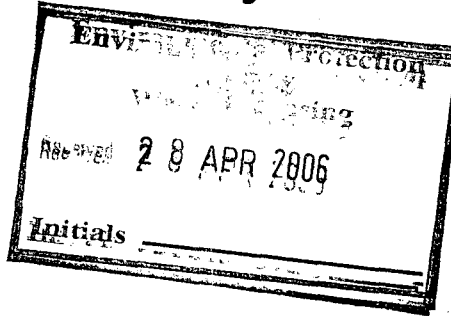




others talk about recycling

W0205-01
Greyhound Recycling & Recovery Limited
Article 14(2)(B)(ii) rec. 28 April 2006
Original

Mr Stuart Huskisson,
Waste Licensing Section
Environmental Protection Agency,
Johnstown Castle Estate,
Wexford.



April 25th 2006

Your Ref: 205-1 (Waste Licence Application)
Our Ref: MOC/epa/Crag/04

Dear Stuart,

I Refer to Environment Protection Agency correspondence of January 13th 2006 concerning the above referenced licence application.

I attached an original and two copies of the requested information. In addition I submit 16 copies of the requested information on CD-ROM

Yours sincerely

Michael O Callaghan
Group Environmental Manager



Nationwide Collection Service:

Dublin	Knockmitten Lane,	sales	00 353 01 450 8865	Limerick:	Galvone Ind Est.,	tel	00 353 61 403333
	Western Ind Est,	service	00 353 01 450 9977		Limerick City,	fax	00 353 61 430999
	Dublin 12 Ireland	fax	00 353 01 419 6882		Ireland		

email sales@greyhoundwaste.com www.greyhoundwaste.com

Registered in Ireland 131376

Article 12 Compliance Requirements

Question 1. Location of Bio-diesel Plant:

The exact location of the proposed Bio-Diesel plant on the site has yet to be decided. The facility will be located internally in a purpose built structure. The building will be remotely banded to the sewer system. The trade effluent will enter the foul water sewer system via a suitably sized and technically appropriate interceptor. The interceptor unit has not yet been sourced.

Question 2. Emissions to Sewer:

Details of all and any trade effluents generated on site, which will be discharged to the foul sewer, are contained in Tables E3(i) and E3(ii).

The source and nature of trade effluents arising from the proposed bio-diesel facility are detailed in responses to Questions 5 and 6 (below). The applicant currently operates a pilot scale bio-diesel development facility at another site. The applicant has assessed the nature and concentration of effluents arising. There will be two effluent streams arising, namely *Diesel Wash Water* and *UCO Water*. The 'Emissions to Sewer' and 'Emissions to Sewer – Characteristics of Effluents' tables are completed and attached.

The *Diesel Wash Water* arises from water used to wash the diesel product. It is anticipated that when in full production the facility will give rise to approximately 6,000 Litre per day.

The *UCO Water* is water contained in the incoming Used Cooking Oil material. This is extracted by heating and density separation step. In the proposed facility this material will be filtered to reduce the contaminant load on the receiving sewer system. It is anticipated that when in full production the facility will give rise to approximately 800 Litre per day.

Question 3. On site Effluent Treatment

There will be no on-site biological or chemical treatment of trade effluents prior to discharge to the foul sewer. All effluents from the proposed Bio-diesel facility will pass through a grit trap and oil interceptor unit prior to entering the foul sewer. It is expected that oil and suspended solid contents will be reduced by 95%. The truck wash area has a separate existing interceptor unit prior to discharge to the sewer system. Sewage effluent from on-site toilets and canteen will be discharged direct to the foul sewer. A map of the foul and surface water drainage system is attached.

Question 4. Trade Effluent Calculations

Tables E3(i) and E3(ii) of the Waste Licence Application form has been updated based on additional discharges from the bio-diesel production area.

Question 5. Bio-diesel Process Plant & Equipment

Question 6. Bio-diesel Production Process

The following is a detailed description of the Greyhound Recycling & Recovery Bio-diesel from UCO production process. The process has been trailed and refined by the applicant and is seen as an accurate presentation of how the proposed facility will operate.

Stage 1 - UCO Reception, Pre-treatment and Storage

Used Cooking Oils (UCO) and other suitable oils will be transferred from the collection receptacle (typically 200L barrels, 1000L IBCs or other) into a UCO reception vessel. Here the UCO is indirectly heated to $>50^{\circ}\text{C}$ and pumped through a coarse filter of 0.5mm aperture, into one of two Water Separation Vessels. The water separation vessels work on a batch basis; each vessel is loaded with UCO, heated to 60°C , and then allowed to settle over night. The following morning water is drained from the bottom; the UCO is then pumped into the Heat Treatment Vessel.

The Heat Treatment Vessel is an optional treatment to further remove trace water content if required. This will only be used for certain oils and fats with obdurate water content. The collected material in its raw state is referred to as UCO. Following filtering and water removal the material is then referred to as RVO.

Following heat treatment the RVO is transferred to one of several RVO storage vessels. These storage vessels act as balance tanks for the RVO to ensure ample capacity when supplies come in faster than Bio-diesel can be manufactured, and also to allow the Bio-diesel process to continue if supply momentarily slows.

Emissions: Discharge to sewer of a maximum of 800 litres per day, laboratory analysis of this untreated material (UCO Water) is attached. The waste stream will be further treated with a grit trap and oil separator prior to discharge.

Stage 2 – Bio-Diesel Production

RVO is drawn from one or more of the storage vessels into a Processing Vessel where the RVO is heated to approx 50°C . Methanol is gravity fed into the Methoxide Mixer. The quantity of methanol added will be 20-25% of the volume of the RVO in the processing vessel. A Catalyst (either Sodium Hydroxide or Potassium Hydroxide) is added to the methoxide mixer, typically 0.5-0.8% by weight of RVO in the Processing Vessel. The catalyst and methanol is slowly mixed to create methoxide. All of the methanol and catalyst is used leaving no residue. The methoxide is added to the Processing Vessel, and the contents of the Processing Vessel are then agitated for 40-60 minutes. The contents are then allowed to settle overnight.

Overnight the contents separate into two distinct layers, a glycerine layer and a methyl ester (Bio-diesel) layer. The glycerine is removed under gravity to the vacuum vessel. The methyl ester is placed in one of three wash vessels.

Emissions: No emissions are produced from this stage of process

Stage 3- Glycerine Treatment, Methanol Recovery

The glycerine is subjected to a partial vacuum and heated to 50°C. This causes any remaining methanol from the reaction to evaporate. Evaporate is transferred to a water-cooled condenser to recover the methanol. The recovered methanol is placed in the methoxide mixer. The remaining glycerine is placed in the glycerine storage vessel. The cooling water is utilised for the diesel-washing step.

Emissions: It is expected that there would be no emissions are produced from this stage of process

Stage 4 – Bio-Diesel Washing

The Bio-diesel is subjected to a three-stage wash process.

In the first wash 2000L of water is pumped from the Recycle Wash Water vessel and discharged through a sprinkler system over the Bio-Diesel. The water gravity settles the bottom of the wash vessel. This water is then removed and sent to the Wash Water Settlement vessel.

For the second wash 2000L of water is drawn from the mains, or from the rain water retention tank and sprinkled over the Bio-diesel. The water accumulates at the bottom after an hour and is removed and sent to the wash water settlement vessel.

For the third and final wash, 2000L of water is again drawn from the mains/rain water retention tank. The water is allowed to settle overnight. The water is then removed and placed in the Recycle Wash Water Vessel.

All wash water is sent to the Wash Water Settlement Vessel. The wash water contains trace amounts of Bio-diesel which settle to the top of the vessel, periodically this Bio-diesel is pumped from the vessel back to one of the water wash vessels where it is sent through the washing process again. Wash water is disposed of to sewer from the wash water interceptor. Disposal is to occur on a daily basis.

