
12. LANDSCAPE & VISUAL IMPACT

12.1 Introduction

This Chapter describes the landscape and provides an assessment of the potential impacts of the proposed increase in the volume of waste accepted on the landscape and visual amenity. It includes a landscape character assessment and a viewpoint analysis.

12.2 Methodology

The assessment was carried out in accordance with on guidelines in the document '*Landscape and Landscape Assessment, Consultation Draft of Guidelines for Planning Authorities*' published by the Department of the Environment and Local Government (June 2002).

12.3 Existing Conditions

Location

The facility is in the northern section of an area developed for commercial and industrial uses. The lots to the south of the facility are occupied by warehousing units, transport depots, oil depots, truck sales and repair facilities and a crane hire depot. To the east and northeast is the Ballinacurra Creek, which is a tributary of the Shannon. To the north and northwest are undeveloped lands.

Site Layout

The site is accessed by a private road off the N69 (Photographs 1 and 2 in Appendix 9). There are two adjoining waste handling buildings (Building 1 and 2) that are portal frame with metal cladding and concrete walls (Photograph 3). Both buildings occupy approximately 3,265m², with a ridge height of approximately 13m and are accessed by doors on the eastern side. The building elevations are shown on Drawing No. 003

There is a separate office building and adjoining vehicle and plant maintenance workshop (Photograph 4) near the site entrance. An electrical substation along the south-western boundary wall is owned by Electric Ireland.

The open yards are paved and are used for external waste storage, including MSW baled wastes in the north east of the site (Photograph 5), construction and demolition waste to the north of Building 2 (Photograph 6), plastics and metals (Photograph 7), truck parking and skip storage (Photograph 8) and a vehicle wash area.

There is palisade security fence on the south, east and west boundaries, with block work walls along the south-western boundary south of Building 1 and west of the site offices and workshop.

Landscape Character

The site and surrounding area is generally flat. The landscape character is predominantly industrial and commercial comprising warehouse type buildings, with open space to the north and the northwest.

Landscape Sensitivity

The facility is not in an area designated as of scenic or of special amenity importance and the sensitivity of the landscape to change is low.

Viewpoints

The facility is approximately 120m from the access off the N69 and is screened from public view from the road by other buildings on the lots between it and the road. (Photograph 1). There are no public view points of the site from the undeveloped lands to the north. There is a line of deciduous trees along the western boundary (Photograph 9), while the embankment along the western bank of the Ballinacurra Creek (Photograph 10) screens the site from the east.

12.4 Impacts

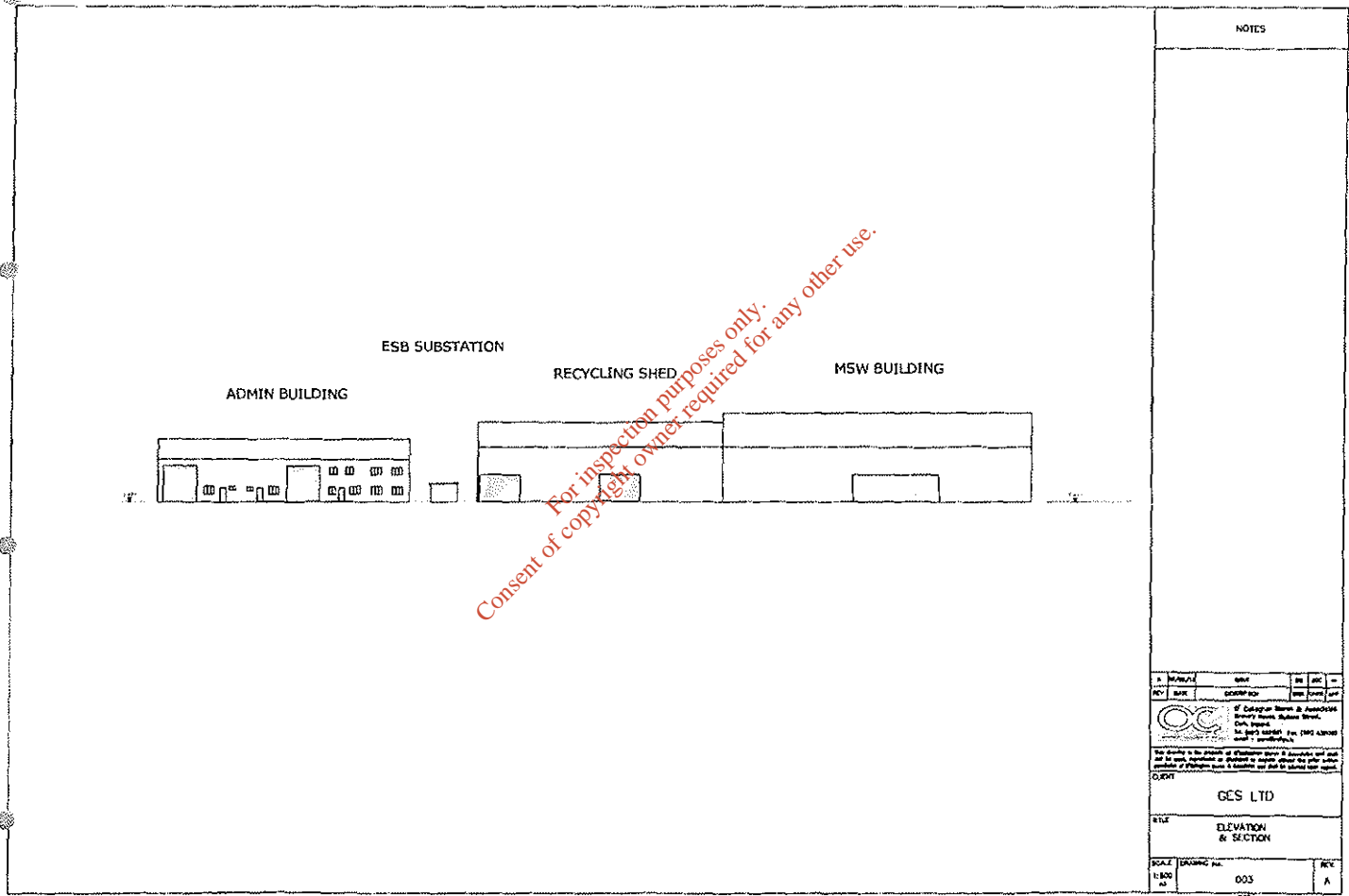
The proposed change to the facility relates solely to an increase in the amount of wastes that will be accepted at the site. The increase does not require the construction of new buildings, alteration to any existing structures or changes to the current arrangement for the external storage of materials.

