions of the Planning & Development Acts 2000 - 2002 and relevant Regulations made thereunder, I hereby decide to grant PERMISSION to Acorn Recycling Limited, Archerstown Industrial Estate, Thurles, Co. Tipperary, for carrying out development at Ballybeg, Littleton, in accordance with application received from Acorn Recycling Limited, c/o. Bluett & O'Donoghue Architects, No. 2, John Street, Kilkenny, on 14/12/2007, 24/04/2008, 25/04/2008, 02/05/2008, 20/06/2008, 11/07/2008 and 08/08/2008 and as recommended by the Senior Executive Planner, Planning and Development Section in her report dated 30/09/2008 which I have considered and to the extent which I have indicated on the said report which I have this day signed and I hereby further order that PERMISSION be granted subject to 17 conditions, on a date being five weeks from the date of this order, unless a valid appeal is brought against this decision within the appropriate period.

Director of Services

DATED

1/

October, 2008

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## Appendix 2.4: EPA Site Inspection Findings

Date of SI	Non-compliance	Observation
28/01/2011	<p><b>Exceedance of Duty Capacity</b> <i>Corrective Action Required</i> The Licensee shall comply with Condition 3.8.3 of the licence and ensure that the quantity of waste to be accepted at the facility on a daily basis shall not exceed the duty capacity of the equipment at the facility. Any exceedance of this intake shall be treated as an incident. The Licensee shall put in place appropriate corrective action procedures to ensure that there is not a recurrence of this incident.</p> <p><b>Non-notification of an Incident</b> <i>Corrective Action Required</i> The Licensee shall comply with Condition 11.6 of the licence and notify the EPA of the exceedance of the daily duty capacity of equipment at the facility. The Licensee shall notify the EPA in accordance with Condition 11.6 of the licence of any breakdown of key processing equipment, namely screens, fans, mobile plant, etc. which may lead to an exceedance of the daily duty capacity of equipment at the facility.</p>	<p><b>Visual Inspection of Storm Water Discharge at SW1</b> <i>Corrective Action Required</i> The Licensee is requested to devise a Standard Operation Procedure (SOP) for the visual inspection of surface water discharges. The Licensee should ensure that personnel conducting the visual inspection should be trained in this procedure. The Licensee should retain a copy of the SOP on file for further inspection.</p> <p><b>Biofilter Condensate Storage Tank Bund</b> <i>Corrective Action Required</i> The Licensee is requested to empty out the liquid from the biofilter condensate storage tank bund and arrange for the appropriate re-use/disposal of the liquid. The Licensee is requested to move the connection point of the biofilter condensate within the perimeter of the bund, in order to ensure any possible leaks from this connection point are contained within the bund.</p> <p><b>Redundant Pipework</b> <i>Corrective Action Required</i> The Licensee is requested to seal the end of the pipes to ensure that there is no fugitive discharge from the pipelines into the surface water drain running to the west of the compost building.</p> <p><b>Re-fuelling of Mobile Plant</b> <i>Corrective Action Required</i> The EPA suggests that the Licensee designate an area on-site for the re-fuelling of mobile plant and to position a spill kit in close proximity to the area. The spill kit should contain containment booms and adsorbent material, to contain any potential spills from the re-fuelling process.</p> <p><b>Duty and Stand-by Capacity Report</b> <i>Corrective Action Required</i> The Licensee is requested to amend the duty and stand-by capacity report to take account of comments mentioned above and submit the amended report for EPA agreement.</p> <p><b>Integrity Testing Report</b> <i>Corrective Action Required</i> The Licensee is requested to submit the report on the testing of the integrity and water tightness of all underground pipes, tanks, bunding structures and containers on-site, in accordance with Condition 6.20 of your licence.</p>

Date of SI	Non-compliance	Observation
		<p><b>Fire Water Risk Assessment Report</b> <i>Corrective Action Required</i> The Licensee is requested to submit a fire water risk assessment report to the EPA, which should report on the findings and recommendations of the assessment, in accordance with Condition 3.20 of the licence. The Licensee should refer to the EPA document "Guidance Note to Industry on Fire Water Retention Facilities, 1995".</p> <p><b>Waste Collection Permits</b> <i>Corrective Action Required</i> The Licensee is advised to ensure that up-to-date waste collection permits for all authorised waste contractors are kept on-site.</p>
26/10/2011	None	<p><b>Changes to Site Infrastructure</b> <i>Corrective Action Required</i> The Licensee should ensure that no alteration to, or reconstruction in respect of, the activity, or any part thereof shall be carried out or commenced without prior notice to, and without the agreement of, the Agency.</p> <p>The Licensee is requested to provide details of the work carried out by the Licensee to rectify the cracking of the rear wall of composting Bay Nos. 3 &amp; 4.</p> <p><b>Standard Operation Procedure (SOP) for Management of Compost Material in Maturation Area</b> <i>Corrective Action Required</i> The Licensee is requested to submit a copy of the finalised SOP for the management of the compost material in the maturation area.</p> <p><b>Proposed Temporary Closure &amp; Re-construction of Compost Building</b> <i>Corrective Action Required</i> The Licensee is requested to provide written details, in accordance with Condition 1.7 of Waste Licence Reg. No. W0249-01, of the proposed temporary closure and re-construction works to be carried out on the compost building. The Licensee shall include proposed measures to mitigate against any fugitive emissions from composting operations during the period of re-construction.</p>
22/08/2012	<p><b>Recording of maturity testing of compost product</b> <i>Corrective Action Required</i> The Licensee shall ensure that compost product is tested for all quality requirements as detailed Schedule E of Waste Licence Reg. No. W0249-01.</p>	<p><b>Management of storm water runoff on-site</b> <i>Corrective Action Required</i> Provide results of analysis of storm water discharge at SW1 referred to above. The Licensee should review the transportation of vehicles in the "clean" yard area in front of the main compost processing building in order to reduce the risk of potentially contaminating material entering the storm water runoff management system and being discharged at storm water discharge point SW1.</p>

Date of SI	Non-compliance	Observation
		<p><b>Biofilter Surface Cracking</b>  <i>Corrective Action Required</i>                      The Licensee should repair the cracking of the surface of the biofilter as outline above.</p> <p><b>Condensate dripping from biofilter pipework</b>  <i>Corrective Action Required</i>                      The Licensee shall ensure that all ductwork on-site is appropriately sealed in order to reduce fugitive emissions.</p> <p><b>CCTV survey of underground pipelines 2011</b>                      The Licensee is requested to clarify the details in relation to the report.</p>
27/02/2013	None	<p><b>Waste Acceptance and Handling</b>                      The Licensee shall ensure that any loads of waste type EWC Code 19 09 02 currently being stored at the facility prior to processing shall be quarantined on-site pending appropriate disposal of this waste off-site in accordance with the licence.                      This issue has been dealt with through Compliance Investigation Instruction No. A005175.</p> <p>The Licensee shall isolate any batches of compost material that may contain waste type EWC Code 19 09 02 and shall establish the aluminium content of the material.                      This issue has been dealt with through Compliance Investigation Instruction No. A005176.</p> <p>The Licensee shall submit a list of all waste types accepted at the licensed facility, which should include the associated EWC codes and a corresponding description for the waste type in accordance with Schedule A.2 of Waste Licence Reg. No.W0249-01.</p> <p><b>Safety, Health &amp; Welfare</b>                      The Audit Team noted there was no safe or permanent access to the storm water discharge point SW1 on-site.  <i>Corrective Action:</i>                      The Licensee shall comply with Condition 3.16 of the licence. The Licensee shall confirm by way of Licensee Return through the ALDER system that the appropriate arrangements have been made to provide safe and permanent access to the storm water discharge point SW1 on-site.</p>
2014	No SI year-to-date	No SI year-to-date

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## Appendix 2.5: Fire Incidents, 2011

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## 8.0 Reported Incidents Summary

There were two incidents onsite in 2011.

- 1) On 19 June 2011 at approx. 8am a fire was detected in the primary processing area of the composting plant. The area was full of black smoke and the screening plant on site was on fire. Waste material in and around the screening plant was also burnt.

The fire service was alerted immediately and arrived on site promptly. Approx 100 tonnes of waste material was removed from the primary processing area out into the yard to allow proper access to the fire. This material (which comprised a mixture of screened compost, plastics contaminants, and 'overs') was covered with polythene and later disposed of to landfill.

A hole was burnt in the roof above the screening equipment which was patched up to prevent any fugitive emissions.

The surface water from the yard was diverted to the fire water retention pond this run off was later disposed of to a wastewater treatment plant.

As a result of this incident the facility was closed for 6 weeks until temporary screening equipment could be installed. The facility was then closed from end Nov 2011 to beginning of Feb 2012 to allow for the full refurbishment of the facility and replacement of screening equipment. While the facility operated with temporary mobile screens it operated at reduced capacity.

There was no environmental impacts or nuisance caused by the fire.

The exact source of ignition is unknown but it is suspected (by forensic engineer) that it may have originated from a broken bearing on the feed hopper. This then spread up the conveyer belts to the rest of the screening equipment.