Emissions: Discharge to sewer of a maximum of 6000 litres per day. Laboratory analysis of the untreated material (Diesel Wash Water) is attached, this material will be further treated in the wash water settlement vessel and oil interceptor prior to discharge.

Stage 5 - Product Polishing

The Bio-Diesel may contain up to 0.1-0.5% of water after the water washing stage. This must be reduced to less than 0.05% to pass the European standard for Bio-diesel EN14214. Bio-diesel is pumped from the water wash vessel through a heat exchanger into a vacuum vessel. The Bio-diesel is heated to 120°C and subjected to a partial vacuum. Any residual water will evaporate from the diesel. The evaporate passes through a water-cooled condenser. The resultant water is fed into the wash water settlement vessel.

The Bio-diesel exits the vacuum vessel, passes back through the heat exchanger (to heat the incoming Bio-diesel) and then goes through a 15-micron and a 3-micron filter. The Bio-diesel then enters one of two finished product vessels.

Emissions: The discharge to sewer from this step is termed *Diesel Wash Water*, the characteristics of which are identified in Table E3(ii). The filter cake arising from the filtration step will not exceed 25kg per day. This filtrate is biodegradable. It is proposed that the filtrate and will be sent to a composting facility.

Auxiliary Equipment - Heating Plant

An on-site steam generator will be used to provide all process heat, assuming an overall heat efficiency of 50% in the plant. CO₂ emissions from the plant will not exceed 630kg per day.

Plant and Equipment Description:

RVO Reception Vessel: 4000 litre capacity open top vessel with steam/hot water heating coil. Covered with 12mm mesh to prevent large items entering.

Water Separation Vessels: 8000 litre capacity closed vessels, fitted with heating coil and insulation layer.

Heat Treatment Vessel 8000 litre capacity vessel insulated and fitted with heating jacket.

RVO Storage Vessels: 16,000 to 20,000 litre capacity closed vessels, fitted with heating coils and insulation layer.

Methanol Storage: 20,000 litre closed storage vessel, spark proof. Fitted with vapour proof vent, insulated and shaded to prevent excessive temperatures. Pump also rated spark proof.

<u>Methoxide Mixer:</u>	2500 litre closed vessel. Fitted with spark proof agitator.
<u>Process Vessels:</u>	11,000 litre closed vessel, insulated, fitted with spark proof agitator and heating coil. Fitted with condenser to prevent escape of methanol vapours.
<u>Vacuum Vessel:</u>	2000 litre capacity, pressure rated tank fitted with heating coil/jacket, splash plate and circulation pump.
<u>Condenser:</u>	Standard water-cooled condenser, operation temperature of < 15°C.
<u>Glycerol Storage Vessel:</u>	24000-litre storage vessel with warming coil.
<u>Rainwater retention vessel:</u>	35,000 litres capacity. Annual rainfall is approximately 732mm. Greyhound's Materials Recovery Building of 4000m2 will collect on average 8000 litres of rainwater per day.
<u>Water Wash Vessels:</u>	12,000 litre capacity vessels fitted with water spray nozzles, heating coil and insulation.
<u>Recycle wash water vessel:</u>	4000 litre capacity vessel, insulated.
<u>Water wash settlement Vsl:</u>	12,000 litre capacity vessel, fitted with Bio-diesel recovery (decant) line and disposal to sewer line.
<u>Water Removal:</u>	800-litre capacity vacuum vessel fitted with splash plates and circulation pump.
<u>Condenser:</u>	Air-cooled condenser, operation temperature of < 55°C.

A schematic representation to the UCO to biodiesel process is attached

Question 7. Information on the Bentofix liner:

A bentofix liner has not been installed. Therefore the specification and the minimum hydraulic conductivity of the liner are not available at this time.

Question 8. Recovery of CFCs

Greyhound Recycling & Recovery do not intend to recover the CFCs from equipment containing CFCs (EWC Code 20 01 23). It is the intention of the applicant to accept and bulk equipment containing CFCs prior to shipment of these materials to licensed and approved facilities for de-gassing and recovery.

Additional Information:

The design specification of the existing truck wash interceptor units is attached. The location of the truck wash is in allocated an site drainage drawing.

Article 13 Compliance Requirements

1. EIS Update

The applicant has reviewed the EIS in relation to the Article 12 submission and in relation to other information submitted. As a result the Applicant has revised the non-technical summary of the EIS. The revisions are related to the changed nature of the site since the original application date. The Phase 1 building and associated site infrastructure are in place and the site is operational under a waste management permit. The nature of waste processing activities proposed for the waste licensed facility remain unchanged. The waste license application form non-technical summary has not been revised.

2. Site Drawings

All drawings submitted to date have been reviewed as a consequence of Article 12 and Article 13 information requests. As a result Drawing No. MOSGHW001, detailing the site drainage has been revised. Drawing No. MOSGHW001 Version 03 is attached.

TABLE E.3(i): EMISSIONS TO SEWER(One page for each emission)

Emission Point:

Emission Point Ref. N ^o :	FW01
Location of connection to sewer :	Near site entrance to Crag Avenue facility.
Grid Ref. (10 digit, 5E,5N):	
Name of sewage undertaker:	South Dublin County Council

Emission Details:

(i) Volume to be emitted 6 m ³ of Diesel Wash Water			
Normal/day	6m ³	Maximum/day	6m ³
Maximum rate/hour	0.3m ³		

(i) Volume to be emitted 0.8 m ³ of UCO water			
Normal/day	0.8m ³	Maximum/day	0.8m ³
Maximum rate/hour	0.05m ³		

(i) Volume to be emitted 1.5 m ³ Truck Wash			
Normal/day	1.5m ³	Maximum/day	1.5m ³
Maximum rate/hour	0.3m ³		

(ii) Period or periods during which emissions are made, or are to be made, including daily or seasonal variations (*start-up /shutdown to be included*):

Periods of Emission (avg)	<u>60</u> min/hr <u>24</u> hr/day <u>365</u> day/yr
---------------------------	---

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TABLE E.3(ii): EMISSIONS TO SEWER - Characteristics of the emission (1 table per emission point)

