

Licensing Unit  
EPA Headquarters  
Johnstown Castle Estate  
County Wexford

ENVIRONMENTAL PROTECTION  
AGENCY

05 SEP 2013

3<sup>rd</sup> September 2013

**Re: Request for Technical Amendment Waste Licence W0146-02**

Dear Sir, Madam,

Following advice from the Office of Environmental Enforcement, we are seeking a technical amendment to Waste Licence Reg No. W0146-02.

A proposal to undertake a metal recovery trial using Incinerator Bottom Ash was recently submitted to the OEE and was rejected on the ground that this activity is not provided for in the Schedule of Licensed Waste Activities listed in Waste Licence Reg No. W0146-02. The OEE have advised that a technical amendment or licence review is required to consider this proposal, we would greatly appreciate if this could be accommodated as a technical amendment due to time constraints and because this is a trial of short duration. If the trial proves successful and we can agree a basis with Indaver for developing a commercial scale plant, then we will seek a licence review for this activity.

Please find enclosed a copy of the OEE letter detailing their response and a copy of the proposal for the Incinerator Bottom Ash Metal Recovery Trial.

Full details of the scope and programme for the trial are included in the proposal. Should you require further information please do not hesitate to contact the undersigned at 041 - 9821650.

Yours sincerely,

pp Emma Finlay.

Heather Lamont  
Landfill Manager  
For and on behalf of Greenstar North East Limited

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**Subject**

LS Rejection - Notice - Free Text

**Created Date**

02/09/2013

Dear Ms. Lamont,

The Agency has reviewed your submission LR004734, "Request for Approval - Incinerator Bottom Ash Metal Recovery Trial" in relation to the proposed trial on the recovery of metal from incinerator bottom ash.

The Agency notes that this activity is not provided for in the Schedule of Licensed Waste Activities listed in Waste Reg No. W0146-02. I am to advise you that a technical amendment or a review of the waste licence would be required to consider this proposal.

Yours sincerely,

Carol O` Sullivan Office of Environmental Enforcement

[Licence Details](#)

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ENVIRONMENTAL PROTECTION  
AGENCY

05 SEP 2013

**REQUEST FOR AGENCY APPROVAL**

**Incinerator Bottom Ash Metal Recovery Trial  
(In conjunction with Indaver Meath Waste-To-Energy)**

**Knockharley Landfill**

**Knockharley**

**Kentstown**

**Co. Meath**

**Submitted to:**

**ENVIRONMENTAL PROTECTION AGENCY**

**29<sup>th</sup> AUGUST 2013**

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### LIST OF APPENDICES

Appendix 1                  Drawings

Drawing Included With This Proposal
Drawing 001 – Trial Location in Cell 10/12 Knockharley Landfill

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## 1.0 INTRODUCTION

Waste Licence No. W0146-02 is for the operation and development of a residual, non-hazardous landfill at Knockharley, Co. Meath. The licensee is Greenstar Holdings Ltd, Unit 6 Ballyogan Business Park, Ballyogan Road, Sandyford, Dublin 18.

This document is a request for Agency approval to undertake a metal recovery trial at the Knockharley Landfill using Incinerator Bottom Ash (IBA) from Indaver Meath Waste-To-Energy, Carranstown, Duleek, Co. Meath (Waste Licence W0167-02).

This document includes details of the proposed trial including location, tonnage, mobile plant equipment and a programme.

## 2.0 INCINERATOR BOTTOM ASH (IBA)

IBA is the non-hazardous, solid residue that remains after the incineration of municipal waste in a waste-to-energy plant. IBA consists mainly of aggregates such as sand, stone, glass, porcelain and ceramics, in addition to some ferrous and non-ferrous metals. The fact that it mainly consists of sand and gravel makes it useful as a construction and engineering material.

Incinerator bottom ash typically contains up to 5% ferrous metals (e.g. steel, iron) and 1-2% non-ferrous metals (e.g. aluminium, copper, lead, zinc) which, if removed from the ash, can be recycled. At present the Meath Waste-To-Energy facility recovers a fraction of the ferrous metals from the ash using an overband magnet in the ash storage hall. However, the remaining ash (which is consigned to landfill for recovery as an engineering material) still contains an unknown but visible quantity of ferrous and non-ferrous metals.