- 2) The second incident was detected on 21<sup>st</sup> Sept 2011. Smoke was found in the clean area of the composting facility at 6.10am. The fire service were contacted immediately & arrived on site. Hot smouldering compost was found to be present in bay 11. This compost had been in the bay for >10 weeks without being turned and originated from waste that entered the site the previous April. The compost had been left in the bay for longer than normal because of the reduced activity on site (due to incident 1 above).

The compost was removed from the shed and placed out onto the yard where it was wetted and cooled. There was extremely high winds at the time and this caused dust to blow from the site. Excess dust was detected in the dust monitoring gauges and there was a complaint from a neighbour. Once all the hot compost was removed and cooled it was removed from the yard and the area cleaned immediately. This was finished by approx. 3pm.

A comprehensive procedure to manage compost in the 'clean' maturation area has since been put in place and is being adhered to strictly.

## Appendix 2.6: Site Inventories

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# Ballybeg Composting Facility (W0249-01) – SITE INVENTORIES

## A. Inventory of Buildings

Buildings	Details
Main Composting Building	<ul style="list-style-type: none"> <li>▪ 3,901m<sup>2</sup> building</li> <li>▪ Concrete/panel construction</li> <li>▪ 3-stage processing building &amp; ancillary equipment</li> <li>▪ 13 No. concrete aerated bays, 30m x 5m</li> <li>▪ 2 No. concrete aerated bays for ABP, 4m x 20m</li> <li>▪ Aerated bays are the full roof height and are integral to building structure</li> </ul>
Site Offices	<ul style="list-style-type: none"> <li>▪ Administration/management 'Portacabin' units (2 No.)</li> <li>▪ Total area: 60m<sup>2</sup></li> </ul>

## B. Inventory of Infrastructure

Infrastructure	Details (Make, Model)
Bio-filter	<ul style="list-style-type: none"> <li>▪ 70m x 12m x 2.5m (internal dimensions); the depth of the bio-filter media is 2m</li> <li>▪ HDPE-lined holding area</li> </ul>
Std. concrete reception tank	<ul style="list-style-type: none"> <li>▪ Chemical toilet residues (no chemical used)/sewage waste</li> <li>▪ 8m<sup>3</sup> oval submerged concrete tank (Carlow Precast)</li> <li>▪ Disposed of internally or to local WWTP</li> </ul>
Aeration and extraction system	<ul style="list-style-type: none"> <li>▪ Fans/ducting - Stainless Steel construction on fan housing, Galvanised and Stainless steel ducting</li> <li>▪ Electrical Panels, PLC systems, wiring, probes</li> <li>▪ 800m length of 400mm Galvanised Ducting</li> <li>▪ 16 Fans</li> <li>▪ 4 extraction Fans</li> </ul>
Staff Mess Facilities	<ul style="list-style-type: none"> <li>▪ Mobile welfare units &amp; toilets, drying area</li> </ul>
Weighbridge(18mx3m)	<ul style="list-style-type: none"> <li>▪ Precia Molen VS300CS Surface mounted 50 tonne</li> </ul>
Fire System	<ul style="list-style-type: none"> <li>▪ 6 x Macron 55 series hose reels</li> </ul>
Plant Control Room	<ul style="list-style-type: none"> <li>▪ Electrical &amp; process control, fire suppression system, back-up battery and emergency lighting systems</li> </ul>
External control room	<ul style="list-style-type: none"> <li>▪ Electrical/plant control room</li> </ul>
Full Retention Interceptor	<ul style="list-style-type: none"> <li>▪ Class 1 EN858 FR-NS-10-HC Bunderus</li> <li>▪ 5,000 lit. silt capacity</li> <li>▪ 1,000 lit. emergency oil retention</li> </ul>
Mini weather station	<ul style="list-style-type: none"> <li>▪ Wind anemometer</li> <li>▪ Thermometer</li> </ul>
Drainage	<ul style="list-style-type: none"> <li>▪ SW collection drains</li> </ul>
Fire-water ponds	<ul style="list-style-type: none"> <li>▪ 1x Fire-water supply</li> <li>▪ 1 x retention pond (c.300m<sup>3</sup>)</li> </ul>

## Ballybeg Composting Facility (W0249-01) – SITE INVENTORIES

Infrastructure	Details (Make, Model)
Perimeter fencing	▪ Perimeter fencing 1.8m stock-proof and main gates
Security	▪ CCTV monitoring systems x 11 cameras covering site
Concrete bund	▪ Not in use; no plans for use
Plastic tank (blue in colour)	▪ Not in use; no plans for use

### C. Inventory of Plant & Equipment

Plant & Equipment	Details (Make, Model, No.)
Front End Loaders	▪ 2 x Volvo L90 front end wheel loaders
Screen	<ul style="list-style-type: none"> <li>▪ Turmec-designed hopper</li> <li>▪ Feeder belt</li> <li>▪ Trommel screen followed by a discharge belt and a Trisomat Flip Flow Screen – 7 x 2m single deck</li> </ul>
Power washer /cleaner	▪ Kerosene powered Triace 3000psi, 11 l/min powerwasher with hotwash
Waste quarantine receptacle	▪ Skips available on request
Temperature Probes	▪ Continuous monitoring of temperature in bays

### D. Inventory of Raw Materials

Raw Materials	Description and use	Storage Arrangements	Approx. quantities per annum	Max. at any one time
Input feedstock	Primary raw material for the process	Indoor storage bays	32,000 t	180 t (fresh unprocessed waste)
Amendment material	Over-size input feedstock and/or woodchip	Indoors on processing floor	2,000 t woodchip	800m <sup>3</sup> (approx. 480t)
Bio-filter media	Woodchip	Bio-filter bunker	1,680m <sup>3</sup>	1,680m <sup>3</sup> (approx. 1,344t)
Diesel	Site vehicles	Bunded storage	55,000 litres	1,000 litres
Hydraulic oil	Site vehicles	Bunded storage	-	200 litres
Kerosene tank	Office heating	Bunded storage	-	800 litres
Grease/Vacuum pump oil	Vehicle/plant maintenance	Bunded storage	-	100 litres
Water	Well-water	Well-water	100m <sup>3</sup>	N/A

## Ballybeg Composting Facility (W0249-01) – SITE INVENTORIES

### E. Inventory of Products

Products	Description and use	Storage Arrangements	Approx. quantities per annum	Max. storage capacity
Compost	Tillage/ grassland/ landscaping	Main Composting Building (clean area)	8,000 t	2,430 t (max. 1350t compost in Clean Area + max. 1080t of material in Primary Area, which will be processed into compost.)

### F. Inventory of Wastes

Wastes	Description and source	Storage Arrangements	Approx. quantities per annum	Max. storage capacity
Residual process waste	Residual from operations/process	Processing Floor	2,400 t	375m <sup>3</sup> (approx. 187.5t)
Bio-filter liquid (non-hazardous)	Residual, other than that required for wetting of compost	Bio-filter	0	160m <sup>3</sup>
Non-process wastes - office	General municipal-type waste; office paper waste	Wheelie bins	Disposed of with plastics	n/a
Other bulky/ misc. waste	Steel/building materials	Workshop area	10 t	10 t
Waste Oil	Vehicles, plant and equipment	Waste oil bin	1 t	250 litres