Emission point reference number : CONTRIBUTORY EFFLUENT STREAMS

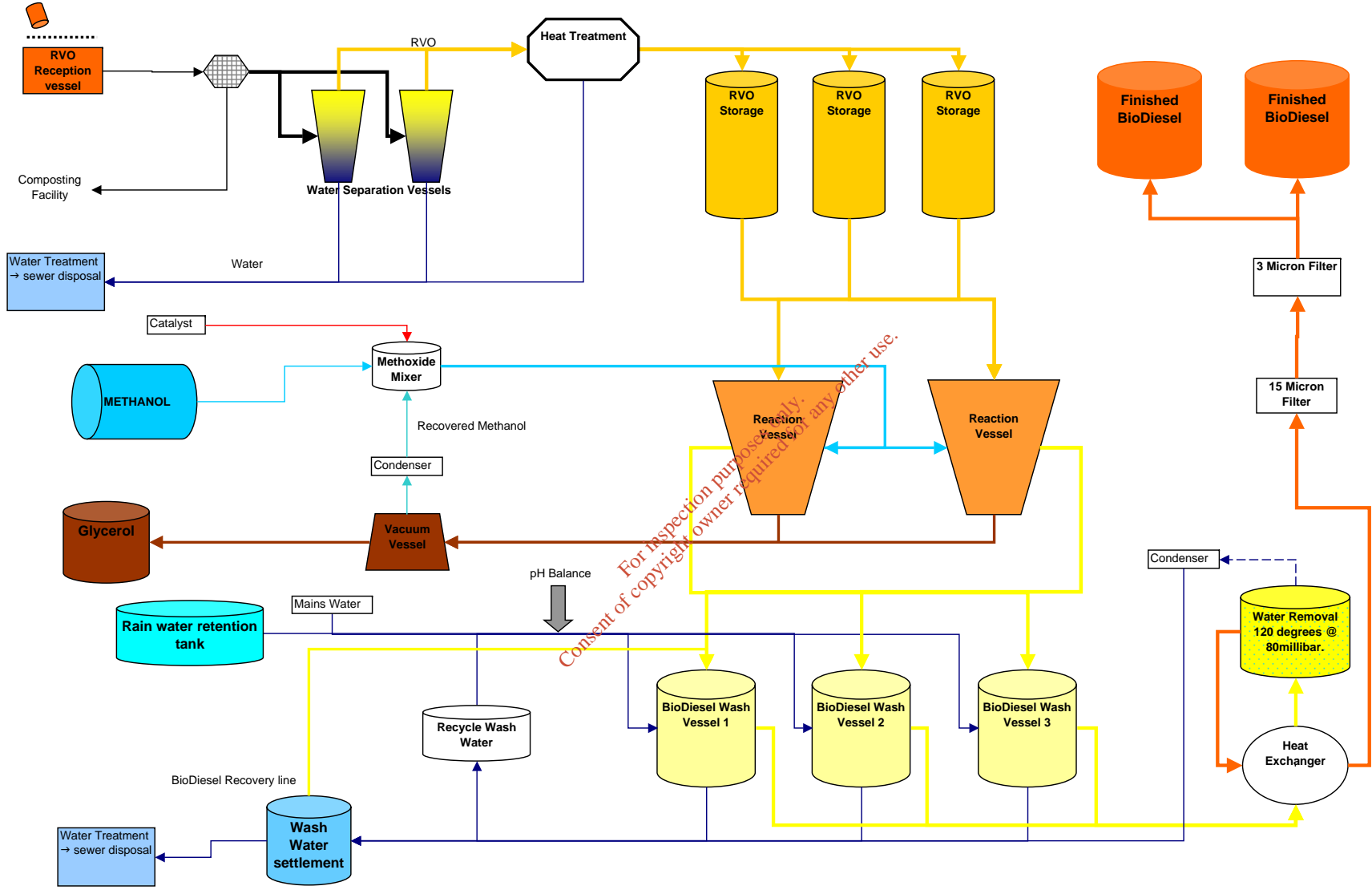
Parameter	Prior to treatment				As discharged				% Efficiency
	Max. hourly average (mg/l)	Max. daily average (mg/l)	kg/day	kg/year	Max. hourly average (mg/l)	Max. daily average (mg/l)	kg/day	kg/year	
<u>Diesel Wash Water</u>									
BOD	<u>2516</u>	<u>2516</u>	<u>15.06</u>	<u>4710</u>	<u>840</u>	<u>840</u>	<u>5.04</u>	<u>1572.5</u>	<u>66%</u>
COD	<u>7800</u>	<u>7800</u>	<u>46.8</u>	<u>14601</u>	<u>3900</u>	<u>3900</u>	<u>23.4</u>	<u>7300</u>	<u>50%</u>
Suspended Solids	<u>4994</u>	<u>4994</u>	<u>29.96</u>	<u>9349</u>	<u>500</u>	<u>500</u>	<u>3.0</u>	<u>936</u>	<u>95%</u>
Total Fatty Matter	<u>4604</u>	<u>4604</u>	<u>27.6</u>	<u>8618</u>	<u>300</u>	<u>300</u>	<u>1.8</u>	<u>562</u>	<u>95%</u>
<u>UCO Water</u>									
BOD	<u>2448</u>	<u>2448</u>	<u>1.96</u>	<u>611</u>	<u>830</u>	<u>830</u>	<u>0.66</u>	<u>206</u>	<u>66%</u>
COD	<u>31000</u>	<u>31000</u>	<u>24.80</u>	<u>7738</u>	<u>15000</u>	<u>15000</u>	<u>12.0</u>	<u>3744</u>	<u>50%</u>
Suspended Solids	<u>66340</u>	<u>66340</u>	<u>53.07</u>	<u>16558</u>	<u>3500</u>	<u>3500</u>	<u>2.8</u>	<u>874</u>	<u>95%</u>
Total Fatty Matter	<u>36230</u>	<u>36230</u>	<u>28.98</u>	<u>9043</u>	<u>1500</u>	<u>1500</u>	<u>1.2</u>	<u>374.4</u>	<u>95%</u>
<u>Truck Wash</u>									
BOD					<u>3000</u>	<u>2500</u>	<u>3.75</u>	<u>1173</u>	
COD					<u>9000</u>	<u>7500</u>	<u>11.25</u>	<u>3521</u>	
Ammonical Nitrogen					<u>50</u>	<u>40</u>	<u>0.06</u>	<u>18.8</u>	
Suspended Solids					<u>1000</u>	<u>700</u>	<u>1.05</u>	<u>382</u>	

<u>Sulphate (as SO4)</u>					<u>200</u>	<u>200</u>	<u>0.3</u>	<u>94</u>	
<u>pH</u>					<u>6-10</u>	<u>6-10</u>	=	=	
<u>Temperature</u>					<u>10- 42°C</u>	<u>10 - 42°C</u>	=	=	
<u>Fats, Oils and Greases</u>					<u>50</u>	<u>50</u>	<u>0.07</u>	<u>22</u>	
<u>Detergents</u>					<u>50</u>	<u>50</u>	<u>0.07</u>	<u>22</u>	

Emission point reference number : FW01 - COMBINED EFFLUENT CHARACTERISTICS

Parameter	Prior to treatment				As discharged				% Efficiency
	Max. hourly average (mg/l)	Max. daily average (mg/l)	kg/day	kg/year	Max. hourly average (mg/l)	Max. daily average (mg/l)	kg/day	kg/year	
<u>BOD</u>					<u>1567</u>	<u>1390</u>	<u>9.45</u>	<u>2948</u>	
<u>COD</u>					<u>9306</u>	<u>8800</u>	<u>46.65</u>	<u>14539</u>	
<u>Suspended Solids</u>					<u>1667</u>	<u>1567</u>	<u>6.85</u>	<u>1221</u>	
<u>Total Fatty Matter</u>					<u>616.7</u>	<u>616.7</u>	<u>3.07</u>	<u>936</u>	
<u>Ammonical Nitrogen</u>					<u>50</u>	<u>40</u>	<u>0.06</u>	<u>18.72</u>	
<u>Sulphate (as SO4)</u>					<u>200</u>	<u>200</u>	<u>0.3</u>	<u>93.6</u>	
<u>pH</u>					<u>6-10</u>	<u>6-10</u>	=	=	
<u>Temperature</u>					<u>10- 42°C</u>	<u>10- 42°C</u>	=	=	
<u>Detergents</u>					<u>50</u>	<u>50</u>	<u>0.07</u>	<u>21.84</u>	

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CARLOW PRECAST TANKS LTD.

Manufacturers and Suppliers of Septic and Effluent Tanks for Sewage, Treatment Systems, Water Reservoirs, Pumping Chambers, Closures and Special Products.

FULL RETENTION SEPARATORS

Introduction

The use of an oil/water separator is required wherever there is the risk of hydrocarbon pollutants causing contamination at a point of discharge, i.e. an open ditch, river, stream or groundwater. Normally the interceptors are made of GRP or PVC, which need to be installed on a reinforced concrete slab, filled with water and then encased in concrete. This is a slow and expensive method of installation. Our interceptors are manufactured from Precast Concrete, and are normally installed on a bed of cl804 stone and backfilled with the excavated material. This will result in considerable savings on time and materials. Our service also includes delivery to site and off-loading into position.

