CIR20- 100

REV: 02

Yard Activities
CIR20-100

Clean (Irl.)Refuse & Recycling Co. Ltd

Ballinagun West

Cree

Kilrush

Co. Clare

Tel: (065) 9059092

Email: info@cleanirl.com

Web: www.cleanirl.com

Consent of copyright owner required for any other use.
For inspection purposes only.

Originator …….

Signed of by …….

Date Released……

EPA Export 26-07-2013:03:29:47

Purpose

To ensure that the movement of people, vehicles, and material follow a designated path

Scope

All documentation processed by Clean (Irl.) Refuse and Recycling Co Ltd.

Reason For Issue

Third release

Responsibility

Operations Manager – P. Hedigan

Reference

Health and Safety Manual. Clean (Irl.) Refuse & Recycling Co. Ltd. Cree, Kilrush, Co. Clare.

Weigh Bridge Activities CIR20-101

Template Procedure CIR50-100

For inspection purposes only.
Consent of copyright owner required for any other use.

EPA Export 26-07-2013:03:29:47

Clean (Irl.) Refuse and Recycling Co Ltd.

Clean (Irl) Refuse and Recycling Co Ltd. provides a full range of waste management services to both domestic and commercial customers.

Clean Ireland Recycling are active members of the Waste Management Association of Ireland.

Compliance with legislation is the primary aim of Clean Ireland Recycling.

Certification/Licensing

Clean Ireland Recycling holds the following permits and affiliations:

- Clare County Council Waste Permit
  (Permit No. 002/07/WPT/CL)
- Clare/Limerick/Kerry region Waste Collection Permit
  (WCP No. WCP/LK/073/07(d))
- Mayo/Sligo/Galway City/Galway County/Roscommon/Leitrim Region Waste Collection Permits
- Cork County Council Collection Permit
- Offaly County Council
- Irish Waste Management Association
- Repak Approved

For inspection purposes only.
Consent of copyright owner required for any other use.

EPA Export 26-07-2013:03:29:47

Visitor Yard Procedure

Clean (Irl) Refuse and Recycling Co Ltd. has a responsibility to ensure, as far as is reasonably possible, the safety of visitors while on the premises.

To that end, the following policies shall apply:

- All visitors including members of the public are required to check-in with staff at the company's gate office prior to entering the site.
- Visitors must be informed of and follow the site safety rules and emergency procedures at all times while on site.
- An appropriate member of Clean (Irl) Refuse and Recycling Co Ltd. will accompany visitors at all times while on Clean (Irl) Refuse and Recycling Co Ltd. property.
- Only those vehicles required for delivery of equipment and materials or used directly in the performance of an operation will be admitted on to the site.
- Your Clean (Irl.) Refuse and Recycling Co Ltd. contact will advise you on the correct parking procedures, zones and access to designated areas.
- Reference. Health and Safety Manual. Clean (Irl) Refuse & Recycling Co. Ltd. Cree, Kilrush, Co. Clare.

Consent of copyright owner required for any other use. For inspection purposes only.

Contractor Yard Procedure

Contractors working for Clean (Irl) Refuse and Recycling Co Ltd. must adhere to the following.

The following policies shall apply:

- Contractors must sign the Contractors Yard Procedure available from the gate office and complete the form as indicted.
- Contractors are required to check-in with staff at the company's Gate Office prior to entering the site.
- Contractors are required to check in/out with the appropriate member of Clean (Irl.) Refuse and Recycling Co Ltd, every time that a contractor leaves or enters the site.
- Contractors must not work on the premises unless appropriately covered by adequate employers and public liability insurance. Contractor's insurance policies must be submitted for examination prior to work commencing.
- Contractors must be familiar with the Clean (Irl.) Refuse & Recycling Co. Ltd. Health and Safety Manual.
- Contractors must adhere to and follow the safety procedures as outlined in the Clean (Irl) Refuse and Recycling Co Ltd. Health and Safety Manual.
- Reference. Health and Safety Manual. Clean (Irl) Refuse & Recycling Co. Ltd. Cree, Kilrush, Co. Clare.

EPA Export 26-07-2013:03:29:47

Machinery Modus Operandi

Machinery and vehicle equipment used in Material Collection operations can pose significant hazards to operations.

- Check all guards and protective devices are in position before working.
- Ensure that you know how to operate the equipment before operating a vehicle.
- Report any defective parts/equipment not working properly.
- Do not use or carry out maintenance on any equipment, vehicle body or compactor unless authorised and trained to do so.
- Never attempt to free jammed material.
- Never clean any vehicle while in motion.
- Appropriate clothing and safety attire must be adhered to.
- Never distract people who are operating equipment on site.
- Never walk under a raised skip, or go between a reversing vehicle and fixed structure.
- Reference. Health and Safety Manual. Clean (Irl) Refuse & Recycling Co. Ltd. Cree, Kilrush, Co. Clare.

Consent of copyright owner required for any other use. For inspection purposes only.

1. Tipping Procedure For Refuse Lorry

- Once the refuse lorry has been weighed the lorry shall then be directed to the shed by the Yard Marshall/Tipping Marshall.
- No refuse lorry should ever reverse into the yard or shed area unless a tipping marshal/Yard marshal is available to safely direct the refuse lorry in.
- If no tipping marshal is available, the refuse lorry driver must wait until a tipping marshal is available.
- Once a tipping marshal is available the refuse lorry may reverse into the yard and shed.
- It is the responsibility of the tipping marshal to ensure that;
  - Both the yard safety chain and shed safety chains are not causing an obstruction and are correctly stored to one side.
  - Make certain there is adequate space available for the contents of the tipping lorry.
  - No other persons are present on the ground floor of the shed
  - If other persons must be on the ground floor, they must be made aware of the refuse lorry presence.
  - No other machines should be active in the vicinity of the shed/ yard while a refuse lorry is present within those areas.
  - Ensure that the correct personnel protective equipment is worn

EPA Export 26-07-2013:03:29:47

- Safety hat
- Goggles
- Mask
- Reflective jacket
- Safety boots

❖ Once the lorry has successfully entered the designated shed and has got the all-clear from the Tipping Marshal they may begin to tip the lorry load.
❖ The lorry shall then be tipped carefully within the wet shed as directed by the tipping/yard Marshall.
❖ The lorry driver is responsible for the opening/closing of the refuse mechanism lorry doors.
❖ No persons except the person in charge of the lorry door should be within the swinging space of a lorry door.
❖ The refuse lorry driver may begin tipping once the driver has received the go-ahead from the tipping/yard marshal.
❖ The tipping marshal and driver must be vigilant for material which may shatter/spray while being tipped from the refuse lorry.
❖ Once the material has been emptied, it must be inspected by the Yard Marshall.
❖ The refuse lorry door must be secured and closed safely once the tipping has ceased and the refuse lorry is in appropriate position.
❖ Once the material has passed the inspection it is then separated and goes through the Clean Ireland separation process
❖ The lorry shall then proceed to the weigh bridge as per Weigh Bridge Activities CIR20-101.
❖ Reference: Weigh Bridge Activities CIR20-101.
❖ While vehicles i.e. bob-cats etc. are moving material around the yard and shed the safety chains must be in use.
❖ If for any reason at all that a person has to enter the shed while a bob-cat is in operation, they must first
  - Press the buzzer on the outer wall to attract the attention of the driver
  - The driver shall then completely turn off the engine of the bob-cat until the situation has been dealt with
  - Once the driver is sure that all persons have exited the shed/yard, movement of material may commence.

Consent of copyright owner required for any other use. For inspection purposes only.

EPA Export 26-07-2013:03:29:47

1.2 Tipping Procedure for Drop Down Lorry

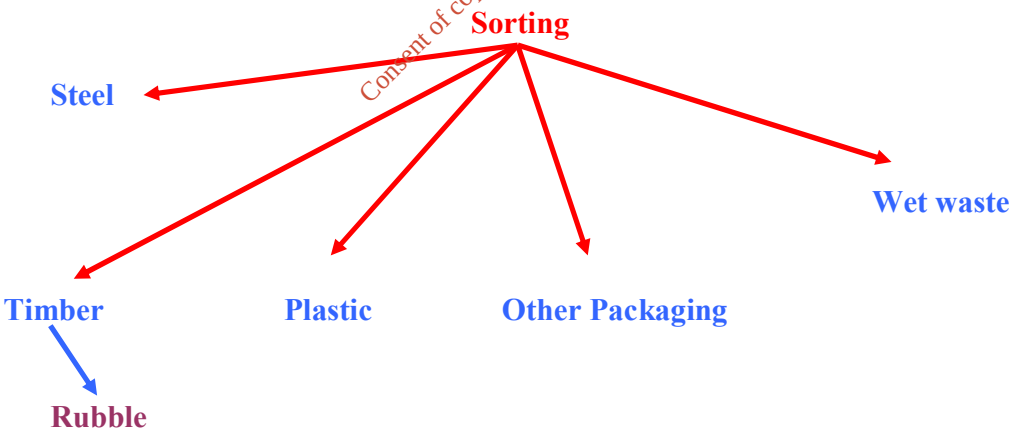
- The driver of the drop down lorry proceeds through the Clean (Irl.) Refuse and Recycling Co Ltd. road barrier once dockets have been handed in to the Clean (Irl) Refuse and Recycling Co Ltd. staff member at the Gate office.
- Staff member shall then follow the agreed procedure as indicated in Weigh Bridge Activities CIR20-101
- Once the drop down lorry has been weighed the drop down lorry shall then be directed to the shed by the Yard Marshall.
- A tipping marshal must be appointed to direct the drop down lorry safely through the yard to the shed.
- A drop down lorry should never reverse into the yard or shed area unless a tipping marshal/Yard marshal is available to safely direct the drop down lorry.
- If no tipping marshal is available, the lorry driver must wait until a tipping marshal is available.
- Once a tipping marshal is available the drop down lorry may reverse into the yard and appropriate shed.
- It is the responsibility of the tipping marshal to ensure that;
  - Both the yard safety chain and shed safety chains are not causing an obstruction and are correctly stored to one side.
  - The shed door is completely open.
  - Make certain there is adequate space available for contents of the tipping lorry.
  - No other persons are present on the ground floor of the shed
  - If other persons must be on the ground floor, they must be made aware of the refuse lorry presence.
  - Ensure that the correct personnel protective equipment is worn
    - Safety hat
    - Goggles
    - Mask
    - Reflective jacket
    - Safety boots
  - No other machines should be active in the vicinity of the shed/ yard while a refuse lorry is present within those areas.
- Once the lorry has successfully entered the designated shed and has got the all-clear from the Tipping Marshal the drop down lorry driver drops the skip onto the shed floor so as to facilitate netting removal.

For inspection purposes only.
Consent of copyright owner required for any other use.

EPA Export 26-07-2013:03:29:47

- The driver shall remove the netting, all drivers must be wearing the appropriate personnel protective equipment, this includes;
  - safety hat
  - reflective jacket
  - safety boots
  - safety mask/goggles when necessary
- The lorry driver should store the netting in its designated area once the netting has been carefully removed.
- The tipping marshal will ensure that no other persons are within the door swinging space as the drop down skip door is opened or closed.
- The drop down back-door is then carefully opened and secured properly to ensure that the door will not swing forward during tipping.
- The drop down lorry driver then proceeds to pick up the skip once the all-clear has been received from the tipping marshal.
- The tipping/yard marshal shall then direct the lorry to an appropriate area for tipping
- The refuse lorry driver may begin tipping once the driver has received the go-ahead from the tipping/yard marshal.
- The tipping marshal/driver must be vigilant for material which may shatter/spray while being tipped from the drop down skip lorry.
- Once tipping is completed and the skip is in its original flat position the skip doors must be closed securely before moving out of the shed.
- The material that has been emptied is inspected by the tipping marshal/yard marshal
- Once the material has passed the inspection it is then separated and goes through the following procedure

For inspection purpose only.
Consent of copyright owner required for any other use.



EPA Export 26-07-2013:03:29:47

- The lorry shall then proceed to the weigh bridge as per Weigh Bridge Activities CIR20-101.
- Reference: Weigh Bridge Activities CIR20-101

- While vehicles i.e. bob-cats etc. are moving material around the yard and sheds, safety chains must be in use.
- If for any reason at all that a person has to enter the shed/yard while a vehicle is in operation, they must first
  - Press the buzzer on the outer wall to attract the attention of the driver
  - The driver shall then turn off the engine of the bob-cat until the situation has been dealt with
  - Once the driver is sure that all persons have exited the shed, movement of material may commence

1.3 Tipping Procedure Open Container Lorry

Consent of copyright owner required for any other use. For inspection purposes only.

- No driver shall ever attempt to reverse and tip a lorry without a Tipping Marshall to direct the lorry carefully into the shed.
- If there is no Tipping Marshall available, the lorry driver must wait until a suitable member of the Clean (Irl.) Refusing and Recycling Co Ltd. team is available.
- The Tipping Marshall is accountable for the following:
  - Safe direction of the lorry into the shed/yard for tipping
  - Ensure there are no other persons in the shed at time of tipping
  - If other persons must be in the shed, they have to be notified and made aware of the lorry entering the shed
  - Ensure that the shed door if fully open to facilitate tipping
  - Ensure that the safety chain is not blocking access to the shed/yard and that the chain is stored safely to one side.
  - Make certain there is adequate space available for contents of the tipping lorry.
  - Ensure that the correct personnel Protective equipment is worn
    - Safety hat
    - Goggles
    - Mask
    - Reflective jacket
    - Safety boots

EPA Export 26-07-2013:03:29:47

- Directing the lorry to an appropriate area for tipping.
- The tipping marshal will open the container back-door once the lorry is in the correct position
  - Tipping marshal must be cautious of material falling suddenly from behind the open container door as it opens.
  - Tipping marshal must ensure that no other persons are within the swinging scope of the container door.
  - Tipping marshal must secure the open lorry back door safely, ensuring that the holding chain is correctly positioned, to avoid the door suddenly swinging during tipping.
- The open-container lorry driver may begin tipping once the driver has received the go-ahead from the tipping/yard marshal.
- The tipping marshal must be vigilant for material which may shatter/spray while being tipped from the drop down skip lorry.
- Once tipping is completed and the skip is in its original position the doors must be closed securely (holding chain and ratchet mechanism) before moving out of the yard/shed.
- The material that has been emptied is inspected by the tipping marshal/yard marshal.
- Once the material has passed the inspection it is then separated and goes through the Clean Ireland sorting process.
- The lorry shall then proceed to the weigh bridge as per Weigh Bridge Activities CIR20-101. as directed by the tipping marshal out of the shed area.
- Reference: Weigh Bridge Activities CIR20-101

For inspection purposes only.
Consent of copyright owner required for any other use.

* Note: Tipping Marshall – Clean (Irl.) Refuse and Recycling Co Ltd. staff individual with sufficient experience to direct a lorry safely into an appropriate shed

EPA Export 26-07-2013:03:29:47

1.4 Tipping Procedure – Glass

Glass must be handled cautiously and only those employees whom are trained to do so.

- The driver of the glass lorry proceeds through the Clean (Irl.) Refuse and Recycling Co Ltd. road barrier once dockets have been handed in to the Clean (Irl) Refuse and Recycling Co Ltd. staff member at the Gate office.
- Staff member shall then follow the agreed procedure as indicated in Weigh Bridge Activities CIR20-101
- Once the driver has been weighed the glass lorry shall then be directed to the glass shed by the Yard Marshall.
- It is the responsibility of the driver to ensure that;
  - The area is clear for tipping
  - That no persons are in the vicinity
  - Once emptied that no glass has fallen out of the bunkers
- The driver shall than return to the weigh bridge if the PT weight is not known

Consent of copyright owner required for any other use. For inspection purposes only.

Equipment Maintenance

- Employees shall immediately report any defective equipment.
- This includes all vehicles, machines and all container types.
- Defective equipment will be repaired on site without delay when possible.
- Any equipment which can not be repaired immediately shall be clearly labelled and locked down until repairs have been completed.

2. Public Vehicle Instruction –Yard Procedure

Clean (Irl) Refuse and Recycling Co Ltd. has a responsibility to ensure, as far as is reasonably possible, the safety of visitors while on the premises.
To that end, the following policies shall apply:

- Customer/driver must check in at Gate Reception and be informed of the procedure, before entering the site through the yard barrier.
- An appropriate member of staff shall be assigned to deal with the client.
- Staff member shall then follow the agreed procedure as indicated in Weigh Bridge Activities CIR20-101 and the Clean (Irl.) Refuse and Recycling Co Ltd. Health and Safety Manual
- All vehicle drivers must remain in their vehicles at all times unless otherwise indicated by an appropriate member of staff.
- Reference: Weigh Bridge Activities CIR20-101.
- Reference: Health and Safety Manual. Clean (Irl) Refuse & Recycling Co Ltd.

EPA Export 26-07-2013:03:29:47

4. Personnel Protective Equipment (PPE)

- Personnel Protective Equipment (PPE) must be used to protect against hazards which are unavoidable.
- PPE include the list below were appropriate
  - Safety hat
  - Safety jacket
  - Safety boots
  - Safety goggles
  - Safety mask
- Where it is appropriate members of the Clean (Irl.) Refuse and Recycling Co Ltd. must at all times wear the provided Personnel Protective Equipment (PPE) where necessary.
  - While in the yard
  - While crossing the yard
  - While operating all machines
  - While driving all vehicles

For inspection purposes only.
Consent of copyright owner required for any other use.

5. Movement Between Clean Ireland Buildings/Offices/Sheds

- Staff must at all times be vigilant while moving about the Clean Ireland site.
- Office staff and those moving between the front gate and main office (not wearing PPE) must use the designated walk away.
- Only those employees wearing PPE may cross the yard and enter Clean Ireland sheds/buildings.
- All employees moving between Clean Ireland sheds must use the designated passageways
- Staff will never:
  - Cross over stationary or moving conveyor belts.
  - Cross through yards where safety chains are visibly in use.
- Employees must be aware of vehicle movement while on site.

EPA Export 26-07-2013:03:29:47

6. Material Handling

- Manual handling is not restricted to the lifting of loads. It also includes lowering, pushing, pulling, carrying or moving loads whether by hand or other bodily force.
- Employees must consider;
  - The way the job is carried out
  - The size, shape and bulk of load
  - The working environment and how it might affect the task

7. Management Of The Activities

- Waste shall only be accepted at this site between the hours of operation Monday to Saturday inclusive (excluding Sundays, Bank and National Holidays).

- Clean (Irl.) Refuse and Recycling Co Ltd. site shall at times of operation be adequately manned and supervised.

- An awareness and training programme established to ensure that all employees of Clean (Irl.) Refuse and Recycling Co Ltd. are fully aware of the requirements of the waste permit and that employees are fully aware of the permit's provisions in relation to their individual and joint areas of responsibility.

- The establishment and maintenance of a communications programme.

- Clean (Irl.) Refuse and Recycling Co Ltd. shall maintain a register of the following on site;
  - Quantities and composition of waste received on site
    - Computer in gate office
    - Go to, shortcut to MATERIAL DATA
    - Yard Tonnage year (Excel)
  - Quantities and composition of waste not accepted at the site, and details to where such waste were diverted
    - Computer in gate office
    - Go to, shortcut to MATERIAL DATA
    - Diverted Waste (Excel)
  - Dates and times of all waste deliveries to the site
    - **Date** – go to, Computer in gate office
    - Go to, shortcut to MATERIAL DATA
    - Yard Tonnage year (Excel)
    - **Time** – Yard Tonnage Folder stored in gate office
  - The name of the carriers and the vehicle registrations numbers

Consent of copyright owner required for any other use. For inspection purposes only.

EPA Export 26-07-2013:03:29:47

- Go to, shortcut to MATERIAL DATA
- Yard Tonnage year (Excel)

- Origin of each delivery of waste
  - Computer in gate office
  - Go to, shortcut to MATERIAL DATA
  - Yard Tonnage year (Excel)

- Destination of all waste moving of site
  - Computer in gate office
  - Go to, shortcut to MATERIAL DATA
  - Outbound Tonnage year (Excel)
- A register must be kept on site recording Environmental Incident.
  - Folder 'Report & Investigation Forms'
  - Stored in gate office
- A register must be kept on site detailing all complaints received relating to the operation of the activity
  - Folder 'Report & Investigation Forms'
  - Stored in gate office

❖ Notify the Director of Services, Environmental Section, Clare County Council by fax/telephone of any Environmental Incident (full details shall be forwarded on the next working day);
- Potential for environmental contamination of surface water or ground water
- Cause an threat to air or land
- Requires and emergency response by the council

For inspection purposes only.
Consent of copyright owner required for any other use.

8. Waste Acceptance and Handling

❖ End of every working day, the hopper and compactor shall be cleared of all waste.

❖ All waste arriving on site is subject to visual inspection, any waste deemed unsuitable for processing and/or in contradiction to the permit shall be immediately separated, stored in a designated quarantined area and removed from the site as soon as possible.

❖ Waste must not be stored on site except for temporary storage pending transport, no t withstanding the requirements of temporary storage, mixed municipal waste and all wastes with a putrescible component shall not be stored on site for more than 48 hours. Dry recyclable wastes shall not be stored continuously for more than 3 months.

EPA Export 26-07-2013:03:29:47

9. Nuisance, Emissions and Environmental Impacts

- No overspill of waste outside the site perimeter shall occur.
  - Go to, gate office computer
  - Shortcut Michelle
  - Site Check List 2004
- No material of any sort can fall or be blown from vehicles delivering waste to site
  - Go to, gate office computer
  - Shortcut Michelle
  - Site Check List 2004
- Vehicles exiting from the site should never deposit any type of site material onto the roadway or adjoining land.
  - Go to, gate office computer
  - Shortcut Michelle
  - Site Check List 2004
- All litter from the site and its surrounding environment shall be removed, this includes any waste on the approach roads for a distance of 250 meters either side of the main access road. This shall be completed on a daily basis.
  - Go to, gate office computer
  - Shortcut Michelle
  - Site Check List 2004
- A visual examination of the surface water discharge will be carried out weekly. A log shall be maintained.
  - Go to, gate office computer
  - Shortcut Michelle
  - Site Check List 2004
- If the quality of the surface water should indicate contamination, the following shall take place;
  - An immediate investigation, to identify and isolate the source
  - Put in place measures to prevent further contamination
  - Notify Clare County Council

For inspection purposes only.
Consent of copyright owner required for any other use.

EPA Export 26-07-2013:03:29:47

10. Site Infrastructure

- Clean (Irl.) Refusing and Recycling Co Ltd. shall maintain and stockproof fencing on site.
    - Go to, gate office computer
    - Shortcut Michelle
    - Checks
- Gates shall at all times be locked and shut when the facility is unsupervised.

