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environmental management for business

Ms. Yvonne Furlong,
Inspector,
Office of Climate, Licensing & Resource Use,
Environmental Protection Agency,
Headquarters P.O. Box 3000,
Johnstown Castle Estate,
County Wexford.

30th January 2008

RE: Application for Waste Licence Ref. No. W0241-01Greenstar Ltd., Clavass, Eniscorthy, County Wexford

Dear Ms. Furlong,

On behalf of Greenstar Ltd., I enclose one original and two hard copies of responses to the Notices issued under Article 14 (2) (b) (ii) on the 11th January in relation to the application for a Waste Licence W0241-01. I also enclose two CD-ROM discs containing the response in searchable pdf format. The content of the electronic files is a true copy of the original.

If you have any queries, please call me.

Yours sincerely,

Jim O' Callaghan

0704819/JOC/MC
Encs.
c.c. Mr. Malcolm Dowling, Greenstar Ltd.

email: info@ocallaghanmoran.com Website: www.ocallaghanmoran.com
O'Callaghan Moran & Associates. Registration No. 8272844U

Article 14(2)(b)(ii) Further Information

Particulars and Evidence For

Greenstar Ltd.

Waste Licence Application No.W0241-01

Article 12 & 13 Compliance

Prepared For: -

Greenstar Ltd.,
Unit 6 Ballyogan Road,
Ballyogan Business Park,
Sandyford,
Dublin 18.

Prepared By: -

O' Callaghan Moran & Associates,
Granary House,
Rutland Street,
Cork.

30th January 2008

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1. INTRODUCTION

This document presents the response by Greenstar Ltd., Unit 6 Ballyogan Road, Ballyogan Business Park, Sandyford, Dublin 18, to the Agency's Notice issued under Article 14(2)(b)(ii) of the Waste Management Licensing Regulations on the 11th January 2008, in relation to the application for a Waste Licence, Application Register No.W0241-01, for a non-hazardous materials recovery and transfer facility at Clavass, Enniscorthy, County Wexford.

Section 2 contains the responses to the Agency's requests. Section 3 contains the revised non-technical summary, which includes a summary of the information provided as part of this response. For ease of interpretation each of the requests are presented in italics followed by Greenstar's response.

2. ARTICLE 12 COMPLIANCE REQUIREMENTS

1. *Ensure that all required information is included in the non-technical summary as detailed in Article 12(1)(u) of the Waste Management (Licensing) Regulations, S.I. 395 of 2004.*

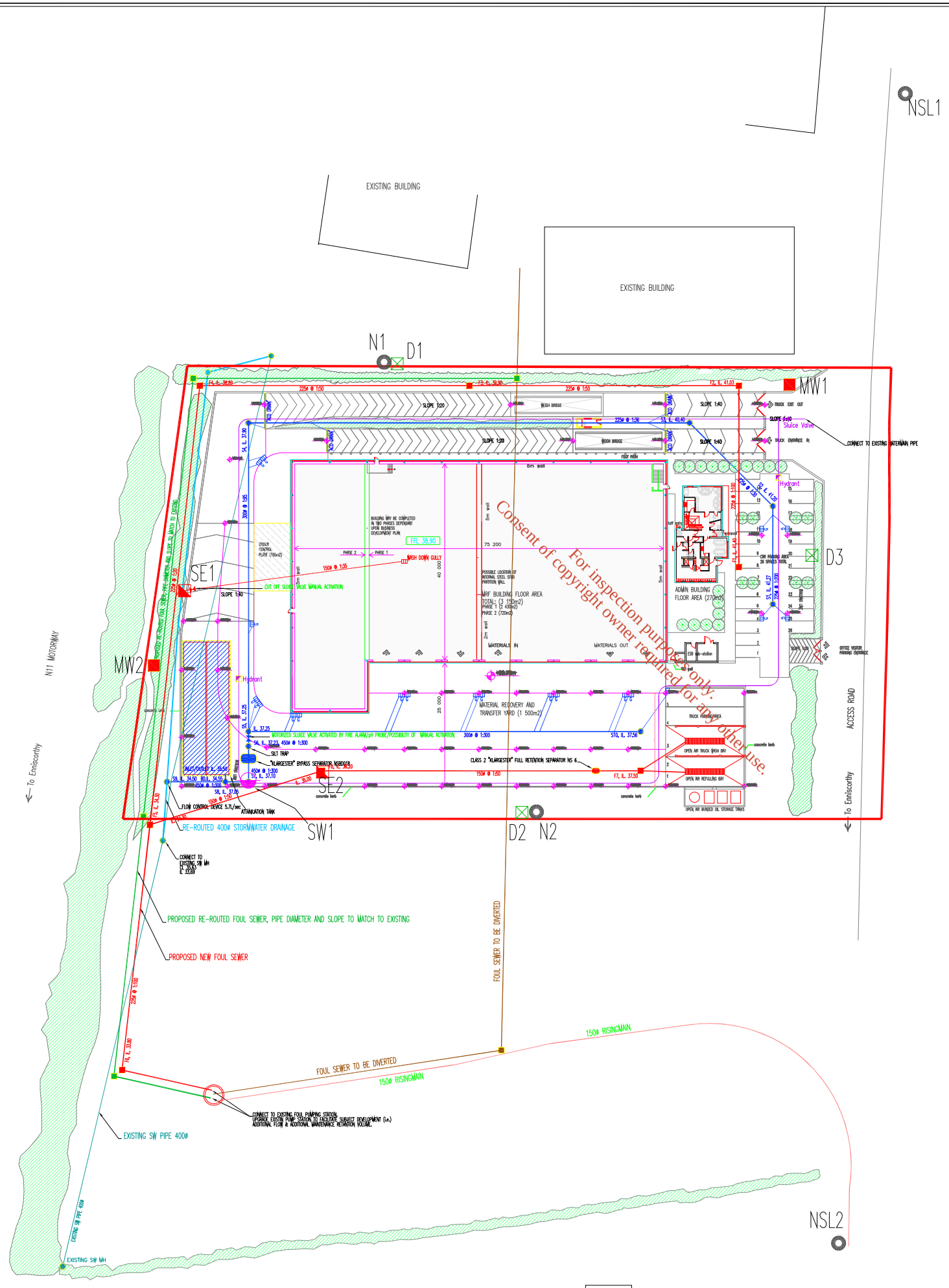
A revised Non-Technical Summary is provided in Section 3.