## 3.0 PROPOSED PROJECT

In order to measure the amount of ferrous and non-ferrous metals remaining in the landfilled IBA, and to determine the best way to extract these metals in the future, Indaver would like to conduct a trial.

### Location

Due to the restricted space available at the Meath Waste-To-Energy facility, it has been decided that the best option for conducting this trial would be to operate the metal recovery mobile plant at the Knockharley Landfill. This has a number of advantages:

- Knockharley Landfill is situated approximately 8.5km from the Meath Waste – To – Energy facility making the logistics of the trial simple and affordable



- The equipment included in the mobile plant is full scale and would give a clear indication of the full recovery potential for ferrous and non-ferrous metals
- IBA can be stored (stockpiled) at the landfill prior to the trial in order to obtain the necessary quantities for the trial and to allow for moisture reduction
- Once processed, the IBA can be used immediately for engineering purposes at the landfill

The optimum location for the trial within the Knockharley Landfill facility is Cell 10/12, is detailed in Drawing 001 in Appendix 1. Cells 10 and 12 are within the landfill footprint; therefore, all material would be contained within lined cells. Cell 12 has its own access ramp which will solely be used by vehicles associated with the trial throughout the programme of works.

Cells 10 and 12 are not accepting disposal waste at present and will not accept disposal waste for the duration of the trial. Both cells currently have an intermediate cover of clay and soil-like filter cake. The intention is to cover the area proposed for placement of the mobile plant with a layer of IBA to form a suitable platform for working prior to the plant arriving.

#### Tonnage

As the quantity of metal contained within the IBA will vary in relation to the composition of the untreated municipal material, it is proposed to process c. 4000t of IBA during the trial in order to give a representative sample. A large sample size also makes the rental and transport of the mobile plant to Ireland financially viable. The processed IBA will remain on site at Knockharley Landfill for engineering and recovery purposes; therefore, each load arriving at the site will be weighed in using the normal waste acceptance procedure.

#### Mobile Plant Equipment

The mobile equipment would consist of screens, conveyors and ferrous and non-ferrous recovery equipment (see photograph below). This would be shipped and installed in three containers connected via conveyor belts. The footprint of the mobile plant is 20 x 20m (Figure 001).