- Clean (Irl.) Refusing and Recycling Co Ltd. shall provide and maintain an inspection bay/quarantine area on site.

11. Contingency Arrangements

- An adequate supply of suitable absorbent material to contain and absorb any spillage at the facility, for example sand.

Consent of copyright owner required for any other use. For inspection purposes only.

12. Corrective Action Procedure

Clean (Ire) has established a written procedure to ensure that Corrective Action is taken. Ref: Corrective Action Procedure CIR20-102

13. Awareness and Training Programme

All personnel who work at the facility are fully cognisant of the requirements of the waste permit and are aware of the permits provisions in relation to their individual and joint areas of responsibility. Please see Awareness and Training Programme CIR20-103.

14. Communications Programme

Clean Ireland Has a dedicated switch board to deal with any queries/requests

15. Holiday Leave Request

- If holidays are required complete Holiday Leave Request form available in canteen

- Minimum four week notice of holiday leave required.

- Get the approval of your supervisor and copy to Reception.

16. Equipment Removal from Site

- Complete form that is available in canteen

- Get the approval of Yard manager and copy to Reception `

EPA Export 26-07-2013:03:29:47

17. Lock up procedure

For diesel shed

1) Switch off pump

2) Switch off valves

3) Turn off lights

4) Leave key

N.B. Diesel is not available when yard is not in operation.

Remove all keys from yard machines (bobcats JCB and rubber ducks) and ensure all are properly isolated

The following is the location for the various yard machines in the yard.

Bobcat with bale grab to be left outside near baler

Bobcat with grab to be left in skip shed

Bobcat to be left in wet waste shed

JCB to be left outside dry recyclable shed

Consent of copyright owner required for any other use.
For inspection purposes only.

Make certain all light in the shed are off the light for the wet waste shed and the skip shed are located in the wet waste shed near the hopper. The lights for dry recyclable shed are on the main panel at the front of shed.
Ensure all door are closed (e.g. skip shed, two doors in the dry recyclable shed, wet waste shed and also that both the barrier in the dry recyclable shed and the skip shed is closed behind the door)

Ensure that the generator is switched off

Check that the spares container is locked.

Switch off lights in reception making sure that weight bridge is switched off and that all three door are locked

Before leaving the site lock the main gate with the key been placed in the container in the canteen

EPA Export 26-07-2013:03:29:47

For inspection purposes only.
Consent of copyright owner required for any other use.

EPA Export 26-07-2013:03:29:48

CIR20-101

Weigh Bridge Activities
CIR20-101

REF: 01

Clean (Irl.)Refuse & Recycling Co. Ltd

Ballinagun West

Cree

Kilrush

Co.Clare

Tel: (065) 9059092

Email: cleanirl@iol.ie

Web: www.cleanirl.com

For inspection purposes only.
Consent of copyright owner required for any other use.

Originator …….

Signed of by …….

Date Released……

EPA Export 26-07-2013:03:29:48

Purpose

Ensure successful movement of all vehicles to and from the weigh bridge

Scope

Model: Precia Molen T2500

Weigh Bridge Definition: Machine for weighing vehicles etc. by means of a metal plate set into the road

Reason For Issue

First release

Responsibility

Yard Manager – P. Hedigan

For inspection purposes only.
Consent of copyright owner required for any other use.

ISSUE	REV	TITLE	PREPARED BY	PAGE
01	01	Weigh Bridge ActivitiesCIR20-101	Clean Ireland Safety Management	1 of 1

EPA Export 26-07-2013:03:29:48

Operation of Weigh Bridge Unit

1. Ensure the weigh bridge unit is powered on.

2. Instructions to follow in the event the weigh bridge is powered off/not working or showing up an error on the display unit.

   a. Ensure unit is powered on.
   b. Ensure there is no vehicle on the weigh bridge.
   c. Proceed to switch off the weigh bridge units on the wall in the gate office
   d. Wait approximately 5-10 minutes and switch the weigh bridge unit back on.
   e. Wait for the unit to re-set. Should start at 10, then 9, 8, 7 etc
   f. When the weigh bridge unit has returned to '0' instruct the driver of the vehicle back onto the weigh bridge

   Continue weighing as normal

For inspection purposes only.
Consent of copyright owner required for any other use.

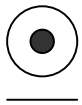
EPA Export 26-07-2013:03:29:48

Weighing of Refuse Lorry

1. The Driver of the refuse lorry proceeds through the site road barrier once acknowledged by the Clean (Irl) Refuse and Recycling Co Ltd. receptionist at the Gate office.
2. The Refuse Lorry then proceeds onto the weigh bridge
3. Staff member shall then follow the agreed procedure as indicated below

Weigh Bridge Unit Operation

On the weigh bridge keypad enter the following

- Press → **PT**
- Key in weight of truck (see appendix 1)
- Press ↵
- Press button on the bottom of the key pad 2nd from the left 
- Enter registration of the vehicle
- Press ↵
- All information as shown below must be completed on the weigh bridge docket
- Registration no. of vehicle (see appendix 1)
- Waste Type – refuse or dry recyclables
- Driver name

4. All relevant documentation
- Weigh bridge docket processed in the Gate Office
- Weigh bridge docket original and duplicate are to be filled in the Yard
- Tonnage folder.

For inspection purposes only.
Consent of copyright owner required for any other use.

EPA Export 26-07-2013:03:29:48

Appendix 1. Vehicle type

- Hook Lorry (3) + (1) Yard Lorry
- Glass Lorry (1)
- Refuse Lorry (10)
- Van (1)

HOOK LORRY		
Vehicle Reg.	Make & Model	Empty Weight
94 CE 300	Open Lorry (Daf hook)	10200kg- 8dd 13880kg – plastic/bottle container
01 CE 3065	Scania Big Hook Loader	12600kg – empty dd
00 CE 2474	Scania Hook Lorry	12100kg – empty dd 15420kg – plastic/bottle container
03 CE 3875	Scania Hook Loader	12580kg -

REFUSE LORRY		
Vehicle Reg.	Make & Model	Empty Weight
98 KE 7271	Scania	16340kg
00 CE 431	Volvo	15400kg
04 CE 935	Scania	14900kg
00 CE 6215	Scania (twin steer ref collector)	14460kg
01 CE 4132	Scania Automatic Bin Litter Refuse	14340kg (Truck)
02 CE 2829	Scania	14700kg
03 CE 497	Scania	14280kg
97 CE 4705	Scania	14110kg
95 CE 3477	Scania	13860kg

Consent of copyright owner required for any other use.
For inspection purposes only.

GLASS LORRY		
Vehicle Reg.	Make & Model	Empty Weight
95 CE 3462	Glass Lorry	10940kg

CANTER VAN		
Vehicle Reg.	Make & Model	Empty Weight
03 CE 3462	Canter Box Van	3220kg

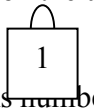
Note: Clean (Irl.) Refuse and Recycling Co Ltd. vehicles may change over time; accordingly Appendix 1 shall be updated accordingly.

EPA Export 26-07-2013:03:29:48

Public Vehicle Instruction

1. Customer/driver must check in at Gate Reception and be informed of the procedure.
2. An appropriate member of staff shall be assigned to deal with the client.
3. Staff member shall then follow the agreed procedure as indicated below.

Weigh Bridge Unit Operation

- Place Weigh Bridge Docket into the W.B.D. unit and press forward
- Press the Forward button on the unit to ensure the W.B.D. is secure
- On the W.B.D. pad press  to obtain 1st weight, once vehicle is on weigh bridge
- On the pad key in a claims number e.g. a random number (for future identification)
- Press  (return)
- When the vehicle returns to the weigh bridge, press  to obtain 2nd weight
- Proceed to key in the original claim number form the 1st weight
- Press  (return)

For inspection purposes only.
Consent of copyright owner required for any other use.

4. All information as shown below must be completed on the weigh bridge docket
- Driver Name
- Address
- Telephone number
- Registration of vehicle
- Waste type (see appendix 2)
- Signature of customer

5. Relevant documentation –
- Weigh bridge docket processed in the Gate Office
- Information on the weigh bridge docket is logged by staff in the Gate Office
- The original weigh bridge docket is then sent to the commercial unit in Office Reception
- The copy of the weigh bridge docket is given to the customer

EPA Export 26-07-2013:03:29:48

Appendix 2. Waste Type

Domestic
Industrial
Commercial

Aero Board
Ash
Batteries
Cans
Cardboard
Compacter
Computer parts
Dry Recyclables
Dry Waste
Glass
Metal/Steel
Mixed Waste
Paper

E.g. Domestic, Cardboard

For inspection purposes only.
Consent of copyright owner required for any other use.

EPA Export 26-07-2013:03:29:48

Hook Lorry Procedure

1. Driver must check in at Gate Reception.
2. Lorry docket must be handed over to Gate Office staff member

- ❖ Lorry docket must contain the following information
- ❖ Date
- ❖ Container number and size
- ❖ Waste origin
- ❖ Signature

3. The lorry shall then proceed to the weigh bridge or the skip is left in a designated area of the Clean (Irl.) Refuse and Recycling Co Ltd site.
4. Staff member shall then follow the agreed procedure as indicated below to obtain the weight.

Weigh Bridge Unit Operation

- ❖ Place Weigh Bridge Docket into the W.B.D. unit and press forward
- ❖ Press the Forward button on the unit to ensure the W.B.D. is secure
- ❖ On the W.B.D. pad press [1] to obtain 1st weight, once vehicle is on weigh bridge
- ❖ On the pad key in a claims number e.g. a random number (for future identification)
- ❖ Press ↵ (return)
- ❖ When the vehicle returns to the weigh bridge, press [2] to obtain 2nd weight
- ❖ Proceed to key in the original claim number form the 1st weight
- ❖ Press ↵ (return)

5. All information as shown below must be completed on the weigh bridge docket

- ❖ Container no. and size
- ❖ Waste origin
- ❖ Lorry Registration
- ❖ Driver name
- ❖ Waste Type if known (see appendix 2)

For inspection purposes only.
Consent of copyright owner required for any other use.

EPA Export 26-07-2013:03:29:48

6. All relevant documentation – Lorry docket and Weigh Bridge Docket

- ❖ Lorry docket attached to weigh bridge docket (processed Gate Office)
- ❖ Lorry docket must be attached to weigh bridge docket
- ❖ Information from weigh bridge docket is logged in the Gate Office computer system by appropriate member of staff
- ❖ Original weigh bridge docket and lorry docket sent to commercial unit in Office Reception
- ❖ Duplicate of weigh bridge docket is then filed in the Yard Tonnage folder in the Gate Office

For inspection purposes only.
Consent of copyright owner required for any other use.

EPA Export 26-07-2013:03:29:48

For inspection purposes only.
Consent of copyright owner required for any other use.

EPA Export 26-07-2013:03:29:48

g.

For inspection purposes only.
Consent of copyright owner required for any other use.

EPA Export 26-07-2013:03:29:48

For inspection purposes only.
Consent of copyright owner required for any other use.

EPA Export 26-07-2013:03:29:48

CIR20-102

REV: 01

Corrective Action Procedure
CIR20-102

Clean (Irl.)Refuse & Recycling Co. Ltd

Ballinagun West

Cree

Kilrush

Co. Clare

Tel: (065) 9059092

Email: cleanirl@iol.ie

Web: www.cleanirl.com

Consent of copyright owner required for any other use.
For inspection purposes only.

Originator …….

Signed of by …….

Date Released……

EPA Export 26-07-2013:03:29:48

Purpose

To ensure that procedures are formatted and are easily reproduced, filed and copied

Scope

All documentation processed by Clean (Irl.) Refuse and Recycling Co Ltd.

Reason For Issue

First Release

Responsibility

Environmental Officer/Facilities Manager/Transport Manager

For inspection purposes only.
Consent of copyright owner required for any other use.

EPA Export 26-07-2013:03:29:48

Corrective Action

Clean Ireland Refuse and Recycling ensures that Corrective Action is taken should any condition of the permit not be compiled with or should any event occur with the potential for environmental pollution. In such instances, Clare County Council shall be immediately notified by telephone/fax, and full details shall be forwarded in writing on the next working day.

Corrective Action Procedure – Environmental Pollution

If any event shall occur with the potential for environmental pollution it shall be immediately brought to the attention of the Environmental Officer/Facilities Manager/Transport Manager.

1. Any event with the potential for environmental pollution upon reporting to the Environmental Officer/Facilities Manager/Transport Manager is instantly reported to Clare County Council.

2. Environmental issues are logged in the **Complaints/Environmental Issues Log**.

3. The issue is investigated thoroughly.
   - Notice of Environmental Incident CIR20-102-1
   - Environmental Incident Investigation Form CIR20-102-2

4. All information pertaining to an issue is clearly noted and corrective action taken.

5. The Environmental Officer periodically runs checks for potential issues.

6. It is the responsibility of the Environmental Officer to investigate/report/close down any environmental issues.

For inspection purposes only.
Consent of copyright owner required for any other use.

Corrective Action Procedure – Complaints

1. All Complaints are logged in our **Complaints/Environmental Issue Log.**

2. In the event of a Complaint the Environmental Officer/Facilities Manager/Transport Manager is notified.

3. All information pertaining to a complaint is clearly noted and corrective action taken.
   - Notice of Complaints CIR 20-102-3
   - Complaints investigation Form CIR 20 -102-4

EPA Export 26-07-2013:03:29:48

4. The Environmental Officer/Facilities Manager/Transport Manager periodically runs checks for potential issues.

5. It is the responsibility of the Environmental Officer to investigate/report/close down any complaints.

Emergency Contact Numbers

Clare County Council
- Clare County Council, Environmental Department – 065 6821616

Hospitals
- 999 or 112
- Ennis General Hospital – 065 6821414 065 6863100
- Regional Hospital Limerick – 061 301111
- Maternity, Limerick- 061327455
- University Hospital Galway – 091 580580

Gardai
- 999 or 112
- Gardai Station Kilrush - 065 9080550
- Gardai Station Ennis - 065 6848100

Fire Brigade Station
- 999 or 112
- Fire Brigade Station Ennis Co. Clare– 065 6846302

For inspection purposes only.
Consent of copyright owner required for any other use.

EPA Export 26-07-2013:03:29:48

CIR20-103

REV: 01

Emergency Response Procedure CIR20-103

Emergency Response Procedure

Clean (Irl.)Refuse & Recycling Co. Ltd

Ballinagun West

Cree

Kilrush

Co. Clare

Tel: (065) 9059092

Email: cleanirl@iol.ie

Web: www.cleanirl.com

Consent of copyright owner required for any other use. For inspection purposes only.

Originator …….

Signed of by …….

Date Released……

EPA Export 26-07-2013:03:29:48

Purpose

To ensure that in case of an emergency around the facility each person knows what actions to carry out and has a list of emergency contact numbers

Scope

The procedures outlined in this document pertain to all employees at Clean Ireland Recycling.

Reason for Issue

First Release

Responsibility

Environmental Officer/Operations Manager/Transport Manager/Yard Supervisors

For inspection purposes only.
Consent of copyright owner required for any other use.

EPA Export 26-07-2013:03:29:48

Pre Emergency Planning

Clean Ireland Recycling will plan for possible emergency situations and have available adequate supplies and manpower to respond. In addition, employees will receive training during the site orientation concerning proper emergency response procedures.

The following measures will be taken to assure the availability of adequate equipment and manpower resources:

- Sufficient equipment and materials will be kept on-site and dedicated for emergencies only. The equipment will be replaced after each use.

- On-site emergency responders will be current with regard to training and medical training. Copies of all applicable certificates will be kept on file for on –site personnel required to respond.

- It will be the responsibility of the Operations Manager to brief the on-site response team on anticipating hazards at the site. The Operations Manager will also be responsible for anticipating and requesting equipment that will be needed for response activities.

For inspection purposes only.
Consent of copyright owner required for any other use.

Corrective Action

Clean Ireland Refuse and Recycling ensures that Emergency Response Action is taken should any should any such incident arise where it is deemed necessary. In such instances, Clare County Council shall be immediately notified by telephone/fax, and full details shall be forwarded in writing on the next working day.

EPA Export 26-07-2013:03:29:48

Environmental Response Procedure

If any event shall occur with the potential of an emergency it shall be immediately brought to the attention of the Environmental Officer/Operations Manager/Transport Manager.

1. Any emergency upon reporting to the Environmental Officer/ Operations Manager/Transport Manager is instantly reported to Clare County Council.

2. Emergencies are logged in the **Complaints/Environmental/Emergency Issue Log** at reception

3. The issue/emergencies are investigated thoroughly.

4. All information pertaining to an issue is clearly noted and corrective action taken.

5. The Environmental Officer/ Operations Manager/Transport Manager periodically runs checks for potential issues.

6. It is the responsibility of the Environmental Officer to investigate/report/close down any environmental issues.

Consent of copyright owner required for any other use. For inspection purposes only.

Housekeeping

In order to reduce the possibility of accidental spills good housekeeping practices will be followed. They include prompt removal of small spills, regular maintenance of walking areas, regular removal of refuse.

EPA Export 26-07-2013:03:29:48

1.0 Vehicle Breakdown/Overturn

- Get your vehicle off the road if possible and warn other traffic by using your hazard warning lights, particularly if your vehicle is causing an obstruction.
- Put on all personal protective equipment including your yellow reflective jacket
- If you have any fear that your vehicle may be struck by other traffic make all helpers get out of the vehicle and get well away from the traffic.
- Put a warning triangle/traffic cones or other permitted warning device on the road at least 45 metres (50 yards) behind your broken down vehicle on the same side of the road. Always take great care when doing this.
- Keep your sidelights on if it is dark or visibility is poor.
- Do not stand (or let anybody else stand), between your vehicle and oncoming traffic.
- At night or in poor visibility do not stand where you will prevent other road users seeing your lights.
- Use your mobile phone, or any other available phone, to summon assistance.
- If you have used a warning triangle remember to retrieve it, with care, when the breakdown is over.

For inspection purposes only.
Consent of copyright owner required for any other use.

2.0 Fire Safety Programme

The main elements of this Fire Safety Programme are:

- Emergency procedures/evacuation drills.
- Evacuation Procedure
- Regular fire safety inspection.
- Maintenance and servicing of fire equipment.
- Staff training.
- Information to occupants.
- Record Keeping

EPA Export 26-07-2013:03:29:48

- Emergency Planning

2.1 Emergency Procedures for Fire

All staff must be capable of responding correctly in the event of fire.

- Procedure for raising the alarm
- A procedure for calling the fire brigade.
- An assembly point and roll call procedure.
- A procedure for fighting the fire.
- A procedure for assisting the fire brigade.

2.1.1 Procedure for Raising the Alarm:

Depending on the establishment size the fire alarm system may be very simple or may be sophisticated. All staff should be aware of how to raise the alarm. Alarm sounders should be different and distinct from any other signal used in the site.

For inspection purposes only.
Consent of copyright owner required for any other use.

The first person discovering a fire will immediately take the following steps:

- Notify all employees in the area by shouting "FIRE"
- Stop all operations that may become hazardous, and proceed to the nearest exit as quickly as possible.

2.1.2 Evacuation Procedure:

2.1.2.1 In advance, each employee shall:

- Be familiar with the building evacuation plan.
- Recognise the sound of the evacuation alarm.

EPA Export 26-07-2013:03:29:48

- 2.3.1.3. Know at least <u>two</u> ways out of the building from your regular work space.

2.1.2.1.2. When you hear the evacuation alarm or are told to evacuate the building:

- Remain calm.
- Immediately cease all operations.
- Leave quickly, without running.
- During normal business hours the yard supervisor is responsible for ensuring that all occupants evacuate the area. In addition, every employee should check that all others in the area are leaving as instructed.
- During other than normal hours, quickly check nearby toilets,
- smoking rooms, for employees as you exit.
- Accompany and assist visitors, and any co-workers who appear to need direction or assistance.
- Shut all doors behind you as you go. Closed doors can slow the spread of fire, smoke, and water.

Consent of copyright owner required for any other use. For inspection purposes only.

- Proceed as quickly as possible, in an orderly manner. Do not push or shove. Hold handrails when you are walking on stairs.
- Once outside, move away from the sheds to the designated assembly area.

2.4 Procedure for Calling the Fire Brigade:

EPA Export 26-07-2013:03:29:48

The Fire Brigade should be called immediately in the event of fire, however small. Where there is a receptionist he/she is usually given the responsibility of contacting the Fire Brigade. When calling the Fire Brigade, give clear information including:

2.4.1 Name of Building Address of Site? Directions to the Site if necessary

2.4.2 Type of Fire Situation (If Available) –e.g. Fire Location, Fire Size, Materials Involved, Persons Missing.

2.5 Assembly Point and Roll Call Procedure:

All staff should proceed to the assembly area on evacuation. The assembly area should be clear of access points for the Fire Brigade. At the assembly point a roll call should be taken to ensure all occupants are accounted for. Missing persons should be notified to the Fire Brigade when they arrive at the scene.

Consent of copyright owner required for any other use.
For inspection purposes only.

2.6 Procedure for Fighting the Fire:

In the early stages of a fire it may be possible to successfully contain it or extinguish it with first aid fire fighting equipment. To accomplish this staff members should be instructed in the use of hand held extinguisher. Certain members of staff may be designated as a fire fighting team as part of the emergency procedures. Their function would be to assess and "if safe to do so" tackle the fire with the available equipment until the Fire Brigade arrives.

2.7 Procedure for Assisting the Fire Brigade:

When the Fire Brigade arrives they need to be given as much information as possible in order to take the best course of action. The type of information required includes:

2.7.1 Location of the fire; materials involved; details of missing persons; location of nearest fire hydrants; location of all access doors to the building.

EPA Export 26-07-2013:03:29:48

2.7.2 Keys for access into any locked areas.

2.8 Fire Evacuation Drills

Drills should be carried out at regular intervals to test the effectiveness of the predetermined arrangements. The aims of a fire evacuation drill are:

a. To ensure safe, orderly and efficient evacuation of all occupants of the building to use all exit facilities available in order that occupants are familiar with them. To test all aspects of the emergency procedures.
b. To achieve an attitude of mind that reacts rationally when confronted with a fire or other emergency situation.

Drills should be held at least twice yearly. The drill should be initiated by activating the fire alarm and all stages of the drill should be observed and a review of the drill should be held. Any deficiencies can then be noted and remedied

Consent of copyright owner required for any other use.
For inspection purposes only.

2.9 Regular Fire Safety Inspections:

Regular inspections are required to ensure the continued functioning of the active and passive fire safety measures in a building and to detect dangerous practices. The following should be monitored by regular inspection.

Exit Doors: Exit doors must never be obstructed, and all exit doors must be capable of being opened easily and immediately from the inside while the building is occupied

Machinery and equipment should be checked regularly for signs of wear, damage or overheating. Faulty equipment should be removed from use until repaired.