## Appendix 2.7: Closure Tasks and Programme

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Closure Tasks and Programme

Closure Tasks	Weeks Post-closure																												
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
<b>1 Empty the Main Composting Building of input material, output material and waste</b>																													
1.1 Process/compost (on site) any remaining input feedstock or partially-composted material to completion (Note 1):	←-----→																												
1.1.1 Manage input material, screen material in Primary Area and move material into Animal By-product (ABP) bays	←-----→																												
1.1.2 Manage material through ABP bays and manage compost in Clean Area. Rescreen over-size materials and return to Primary Area for reprocessing	←-----→																												
1.1.3 Manage material through ABP bays and manage compost in Clean Area	←-----→																												
1.1.4 Rescreen over-size material in Primary Area and move material into ABP bays	←-----→																												
1.2 Remove compost product to approved off-site outlets	←-----→																												
1.3 Remove residual waste to appropriate off-site facility	←-----→																												
1.4 Remove over-size process material to appropriate off-site facility	←-----→																												
<b>2 Decommission Main Composting Building</b>																													
2.1 Jetting of leachate collection drains and tankering to appropriate off-site facility	←-----→																												
2.2 Decontaminate storage bays, floor, walls and mobile equipment (high pressure wash)	←-----→																												
2.3 Decommission plant and equipment, including screens, conveyors, etc. (Note 2)	←-----→																												
2.4 Decontaminate/decommission air extraction/condensate collection system (Note 3)	←-----→																												
2.5 Building retained <i>in situ</i> upon closure	←-----→																												
<b>3 Decommission Bio-filter</b>																													
3.1 Remove bio-filter condensate to appropriate off-site facility (Note 4)	←-----→																												
3.2 Remove bio-filter media to appropriate off-site outlet (Note 5)	←-----→																												
3.3 High-pressure wash of [empty] HDPE-lined biofilter holding area	←-----→																												
3.4 Safety fencing installed around holding area	←-----→																												
3.5 Holding area retained <i>in situ</i> upon closure	←-----→																												
<b>4 Decommission Site Offices</b>																													
4.1 Remove contents and clean	←-----→																												
4.2 Remove Portacabins off-site for reuse/salvage	←-----→																												
<b>5 Decommission tanks, drums and storage areas</b>																													
5.1 Drain residual fuel/materials, decommission and remove off-site	←-----→																												
<b>6 Sewage holding tank maintenance</b>																													
6.1 Sewage holding tank inspection and desludging	←-----→																												
6.2 Sewage holding retained <i>in situ</i> upon closure	←-----→																												
<b>7 Surface water drainage system (incl. interceptor)</b>																													
7.1 Surface water drainage system inspection and jetting	←-----→																												
7.2 Emptying of oil interceptor	←-----→																												
7.3 Surface water drainage system retained <i>in situ</i> upon closure	←-----→																												
<b>8 General site maintenance</b>																													
8.1 Inspection and making safe of plant/equipment/electrics/services	←-----→																												
8.2 Removal of all mobile vehicles, plant and equipment	←-----→																												
8.3 Removal of all bins and non-process wastes	←-----→																												
8.4 Yard sweeping, cleaning and general housekeeping	←-----→																												
8.5 Firewater pond and firewater retention pond retained <i>in situ</i> upon closure	←-----→																												
8.6 Plant/equipment to be retained <i>in situ</i> upon closure, or sold/salvaged for reuse off-site (Note 6)	←-----→																												
<b>9 Monitoring, reporting and surrender of licence</b>																													
9.1 Round of environmental monitoring (in line with licence requirements)	←-----→																												
9.2 Closure audit and report	←-----→																												
9.3 Surrender of EPA licence	←-----→																												

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←-----→ A dashed line indicates that the activity may be stop-start over a period of time.



## Appendix 2.8: Closure Costs

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Acorn Recycling, Ballybeg Composting Facility  
EPA Licence W0249-01

Closure Costs

#	Item	Units	Quantity (No. units)	Unit Rate - Lower Range	Unit Rate - Upper Range	Unit Rate - average	Cost	Subtotal	Sources
<b>1</b>	<b>Empty the Main Composting Building of input material, output material and waste</b>							€ 62,400	-
1.1	Process/compost (on site) any remaining input feedstock or partially-composted material to completion (Note 1):	-	-	-	-	-	-		-
1.1.1	Manage input material, screen material in Primary Area and move material into Animal By-product (ABP) bays	days	16	€ 640	€ 640	€ 640	€ 10,240		Third party contractor costs - see supporting documentation in <b>Appendix 4.2</b> .
1.1.2	Manage material through ABP bays and manage compost in Clean Area. Rescreen over-size materials and return to Primary Area for reprocessing	days	8	€ 640	€ 640	€ 640	€ 5,120		Third party contractor costs - see supporting documentation in <b>Appendix 4.2</b> .
1.1.3	Manage material through ABP bays and manage compost in Clean Area	days	4	€ 640	€ 640	€ 640	€ 2,560		Third party contractor costs - see supporting documentation in <b>Appendix 4.2</b> .
1.1.4	Rescreen over-size material in Primary Area and move material into ABP bays	days	3	€ 640	€ 640	€ 640	€ 1,920		Third party contractor costs - see supporting documentation in <b>Appendix 4.2</b> .
1.2	Remove compost product to approved off-site outlets	tonnes	2,430	€ -	€ -	€ -	€ -		Acorn Recycling (Note 7, Note 8) Acorn Recycling: max. 1350t compost in Clean Area + max. 1080t of material in Primary Area, which will be processed into compost.
1.3	Remove residual waste to appropriate off-site facility	-	-	-	-	-	-		-
1.3.1	- Transportation cost	tonnes	188	€ 9	€ 9	€ 9	€ 1,688		Transportation costs provided by Acorn Recycling; ref. supporting documentation in <b>Appendix 4.2</b> . Acorn Recycling: 375m3 residual @ 0.5t/m3
1.3.2	- Waste management cost	tonnes	188	€ 42	€ 42	€ 42	€ 7,875		Unit rate - ref. supporting documentation in <b>Appendix 4.2</b>
1.4	Remove over-size process material to appropriate off-site facility	tonnes	-	-	-	-	-		-
1.4.1	- Transportation cost	tonnes	647	€ 9	€ 9	€ 9	€ 5,823		Transportation costs provided by Acorn Recycling; ref. supporting documentation in <b>Appendix 4.2</b> . Acorn Recycling: max. 647t of oversize material from Primary Area (no oversize in Clean Area)
1.4.2	- Waste management cost	tonnes	647	€ 42	€ 42	€ 42	€ 27,174		Unit rate - ref. supporting documentation in <b>Appendix 4.2</b>
<b>2</b>	<b>Decommission Main Composting Building</b>							€ 8,714	-
2.1	Jetting of leachate collection drains and tankering to appropriate off-site facility	-	-	-	-	-	-		-
2.1.1	- Drain jetting	days	0.5	€ 1,435	€ 2,160	€ 1,798	€ 899		EPA 2014, Unit cost rates, Table 1, jet vac, 2-3 Gen Ops + supervisor
2.1.2	- Tankering off-site (transport and disposal)	tonnes	10	€ 102	€ 150	€ 126	€ 1,260		EPA 2014, Unit cost rates, Table 1 (Interceptor sludge)
2.2	Decontaminate storage bays, floor, walls and mobile equipment (high pressure wash)	-	-	-	-	-	-		-
2.2.1	- Cleaning	days	2	€ 640	€ 640	€ 640	€ 1,280		Third party contractor costs - see supporting documentation in <b>Appendix 4.2</b> .

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Closure Costs

#	Item	Units	Quantity (No. units)	Unit Rate - Lower Range	Unit Rate - Upper Range	Unit Rate - average	Cost	Subtotal	Sources
2.2.2	- Tankering off-site (transport)	tonnes	25	€ 9	€ 9	€ 9	€ 225		Transportation costs provided by Acorn Recycling; ref. supporting documentation in <b>Appendix 4.2.</b>
2.2.3	- Tankering off-site (disposal)	tonnes	25	€ 10	€ 10	€ 10	€ 250		Waste management unit rate (to WWTP) provided by Acorn Recycling; ref. supporting documentation in <b>Appendix 4.2.</b>
2.3	Decommission plant and equipment, including screens, conveyors, etc. (Note 2)	days	2	€ -	€ -	€ -	€ -		Note 2
2.4	Decontaminate/decommission air extraction/condensate collection system (Note 3)	days	4	€ 1,200	€ 1,200	€ 1,200	€ 4,800		Acorn Recycling - local rates applied - 1 decontam supervisor + 3 Gen Ops; zero-cost for waste disposal as net value assumed
2.5	Building retained in situ upon closure	N/A	-	-	-	-	-		-
<b>3</b>	<b>Decommission Bio-filter</b>							<b>€ 1,440</b>	-
3.1	Remove bio-filter condensate to appropriate off-site facility (Note 4)	-	-	-	-	-	-		-
3.1.1	- Off-site - disposal cost	m3	160	€ 10	€ 10	€ 10	€ 1,600		Waste management unit rate (to WWTP) provided by Acorn Recycling; ref. supporting documentation in <b>Appendix 4.2.</b>
3.1.2	- Transportation cost	tonnes	160	€ 9	€ 9	€ 9	€ 1,440		Transportation costs provided by Acorn Recycling; ref. supporting documentation in <b>Appendix 4.2.</b>
3.2	Remove bio-filter media to appropriate off-site outlet (Note 5)	tonnes	1,344	-	-	-	-		Note 5
3.3	High-pressure wash of [empty] HDPE-lined biofilter holding area	days	1	€ 640	€ 640	€ 640	€ 640		Third party contractor costs - see supporting documentation in <b>Appendix 4.2.</b>
3.4	Safety fencing installed around holding area	unit	1	€ 800	€ 800	€ 800	€ 800		Local rates applied
3.5	Holding area retained in situ upon closure	N/A	-	-	-	-	-		-
<b>4</b>	<b>Decommission Site Offices</b>							<b>€ 500</b>	-
4.1	Remove contents and clean	days	1	€ 500	€ 500	€ 500	€ 500		Local rates applied
4.2	Remove Portacabins off-site for reuse/salvage	unit	1	€ -	€ -	€ -	€ -		Net value assumed
<b>5</b>	<b>Decommission tanks, drums and storage areas</b>							<b>€ 2,060</b>	-
5.1	Drain residual fuel/materials, decommission and remove off-site	-	-	-	-	-	-		-
5.1.1	- Decontaminate	days	1	€ 1,435	€ 2,160	€ 1,798	€ 1,798		EPA 2014, Unit cost rates, Table 1, jet vac, 2-3 Gen Ops + supervisor
5.1.2	- Off-site removal of residues	tonnes	2	€ 117	€ 145	€ 131	€ 262		EPA 2014, Unit cost rates, Table 1, transport and disposal residual fuels
<b>6</b>	<b>Sewage holding tank maintenance</b>							<b>€ 460</b>	-
6.1	Sewage holding tank inspection and desludging	m3	8	€ 35	€ 80	€ 58	€ 460		EPA 2014, Unit cost rates, Table 1 (sludge, composting)
6.2	Sewage holding retained in situ upon closure	Item	1	€ -	€ -	€ -	€ -		-