2. *Provide details of a groundwater monitoring programme for the site. The programme shall include an A3 drawing of the site, showing the proposed monitoring locations. The methodology used for selection of these monitoring locations should also be outlined.*

There will be no direct or indirect discharges from the site to ground or groundwater linked with the proposed site activities. The provision of extensive paved areas, surface water collection drains, and secondary containment of the oil storage area minimises the potential for short term, direct or indirect discharges to ground or groundwater associated with accidental spills or leaks.

While the facility presents a minimal risk to groundwater t is proposed, in response to the Agency's request, to install two groundwater monitoring wells at the site. One will be upgradient (MW1) and one downgradient (MW2) of operational areas. The locations are shown on Drawing No F1 Rev B. The site slopes from the north east to the south west, from an elevation of 42 m Ordnance Datum (OD) to 36 m OD. It is expected that groundwater flow will follow the local topography from the north east to the south west.

MW1 will be positioned in the landscaped area to the north of the facility entrance and up gradient of the operational areas. MW2 will be located along the south west boundary of the facility and down gradient of the operational area. Both wells will be installed in accordance with best practice following the construction of the facility, so as to avoid damage during the development phase.



NOTES

LEGEND: PROPOSED MONITORING LOCATIONS

- Denotes Sewer Monitoring Location
- Denotes surface water monitoring locations
- Denotes noise monitoring point
- Denotes dust monitoring point
- Denotes groundwater monitoring point

#	I.D.	EASTING	NORTHING
1	NSL1	298403	143634
2	NSL2	298382	143394
3	N1	298282	143574
4	N2	298302	143479
5	SE1	298360	143420
6	SE2	298251	143491
7	SW1	298262	143487
8	D1	298283	143575
9	D2	298301	143478
10	D3	298368	143530
11	MW1	298360	143570
12	MW2	298340	143415

REV	DATE	DESCRIPTION	DRN	CHKD	APP
B	29/01/08	Art 14 Rev ISSUE	MW	JOC	**

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CLIENT

GREENSTAR LTD

TITLE

MONITORING LOCATIONS
ENNISCORTHY

SCALE	DRAWING No.	REV.
1:1000 A3	F1	B

DOS Filename : *********

3. *Clarify the route and final destination of all on-site drainage at the facility, including any off site treatment. Submit a clearly labelled drawing for the proposed development showing the proposed drainage systems, emission points, sampling points and monitoring points.*

Surface water

The proposed surface water drainage system is shown on Drawing No. D1080D2 submitted with the application. As was stated in the application surface water run-off from the roofs and paved areas will discharge to the existing 400mm storm water sewer, which runs along the western site boundary. It is understood that this sewer, which was installed as part of the development of the adjoining Commercial Park, connects to the municipal storm sewer. The municipal storm sewer discharges to the River Slaney at Island Road in Enniscorthy.

Wastewater

Sanitary and sink wastewater from the site offices will be discharged to the facility's foul drainage system, as shown on Drawing No.D1080D2 submitted with the application.