12.5 Mitigation Measures

As it is not proposed to alter the visual appearance of the existing facility therefore mitigation measures are not necessary.

12.6 Assessment of Impacts

The proposed increase in the quantity of wastes accepted will not alter the appearance of the facility and therefore there will be no visual impact.



NOTES			
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13. HUMAN BEINGS

13.1 Introduction

This Section describes the population, economic activity, social consideration and land uses in the vicinity of the site and assesses the impacts of the proposal to increase the amount of waste accepted at the facility on the local population.

13.2 Methodology

The assessment was based on the planning zoning status, the landuse in the vicinity of the facility, population density and employment sectors. This information was derived from databases maintained by the Central Statistics Office and the Southern Environs Local Area Plan 2011-2017 (June 2011) (SELAP) adopted by Limerick County Council.

13.3 Existing Conditions

The Southern Environs covers approximately 21km² and comprises the Ballycummin and Limerick South Rural Electoral Districts (ED). It is south of Limerick City and stretches east to Banemore, south to Ballycummin and west to Conigar in Mungret. It is a largely urban area that has experienced significant population growth over the years. Its importance to the county and the region is reflected in the range and scale of landuse, in particular the large scale infrastructural development.

The site is located in an area designated as 'Industry' Zoned Land'. This zoning accommodates existing and proposed heavy industrial uses north and south of the Dock Road. Its purpose is to facilitate opportunities for industrial uses, activity and processes that might give rise to land use conflict in other zonings.

The landuses in the immediate area surrounding the facility are commercial and industrial. The closest residences are more than 250m from the site. Neither the GES facility nor its immediate environs have a significant leisure or amenity potential.

13.4 Population

The Ballycummin and Limerick South Rural ED experienced some of the highest population growths in County Limerick between 1996 and 2006, ranging from 26% in Ballycummin to 45.3% in Limerick South Rural.

13.5 Socio-Economic Activity

Both the Ballycummin and Limerick South Rural ED have similar socio-economic patterns with 4% of the population either being unemployed or looking for their first job. However this is based on the 2006 census and there is likely to have been significant changes due to national economic downturn since then.

The major employment centres in the area include the Crescent Shopping Centre, the Regional Hospital, Raheen Business Park and Irish Cement. The SELAP recognises that the need to support economic activity in the area and it is a policy objective to encourage and facilitate optimal levels of sustainable economic development, promoting the growth of employment opportunities.

13.6 Human Health

The GES facility accepts wastes that are a potential source of odours and potentially attractive to vermin and pests. The waste activities are also a source of noise and dust emissions, while the heavy goods vehicles and mobile plant give off exhaust gases. While odours, noise, dust and vermin do not present a direct risk to health, they can be a significant nuisance and cause of discomfort, which can indirectly affect human health.

GES has not received any complaints of malodours from either occupants of the adjoining lots, or members of the general public. All wastes that have the potential to be a source of odours are and will be stored and processed inside the buildings thereby mitigating any potential health impacts on occupants of the nearest residences and farms.

Groundwater is not abstracted locally for use as drinking water. The proposed changes will not result in any new emission to either ground or groundwater. Following the connection to the municipal foul sewer, the use of the on-site sanitary wastewater treatment system and percolation area will stop, which will minimise the risk to groundwater use as a drinking water supply either at present or in the future.

The results of the routine noise and dust monitoring carried out at the facility, which are described in Chapters 10 and 11, has demonstrated that noise and dust emissions comply with the emission limit values set in the Licence and are not a cause of nuisance either within, or outside the facility boundary.

While the proposed changes will result in additional traffic movement, with an associated increase in vehicle exhaust emissions, the overall impact on air quality will be negligible.

13.7 Impacts

There are a number of positive environmental and socio economic benefits associated with the development

- **Waste Recovery:** The increase in the amount of waste accepted and processed is in keeping with national and local waste management policy on waste recovery.
- **Employment:** The proposed increase in the amount of wastes accepted at the facility will assist in sustaining current employment levels. It will not adversely influence the existing economic activities in the surrounding area nor will it reduce the potential for the expansion of other economic activities.

13.8 Mitigation Measures

The mitigation measures incorporated into the design and method of operation of the existing facility, which have proven effective on mitigating any adverse impacts on human beings, have been described in the previous Chapters.

13.9 Impact Assessment

It is considered that the proposed increase in the amount of waste accepted will have positive socio-economic impact and will have a neutral impact with imperceptible consequences for human health.

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14. ARCHAEOLOGY & ARCHITECTURE HERITAGE

14.1 Introduction

This Chapter describes the archaeological significance of the site occupied by the facility. Given the available information on site history and the nature of the proposed changes, the archaeological assessment was confined to a desk study. The study was based on information derived from the Records of Monuments and Places published by the Department of Arts, Heritage & Gaeltacht and the Limerick County Development Plan 2010-2016

14.2 Archaeological and Historical Background

There are no records of archaeologically significant monuments or places at or within the vicinity of the site.

14.3 Architectural Heritage – Protected Structures

A Protected Structure is one that is considered to be of special interest from an architectural, historical, archaeological, artistic, cultural, scientific, social or technical point of view. The Record of Protected Structures (RPS) is a list of the buildings developed by Limerick County and City Councils that lists buildings considered to be of special interest in its operational area. There are no protected structures on the site.

14.4 Impact Assessment

The proposal to increase the volume of waste accepted will have no impact on the archaeology or architectural heritage in the vicinity of the facility.

14.5 Mitigation Measures

Since there are no infrastructural works planned for the facility, mitigation measures are not required.

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15. MATERIAL ASSETS / NATURAL RESOURCES

15.1 Introduction

This Chapter describes the material assets on and in the environs of the site and assesses the associated impacts and proposed mitigation measures.

15.2 Amenities

The facility is in an area that is zoned for industrial development and neither the existing site nor its immediate environs have a significant leisure or amenity potential. The proposed change in the amount of waste accepted does not require any change to the method of operation or the opening hours and therefore will have no impact on the amenity value.

15.3 Local Infrastructure

The proposed increase in the amount of wastes accepted will result in an increase in traffic movements to and from the site. A traffic impact assessment (Chapter 6) has established that the existing road network has the capacity to accommodate the increased traffic. The overall impact of the increased traffic will be negligible.

15.4 Energy Efficiency and Resource Consumption

Facility operations involve the consumption of water, oil and electricity. Energy consumption is a significant operational cost and GES is committed to improving energy efficiency. The estimated quantities used in 2011 and 2012 are given in Table 15.1.