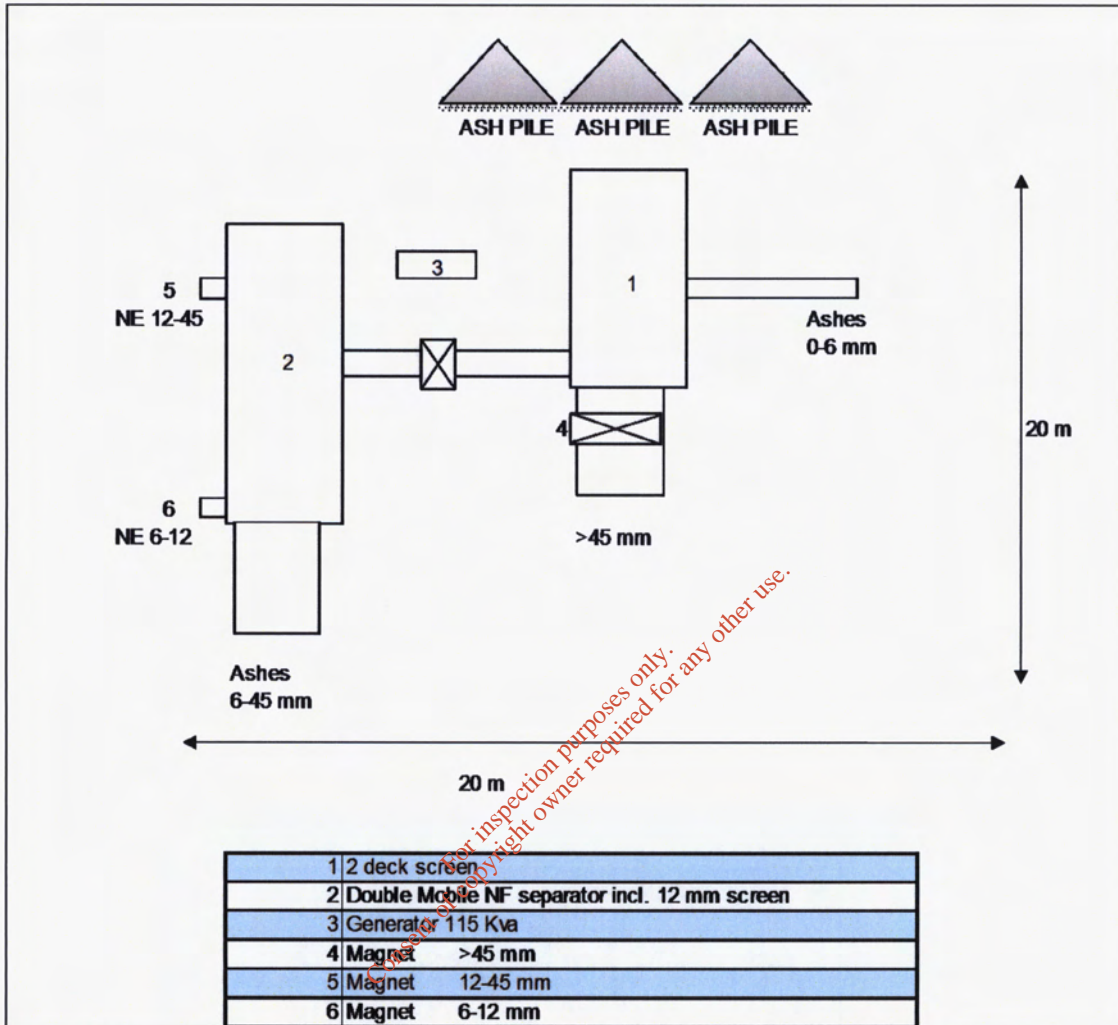


Figure 001

The ash is initially screened in a 0-50mm screen to remove any oversize material. The residues then pass in to the first container which has a drum magnet to recover any remaining ferrous metal (not already removed at the Meath Waste-To-Energy facility) from the ash. This both recovers additional ferrous metal and avoids damage to the eddy current separators in the no-ferrous recovery step.

Following this, the ash passes in to a sieving container where size fractions 6-12mm and 12-45mm are separated. These fractions are then sent to the container with eddy current separators for non-ferrous recovery while the undersize (0-8mm) is rejected.



#### 4.0 PROGRAMME

The trial is expected to last a maximum of 8 weeks.

Week 1	<ul style="list-style-type: none"> <li>• Delivery of 500t of IBA for ground preparation in Cells 10 and 12</li> <li>• Delivery of 1000t of IBA for stockpiling</li> </ul>
Week 2	<ul style="list-style-type: none"> <li>• Preparation of access ramp and working area for equipment placement</li> <li>• Delivery of 1000t of IBA for stockpiling</li> </ul>
Week 3	<ul style="list-style-type: none"> <li>• Delivery of 1000t of IBA for stockpiling</li> </ul>
Week 4	<ul style="list-style-type: none"> <li>• Delivery of 1000t of IBA for stockpiling</li> </ul>
Week 5	<ul style="list-style-type: none"> <li>• Delivery and set up of mobile screening plant</li> </ul>
Week 6	<ul style="list-style-type: none"> <li>• Process IBA</li> <li>• Stockpile</li> </ul>
Week 7	<ul style="list-style-type: none"> <li>• Process IBA</li> </ul>
Week 8	<ul style="list-style-type: none"> <li>• Demobilise mobile screening plant</li> </ul>

#### 5.0 REQUEST FOR APPROVAL

Based on the information provided above, we would ask for the Agency's approval to carry out this trial at Knockharley Landfill. This trial is vital for the compliance of Waste Licence W0167-02 Condition 7.5 (b) "The licensee shall identify opportunities for the recovery/recycling of residues", and as it is not possible to undertake this trial at Indaver's Carranstown facility, we would ask that the Agency see the pragmatism in undertaking this trial at the nearby Knockharley Landfill facility.