Storm water run-off from the refuelling area will be directed to the foul sewer, via a Class 2 Klargester Full Retention Separator. Washwater from the vehicle wash willalso be directed to the foul sewer via this separator, as shown on Drawing No.D1080D2. Given the nature of the materials that will be handled in the Dry Waste area, floor wash down will not be required. The floor of the Mixed Waste area will be washed down as needed The wash water will be collected in a floor gully and will be piped to the foul sewer system, as shown on Drawing No. D1080D2.

The foul sewer will connect to the existing foul water pumping station that currently takes wastewater from the Commercial Park to the north. The rising main from the pumping station connects to the municipal sewer, which discharges to the Wexford County Council Wastewater Treatment Plant at Saint Johns, Enniscorthy, County. Wexford (Grid Ref.: 297111E 138427N). This plant treats sewage from Enniscorthy Town and Environs.

Monitoring/Sampling/Emission Points

Drawing No F1, which was submitted with the application, shows the proposed surface water and foul water monitoring locations and grid references. Sections 5.14 9 of the EIS and Attachments F3 and F4 of the application describe the foul water and surface water drainage arrangements and monitoring proposals and are reiterated here.

Discharges to the foul sewer will include sanitary and sink wash water and washwater from the vehicle wash bay, floor wash water from the MSW handling section of the building and the runoff from the refuelling area. The quality of the sanitary and sink wastewater discharge

will be similar to domestic discharges and therefore it is not proposed to monitor this discharge.

It is proposed to monitor the discharge to the foul sewer from the floor wash down, and the vehicle washbay and refuelling area at SE1 and SE2. SE1 is the final emission point from the building and SE2 is the final emission point from the vehicle wash bay and refuelling area.

Surface water run-off from the roofs and paved areas will discharge to the existing 400mm storm water sewer, which runs along the western site boundary. There will be one emission point emission from the facility, which will be from the attenuation tank. This emission will be regulated by a flow control device fitted at the connection to the existing storm sewer. The device will allow a maximum outflow from the site of 5.7 litre/second in accordance with Wexford County Council requirements. The controlled discharge from the site will minimise the potential for any impact on the receiving municipal storm sewer.

4. *Provide details of the proposed odour treatment system to be used at the facility, including the location of the system.*

Details on the proposed odour treatment system were provided in Section 12.1.1 of the EIS, which accompanied the application and are reiterated here. The location of the odour control plant is shown to the west of the recovery building on Drawings PP-003 Site Plan and PP-004 MRF Floor Plan, which were submitted with the application.

Greenstar will, prior to the start of waste activities, install an odour management system that will include an appropriately sized air extraction and emissions treatment system. The system design, which must receive the approval of the EPA, will be similar to that installed at other Greenstar MRTFs that handle similar waste types, and will include:-

- Internal segregation of the building to allow for separate processing of odorous and non-odorous wastes in a designated Mixed Waste area;
- Provide a good building fabric skin, with minimal gaps;
- An air extraction system that provides negative air pressure in the areas where odorous wastes are handled. This should provide between 2 and of 4.5 air changes/hour inside the Mixed Waste area;
- Air collection pipework connected to an air treatment system that will use activated carbon.

The proposed location of the odour control plant is shown to the west of the recovery building on Drawings PP-003 Site Plan and PP-004 MRF Floor Plan. The extraction pipework will extend over the mixed waste area and direct the air to the control plant to the west of the building.

Following receipt of the waste licence a detailed design will be provided to the Agency and its approval obtained before the plant is commissioned.

5. *Provide details of the proposed on-site noise barrier (i.e. is it reflective or absorptive)*

A report on various options for the proposed noise barrier is included in Appendix 1. The barrier will be absorptive in nature, as recommended in the report. Three barrier designs are presented in Appendix 1 and it is intended to construct either Option 2, which includes an absorptive barrier on top of an earthen berm, or Option 3 which is an earthen berm only. Both of these options are considered appropriate and the final option will be determined during the construction phase of the development.

3. NON TECHNICAL SUMMARY WASTE LICENCE APPLICATION

Greenstar Ltd. Unit 6 Ballyogan Road, Ballyogan Business Park, Sandyford, Dublin 18 (Greenstar) is applying to the Environmental Protection Agency (EPA) for a Waste Licence to construct and operate a Materials Recovery and Transfer Facility (MRTF) at Clavass, Enniscorthy, County Wexford.

The application for a Waste Licence is in accordance with the requirements of the Waste Management Acts, 1996 to 2007. This non-technical summary contains the information specified in Article 12 (1) (u) of the Waste Management (Licensing) Regulations, 2004 (S.I. No. 395 of 2004).