Table 15.1 Estimate of Resource Consumption 2011 & 2012 –

Resources	Quantities 2012	Quantities 2011
Diesel (green)	60,000 litres	43,000 litres
Electricity	113,567 Units	65,000 Units
Hydraulic Oil	4500 litres	400 litres
Engine Oil	1500 litres	150 litres
Mains Water	8200 m ³	265 m ³

The proposed increase in the waste accepted and processed will result in an increase in energy and resource consumption.

15.5 Mitigation

GES carries out quarterly reviews of energy and resource usage to monitor the consumption rate and minimise both the amounts consumed and the associated costs.

15.6 Assessment of Impact

The proposed change will have no impact on local amenity value and will have a negligible impact on the local road network. There will be an associated increase in energy use and natural resource consumption, but this will be kept to a minimum.

16. INTERACTION OF THE FOREGOING

16.1 Introduction

Earlier Chapters describe the impacts associated with the facility and the mitigation measures for individual sensitive receptors. This Chapter discusses the significance of the actual and potential direct, indirect and cumulative effects of the facility due to interaction between relevant receptors. Only those receptors between which there is an identifiable actual or potential relationship are addressed.

16.2 Human Beings / Air

Waste activities have the potential to impact on human beings arising from noise, dust, and vehicle exhaust emissions. The location, design and method of operations have taken account of these emissions and effective mitigation measures are incorporated into the facility design and operation.

The proposed change in the amount of waste accepted will not result in any new emissions. There will be an increase in the exhaust gases from the additional vehicle movements, but this will have an imperceptible impact on human beings.

16.3 Human Beings/Traffic

The proposal will cause an increase in the traffic volumes accessing the facility. The existing road infrastructure has the capacity to handle the increase in traffic and will have a negligible impact on members of the public using the local road network.

16.4 Surface Water / Ecology

Rainwater run-off from the site discharges to the drains that outfall to the Bunlickey Lake, which is part of the Shannon and Fergus Estuaries SPA. The proposed increase in the amount of waste accepted will not result in any new emission to surface water or any change to the volume and quality of the existing discharge.

16.5 Cumulative Impacts

The assessment of impacts took into consideration the existing facility operations, and the proposal to increase amounts of wastes accepted, and the current and approved future landuses in the environs. The only impact that associated with the proposed change that could contribute to cumulative pressures in the area is increased traffic movement. The traffic impact assessment has established that the additional vehicle movements will have a negligible impact on the existing road network.

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ABBREVIATIONS

CSO –	Central Statistics Office
EPA –	Environmental Protection Agency
EIA –	Environmental Impact Assessment
EIS –	Environmental Impact Statement
EU –	European Union
GES	Greenstar Environmental Services Ltd
GHG –	Greenhouse Gases
GSI	Geological Survey of Ireland
HGV –	Heavy Goods Vehicle
Kwh –	Kilowatt Hour
OPW	Office of Public Works
OSI –	Ordnance Survey Ireland
SELAP –	South Environs Local Area Plan 2007 - 2013
PCU	Passenger Car Units
PM10 –	Particulate Matter 10 micrometers or less
PPE –	Personal Protective Equipment
WMU	Water Management Unit
WWTP –	Waste Water Treatment Plant

APPENDICES

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Appendix 1

Waste Licence

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INTRODUCTION

This introduction is not part of the licence and does not purport to be a legal interpretation of the licence.

The facility is a licensed waste transfer station located on the Dock Road in Limerick, close to Limerick City. The facility accepts municipal, commercial and industrial, construction and demolition wastes. The reviewed licence relates to various grounds including changes to the facility boundary, fencing, site offices, foul water drainage, extension of the existing transfer building, changes to hours of operation and waste types and an increase in waste tonnages etc. Waste transported to the facility is either transported to landfill for disposal or separated for recycling.

The licence sets out in detail the conditions under which Ipedec (Ireland) Limited will operate and manage this facility.

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DECISION & REASONS FOR THE DECISION

Reasons for the Decision

The Environmental Protection Agency (the Agency) is satisfied, on the basis of the information available, that the waste activity, or activities, licensed hereunder will comply with the requirements of Section 40(4) of the Waste Management Act, 1996.

In reaching this decision the Agency has considered the application and supporting documentation received from the applicant, a submission and objections received and the reports of its inspectors.

Part I Activities Licensed

In pursuance of the powers conferred on it by the Waste Management Act, 1996, the Environmental Protection Agency (the Agency), under Section 46(2) of the said Act hereby grants this Waste Licence to Ipodec (Ireland) Limited to carry on the waste activity/activities listed below at Dock Road, Limerick subject to conditions, with the reasons therefor and the associated schedules attached thereto set out in the licence.

Licensed Waste Disposal Activities, in accordance with the Third Schedule of the Waste Management Act 1996

Class 12.	Repackaging prior to submission to any activity referred to in a preceding paragraph of this Schedule. This refers to the licensee transferring waste to landfill for disposal in accordance with the conditions of the licence.
Class 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 was produced. This refers to the licensee storing waste on a temporary basis in accordance with the conditions of the licence, before transferring it to landfill.

Licensed Waste Recovery Activities, in accordance with the Fourth Schedule of the Waste Management Act 1996

Class 2.	Recycling or reclamation of organic substances which are not used as solvents (including composting and other biological transformation processes): This activity is limited to the recovery of organic substances such as cardboard and wood or other materials as agreed by the Agency.
Class 3.	Recycling or reclamation of metals and metal compounds: This activity is limited to the recovery of metal and the separation of metal from other waste for recovery.
Class 4.	Recycling or reclamation of other inorganic materials: This activity is limited to the recovery of glass, construction and demolition wastes and other inorganic materials, as agreed by the Agency.
Class 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: This activity is limited to the storage of waste, destined for recovery.

INTERPRETATION

All terms in this licence should be interpreted in accordance with the definitions in the Waste Management Act, (the Act), unless otherwise defined in this section.