Description of basic types - Class I & II

Class I Separator

This type of unit is required where the hydrocarbon pollutant concentration in the liquid discharging from the tank must be 5 mg/L or less, or where discharge is to sensitive waters. Class I units contain a coalescing filter which prevents passage through the system, of oil droplets held in suspension in the liquid. Class I units also contain a float controlled closure device. In the event of a major spillage, as pollutants enter the separator the closure device will sink and shut off the inlet flow. The pollutants are contained within the separator, thus preventing contamination of the outfall.

Class II Separator

This type of unit is required where the hydrocarbon pollutant concentration in the effluent is 100 mg/L or less. They are used where the effluent quality requirements are less stringent, but there is still a need to protect the environment by shutting the system down in the event of a spillage. Class II separators are provided with a closure device only.

Product Selection

Full Retention Separators

Full retention separators are used in areas where there is a high risk of spillage. These areas include garage forecourts, petrol depots and vehicle workshops.

As contaminated water flows through the separator,

it is retained long enough to allow pollutants to accumulate on the surface. Carlow Precast Full Retention Separators are single chamber vessels, resulting in minimal turbulence and velocity, and maximising retention time. The pollutants are retained within the separator, allowing treated water to discharge.

Garage forecourts are particularly high-risk areas. In accordance with Environment Agency Regulations, any separator serving a refuelling area should be at least capable of retaining the spillage from one compartment of a delivery tanker, normally 7,600 litres. The capacity for parking areas etc. within the forecourt is not included in this 7,600 litres capacity.

Materials

Carlow Precast Full Retention Separators are manufactured from Grade A C50/N15 concrete, with steel fibre reinforcement at 40kg per cubic metre. Larger units contain conventional steel reinforcement as well as steel fibre.

Installation

The unit should be installed on a level bed of sand, gravel or broken stone. The base of the excavation should be level and free from projecting hard points such as rocks or boulders. The separator is lifted into position by our truck-mounted crane, assuming there is suitable access for our delivery vehicle. Backfilling is commenced as soon as possible after placement of the separators. In most installations, it is not necessary to backfill around the separator with concrete.

Design

In principle, we design to four basic classifications; Full Retention, Bypass, Class I and Class II. Classes I and II pertain to the Draft Eurocode prEN858 (Separator Systems for Light Liquids Part I)

Our designs comply with the requirements of the EPA Wastewater Treatment Manuals:-

- Preliminary Treatment: Part 5: Oils, Grease and Fats
- Primary Secondary and Tertiary Treatment: Part II

All of our products are engineered to the customers' requirements, using established design parameters. The designs are based on flow speeds, retention times, temperature and the settlement characteristics of the target materials. The tank structures are designed to BS8110, BS8007 and the Dramix Design Guidelines for Steel Fibre Reinforced Concrete Structures.

NOTES

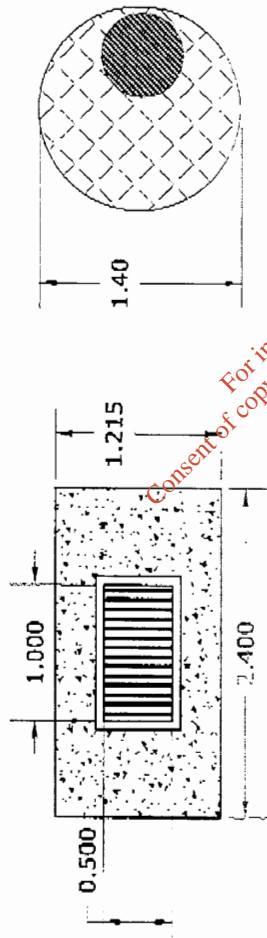
Interceptor opening 600mm diam. with heavy duty cover.

+Other sizes and configurations of opening on request.

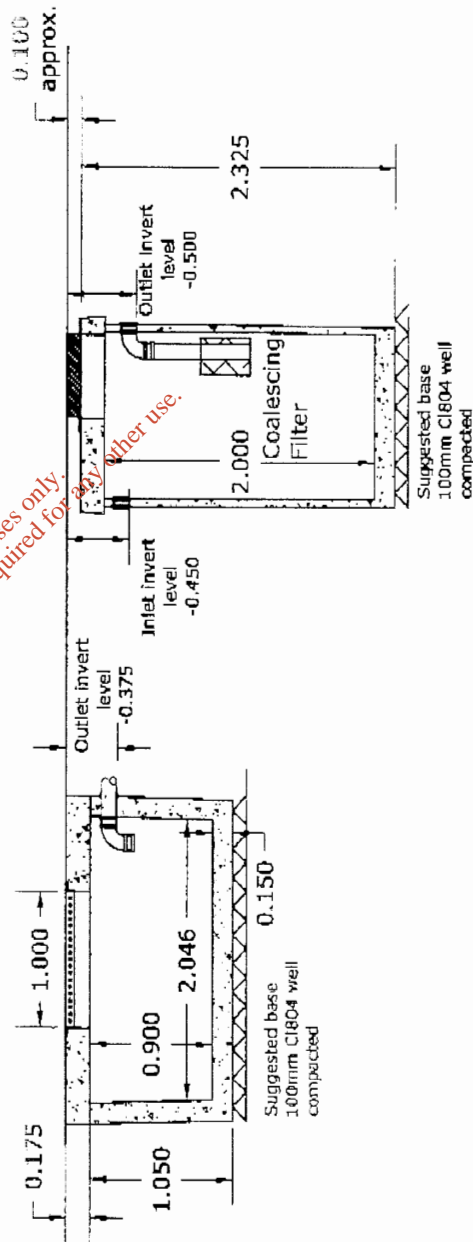
+All pipework shown to be 100mm wavin. Collars & filter on interceptor by CPT. Grit trap fitted with elastomeric wall-seal, pipework by others. Interconnection of tanks by others.

+Please verify the suitability of the orientation of the tanks & fittings prior to ordering

+Suggested base preparation 100mm c1804 / crushed stone well compacted & level



ROOF PLAN



P.O. #:	
Sts:	Site Dwg.
Dm:	P. Walsh
Ckd:	J.W.
Date:	26 January 2005

Greyhound Recycling
2.4m grit trap &
CP 150 FR class 1
Interceptor

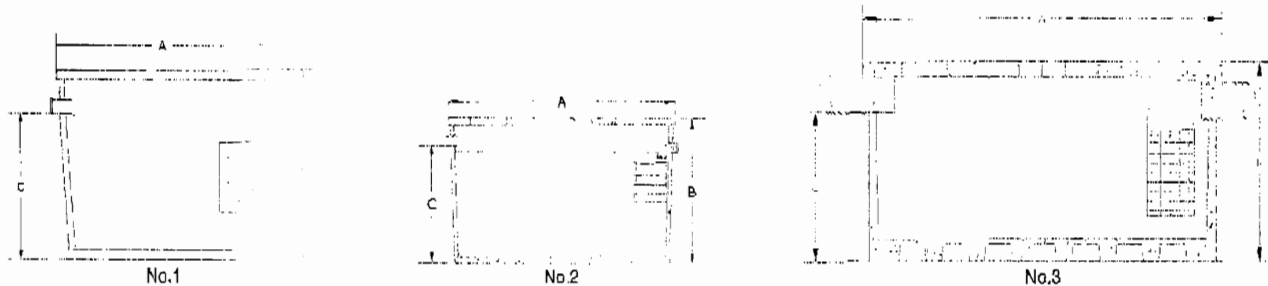
Revisions

1	A
2	
3	

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CARLOW PRECAST TANKS LTD

Manufacturers of Septic & effluent tanks, pump chambers, reservoirs, interceptors and special products
Phone +00 353 (59)91 59322 Fax +00 353 (59)91 59202 e-mail: sales@carlowprecasttanks.com



Model	Drainage Area M ²	Max Flow L/s	Oil Retention Capacity L	A Outside Dimensions	B Overall Depth	C Inlet Invert to Base	D Fall Across Unit	Inlet/Outlet O.D.	Refer to Drawing
CP 3	300	3	370	1400 Ø	2325	1825	50	110 Ø	No.1
CP 6	750	6	900	2760 x 1400	1800	1445	50	160 Ø	No.2
CP 15	1100	15	1400	2350 Ø	2275	1800	50	225 Ø	No.1
CP 25	1800	25	2200	3050 Ø	2325	1770	50	225 Ø	No.1
CP 36	2800	36	2650	3050 Ø	3025	2400	50	250 Ø	No.1
CP 50	3600	50	4000	4720 x 3150	2609	2060	50	315 Ø	No.3
CP 72	5200	72	4500	3050 Ø x 2	3025	2400	100	315 Ø	No.1

CRK TRUCK WASH →

Detailed drawings for each Full Retention Separator are available on request

Advantages

- ⇒ Ease of installation
- ⇒ Speed of installation
- ⇒ Reduced Civil Costs - no expensive concrete backfill
- ⇒ Durability and robustness
- ⇒ Tanks may be installed in heavily trafficked areas without extra reinforcement.