Compliance with Requirements of the Waste Management Act 1996 to 2003

Best Available Techniques (BAT) will be used to prevent/eliminate or, where this may be deemed not practicable, limit/abate/reduce emissions of environmental concern resulting from on-site recovery activities.

Nature of the Facility

The proposed development involves the construction and operation of a materials recovery and transfer facility on a 1.5 ha site, 4 kilometres north of Enniscorthy, Co Wexford. This will include a Main Building, where all waste processing will be carrier out, an Administration Building, ESB substation, double weighbridge, bunded fuels storage area and a vehicle wash. The facility will handle source separated and mixed non-hazardous solid wastes. The waste types will include Household, Commercial & Industrial (C&I) and Construction & Demolition (C&D) waste. Operations will involve on-site waste sorting, compacting, baling and transfer off-site to recycling/treatment facilities and residual landfill.

The facility will form a very important part of the waste management infrastructure required in the South East Region to achieve European Union, national and regional objectives for waste treatment, recovery and recycling and the diversion of waste, including biodegradable waste, from landfill.

Classes of Activity

The relevant activities as per the Fourth Schedule of the Waste Management Acts 1996 – 2005 will be as follows: -

Third Schedule – Waste Disposal Activities

12: 'Repackaging prior to submission to any activity referred to in a preceding paragraph of this Schedule'.

11: 'Blending or mixture prior to submission to any activity referred to in a preceding paragraph of this Schedule'.

13: 'Storage prior to submission to any activity referred to in a preceding paragraph of this Schedule, other than temporary storage, pending collection, on the premises where the waste concerned is produced'.

Fourth Schedule – Waste Recovery Activities

Principal Activity:

2: 'Recycling or reclamation of organic substances, which are not used as solvents (including composting and other biological processes)'. (P)

3: 'Recycling or reclamation of metals and metal compounds'.

4: 'Recycling or reclamation of other inorganic materials'.

13: 'Storage of waste intended for submission to any activity referred to in a preceding paragraph of this Schedule, other than temporary storage, pending collection, on the premises where such waste is produced'.

Quantity and Nature of the Waste to be Recovered or Disposed

A maximum of 90,000 tonnes per annum will be processed. Total waste inputs are shown on Table 1.1

Table 1.1 Waste Types and Amounts

Waste Type	Maximum Capacity*
C & I	30,000
Household	30,000
C & D	30,000
Total	**90,000**

*Subject to Market Conditions

Raw and Ancillary Materials, Substances, Preparations, Fuels & Energy used on the Site

Raw materials and energy that will be used include: -

- Diesel for on-site equipment,
- Hydraulic oil and engine oil for use in on-site equipment,
- Electricity,
- Water.

Plant, Methods, Processes, Abatement, Recovery, Treatment and Operating Procedures

The estimated type and number of machinery items that will be used at the facility on a regular basis includes: -

Type of Plant	MRTF Building
Front Loading Shovel	2
Trommel or similar mechanical process	1/2
Baler	1
Air Compressor	1
Grabs	1
Shredder	1
Conveyor	2
Bag Opener	1
Forklift	1
Yardsweeper	1
Odour abatement system	1

Waste Processing

Initially, the majority of the waste will be delivered to the facility by Greenstar collection vehicles. Waste will also be delivered by third parties, including permitted waste collectors. Wastes will not be accepted from individual householders.

Household Waste

Household waste will comprise source separated dry recyclables and mixed residual wastes. It will be delivered to the facility in enclosed refuse trucks and will be off loaded in a designated area inside the Main Building, where it will be inspected to ensure it is suitable for processing i.e. it does not contain any hazardous or other unsuitable material.

The source separated material will be moved to the baling units or loading bays where it will be baled, or compacted before being loaded onto trailers for removal off-site. The mixed waste containing putrescible (e.g. food stuff) waste will only be handled in area provided with an odour control system. The waste may be mechanically processed to remove potential recyclable materials including metals, paper, plastics, compostable materials and materials that are suitable for energy recovery. The recovered metals, paper and plastic will be stored on-site pending removal to off-site recovery/recycling facilities. The compostable materials will be removed off-site for composting at a permitted/licensed facility.

C & I Waste

The C & I waste will comprise source separated and mixed residual waste. The source separated materials will contain larger fraction of cardboard, plastic and cans than the household dry recyclables. Any waste containing putrescible material will be handled with the mixed household waste in the area provide with odour control.

The source separated material will be baled, or compacted before being loaded onto trailers for removal off-site. The mixed waste will be mechanically treated to remove potential recyclable materials. The recovered non compostable materials will be stored on-site pending removal to off-site recovery/recycling facilities. The compostable materials will be removed off-site for composting at a permitted/licensed facility.