2.10 Maintenance and Servicing of Fire Equipment:

Fire precautions systems installed in site require regular checking and maintenance to ensure their continued operation and availability. Visual checks are required for most

EPA Export 26-07-2013:03:29:48

types of systems on a frequent basis with full operational check by a trained person required once every year.

Maintenance and servicing is required for:

a. Fire Alarm Systems.
b. Fire Hydrants.

2.11 Staff Instruction and Training:

For a fire safety programme to be effective, staff must be familiar with the parts of the fire safety programme which relate to them. Instruction and training should be given to staff to enable them to carry out their functions under the programme. All staff should receive instruction in:

i. Everyday fire prevention measures
ii. Emergency procedures
iii. First aid fire fighting

For inspection purposes only.
Consent of copyright owner required for any other use.

3.0 Oil Spillage

Oil waste spills that are not appropriately handled can harm the environment.

Oil spills on roads present a hazard. If oil spill while driver is collecting on the road they need to be dealt with immediately and effectively. The traditional method of removing road spills is through the use of oil absorbents pads.

3.1 In the event of an oil spill:

1. Stop
2. Contain

EPA Export 26-07-2013:03:29:48

3. Report
4. Clean up

Attend to liquid waste spills immediately.

If it is safe to do so, stop the spill at its source.

To contain a spill, distribute spill control and absorbent materials around and over the entire spill area, working from the outside and circling to the inside.

Log all incidences of spills and report to the Transport Manager.

Investigate the cause of each spill and ensure that precautionary action is implemented to lessen the risk of a similar incident recurring.

Consent of copyright owner required for any other use.
For inspection purposes only.

4.0 Waste Spillage

In the event of a waste spill from trucks drivers should immediately take the following action to prevent any damage to the environment. All spillages of waste from receptacles prior to, or at the time of collection, should be cleared by the driver or helper

4.1 Spills/Removal of substance to safe place

4.1.1 Spills involving hazardous materials should first be contained to prevent spread of the material to other areas. This may involve the use of temporary sand bags, dry sand, earth or absorbent pads;

4.2 Waste Spill Response Procedures and Equipment

In the event of an emergency involving a waste spill or release, the following general procedures will be used for rapid and safe response and control of the situation.

EPA Export 26-07-2013:03:29:48

4.2.1 Notification Procedures

If an employee discovers a waste spill he or she will immediately notify the Transport Manager.

The Transport Manager will obtain information pertaining to the following:

- The material spilled or released.
- Location of the release.
- An estimate of quantity released and the rate at which it is being released.
- The direction in which the spill is heading.

This information will help the transport manager to assess the magnitude and potential seriousness of the spill or release.

For inspection purposes only.
Consent of copyright owner required for any other use.

4.2.2 Procedure for Containing/Collecting Spills

The initial response to any spill or discharge will be to protect human health and safety, and then the environment. Identification, containment, treatment, and disposal assessment will be the secondary response.

4.3 Emergency Spill Response Cleanup Materials and Equipment

The supply of appropriate emergency response cleanup and personal protective equipment on hand will be visually inspected on a weekly basis.

A shovel and a sweeping brush will be kept on all trucks for waste spill control

5.0 Medical Emergencies

5.1 If a staff member or visitor is ill or injured:

EPA Export 26-07-2013:03:29:48

5.1.1. Notify immediately First Aiders, give exact location on site, and condition of the ill or injured person and nature of emergency or injury.

5.1.2. Unless it is a life-threatening situation and you are qualified to respond, do not attempt to render first aid yourself before emergency personnel arrive.

5.1.3. Do not attempt to move a person who has fallen and/or appears to be in pain.

5.1.4. Avoid unnecessary conversation with, or about, the ill or injured person. You might increase the person's distress or fears, and thereby contribute to medical shock. Limit your communication to quiet reassurances.

5.1.5. Avoid contact with blood.

Consent of copyright owner required for any other use. For inspection purposes only.

6.0 Discovery of Hazardous Substances

All waste arriving on site is subject to visual inspection, any waste deemed unsuitable for processing and/or in contradiction to the permit shall be immediately separated, stored in a designated quarantined area and removed from the site as soon as possible.

On discovery of hazardous waste on site the following steps must be followed:

1. Place hazardous waste in appropriate container e.g. for lead acid batteries they are placed in a sealed watertight container provided by our battery recyclers.

7.0 Rejection of load at destination waste facility

7.1 All waste arriving on site is subject to visual inspection, any waste deemed unsuitable for processing and/or in contradiction to the permit shall be immediately separated, stored in a designated quarantined area and removed from the site as soon as possible.

7.2 After the vehicle has been directed to the appropriate shed the fist step that should be undertaken is a visual inspection of the load. If unsuitable material is

EPA Export 26-07-2013:03:29:48

evident throughout the load it is necessary for the customer to remove this from site immediately at their own cost.

7.3 Incoming loads may be rejected or assessed a handling charge for the following reasons:

7.3. 1. Incoming loads of paper or mixed containers with any quantity of hazardous waste.

7.3. 2. Incoming loads of paper will be rejected if they have excessive food, glass, ceramic or metal contamination.

7.3. 3. Incoming loads will be rejected if they are excessively wet.

7.3. 4. Incoming loads of mixed containers will be rejected or assessed a fixed charge when found to contain excessive amounts of broken glass, determined visually and by the weight of the material in the load.

7.3. 5. Incoming loads of mixed containers may be rejected or a charge may be assessed for the presence of other contaminants such as scrap metal, non-recyclable glass, food waste, plastic wrap and packaging, etc.

For inspection purposes only.
Consent of copyright owner required for any other use.

7.4 Upon rejection of the load the driver must then directed to the appropriate facility for proper disposal of material.

8.0 Emergency Contact Numbers

County Councils

- Clare County Council, Environmental Department – 065 6821616
- Limerick County Council, Environmental Department –
- Regional Waste Management Office

Hospitals

- 999 or 112
- Ennis General Hospital – 065 6821414 065 6863100
- Regional Hospital Limerick – 061 301111

EPA Export 26-07-2013:03:29:48

- Maternity, Limerick- 061327455
- University Hospital Galway – 091 580580

Gardai

- 999 or 112
- Gardai Station Kilrush - 065 9080550
- Gardai Station Ennis - 065 6848100

Fire Brigade Station

- 999 or 112
- Fire Brigade Station Ennis Co. Clare– 065 6846302

Clean Ireland Recycling

John O'Donoghue: 087 2266543

Paddy Hedigan: 087 2346094

Michael Greene: 087 6031800

Diarmuid O' Donnell: 087 2233661

Cree Yard: 087 2867173

Mark Kerin: 086 0597115

Cree Office: 065 905 9092

Ennis Office: 065 6891350

Email cleanirl@iol.ie

Web: www.cleanirl.com

Bord Na Mona: 1850 20 05 47

For inspection purposes only.
Consent of copyright owner required for any other use.

EPA Export 26-07-2013:03:29:48

9.0 List of Emergency Response equipment to be stored on all vehicles

Spill Kit

Items to be included in spill kit	Quantity
16 x 19 pads	30
3 x 4 socks	2
Disposable Bags	2

Crash Kit

Items to be included in crash kit	Quantity
Procedure Form & Pen	1
Latex Disposable Gloves	1
Torch	1
Measuring Tape	1
Camera	1
Road Marker	1

For inspection purposes only.
Consent of copyright owner required for any other use.

First Aid Boxes

Items to be included in first aid boxes	Quantity
Adhesive washproof plasters	40
Antiseptic wipes	6
Disposable triangular bandage	2
Latex gloves	2
Wound dressings	2
20ml eye wash solution	1

EPA Export 26-07-2013:03:29:49

Scissors	1
Surgical Tape	1

Other Items

Fire Extinguishers	1
Shovel	1
Brush	1

For inspection purposes only.
Consent of copyright owner required for any other use.

EPA Export 26-07-2013:03:29:49

CIR20 - 115

REV: 01

Completion of customer waste analysis reports (W.A.R.) CIR20-115

Clean (Irl.)Refuse & Recycling Co. Ltd

Ballinagun West

Cree

Kilrush

Co. Clare

Tel: (065) 9059092

Email: cleanirl@iol.ie

Web: www.cleanirl.com

For inspection purposes only.
Consent of copyright owner required for any other use.

Originator …….

Signed of by …….

Date Released……

EPA Export 26-07-2013:03:29:49

Purpose

To ensure that customer waste analysis reports are generated in an accurate manner as well as the same layout as required by the customer

Scope

All documentation processed by Clean (Irl.) Refuse and Recycling Co Ltd.

Reason For Issue

First Release

Responsibility

Environmental Officer

For inspection purposes only.
Consent of copyright owner required for any other use.

EPA Export 26-07-2013:03:29:49

Completion of Waste Analysis Reports (W.A.R) for companies must be done once invoicing has been completed

- Really important to ensure that no invoice gets sent without the appropriate waste analysis report

The following is the list of companies that require a waste analysis report to be completed.

1. Avocent International Limited, Shannon
2. Bijur Lubricating, Gort Rd Industrial Estate, Ennis
3. ESB Moneypoint Killimer Co. Clare
4. Lufthansa Technik Turbine, Shannon
5. Tecnomen, Shannon
6. Vitalograph, Gort Rd Industrial Estate, Ennis

For inspection purposes only.
Consent of copyright owner required for any other use.

Avocent International Limited, Shannon

Check all dockets to invoice e.g. if the docket says that paper was picked up in a 660L the invoice must match. John O Donoghue will give you list of weight for both the paper and mixed waste collection. If weight required for timber/cardboard removed these available from Yard Register in Maggie's office

Bijur Lubricating, Gort Rd Industrial Estate, Ennis

No pie chart required just list the material that was collected during the month as per invoice also the EWC codes for each material is required e.g. Paper/Cardboard packaging has an EWC Code of 15 01 01. The codes are available from the European Waste Catalogue in Paddy's office.

ESB Moneypoint Killimer Co. Clare

EPA Export 26-07-2013:03:29:49

Requires a breakdown of the skip collected from their site during the month this is available from Maggie's office. Ensure that every skip that is on the breakdown list is on the invoice. Moneypoint also requires a breakdown of the dry recyclable bins that were collected this is accessible from John O Donoghue.

Lufthansa Technik Turbine, Tecnomen, Vitalograph

Check all dockets to invoice e.g. if the docket says that paper was picked up in a 660L the invoice must match. Summaries the different collections (Dry recyclable and wet waste) by calculating each quantity of the different bins that was collected. The list of average weights for the various bins/bales is available from the front of the 'Customer waste analysis 2007 folder'.

For example if the invoice shows

For inspection purposes only.
Consent of copyright owner required for any other use.

Date	**Item**	**Description**	**Quantity**
02/03/07	216741	Dry Recyclable collection (360L Bin)	1
03/03/07	216458	Dry Recyclable collection (660L Bin)	2
05/03/07	214789	1x 1100L Refuse	1

Therefore total dry recyclables collected is:

(360L) 1 x 25kgs (average weight of 360L bin with DR) = 25kgs

(660L) 2 x 40kgs (average weight of 360L bin with DR) = 80kgs

Total 105kgs

Total Refuse collected:

(1100L) 1 x 170kgs (average weight of 1100L bin with refuse) = 170kgs

- From this information you can then generate the pie chart in Microsoft Excel.

EPA Export 26-07-2013:03:29:49

- A copy of every waste analysis report must kept in (Customer Waste Analysis Folder)
- Copies of waste analysis reports sent can be found in Paddy's Office (Customer Waste Analysis)

For inspection purposes only.
Consent of copyright owner required for any other use.

EPA Export 26-07-2013:03:29:49

CIR20 - 116

REV: 01

Skip Collection/Delivery
Procedure no: CIR20-116

Clean (Irl.)Refuse & Recycling Co. Ltd

Ballinagun West

Cree

Kilrush

Co. Clare

Tel: (065) 9059092

Email: cleanirl@iol.ie

Web: www.cleanirl.com

Consent of copyright owner required for any other use.
For inspection purposes only.

Originator …….

Signed of by …….

Date Released……

EPA Export 26-07-2013:03:29:49

Purpose

To ensure that skip are delivery/collected in a safe manner and correct manner

Scope

Text

Reason For Issue

To ensure that drivers know that correct procedure for dropping of skip to customers

For inspection purposes only.
Consent of copyright owner required for any other use.

Responsibility

Skip drivers

EPA Export 26-07-2013:03:29:49

Steps to be followed before drop off of skips

Before picking up of skip make sure that there is no loose debris in the skip

Ensure both door are properly secured with pins and safety chain secured also that both pins are in place around hook

After lifting the skip on the truck ensure that the safety lock are in place also ensuring that no stones are on the chassis that would prevent the safety lock from engaging properly

Ensure wheels are moving freely this will guarantee that no damage is done to the driveway that the skip is being delivered to.

Make sure that that the skip is in good condition generally. If any defect please report straight away to yard manager before delivery.

Ring customer to confirm that they are at the location to receive payment and also to look for directions

For inspection purposes only.
Consent of copyright owner required for any other use.

Steps to be followed when dropping skip at the location

Assess the situation if unusual danger exists do not drop off the skip if in doubt about safety of operation

Do not drop off skip unless you collect money that is due

Do not drop off if you think that where the skip is being placed will be a hindrance to members of the public

Make sure there is sufficient room to place skip on driveway

Ensure that there are low overhead wires

Complete a Clean Irl Skip docket filling in appropriate information e.g. name of customer, size of skip and also getting customer to sign

Steps to be followed on collection of skips

Again it is extremely important to assess the situation if unusual danger exists do not pick up the skip if in doubt about safety of operation

Make sure that you have two net to cover the load

EPA Export 26-07-2013:03:29:49

Before lifting of skip again make sure that both doors are properly secured only lift the skip if safe to do so.

Inspect the load in the skip to make sure that it is distributed evenly. When inspecting the load the driver must use the steps provided on the side of the skip.

Loads should be evenly distributed, secured and not protruding beyond the sides of the skip. Remove any overhanging material from sides of skips and properly secure load with nets and ratchet straps if necessary when covering, cover first with green net then use the mesh net.

The driver shall ensure all non essential personnel are removed when picking up the skip. No other persons are present if other persons must be present, they must be made aware that loading of the skip is in progress.

Never pick up a skip that is overloaded or dangerously loaded inform customers of their duty to present skips in a safe manner

Complete a Clean Irl yard docket with name of customer, size of skip and also include your registration number

Drivers should always check the security of a load before heading off.

When back in yard follow the tipping procedure for drop down lorry as outlined in Yard Activities procedure

For inspection purposes only.
Consent of copyright owner required for any other use.

Mini Bin Delivery

Check all guards and protective devices are in position before working.

Make sure you know how to stop equipment before starting it

Skip eyes chains to be inspected regularly by competent person. Never use damaged chains.

Safety locks must be supplied to chain before skip is lifted off the ground

Be aware of overhead cables

Wear safety helmet for this operation

Never work under raised skip

EPA Export 26-07-2013:03:29:49

CIR20 - 117

REV: 01

Timber shredder operation
Procedure no. CIR 20-117

Clean (Irl.)Refuse & Recycling Co. Ltd

Ballinagun West

Cree

Kilrush

Co. Clare

Tel: (065) 9059092

Email: cleanirl@iol.ie

Web: www.cleanirl.com

Consent of copyright owner required for any other use.
For inspection purposes only.

Originator …….

Signed of by …….

Date Released……

EPA Export 26-07-2013:03:29:49

Purpose

To ensure that the timber shredder can be operated both safely and correctly and during maintenance the shredder can be locked out correctly

Scope

Timber Shredding Activities

Reason For Issue

First Release

Responsibility

Yard operators

For inspection purposes only.
Consent of copyright owner required for any other use.

EPA Export 26-07-2013:03:29:49

Timber Shredding Process

All wood waste received and identified for recycling, regardless of its final destination has to be broken down to smaller particles. To achieve a timber shredder is employed.

The three-stage process includes shredding, screening this and metal extraction to produce a high quality woodchip, which meets the exacting standards demanded by customers.

Shredding

The first step in the process is to remove any contamination that would be included with the timber. The next step the timber is feed via a komatsu rubber duck into the infeed hopper. The infeed hopper directs material into the cutting chamber. The material is grabbed by the hooks and pinched against the opposing cutters, which causes it to fracture and break.

Screening

The screening process involves a heavy duty metal sizing device which is mounted below the cutting chamber which allows shredded material to pass if it is below the size of the screen's openings. Oversized material is re-circulated back to the cutting chamber for further reduction.

For inspection purposes only.
Consent of copyright owner required for any other use.

Metals Extraction

A magnet supported overhead the conveyor removes ferrous contaminants such as nails and hinges.

Discharge Conveyor

The discharge conveyor directs processed material falling out of the cutting chamber into containers.

The Timber Shredder should be operated by trained, authorised personnel only.

No loose clothing to be worn in the vicinity of the timber shredder rotating parts can grab loose clothing leading to injury.

All guards and shields must be in place before starting or operating the unit

Before starting the shredder visually inspect the cutting chamber, drive unit and auxiliary equipment to ensure there are no loose fittings or bolts worn hoses or other unsafe conditions.

EPA Export 26-07-2013:03:29:49

Check the shredder to ensure that no persons, tools, or other unsafe materials are inside or nearby, and then call out a warning before starting the machine.

Do not stand with waist above top of shredder hopper while shredder is running

Stop motor and lock out electrical power before entering shredding chamber or attempting to make repairs.

Do not shred long material that sticks out past the top edge of the hopper. Never operate the shredder on material that was not designed to shred.

Operating the Shredder

Before processing material at the beginning of each day the operator should perform the following pre-operation routine

Perform daily maintenance checks See

Make sure no persons or foreign objects are inside the hopper or discharge chute

Call out a warning to let person working in the area know of your intention to start shredder

To start the shredder turn the main power supply ON.

Turn the control power keyswitch to ON and press the MCR RESET button.

Press and hold the SHREDDER RUN button. The warning horn will sound for 5 seconds prior to the motors starting.

Listen for noises that would indicate cutters or other components hitting or scraping against each other. If such noises are heard, stop the machine, lock out the power and locate and correct the cause.

Stopping the Shredder

Stop feeding the material into the shredder

Run the machine after feeding has been stopped until the cutting chamber, discharge chute and conveyors are empty.

Wait for ram cylinder to retract fully.

Consent of copyright owner required for any other use.
For inspection purposes only.

EPA Export 26-07-2013:03:29:49

Turn ram selector switch to OFF. Turn control power keyswitch to OFF and remove key.

Locking Out of Shredder

Prevent personal injury by stopping and lock out electrical power before entering shredding chamber or attempting to make repairs. To ensure safety when servicing the shredder, the electrical power supply to the machine must be switched off and locked out

After the power has been locked out an attempt should be made to start the machine using all start buttons on the control panel. This step confirms that the correct power supply has been disabled.

Certain equipment is necessary to protect your body from materials that could be thrown from the shredder and to avoid being caught in the equipment's moving parts.

The following Personnel Protective Equipment should be constantly worn around the vicinity of the shredder

Safety boots:

Safety glasses:

Wear safety glasses to protect your vision.

For inspection purposes only.
Consent of copyright owner required for any other use.

Hard hat:
Wear a hard hat to protect your head from material that may be kicked out of the machine.

Hearing protection:
Over time, you will lose your hearing if you are exposed to loud noises without protection.

Daily Inspection Required

Inspection of the underside of the cutting chamber is required any build up of material should be removed immediately to prevent cutter wear

The following daily checks should be performed on the shredder:

1. Gear Reducer Oil
2. Shredder Gear Box Oil

EPA Export 26-07-2013:03:29:49

3. End Plate Bearings
4. Shields and Guards
5. Cutting Chambers
6. Discharge Chute/Screen

Bi-monthly Inspection Required

1. Oil levels
2. End Plate Bearings
3. Screen
4. Wiring
5. Fasteners
6. Belt drive
7. Cutter Stack
8. Cutter Wear
9. Screen Conditions
10. Safety Switches

Consent of copyright owner required for any other use. For inspection purposes only.

Annual Maintenance

1. Gear Reducer
2. Gear Box
3. Screen
4. Restack Shredder

EPA Export 26-07-2013:03:29:49

5. PLC Battery

For inspection purposes only.
Consent of copyright owner required for any other use.

EPA Export 26-07-2013:03:29:49

CIR20 - 122

REV: 01

Monitoring and Measuring CIR20-122

Clean (Irl.)Refuse & Recycling Co. Ltd

Ballinagun West

Cree

Kilrush

Co. Clare

Tel: (065) 9059092

Email: cleanirl@iol.ie

Web: www.cleanirl.com

Consent of copyright owner required for any other use.
For inspection purposes only.

EPA Export 26-07-2013:03:29:49

Purpose

The following procedure provides guidance for preparing quarterly reports which will be reviewed during quarterly reports in order to monitor and measure the Clean Ireland Recycling's significant impacts on the environment..

Scope

All documentation processed by Clean (Irl.) Refuse and Recycling Co Ltd.

Reason For Issue

First Release

Responsibility

Operational Director

For inspection purposes only.
Consent of copyright owner required for any other use.

EPA Export 26-07-2013:03:29:49

1.0 Procedure

Environmental Monitoring for the Waste Permit Facility and Discharge Licence

N.B All monitoring results carried out has to be forwarded to Clare County Council within 14 days of the event.

A) Surface Water Monitoring

Under condition 6.2 of our waste permit monitoring has to be carried out a discharge points SW1 and SW2.

Under the discharge WP 162 the discharge from the percolation area from the treatment of waste on site must be monitored for pH, Suspended Solids, BOD and COD

Clean Ireland Recycling is to carry out surface water monitoring at set out in the tables below.

The water monitoring must be carried out by a competent laboratory using standard and internationally accepted procedures.

Copies of results of all monitoring, along with details of any necessary corrective actions shall be forwarded to Clare County Council as soon as such results become available.

For inspection purposes only.
Consent of copyright owner required for any other use.

Table A1: The surface water sampling locations shall be at both surface water discharge points as described below.

Sampling Location Ref	Description
SW1(a) (Discharge Point 1) SW1(b) SW1(c)	Surface water emission discharge point at the northern side of the facility car park; sample (a) to be taken from actual discharge, sample (b) upstream of discharge point and sample (c) downstream of discharge.
SW2(a) (Discharge Point 2) SW2(b) SW2(c)	Surface water emission discharge point at the south east corner of the facility; sample (a) to be taken from actual discharge, sample (b) upstream of discharge point and sample (c) downstream of discharge.

