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Waste Licensing
Waste Recovery/Disposal Activities (Other than Landfill Sites)

Section D

Facility Design

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Waste Licensing
Waste Recovery/Disposal Activities
(Other than Landfill Sites)

Section D1

Infrastructure

D.1 SITE INFRASTRUCTURE

Details of the site infrastructure are shown on Drawing No. D.1 "Site Infrastructure" included in this Attachment.

D.1.a SITE SECURITY ARRANGEMENTS

As shown on Drawing No. D.1. the site is surrounded on all four sides by 2.5 m high brick wall. Access to the site is restricted to the existing entrance located to the north west of the facility. It is proposed to construct an additional entrance to the site. This entrance will be used by exiting vehicles only, with the existing entrance used for entering vehicles only. The entrance and exit from the site will be used by waste vehicles, employee vehicles and visitors to the site (see Drawing D.1).

D.1.b. DESIGN FOR FACILITY ROADS

Due to the site's location in an industrial estate and it's proximity to Robinhood Road and a well developed road network there will be no need for new access roads. All waste vehicles will use the existing site access.

D.1.c. DESIGN FOR HARD-STANDING AREAS

The existing yard within the site is constructed of reinforced concrete. Surface water run-off from the site will discharge to surface water sewer via an oil interceptor; this is discussed further in D.1.l below.

D.1.d. WEIGHBRIDGE

There is an Avery weighbridge located at the entrance of the existing facility, which is connected to the Gensys (Precia Molen) software within the weighbridge office. It is proposed to install an additional weighbridge at the proposed additional entrance, subject to planning permission, which will be connected to the existing Gensys (Precia Molen) software within the weighbridge office.

The weighbridge operator shall record the vehicle registration, the direction of the waste (incoming or outgoing), the type of waste, the origin of the waste and the gross weight of the vehicle, the date and time will be captured automatically by the system. Once the weighbridge operator has captured the relevant data it will then signal via a green traffic light that the driver may proceed into or out of the yard.

Once the vehicle operator has emptied the load, he/she then proceeds to the exit weighbridge, where the weighbridge operator records the tare weight of the vehicle and correlates it to the incoming data. The weighbridge operator then prints out a weighbridge ticket for record keeping purposes and may also print a copy for the driver.

D.1.e. WHEELWASH

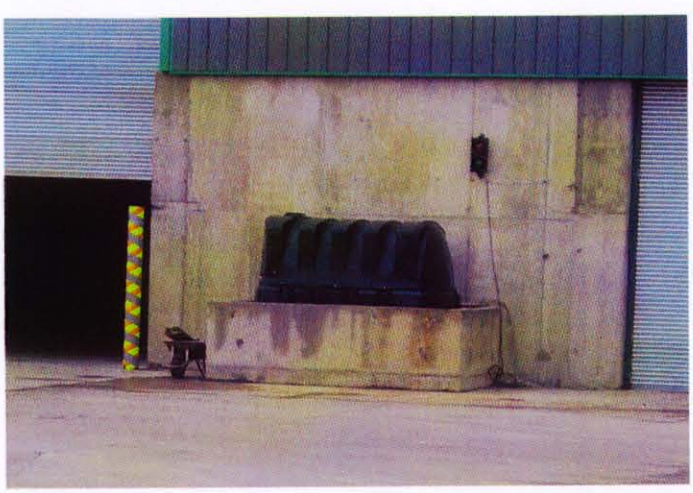
As the site is covered in reinforced concrete and is cleaned on a regular basis it is considered that a wheel cleaner will not be required on-site. Therefore a wheelwash/cleaner will not be installed on-site.

D.1.f. LABORATORY FACILITIES

Due to the nature of the operations on site, it is not proposed to install a laboratory within the facility at this time.

D.1.g. FUEL STORAGE AREAS

There is currently a bunded storage area on-site for the storing fuel. The integrity of the bund shall be tested to ensure that they are in compliance with the required standards (namely section 9 of the British Standard BS 8007:1987; '*Design of concrete structures for the retaining of aqueous liquids*').