C & D Waste

C&D Waste will be off-loaded in the designated area inside the Main Building for inspection. Any unsuitable (contaminated) materials will be removed to a waste quarantine area. Large items of wood, metal or plastic will be removed using a mechanical grab or trommel and bought to the appropriate on-site handling/storage area. The remaining material will be screened. The screened material will be sent off-site for recycling.

Information Related to Section 40(4) (a) to (d) of the Waste Management Act

Emissions from the facility will not result in the contravention of any relevant standard or emission limit prescribed under enactment. The proposed development is consistent with the Joint Waste Management Plan for the South East Region 2006 – 2011.

The proposed activities are based on best management practice and take into consideration the BAT Guidance Note for the Waste Sector: Waste Transfer Activities published by the EPA. The facility operations, when carried out in accordance with licence conditions, will not cause environmental pollution.

The Facility Manager and Deputy will complete the FAS Waste Management Training Programme, or equivalent agreed with the Agency, prior to the start of waste acceptance.

Energy will be used efficiently in the carrying out of proposed activities/. Necessary measures will be taken to ensure limited consequences for the environment from site activities accidents or the permanent cessation of activities at the site.

Source, Location, Nature, Composition, Quantity, Level and Rate of Emissions

Surface Water / Groundwater

The site is in the catchment of the River Slaney, which is to the north and east of the site and approximately 1.5 km from the site boundary. There are no surface water drains on the site. Surface water from rainfall on the roof and open yards will be directed to the surface water sewer that runs along the western boundary. Silt traps and an oil interceptor will be provided to prevent sediment and any oils that may occur as a result of accidental spills, from entering the sewer. The rate of water flow from the site will be controlled by means of a valve and holding tank to ensure that the flows do not affect the integrity of the sewer.

The water from the sinks and toilets will go to the new foul sewer system and will be pumped to the Council's sewer. Wash water from cleaning the floor in the main building, water from the vehicle wash area and rainwater from the refuelling area will also go to the foul water sewer.

The soils are a shale till (clay) ranging from 3 to 10 metres deep. The underlying bedrock is rhyloitic volcanics and grey and brown slates. The subsoils are not significantly water bearing. The bedrock is classified as a Regionally Important Aquifer and its vulnerability to pollution ranges from high to low. There will be no direct or indirect routine emission to ground or groundwater.

Dust/Odours/Exhaust Emissions

Air quality surveys were carried out to establish the current conditions. The surveys indicate that air quality at the site is generally good. The proposed development will be a source of emissions to air linked traffic and the waste activities. These emissions include dusts, vehicle exhaust gases and odours.

Noise

An environmental noise survey was carried out to establish the existing noise levels at the site. The survey included measurements at three locations (N1, N2 and N3) within the site boundary and at two off site locations (NSL1 and NSL2). The off-site locations were near the closest houses to the site, as these were considered to be the locations most sensitive to noise from the facility. The dominant source of noise is traffic on the N11. The lowest levels were recorded at NSL1, where shielding from the N11 is provided by the buildings in the Commercial Park. The facility will be a source of noise emissions from the waste processing plant used internally, building services plant, waste transport vehicles and external movement of facility vehicles e.g. road sweeper.

Assessment of the Effects of Emissions on the Environment

Groundwater / Surface water

When the site is operational, there will be no direct or indirect long-term emissions to ground or groundwater. The provision of extensive paved areas provided with surface water collection drains, and secondary containment of the oil storage area minimises the potential for short term direct or indirect discharges to ground or groundwater, including dangerous substances, in the event of spill or leak.

Dust/Odours/Exhaust Gases

Dust emissions will not be a significant problem. All waste processing that can produce dusts (e.g. screening and shredding of C&D waste) will be carried out inside the main building. Dust suppression systems may be provided on the individual plant items. The facility access roads, manoeuvring and parking areas will be paved and a road sweeper will be used to keep the roads clean.

Some of the waste will contain odorous materials, such as foodstuffs. This type of waste will only be handled in the Mixed Waste Area of the Building. This area will be sealed off from the remainder of the building and will be provided with an air collection and odour treatment system. The system, which will be similar to ones already successfully operating at other waste recovery facilities, will ensure that odours from the facility do not cause a nuisance. The EPA's approval of the system design will be obtained before it is installed. Computer modelling indicates that the facility will not have any significant odour impact.

Computer modelling has indicated that the vehicle exhaust gases from traffic using the facility will not be significant and mitigation measures are not required.

Noise

The noise survey data was used, along with information on the noise levels from the equipment that will be used at the facility, to predict future noise levels both within the site boundary and the closest houses. The development will not impact on the closest house to the north west. Due to the doors at the southern side of the main building, there is the potential that noise levels could exceed recommended night time limits at the house to the south. To prevent this a 4m high noise barrier will be erected along the southern site boundary.