Adequate lighting	20 lux measured at ground level.
Agreement	Agreement in writing.
Annually	At approximately twelve monthly intervals.
Attachment	Any reference to Attachments in this licence refers to attachments submitted as part of the waste licence application.
Application	The application by the licensee for this waste licence.
Appropriate facility	A waste management facility, duly authorised under relevant law and technically suitable.
BATNEEC	Best Available Technology Not Entailing Excessive Cost as defined in Section 5(2) of the Act.
Bi-annually	All or part of a period of six consecutive months.
Biodegradable waste	Any waste that is capable of undergoing anaerobic or aerobic decomposition, such as food, garden waste, sewage sludge, paper and paperboard.
Condition	A condition of this licence.
Consignment Note	All movements of hazardous waste within Ireland must be accompanied by a "C1" consignment note issued by a local authority under the Waste Management (Movement of Hazardous Waste) Regulations (SI No. 147 of 1998).
Construction and Demolition Waste	All wastes which arise from construction, renovation and demolition activities.
Containment boom	A boom which can contain spillages and prevent them from entering drains or watercourses.
Daytime	8.00 a.m. to 10.00 p.m.
Documentation	Any report, record, result, data, drawing, proposal, interpretation or other document in written or electronic form which is required by this licence.
Drawing	Any reference to a drawing or drawing number means a drawing or drawing number contained in the application, unless otherwise specified in this licence.
Emergency	Those occurrences defined in Condition 9.4.
Emission Limits	Those limits, including concentration limits and deposition levels established in <i>Schedule C: Emission Limits</i> , of this licence.
European Waste Catalogue (EWC)	A harmonised, non-exhaustive list of wastes drawn up by the European Commission and published as Commission Decision 94/3/EC and any subsequent amendment published in the Official Journal of the European Community.
Hours of Operation	The hours during which the facility is authorised to be operational.

Hours of Waste Acceptance	The hours during which the facility is authorised to accept waste.
Incident	The following shall constitute an incident for the purposes of this licence: a) an emergency; b) any emission which does not comply with the requirements of this licence; c) any exceedance of the daily duty capacity of the waste handling equipment; d) any trigger level specified in this licence which is attained or exceeded; and any indication that environmental pollution has, or may have, taken place.
Industrial Waste	As defined in Section 5(1) of the Act.
Inert waste	Waste as defined in SI 336 of 2002 Waste Management (Licensing) (Amendment) Regulations, 2002.
Landfill Directive	Council Directive 1999/31/EC.
Licence	A Waste Licence issued in accordance with the Act.
Licensee	Ipodec Ireland Limited
Liquid Waste	Any waste in liquid form and containing less than 2% dry matter. Any waste tankered to the facility.
Maintain	Keep in a fit state, including such regular inspection, servicing, calibration and repair as may be necessary to adequately perform its function.
Mobile Plant	Self-propelled machinery used for the emplacement of wastes or for the construction of specified engineering works.
Monthly	A minimum of 12 times per year, at approximately monthly intervals.
Municipal waste	As defined in Section 5(1) of the Waste Management Act 1996.
Night-time	10.00 p.m. to 8.00 a.m.
Noise Sensitive Location (NSL)	Any dwelling house, hotel or hostel, health building, educational establishment, place of worship or entertainment, or any other facility or area of high amenity which for its proper enjoyment requires the absence of noise at nuisance levels.
Quarterly	At approximately three monthly intervals.
Sanitary Authority	Limerick County Council.
Sample(s)	Unless the context of this licence indicates to the contrary, samples shall include measurements by electronic instruments.
Specified Emissions	Those emissions listed in <i>Schedule C: Emission Limits</i> of this licence.
Specified Engineering Works	Those engineering works listed in <i>Schedule B: Specified Engineering Works</i> of this licence.
Trigger Level	A parameter value specified in the licence, the achievement or exceedance of which requires certain actions to be taken by the licensee.

Wastewater	Contaminated water including water that has been used for washing and/or flushing (including foul water).
Weekly	During all weeks of plant operation, and in the case of emissions, when emissions are taking place; with no more than one measurement in any one week.
White Goods	Refrigerators, cookers, ovens and other similar appliances.
EPA Working Day	Refers to the following hours; 9.00 a.m. to 5.30 p.m. Monday to Friday inclusive.

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PART II CONDITIONS

CONDITION 1 SCOPE OF THE LICENCE

- 1.1. Waste activities at the facility shall be restricted to those listed and described in Part I: Activities Licensed and authorised by this licence.
- 1.2. For the purposes of this licence, the facility is the area of land outlined in orange on Drawing No. C98-101-B2-01 Rev 2 of the application and the area outlined in green in Drawing No C98-101-B2-01, until decontaminated as agreed by the Agency. Any reference in this licence to "facility" shall mean the area thus outlined unless otherwise agreed with the Agency.
- 1.3. This licence is for the purposes of waste licensing under the Waste Management Act 1996 only and nothing in this licence shall be construed as negating the licensee's statutory obligations or requirements under any other enactments or regulations.
- 1.4. Only those waste categories and quantities listed in *Schedule A: Waste Acceptance* of this licence, shall be accepted at the facility.
- 1.5. No hazardous wastes or liquid wastes shall be accepted at the facility.
- 1.6. Waste Acceptance Hours and Hours of Operation

The facility may operate and accept waste on a twenty-four hour basis, seven days per week.

- 1.7. Where the Agency considers that a non-compliance with any condition of this licence has occurred, it may serve a notice on the licensee specifying.
 - 1.7.1 That only those wastes as specified, if any, in the notice are to be accepted at the facility after the date set down in the notice.
 - 1.7.2 That the licensee shall undertake the works stipulated in the notice, and/or otherwise comply with the requirements of the notice as set down therein, within the time-scale contained in the notice.
 - 1.7.3 That the licensee shall carry out any other requirement specified in the notice.

When the notice has been complied with, the licensee shall provide written confirmation that the requirements of the notice have been carried out. No waste, other than that which is stipulated in the notice, shall be accepted at the facility until written permission is received from the Agency.

- 1.8. Every plan, programme or proposal submitted to the Agency for its agreement pursuant to any condition of this licence shall include a proposed timescale for its implementation. The Agency may modify or alter any such plan, programme or proposal in so far as it considers such modification or alteration to be necessary and shall notify the licensee in writing of any such modification or alteration. Every such plan, programme or proposal shall be carried out within the timescale fixed by the Agency but shall not be undertaken without the agreement of the Agency. Every such plan, programme or proposal agreed by the Agency shall be covered by the conditions of this licence.
- 1.9. This licence is being granted in substitution for the waste licence granted to the licensee on the 19th of May 2000 and bears Waste Licence Register No: 82-2. The previous waste licence (Register No: 82-1) is superseded by this licence.

REASON: *To clarify the scope of this licence.*

CONDITION 2 MANAGEMENT OF THE FACILITY

2.1 Facility Management

- 2.1.1 The licensee shall employ a suitably qualified facility manager with experience commensurate with the expertise required who shall be designated as the person in charge. The facility manager or a nominated, suitably qualified and experienced, deputy shall be present on the facility at all times during its operation.
- 2.1.2 Both the facility manager and deputy, and any replacement manager or deputy, shall successfully complete both the FAS waste management training programme (or equivalent agreed by the Agency) and associated on site assessment appraisal within twelve months of appointment.
- 2.1.3 The licensee shall ensure that personnel performing specifically assigned tasks shall be qualified on the basis of appropriate education, training and experience, as required and shall be aware of the requirements of this licence.