Accessories

- ⇒ **Oil level Alarms** can be fitted to indicate when the separator requires emptying. They are mounted remotely from the unit and are available with an audible or visual alarm.
- ⇒ **Access Covers** to allow oil loadings are available on request.

Capacities available

From 1,500 litres up to 10,000 litres in a single chamber Full Retention Unit. Larger capacities can be achieved using a combination of tanks.

Data Available

- Detailed drawings of each unit
- Detailed Installation Manual
- Maintenance Manual
- Capacity & Design Details Wash Separator

Production Selection

For assistance in selecting the required unit, please fill in the following questionnaire and return to our office at the address below, or fax to 014196882.

Questionnaire for Interceptor enquiry.

Name:

Company:

Phone No: Fax No:

Site Location:

Type Required: Bypass
 Full Retention
 Unknown

Class I or Class II

Type of project: Garage Forecourt
 Car Park
 Haulage Company
 Other, please specify below:

Surface area being drained by interceptor:

Where is it discharging to (council sewer, storm drain, percolation area, etc)?

Roof Loading - What type of traffic, if any, will cross unit?

For more details please ring 059-9159322 or email us at sales@carlowprecasttanks.com

Oldcastle Laboratories Ltd.

Cogan St., Oldcastle, Co. Meath. Ireland.

Tel: (049) 8541160/8541406, Fax (049) 8541755

Email: info@oldcastlelabs.ie

Website address: www.oldcastlelabs.ie



CERTIFICATE OF ANALYSIS

Lab Ref No: 139256

Date Received: 27th March 2006

Commencement Date: 27th March 2006

Certificate Date: 10th April 2006

Sender: Greyhound Recycling & Recovery, Knockmitten Lane, Western Ind Est, Dublin 12

Senders Reference: **Sample Ref A - Diesel Wash Water**

Chemical Analysis Of Effluent

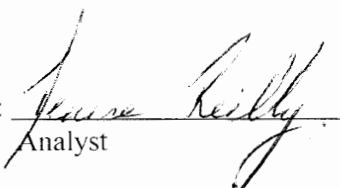
Parameter	Units	Laboratory Result
BOD	BOD ²⁰ 5 mg/l	2,516
COD	mg/l COD	7,800
Total Suspended Solids	mg/l Total Suspended Solids	4,994
Total Fatty Matter	mg/l Total Fatty Matter	4,604
Surfactants as MBAS	µg/l	3,836

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Notes: PV are as per European Communities 2000 regulations on drinking water quality.

Nitrates result is nitrates expressed as N (PV 11.3mg/l N = 50mg/l NO₃) and nitrites result is nitrites expressed as N (PV 0.03mg/l N = 0.1mg/l NO₂).

Excessive iron when present can lead to staining while excessive hardness may lead to deposits on pipes. Microbiological analysis is reported separately where applicable.

Signed: 
Analyst

Above Results Relate Only To Sample Submitted.

Oldcastle Laboratories Ltd.

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CERTIFICATE OF ANALYSIS

Lab Ref No: 139257
Date Received: 27th March 2006
Commencement Date: 27th March 2006
Certificate Date: 10th April 2006
Sender: Greyhound Recycling & Recovery, Knockmitten Lane, Western Ind Est, Dublin 12
Senders Reference: **Sample Ref B - UCO Water**

Chemical Analysis Of Effluent

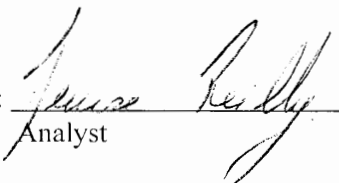
Parameter	Units	Laboratory Result
BOD	BOD ₅ mg/l	2,448
COD	mg/l COD	31,000
Total Suspended Solids	mg/l Total Suspended Solids	66,340
Total Fatty Matter	mg/l Total Fatty Matter	36,230
Surfactants as MBAS	$\mu\text{g/l}$	234

Notes: PV are as per European Communities 2000 regulations on drinking water quality.

Nitrates result is nitrates expressed as N (PV 11.3mg/l N = 50mg/l NO₃) and nitrites result is nitrites expressed as N (PV 0.03mg/l N = 0.1mg/l NO₂).

Excessive iron when present can lead to staining while excessive hardness may lead to deposits on pipes.
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Signed:


Analyst

Above Results Relate Only To Sample Submitted.

Submitted Drawings Revision 24/04/06

Drawing Title	Drawing No	Rev. No	Change Y/N	Description of change
Site location and Ownership Plan	DG 0012	02	N	
Site layout and Block Plan	DG 0013	02	N	
Recovery Warehouse plan and Section AA	DG 0014	02	N	
Services Proposed Details (New title: Final Construction)	DG 0015 (new No. MOSGH W001)	02	Y	New drainage installation. Updated drawing No: MOSGHW001 Rev. No. 03
Monitoring Plan	DG 0016	02	N	
Storage Tank Details	DG 0017	02	N	
Surface Water Services Permeable Prevent Proposal	DG 0018	02	N	



DOCUMENT CONTROL SHEET

Client	Reduce Reuse & Recycle Ltd.					
Project Title	Sustainable Resource Recovery Facility					
Document Title	Environmental Impact Statement - Non-Technical Summary / <u>REvised</u>					
Document No.	MDE0163Rp0003- <u>A</u>					
This Document Comprises	DCS	TOC	Text	List of Tables	List of Figures	No. of Appendices
	1	1	10	-	-	-

Rev.	Status	Author(s)	Reviewed By	Approved By	Office of Origin	Issue Date
F01	Final	J. McManus	W. Phelan	C. Boland	Carnegie	October 2003
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1 INTRODUCTION

The following EIS Non-Technical Summary was reviewed as part of an Article 13 compliance requirement for EPA licence application Reg No. 205-1. The amendments herein are tracked and highlighted.

1.1 BACKGROUND

This Environmental Impact Statement (EIS) is part of the planning application submitted by Reduce Reuse & Recycle Ltd. to South Dublin County Council seeking planning permission to develop a Sustainable Resource Recovery Centre on a 4.5Ha (11.1 acres) at Crag Avenue, Clondalkin Co. Dublin. The site is located in Clondalkin Industrial Estate two kilometres north of Clondalkin village. The property is currently used as a car warehouse and distribution centre (Transcar Warehousing and Car Distribution).

RPS-MCOS were commissioned by Reduce Reuse & Recycle Ltd. to prepare an Environmental Impact Statement (EIS) for the proposed development.

The Environmental Impact Statement assesses the potential environmental impacts associated with the construction and operation of the proposed development. Where the potential exists for significant impacts to occur, ameliorative measures to prevent or minimise the impact are given. The EIS provides information which the competent authority uses in determining whether or not to grant consent. This information is also used by affected parties to evaluate the acceptability of the development and its impacts.