This tank shall contain fuel for site vehicles only. Oxigen Environmental Ltd. road vehicles shall obtain their fuel off site. Other maintenance materials such as lubricants

and gear oils for the on-site vehicles shall be stored in the adjacent shed. All materials are stored on portable bunded units or bunded storage cabinets.

D.1.h. WASTE QUARANTINE AREA

A bunded waste quarantine area is located within the waste processing building (see Drawing D.1: Site Infrastructure). This area has been constructed to temporarily store any waste loads which are deemed outside the plant waste acceptance criteria.

D.1.i. WASTE INSPECTION AREA

There is a waste inspection area located within each bay of the waste processing building, which allows the waste to be tipped on the floor and non-conforming and dangerous (e.g. compressed gas cylinders) waste to be removed from the waste stream prior to removal to the baler. This waste is then transferred to either the designated receptacles (for fluorescent light bulbs, batteries etc.) or to the waste quarantine area.

D.1.j. TRAFFIC CONTROL

Access to and from the site is controlled by security barriers operated by the weighbridge operator/site manager. Vehicles enter the site via the north western entrance, where the weighbridge officer will record the necessary details (see D.1.d above), and prior to allowing access onto the site. The weighbridge operator will direct the vehicle operator to the appropriate loading/waste inspection bay using a green light traffic system. When the vehicle operator has unloaded the waste, he/she will progress to the exit, where the weighbridge operator will record the necessary details prior to lifting the security barrier.

On average a vehicle will arrive on-site every ten minutes between the hours of 06:00 and 20:00. The staff car park is accessed through the same traffic system.

The site access gate is located approximately 14 m off the access road which enables any vehicle entering the site to drive completely off the public road thereby ensuring that there is no obstruction to the free flow of traffic on the access road.

Oxigen Environmental Ltd. have submitted a planning application to South Dublin County Council for the development of a new entrance at the north eastern boundary of the site (see Drawing D.1 and D.1.j). In the event that planning permission is granted then it is proposed to use a one-way traffic system within the facility. This system is detailed in Drawing D.1.j.

D.1.k. ALL SERVICES

The existing site is serviced with electricity, water, and telecommunications infrastructure. This infrastructure will also serve the waste baling station.

D.1.l. SEWERAGE AND SURFACE WATER DRAINAGE INFRASTRUCTURE

Drawing No. D.1 Site Infrastructure shows foul and surface water infrastructure for the existing development, which will also serve the waste baling station.

All surface water from hardstanding areas on-site is discharged to surface water sewer via an oil interceptor with an manual shut-off valve which, when activated by the Facility Manager, will prevent discharges to the surface water sewer in the event of an accidental discharge / spillage into the surface water network. There are a number of gullies located within the yard which are detailed in the drawing D.1: Site Infrastructure.

Leachate generated within the buildings and process wastewater is directed to the foul sewer.

D.1.m. PLANT SHEDS, GARAGES AND EQUIPMENT COMPOUND

There is a maintenance shed located to the east of the waste processing building. This shed shall store the necessary materials required for the maintenance of the on-site vehicles and baler. Other vehicles shall be regularly maintained on another Oxigen Environmental Ltd. depot. All maintenance materials shall be stored on a portable bund or within a bunded chemical store.

D.1.n. FACILITY ACCOMMODATION

An office is provided for the operator to facilitate administration duties. The office contains canteen and toilets facilities. (see Drawing D.1: Site Infrastructure

D.1.o. FIRE CONTROL SYSTEM

Fire protection is provided by two hydrant points (as detailed on the Drawing D.1: Site Infrastructure) each of which currently draws from the water supply mains. All relevant staff are trained for basic fire fighting and evacuation procedures. All site accommodation has been supplied with dedicated fire extinguishers, with a fire hose located within each inspection bay. It is proposed to install a fire alarm system within the waste processing building .

D.1.p. CIVIC AMENITY SITE

A civic amenity site will not be provided on-site.