2.2 Management Structure

- 2.2.1 Within three months from the date of grant of this licence, the licensee shall submit written updated details of the management structure of the facility to the Agency. Any proposed replacement in the management structure shall be notified in advance in writing to the Agency. Written details of the management structure shall include the following information.
- a) the names of all persons who are to provide the management and supervision of the waste activities authorised by the licence, in particular the name of the facility manager and any nominated deputies;
 - b) details of the responsibilities for each individual named under a) above; and
 - c) details of the relevant education, training and experience held by each of the persons nominated under a) above.

2.3 Environmental Management System (EMS)

- 2.3.1 The licensee shall maintain an EMS. The EMS shall be updated on an annual basis with amendments being submitted to the Agency for its agreement.

- 2.3.2 The EMS shall include as a minimum the following elements:

2.3.2.1 Schedule of Environmental Objectives and Targets

The objectives should be specific and the targets measurable. The Schedule shall address a five-year period as a minimum. The Schedule shall include a time-scale for achieving the objectives and targets and shall comply with any other written guidance issued by the Agency.

2.3.2.2 Environmental Management Plan (EMP)

The EMP shall include, as a minimum, the following:

- (i) methods by which the objectives and targets will be achieved in the coming year and the designation of responsibility for targets; and
- (ii) any other items required by written guidance issued by the Agency.

2.3.2.3 Corrective Action Procedures

The Corrective Action Procedures shall detail the corrective actions to be taken should any of the procedures detailed in the EMS not be followed.

2.3.2.4 Awareness and Training Programme

The Awareness and Training Programme shall identify training needs, for personnel who work in or have responsibility for the licensed facility.

2.4 Communications Programme

- 2.4.1 The licensee shall maintain a Communications Programme to inform and involve the local community and ensure that members of the public can obtain information at the facility, at all reasonable times, concerning the environmental performance of the facility. This shall be established within six months of the date of grant of this licence.

REASON: *To make provision for the proper management of the activity on a planned basis having regard to the desirability of ongoing assessment, recording and reporting of matters affecting the environment.*

CONDITION 3 FACILITY INFRASTRUCTURE

- 3.1 The licensee shall establish all infrastructure referred to in this licence prior to the commencement of the licensed activities or as required by the conditions of this licence.

3.2 Specified Engineering Works

- 3.2.1 The licensee shall submit proposals for all Specified Engineering Works, as defined in *Schedule B: Specified Engineering Works* of this licence, to the Agency for its agreement at least two months prior to the intended date of commencement of any such works. No such works shall be carried out without the prior agreement of the Agency.

- 3.2.2 All specified engineering works shall be supervised by a competent person(s) and that person, or persons, shall be present at all times during which relevant works are being undertaken.

- 3.2.3 Following the completion of all specified engineering works, the licensee shall complete a construction quality assurance validation. The validation report shall be made available to the Agency on request. The report shall include the following information:-

- a) a description of the works;
- b) as-built drawings of the works;
- c) records and results of all tests carried out (including failures);
- d) drawings and sections showing the location of all samples and tests carried out;
- e) daily record sheets/diary;
- f) name(s) of contractor(s)/individual(s) responsible for undertaking the specified engineering works;
- g) name(s) of individual(s) responsible for supervision of works and for quality assurance validation of works;

- h) records of any problems and the remedial works carried out to resolve those problems; and
- i) any other information requested in writing by the Agency.

3.3 Facility Notice Board

3.3.1 The licensee shall provide and maintain a Facility Notice Board at the entrance leading to the facility from the main road so that it is legible to persons outside the main entrance to the facility. The minimum dimensions of the board shall be 1200 mm by 750 mm.

3.3.2 The board shall clearly show:-

- a) the name and telephone number of the facility;
- b) the normal hours of opening;
- c) the name of the licence holder;
- d) an emergency out of hours contact telephone number;
- e) the licence reference number; and
- f) where environmental information relating to the facility can be obtained.

3.4 Facility Security

3.4.1 Security fencing and gates shall be installed and maintained around the boundary of the facility, except where the existing boundary walls are in place. The gates shall be at the locations shown on Drawing No. C98-01-B2-01 Rev.2. The base of the fencing shall be set in the ground.

3.4.2 The licensee shall remedy any defect in the gates and/or fencing as follows:-

- a) a temporary repair shall be made by the end of the working day; and
- b) a repair to the standard of the original gates and/or fencing shall be undertaken within three working days.

3.5 Facility Roads and Site Surfaces

3.5.1 Site roads shall be provided and maintained to ensure the safe movement of vehicles within the facility.

3.5.2 The licensee shall provide, and maintain an impermeable hardstanding surface in all areas of the facility. In addition, the floor of the building extensions shall be concreted and constructed to British Standard 8110 or an alternative as agreed by the Agency.

3.6 Facility Office

3.6.1 The licensee shall provide and maintain an office at the facility. The office shall be constructed and maintained in a manner suitable for the processing and storing of documentation.

3.6.2 The licensee shall provide and maintain a working telephone and a method for electronic transfer of information at the facility.

3.7 Waste Inspection and Quarantine Areas

3.7.1 A Waste Inspection Area and a Waste Quarantine Area shall be provided and maintained at the facility.

3.7.2 These areas shall be constructed and maintained in a manner suitable, and be of a size appropriate, for the inspection of waste and subsequent quarantine if required. The

waste inspection area and the waste quarantine area shall be clearly identified and segregated from each other.

3.8 Weighbridge and Wheel Cleaning

3.8.1 The licensee shall provide and maintain a weighbridge and a wheel cleaner at the facility.

3.9 Waste handling, ventilation and processing plant

3.9.1 Items of plant deemed critical to the efficient and adequate processing of waste at the facility (including *inter alia* waste loading vehicles and ejector trailers) shall be provided on the following basis:-

- a) 100% duty capacity;
- b) 50% standby capacity available on a routine basis; and
- c) Provision of contingency arrangements and/or back up and spares in the case of breakdown of critical equipment.

3.9.2 Within six months from the date of grant of this licence, the licensee shall provide a report for the agreement of the Agency detailing the duty and standby capacity in tonnes per day, of all waste handling and processing equipment to be used at the facility. These capacities shall be based on the licensed waste intake, as per *Schedule A: Waste Acceptance*, of this licence.

3.9.3 The quantity of waste to be accepted at the facility on a daily basis shall not exceed the duty capacity of the equipment at the facility. Any exceedance of this intake shall be treated as an incident.