Acorn Recycling, Ballybeg Composting Facility  
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Closure Costs

#	Item	Units	Quantity (No. units)	Unit Rate - Lower Range	Unit Rate - Upper Range	Unit Rate - average	Cost	Subtotal	Sources
<b>7</b>	<b>Surface water drainage system (incl. interceptor)</b>							<b>€ 1,283</b>	
7.1	Surface water drainage system inspection and jetting	-	-	-	-	-	-		-
7.1.1	- Jetting	m	182	€ 2	€ 3	€ 2	€ 401		EPA 2014, Unit cost rates, Table 1
7.1.2	- Off-site removal, incl. transport	tonnes	1	€ 102	€ 150	€ 126	€ 126		EPA 2014, Unit cost rates, Table 1, interceptor sludge
7.2	Emptying of oil interceptor	tonnes	6	€ 102	€ 150	€ 126	€ 756		EPA 2014, Unit cost rates, Table 1
7.3	Surface water drainage system retained in situ upon closure	Item	1	€ -	€ -	€ -	€ -		-
<b>8</b>	<b>General site maintenance</b>							<b>€ 2,755</b>	
8.1	Inspection and making safe of plant/equipment/electrics/services	days	2	€ 450	€ 600	€ 525	€ 1,050		EPA 2014, Unit cost rates, Table 1 - decomm supervisor costs
8.2	Removal of all mobile vehicles, plant and equipment	Item	1	€ -	€ -	€ -	€ -		Net value assumed
8.3	Removal of all bins and non-process wastes	skip	1	€ 400	€ 450	€ 425	€ 425		Costs as per a service provider's website (PTL, June 2014)
8.4	Yard sweeping, cleaning and general housekeeping	days	2	€ 640	€ 640	€ 640	€ 1,280		Third party contractor costs - see supporting documentation in <b>Appendix 4.2</b> .
8.5	Firewater pond and firewater retention pond retained in situ upon closure	Item	1	€ -	€ -	€ -	€ -		-
8.6	Plant/equipment to be retained in situ upon closure, or sold/salvaged for reuse off-site (Note 6)	Item	1	€ -	€ -	€ -	€ -		-
<b>9</b>	<b>Monitoring, reporting and surrender of licence</b>							<b>€ 23,330</b>	
9.1	Round of environmental monitoring (in line with licence requirements)	Item	1	€ 9,830	€ 9,830	€ 9,830	€ 9,830		Note 10
9.2	Closure audit and report <input type="checkbox"/>	Item	1	€ 5,000	€ 10,000	€ 7,500	€ 7,500		EPA 2014, Unit cost rates, Table 1
9.3	Surrender of EPA licence <input type="checkbox"/>	Item	1	€ 6,000	€ 6,000	€ 6,000	€ 6,000		WM Regulations
	<b>SUBTOTAL</b>							<b>€ 102,941</b>	
10	Contingency		10%					€ 10,294	
	<b>TOTAL - CLOSURE COSTS</b>							<b>€ 113,235</b>	

## Appendix 2.9: Notes to accompany Closure Tasks, Programme and Costs

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## Acorn Recycling, Ballybeg Composting Facility

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### Notes to Closures Tasks/Costs

<b>NOTES</b>					
<b>1</b>	<p>In the event of planned closure, upon cessation of waste acceptance, the licensee will ensure that all material is processed through the composting plant, as per standard operating procedures.</p> <p>In the event of unplanned closure, a competent third party operator will be contracted to operate the facility until closure, on a full-time basis for a fixed period (as Closure Programme). The contractor will process all untreated material through the processing operation at the Ballybeg Composting Facility, in accordance with EPA and Animal By-products requirements, and manage the off-site removal of compost product to approved outlets. The contractor will complete required cleaning/sterilisation of the entire building and decommission the biofilter (as Closure Tasks/Programme). An agreement has been put in place with a competent operator for this scenario - See <b>Appendix 4.2</b>.</p> <p>The latter [third party contractor] option has been considered as the 'worst-case' scenario for costing purposes.</p>				
<b>2</b>	Plant and equipment, including screens, conveyors, etc., will be sold for re-use, insofar as practicable. As a conservative position, plant & equipment is assumed to be zero-cost/value for the purpose of calculating closure costs, including transportation and disassembly costs.				
<b>3</b>	Pipework/stainless steel will be sold/salvaged. As a conservative position, a zero-cost/value has been assumed for the purpose of calculating closure costs, including transportation.				
<b>4</b>	Consideration was given to potential (liquid) condensate within the biofilter. Acorn Recycling's operating experience has shown that liquid material only builds up in the biofilter under extreme and prolonged wet weather conditions, and evaporates quickly thereafter. A 'worst-case' scenario volume of condensate has been included.				
<b>5</b>	Material to be tested (in accordance with ABP testing of product) prior to removal off-site.				
<b>6</b>	Depending on the afteruse of the facility, certain items of plant/infrastructure may be retained on-site for future use, or sold/salvaged, e.g. weighbridge, fire systems, plant control room, fencing/security. As a conservative position, they are assumed to be zero-cost/value for the purpose of calculating closure costs.				
<b>7</b>	The labour costs for managing compost out are included in Item <b>1.1</b> .				
<b>8</b>	Acorn Recycling has 30 No. approved off-site outlets with DAFM (the register is available for inspection at Acorn Recycling). All outlets are located within 20km of the Acorn Recycling facility. There is a consistent demand for the compost product. Zero cost/value assumed for the purposes of the closure model.				
<b>9</b>	Monitoring will be conducted throughout the closure period, in line with licence requirements. In addition, monitoring of certain aspects will be conducted upon completion of site closure/decommissioning, as follows. Costs are based on costs incurred by Acorn Recycling as part of current operational experience; upward adjustments have been applied where sampling is currently completed in-house.				
	<b>Monitoring item</b>	<b>Unit cost</b>	<b>No. of monitoring events during closure period</b>	<b>No. of monitoring events upon completion of closure/ decommissioning</b>	<b>Total cost</b>
	Odour	€ 400	2	1	€ 1,200
	Biofilter - Inlet & Outlet Gas	€ 900	1	1	€ 1,800
	PM10	€ 300	1	1	€ 600
	Biofilter Bed Media	€ 210	2	0	€ 420
	Bacteria/Aspergillus	€ 1,080	1	1	€ 2,160
	Dust	€ 200	1	1	€ 400
	Compost Quality	€ 200	4	0	€ 800
	Groundwater Testing	€ 600	1	1	€ 1,200
	Surface Water Discharge	€ 300	1	1	€ 600
	Noise Monitoring	€ 650	1	0	€ 650
	<b>TOTAL</b>				<b>€ 9,830</b>

## Appendix 3.1: Risk Register (List of Plausible Risks)

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**Acorn Recycling, Ballybeg Composting Facility**  
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**Risk Register (Plausible Risks)**

Risk ID	Process	Potential risk	Potential environmental effect/impact
#01	General site operations/process	Uncontrolled release of leachate/liquid runoff from waste materials	Pollution of surface water/groundwater/soil
#02	General site operations/process	Uncontrolled emissions to air from waste materials/compost product	Air pollution, including odour, bioaerosols
#03	General site operations/process	Uncontrolled release of untreated input feedstock or non-compliant product to the external environment - Animal By-products (ABP) risk	Potential removal of ABP off-site by vectors - food chain contamination risks
#04	General site operations/process	Breach of Waste Acceptance Procedure resulting in the processing of non-conforming waste types	Contamination of batch processing or specific bays in primary and secondary areas
#05	General site operations/process	Environmental nuisances	Environmental nuisances, i.e. birds, vermin
#06	Risk of fire incident	Emissions to air	Uncontrolled emissions to air
#07	Risk of fire incident	Release of contaminated firewater/waste/leachate	Pollution of surface water/groundwater/soil
#08	Biofilter	Malfunction or failure of bio-filtration operation - uncontrolled emissions to air	Air pollution, including odour, bioaerosols
#09	Biofilter	Malfunction or failure of bio-filtration operation - uncontrolled release of condensate/liquid run-off	Pollution of surface water/groundwater/soil
#10	Surface water management infrastructure (including interceptor)	Failure of surface water management system (including interceptor) - uncontrolled release of polluting substance	Pollution of surface water/groundwater/soil
#11	Storage of diesel and hazardous liquid materials	Tank/drum and bund failure	Pollution of surface water/groundwater/soil
#12	Refuelling/fuel deliveries	Fuel spillage during tanker unloading/delivery operations, or refuelling of plant/vehicles on-site	Pollution of surface water/groundwater/soil
#13	Weighbridge/reception area for incoming vehicles	Fuel spillage arising from vehicular accident/incident	Pollution of surface water/groundwater/soil
#14	Vehicle/plant maintenance	Fuel/polluting substance spillage	Pollution of surface water/groundwater/soil
#15	Wastewater management	Failure of sewage holding tank	Pollution of surface water/groundwater/soil
#16	Weather	Flooding on site causing uncontrolled discharge	Pollution of surface water/groundwater/soil