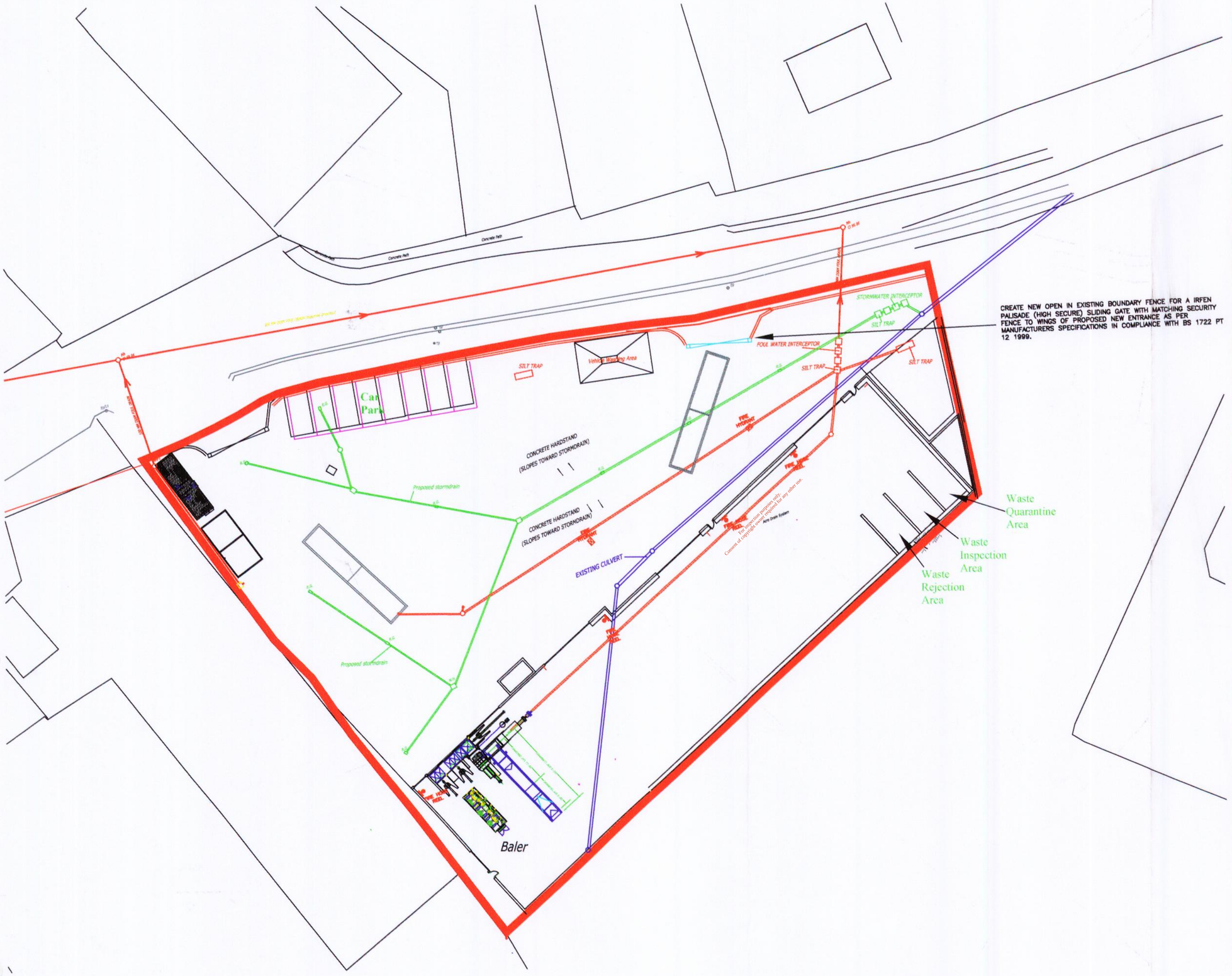
D.1.q. OTHER WASTE RECOVERY INFRASTRUCTURE

The following waste equipment are located on site (detailed specifications in attachment E.6):

Harris Waste Baler HRB 45D	Loadall teleporter
Sennebogen 821 grab machine	Terberg shunter tractor

D.1.r. DETAILS OF ANY OTHER WASTE RECOVERY INFRASTRUCTURE PROPOSED

Not Applicable



N

LEGEND

- Indicates Site Boundary
- Existing Weighbridge
- Proposed Weighbridge
- Surface Water Drainage
- Foul Sewer Drainage
- Existing Surface Water Culvert
- Existing Entrance
- Proposed Entrance

Rev.	DESCRIPTION	DATE

BORD NA MÓNA
BORD NA MÓNA ENVIRONMENTAL LIMITED
Main St, Newbridge, Co. Kildare
Phone 045 431201 Fax 045 432312
www.bnm.ie/environmental
Email: ed.info@bnm.ie

Project: Waste Licence Review Application

Client: Oxigen Environmental Ltd.