The Planning Application was successful and the planning granted on the basis of the application as submitted. The proposed 50,000 ft warehouse was erected. Construction of the warehouse and weighbridge infrastructure was completed in April 2005. The site commenced operation in May 2005 under a Waste Permit issued by South Dublin County Council (Ref No. WP050). A copy of the facility permit is attached.

The site is now operational with the following activities being carried on, and with the following operational facilities being provided:

- (i) Weighbridge function and data logging
- (ii) Waste reception, sorting and processing
- (iii) Waste storage and despatch
- (iv) Bin and skip storage and maintenance
- (v) Vehicle parking
- (vi) Workshop function for vehicle and equipment maintenance
- (vii) Fuel storage and fuelling
- (viii) Staff parking and facilities

2 REDUCE REUSE & RECYCLE (RRR) LTD.

In November 2003 Reduce Reuse Recycle Limited (RRR) changed its name to Greyhound Recycling & Recovery Limited (GRR). A Certificate of Incorporation on change of name from RRR to GRR is attached. The entity referred to herein as RRR and Greyhound Recycling & Recovery (GRR) are one and the same.

RRR is an established recycling company with over 30 years experience in the waste management industry providing a nationwide service to customers. Waste collection is carried out under a separate name "Greyhound Recycling & Recovery". In 2002 RRR was Ireland's most successful recycler of packaging waste according to REPAK, the nationwide packaging waste controllers. In 2003 RRR were awarded the "Recycler of the Year" award by Repak.

The company is based in Dublin and operates two authorised waste recovery and transfer facilities in Dublin and Limerick and holds all necessary waste collection permits for its haulage fleet.

The principle materials collected by Greyhound include commercial cardboard, paper, plastic, and other types of packaging waste. Since the company does not have a landfill facility, they work closely with their clients to channel as much waste as possible away from landfill.

Greyhound has established itself as a market leader through constant innovation and improvement. This is reflected by achieving the following recognitions:

- **ISO 9002** (being the first waste company to achieve accreditation in March 1998).
- **EPA Waste Licence** (Reg. No. 95-2; operating under the name of Reuse, Reuse & Recycle Ltd.)
- The company are currently working towards achieving **ISO 14001** environmental standard and expects to be awarded the ISO14001 after the final audit in November 2003. [Greyhound Recycling & Recovery now holds ISO 14001 accreditation.](#)
- **2003 Repak Recycler of the year. Runner-up 2005**
- Paper recycler for the **2003 Special Olympics**

3 THE NEED FOR THE DEVELOPMENT

The RRR business has been expanding rapidly in recent years in tandem with national recycling growth. The company requires additional capacity to accept, sort and transfer a growing volume of waste. The proposed facility is in keeping with the following national and local policies:

- Changing Our Ways (1998)- The Government Policy Statement on waste management aims to reduce dependence on landfill, increase recycling and recovery of used materials and to increase private sector action.
- Delivering change (2002)- emphasis on source separation, expanding recycling infrastructure.
- Dublin Waste Management Plan (1998)- looks to commercial collection companies to establish additional capacity to sort and recover commercial waste. Adopted by all four Dublin Local Authorities, the Plan sets an ambitious recycling & recovery target of 59% for the region.
- The new proposed new materials recycling and recovery facility is line with the South Dublin County Council Development Plan policies.

4 ALTERNATIVES

A number of developments were pursued by RRR Ltd. in the development of their additional capacity.

A planning application was lodged by RRR Ltd. for an extension to their existing facility at Knockmitten Lane which sought to increase the recovery capacity of their operations. However, despite been granted permission by South Dublin County Council, the decision was subsequently overturned by Bord Pleanala in 2003.

It was then decided to seek an alternative and much bigger site suitable to expand the company's operations on a sustainable medium-long term basis.

The site selection process began with the examination of a number of sites including a 9.5 acre site at Turnpike, Dublin 12 that was deemed unsuitable due to the close proximity to residents. RRR Ltd. sought further sites in suitably zoned areas. This process identified the Crosbie Transcar site as being particularly suitable.

RRR Ltd. believes that the site of the proposed development, which is currently used as a car storage and distribution compound, is the most suitable and logical location for the proposed development for the following reasons:

- The site is zoned for the proposed use (Light Industrial Use)
- The location is well separated from residential areas, located in the centre of an industrial estate.
- The size of the site allows for future expansion and improvement.
- The proposed development will make use of some of the existing infrastructure on the site.

In the event of the “do nothing” scenario there will be a deficit in the waste management infrastructure in the Dublin region and will lead to more waste going to landfill. It may also pose a serious threat to the future viability of the company.

4.1 PUBLIC CONSULTATION

In accordance with the Environmental Protection Agency’s guidelines on compiling an Environmental Impact Statement, consultation forms an integral part of the EIS process.

During the pre-planning stage of this development contact was made with a number of relevant statutory bodies outlining details of the proposed new facility and inviting written submissions from them. Scoping meetings were held with South Dublin County Council, including the Planning, Environment and Traffic departments.

A public information day was held to inform members of the local community about the proposed development and to invite comments from them. Local businesses in the areas received brochures detailing the proposals, as did local political representatives. Among the primary issues and concerns expressed between the local authority and local public consultation were noise and traffic impacts, odour, employment opportunities and recycling infrastructure for local businesses. Comments and feedback from all consultation measures has been taken into account in the EIS and where relevant in the design of the facility.

5 SITE AND PROPOSED DEVELOPMENT DESCRIPTION

5.1 SITE DESCRIPTION

The site of the proposed development measures 4.5Ha (11.1acres) and is currently utilised as a car storage and distribution compound. It is located on Crag Avenue in Clondalkin Industrial Estate, Dublin 22, north of Clondalkin village, and is shown on **Figure 1.1**. The estate is bounded to the west by the M50 Motorway, to the south by the Grand Canal, to the east by Cloverhill Road and to the north by the Dublin-Kildare railway line and Cloverhill Industrial Estate, an industrial estate managed by the IDA.

5.2 DEVELOPMENT DESCRIPTION

The proposed development will consist of the following elements:

- New waste recycling and transfer building (4 909 sq. m). Completed February 2005. Opened May 2005. The building houses a picking line and baling station.
- New administrative office building (606 sq. m).
- Traffic control building (60 sq. m) and weighbridges. Completed April 2005 and now fully operational
- Skip storage area. Completed
- Truck parking area. Completed with bunded fuel storage area

- Ancillary features including roads, sewerage and surface water drainage.
- Improved site entrance. Completed
- Landscaping measures.
- Small wind turbine adjacent to the office, 13m in height and approx. 2.5m in diameter.
- Underground rainwater storage tank.

The primary function of the new recycling and transfer building will be to segregate greater quantities of waste for recycling purposes. The maximum proposed tonnage is 250,000 tonnes per annum to be reached after approximately two years of operation. The building will also be used to bulk up the residual waste that is unsuitable for recycling. The facility design will support the principle of sustainable development utilising solar panels, wind turbine, reuse of rain water within the site infrastructure.

Some of the existing buildings and structures on the existing site will be retained by the new development. The existing hard standing surface will be retained in most areas. Service infrastructure that will serve the new site will include three-phase electricity, telecommunications infrastructure, water mains, storm water drains and foul sewerage.

Provisions will be made in the planning application for the improvement of the existing services and for the expansion to bring each of these services to the new buildings at the site.

5.3 PHASING

The proposed site layout is shown on Figure 5.2. This will form Phase 1 of the development. RRR envisage further phases of expansion including waste recovery and recycling activities will take place in the future. These will form the basis of future planning applications.

No additional planning applications have been submitted at this time (April 10th 2006).