Monitoring and Sampling Points

Dust

Dust will be monitored at three locations on the property boundary annually.

Noise

Noise will be monitored annually at the nearest noise sensitive locations.

Odour

Daily odour patrols around the site perimeter will be carried out.

Surface Water

The surface water discharge from the oil water separator will be monitored on an annual basis. As the discharge will be intermittent and linked to rainfall events, grab samples will be collected.

Waste Water

The waste water discharge from the floor wash downs and the vehicle wash and refuelling area will be sampled annually.

Groundwater

Groundwater beneath the facility both upgradient and downgradient of site activities will be monitored on an annual basis.

Prevention and Recovery of Waste

Waste oils generated during plant and vehicle maintenance will be collected and sent off-site for recovery.

Off-site Treatment or Disposal of Solid or Liquid Wastes

Sanitary and sink wastewater from the site offices, floor wash water from the Main Building, washwater from the vehicle wash and run-off from the refuelling area will be discharged to the facility's foul drainage system. This drainage system will connect to the Council's foul sewer.

Emergency Procedures to Prevent Unexpected Emissions

Before waste is accepted at the site Greenstar will prepare an Emergency Response Procedure that addresses all contingencies that might arise including fire and oil spills. The Procedure will ensure a rapid response to any incident by trained staff and minimise the impact on the environment.

Closure, Restoration and Aftercare of the Site

The majority of the site will be either paved or occupied by buildings, with minor landscape works at the site boundary. It is not anticipated that the waste processing activities will cease in the medium to long term. In the unlikely event that the facility shuts down it will be decommissioned in accordance with the Decommissioning Plan agreed with the EPA. Post closure measures for the monitoring and maintenance of the building and the restored areas will also be as agreed with the EPA.

4. ARTICLE 13 COMPLIANCE

1 Where necessary update the EIS documents, having regard to the information requested under "Article 12 Compliance Requirements" above.

The information provided does not significantly impinge on the EIS.

APPENDIX 1

Noise Barrier Options

DixonBrosnan
environmental consultants

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Michael Watson

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date	our ref	your ref	cc
24.01.08	07031	-	-

Re: Acoustic barrier at proposed Greenstar facility, Enniscorthy.

Dear Michael,

Further to your email of today regarding the above, I have outlined below the optimum solution for the construction of the noise barrier proposed in our report 07031.1 dated 05.11.07.

Due to the hard reflective surfaces (building facades and hard standing area) which will be constructed on the northern side of the barrier, it will be necessary for the proposed barrier to incorporate an absorptive finish. Sound attenuation provided by a reflective barrier will be significantly negated in this case.

Three barrier design options are recommended as indicated below. The selection of the most appropriate barrier may be determined by your client at construction stage and will be based on land take, onsite soil availability and barrier cost. Option 3 presents the most favourable option as the berm sides will be expected to provide additional attenuation due to soft ground attenuation and increased Fresnel number in each octave band. However, the land take associated with this option may be excessive, and in this regard Option 2 presents a practical alternative.

Where Options 1 or 2 are applied, it is recommended that the barrier be sourced from a reputable supplier. Recommended suppliers are Woodfab Structures Ltd., Co. Wicklow or Holgate Fencing Ltd, Co. Dublin. An example of a recommended timber absorptive barrier panel from the latter is presented in Figure 1.

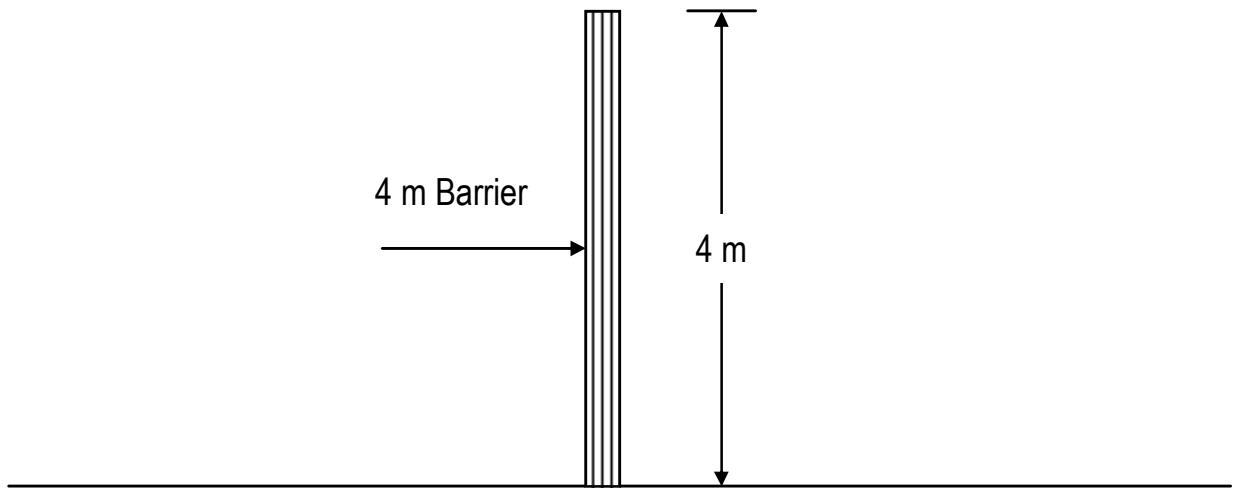
Please contact me if you have any queries.