Drawing Title: Site Infrastructure

Date	Scale	Drawn by	Checked by	Approved by
Sept 2004	1:500	DOQ	GL	NC

Status: PLANNING ☐ TENDER ☐ FOR APPROVAL ☐ FOR CONSTRUCTION ☐ AS BUILT ☒

Dwg. No. D.1

LEGEND

- Indicates Site Boundary
- Existing Weighbridge
- Proposed Weighbridge
- Traffic Direction
- Traffic flow
- Existing Entrance
- Proposed Entrance

Rev.	DESCRIPTION	DATE

BORD NA MÓNA
BORD NA MÓNA ENVIRONMENTAL LIMITED
Main St, Newbridge, Co. Kildare
Phone 045 431201 Fax 045 432312
www.bnm.ie/environmental
Email: ed.info@bnm.ie

Project: Waste Licence Review Application

Client: Oxigen Environmental Ltd.

Drawing Title: Traffic Movements

Date	Scale	Drawn by	Checked by	Approved by
Sept 2004	1:500	NC	SC	GL

Status: PLANNING ☐ TENDER ☐ FOR APPROVAL ☐ FOR CONSTRUCTION ☐ AS BUILT ☐

Dwg. No. D.1.j

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Waste Licensing
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Section D2

Facility Operation

D.2 FACILITY OPERATION

Operational History

The site had been operated as a cleaning depot for South Dublin County Council until 1999 when it was purchased by Oxigen Environmental Ltd. Since 1999, the site has been operated as waste transfer facility, initially in line with a waste permit issued by South Dublin County Council, and then in December 2001 the site was issued a waste licence (Register No. 152-1) by the Environmental Protection Agency.

The site has received planning permission for the initial change of use in 2001 (Planning Ref: SD01A/226), and for the construction of necessary site infrastructure, such as the waste processing building, in November 2002 (SD02A/0382). Oxigen Environmental Ltd. are currently seeking permission for the construction of an additional site entrance (Planning Ref: SD04A/0688) from South Dublin County Council.

Proposed Operations

The facility is currently used as a waste transfer facility that accepts a maximum of twenty four thousand and six hundred tonnes of commercial, industrial, household and construction and demolition waste per annum. It is proposed to change the on site operations from a multi treatment waste transfer facility to a single treatment waste baling station, which will accept a maximum of one hundred and sixty thousand tonnes of household and commercial waste. There will be no on-site disposal of waste at this facility. Process wastewater (i.e. leachate) is collected separately from the surface water drainage system, and is discharged to the Robinhood foul sewer, via a silt trap and an interceptor. Surface water discharges from the site are discharged directly into the County Council surface water sewer via a silt trap and an oil interceptor.

It is proposed to accept waste between the hours of 06:00 and 20:00, Monday to Saturday. Waste will not be removed from the facility after 20:00.

Waste Type and Volumes

It is proposed to only accept waste from commercial and household sources at the facility. It is envisaged that the waste inputs will increase from the existing licenced acceptance volume of 24,600 tonnes per annum (as per waste licence Reg. No. 152-1) to a maximum annual throughput of 160,000 tonnes per annum. While it is assumed that the volumes of waste accepted will be relatively constant, market conditions will dictate the actual volumes accepted. The timescale for achieving the maximum volume is dependent on market conditions, but is expected to be reached within 24 months of receipt of new licence.

Process Description

Waste will be delivered to the site by Oxigen Environmental Ltd. waste collection vehicles and licenced/permitted waste contractors. Each vehicle will be required to enter the site via the entrance to the north west of the facility. The weighbridge operator will record the following details of each waste vehicle:

- vehicle registration,
- the direction of the waste,
- the type of waste,
- the origin of the waste and
- the gross weight of the vehicle,

The date and time will be captured automatically by the Precia Molen weighbridge system. Once the load has been verified, the weighbridge operator will direct the driver to the appropriate waste inspection bay using a green traffic light system.