Table A2: Parameters to be measured, frequency of monitoring and the methods to be used:

Parameters	Frequency	Method
Visual (Interceptor/silt storage)*	Monthly	Not Applicable
Visual (Surface Water Emissions)*	Weekly	Not Applicable

EPA Export 26-07-2013:03:29:49

pH (pH units)	Quarterly	Standard Methods**
Conductivity (µS/cm)	Quarterly	Standard Methods**
COD (mg/L)	Quarterly	Standard Methods**
BOD (mg/L)	Quarterly	Standard Methods**
Suspended Solids (mg/L)	Quarterly	Standard Methods**
Ammonia (mg/L)	Quarterly	Standard Methods**
Total Phosphorus (mg/L)	Quarterly	Standard Methods**
Fats, Oils and Greases(mg/L)	Quarterly	Standard Methods**
Mineral Oils (mg/L)	Quarterly	Standard Methods**

**Visual: To see if there is evidence of contamination e.g. abnormal colour, presence of solids, surface film.*

**Standard Methods – In accordance with publication: '*Standard Methods for the Examination of Water and Wastewater', 20th edition.*

For inspection purposes only.
Consent of copyright owner required for any other use.

EPA Export 26-07-2013:03:29:49

B) Noise Monitoring Parameters and Frequencies

Clean Ireland Recycling is to carry out noise monitoring at the following points:

i) Four boundary locations (N1-N4)- these shall be located alongside the dust monitoring
ii) All noise sensitive locations within 500m of the facility

Parameters	Frequency	Method
$L_{Aeq,\ 30\ min}$ dB(A)	Bi-Annually (Day and Night*)	ISO 1996 and EPA Environmental Noise Survey Guidance Document
$L_{A90,\ 30\ min}$ dB(A)	Bi-Annually (Day and Night*)	ISO 1996 and EPA Environmental Noise Survey Guidance Document
$L_{A10,\ 30\ min}$ dB(A)	Bi-Annually (Day and Night*)	ISO 1996 and EPA Environmental Noise Survey Guidance Document
Frequency Analysis (1/3 octave band)	Bi-Annually (Day and Night*	ISO 1996 and EPA Environmental Noise Survey Guidance Document

*Monitoring shall be carried out during both night time and day time operation of the facility. Night time monitoring shall occur between 7:00am and 7:30am and shall be representative of normal activities at this time. Operational activities and traffic movements shall be recorded during the sampling event.

For inspection purposes only. Consent of copyright owner required for any other use.

C) Dust Monitoring Parameters and Frequencies

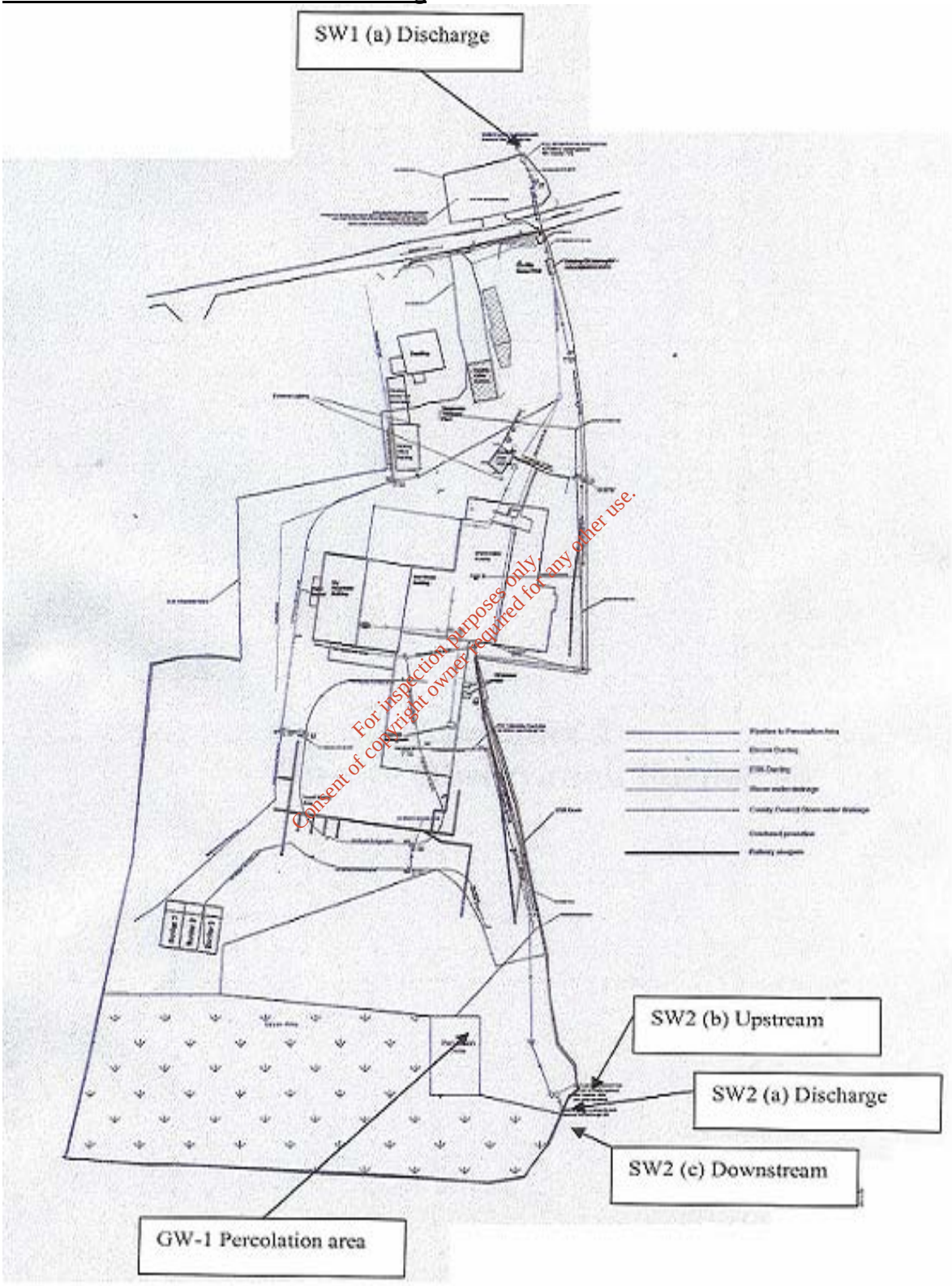
The permit holder is to carry out dust monitoring at the dust monitoring locations (AM-01 to AM-05)

Parameters	Frequency	Method
Dust Deposition	Bi-Annually	Standard Methods*

* Standard method VDI2119 (Measurement of Dustfall, Determination of Dustfall using Bergerhoff Instrument (Standard Method-German Engineering Institute).

EPA Export 26-07-2013:03:29:49

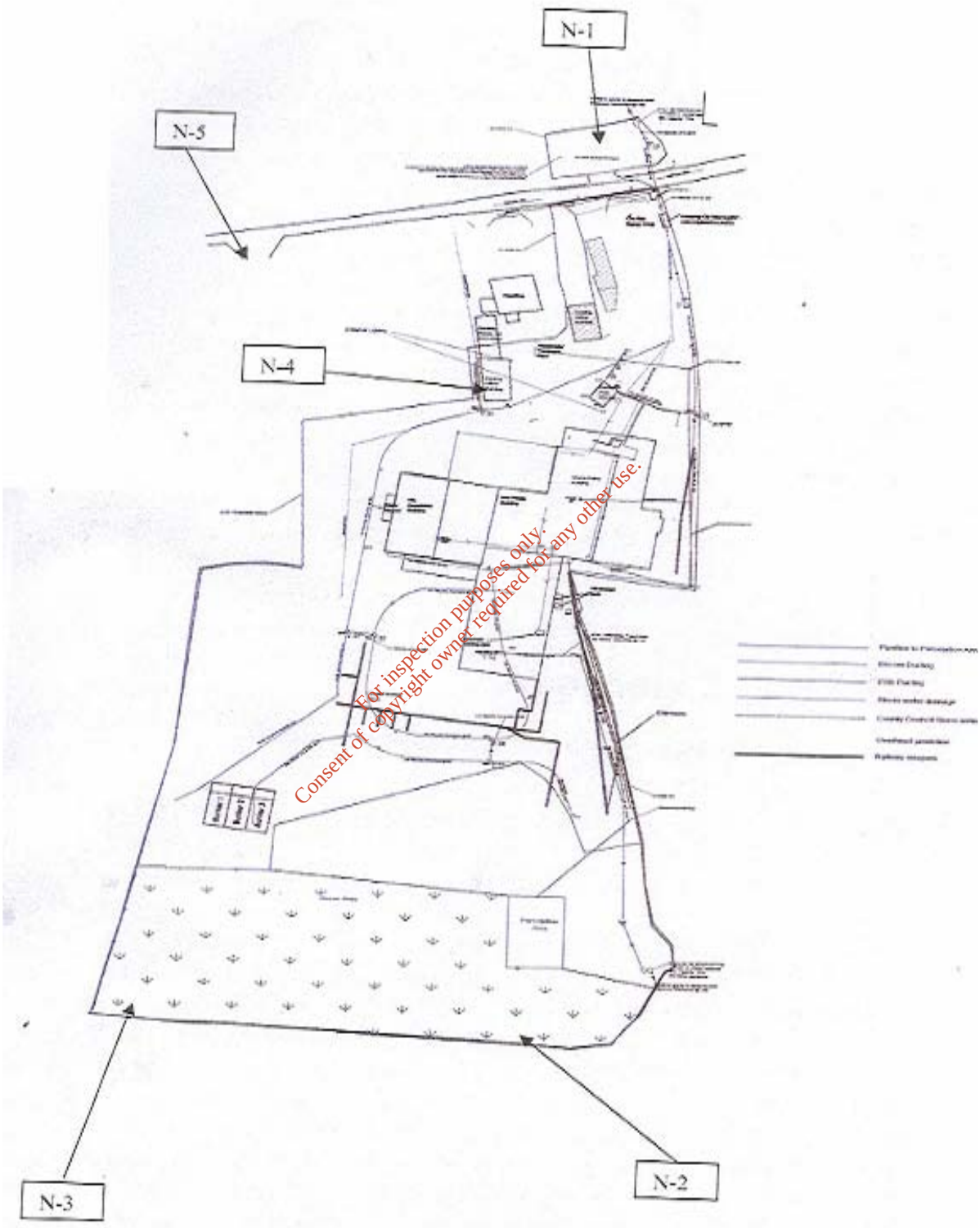
Locations for surface water monitoring



For inspection purposes only.
Consent of copyright owner required for any other use.

EPA Export 26-07-2013:03:29:49

Location for Noise Monitoring



For inspection purposes only.
Consent of copyright owner required for any other use.

EPA Export 26-07-2013:03:29:49

CIR20-123

REV: 01

Environmental Reporting Procedure CIR20-123

Clean (Irl.)Refuse & Recycling Co. Ltd
Ballinagun West
Cree
Kilrush
Co. Clare

Tel: (065) 9059092
Email: cleanirl@iol.ie
Web: www.cleanirl.com

For inspection purposes only.
Consent of copyright owner required for any other use.

Originator …….

Signed of by …….

Date Released……

EPA Export 26-07-2013:03:29:49

Purpose

Complaint and Environmental Reporting

Scope

Monitoring Results, Public Complaints and Environmental Incidents

Reason for Issue

First Release

Responsibility

Environmental Officer/Operations Manager/Transport Manager/Yard Supervisors

For inspection purposes only.
Consent of copyright owner required for any other use.

EPA Export 26-07-2013:03:29:49

1.0 Environmental Pollution

If any event shall occur with the potential for environmental pollution it shall be immediately brought to the attention of the Environmental Officer/Facilities Manager/Transport Manager.

1. Any event with the potential for environmental pollution upon reporting to the Environmental Officer/Facilities Manager/Transport Manager is instantly reported to Clare County Council.

2. Environmental issues are logged in the **Complaints/Environmental Issues Log**.

3. The issue is investigated thoroughly.
    - Notice of Environmental incident CIR20-102-1
    - Environmental Incident Investigation Form CIR20-102-2

4. All information pertaining to an issue is clearly noted and corrective action taken.

5. The Environmental Officer periodically runs checks for potential issues.

6. It is the responsibility of the Environmental Officer to investigate/report/close down any environmental issues.

For inspection purposes only.
Consent of copyright owner required for any other use.

1.1 Reporting Environmental Pollution to Clare County Council

Clean Ireland Recycling shall immediately notify the Staff Officer, Waste Enforcement Unit, Clare County Council by telephone/fax of any incident which occurs as a result of the activity on the site, and which:

- Has the potential for environmental contamination of surface water or ground water, or
- Poses an environmental threat to air or land, or
- Requires an emergency response by the Council.

Full details shall be forwarded in writing on the next working day.
Clean Ireland Recycling will include the following as part of the notification:

- The date and time of the incident,
- Details of the incident and circumstances giving rise to it,
- An evaluation of environmental pollution caused, if any,
- Actions taken to minimise the effect on the environment,
- Steps taken to avoid reoccurrence,
- Any other remedial action taken.
- The permit holder shall make a record of any such incident in a register to be maintained on the site.

EPA Export 26-07-2013:03:29:49

2.0 Complaints

1. All Complaints are logged in our **Complaints/Environmental Issue Log.**

2. In the event of a Complaint the Environmental Officer/Facilities Manager/Transport Manager is notified.

3. All information pertaining to a complaint is clearly noted and corrective action taken.
   - Notice of Complaints CIR 20-102-3
   - Complaints investigation Form CIR 20 -102-4

4. The Environmental Officer/Facilities Manager/Transport Manager periodically runs checks for potential issues.

5. Clean Ireland Recycling will maintain on the site a register of all complaints received relating to the operation of the activity. Each such record should give details of the following:
   - Time and date of the complaint.
   - The name of the complainant.
   - Details of the nature of the complaint.
   - Actions taken to deal with the complaint, and the results of such actions.
   - The response made to each complainant.

5. It is the responsibility of the Environmental Officer to investigate/report/close down any complaints.

Consent of copyright owner required for any other use.
For inspection purposes only.

2.1 Reporting Complaints to Clare County Council

After the receipt of a complaint, Clare County Council shall be notified in writing as soon as possible and in any event not later than the next working day.

3.0 Reporting Annual Environmental Report

Before February 28th of each calendar year, Clean Ireland Recycling will submit to the Environment Section, Clare County Council, an Annual Environmental Report (AER) for the preceding calendar year. The AER will include the following detailed information:

- A summary of compliance with all the conditions attached to the permit.
- The management & staffing structure of the site
- Details of any impositions or convictions as outlined in the permit conditions, herein
- Quantity, type and composition of all wastes accepted at the site during the year

EPA Export 26-07-2013:03:29:49

- Final destination and method of treatment of waste
- Fluid storage bunds integrity results and inspection reports
- Monitoring results, as appropriate
- Details of any loads rejected at the site during the year
- Reportable incidents
- Corrective action procedures
- A schedule of environmental objectives & targets
- Resource & energy consumption summary
- Development works undertaken during the reporting period
- Details of the communications programme for the public, including all complaints
- Awareness and training programme
- Risk assessment, including fire.
- Any other items specified from time to time by the council.

4.0 Monitoring and Report Results

Clean Ireland Recycling will carry out surface water monitoring at locations and frequencies as set out in permit conditions.

The water monitoring will be carried out by a competent laboratory using standard and internationally accepted procedures.

Copies of results of all monitoring, along with details of any necessary corrective actions shall be forwarded to Clare County Council as soon as such results become available.

For inspection purposes only.
Consent of copyright owner required for any other use.

5.0 Contact Numbers for Reporting Incidents/Complaints etc.

Clare County Council

7. Clare County Council, Environmental Department – 065 6821616

Hospitals

8. 999 or 112
9. Ennis General Hospital – 065 6821414 065 6863100
10. Regional Hospital Limerick – 061 301111
11. Maternity, Limerick- 061327455
12. University Hospital Galway – 091 580580

Gardai

13. 999 or 112
14. Gardai Station Kilrush - 065 9080550
15. Gardai Station Ennis - 065 6848100

Fire Brigade Station

- 999 or 112

16. Fire Brigade Station Ennis Co. Clare– 065 6846302

EPA Export 26-07-2013:03:29:49

CIR20 - 125

REV: 01

Objectives and Targets Procedure CIR20-125

Clean (Irl.)Refuse & Recycling Co. Ltd

Ballinagun West

Cree

Kilrush

Co. Clare

Tel: (065) 9059092

Email: cleanirl@iol.ie

Web: www.cleanirl.com

Consent of copyright owner required for any other use.
For inspection purposes only.

Originator …….

Signed of by …….

Date Released……

EPA Export 26-07-2013:03:29:49

Purpose

The following procedure provides guidance for the development and review of objectives and targets for Clean Ireland Recycling.

Scope

All documentation processed by Clean (Irl.) Refuse and Recycling Co Ltd.

Reason for Issue

First Release

Responsibility

Environemtal Officer & Operations Manager

For inspection purposes only.
Consent of copyright owner required for any other use.

EPA Export 26-07-2013:03:29:49

1.0 Procedure

1.1 Clean Ireland Recycling will establish and/or revise an objectives and targets list annually, by February 27th of each year, by considering at least the following information:

- Legal and other requirements
- Significant environmental aspects and impacts for the current year
- Prevention of pollution
- Technological options
- Financial, operational, and business requirements
- Clean Ireland Recycling environmental policy
- Views of interested parties – Management Review Board quarterly reports and External communication log books
- Progress reports on the previous years objectives and targets

1.2 Objectives and targets may also be amended at other times during the year as a result of new or revised operations, activities, and/or regulations.

1.3 When there are projects that relate to new developments and new or modified activities, products or services, the program shall be amended where relevant to ensure that environmental management applies to such projects.

1.4 Objectives and Targets may be removed from a current list by the directors if circumstances surrounding an objective and target change during the year.

1.4.1 This removal shall take place following a review of its technological and/or economical feasibility

1.5 Each Objective and Target will be assigned a unique program ID number.

1.5.1 This program shall include:

1.5.1.1 Designation of responsibility for achieving the objectives and targets at each level of company;

1.5.1.2 Means and time-frame by which they are to be achieved.

For inspection purposes only.
Consent of copyright owner required for any other use.

EPA Export 26-07-2013:03:29:50

1.6 The Objective and Target Improvements must be approved by the directors of the company and budgeting provisions made, where necessary, to accomplish the stated objectives and targets.

1.7 The Environmental Officer is responsible for their maintenance and facilitating their reporting to the directors.

Table 1: Showing the objectives and Targets as set by Clean Ireland Recycling

TASK	OBJECTIVES	TARGETS
Pay by weight system	We will introduce a 'pay by weight' system in all our collections areas	Completed
Separate recycling collection	Issue a separate recycling bin to all our customers which, will improve recycling and give our customers the opportunity to reduce, reuse and recycle.	Completed
Separate commercial & recycling collections	To improve the quality of the recyclable material by removing commercial contaminants	Collection 35% complete
Separate collection of compostable material from commercial premises	To separately collect compostable material from commercial premises During 2007 compost bin were put in place in several commercial premises. A sealed water tight collection unit was purchased for the collection of organic waste Management	10% complete

Consent of copyright owner required for any other use. For inspection purposes only.

EPA Export 26-07-2013:03:29:50

To improve and upgrade our plant (picking line) to segregate the recyclables fractions more efficiently. Install a PPK(cardboard separator) that will remove bulky cardboard going through the dry recyclable process	To improve the quality of the recyclable streams. We would hope to have segregated recycling streams i.e. Paper Packaging, Plastic Packaging, Cardboard Packaging, Metallic Packaging, Glass Packaging.	92% Complete ` 85% Complete
Recycling of Timber	To install a timber shredder that will recycle all waste timber. Wood chip can be used for home heating also for animal bedding	95% Complete
Install a new plastic bottle line	Installed a new plastic bottles line that will improve the quality of the recyclable product.	10% Complete
Bring up to date schools within our collection area, regarding recycling and future trends. To introduce and inform schools regarding the process of recycling to schools within our collection area Commencing 2005 Completion 2008 Approx four schools visited during 2007 also approximately three schools visited our site to view the facility		
To implement a wood chip burner	To reduce our dependence on fossil fuels for heating offices and showers	55 % Complete
Electricity versus generator power	To investigate the impact of using a generator versus the use of electricity on the environment	4% Complete

Consent of copyright owner required for any other use.
For inspection purposes only.

EPA Export 26-07-2013:03:29:50

Biofuel	To investigate the possibility of converting all collection vehicles to biofuel. Working in conjunction with Eco Fuel Killarney on this matter One vehicle has been purchased that can run on biofuel with a view to purchase all vehicles that can run on biofuel	5% Complete
Environmental Management System	To implement an EMS to 1SO14001 standards	Started creating procedures in 2007 that will be used as part of our EMS system 10% Complete
Water Usage	To review our water usage on site with a view to reducing water usage for both the facility and toilets etc Tank in place at side of shed that can store water and be used as required for the facility In the next year hope to install a tank that will store water for use in toilets etc.	7% Complete

Consent of copyright owner required for any other use.
For inspection purposes only.

EPA Export 26-07-2013:03:29:50

CIR20 - 126

REV: 01

Operation and Maintenance of bypass separators CIR-126

Clean (Irl.)Refuse & Recycling Co. Ltd

Ballinagun West

Cree

Kilrush

Co. Clare

Tel: (065) 9059092

Email: cleanirl@iol.ie

Web: www.cleanirl.com

Consent of copyright owner required for any other use.
For inspection purposes only.

Originator …….

Signed of by …….

Date Released……

EPA Export 26-07-2013:03:29:50

Purpose

To ensure that maintenance of the bypass separators is carried out as required.

Scope

All documentation processed by Clean (Irl.) Refuse and Recycling Co Ltd.

Reason for Issue

First Release

Responsibility

Operations Manager/ Environmental Officer

For inspection purposes only.
Consent of copyright owner required for any other use.

ISSUE	REV	TITLE	PREARED BY	PAGE
01	01	Operation and Maintenance of bypass separators	Clean Ireland Safety Management	1 of 3

EPA Export 26-07-2013:03:29:50

Operation

- The two new units installed are NSB-D bypass separators. The model number of each installed is NSB-D 8 and NSB-D 24. The prefix denotes the flow rate at which the separator operates for example the NSB-D 8 will treat a flow rate of 8 litres per second.

- If the flow rate is greater than this, then the excess flow will bypass the main treatment chamber. A NSB-D 8 unit will work in bypass mode over 8 and up to 80 litres per second. During a storm the rain falls and flushes any oil, silt into the tank. This first flush up to the maximum rated flow is fully treated. As the severity of the storm increases so does the rate of flow increases. The liquid entering the separator after the first flush tends to be cleaner and so, in lower risk applications, is allowed to bypass the oil separation chamber for directly discharge. This ensures that excess flows will not cause "wash out" of stored pollutants.