## Appendix 3.2: Risk Analysis

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Risk Analysis

Risk ID	Process	Potential risk	Potential environmental effect/impact	Consequence [See notes]	Basis of consequence	Likelihood [See notes]	Basis of likelihood	Risk Score [See notes]
#01	General site operations/process	Uncontrolled release of leachate/liquid runoff from waste materials	Pollution of surface water/groundwater/soil	2	Low volume of potential material losses; non-hazardous material; impact considered to be localised.	3	The facility is designed and operated in accordance with best practice control procedures to prevent environmental impact. No complaints/incident history in relation to this risk. Historic non-compliance re. exceedance of duty capacity.	6
#02	General site operations/process	Uncontrolled emissions to air from waste materials/compost product	Air pollution, including odour, bioaerosols	3	Moderate impact in terms of human sensitivity to potential impact	3	The facility is designed and operated in accordance with best practice control procedures to prevent environmental impact. Low number of odour complaints since commencement of operations. Historic non-compliance re. exceedance of duty capacity.	9
#03	General site operations/process	Uncontrolled release of untreated input feedstock or non-compliant product to the external environment - Animal By-products (ABP) risk	Potential removal of ABP off-site by vectors - food chain contamination risks	3	Moderate impact in terms of human sensitivity to potential impact	3	The facility is designed and operated in accordance with best practice control procedures to prevent environmental impact. No complaints/incident history in relation to this risk. Historic non-compliances re. exceedance of duty capacity and product testing.	9
#04	General site operations/process	Breach of Waste Acceptance Procedure resulting in the processing of non-conforming waste types	Contamination of batch processing or specific bays in primary and secondary areas	1	In this event, material would re-start the composting process; limited environmental impact potential	2	The facility is designed and operated in accordance with best practice control procedures to prevent environmental impact. No complaints/incident/enforcement history in relation to this risk.	2
#05	General site operations/process	Environmental nuisances	Environmental nuisances, i.e. birds, vermin	2	Impact considered to be minor/localised nuisance	2	The facility is designed and operated in accordance with best practice control procedures to prevent environmental impact. No complaints/incident/enforcement history in relation to this risk.	4
#06	Risk of fire incident	Emissions to air	Uncontrolled emissions to air	4	Non-hazardous, organic wastes; potentially large volumes/prolonged emissions; potentially severe local impact	3	The facility is designed and operated in accordance with best practice control procedures to prevent environmental impact. 2 No. fire-related incidents since commencement of operations; no environmental impact/nuisance noted.	12
#07	Risk of fire incident	Release of contaminated firewater/waste/leachate	Pollution of surface water/groundwater/soil	4	Significant volumes of potential release, based on volumes of input/in-process feedstock and 300m3 capacity of firewater pond	3	The facility is designed and operated in accordance with best practice control procedures to prevent environmental impact. 2 No. fire-related incidents since commencement of operations; no environmental impact/nuisance noted.	12

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Risk Analysis

Risk ID	Process	Potential risk	Potential environmental effect/impact	Consequence [See notes]	Basis of consequence	Likelihood [See notes]	Basis of likelihood	Risk Score [See notes]
#08	Biofilter	Malfunction or failure of bio-filtration operation - uncontrolled emissions to air	Air pollution, including odour, bioaerosols	3	Moderate impact in terms of human sensitivity to potential impact	3	The facility is designed and operated in accordance with best practice control procedures to prevent environmental impact. Low number of odour complaints since commencement of operations.	9
#09	Biofilter	Malfunction or failure of bio-filtration operation - uncontrolled release of condensate/liquid run-off	Pollution of surface water/groundwater/soil	3	Medium volume of potential release, based on typical volumes of condensate stored/retained in biofilter	2	The facility is designed and operated in accordance with best practice control procedures to prevent environmental impact. No complaints/incident/enforcement history in relation to this risk.	6
#10	Surface water management infrastructure (including interceptor)	Failure of surface water management system (including interceptor) - uncontrolled release of polluting substance	Pollution of surface water/groundwater/soil	3	Low volume of potential release of hazardous liquid material; impact considered to be moderate	2	The facility is designed and operated in accordance with best practice control procedures to prevent environmental impact. No complaints/incident/enforcement history in relation to this risk.	6
#11	Storage of diesel and hazardous liquid materials	Tank/drum and bund failure	Pollution of surface water/groundwater/soil	3	Low volume of potential release of hazardous liquid material; impact considered to be moderate	2	The facility is designed and operated in accordance with best practice control procedures to prevent environmental impact. No complaints/incident/enforcement history in relation to this risk.	6
#12	Refuelling/fuel deliveries	Fuel spillage during tanker unloading/delivery operations, or refuelling of plant/vehicles on-site	Pollution of surface water/groundwater/soil	3	Low volume of potential release of hazardous liquid material; impact considered to be moderate in local environment, primarily associated with potential groundwater impact.	2	The facility is designed and operated in accordance with best practice control procedures to prevent environmental impact. No complaints/incident/enforcement history in relation to this risk.	6
#13	Weighbridge/reception area for incoming vehicles	Fuel spillage arising from vehicular accident/incident	Pollution of surface water/groundwater/soil	3	Low volume of potential release of hazardous liquid material; impact considered to be moderate in local environment, primarily associated with potential groundwater impact.	2	The facility is designed and operated in accordance with best practice control procedures to prevent environmental impact. No complaints/incident/enforcement history in relation to this risk.	6
#14	Vehicle/plant maintenance	Fuel/polluting substance spillage	Pollution of surface water/groundwater/soil	3	Low volume of potential release of hazardous liquid material; impact considered to be moderate in local environment, primarily associated with potential groundwater impact.	2	The facility is designed and operated in accordance with best practice control procedures to prevent environmental impact. No complaints/incident/enforcement history in relation to this risk.	6

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Risk Analysis

Risk ID	Process	Potential risk	Potential environmental effect/impact	Consequence [See notes]	Basis of consequence	Likelihood [See notes]	Basis of likelihood	Risk Score [See notes]
#15	Wastewater management	Failure of sewage holding tank	Pollution of surface water/groundwater/soil	3	Low volume (8m3) of potential release of non-hazardous material; impact considered to be moderate in local environment, primarily associated with potential groundwater impact.	2	The facility is designed and operated in accordance with best practice control procedures to prevent environmental impact. No complaints/incident/enforcement history in relation to this risk.	6
#16	Weather	Flooding on site causing uncontrolled discharge	Pollution of surface water/groundwater/soil	3	Medium volume of potential release anticipated; non-hazardous material; impact considered to be moderate.	2	The facility is designed and operated in accordance with best practice control procedures to prevent environmental impact. No history of flooding on site.	6

[NOTES]

**CONSEQUENCE**

Rating	Category	Description
1	Trivial	No impact or negligible change to the environment
2	Minor	Minor impact/localised or nuisance
3	Moderate	Moderate impact to environment
4	Major	Severe impact to local environment
5	Massive	Massive impact to a large area, irreversible in medium term

**LIKELIHOOD**

Rating	Category	Description
1	Very Low	Very low chance of hazard occurring
2	Low	Low chance of hazard occurring
3	Medium	Medium chance of hazard occurring
4	High	High chance of hazard occurring
5	Very High	Very high chance of hazard occurring

**RISK SCORE**

Consequence  
x  
Likelihood

## Appendix 3.3: Risk Matrix

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 EPA Licence W0249-01

Risk Matrix

		Risk ID #					
Likelihood	V. High	5					
	High	4					
	Medium	3		1	2, 3, 8	6, 7	
	Low	2	4	5	9, 10, 11, 12, 13, 14, 15, 16		
	V. Low	1					
			Trivial	Minor	Moderate	Major	Massive
			1	2	3	4	5
			Consequence				

The plausible worst case scenario may be represented by the risk with the highest consequence rating, i.e. Risks #06 and #07.

Risks #06 and #07 were identified as the most significant risks for quantification and costing, and have been brought forward to the 'ELRA Costing' worksheet.

No additional linked/domino-effects were identified.