5.4 SUSTAINABLE RESOURCE RECOVERY

The proposed new state of the art sustainable resource recovery facility has been designed to be as environmentally friendly as possible. This aim was followed in the design of both the main processing and office buildings. Some sustainable design features include a small wind turbine and solar panels that will generate energy, reducing the overall power requirement for the offices, and a rainwater collection system that will allow for the reuse of collected rainwater in the main facility building. These features along with others help promote the sustainable aspect of the facility whose ultimate purpose is to reduce the amount of materials sent to landfill for final disposal.

Future phases of development at the facility are likely to revolve around research and development in terms of converting waste materials to resources – for example further reprocessing of the materials recovered into new products and raw materials. RRR are committed to implementing opportunities for sustainable use of resources at all stages in their operation.

5.5 DESIGN OBJECTIVES

The principle design objectives associated with the new proposed development can be summarised as follows:

- The provision of a simple yet functional and safe means of receiving, sorting, baling, pelletising, chipping, recycling, compaction and off-loading of various waste streams.
- The minimisation of the potential impacts from spillages, contamination or otherwise.
- The minimisation of any fugitive emissions.

- The design and construction of a facility that meets high safety standards.
- The new facilities should be accommodated within the available area of the site.
- The warehouse should be large enough to accommodate the loading and unloading of trucks and the separation of waste.
- Careful integration with the environment and minimisation of potential environmental impacts.
- Careful design of new buildings in order to minimise any cut and fill requirements during construction.

6 ENVIRONMENTAL ASSESSMENT

The environmental topics of the EIS are summarised in the following section under the general classification of “Natural Environment” and “Human Beings”. Each section commences with a summary of the existing environment, predicated impacts of the proposed development and planned mitigation measures to deal with the impacts. Specialist sub-consultants were employed to carry out specific environmental work at the site.

6.1 NATURAL ENVIRONMENT

6.1.1 Soils Geology and Hydrogeology

Existing

The geology and hydrogeology in the vicinity of the proposed Sustainable Resource Recovery Facility were assessed through the study of maps, reports and site investigation. Made ground was encountered to the east and west of the proposed site overlying gravely clay and gravel, which in turn was underlain by shale and weathered limestone.

Groundwater was encountered at between 2.0 and 3.0 meters below ground level (bgl). Standpipes were installed in all boreholes for further monitoring. The standing water level recorded in the boreholes ranged between 1.6m and 2.0m. Groundwater samples were also taken and sent for analysis.

Potential Impact

There is potential for the compaction of soils by vehicles during construction. The risk also exists of fuel spills polluting soil and groundwater, e.g. diesel and oil spills. Waste can leach into the ground impacting soil and groundwater.

Mitigation

- To avoid direct and indirect contamination of groundwater mitigation measures during construction will include: proper management of potential contaminating substances including bunding of fuel tanks, employing temporary dewatering techniques if it is necessary to excavate to below groundwater level and suitable backfill in areas of excavation to prevent increasing vulnerability of the underlying groundwater.
- During the operation of the new facility all wastes should only be handled on impermeable surfaces to avoid the possibility of groundwater contamination.

6.1.2 Terrestrial Ecology

Existing

The site is not included in any designated area under national law or the EU Habitats or Bird Directives. The nearest designated site is the Grand Canal which is approximately 2km south of the

site. The existing site is hard standing, comprising of approximately 85% concrete covering. Therefore the site is almost devoid of all natural vegetation. All adjacent sites are also of a hard standing nature as is typically found in an industrial estate.

Potential Impact

During the construction stage there will be removal of some of the topsoil although this will not have a significant ecological impact on the site or surrounding area.

Mitigation

The creation of "green areas" in conjunction with the implementation of appropriate landscaping measures and overall layout design of the proposed development will help promote and encourage the development of the overall ecological environment.

6.1.3 Aquatic Ecology and Surface Water Quality

Existing

There are no existing watercourses on the site of the proposed development. The only visible surface water close to the site is a small feeder stream that receives the drainage discharge from Crag Avenue. This stream runs down to and along the Grand Canal before it discharges into the River Camac at Blue Bell Avenue.

Potential Impact

There are potential negative impacts on the stream which receives surface water drainage from the site and which flows in to the River Camac, due to sedimentation from the construction phase, and from possible run-off from waste from fuels, spillages etc., or other processed wet wastes during the operation of the proposed development.

Mitigation

In order to prevent or reduce the potential risk of contamination of water quality in adjacent watercourses a number of steps will be incorporated into the design and construction phase as well as during the operation of the new facility:

- Surface water runoff generated on-site will be collected and conveyed off-site via a specially designed surface water network system. The network will consist of drains, gullies, manholes and pipes and will reduce the possibility of surface water ponding occurring on-site. The runoff will be channelled through an oil-interceptor which will remove any pollutants from the surface water before connecting into the local area surface water system.
- Surface water management will be implemented during the construction stage to minimise discharge of sediment.
- The main warehouse, when operational, will not release any leachate since the accepted waste will be predominately dry packaging. There will be no drainage on the waste processing area. Any spills will be collected by on-site suction sweeper and disposed of off-site.
- Capacity of rainwater for reuse will reduce the volume of surface run-off from the site.

6.1.4 Air Quality, Odours & Climate

Air Quality & Odours

Existing

A baseline ambient air quality survey was carried out in the vicinity of the proposed development. Currently the air quality is moderate with levels of indicators for traffic-derived pollution (benzene, particulate matter and nitrogen dioxide) below the relevant European Union limits. The main source of air pollution in the area is from motor vehicle exhausts and the concentrations of pollutants decreases with distance from major roads.

Potential Impact

The storage on site of any organic wastes for long periods of time may give rise to offensive odours, particularly in spells of dry and warm weather. The processing of waste outdoors could generate dust.

During construction air borne particles may give rise to the generation of dust. Construction vehicles may also give rise to petrol and diesel exhaust emissions. Trucks and vehicles travelling to and from the new facility could give rise to dust generation particularly in spells of dry weather.

Mitigation

Good working practices and the following mitigation measures will help minimise any negative impacts to air quality:

Construction Phase:

The contractor will be required to produce a dust minimisation plan which will incorporate the following measures:

- Regular cleaning of site roads (once a week to increase to once a day if heavy rain with a road sweeper)
- Regular watering of roads which have the potential to give rise to fugitive dust during dry and or windy weather conditions (once a week with a road sweeper)
- 15 mph speed restrictions applied to site roads
- Material handling systems and site stockpiling of materials shall be designed and laid out to minimise exposure to wind during construction. Any stockpiles of materials likely to create nuisance dust will be kept covered.

Operational Phase:

- Use of fast acting roller-shutter doors when waste delivery trucks are delivering waste to the enclosed building
- Ensuring residual wastes and any organic wastes are moved off-site promptly
- Use of odour and dust suppression systems (mist sprays) at relevant door openings
- All waste handling operations will be undertaken in a fully enclosed building.

Climate

Existing

A study was conducted on the potential climatic impacts of the proposed scheme taking into consideration both long-term weather patterns (macro-climate) and localised atmospheric conditions (micro-climate).

Motor vehicles are a major source of atmospheric emissions thought to contribute to climate change. Smooth inflow and outflow of traffic incorporated into the site design and future improvements to existing road will result in free flowing traffic which will reduce the impact arising from vehicle emissions, compared to the emission pattern associated with congested driving conditions. It is considered that in general the proposed scheme will not have a significant impact on the macroclimate in Dublin.

Potential Impact

With regard to microclimate there may be slight changes in shelter, the spatial distribution of temperature, light, shade and rainwater runoff. There are no plants on the site of the proposed development that will be affected by this slight change in the microclimate. There are also no particularly sensitive life forms that will suffer.

The new development will not have a significant effect on shading or temperature profiles at the nearest residential properties therefore mitigation measures are not required.