- The first chamber will accumulate silt and grit. The maximum volume that can be retained is the rating x 100 e.g. a NSB-D 8 is capable of holding 800 litres of silt and the NSB-D 24 is capable of holding 2400 litres of silt.

- The second / separating chamber is sized to separate oil at a rated flow rate and to accumulate the required oil storage volume. A NSB-D 8 maximum oil storage volume is 120 litres whereas the maximum oil storage volume for the NSB-D 24 is 360 litres of oil.

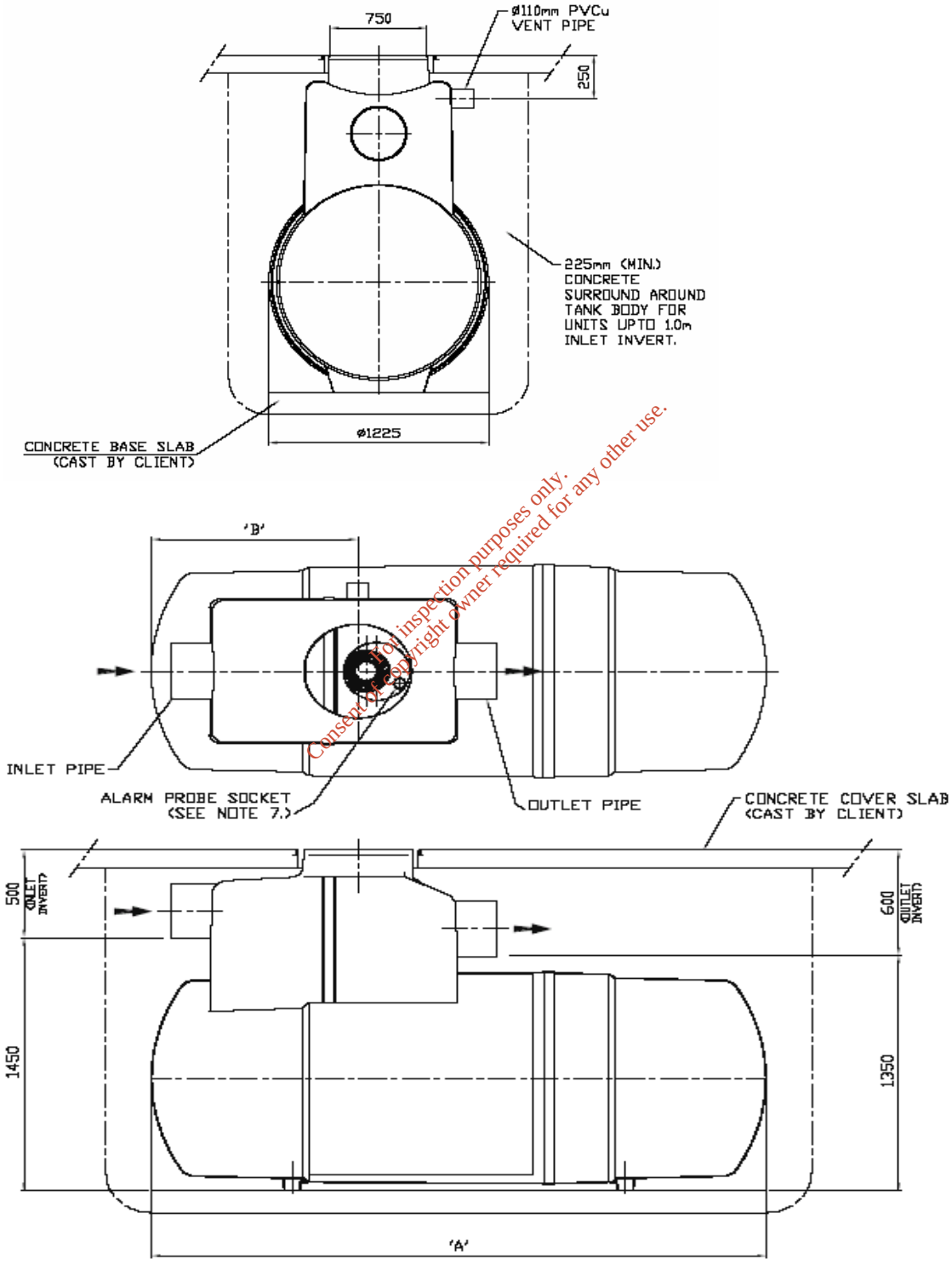
- The separation chamber retains the lighter than water pollutants, oils and petrol, which rise to the surface of the chamber. These pollutants are stored within the separator. The separated water discharges from the unit by gravity

Consent of copyright owner required for any other use.
For inspection purposes only.

EPA Export 26-07-2013:03:29:50

Specifications

NSB-D 8



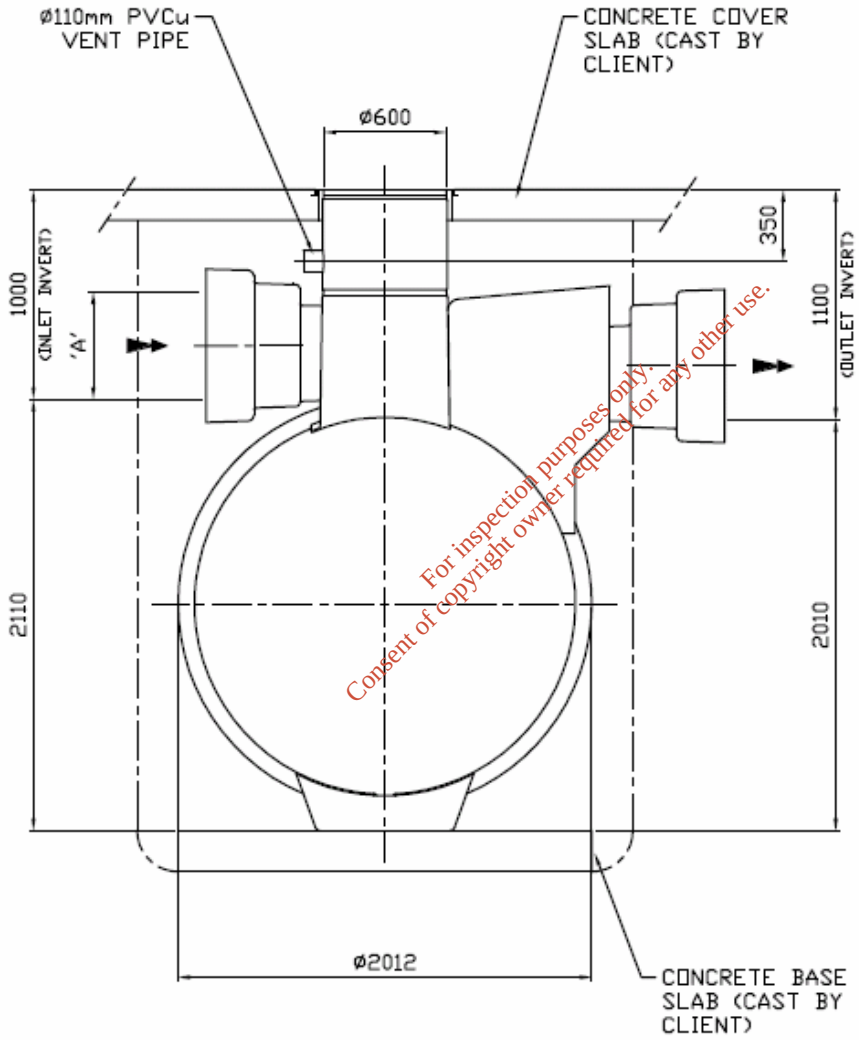
Consent of copyright owner required for any other use.
For inspection purposes only.

EPA Export 26-07-2013:03:29:50

Dimensions of NSB-D 008

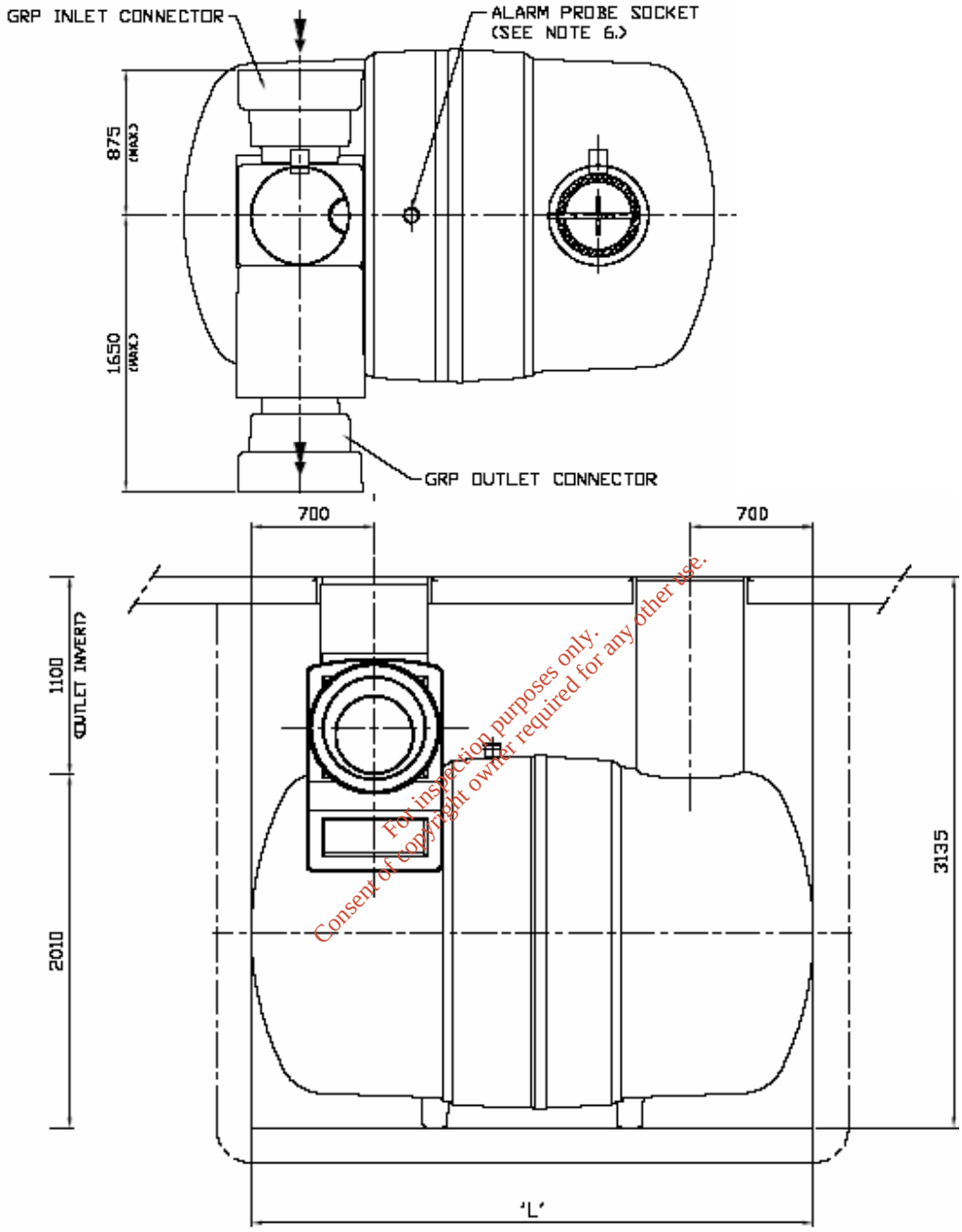
Unit ref No	Nominal Flow	Dia 'A'	Dim 'B'	Standard Pipe Diameter	Approx empty Weight (kg)
NSBD 008	8 l/s	3065	1560	250	210

NSB-D 24



For inspection purposes only.
Consent of copyright owner required for any other use.

EPA Export 26-07-2013:03:29:50



For inspection purposes only.
Consent of copyright owner required for any other use.

Dimensions of NSB-D 024

Unit ref No	Nominal Flow	Standard Pipe 'A'	Diameter Length 'L'	Approx empty Weight (kg)
NSBD 024	24 l/s	375	3200	740

EPA Export 26-07-2013:03:29:50

Maintenance

Waste removal and servicing

- Separated light liquid must be removed from separator when the oil capacity has been reached.
- Separators should be inspected at least every six months or more frequently if experience dictates.
- A log should be maintained detailing the depth of oil found, any oil removed and any silt removal or cleaning carried out.
- A log is included at the end of this procedure.
- Separator waste is a 'special waste' under the terms of The Waste Management Code of Practice. The code imposes a duty of care on Clean Ireland Recycling to ensure that the Cleansing contractor is registered with the Environment Agency and that the final disposal is to a licensed facility.

For inspection purposes only.
Consent of copyright owner required for any other use.

Waste Removal Procedure- Oil & Silt

- Oil can only be effectively removed when there is no flow entering the unit.
- Isolate the unit and prevent flow from entering.
- Always remove the oil before attempting to remove coalescer. If this is not done, when the coalescer is withdrawn the oil can coat the media surface and when replaced the oil may be forced through the media, contaminating the effluent
- Remove the access cover and lower the desludging hose into the separation chamber. Draw off the surface oil.
- If removing the silt, lower the desludge hose to the base of the tank and empty the contents of the chamber. Ensure that you access and clean both compartments
- Consider the period of time that the coalescer has been installed and consider removing and inspecting (cleaning or replacing) the coalescer media. If removed, ensure that it is correctly replaced and secured into position. Re place the access covers. It is best to lower the water level to aid re-fitting.
- Re-fill the separator with clean water up to the outlet level.

EPA Export 26-07-2013:03:29:50

Clean Ireland Recycling

Separator Maintenance Log

Separator Location	Located in car park beside shed and near boundary ditch
Type of separator	NSB-D-008
Nominal Flow	8 l/s
Total capacity	800 litres silt. 120 litres oil

For inspection purposes only.
Consent of copyright owner required for any other use.

Inspection/ Maintenance Date	Comments	Waste Volumes Removed (if appropriate)

EPA Export 26-07-2013:03:29:50

Clean Ireland Recycling

Separator Maintenance Log

Separator Location	Located south eastern corner of site near boundary ditch
Type of separator	NSB-D-024
Nominal Flow	24 l/s
Total capacity	2400 litres silt. 360 litres oil

For inspection purposes only.
Consent of copyright owner required for any other use.

Inspection/ Maintenance Date	Comments	Waste Volumes Removed (if appropriate)

EPA Export 26-07-2013:03:29:50

For inspection purposes only.
Consent of copyright owner required for any other use.

EPA Export 26-07-2013:03:29:50

CIR20- 127

REV: 02

Procedure outlining process involved in the sorting of skip waste
CIR20-127

Clean (Irl.)Refuse & Recycling Co. Ltd

Ballinagun West

Cree

Kilrush

Co. Clare

Tel: (065) 9059092

Email: cleanirl@iol.ie

Web: www.cleanirl.com

Consent of copyright owner required for any other use.
For inspection purposes only.

Originator …….

Signed of by …….

Date Released……

EPA Export 26-07-2013:03:29:50

Purpose

To ensure that every employee know the procedure involved in the sorting of skip waste

Scope

All documentation processed by Clean (Irl.) Refuse and Recycling Co Ltd.

Reason for Issue

Second release

Responsibility

Yard Manager – P. Hedigan

Reference

Health and Safety Manual. Clean (Irl) Refuse & Recycling Co. Ltd. Cree, Kilrush, Co. Clare.

Weigh Bridge Activities CIR20-101

Template Procedure CIR50-100

For inspection purposes only.
Consent of copyright owner required for any other use.

EPA Export 26-07-2013:03:29:50

Tipping Procedure for Drop Down Skips

- The driver of the drop down skip lorry proceeds through the Clean (Irl.) Refuse and Recycling Co Ltd. road barrier once dockets have been handed in to the Clean (Irl) Refuse and Recycling Co Ltd. staff member at the Gate office.

- Staff members shall then follow the agreed procedure as indicated in Weigh Bridge Activities CIR20-101

- Once the drop down skip lorry has been weighed it shall then be directed to the skip shed by the Yard Marshall.

- A tipping marshal has been appointed to direct the drop down skip lorry safely through the yard to the shed.

- A drop down skip lorry should never reverse into the yard or shed area unless a tipping marshal/Yard marshal is available to safely direct the drop down skip lorry.

- If no tipping marshal is available, the lorry driver must wait until a tipping marshal is available.

- Once a tipping marshal is available the drop down lorry may reverse into the yard and appropriate shed.

- It is the responsibility of the tipping marshal to ensure that;

    - Both the yard safety chain and shed safety chains are not causing an obstruction and are correctly stored to one side.

    - The shed door is completely open.

    - Make certain there is adequate space available for contents of the tipping lorry.

    - No other persons are present on the ground floor of the shed

    - If other persons must be on the ground floor, they must be made aware of the refuse lorry presence.

    - Ensure that the correct personnel protective equipment is worn
        - Safety hat
        - Goggles
        - Mask
        - Reflective jacket
        - Safety boots

    - No other machines should be active in the vicinity of the shed/ yard while a drop down skip lorry is present within those areas.

For inspection purposes only.
Consent of copyright owner required for any other use.

EPA Export 26-07-2013:03:29:50

- Once the lorry has successfully entered the designated shed and has got the all-clear from the Tipping Marshal the drop down skip lorry driver drops the skip onto the shed floor so as to facilitate netting removal.

- The driver shall remove the netting, all drivers must be wearing the appropriate personnel protective equipment, this includes;
    - safety hat
    - reflective jacket
    - safety boots
    - safety mask/goggles when necessary

- The lorry driver should store the netting in its designated area once the netting has been carefully removed.

- The tipping marshal will ensure that no other persons are within the door swinging space as the drop down skip door is opened or closed.

- Where there is a skip bag inside the skip for gypsum based products this must be carefully removed first and weighted separately.

- The drop down back-door is then carefully opened and secured properly to ensure that the door will not swing forward during tipping.

- The drop down skip lorry driver then proceeds to pick up the skip once the all-clear has been received from the tipping marshal.

- The tipping/yard marshal shall then direct the lorry to an appropriate area for tipping.

- The drop down skip lorry driver may begin tipping once the driver has received the go-ahead from the tipping/yard marshal.

- The tipping marshal/driver must be vigilant for material which may shatter/spray while being tipped from the drop down skip lorry.

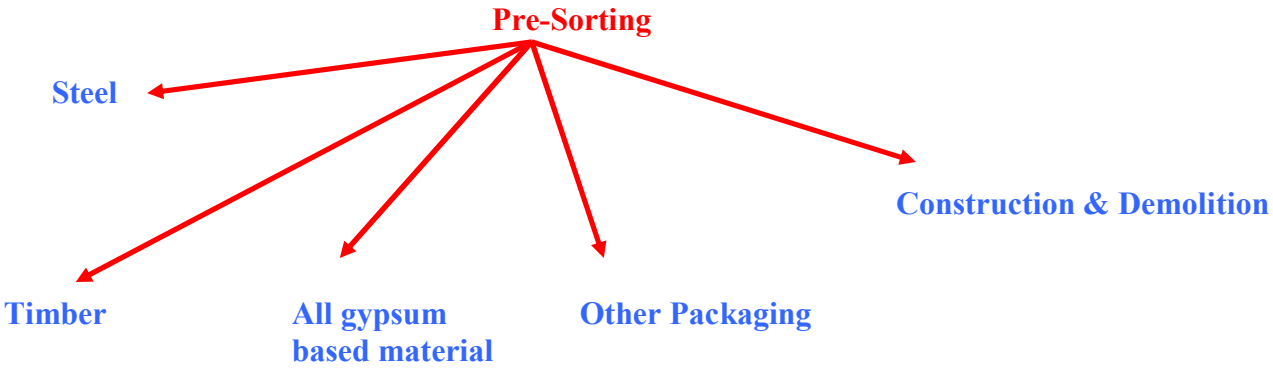
- Once tipping is completed and the skip is in its original flat position the skip doors must be closed securely before moving out of the shed.

- The material that has been emptied is inspected by the tipping marshal/yard marshal

- Once the material has passed the inspection it is then separated and goes through the following procedure.

For inspection purposes only.
Consent of copyright owner required for any other use.

EPA Export 26-07-2013:03:29:50



Skip Sorting Process flow diagram

Skip emptied in shed

↓ Skip visually inspected

Mechanically pre-sorted

↓

Manual pre sorted

For inspection purposes only.
Consent of copyright owner required for any other use.

Copper	Other packaging	Gypsum(removed from skip prior to tipping)	Timber *	Metals *	Construction & Demolition Waste *
Recycling	Recycling	Recycling	Recycling	Recycling	Recycling

* See below for further description of the final stages involved for each product.

Each material is stored in a designated area, for further transfer or bailing.

EPA Export 26-07-2013:03:29:50

The metal is graded by quality it is subsequently baled or stored in containers before being sent off site for recycling.

The gypsum is then stored prior to be transported off site for recycling to a licensed facility.

For inspection purposes only.
Consent of copyright owner required for any other use.

EPA Export 26-07-2013:03:29:50

The timber then goes through the following process:

Any contaminated timber is removed and forwarded to landfill any remaining timber goes through the process below. Any remaining wood waste received and identified for recycling, regardless of its final destination has to be broken down to smaller particles. The final product is ideal for use as a boiler fuel woodchip, home heating and in certain cases as animal bedding. To achieve a timber shredder is employed.
The three-stage process includes shredding, screening and metal extraction to produce a high quality woodchip, which meets the exacting standards demanded by customers.

Shredding

The first step in the process is to remove any contamination that would be included with the timber. This involves manually sorting through material and the removal of inappropriate material. Following this process the timber is fed into an infeed hopper using a komatsu rubber duck. The infeed hopper directs material into a cutting chamber, which consists of slow moving rotor cutting blades which grind the material to a wood chip consistency.

For inspection purposes only.
Consent of copyright owner required for any other use.

Screening

The screening process involves a heavy duty "sizing device" which is mounted below the cutting chamber which allows shredded material to pass through it if material is below a certain dimension. Oversized material is re-circulated back to the cutting chamber for further processing.