## Appendix 3.4: Statement of Measures

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EPA Licence W0249-01

Statement of Measures

Risk ID	Process	Potential risk	Risk Score	Mitigation Measures	Outcome	Action	Completion Date	Responsible Person
#01	General site operations/process	Uncontrolled release of leachate/liquid runoff from waste materials	6	- Management/control infrastructure in place - Implementation of SOP/EMS	Risk of uncontrolled release/impact on receiving environment minimised.	Ongoing	Ongoing	Facility Manager
#02	General site operations/process	Uncontrolled emissions to air from waste materials/compost product	9	- Management/control infrastructure in place - Implementation of SOP/EMS - Environmental monitoring	Risk of uncontrolled release/impact on receiving environment minimised.	Ongoing	Ongoing	Facility Manager
#03	General site operations/process	Uncontrolled release of untreated input feedstock or non-compliant product to the external environment - Animal By-products (ADD risk)	9	- Management/control infrastructure in place - Implementation of SOP/EMS	Risk of uncontrolled release/impact on receiving environment minimised.	Ongoing	Ongoing	Facility Manager
#04	General site operations/process	Breach of Waste Acceptance Procedure resulting in the processing of non-conforming waste types	2	- Management/control infrastructure in place - Implementation of SOP/EMS	Risk of uncontrolled release/impact on receiving environment minimised.	Ongoing	Ongoing	Facility Manager
#05	General site operations/process	Environmental nuisances	4	- Management/control infrastructure in place - Implementation of SOP/EMS	Risk of uncontrolled release/impact on receiving environment minimised.	Ongoing	Ongoing	Facility Manager
#06	Risk of fire incident	Emissions to air	12	- Management/control infrastructure in place - Implementation of SOP/EMS - Environmental monitoring - See also <b>Note 1</b>	Risk of uncontrolled release/impact on receiving environment minimised.	Ongoing	Ongoing	Facility Manager
#07	Risk of fire incident	Release of contaminated firewater/waste/leachate	12	- Management/control infrastructure in place - Implementation of SOP/EMS - Environmental monitoring - See also <b>Note 1</b>	Risk of uncontrolled release/impact on receiving environment minimised.	Ongoing	Ongoing	Facility Manager
#08	Biofilter	Malfunction or failure of bio-filtration operation - uncontrolled emissions to air	9	- Management/control infrastructure in place - Implementation of SOP/EMS - Environmental monitoring	Risk of uncontrolled release/impact on receiving environment minimised.	Ongoing	Ongoing	Facility Manager
#09	Biofilter	Malfunction or failure of bio-filtration operation - uncontrolled release of condensate/liquid run-	6	- Management/control infrastructure in place - Implementation of SOP/EMS - Environmental monitoring	Risk of uncontrolled release/impact on receiving environment minimised.	Ongoing	Ongoing	Facility Manager
#10	Surface water management infrastructure (including interceptor)	Failure of surface water management system (including interceptor) - uncontrolled release of polluting substance	6	- Management/control infrastructure in place - Implementation of SOP/EMS - Environmental monitoring	Risk of uncontrolled release/impact on receiving environment minimised.	Ongoing	Ongoing	Facility Manager



Acorn Recycling, Ballybeg Composting Facility  
EPA Licence W0249-01

Statement of Measures

Risk ID	Process	Potential risk	Risk Score	Mitigation Measures	Outcome	Action	Completion Date	Responsible Person
#11	Storage of diesel and hazardous liquid materials	Tank/drum and bund failure	6	- Management/control infrastructure in place - Implementation of SOP/EMS - Environmental monitoring	Risk of uncontrolled release/impact on receiving environment minimised.	Ongoing	Ongoing	Facility Manager
#12	Refuelling/fuel deliveries	Fuel spillage during tanker unloading/delivery operations, or refuelling of plant/vehicles on-site	6	- Management/control infrastructure in place - Implementation of SOP/EMS - Environmental monitoring	Risk of uncontrolled release/impact on receiving environment minimised.	Ongoing	Ongoing	Facility Manager
#13	Weighbridge/reception area for incoming vehicles	Fuel spillage arising from vehicular accident/incident	6	- Management/control infrastructure in place - Implementation of SOP/EMS - Environmental monitoring	Risk of uncontrolled release/impact on receiving environment minimised.	Ongoing	Ongoing	Facility Manager
#14	Vehicle/plant maintenance	Fuel/polluting substance spillage	6	- Management/control infrastructure in place - Implementation of SOP/EMS - Environmental monitoring	Risk of uncontrolled release/impact on receiving environment minimised.	Ongoing	Ongoing	Facility Manager
#15	Wastewater management	Failure of sewage holding tank	6	- Management/control infrastructure in place - Implementation of SOP/EMS - Environmental monitoring	Risk of uncontrolled release/impact on receiving environment minimised.	Ongoing	Ongoing	Facility Manager
#16	Weather	Flooding on site causing uncontrolled discharge	6	-Mitigation not required	Risk of uncontrolled release/impact on receiving environment minimised.	Ongoing	Ongoing	Facility Manager

[NOTES]

**SOP** = Standard Operating Procedure

**EMS** = Environmental Management System

**Note 1** The licensee implemented a number of measures as a result of two fire incidents in 2017 (See **Appendix 2.5**), as follows:

- Emergency roof repairs carried out to prevent fugitive emissions.
- Smoke vents fitted (automatic opening) to main processing building roof to release smoke in a controlled manner and prevent the smoke and heat from spreading.
- Fire-damaged compost pile in the yard covered with polythene sheeting to prevent fugitive dust emissions and rainwater leaching prior to off-site disposal.
- New SOP ARB18 drafted in agreement with the EPA for the management of compost in the maturation area, diversion of fire-water to the fire-water retention pond and disposal via WWTP.

## Appendix 3.5: ELRA Costing Model

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ELRA Plausible Worst-case Scenario Quantification and Costing

Tasks			
Response to:	<b>Risk of fire incident</b>	Risk:	#06 Emissions to air
		Risk:	#07 Release of contaminated firewater/waste/leachate

#	Description	Units	Quantity (No. units)	Unit Rate (Lower)	Unit Rate (Upper)	Unit Rate (Average)	Cost	Notes
1	Fire-fighting	days	1	€ 20,000	€ 20,000	€ 20,000	€ 20,000	<b>Note 1, 2, 3</b>
2	Fire-water disposal costs	m3	300	€ 25	€ 25	€ 25	€ 7,500	<b>Note 1</b>
3	Transportation of fire-water for disposal off-site	m3	300	€ 9	€ 9	€ 9	€ 2,700	<b>Note 4</b>
4	Fire/fire-water-contaminated feedstock and amendment material - costs for off-site waste management	tonnes	660	€ 35	€ 80	€ 58	€ 37,950	<b>Note 5, 6</b>
5	Fire/fire-water-contaminated feedstock and amendment material - costs for transportation off-site	tonnes	660	€ 9	€ 9	€ 9	€ 5,940	<b>Note 4, 5</b>
6	Decontamination of the building	days	2	€ 640	€ 640	€ 640	€ 1,280	<b>Note 7</b>
7	Consultancy costs	days	8	€ 600	€ 600	€ 600	€ 4,800	<b>Note 1</b>
8	Surface water monitoring	sample	6	€ 130	€ 130	€ 130	€ 780	<b>Note 1</b>
9	Groundwater monitoring	sample	10	€ 150	€ 150	€ 150	€ 1,500	<b>Note 1</b>
10	Air monitoring	sample	10	€ 200	€ 200	€ 200	€ 2,000	<b>Note 1</b>
11	Waste monitoring	sample	10	€ 200	€ 200	€ 200	€ 2,000	<b>Note 1</b>
	<b>TOTAL (ex VAT)</b>						<b>€ 86,450</b>	
	<b>CONTINGENCY</b>					20%	<b>€ 17,290</b>	<b>Note 8</b>
	<b>TOTAL INCLUDING CONTINGENCY</b>						<b>€ 103,740</b>	

## Acorn Recycling, Ballybeg Composting Facility, EPA Licence W0249-01

### ELRA Plausible Worst-case Scenario Quantification and Costing

#### [NOTES]

- Note 1** Source of unit rate: EPA 2014 Guidance, Table B8
- Note 2** Fire brigade (North Tipperary Fire Service) charges for fire services at the Ballybeg Composting Facility for a fire incident on 19/06/2011 were €6,562 (see **Appendix 4.2**). Conservative costs have been applied above, based on EPA unit rates, as an anticipated 'worst-case' scenario.
- Note 3** Firewater Risk Assessment report (Apr. 2011) stated that the max. anticipated time requirement for fire services would be 120 mins.
- Note 4** Source of unit rate: Acorn Recycling. Supporting documentation/validation included in **Appendix 4.2**.
- Note 5** Quantity is based on the approx. max. storage volume of any single storage area in the Composting Building, i.e. unprocessed input material in the Primary Area (approx. 180t) + woodchip amendment stored in Primary Area (approx. 800m<sup>3</sup> @ 0.6t/m<sup>3</sup>)
- Note 6** Source of unit rate: EPA 2014 Guidance, Table 1, composting rates
- Note 7** Ref. closure costs, **Appendix 2.8**
- Note 8** Due to the licensee's direct experience with managing fire incidents (2 No.) at this facility, contingency can be lower than that typically observed for ELRA, i.e. a greater level of certainty can be applied.