3.10 Waste Water Treatment System / Surface Water Management

3.10.1 The licensee shall, subject to Condition 4.7 provide and maintain a Waste Water Treatment System at the facility. The specification of the treatment system shall be agreed in advance with the Agency. Any proposed treatment system including percolation area shall satisfy the criteria set out in the Wastewater Treatment Manual, *Treatment Systems for Single Houses*, published by the Environmental Protection Agency.

3.10.2 Runoff from all areas used for the handling and storage of waste, and vehicle wash water shall discharge to the treatment system or other collection system, subject to Condition 4.7 via a silt trap and Class 1 oil interceptor.

3.10.3 Runoff from all areas not used for the handling and storage of waste shall be discharged to surface water via a silt trap and Class 1 oil interceptor.

3.11 Tank and Drum Storage Areas

3.11.1 All tank and drum storage areas shall be rendered impervious to the materials stored therein.

3.11.2 All tank and drum storage areas shall, as a minimum, be bunded, either locally or remotely, to a volume not less than the greater of the following:-

- a) 110% of the capacity of the largest tank or drum within the bunded area; or
- b) 25% of the total volume of substance which could be stored within the bunded area.

- 3.11.3 All drainage from bunded areas shall be diverted for collection and safe disposal.
- 3.11.4 All inlets, outlets, vent pipes, valves and gauges must be within the bunded area.
- 3.11.5 The integrity and water tightness of all the bunds and their resistance to penetration by water or other materials stored therein shall be confirmed by the licensee and shall be reported to the Agency within 12 months of the date of grant of this licence.
- This confirmation shall be repeated at least once every three years thereafter and reported to the Agency on each occasion.
- 3.11.6 The licensee shall install and maintain oil interceptor(s) at the facility to ensure that all surface water discharges from the facility pass through a grit trap and an oil interceptor prior to discharge. The interceptors shall be Class I full retention interceptors and shall be in accordance with European Standard prEN 858 (installations for the separation of light liquids).
- 3.11.7 All wastewater gullies, drainage grids and manhole covers shall be painted with red squares whilst all surface water discharge gullies, drainage grids and manhole covers shall be painted with blue triangles. These colour codes shall be maintained so as to be visible at all times during facility operation, and any identification designated in this licence (e.g. SW1) shall be inscribed on these manholes.
- 3.11.8 The drainage system, bunds, silt traps and oil separators shall be inspected weekly, desludged as necessary and properly maintained at all times. All sludge and drainage from these operations shall be collected for safe disposal. A written record shall be kept of the inspections, desludging, cleaning, disposal of associated waste products, maintenance and performance of the interceptors, bunds and drains.

3.12 Construction and Demolition Waste Recovery Area

- 3.12.1 Within six months of the date of grant of this licence, the licensee shall provide and maintain a construction and demolition waste recovery area at the location indicated in Drawing no. C98-101-D2-9. This infrastructure shall at a minimum comprise the following:
- an impermeable concrete slab;
 - collection and disposal infrastructure for all run-off;
 - appropriate screening to provide visual and noise screening;
 - All stockpiles shall be adequately contained to minimise dust generation; and
 - Within eight months of the date of grant of this licence, the licensee shall review the measures in place to minimise dust generation at this facility and shall provide a report to the Agency for its agreement, making recommendations for the control of dust nuisance from the facility. Any remedial works recommended in this report must be implemented within a time-scale to be agreed by the Agency.

3.13 Monitoring Infrastructure

Replacement of Infrastructure

- Monitoring infrastructure which is damaged or proves to be unsuitable for its purpose shall be replaced within three months of it being damaged or recognised as being unsuitable.

REASON: To provide appropriate infrastructure for the protection of the environment.

CONDITION 4 FACILITY OPERATIONS

- 4.1 All waste processing shall be carried out inside the waste transfer building.
- 4.2 Waste Acceptance and Characterisation Procedures
- 4.2.1 Waste arriving at the facility shall be weighed, documented and directed to the Waste Transfer Building. Each load of waste arriving at the Waste Transfer Building shall be inspected upon tipping within this building. Only after such inspections shall the waste be processed for disposal or recovery.
- 4.2.2 Any waste deemed unsuitable for processing at the facility and/or in contravention of this licence shall be immediately separated and removed from the facility at the earliest possible time. Temporary storage of such wastes shall be in a designated Waste Quarantine Area. Waste shall be stored under appropriate conditions in the quarantine area to avoid putrefaction, odour generation, the attraction of vermin and any other nuisance or objectionable condition.
- 4.2.3 Waste shall only be accepted at the facility, from customers who are holders of a waste permit, unless exempted, under the Waste Management (Collection Permit) Regulations 2001 or from other licensed/permitted facilities.
- 4.3 Operational Controls
- 4.3.1 The floor of the waste transfer building shall be washed down and cleared of all waste on a daily basis. The floor of the storage bays for recovered wastes shall be washed down and cleaned as required.
- 4.3.2 The overnight storage of any waste loads which remain on any working day shall be in designated, secure areas within the transfer building.
- 4.3.3 Any waste stored overnight in the transfer building shall be processed at the commencement of operations on the following working day.
- 4.3.4 Wastes for recovery may be stored outside the transfer building in designated, secure storage areas, subject to the agreement of the Agency provided the storage area is rendered impervious to the materials stored therein.
- 4.3.5 Scavenging shall not be permitted at the facility.
- 4.3.6 Gates shall be locked shut when the facility is unsupervised.
- 4.3.7 The licensee shall provide and use adequate lighting during the operation of the facility in hours of darkness.
- 4.3.8 Fuels shall be stored only at appropriately bunded locations on the facility.
- 4.3.9 All tanks and drums shall be labelled to clearly indicate their contents.
- 4.3.10 No smoking shall be allowed on the facility (other than in the facility office, as shown on Drawing No. C98-101-B2-01 Rev. 2).
- 4.4 Waste sent off-site for recovery or disposal shall be conveyed only by a waste carrier agreed in advance by the Agency. Any request for such agreement of a waste carrier shall include the following:
- i) Copies of the waste carrier's permit(s) under the Waste Management (Collection Permit) Regulations 2001.