Metals Extraction

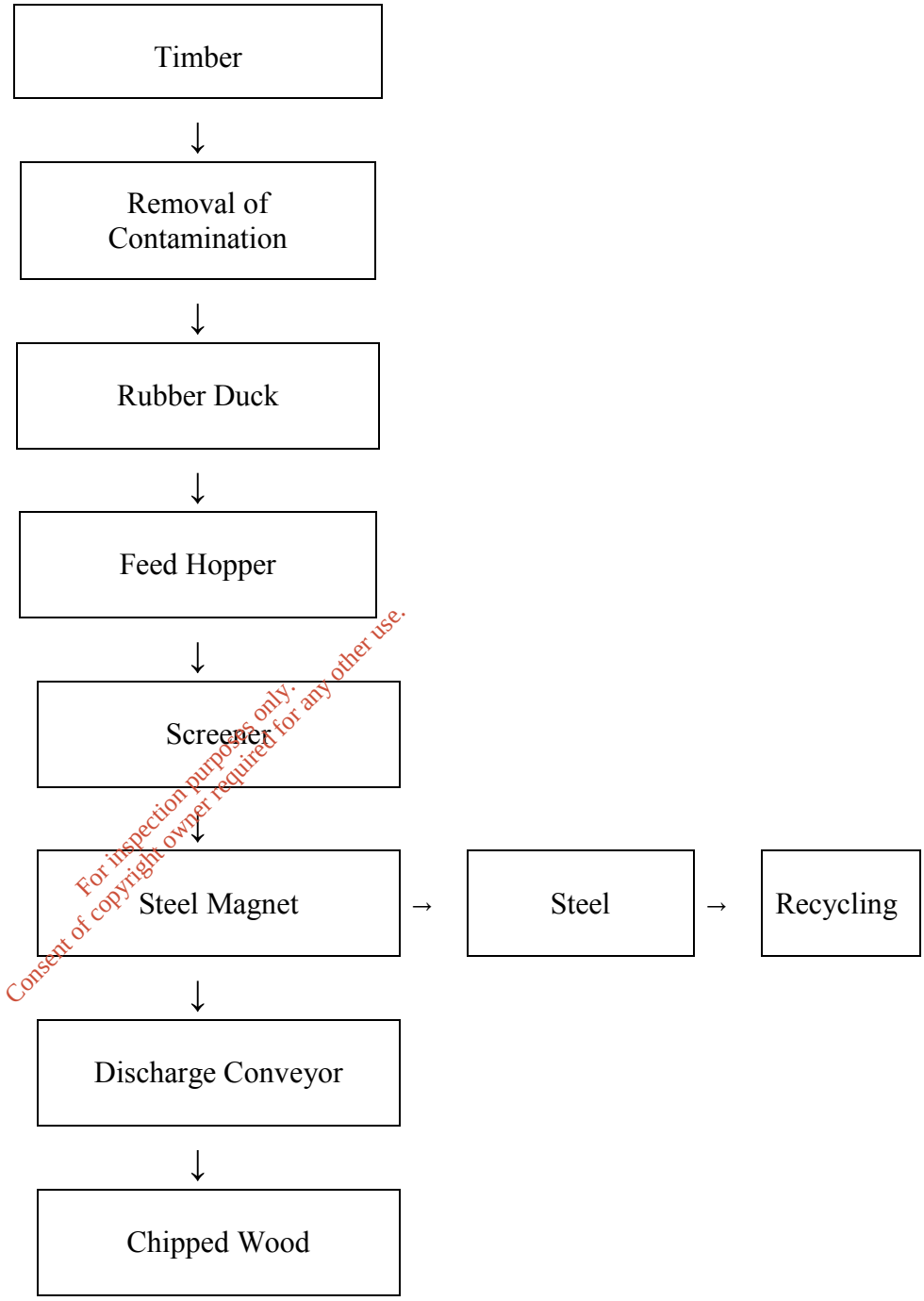
The wood chip material, then moves onto a moving conveyor belt. A magnet supported over the conveyor removes ferrous contaminants such as nails and hinges from the wood chip.

Discharge Conveyor

The discharge conveyor directs processed material falling out of the cutting chamber into containers.

EPA Export 26-07-2013:03:29:50

Timber Shredder Process



For inspection purposes only.
Consent of copyright owner required for any other use.

The Construction and Demolition goes through the following process

EPA Export 26-07-2013:03:29:50

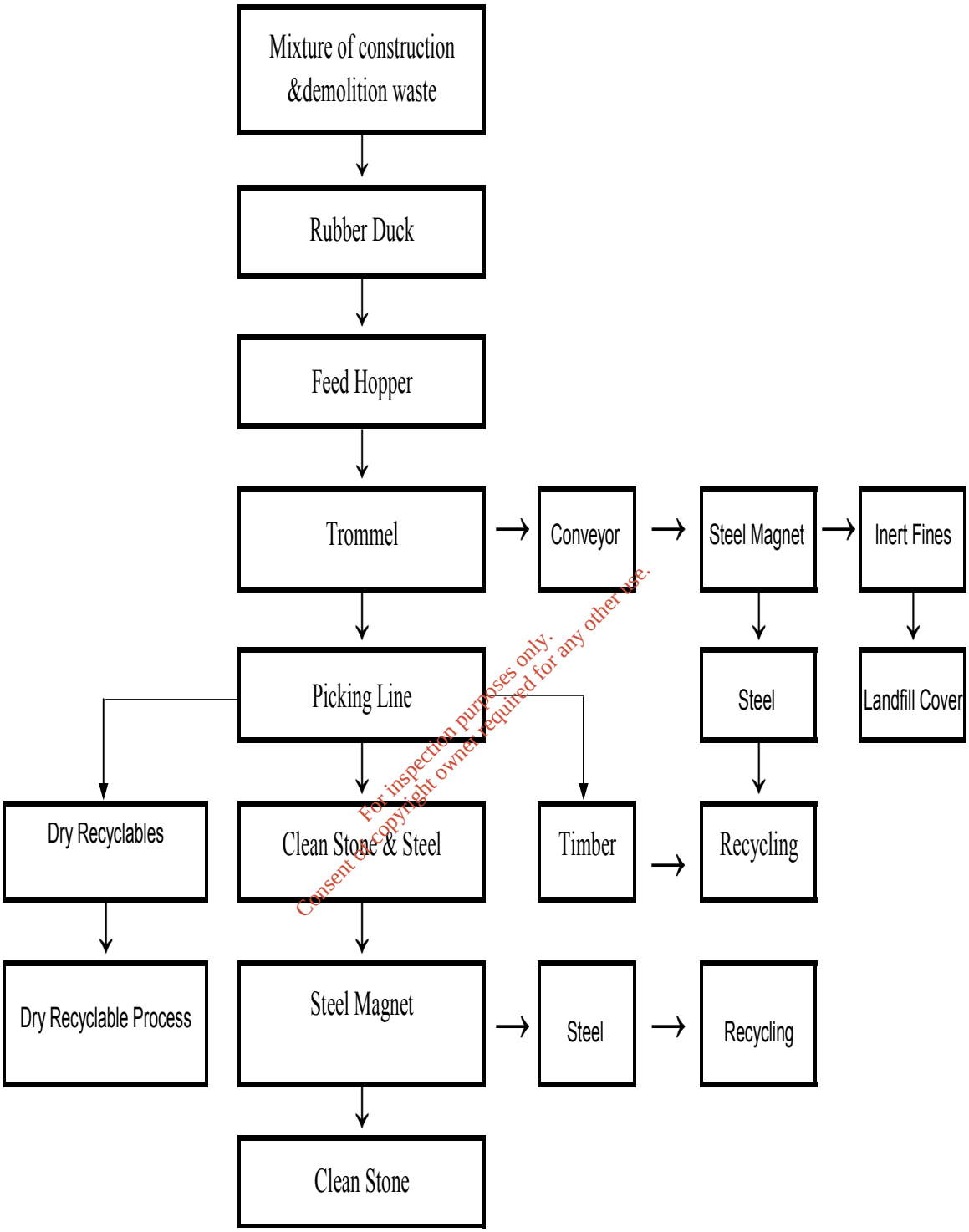
All skip waste received on site is first sorted into various products as outlined in the skip sorting process. The mixture of construction and demolition waste that is manually separated from this process is first loaded into the feed hopper by the means of a rubber duck excluding contamination i.e. gypsum based material. The next step in the process is the rotating trommel which has 40mm openings. These openings allowed material fall through onto a conveyor. This material which can also consist of steel nails then passes under a steel magnet where the nails are removed. The end product from this line is inert fines which are then stored on site before being transported off-site for use as landfill cover.

The material that does not fall through the openings is transported by a conveyor to a picking station where the material is manually sorted. The products removed at this stage are dry recyclables and timber. The dry recyclables that are removed at this stage go through the dry recyclable process and the timber removed is wood chipped. The remaining material then passes under another steel magnet any remaining nails or metal is removed. The end product that is achieved from the process is clean stone.

For inspection purposes only.
Consent of copyright owner required for any other use.

Construction and Demolition Flow Diagram Process

EPA Export 26-07-2013:03:29:50



For inspection purposes only.
Consent of copyright owner required for any other use.

End Product: Clean Stone

EPA Export 26-07-2013:03:29:50

CIR20 - 129

REV: 01

Biostabilisation Plant
Leachate Management Plan
CIR20-129

Clean (Irl.)Refuse & Recycling Co. Ltd

Ballinagun West

Cree

Kilrush

Co. Clare

Tel: (065) 9059092

Email: cleanirl@iol.ie

Web: www.cleanirl.com

Consent of copyright owner required for any other use. For inspection purposes only.

Originator …….

Signed of by …….

Date Released……

EPA Export 26-07-2013:03:29:50

Purpose

Outline Leachate Management Plan for the Biostabilisation Plant

Scope

Biostabilisation Plant

Reason For Issue

First Release

Responsibility

Operational Director

For inspection purposes only.
Consent of copyright owner required for any other use.

EPA Export 26-07-2013:03:29:50

A wide range of effluents can be produced by a composting facility, while some are potentially polluting, all can be reused in the composting process during the feedstock preparation stage or be used to maintain moisture levels in the composting biomass in the curing building. While some effluents can be collected and treated or reused together, others must be collected separately. They include:

(1) Raw waste leachate from the tipping building
(2) Tunnel leachate and condensate
(3) Aerated static pile composting leachate and condensate
(5) Storm water run-off from traffic surfaces
(6) Clean storm water from roofs

Raw waste leachate from the tipping building
Liquids or moisture from raw waste can be generated from the tipping, storage, handling and mixing of the incoming waste from the waste itself or from cleaning activities within the tipping building. As all these flows are generated within the compost tipping and reception building, they can be captured in a dedicated catchment system and directed to a leachate collection tank. The concrete floor of the tipping buildings would be graded to catch basins so that any liquids within these buildings can be captured and directed via underground piping to a leachate collection tank in the tipping building.

Tunnel leachate and condensate
The in-vessel tunnel composting system is designed to contain, collect and control leachate. The below grade aeration system doubles as a liquid collection system for leachate from composting piles and for condensate that forms when hot moist process air comes into contact with cooler aeration piping. Since materials are contained within sealed concrete tunnels, any leachate that is generated during the composting process drops into the grates, slats or channels of the aeration system where it drops into a sump before the air is drawn into the blowers. From the sump, the liquids are directed to a drainage line that feeds into a concrete leachate holding tank and combined with raw waste leachate from the tipping building.

For inspection purposes only.
Consent of copyright owner required for any other use.

ASP and finished compost leachate and condensate
Similar to the tunnels, the aerated static pile composting system can generate a weaker leachate that is free of pathogens (having been pasteurised within the tunnels) and condensate that can be collected through the aeration system, dropped into a sump and discharged into a dedicated concrete tank in the curing building.

Storm water run-off from traffic surfaces
The traffic surfaces can become potentially contaminated with soil and debris. Consequently, resultant rainfall onto these surfaces can pick up this material as it travels to catch basins on site. To reduce potential debris from spreading out of the bio-stabilisation tipping and mixing building, the proposed facility will allow delivery vehicles to tip materials from outside the building and into bunkers housed below inside the building.

EPA Export 26-07-2013:03:29:50

Clean storm water from roofs
The clean water from building roofs would be collected and combined with treated storm water from traffic surfaces prior to release to the environment.

Reuse and Treatment of Effluents

The leachate from the tipping floors and tunnels needs to be isolated as it tends to be of high strength (nutrients) and can potentially have high concentrations of pathogens. It is however possible that a high proportion of this material can be reused within the initial mixing stage in the event that the incoming blend of materials has insufficient moisture (< 60%). The excess leachate that cannot be reused in this fashion would be pumped into a tanker and transferred to a waste water treatment plant as needed for disposal and treatment. Because leachate from the tipping area and composting tunnels are captured and collected, it will not penetrate into the ground and affect ground water or be carried away with surface water and pollute nearby water courses.

In the curing building, actively aerated compost has a high moisture demand as the air passing through the compost piles become humidified and this moisture is then lost to the atmosphere. As a result, the net moisture content of the compost can fall by as much as 10% in a two week period. Consequently, aerated composting systems can consume between 0-200 litres of water for every tonne of feedstock material processed by the facility depending on the technology chosen and how the plant is operated. Therefore, a 15,000 tonne per annum plant could have a water demand of up to 3,000 m^3 per year. Clearly, meeting this demand from drinking water supplies would be wasteful and costly. However, it is intended that much of this water can be derived from a combination of on-site water sources including liquids collected from the curing building and water from building roofs. Roof water will be collected in three water retainers (ca. 30m^3 each). This water then can be used in the curing building as required.

Consent of copyright owner required for any other use.
For inspection purposes only.

EPA Export 26-07-2013:03:29:50

CIR20 - 128

REV: 01

Biostabilisation Plant Operation CIR20-128

Clean (Irl.)Refuse & Recycling Co. Ltd

Ballinagun West

Cree

Kilrush

Co. Clare

Tel: (065) 9059092

Email: cleanirl@iol.ie

Web: www.cleanirl.com

Consent of copyright owner required for any other use. For inspection purposes only.

Originator …….

Signed of by …….

Date Released……

EPA Export 26-07-2013:03:29:50

Purpose

To outline the process for operation of the Biostabilisation Plant

Scope

Biostabilisation Process

Reason For Issue

First Release

Responsibility

Operational Director

For inspection purposes only.
Consent of copyright owner required for any other use.

EPA Export 26-07-2013:03:29:50

1. Waste handling procedure (and #26 Standard operating procedure)

The waste handling and operational procedures for the proposed CIRL bio-stabilisation and pasteurisation treatment process consist of the following steps:

Step 1: Waste Acceptance
Step 2: Material Reception
Step 3: Material Inspection and Decontamination
Step 4: Bulking Material Shredding
Step 5: Feedstock Storage
Step 6: Feedstock Preparation
Step 7: Loading In-Vessel Tunnels
Step 8: In-Vessel Composting
Step 9: Unloading In-Vessel Tunnels
Step 10: Aerated Static Pile Curing
Step 11: Screening
Step 12: Product Testing
Step 13: Blending and Storage
Step 14: Product Distribution
Step 15: Contaminant Disposal

All of these steps are detailed below with pictures and descriptive text.

For inspection purposes only.
Consent of copyright owner required for any other use.

Step 1: Waste Acceptance

Materials will only be accepted at the proposed bio-stabilisation and pasteurisation facility from CIRL's own collection vehicles, known customers, or new customers subject to initial profiling and characterisations of the materials they would like to bring to the proposed site for treatment. This includes laboratory testing of biosolids and sludges for heavy metal content and potentially toxic chemicals. Written records of this off-site investigation will be retained by CIRL for all active customers and for a two year period following termination of customer agreements or feedstoock supply contracts.

Each load arriving at the site will be inspected at the point of entry to the facility, and subject to this inspection, weighed, documented and directed to the tipping and receiving area for the bio-stabilisation and pasteurisation treatment facility. The following records of incoming materials will be kept for each load brought to the site:

- Date
- Name of haulier or customer
- Source of material
- Type of material
- Weight of material

These records will be organised by date, filed, saved and be available for reporting purposes or for inspection by regulatory authorities as required.

EPA Export 26-07-2013:03:29:50

Example of vehicle being weighed in at similar treatment facility

Step 2: Material Reception

After weighing and recording each load, the vehicle will be directed to a specified bay outside the tipping and receiving building. To avoid confusion, these bays will be labelled by number above the bay doors as shown in the picture below so that materials can be tipped in the designated receiving bunker for that particular material, for example, biosolids in bay 1, brown bin materials in bay 2, garden materials in bay 3, etc.

For inspection purposes only.
Consent of copyright owner required for any other use.

Tipping biowaste materials into a reception building through a bay at a similar biological treatment facility.

When the vehicle is in position, the bay door is opened and the truck backs up to the curb so that the load can be tipped inside the building as shown above. As soon as the load is discharged, the truck pulls forward and the rolling door is immediately closed. The advantage of this sort of system is that traffic is minimised inside of the building which improves waste handing efficiencies inside, decreases the potential for accidents and injuries, and keeps the outside road areas clean of debris which in turns reduces the need to clean up surface water runoff from the overall site.

EPA Export 26-07-2013:03:29:51

Since the facility will serve mostly CIRL's collection vehicles, drivers will have the opportunity to inspect materials before they are collected to assure that the load meets the facility's acceptance standards. For other facility users, materials are inspected after they are tipped within the bunkers inside the tipping building to make sure that they comply with facility acceptance standards for type of material, physical contamination, moisture level and foul odours. If the type of source-separated material is not a permitted material, contamination is over 5% by weight, the moisture level is above 90% or the material emits an intensely strong foul putrid odour, the load would be deemed unsuitable for processing. In this case, it would be immediately reloaded into the customer's vehicle and directed to the nearest licensed landfill or disposal facility. In all cases, a record of all inspections of incoming materials will be maintained, including those that are rejected for processing.

Step 3: Material Inspection and Decontamination


For inspection purposes only.
Consent of copyright owner required for any other use.

Manual removal of gross contaminants from residential brown bin collection scheme in Ballinasloe, County Galway.

After unloaded materials pass the initial inspection and are accepted for processing, they are assessed for the needed to remove gross contaminants, such as sacks full of rubbish, large metal items, rocks or bulky non-degradable items (appliances, furniture, toys, tools, etc.). Some materials, by nature, will not required decontamination, such as biosolids from waste water treatment plants or sludges from industrial food processing facilities. Likewise, since mixed waste fines have already been pre-processed by mechanical means to remove large contaminants, they would be ready for composting. However, materials

EPA Export 26-07-2013:03:29:51

such as biowaste from brown bin collections or garden and landscape material from drop-off civic amenity sites may contain some large contaminants that could damage equipment or affect the quality of the final compost product. At this stage, loads of biowaste and drop-off garden materials would be spread out on the floor of the tipping building where gross contaminants would be removed manually as shown in the photo above at County's Galway's pilot brown bin processing site in Ballinasloe.

All contaminants removed would be collected in wheelie bins as shown in the photo above and when full, placed into a skip in the tipping building or wheeled to the adjacent mixed waste processing and transfer station on the CIRL site for eventual disposal.

Step 4: Bulking Material Shredding

For inspection purposes only.
Consent of copyright owner required for any other use.

Top: Typical high speed shredder converting clean timber into wood chips. Above: Clean wood shredding area at CIRL site showing stockpile of processed wood chips. (Please note that a part of this overall planning and licensing application involves placing this whole shredding operation under roof.)

EPA Export 26-07-2013:03:29:51

The CIRL site already contains a material recovery sorting line for select commercial and construction & demolition waste where sand/soil, rocks, metals, cardboard, clean wood and other materials are separated for reuse and recycling. Once the clean timber (painted, coated, laminated or treated wood are *not* considered clean) has been manually segregated from the mixed waste stream, it is taken to the shredding area on the CIRL site for processing by a high-speed shredder. Shown in the pictures above is front-end loader placing clean timber into a high-speed shredder at a material recovery facility in western Ireland. Below that is a picture of the wood shredding area at the CIRL's site showing a stockpile of the clean wood chips. Currently these are sold to a fibre board manufacturer in Ireland, a high specification buyer who demands consistent particle size and cleanliness from its suppliers.

The proposed bio-stabilization and pasteurisation plant will require this type of bulking material for inclusion in feedstock mixes. The wood chips provide some moisture absorbing qualities, but more importantly, they are needed for their structural properties, providing adequate porosity or air space within the blended feedstock mixes in order to facilitate subsequent air flow through the composting mass. A portion of the wood chips produced by CIRL would be diverted to the bio-stabilisation and pasteurisation facility. A front end loader would be used to transfer wood chips from the stockpile by the shredding equipment and take it into the tipping and receiving area of the bio-stabilisation and pasteurisation facility as needed, making sure that the storage bunker in the tipping building is adequately full of chips and readily available for blending purposes on a daily basis.

For inspection purposes only.
Consent of copyright owner required for any other use.

This same wood processing equipment can be used to shred brushy drop-off garden and landscape materials as well. These, of course, would be processed separately from the clean wood so the wood chips that are sent to the fibre board manufacturer are not contaminated with shredded landscape materials. Once processed, a front-end loader would immediately transfer the shredded landscape materials to the tipping and receiving building and placed into a storage bunker inside.

Step 5: Feedstock Storage

The tipping and receiving building would contain six feedstock storage bunkers for the following materials:

- Biosolids from waste water treatment plants and sludges from food processing facilities.
- Structural bulking materials: shredded wood and brushy landscape materials
- Moisture absorbing bulking materials, such as: leaves, sawdust, wheat chafe, shredded paper
- Biowaste from brown bin kerbside collection routes
- Biowaste from brown bin collection or other source separated feedstock materials, such as drop-off garden and landscape materials
- Two feedstock storage bunkers for mixed waste

EPA Export 26-07-2013:03:29:51

Clean Ireland's existing mixed waste processing equipment will be moved into the tipping building of the biostabilisation facility to extract organic rich fines from commercial and residential mixed waste. The fines will be blended with bulking materials and placed into the proposed facility's tunnels for biostabilisation and pasteurisation. The oversized materials will be directed to one of two roll-off compactors for eventual transport to a licensed waste disposal facility, as currently operated on site now.

It is important to store various feedstock materials separately from one another for several reasons. First, it allows operators full control over proportioning the different materials together so they can be assured of creating an optimal recipe for composting (this is covered in the next step- feedstock preparation). Second, it is important to keep animal by-product (ABP) material separate from non-ABP material for regulatory purposes. Third, is that different feedstocks will be used to create different compost products. As indicated above, mixed waste fines will be used to create a low-quality compost, whereas source-separated materials will be used to create high-quality products. If all feedstocks are blended together, then CIRL loses the opportunity to produce high-quality products and the revenue that comes with selling them in the marketplace. Lastly, it is important to separate highly putrescible materials (high moisture, high nitrogen) from drier high carbon feedstocks because putrescible feedstocks need to be processed as soon as possible while high carbon feedstock can be safely stored for longer periods of time. This last issue is a matter of not overwhelming the daily processing capacity of the plant if everything is mixed in one storage bunker as well as an effort to manage and control odours.

For inspection purposes only.
Consent of copyright owner required for any other use.

Separate feedstock storage bunkers at an on-farm in-vessel composting facility in County Carlow showing wood chips in one bunker to the left and commercial food in the bunker to the right.