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## Appendix 3.6: Emergency Response Procedure for Ballybeg Composting Facility

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## **Emergency Preparedness and Response Procedure**

### **1. Objectives**

- To ensure all appropriate infrastructure related to fire safety and other emergency situation is installed and properly maintained on site
- To ensure appropriate precautionary work practices are carried out on site to prevent fires and other emergency situations occurring
- To ensure that all employees are appropriately trained and aware of their roles and responsibilities with regard fire safety and what actions to carry out in the event of a fire or other emergency situation

### **2 . Responsibility**

- Managing Director
- Environmental Manager
- Operations Manager
- All employees on site

### **3.0 Potential Site Emergency situations**

The following are potential emergency situations have been identified as possible to occur on site.

- A) Fire
- B) MAJOR SPILL (DIESEL, LIQUID WASTE)
- C) INJURY/MEDICAL EMERGENCY
- D) CRASH OR STRUCTURAL COLLAPSE

## **4.0 Fire Safety**

### **4.1 Site Infrastructure**

The following site infrastructure is maintained on site to mitigate against the risk of a fire;

#### 4.1.1 Signage

- Site service map at entrance to facility to enable fire services to quickly and easily navigate the site.
- The four pedestrian emergency fire exits are clearly delineated with high visibility signage including illuminated (glow in the dark) to enable visibility in the event that lighting fails
- Emergency contact numbers are posted at various locations around the site namely; site office, canteen, and 'electrical room'.
- A sign indicates the evacuation meeting point



#### 4.1.2 Fire water storage

- A fire water storage pond is maintained on site to ensure adequate water is provided on site. As part of the weekly site inspection this will be checked to ensure that adequate water is present (more water will be added if there water level is below 2ft from the top of the lagoon).  
It is the responsibility of the Environmental Manager to ensure this inspection is carried out and that the water level in the lagoon is maintained.

#### 4.1.3 Fire water retention pond and divert valve.

- A fire water retention pond is maintained on site as per EPA requirements in order to collect any contaminated fire water that may arise on site during a fire event. The surface water on site can be diverted to the fire water retention pond by turning a divert valve counter clockwise.  
All staff onsite must be trained on how to do this and this will be carried out immediately in the event of a fire on site.

#### 4.1.4 Fire Reels & Extinguishers

- There are 3 No. fire reels on site. All staff on site are trained so as to be familiar with the location of all the fire reels and there operation.  
The fire reels on site are inspected weekly to ensure they are fully operational.  
The maintenance of the fire reels is the responsibility of the operations manager.
- Fire extinguishers are maintained on site and these are inspected annually by an external company and records retained.

#### 4.1.5 Site Access/Egress and Roller Shutter doors

- As part of the weekly site inspection carried out on site all fire exits on site are inspected to ensure they are being kept free from obstruction.  
It is the responsibility of all staff on site to ensure the fire exits are not obstructed. Any personnel found to have obstructed a fire exit may face disciplinary action.
- For security purposes an electronic gate is located at the entrance of the site. In the event that electricity is out during an emergency, a manual override key is located in the site office.  
All staff on site are shown where this key is located and how to use it as part of their induction training.



- Roller shutter doors are located at the front of the building. If in the event that the electricity is down during an emergency, a manual chain can be used to open and close the doors. All staff are trained on how to access this manual option as part of their site training

#### 4.1.6 Fire Alarm System

- A full fire alarm system is installed on site. The system includes linear heat cables and brake glass units in the composting building and smoke detection in the offices. The system gives an alarm onsite and gives test messages alerts to Acorn management. There is also a fire suppression system in the control room and BMS room. The alarm system and fire suppression is maintained quarterly by Firecrest Safety Systems Ltd and records are held in the inspection/maintenance folders in the Acorn, Ballybeg office.

## **4.2 Evacuation Procedure**

Should you discover a fire or one is reported to you, IMMEDIATELY raise the ALARM and:

1. Open the nearest available exit in your area and direct people to this exit.
2. Make sure that all areas are searched for stragglers, provided it's safe to do so. If possible close all doors behind you.
3. Evacuate the facility immediately. Do not take anything with you.
4. Once evacuated, no person should be allowed back into the building under any circumstances.
5. Rescue: If any personnel are discovered missing or are injured they will need assistance to bring them to safety. You should only re-enter the area under these circumstances, if you are not placing yourself in danger.
6. Fire Control: You should only attack the fire if you know what you are doing and if you are not placing your own life in any danger. 3 Fire hose reels and fire fighting equipment are provided for this purpose.
7. The storm water must be diverted to the fire water retention pond.
8. Carry out any special task or tasks allocated by Management.
9. Do not go home. You must wait until you have been given permission to leave.

## **4.3 Operational Fire Prevention Practices**





- In order to allow even and full air flow through the compost pile (and maintain even temperatures) no material/compost shall be stacked higher than 3m.
- The temperatures in each composting tunnel are monitored on a continuous basis by a least 2 temperature probes. Temperatures will not be allowed exceed 78degrees Celsius. Where temperatures exceed this, the aeration fans will be turned up in order to cool the material and/or the compost pile will be turned.
- Prior to the aeration holes of a bay being cleaned by staff all the material from the bay must be removed by the loading shovel.
- Material must not be placed in such a way that it obstructs access/egress at any of the emergency exits or large roller shut doors. The monitoring of this shall form part of the weekly inspection.

#### 4.4 Smoking Policy

Smoking is strictly prohibited within the vicinity of the composting building including inside the loaders. The only place where smoking is permitted is outside the welfare cabin. Employees may face disciplinary procedures including dismissal from site if found to be smoking outside the designated area.

Training on the responsibilities of staff with regard to fire safety forms part of the site induction.

#### 4.5 Testing of fire evacuation procedure.

Testing of the evacuation procedure (i.e a fire drill) is carried out every 6 months and records retained in the inspection/maintenance folders at Acorn, Ballybeg.

### 5.0 Major Spill Prevention & Response

In order to prevent any spillage or dirty water that may occur discharging to the river there is a discharge valve that can be used to divert the flow to the fire water retention pond. In the event of any spillage in the yard this should be closed immediately.

All employees are trained on where this valve is and how to use it.

Turning the valve **anti-clockwise** closes it (i.e diverts the flow to the fire water retention pond).

Procedure in the event of a spillage

- Immediately close the discharge valve
- Inform the operations manager or environmental manager



## 6.0 Medical Emergency Plan

If a medical emergency is reported, dial 112 or 911 and request an ambulance. Provide the following information:

- Number and location of victim(s)
- Nature of injury or illness
- Hazards involved
- Nearest entrance

Alert trained employees to respond to the victim's location and bring a first aid kit.

Name	Location/Telephone
Sam Bowden	086 1071231

- Only trained responders should provide first aid assistance.
- Do not move the victim unless the victim's location is unsafe.
- Control access to the scene.
- Meet the ambulance at the nearest entrance or emergency access point
- First Aid kits are located in the welfare cabin and electrical room

## 7.0 Crash or Structural Collapse

In the event of Crash or structural collapse the following steps are to be taken:

- Raise the alarm if not done so already
- Leave the building through the safest possible location
- Assemble at the assembly point and await further instructions
- Do not enter the building/vehicle until safe to do so

## Appendix 4.1: Financial Provision Summary

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**Acorn Recycling, Ballybeg Composting Facility**  
**EPA Licence W0249-01**

**Summary Financial Provision**

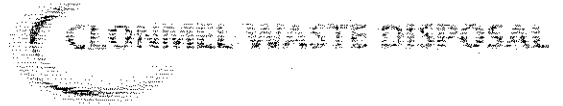
<b>Liability Type</b>	<b>Amount</b>
Financial provision for closure	€ 113,235
Financial provision for incidents	€ 103,740
<b>TOTAL (including contingency, excluding VAT)</b>	<b>€ 216,975</b>

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## Appendix 4.2: Costs – Supporting/Validation Documentation

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Clonmel Waste Disposal Ltd,  
 Cashel Road Recycle Centre, Lawlesstown,  
 Clonmel, Co.Tipperary.  
 Tel: 052 6124509 Fax: 052 6124874  
 Email: anita@clonmelwaste.ie



# INVOICE

Invoice No: 103024  
 Date: 25/05/2014  
 Account No: TACORN

ACORN RECYCLING LTD  
 ARCHERSTOWN IND EST  
 THURLES  
 CO. TIPPERARY

Page 1 of 1

13021

Date	Ticket	Type /Description/Service	Waste Description	VAT Code	Quantity	Rates	Total
<b>Site Address: PANDA RECYCLE-, ACORN, .</b>							
23/05/2014	1005459	ARTICULATED LORRY-Disposal Charge	TRANSPORT CHARGE	T1	23.14 €	9.00 €	208.26 €
PO Number: 7284							
<p><i>Supporting documentation/validation for transportation cost of €9 per tonne</i></p> <p><i>Consent of copyright owner required for any other use.</i></p>							
VAT Registration No:IE6556055G						<b>Total Nett Amount</b>	<b>€208.26</b>
VAT Code/Rate	Goods	V.A.T.			<b>Total VAT</b>	<b>€47.90</b>	
T1 23.0%	208.26	47.90			<b>Invoice Total</b>	<b>€256.16</b>	
T2 13.5%	0.00	0.00					
T3 0.0%	0.00	0.00					

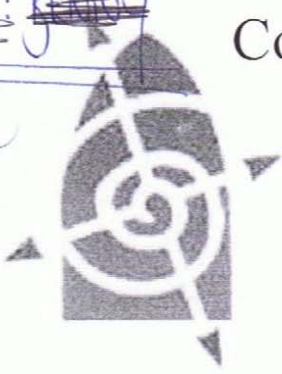
TERMS: Unless otherwise agreed, our standard credit terms are STRICTLY 30 DAYS END OF MONTH. Any accounts outside of the terms WILL NOT be serviced . Preferred Method of Payment is by EFT quoting your account number to:  
 AIB Bankcentre Branch, Ballsbridge, Dublin 4. Account Number 17614-939 Sort Code: 93-13-65  
 IBAN: IE39 AIBK 9313 6517 6149 39 (BIC: AIBKIE2D)

# Comhairle Contae Thiobraid Árann Thuaidh

North Tipperary Fire Service

Civic Offices, Limerick Road, Nenagh, Co. Tipperary.