- ii) Details of the waste types it is proposed the carrier will transfer from the facility.
- 4.5 All waste transferred from the facility shall be transferred only to an appropriate facility agreed by the Agency. Any request for agreement of such a facility shall be forwarded to the Agency at least one month in advance of its proposed use and shall include the following:
- i) A copy of the waste permit or waste licence where applicable.
 - ii) The proposed waste types and quantities.
 - iii) Details of any limitations on waste types and quantities acceptable at the facility.
- 4.6 Construction and Demolition Waste Recovery Area
- 4.6.1 Only Construction and Demolition waste shall be accepted at this Area. Wastes which are capable of being recovered shall be separated and shall be stored temporarily in this area prior to being subjected to other recovery activities at the facility or transport off the facility.
- 4.6.2 All stockpiles shall be maintained so as to minimise dust generation.
- 4.7 Foul Water, Surface Water and Sewage Management
- 4.7.1 Upon completion of the Limerick Main Drainage Scheme and subject to the agreement of the Sanitary Authority, sewage and foul water arising on site shall be discharged to the sanitary authority sewer.
- 4.7.2 Prior to the completion of the Limerick Main Drainage Scheme and treatment plant works the following shall apply: either
- (a) an on-site treatment plant shall be installed subject to the requirements of Condition 3.10; or
 - (b) sewage and wastewater arising on site shall be stored in on-site storage tanks and tankered off-site in fully enclosed road tankers to an appropriate Wastewater Treatment Plant, agreed in advance with the Agency.
- 4.8 Maintenance
- 4.8.1 All processing, treatment, abatement and emission control equipment shall be calibrated and maintained, in accordance with the instructions issued by the manufacturer/supplier or installer. Written records of the calibrations and maintenance shall be made and kept by the licensee.
- 4.8.2 The licensee shall maintain and clearly label and name all sampling and monitoring locations.
- 4.8.3 The wheel cleaner shall be inspected on a daily basis and drained as required. Silt, stones and other accumulated material shall be removed as required from the wheel cleaner and disposed of appropriately.

REASON: To provide for appropriate operation of the facility to ensure protection of the environment.

CONDITION 5 EMISSIONS

- 5.1 No specified emission from the facility shall exceed the emission limit values set out in *Schedule C: Emission Limits* of this licence. There shall be no other emissions of environmental significance.
- 5.2 The licensee shall ensure that the activities shall be carried out in a manner such that emissions do not result in significant impairment of, or significant interference with the environment beyond the facility boundary.
- 5.3 Emission limits for emissions to atmosphere in this licence shall be interpreted in the following way.
- 5.3.1 Non-Continuous Monitoring
- (i) For any parameter where, due to sampling/analytical limitations, a 30 minute samples is inappropriate, a suitable sampling period should be employed and the value obtained therein shall not exceed the emission limit value.
 - (ii) For all other parameters, no 30 minute mean value shall exceed the emission limit value.
 - (iii) For flow, no hourly or daily mean value shall exceed the emission limit value.
- 5.4 Emissions to Surface Water
- 5.4.1 The trigger levels for surface water discharges from the facility measured at monitoring point(s) Fe1 and Fe2 are:-
- a) BOD 25mg/l
 - b) Suspended Solids 60mg/l.
- 5.4.2 No substance shall be discharged in a manner, or at a concentration which, following initial dilution causes tainting of fish or shellfish.
- 5.5 There shall be no direct emissions to groundwater.
- 5.6 There shall be no clearly audible tonal component or impulsive component in the noise emissions from the activity at the noise sensitive locations.
- 5.7 Disposal of Wastewater
- No waste water shall be discharged to surface water.

REASON: *To control emissions from the facility and provide for the protection of the environment.*

CONDITION 6 NUISANCE CONTROL

- 6.1 The licensee shall ensure that vermin, birds, flies, mud, dust, noise, litter and odours do not give rise to nuisance at the facility or in the immediate area of the facility. Any method used by the licensee to control any such nuisance shall not cause environmental pollution.
- 6.2 The road network in the vicinity of the facility shall be kept free from any debris caused by vehicles entering or leaving the facility. Any such debris or deposited materials shall be removed without delay.

6.3 Litter Control

6.3.1 All loose litter or other waste, placed on or in the vicinity of the facility, other than in accordance with the requirements of this licences, shall be removed, subject to the agreement of the landowners, immediately and in any event by 10.00am of the next working day after such waste is discovered.

6.3.2 The licensee shall ensure that all vehicles delivering waste to and removing waste and materials from the facility are appropriately covered.

6.4 Dust/Odour Control

6.4.1 All waste for disposal stored overnight at the facility, shall be stored in a secure area within the Waste Transfer Building, and shall be removed from the facility within forty eight hours. In the case where waste delivered to the facility after midday on Friday cannot be transferred due to inaccessibility (e.g. closure) of offsite disposal or recovery facilities, then the waste may be stored for a maximum of 72 hours. These loads of waste shall, in each case be recorded, including the time the waste was held on site and the reasons for inaccessibility (e.g. closure) of a facility for disposal or recovery.

6.4.2 The licensee shall review the measures in place to control dust at the facility and submit a report to Agency within six months of the date of grant of the licence including proposals for additional measures.

6.5 Prior to exiting the facility, all waste vehicles shall use the wheelwash.

REASON: To provide for the control of nuisances.

CONDITION 7 MONITORING

7.1 The licensee shall carry out such monitoring and at such locations and frequencies as set out in *Schedule D: Monitoring* of this licence. Unless otherwise specified by this licence, all environmental monitoring shall commence no later than two months after the date of grant of this licence.

7.2 The licensee shall amend the frequency, locations, methods and scope of monitoring as required by this licence only upon the written instruction of the Agency and shall provide such information concerning such amendments as may be requested in writing by the Agency. Such alterations shall be carried out within any timescale nominated by the Agency.

7.3 Monitoring and analysis equipment shall be operated and maintained in accordance with the manufacturers' instructions (if any) so that all monitoring results accurately reflect any emission, discharge or environmental parameter.

7.4 The licensee shall provide safe and permanent access to all on-site sampling and monitoring points and to off-site points as required by the Agency.

7.5 The licensee shall maintain all sampling and monitoring points, and clearly label and name all sampling and monitoring locations, so that they may be used for representative sampling and monitoring.

7.6 The licensee shall install on all emission points such sampling points or equipment, including any data-logging or other electronic communication equipment, as may be required by the Agency. All such equipment shall be consistent with the safe operation of all sampling and monitoring systems.

7.7 All automatic monitors and samplers shall be functioning at all times (except during maintenance and calibration) when the activity is being carried on, unless alternative sampling or monitoring has been agreed, in writing, by the Agency for a limited period. In the event of the malfunction of any continuous monitor, the licensee shall contact the Agency as soon as practicable, and alternative sampling and monitoring facilities shall be put in place. Prior written agreement for the use of alternative equipment, other than in emergency situations, shall be obtained from the Agency.

7.8 Nuisance Monitoring

The licensee shall, at a minimum of one week intervals, inspect the facility and its immediate surrounds for nuisances caused by litter, vermin, birds, flies, mud, dust and odours.

REASON: To ensure compliance with the conditions of this licence by provision of a satisfactory system of monitoring of emissions.