Yours sincerely,

Damian Brosnan

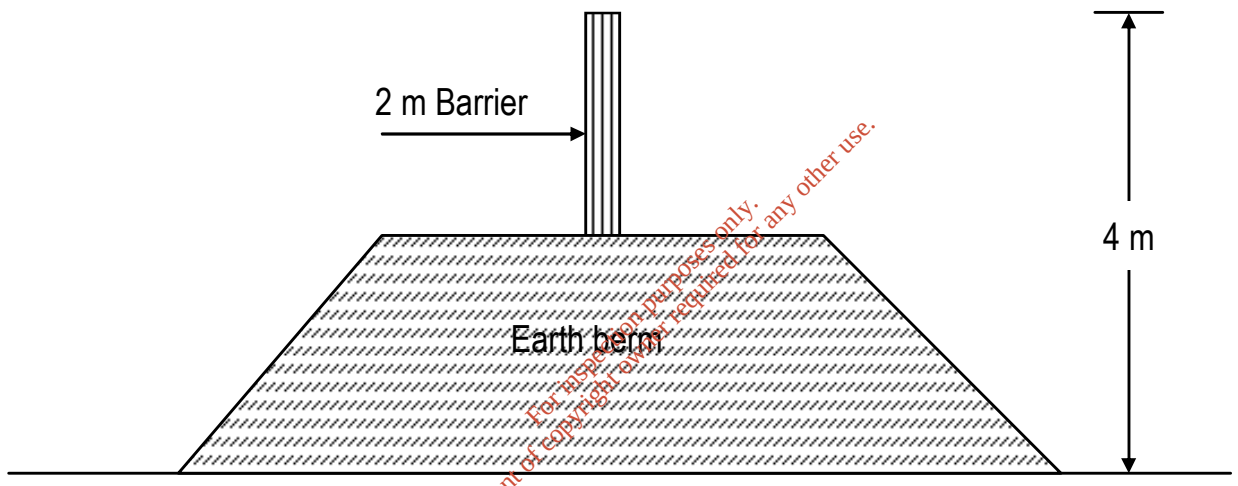
DixonBrosnan Partners
Carl Dixon BSc
Damian Brosnan BSc AMIEI AMIOA
Registered in Ireland no 201425
VAT reg IE 9535088F

Option 1.



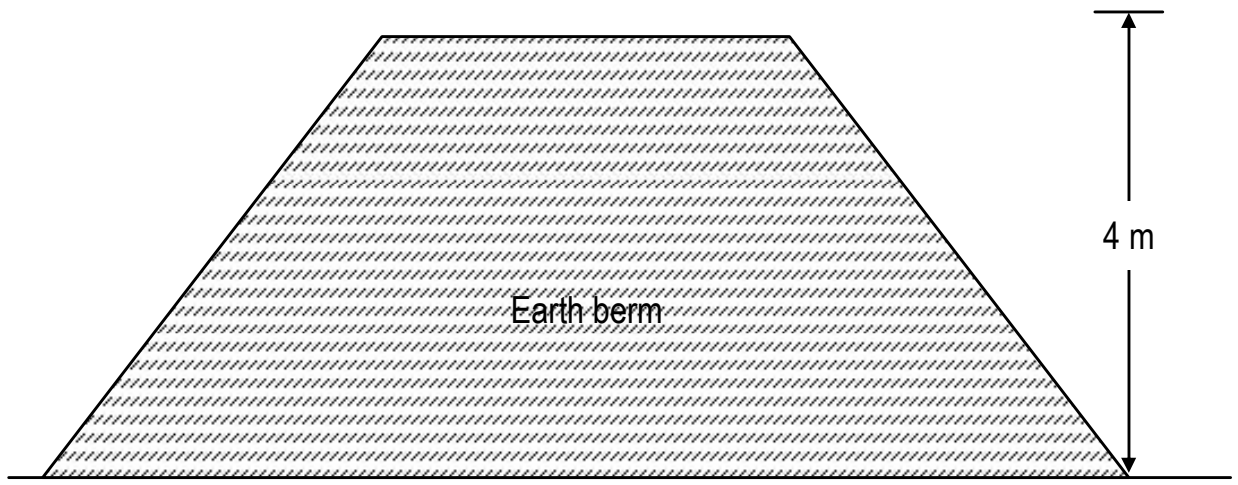
Barrier to consist of proprietary acoustic panels with wood or alternative construction.
Absorptive finish to be erected on N side.