Telephone No: 067 38415



## INVOICE

Date: 24 June 2011

ACORN RECYCLING  
BALLYBEG  
LITTLETON  
THURLES

Invoice No: 003767

A Chara,

I outline hereunder details of your Fire Service charge. Please arrange for payment of this charge as soon as possible but no later than 30 days from date of issue:

Details : FIRE SERVICE CHARGE		Amount
Fire Date: 19/06/2011	Fire Report Ref: Thurles/11/94	
Incident Address: BALLYBEG, LITTLETON, THURLES		
Description: Commercial Call Out		€6,562.19
<b>Total Due:</b>		<b>€6,562.19</b>
<b>Current Balance:</b>		<b>€6,562.19</b>

Supporting ref. documentation for fire services charges

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If applying for a waiver, please complete the following:

Invoice No: 03767

Name: \_\_\_\_\_ Medical Card No: \_\_\_\_\_

Address: \_\_\_\_\_

Date of Birth: \_\_\_\_\_

I consent to the Mid-Western Health Board verifying the above information:

Please Cut Along Dotted Line

### Fire Service Charge Remittance Slip

Please detach and return this remittance slip with your payment. Cheques, Postal Orders should be made payable to: North Tipperary Fire Service, Civic Offices, Limerick Road, Nenagh, Co. Tipperary.

Invoice No: 03767

Amount Due: €6,562.19

Name: ACORN RECYCLING

Address: BALLYBEG, LITTLETON, THURLES

Amount Enclosed: \_\_\_\_\_

**Bord na Mona Resource Recovery Ltd**  
 Main Street  
 Newbridge  
 Co Kildare  
 Phone: 045 439288  
 VAT Reg No: 3194218TH  
 Email: creditcontrol@aesirl.ie



**INVOICE**

Invoice To:

**Acorn Recycling Ltd**  
 Archerstown Industrial Estate

Archerstown  
 Thurles  
 Co Tipperary

*13012*  
*10 JUN 2014*

<b>INVOICE</b>	<b>IACCE1219</b>
Account No.	60000091
Invoice Date	31 May 2014
Customer Order Ref.	
Payment Terms	30 Days
Page	1 of 1

Date	Ticket No	Action	Material	Weight	Unit Price	VAT Rate	Ex.VAT Total
<b>Site: Ballybeg CF, Littleton, Littleton, Tipperary North</b>							
28/05/2014	WBDL7225	Processing	Sludge from Water Clarification	16.3	45.0000	13.5	733.50
28/05/2014	WBDL7225	Landfill Levy	Sludge from Water Clarification <i>ROS common</i>	16.3	75.0000	13.5	1,222.50
17/05/2014	WBDL6533	Processing	Non-Composted Fraction of municipal and similar wastes Levy Exempt	26.86	42.0000	13.5	1,128.12
21/05/2014	WBDL6758	Processing	Non-Composted Fraction of municipal and similar wastes Levy Exempt	26.62	42.0000	13.5	1,118.04
23/05/2014	WBDL6965	Processing	Non-Composted Fraction of municipal and similar wastes Levy Exempt	24.64	42.0000	13.5	1,034.88
27/05/2014	WBDL7093	Processing	Non-Composted Fraction of municipal and similar wastes Levy Exempt	27.04	42.0000	13.5	1,135.68
29/05/2014	WBDL7286	Processing	Non-Composted Fraction of municipal and similar wastes Levy Exempt	28.1	42.0000	13.5	1,180.20
31/05/2014	WBDL7478	Processing	Non-Composted Fraction of municipal and similar wastes Levy Exempt	26.3	42.0000	13.5	1,104.60
<b>Ballybeg CF Site Subtotal</b>				<b>8,657.52</b>			

*Supporting documentation/validation for off-site residual waste management cost of €42 per tonne*

VAT Summary

This invoice is PAYABLE within 30 Days of invoice date

Totals

Code	Rate	Ex. VAT Value	VAT Value
Standard	13.50	8657.52	1168.77

€	
<b>Sub Total</b>	8657.52
<b>VAT</b>	1168.77
<b>Total</b>	9826.29

Payment Options

<b>Online</b>	On our website at <a href="http://www.aesirl.ie">www.aesirl.ie</a>	<b>Direct Debit</b>	Just download our Direct DebitMandate form at <a href="http://www.aesirl.ie">www.aesirl.ie</a> , print it out, complete and return to us.
<b>Cheque/ Bank Draft/ Postal Order</b>	Please make your cheque, postal order or bank draft out to Bord na Mona Resource Recovery Ltd. and return to us at Bord na Mona Resource Recovery Ltd., Main Street, Newbridge, Co Kildare	<b>Electronic Funds Transfer</b>	Account Name: Bord na Mona Resource Recovery Limited Sort Code: 90-12-63 Account No: 43235715 IBAN: IE19 BOFI 9012 6343 2357 15 BIC: BOFIE2D



## Appendix 4.3: Current Insurance Certificate

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100 Main Street, Cashel, Co. Tipperary.  
t 062 61991 f 062 70799 e [info@campionins.com](mailto:info@campionins.com) [www.campionins.com](http://www.campionins.com)

## To Whom It May Concern:

**Our Ref: LM/ARL001**  
**29 April 2014**

**RE: Our Client, Acorn Recycling Ltd. t/a AQS Environmental Solutions,  
Archerstown Industrial Estate, Thurles, Co. Tipperary.**

We refer to our above mentioned client and can now confirm details of their Public and Employers Liability Cover, details as follows: -

**Insured:** Acorn Recycling Ltd. t/a AQS Environmental Solutions  
**Address:** Archerstown Industrial Estate, Thurles, Co. Tipperary.  
**Business Description:** Drain & Environmental Services, including Drain Unblocking, Drain and Tank Cleaning (including working with Methane Gas), Drain Rehabilitation, CCTV Survey Services, Removal of Sludge, Food Waste, Oil & Grease, Maskoflex Dewatering, Drain Relining, Resin Injection, Water Egress Sealing of Drains and Buildings, provision of Drain Cleaning Vehicles, Sales Service, Repair & Sale of Parts, Vacuum Extraction of Dried Products, Waste Management including Waste Processing (Composting Facility), Water well and geothermal bore well drilling (less than 1%), Project Management including provision of Traffic Management as ancillary to main contract for drain cleaning and environmental services provided & Property Owner

**Insurers:** Brit Syndicate @ Lloyds  
**Policy Numbers:** IC107954Q  
**Period of Cover:** 30<sup>th</sup> April 2014 – 29<sup>th</sup> April 2015

**Employers Liability**  
**Limit of Indemnity:** €13 million each and every claim, unlimited any one period

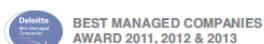
**Public / Products Liability**  
**Limit of Indemnity:** €6.5 million each and every claim, unlimited any one period but in all in respect of Products Liability

**Height & Depth Limits** Unlimited

I can confirm that this policy further extends to indemnify principals as standard. If you have any queries please contact the undersigned.

Yours sincerely,

**Loughlin McGovern | CIP |**  
**Regional Director**  
**Tel.: +353 62 64114**  
**Email: [loughlin@campionins.com](mailto:loughlin@campionins.com)**



Directors: P. Kenny (Chairman), J. Campion, M. Campion, D. Cullen, B. Roberts, P. Scott, J. Kelly, S. Gilmor, S. Moloughney, K. Jones, R. Tyrrell, L. McGovern, J. McCarthy. Registered office: Otter House, Modern Plant Building, Naas Road, Dublin 22. Company registration no. 269654. Campion Insurances Ltd t/a Campion Insurance is regulated by the Central Bank of Ireland. For further information please visit: [www.campioninsurance.ie](http://www.campioninsurance.ie)