EPA Export 26-07-2013:03:29:51

This discussion leads to the issue of how long different materials should be stored in the tipping and receiving building before being processed for composting. As a guideline, all putrescible materials, including mixed waste fines, biosolids, sludges, biowaste or food, should be processed within 24 hours of being tipped inside the receiving building. In practice, most putrescibles would be processed the same day they are received on site. If this is not possible due to late afternoon deliveries to the facility, the material would be covered with a 15-20cm layer of screening overs or wood chips overnight and be

For inspection purposes only.
Consent of copyright owner required for any other use.

EPA Export 26-07-2013:03:29:51

processed the next morning. This practice provides a barrier to pests and helps to control odours within the tipping and receiving building.

For brushy drop-off landscape materials, these can be stored undercover in the shredding area or in the tipping building for one to two weeks prior to shredding without creating an odour problem. Once shredded, they should be incorporated into composting mixes within one week's time. And finally, for dry, high-carbon bulking materials such as wood chips, sawdust, leaves, wheat chafe or shredded paper, they can be stored until they are needed without any affect on the composting process or on the generation of odours by the facility. As a standard operational procedure, CIRL will make sure that the two bulking material bunkers will always be partially or completely full so that the facility will always have adequate and readily available bulking materials on hand to blend with the wetter and high nitrogen feedstocks when they arrive on site. This allows the operator to create the proper recipes for composting on a daily basis, balancing ingredients to obtain the right blend of nutrients, moisture and porosity for the bio-stabilisation and pasteurisation treatment process.

Step 6: Feedstock Preparation

For inspection purposes only.
Consent of copyright owner required for any other use.

Feedstock preparation is the most important step in the composting process. It's like baking a cake. If the ingredients are not proportioned or mixed properly in the beginning, then the cake will not rise or be that tasty. Composting is similar in that it relies on biological organisms, aerobic microbes, which digest or decompose biodegradable materials (anything that comes from plants or animals) and turns them into a stable, humus like material called compost. When managing a biological process, one needs to pay attention to the requirements of the microorganisms. It's like making beer, yogurt, cheese, bread or wine. If an ingredient is omitted or the ingredients are not properly balanced, the biological process can go astray, creating a foul mess. In it most simple form, compost is the farming of microorganisms. In order to raise chickens or cattle, the farmer needs to understand what the animal needs to thrive; all animals need a balanced diet, water and air to survive, grow and reproduce. It's the same for the composting microbes. In their case, they need a balanced diet of Carbon and Nitrogen rich materials, water and air in an environment that is near pH neutral. Therefore, in order to create a compost recipe, the operator needs to understand the critical parameters essential to start and maintain the composting process. These are listed below:

Composting Parameter	Preferred Range
Carbon to Nitrogen Ratio	25-35:1
Moisture Content	55-65%
Porosity	45-60% air space
pH	6.0-8.0

Getting the mix right, involves paying attention to the nutritional properties of feedstock materials (C:N ratio), their physical properties (moisture content, particle size and pH) aswell as their biological properties or the ability to supply and support the right biological organisms. The physical properties in turn have a significant

EPA Export 26-07-2013:03:29:51

impact on porosity or the amount of air space within a pile and therefore how easily air will flow through the composting mass. Feedstock materials must not only be porous, but also contain sufficient moisture to support microbial growth. It's all a balancing act.

Once a recipe is created, the steps, in descending order, associated with compost feedstock preparation include setting:

- Particle size
- Carbon to Nitrogen ratio (C:N ratio)
- Porosity
- Moisture
- pH

The first step in feedstock preparation is to set particle size. The general rule of thumb is: the smaller the particle, the faster it will decay. Most materials come in the right size for composting, such as food, brown bin materials, biosolids, sludges, animal manures, grass clippings, leaves, weeds, hay, straw, paper and saw dust. The only materials that need size reduction are woody materials like tree branches, bush trimmings, clean timber and cardboard. Generally shredding to a 10-20mm minus material provides both structural properties as well as moisture absorbing and readily available Carbon qualities. As discussed above in Step 2: Bulking Material Shredding, CIRL has the existing capability to shred woody feedstock materials so they can be added to feedstock blends.

Consent of copyright owner required for any other use. For inspection purposes only.

Once the particle size is set, balancing the C:N ratio is next. Some materials are higher in Nitrogen than the ideal ratio of 30:1, such as biosolids, food, animal manures, or grass clippings. Other materials are higher in Carbon than the ideal ratio of 30:1, such as sawdust, paper, dried leaves, hay or straw. Few materials are well balanced, such as shredded drop-off garden materials which could be composted on their own without being blended with other materials. Therefore, given the variety of materials to be composted at the proposed facility, the challenge is to create the right proportion of different feedstock materials to get within the ideal range of 30:1 Carbon to Nitrogen for composting.

So how is this done? Given some basic information about Carbon and Nitrogen content of potential feedstocks from published tables or exact figures from actual laboratory testing of individual materials, there are two ways of coming up with a composting recipe. The first involves using mathematical formulas and a lot of time and effort. The second uses a computerised spreadsheet model readily available on the internet from Cornell University. This interactive tool allows operators to plug in Carbon, Nitrogen and moisture levels into the spreadsheet to help them determine the proper recipe for blending various feedstocks together by weight. Recently, both the managing director and proposed facility manager for CIRL successfully completed the IT Sligo HETAC course "Certificate in Compost Facility Operations" where they learned how to create composting recipes for 2, 3 and 4 ingredients using the Cornell University spreadsheet. In reality, due to the variety of feedstocks to be processed by the proposed facility and the different qualities of compost to be produced, a number of recipes will be developed for

EPA Export 26-07-2013:03:29:51

composting: 1) mixed waste fines; 2) biosolids and sludges; and 3) biowaste from kerbside collection routes. In addition, biowaste recipes will be fine-tuned during the year to accommodate changes in material composition during various seasons (e.g., mostly food in winter requiring more bulking materials, and food and garden materials in summer requiring less bulking materials).

Loading stationary electrically powered batch auger mixer with biowaste for feedstock blending purposes.

Consent of copyright owner required for any other use. For inspection purposes only.

After recipes have been developed for the three qualities of compost to be produced by the proposed facility, they will be converted from weight to volume measures using published bulk density characteristics for each feedstock so facility operators can be given a mix ratio based on X number of front end loader buckets of this material versus Y buckets of that material. When it comes time to blend materials for composting, operators will fill a stationary, electrically powered batch auger mixer in the tipping and mixing building with materials according to the recipe developed. This balances nutrients and gets the moisture level near its ideal range. After this, wood chips or overs from the screening process are added to the batch in the mixer to provide the blend with the porosity it needs to facilitate air flow during composting. After this, the moisture level is checked using a simple squeeze test. If the mix is too wet, then more moisture absorbing bulking material is added along with a moisture neutral nitrogen source (dry moisture absorbing bulking materials are high in carbon, so if they are added, then the C:N ratio needs to be readjusted downward so it is not too high). If the mixture is too dry, moisture can be added in the form of leachate collected from the tipping building, compost tunnels or aerated static pile curing area; surface water; or well water.

EPA Export 26-07-2013:03:29:51

Water being added to a batch of feedstocks in an auger mixer at the end of the feedstock blending process.

For inspection purposes only.
Consent of copyright owner required for any other use.

Once the proper balance of nutrients, structural bulking materials and moisture are added to the mixer, it is allowed to mix the materials thoroughly together until the materials reach a homogeneous blend (3-5 minutes).

Most materials from the residential and commercial waste stream will be close to pH neutral, so pH will not need to be adjusted. However, some sludges from industrial plants or commercial wastes, such as pizza dough, will be either too acidic or too alkaline. This can be a problem because materials that are too high or too low in pH can inhibit microbial activity, growth and reproduction. In this case, the materials would need to be tested to see if pH adjustment in the feedstock preparation process is necessary. If a pH adjustment needs to be made, this can be accomplished with the use of chemicals or other feedstock materials. If the ingredient it too acidic, it can be neutralised with lime or wood ash. If it is too alkaline, it can be adjusted with shredded pine branches, pine needles or peat moss. Given the types of feedstocks to be processed by the facility, the need for pH adjustment will be minimal.

Once everything is just right (balanced nutrients, the proper moisture level, the right porosity, and a pH neutral environment) and the mix is thoroughly blended, it is then discharged from the mixer into a holding area within the tipping and receiving building where it is ready to be placed into the in-vessel composting tunnels.

EPA Export 26-07-2013:03:29:51

Step 7: Loading In-Vessel Tunnels

After thorough blending, the feedstock mix is discharged from the mixer in a bunker within the tipping building. At this point, the blended feedstock materials are ready to be picked up by a front-end loader and taken into tunnels and stacked to a height of 2-3m. For high-quality compost made from biowaste and drop-off garden materials, the height will depend on the season of the year with higher piles in the peak summer months and lower piles in the lower volume winter months. For biosolids and mixed waste fines, the height will depend on the volume of material to be processed in a weekly batch. The important thing during this process is that the piles are built evenly within the tunnel, i.e., the same height from back to front. This promotes even air flow through the material and avoids short circuiting of air through higher or denser sections of the pile.

Loading a fully enclosed composting tunnel with a front-end loader

For inspection purposes only.
Consent of copyright owner required for any other use.

In most cases, CIRL will not be able to fill a tunnel with one day's supply of materials and the tunnel will need to be filled over a series of days. In this case, the tunnel is loaded from the back to the front until the tunnel is filled. After each day's worth of blended materials is placed into the tunnel, the doors are closed and the aeration system is turned on to begin composting. For whichever tunnel technology is chosen, CIRL will require that aeration within the tunnels are sectioned off into 3-4 zones and controlled by valves so that aeration does not short circuit the piles when a tunnel is partially filled.

Step 8: In-Vessel Composting

CIRL has chosen to install a batch tunnel in-vessel composting technology to initially process materials because it is the best available technology for minimising potential environmental impacts such as odour while being the most efficient and cost effective system on the market. It is also the simplest to operate and easiest to maintain. Plus, an in-vessel or enclosed technology is required by the EU Animal By-Products Regulations (ABPR) to process catering waste, or food containing meat, fish, bones, skins, shells

EPA Export 26-07-2013:03:29:51

coming from residential sources and commercial kitchens (i.e., in hotels, restaurants, schools, hospitals, and supermarkets but not from butcher counters). The Department of Agriculture and Food (DAF) has been given responsibility to oversee the implementation of EU's ABPR in Ireland. The ABPR specify that the composting of food waste containing meat must be conducted in a "closed composting reactor that cannot be by-passed." The in-vessel tunnel system ensures these requirements are met by enclosing the material in a sealed concrete tunnel over a 10-14 day cycle. To meet the latest requirements of DAF's ABPR, materials would be placed into a tunnel for 5-7 days of composting, making sure that the appropriate time and temperature regime is met. Then materials would be taken out of the tunnel, and placed into a second tunnel for another 5-7 days, again meeting the appropriate time and temperature requirement for the material being processed. This dual barrier or double in-vessel processing approach ensures that all materials within the tunnel have been exposed to pathogen killing temperatures in the first and/or second stage of in-vessel processing.


For inspection purposes only.
Consent of copyright owner required for any other use.

New concrete in-vessel composting system installed in County Devon, UK as seen from inside the tipping building

The batch in-vessel tunnel systems have the following environmental features:

- Completely enclosed to allow complete heating of the composting material
- Close control of the composting process
- Full capture of all exhaust air
- Biofiltration of exhaust air
- Exclusion of vermin
- Full·capture·of·all·leachate·generated

EPA Export 26-07-2013:03:29:51

- Weatherproof
- Full computer control
- Continuous temperature record
- Neat and tidy appearance

The in-vessel tunnel system to be constructed at the CIRL facility will comprise of initially four concrete tunnels with the possibility of adding two additional ones. The tunnels will have a sliding door at each end through which they are loaded and unloaded. Loading occurs through the doors in the compost tipping and receiving building side and unloaded from the doors within the aerated static pile curing building. The material is typically stacked to a height of between two and three metres within the tunnels. Air is delivered to the composting mass via a series of buried pipes underneath the tunnel floor rising up through grates, slats, channels or spouts. The aeration system in the tunnel floor delivers air to the composting mass. Large high speed, high pressure aeration blowers push and pull air through the composting mass in order to keep it 'aerobic'. Each tunnel utilises two stainless steel blowers; one blows air into the top or bottom of the tunnel and the other draws air out of the tunnel and pushes it through the odour treatment system. A grate, slat or channel system has the advantage of also being capable of collecting leachate which can be reused at the front end of the process and added during the feedstock preparation stage.

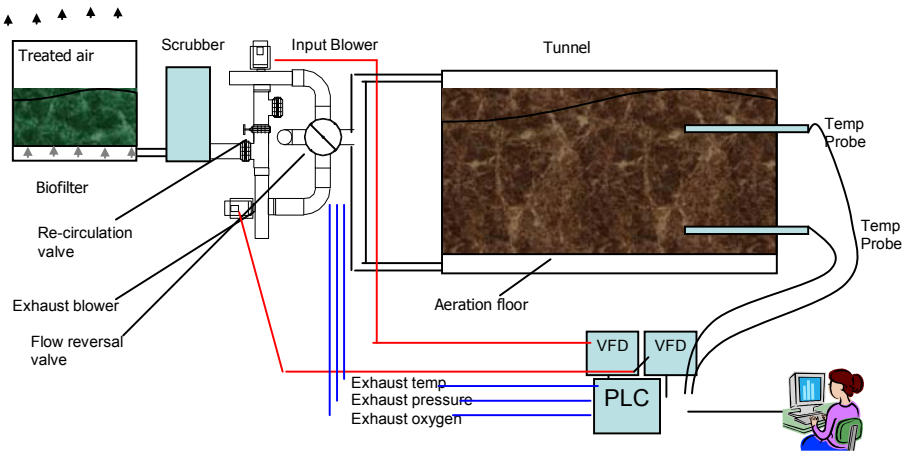
Consent of copyright owner required for any other use.
For inspection purposes only.

The delivery of air are dictated by temperature and or oxygen measurements of the composting mass or exhaust air and are continuously recorded by a computer. Temperatures are measured by a number of temperature probes that are directly inserted into the top and bottom of the composting mass. In the beginning of the process, when the composting mass is heating up, the computer system is in "oxygenation" mode. Here the process control system is programmed to blow air into the vessels on a periodic basis to maintain adequate oxygen levels and stimulate the growth of aerobic bacteria with the off cycle being no longer than 30 minutes. These systems can also be configured for air recirculation to conserve heat and moisture and for air reversal to assure pathogen killing heat is spread evenly throughout the composting mass.

Once the composting mass reaches its temperature set point, the computer system switches into "cool down" mode. This "temperature feedback mechanism" maintains the composting process within its optimum range of 60-65 degrees C. If the mixing is done properly, the challenge is to keep the composting mass from overheating and killing off the beneficial bacteria. If the temperature differential between upper and lower temperature probes is greater than 3-5 degrees C, the air flow reverses. Experience has shown that this cool down cycle provides more than enough oxygen to keep the mass aerobic. The 10-14-day cycle within the tunnels allows enough time to pasteurise the material while removing its food value. This avoids any subsequent insect or vermin problems during the second phase of composting in the enclosed curing building.

The tunnel aeration system is illustrated in the diagram below.

EPA Export 26-07-2013:03:29:51



The process control system consists of the following components:

- Industrial Programmable Logic Controller (PLC)
- Variable frequency drives for the blowers
- Temperature, pressure, air flow and/or oxygen sensors
- Personal computer with printer, UPS and modem
- Windows operating system software
- Process control software
- Pile logistics software

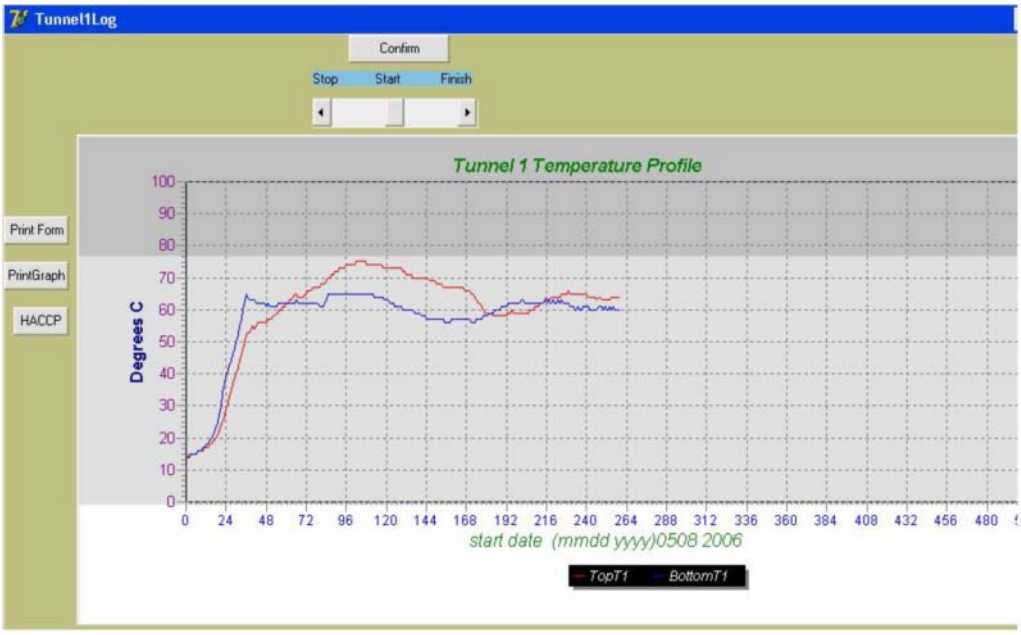
For inspection purposes only.
Consent of copyright owner required for any other use.

The Programmable Logic Controller (PLC) the brains of the system, coupled with a windows based PC computer allows the operator to configure a temperature profile for the 10-14 days of in-vessel composting. The PC computer is loaded with proprietary software so that the operator can configure or change operating parameters to meet regulatory time and temperature requirements. The computer also is loaded with database and spreadsheet software so that temperature data can be logged and reports can be generated, printed and filed for each batch of compost.

The computer will also be connected to a printer so that reports on each batch of compost can be printed and filed for record keeping purposes. The process control panel, variable frequency drives, computer, modem and printer will be housed in the office adjacent to the composting mixing building.

From an ABPR standpoint, the process control software will comply with Irish ABPR requirements. In this regard, specific time/temperature graphs and data sheets are generated as seen below in addition to HACCP enabled colour coding for each temperature probe: top and bottom.

EPA Export 26-07-2013:03:29:51



Typical time temperature graph from a tunnel composting facility in County Carlow illustrating the tracking of the temperatures in the top and bottom of the compost pile.

For inspection purposes only.
Consent of copyright owner required for any other use.

Step 9: Unloading In-Vessel Tunnels

After 10-14 days of composting within the tunnels, the door within the curing building is opened and a front-end loader is used to remove material from the tunnel as shown below.

Front-end loader removing material from concrete tunnel

EPA Export 26-07-2013:03:29:51

Step 10: Aerated Static Pile Curing

The front-end loader then places the material from the tunnel and places it into an aerated bunker for 3-8 weeks of curing depending on the product to be made and its application or use. Again, the operator forms piles evenly, at the same height, over the aeration system to promote even air flow through the composting mass and avoid any short circuiting of air through shorter sections of the pile.

The material is initially placed into an aerated curing bunker for 2 weeks of continued composting and stabilisation. The material is then turned into a new bunker with the use of a front end loader and is then allowed to further stabilise for another 1-2 weeks. Depending on the type of material to be processed and its desired end use, the material could be turned once more and allowed to mature further for 2-4 weeks in an aerated aging bunker as shown on the facility plan. Below are the turning regimes for the low, medium and high quality products to be processed by the facility:

- *Mixed waste fines producing a low quality product*: placed in an aerated bunker for two weeks and turned once for another two weeks of processing into another aerated curing bunker. After 4 weeks of processing, two bunkers of mixed waste fines materials will be consolidated into one aerated aging bunker for 2-4 weeks of maturation. Total curing time will depend on the pending EPA standard for stability of biostabilised waste (6-8 weeks of total curing time).

- *Biosolids and sludges producing a medium quality product*: placed in an aerated bunker for two weeks. If the compost is used as an agricultural fertiliser, the material is turned once into another aerated bunker and allowed to compost for an additional one to two weeks (3-4 weeks of total curing time). If the compost is to be used for topsoil production, the material is placed into an aerated curing bunker for two weeks and turned into another aerated curing bunker for two weeks. After four weeks of processing, two bunkers of biosolids/sludges will be consolidated into one aerated aging bunker for another 2-4 weeks of maturation. (6-8 weeks of total curing time).

- *Biowaste from brown bins and other source separated biodegradable materials producing a high quality product*: placed in a curing bunker for two weeks and turned into another curing bunker for two weeks. After four weeks of processing, two bunkers of biowaste will be consolidated into one aerated aging bunker for another 4 weeks of maturation. (8 weeks of total curing time).

The maturation building consists of a large concrete slab with a similar air delivery system as the tunnels i.e. a buried network of pipes connected to a series of aeration blowers. Grate and channel aeration floors are showed in the photographs below:

For inspection purposes only.
Consent of copyright owner required for any other use.

EPA Export 26-07-2013:03:29:51

For inspection purposes only.
Consent of copyright owner required for any other use.

Top: Aerated bunker system enclosed within a building
Above: Channel aeration system to left and grate aeration system to the right

The aerated maturation pavement is an engineered biological treatment system designed to optimise and accelerate the maturation process. In brief, the pasteurised biomass is removed from the tunnels at the end of a 10-14 day cycle and transferred to one the aerated curing bunkers. The aerated pavement works by drawing air under vacuum through the

EPA Export 26-07-2013:03:29:51

Initially with six tunnels operating, the curing building would contain 12 aerated bunkers and six aerated aging bunkers as shown in the facility plan. The aerated maturation pavement is an engineered biological treatment system designed to optimise and accelerate the maturation process. In brief, the pasteurised biomass is removed from the tunnels at the end of a 10-14 day cycle and transferred to one the aerated bunkers. The aerated pavement works by drawing air under vacuum through the maturing biomass to maintain aerobic activity. This air is re-pressurised and forced through a scrubber and biofilter to remove any residual odours. Consequently, all exhaust or process air at the site will be collected and treated. The aeration pipes in the in-floor system double as a drainage system for leachate and condensate so these can be captured and directed to a storage tank for reuse when piles are turned between bunkers to maintain adequate moisture levels or added to new batches of feedstock blends in the beginning of the composting process.