Option 2.



Barrier to consist of proprietary acoustic panels with wood or alternative construction.
Absorptive finish to be erected on N side.
Earth berm sides to be made safe and planted with grass seed mix.
Planting of trees along berm top may enhance landscaping.

Option 3.



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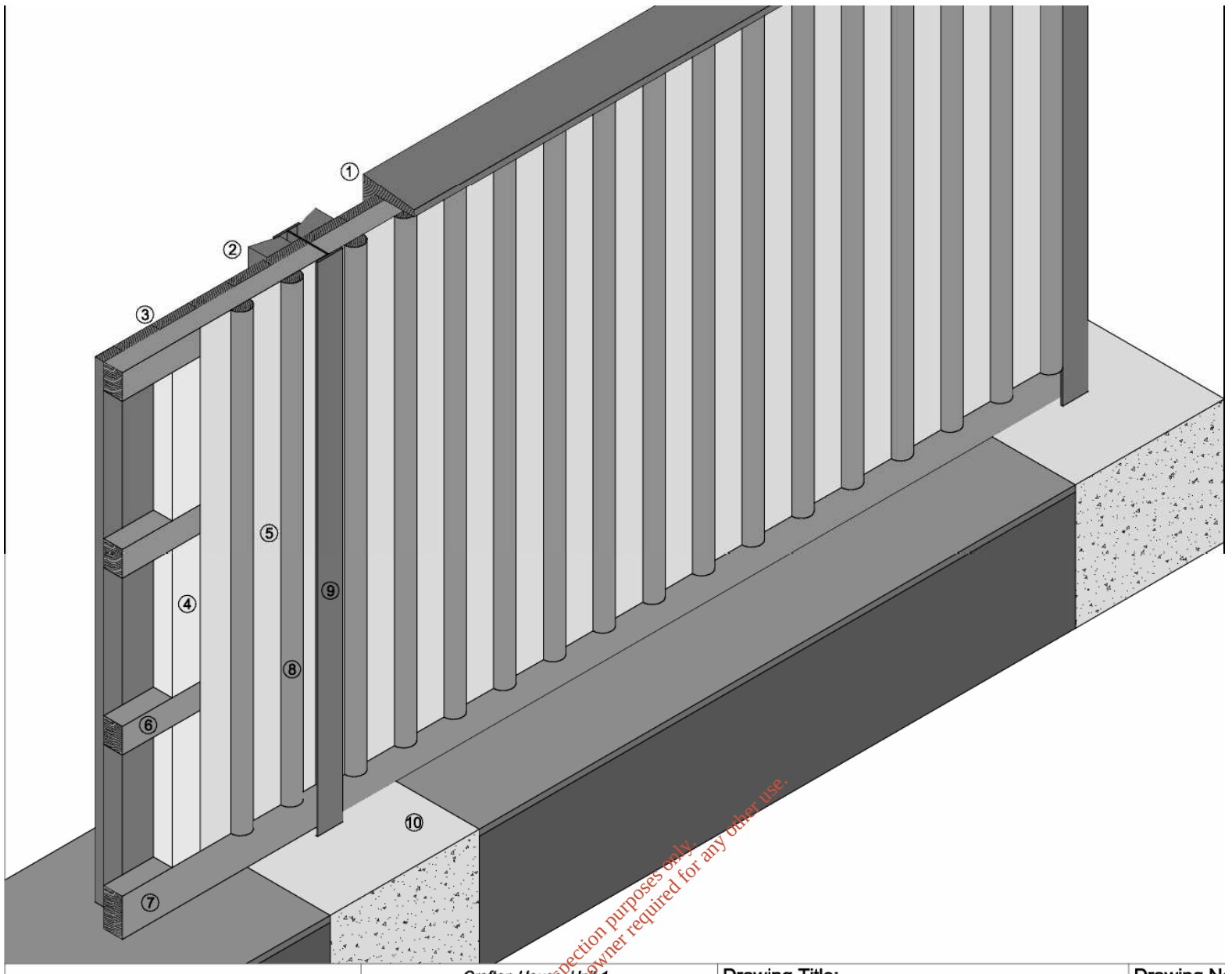

Holgate Fencing (Ire) Ltd.
Motorway Crash Barriers
&
Environmental Noise Barrier Specialists

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Drawing Title:
Timber Absorbtive Noise Barrier

Drawing N	
Drawn by:	
Scale:	
Date:	
Rev:	