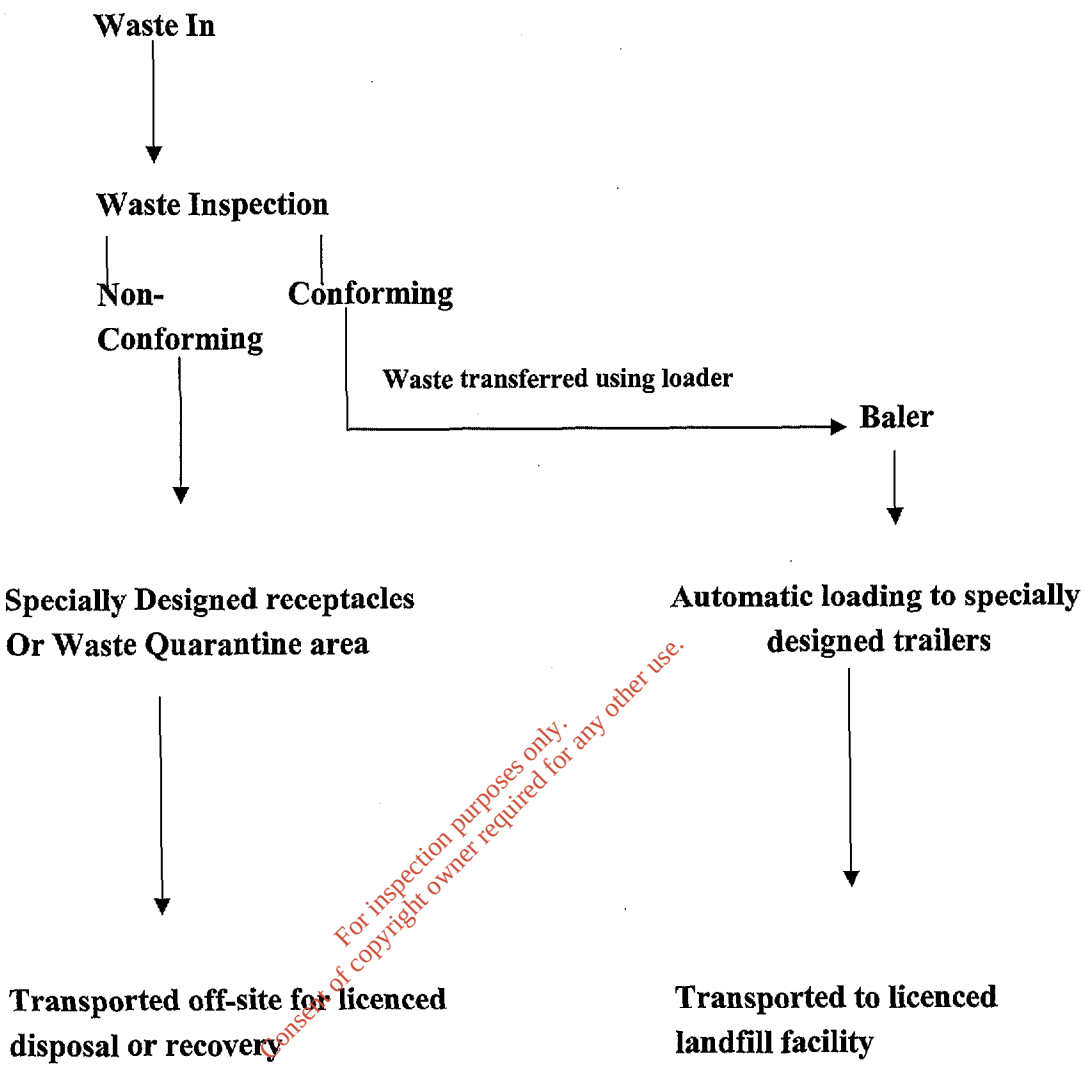
The waste is tipped on the waste processing floor, where it is initially visually inspected by the machine operators. Non-conforming and dangerous (such as compressed containers) wastes shall be removed to the specially designed receptacles (namely for paints, batteries etc.) or to the waste quarantine area prior to removal off-site.