Critically, the maturing material is turned and moved 2-3 times over a three to eight week period while it is in the curing building, again the cycle time is dependent on what is being processed and its ultimate end use. Turning is achieved by using front end loaders or telescopic front end loaders as shown below.

Consent of copyright owner required for any other use.
For inspection purposes only.

Turning aerated static piles in Waterford City

Temperatures are recorded in the curing phase using wireless temperature probes. These probes use radio transmitters to relay temperature readings back to the process controller so blower speed, blower on-off cycling and valves to each zone can be automatically adjusted. This also allows the operator to monitor temperatures in each of the composting bunkers. A picture of the wireless probes is shown below.

EPA Export 26-07-2013:03:29:51

For inspection purposes only.
Consent of copyright owner required for any other use.

Wireless temperature probe in aerated static pile in Waterford with receiver located between the signs for zone numbers 4 and 5 in the back.

Step 11: Screening

After curing, the material is ready to be screened. Depending on the grade of product to be produced (coarse, medium or fine), a screening size is selected and the material is screened. A front end loader is used to place cured material into the screen hopper for screening. Screening will take place within the curing building as a way to capture and control odours, bioaerosols and dust. All screened product will be stored within the three bunkers outside the curing building while it is being tested and prior to blending.

EPA Export 26-07-2013:03:29:51

Stationary electrically powered trommel screen above from Galway City and star screen with air classifier shown below.

For inspection purposes only.
Consent of copyright owner required for any other use.

The screening system will include an air classifier to remove plastic film from the overs so they can be reused in the process as a structural bulking material and as an inoculant in new batches. The overs can also be cleaned up further with the use of a 40-50mm screen

EPA Export 26-07-2013:03:29:51

or by manual sorting to produce a clean mulch product for sale. All contaminants would be collected for landfill disposal.

Step 12: Product Testing

Testing would be conducted to assure the product's safety, compliance with EPA and ABPR requirements and to understand the product's characteristics for marketing and sales purposes. Due to the fact that the facility would produce between 5,000 and 8,000 tonnes of product per year, the EPA guideline on frequency of testing would require testing to occur every 1,000 tonnes of production. As shown below, sterilised stainless steel instruments would be used for gathering composite samples for shipment to an independent laboratory for testing following the sampling guidelines detailed in the I.S. EN 12579: 2000.

For inspection purposes only.
Consent of copyright owner required for any other use.

These samples would then be sent to an independent laboratory for testing. To comply with EPA and ABPR requirements, the following laboratory tests would be conducted to assess compost quality:

- Stability
- Physical Impurities
- Pathogens
- Heavy Metals
-

The chart below lists the limits being proposed by the EPA and Cré Composting Association of Ireland for compost quality.

EPA Export 26-07-2013:03:29:51

Heavy Metals (mg/kg- dry matter)	
Mercury	0.5
Cadmium	1.2
Nickel	59
Chromium	97
Copper	159
Zinc	399
Lead	150
Pathogens	
Salmonella (in 25g)	0
E. coli (cfu/g fresh mass)	1,000
Impurities	
Total glass, metal & plastic > 2mm diameter by weight	0.5%
Stability	
Oxygen Uptake Rate (mmol / O_2kg Organic solid/h)	10

Consent of Copyright owner required for any other use. For inspection purposes only.

To assist with marketing and sales, other parameters will periodically be tested, including one or more of the following laboratory tests:

Physical Properties:

- Organic matter content

EPA Export 26-07-2013:03:29:51

- Moisture content
- Bulk density
- Particle size distribution
-

Chemical Properties:

- pH
- Electrical conductivity (salts)
- Phytotoxins (organic acids)
- Total Carbon
- Total Nitrogen (N)
- Phosphorous (P) and Potassium (K)
- Available nutrients (N, P & K)
- Ammonium to Nitrate ratio

Step 13: Blending and Storage

Depending on the quality of the compost and its intended use, the compost product could be immediately moved off site to end users or it could be blended with other materials to make topsoil, potting mixes or organic fertiliser. Depending on what is being produced, a mixer, trommel screen or front-end loader could be used to blend ingredients together to create value-added compost-based products. These blended products could be stored outside in bunkers, as shown below.

For inspection purposes only.
Consent of copyright owner required for any other use.

Outdoor product storage bunkers

Step 14: Product Distribution

Compost based products will be distributed in the following ways:

- Picked up by the customer from CIRL's site
- Bagged and distributed for sale from retail outlets and civic amenity sites

EPA Export 26-07-2013:03:29:51

- Delivered using 1-2 cubic meter bags
- Bulk delivery using CIRL roll-off or transfer vehicles

All material leaving the site will be weighed for tracking purposes. Records will include the date, type of product, quantity/weight, customer name and price (typical sales invoice).

Loading delivery vehicle with compost

Consent of copyright owner required for any other use.
For inspection purposes only.

Any and all products could be packaged in small paper or plastic bags for retail distribution or sale from public or privately operated civic amenity sites. Other composting facilities in Ireland have had great success with loading compost-based products into 1-2 cubic meter plastic mesh bags that then can be delivered to landscaping jobs or construction sites (these are the same bags that CIRL uses to collect various waste materials from contractors, landscapers or anyone needing disposal services for quantities that are more than what wheelie bins would hold and less than the capacity of a skip).

EPA Export 26-07-2013:03:29:51

Under cover storage in Waterford City where customers can pick up or bag their own compost

For inspection purposes only.
Consent of copyright owner required for any other use.

Step 15: Contaminant Disposal

All contaminants removed from the tipping area and from the cleaning up the screening overs would then be accumulated with other residual waste from the entire CIRL site and loaded into a transfer trailer for transport to a licensed landfill disposal facility.

EPA Export 26-07-2013:03:29:51

CIR20 - 130

REV: 01

Biostabilisation Plant Biofilter Management Plan CIR20-130

Clean (Irl.)Refuse & Recycling Co. Ltd

Ballinagun West

Cree

Kilrush

Co. Clare

Tel: (065) 9059092

Email: cleanirl@iol.ie

Web: www.cleanirl.com

Consent of copyright owner required for any other use. For inspection purposes only.

Originator …….

Signed of by …….

Date Released……

EPA Export 26-07-2013:03:29:51

Purpose

Outline Biofilter Management

Scope

Biostabilisation Plant

Reason For Issue

First Release

Responsibility

Operational Director

For inspection purposes only.
Consent of copyright owner required for any other use.

EPA Export 26-07-2013:03:29:51

Biofiler material, method of treatment & efficiency, regeneration or replacement schedule, fate of exhausted biofilter media

Biofilter media composition

The selection of media for biofilter applications has evolved over time, and continues to evolve. Materials such as peat, soil, compost, heather, wood chips, screening overs, and inert additives such as perilite and plastics have all been used successfully as media for biofilters. The most common biofilter media are made from a combination of soil, wood chips and/or coarse compost.

A good biofilter media should possess the following characteristics:

- Supports a large diverse microbial population
- pH buffering capabilities
- Ability to retain microbes
- Appropriate density
- Physically stable
- Low pressure drop (or good porosity)
- Production of clear drainage water
- High bearing strength (good structure)

Consent of copyright owner required for any other use. For inspection purposes only.

The media design involves a number of elective decisions, including media ingredients, particle sizing, cross-sectional depth, surface loading rate per square meter, porosity, and desired service life. These parameters are dependent on the foul airstream characteristics, including contaminants of concern and loading rate.

The proposed mixture of biofilter media consists of the following materials:

- 90-95% wood chips
- 5-10% coarse compost and/or clay/soil

The wood chips need to be of various sizes to provide both porosity and adequate surface area for the microbial population. The compost and soil provides the micro-organisms necessary and increase media surface area. These ingredients can be mixed together using a front-end loader or the facility's auger mixer can be used. It is important that moisture is added during the mixing phase to get the moisture level up to the desired range listed below.

Shredded wood should be non-composted chipped, hogged, or shredded wood. Green material including plant leaves, needles, and grass must be limited to no more than 2% by wet weight. Dimensional wood, stumps, trees, clean plywood, and clean particle board are acceptable. Painted, treated, oiled, creosoted, petroleum coated, or plastic laminated wood is not acceptable. Particle size must be within the following ranges listed below:

EPA Export 26-07-2013:03:29:51

less than 12 mm	max	25%
12 – 25 mm	min	40%
25 – 75 mm	min	20%
Over 100 mm	max	5%

Other criteria for testing:

- Minimum percent organic matter of 60%
- Maximum total TKN nitrogen of 0.35 %
- Sum of nitrate and ammonium concentrations must not exceed 100 ppm
- Moisture must be between 35 and 60% by weight

Placing media within the biofilter structure

Workers will not be permitted to walk or stand directly on media after it has been placed in the biofilter. Use of plywood sheets that sustain workers' weight would be used to prevent media compaction.

Placement of Media:

- *Before depositing media, remove debris from space to be occupied by media.*
- *Remove wood pieces outside of the gradation range specified, as well as any extraneous material such as rocks, trash, metal, and mudballs.*
- *Use front-end loader or conveyor for media placement.*
- *Place media as loosely as possible to preserve porosity*
- *Media shall be placed in a consistent manner in order to insure uniform porosity and subsequent airflow*
- *Place media at a depth equal to 2.6m in each zone. It is estimated that about 0.2 m of settling will occur during the first two to three weeks. Ensure that 2.4m of media remains after three weeks.*
- Final media top surface shall be flat and uniform. Means for obtaining a finished flat top surface without compaction of the media shall be acceptable based on owner or owner's engineer approval.

Media replacement

Media exchange decisions should be based on a combination of age, surface appearance, effective depth, exhaust quality and back pressure (high pressure indicates compaction and lack of porosity). A decision model for media exchange is based on the following observations:

1. Create a scoring system from 1 to 4 for judging the exhaust quality. Use descriptors like "manure," "musty," "earthy," "marine," and "carrots." Score the filter on a regular basis and record the information in the decision model.

Consent of copyright owner required for any other use. For inspection purposes only.

EPA Export 26-07-2013:03:29:51

2. Create a standard or threshold for visual inspection. Dry spots can be counted and their size estimated. If sports are rapidly growing or there are multiple spots, or if any single spot is larger than 5 square meters, then airflow short circuiting is occurring.
3. Measure the media depth in each of the four filter zones at various points to record an average effective depth. Track the trend of filter depth over time and schedule media replacement to insure there is always a minimum of 1.5 meters of averaged effective depth.

4. Back pressure will be unique to each biofilter, but trends over time can indicate problems, such as gradually rising back pressure that consumes power and reduces air flow. Depth and age are also closely correlated. If the biofilter looses too much effective depth, it generally also has reached an advanced age since the depth decreases over time.

Therefore, if the depth is less than 1.5m, backpressure has substantially increased, the media has decayed and is too wet and dense, the surface has dry spots, and/or the exhaust has strong odours present, then the media needs replacing.

Typically, with the media recommended for the CIRL biofilter, the media should last at least 18-24 months.

Consent of copyright owner required for any other use.
For inspection purposes only.

Fate of exhausted media

When the media is removed from the biofilter, about 10% of it should be mixed in with the new media (instead of the soil and compost) to inoculate the new media with the proper microbes. The rest of it can be screened. The fines can be incorporated into topsoil blends and the overs can be used as structural bulking material. In other words, the media can be harvested and sold as a part of facility products or it can be reused in the composting process.

EPA Export 26-07-2013:03:29:51

CIR20 - 131

REV: 01

Biostabilisation Plant Odour Management Plan CIR20-131

Clean (Irl.)Refuse & Recycling Co. Ltd

Ballinagun West

Cree

Kilrush

Co. Clare

Tel: (065) 9059092

Email: cleanirl@iol.ie

Web: www.cleanirl.com

Consent of copyright owner required for any other use. For inspection purposes only.

Originator …….

Signed of by …….

Date Released……

EPA Export 26-07-2013:03:29:51

Purpose

Outline Odour Mangement Plant for Biostabilisation Plant

Scope

Biostabilisation Process

Reason For Issue

First Release

Responsibility

Operational Director

For inspection purposes only.
Consent of copyright owner required for any other use.

EPA Export 26-07-2013:03:29:51

Odour prevention and minimisation is the key to odour control. In order to prevent the odour treatment system from being overwhelmed, the facility will employ best management practices to prevent and minimise odours from the composting process. These include:

- Rejecting overly odorous loads or materials that have gone completely anaerobic.
- Following compost mixing recipes so that the C:N ratio of feedstock blends is maintained between 25-35:1. Mixes that are lower than 25:1 will release nitrogen in the form of ammonia during the composting process. Ammonia inhibits biofilter organisms and can decrease biofilter effectiveness in large concentrations.
- Maintaining aerobic conditions within composting materials at all times to avoid anaerobic conditions and the generation of foul putrid odours.
- Adhering to a closed door policy to prevent the escape of odours from reception and curing buildings.
- Maintaining a negative pressure within the reception and curing buildings to minimise the escape of untreated air from these indoor working areas.
- Collecting leachate in enclosed tanks and reusing it in new batches of compost heading into the tunnel in-vessel composting system.
- Keeping the site clean and tidy and free from standing water.

For inspection purposes only.
Consent of copyright owner required for any other use.

Given adherence to best management operational procedures, the odour management and control system should be fully capable of effectively treating odours from the composting process. A combination wet-scrubber and biofilter is being proposed for the tipping building, tunnels and compost curing building. Here, compost process air from the tunnels and aerated static pile composting system will be combined with compost curing building and reception building air and directed to a wet scrubber to predominantly remove ammonia from the air stream while humidifying the air stream prior to introduction to the biofilter system. The biofilter system has been designed for a minimum 60 second retention time at full ventilation rate, which allows the biofilter to effectively remove odorous compounds from the air stream.

Under normal operating conditions, a biofilter is fed 100% saturated process air from composting materials in an in-vessel system or from a negatively aerated static pile system. This prevents the biofilter's bacteria and fungus from dehydrating. The ideal moisture conditions in the biofilter media are 45 – 60% total moisture by weight. In direct pile exhaust systems, additional moisture addition to the biofilter media is not necessary. However, given that the fully saturated process air from the composting tunnels and curing piles will be mixed with drier compost curing building air and air from the reception building, moisture addition to the biofilter media may be necessary on an occasional basis. Therefore, two systems are proposed; the wet scrubber system and an automatic irrigation system using spray nozzles installed on top of the biofilter. The wet scrubber system adds moisture to bring the airflow near saturated conditions.

EPA Export 26-07-2013:03:29:51

A spray system applies moisture more evenly over the biofilter media surface than a drip system. This spray irrigation system will be controlled by a simple process controller with a weather/rain sensor. The irrigation system will be regulated by a timer allowing the operator to manually set the frequency of operation (on/off setting) and duration of watering (length of watering time). When it rains, the sensor turns the irrigation system off so that the biofiler is not over watered. This is critical as too much water can wash the microorganisms off of the surface of the biofilter media, those that are responsible for breaking down odour compounds that have be absorbed into the biofilm that surrounds each particle of the biofilter media.

At first, when the curing system is initially started, the biofilter is monitored manually by the operator several times a week so that the watering regime can be fine-tuned to keep the biofilter media moist but not overly saturated. Once a good watering regime has been established, the biofilter media is checked on a weekly basis to assure that the moisture within the media is maintained at optimal levels. This allows the operator to further fine-tune watering regimes throughout the year to take into account seasonal weather differences in Ireland.

Lastly, the biofilter system contains an in-floor aeration system. This doubles as a drainage system for condensate and excess water. During operation of the composting aeration and ventilation system, periodically all blowers are stopped for a few minutes each hour to allow drainage from the biofilter to flow downward into the drainage system and holding tank for the facility. This prevents saturation of the biofilter media and encourages even air flow through the biofilter media. This water can be reused in the curing building to rewet dry piles when turned.

Consent of copyright owner required for any other use.
For inspection purposes only.

If other odours are detected, then the entire composting process needs to be examined to identify the source of the problem. Are piles anaerobic? If so, then aeration regimes should be adjusted and feedstock preparation methods should be reviewed to improve porosity, reduce initial moisture, and reduce initial bulk density. If the piles are aerobic, then the biofilter system needs to be inspected thoroughly in terms of blockage, media saturation (causing anaerobic conditions within the biofilter media) and for media compaction, moisture and porosity. When a problem has been identified, corrective action would be immediately taken to repair faulty components, remove blockages, improve drainage or replace the biofilter media. These points are covered in more detail in the maintenance section below.

EPA Export 26-07-2013:03:29:52

CIR20 – 132

REV: 01

Biostabilisation Plant
Mainteance Plan
CIR20-132

Clean (Irl.)Refuse & Recycling Co. Ltd

Ballinagun West

Cree

Kilrush

Co. Clare

Tel: (065) 9059092

Email: cleanirl@iol.ie

Web: www.cleanirl.com

Consent of copyright owner required for any other use.
For inspection purposes only.

Originator …….

Signed of by …….

Date Released……

EPA Export 26-07-2013:03:29:52

Purpose

Outline a Maintenance Plan for the Biostabilisation Plant

Scope

Biostabilisation Plant

Reason For Issue

First Release

Responsibility

Operational Director

For inspection purposes only.
Consent of copyright owner required for any other use.

EPA Export 26-07-2013:03:29:52

A daily monitoring and maintenance programme will ensure that the entire facility is operating efficiently and that the environmental management systems are all working properly. The following daily inspection will be carried out:

- Checking the process control computer to monitor temperatures in both systems and operation of the aeration equipment.
- Manually checking pile temperatures, oxygen levels and moisture levels to check the composting process.
- Inspecting environmental management systems, including drains for leachate, level of leachate in storage tank, aeration system blowers, valves and pipe work, and performance of biofilter.
- Talking a walk around the facility to detect odours, assess tidiness and potential litter.

A lot of the process monitoring is done by the process control computer with most systems providing an alarm if something is not working. The temperatures within both systems are monitored continuously and recorded periodically within the computer database. For the tunnel system and aerated static pile system, aeration is totally controlled by computer.

Equipment will be maintained carefully. All rolling stock, tractors, mixer and loader, will undergo regularly scheduled preventative maintenance. All other parts and pieces will be repaired or replaced immediately after something is found to be broken or dysfunctional. The facility will stock spare parts so critical equipment can be repaired or replaced easily and quickly. In addition, compost system and equipment suppliers will be required to maintain a readily available stock of parts and components for the two composting systems and related auxiliary equipment, such as the shredder, mixer and screen.

Consent of copyright owner required for any other use.
For inspection purposes only.

Biofilter maintenance will be carried out periodically to ensure efficient performance. Typically the biofilter media needs to be changed infrequently – for example every 18-24 months – based on performance levels as monitored in the air handling unit and the type of initial materials used for the biofilter media. Any used filter media can be used as a bulking agent in the composting process and is not wasted. What follows is a detailed description for the maintenance of the odour treatment and control system

Regular inspection for potential failure of the odour treatment system is identified as follows:

a. Visual inspection for cracks in the biofilter and steam venting through them.

b . Visual inspection of even air flow through the biofilter media (observing even steam
rising from biofilter media in the mornings)

c. Inspection of media for moisture, compaction and porosity.

EPA Export 26-07-2013:03:29:52

d. Inspection of wet scrubber and biofilter for odour release.

The biofilter is modular, meaning that the biofilter bed has been broken up into four distinct zones where exhaust air can be controlled via aeration valves to each zone.

This allows the operator to turn off aeration to biofilter zones if the media in the zone needs adjustment or when the media needs replacement. If a problem occurs within the biofilter media, the aeration valve is closed off and directed to other zones while corrective action is taken within a particular zone. At the same time, aeration and ventilation blowers can be slowed slightly so that retention time within the biofilter media is maintained at around 60 seconds, or if full ventilation is continued the retention time would be reduced to 45 seconds with one module shut down. When the media is fixed or replaced, the valve can be opened again and the blowers adjusted back to their normal operating speed. This prevents untreated process or exhaust air from escaping to the environment while repairs or regular maintenance (media replacement) occurs.

a. In the event of cracks in the biofilter media, either around the edge of the media bed often due to media shrinkage over time or within the media bed often due to drying, the biofilter media will be dug up manually (small cracks) or with the use of an excavator or front end loader (large cracks) and replaced, filling in the crack. If a crack has developed as a result of the media drying out, the sprinkling system will be checked and adjusted as needed to assure that water is being evenly spread over the media and that the media remains moist at all times.

For inspection purposes only.
Consent of copyright owner required for any other use.

b. In the event of uneven air flow over the entire media bed, the operator will investigate the cause of the problem. The most common fault is the drying of media in small or large spots so process or exhaust air is short circuiting through the dry spot. Here again, the valve to the zone will be turned off and the media is removed, moistened and replaced. The sprinkler system is adjusted and the aeration valve is turned back on. Another cause can be uneven media placement, uneven media height or uneven media decomposition or compaction. Sometimes this can be remedied in the short term by adjusting the valve positions of all aeration zones in the biofilter. If this does not remedy the problem, then the media must be checked for porosity and compaction. If porosity or compaction are not the problem, the operator can simply add or remove biofilter media in certain spots to even out the back pressure within a zone or between zones. If compaction and porosity seem to be the problem, then it is time to replace the media. In this case, media replacement occurs one zone at a time until all of the media is replaced.

c. The biofilter media will be monitored on an every other week basis for moisture level, porosity and compaction. This is done by digging down at least half a meter into the biofilter media in various locations to check media moisture and the decomposition of the media. The operator can also regularly monitor back pressure in the aeration piping to determine how hard the aeration and ventilation blowers are working. The higher the pressure, the more likely that the biofilter media is decomposing. This leads to the loss of porosity and compaction of the media. As media compaction increases power

EPA Export 26-07-2013:03:29:52

consumption, the best move is to gradually replace the biofilter media with new media, again one zone at a time until all of the media is replaced.

d. The odour control system will be checked on a daily basis for release of unacceptable odours from the biofilter. If a strong smell of ammonia is detected, the wet scrubber would be checked to see if it is operating properly. This consists of checking to see if the solution is being adequately sprayed or injected into thescrubber tower, checking the scrubber media for blocking from scum build up, and checking the scrubber liquid for odour or discolouration. When the problem is identified, corrective action in the form of cleaning the nozzles or sprayers, cleaning or replacing the scrubber media, replacing scrubber liquid, or adjusting scrubber liquid recirculation and replenishment regimes. If the scrubber needs attention, maintenance or repair, the process and exhaust air will be directed around the scrubber and into the biofilter directly. To improve odour removal efficiencies, all blowers will be slowed down to increase retention time within the biofilter and hence increase odour removal efficiencies while the scrubber is being worked on. If possible, repairs or maintenance on the scrubber will occur at night when ventilation blowers for the curing and reception buildings are in their slower night time operation mode.

For inspection purposes only.
Consent of copyright owner required for any other use.

EPA Export 26-07-2013:03:29:52