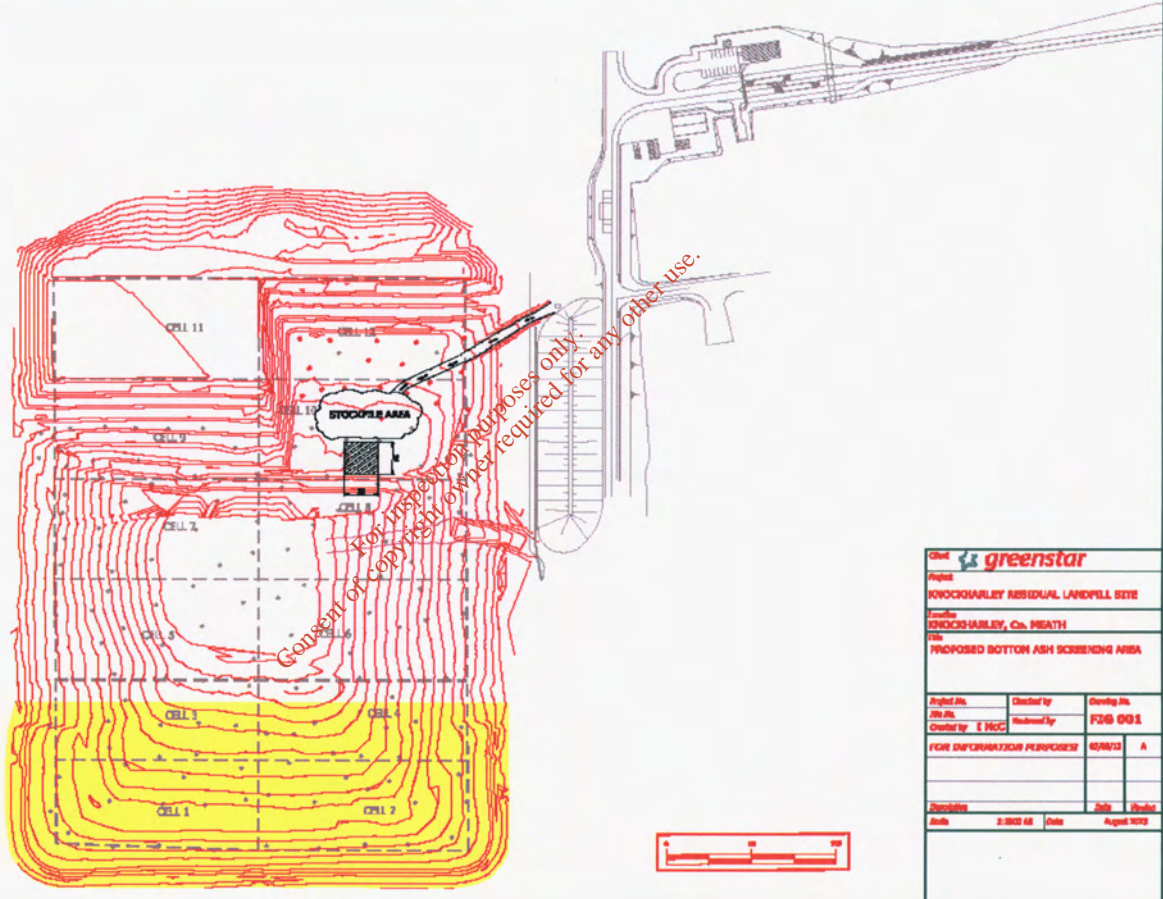
This trial is an important one from the Knockharley Landfill perspective as, should the trial prove successful, Knockharley Landfill and Indaver Carranstown will endeavour, having gone through a full licensing and planning process, to develop a permanent metal recovery plant located at the landfill that would be capable of processing all of Indaver's IBA, and in time, to offer a solution to other incinerators that may be developed. This type of progressive recycling is of both environmental and commercial benefit to both parties; and would provide a sustainable commercial activity for the Knockharley Landfill at a time when landfill's are under increasing pressure to find a role within the waste industry due to the objectives of the Landfill Directive.



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# Appendix 1

## Drawings



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<b>Client</b>			
<b>Project</b> KNOCKCHARLEY RESIDUAL LANDFILL SITE			
<b>Location</b> KNOCKCHARLEY, Co. MEATH			
<b>Title</b> PROPOSED BOTTOM ASH SCREENING AREA			
<b>Project No.</b>	<b>Checked by</b>	<b>Drawing No.</b>	
<b>Rev. No.</b>	<b>Reviewed by</b>	<b>FIG 001</b>	
<b>Order by</b> E HCC			
<b>FOR INFORMATIONAL PURPOSES</b>		<b>02/09/13</b>	<b>A</b>
<b>Revisions</b>		<b>Rev</b>	<b>Detail</b>
<b>Scale</b> 1:5000 A8		<b>Date</b>	<b>August 2013</b>