The remaining waste fraction will subsequently be transferred into the baler for treatment. The baler that will be used on site is a Harris Waste Baler HRB45D. This baler has a maximum capacity of 60 tonnes of waste throughput per hour, and produces a bale size of 1.6, x 1.6m x 1m. The power consumption for the baler is estimated at approximately 320kw per average waste load.

There is sufficient capacity within the baler to process one hundred and sixty thousand tonnes of waste per annum. As the baler can process 60 tonnes of waste per hour, that would allow a capacity of 257,040 tonnes of waste per annum. Taking into account shut-down, maintenance downtime etc. it is anticipated that the actual through put of the baler will be approximately 189,000 tonnes per annum, which is greater than the anticipated 160,000 tonnes proposed within this review.

Oxigen Environmental Ltd. is proposing to temporarily store baled waste within the waste processing building overnight. This will allow the facility to continue operating after the receiving landfill has closed. This waste shall be transported off site as soon as the landfill has re-opened the following day (or within forty eight hours at weekends)

Figure D.2.1: Process flow diagram



Waste Acceptance

All wastes accepted at the facility will be in line with the existing waste acceptance procedures as developed in line with the conditions of the waste licence Register No. 152-1. Waste is delivered to the facility by Oxigen Environmental Ltd employees, Local Authority employees or by suitably permitted/licenced waste contractors.

Waste containers are visually inspected prior to its acceptance by the vehicle operator to ensure that the waste type is allowed to be accepted under the requirements of the waste licence. Prior to gaining access to the site the vehicle operator will be required to provide the necessary information, such as the waste type, source of the waste, vehicle type, vehicle operators name, and any other relevant information deemed necessary by the weighbridge operator. The load will be required to the verified by the computer system prior to the barrier being raised.

The vehicle operator is directed to the appropriate waste inspection area using a traffic light system. The vehicle operator will reverse into the required waste inspection area, where its load is tipped. If on initial inspection the load contains non conforming waste streams, the vehicle operator will be required to remove the entire load from the facility, prior to exiting the site. Once the waste has been tipped on the floor it is visually inspected prior to being transported to the on-site baler. This is to ensure that all non-conforming, or dangerous (e.g. gas cylinders), are removed from the waste stream, and is immediately removed to the waste quarantine area. The waste is stored in the quarantine area pending its removal off site by the waste producer. In the event of the producer refusing to remove the waste, or the source of the waste is unknown, Oxigen Environmental Ltd will ensure that it is removed off site and disposed of at an appropriate facility as soon as possible. Oxigen Environmental Ltd. will maintain records of the waste type, quantity, and ultimate disposal/treatment facility.

Outside waste acceptance hours the security gate is closed and access is only permitted by the key personnel (i.e. site manager, baling staff etc).

Operational Considerations

Oxigen Environmental Ltd. will obtain the prior approval of the EPA for the use of all off site waste recovery or disposal agents before availing of their services.

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Waste Licensing
Waste Recovery/Disposal Activities
(Other than Landfill Sites)

Section D3

Materials Management

D.3 MATERIALS MANAGEMENT

The on-site materials handling and management procedures are described in Attachment D.2 and E. Relevant European Waste Catalogue (EWC) codes for the various waste streams are described below.

* denoted waste of a hazardous nature.

Categories of waste recovered on site (with associated EWC code)

16 WASTES NOT OTHERWISE SPECIFIED IN THE LIST

16 06 Batteries and accumulators
16 06 01* Lead Batteries
16 06 02* Ni-Cd Batteries
16 06 03* Mercury-containing batteries
16 06 04 Alkaline batteries
16 06 05 Other batteries and accumulators

20 Municipal wastes (Household waste and similar commercial, industrial and institutional wastes) including separately collected fractions

20 01 Separately collected fractions (except 15 01)
20 01 08 biodegradable kitchen and canteen waste

20 02 garden and park wastes (including cemetery waste)
20 02 01 biodegradable waste
20 02 02 soil and stones
20 02 03 other non-biodegradable wastes

20 03 other municipal wastes
20 03 01 mixed municipal waste
20 03 99 municipal wastes not otherwise specified.