6.1.5 Noise & Vibration

Existing

Background day time and night time noise levels are typical of an industrial zone and are influenced by traffic and industrial activity as well as passing trains on the Dublin to Kildare line.

Potential Impact

There will be short-term temporary elevated noise levels associated with construction works during the construction of the new recycling facility.

Once fully operational, the new development will utilise industrial type processes and equipment that will generate noise. The vehicles transporting materials to and from the new facility will also give rise to traffic noise.

Mitigation

Construction Phase:

- Limiting working hours on site
- Sitting of noisy/vibratory plant as far away from sensitive properties as permitted by site constraints.
- Communication line open to neighbours to answer and deal with suggestions or complaints when they arise.

Operational Phase:

- Keep doors of waste building closed at all times when not in use.
- Keep fleet and machinery on site well serviced to reduce noise. A strict 6 monthly service regimes with documented records will be maintained by RRR.

Once operational the waste recovery process will be totally enclosed and will be governed by a waste licence issued by the EPA. There will also be regular noise monitoring carried out, both on site and off site.

It is not expected that the new development will give rise to significant negative noise levels once the mitigation measures outlined above are in place.

6.1.6 Landscape & Visual Study

Existing

The site of the proposed development lies within Clondalkin Industrial Estate and this landscape is best described as flat and typical of mixed industrial/commercial/residential/open space suburban character.

Potential Impact

The proposed development will include a new 15.4m high building, an 9.3m high office building and a 13m high wind turbine. Visual impacts will be most pronounced during the construction stage while general construction and visual disturbance will be at its greatest.

Mitigation

During the construction stage contracts will be drawn up in accordance with this report to ensure good working practices are outlined and adhered to which will help reduce negative impacts arising during the construction period.

Storage areas will be put in place to avoid impacting on surrounding properties with such areas fully re-instated when construction is fully completed.

The design of the proposed development and the overall site layout plan have been sympathetic to the landscape character of the area including the height of the surrounding buildings and as a result the completed development will not result in any negative landscape or visual impacts.

It is anticipated that when the landscaping measures proposed in the Landscaping Master-Plan for the site are fully implemented the new development will enhance and improve the visual aesthetics of the current site.

6.1.7 Archaeology & Cultural Heritage

No known archaeology sites, as identified in the Sites and Monuments Record (SMR) are affected by the proposed development, as there are none in the vicinity of the site.

No additional areas of archaeological potential have been identified and the proposed development is not expected to impact on items of architectural heritage or other cultural heritage items. As a result no mitigation measures are necessary.

6.2 HUMAN BEINGS

6.2.1 Traffic

Existing

The proposed development site is located in Clondalkin Industrial Estate off Station Road. The existing road network has been designed to cater for relatively large volumes of traffic.

Traffic assessments have been undertaken at a number of major junctions in and around the site of the proposed development on Crag Avenue.

Potential Impact

In terms of the overall impact of the proposed development on the road network, there will be an increase of 6 PCU (passenger carrying units) movements per day after two years once the new facility is fully operational. This is not considered to be significant and the traffic can be accommodated satisfactorily within the road network. Traffic assessments have been undertaken at a number of major junctions close to the proposed development.

Mitigation

The layout and design of the access and the internal roads and car park have been designed for ease of access and egress and to minimise the likelihood of accidents.

Careful consideration has been afforded to the needs of pedestrians and cyclists, the more vulnerable road users. The proposed layout incorporates a separate pedestrian/cyclist entrance to the facility and sheltered bike racks for bicycles. Pedestrian walkways will be clearly marked throughout the site to ensure staff/visitors and vehicles can move around the site safely.

The signalised junction between Coldcut Road and Cloverhill Road would benefit from additional capacity which could be created by provision of a left turn flare on Cloverhill Road. This would be subject to further investigation by SDCC, in terms of land acquisition and overall feasibility.

The implementation of a number of strategic road improvement schemes including the Dublin Port Tunnel, the Second Westlink Bridge, the Outer Ring Road, the widening of the humpback bridges and the widening of the N4 to 3 lanes in either direction will result in significant improvements for traffic patterns in Clondalkin in the future.

6.2.2 Nuisances

The term “nuisance” covers a wide range of environmental parameters including as scavenging birds, litter and rodents can all serve as a form of nuisance.

The waste licence deals with all these specific issues individually. They are also addressed in the EIS and suitable mitigation measures are proposed for each topic. It is not anticipated that there will be a significant impact caused by any of these issues, either individually or collectively.

Potential Impacts & Mitigation

Litter

Litter can become dislodged or blown off vehicles transporting materials to and from the new facility. However, the implementation of the following control measures will minimise the potential of litter problems:

- Carrying out all waste handling indoors
- Ensuring incoming and outgoing vehicles are covered
- Daily litter patrols
- Erecting windbreaks
- Good house keeping measures

Pests

The new facility may attract rodents and scavenging birds to the proposed facility to seek alternative food sources. However, the implementation of the following control measures will minimise the potential of such an unwelcome attraction.

- The removal of all waste delivered on a daily basis
- Regular washing of the tipping floor
- Ensuring all operations involving handling of materials is done indoors
- Installation of bird-deterrent measures
- Covering of all materials which is to be transported
- Routine visual inspections of pest habitats
- Hiring of professional licensed pest control specialists with expertise in controlling specific pest populations, when needed, and using rodent baits/poison and insect sprays.

As the site will be unsuitable for rodent habitation and given the mitigation measures as outlined in the EIS, it is unlikely that this will be an issue of likely concern.

6.2.3 Employment

The proposed development is expected to create up to an additional 60 jobs when fully operational.

6.3 INTERACTION OF EFFECTS

The EIS has examined the potential for separate environmental effects to interact or combine to create further or amplified environmental effects.

Potential interactions identified mainly relate to a reduction in residential quality, where potential slight impacts related to traffic, noise and air quality could interact. However, as suitable mitigation measures will be eliminated/reduce the possibility of potential effects, the above interactions will be avoided. There is also a possible positive impact on community and human beings through enhanced employment opportunities. Further potential positive impacts on visual appearance of the site and flora and fauna (through improved landscaping and vegetation) are also outlined.

As the potential negative interactions between factors associated with the operation of the proposed sustainable resource recovery facility will be mitigated appropriately, it is anticipated the overall new facility will result in a net slight positive impact to the local environment.

7 CONCLUSION

The EIS has examined in detail the impacts, both positive and negative, that the proposed new facility will have on the environment. A number of potential impacts on both the natural and socio-economic environments have been identified and where necessary suitable mitigation measures to reduce negative impacts have been recommended.

Having regard to National Waste Policies, the Dublin Waste Management Plan, the South Dublin County Development Plan and the details outlined within this EIS, it can be concluded that the proposal to develop a new state of the art sustainable resource recovery & recycling facility- which will receive 250,000 tonnes/annum of material when fully operational- will not have an adverse impact on the environment.

The future landscaping proposals will lead to a significant improvement on the current industrial appearance of the site. In terms of impacting on the local community, potential effects have been examined and mitigation measures advised to eliminate any potential serious environmental risks. Once regard is had to the EPA's Waste Licence for the proposed facility, negative environmental impacts will be minimised.

The ultimate result of the operation of this proposed development would be the diversion of waste material from landfill, which is no longer a viable and sustainable option, while helping Dublin achieve its recycling targets. It will also lead to the creation of employment in the area which would have beneficial knock-on economic effects for Clondalkin which currently suffers from levels of high unemployment.

Therefore, it is recommended that this development should proceed, provided recommended mitigation measures are implemented.

At the time of revision of this EIS, the facility has been operational for 12 months under a waste permit issued by South Dublin County Council. There have been no incidents or uncontrolled emissions from the site. No complaints have been received against the facility.