CONDITION 8 CONTINGENCY ARRANGEMENTS

8.1 In the event of an incident the licensee shall immediately:-

- a) identify the date, time and place of the incident;
- b) carry out an immediate investigation to identify the nature, source and cause of the incident and any emission arising therefrom;
- c) isolate the source of any such emission;
- d) evaluate the environmental pollution, if any, caused by the incident;
- e) identify and execute measures to minimise the emissions/malfunction and the effects thereof; and
- f) provide a proposal to the Agency for its agreement within one month of the incident occurring to:-
 - i) identify and put in place measures to avoid reoccurrence of the incident; and
 - ii) identify and put in place any other appropriate remedial action.

8.2 The licensee shall, within nine months of the date of grant of this licence, submit a written Emergency Response Procedure (ERP) to the Agency for its agreement. The ERP shall address any emergency situations which may originate on the facility and shall include provision for minimising the effects of any emergency on the environment.

8.3 The licensee shall have in storage an adequate supply of containment booms and/or suitable absorbent material to contain and absorb any spillage at the facility. Once used the absorbent material shall be disposed of at an appropriate facility.

8.4 Emergencies

8.4.1 In the event of a complete breakdown of equipment or any other occurrence which results in the closure of the transfer station building, any waste arriving at or already collected at the facility shall be transferred directly to appropriate landfill sites or any other appropriate facility until such time as the transfer station building is returned to a

fully operational status. Such a breakdown event will be treated as an emergency and rectified as soon as possible.

8.4.2 All significant spillages occurring at the facility shall be treated as an emergency and immediately cleaned up and dealt with so as to alleviate their effects.

8.4.3 No waste shall be burnt within the boundaries of the facility. A fire at the facility shall be treated as an emergency and immediate action shall be taken to extinguish it and notify the appropriate authorities.

REASON: To ensure compliance with the conditions of this licence by provision of a satisfactory system of monitoring of emissions.

CONDITION 9 RECORDS

9.1 The licensee shall keep the following documents at the facility office:-

- a) the current waste licence relating to the facility;
- b) the current EMS for the facility;
- c) the previous year's AER for the facility;
- d) application(s) for a licence; and,
- e) all written procedures produced by the licensee which relate to the licensed activities.

9.2 The licensee shall maintain a written record for each load of waste arriving at and departing from the facility. The licensee shall record the following:-

- a) the date;
- b) the name of the carrier (including if appropriate, the waste collection permit details);
- c) the vehicle registration number;
- d) the name of the producer(s)/collector(s) of the waste as appropriate;
- e) the name of the waste facility (if appropriate) from which the load originated including the waste licence or waste permit register number;
- f) a description of the waste including the associated EWC codes;
- g) the quantity of the waste, recorded in tonnes;
- h) the name of the person checking the load;
- i) where loads or wastes are removed or rejected, details of the date of occurrence, the types of waste and the facility to which they were removed including the waste licence and waste permit register number of these facilities as appropriate; and
- j) where applicable a consignment note number (including transfrontier shipment notification and movement/tracking form numbers, as appropriate).

9.3 Written Records

The following written records shall be maintained by the licensee:-

- a) the types and quantities of waste recovered at the facility each year. These records shall include the relevant EWC Codes and any details required to complete national reports on waste statistics;
- b) all training undertaken by facility staff;

- c) results from all integrity tests of bunds and other structures and any maintenance or remedial work arising from them;
- d) details of all nuisance inspections;
- e) the names and qualifications of all persons who carry out all sampling and monitoring as required by this licence and who carry out the interpretation of the results of such sampling and monitoring; and
- f) details of daily floor washing and cleaning.

9.4 The licensee shall maintain a written record of all complaints relating to the operation of the activity. Each such record shall give details of the following:-

- a) date and time of the complaint;
- b) the name of the complainant;
- c) details of the nature of the complaint;
- d) actions taken on foot of the complaint and the results of such actions; and,
- e) the response made to each complainant.

9.5 A written record shall be kept of each consignment of waste water removed from the facility. The record shall include the following:-

- a) the name of the carrier;
- b) the date and time of removal of waste water from the facility;
- c) the volume of waste water, in cubic metres, removed from the facility on each occasion;
- d) the name and address of the Waste Water Treatment Plant to which the waste water was transported; and
- e) any incidents or spillages of waste water during its removal or transportation.

9.6 A written record shall be kept at the facility of the programme for the control and eradication of vermin and fly infestations at the facility. These records shall include as a minimum the following:-

- a) the date and time during which spraying of insecticide is carried out;
- b) contractor details;
- c) contractor logs and site inspection reports;
- d) details of the rodenticide(s) and insecticide(s) used;
- e) operator training details;
- f) details of any infestations;
- g) mode, frequency, location and quantity of application; and,
- h) measures to contain sprays within the facility boundary.

REASON: To provide for the keeping of proper records of the operation of the facility.

CONDITION 10 REPORTS AND NOTIFICATIONS

10.1 Unless otherwise agreed by the Agency, all reports and notifications submitted to the Agency shall:-

- a) be sent to the Agency's Regional Inspectorate, Inniscarra, Cork;
- b) comprise one original and three copies unless additional copies are required;
- c) be formatted in accordance with any written instruction or guidance issued by the Agency;
- d) include whatever information as is specified in writing by the Agency;
- e) be identified by a unique code, indicate any modification or amendment, and be correctly dated to reflect any such modification or amendment;
- f) be submitted in accordance to the relevant reporting frequencies specified by this licence, such as in *Schedule E: Recording and Reporting to the Agency* of this licence;
- g) be accompanied by a written interpretation setting out their significance in the case of all monitoring data; and
- h) be transferred electronically to the Agency's computer system if required by the Agency.

10.2 In the event of an incident occurring on the facility, the licensee shall:-

- a) notify the Agency as soon as practicable and in any case not later than 10.00 am the following working day after the occurrence of any incident;
- b) submit a written record of the incident, including all aspects described in Condition 9.1(a-e), to the Agency as soon as practicable and in any case within five working days after the occurrence of any incident;
- c) in the event of any incident which relates to discharges to surface/sewer water, notify Limerick County Council as soon as practicable and in any case not later than 10:00am on the following working day after such an incident; and
- d) Should any further actions be taken as a result of an incident occurring, the licensee shall forward a written report of those actions to the Agency as soon as practicable and no later than ten days after the initiation of those actions.

10.3 A proposal for a Decommissioning and Aftercare Plan for the facility shall be submitted to the Agency within 18 months of the date of grant of this licence. The licensee shall update these schemes when required by the Agency.

10.4 Waste Recovery Reports

Within six months of the date of grant of this licence, a report examining waste recovery options shall be submitted to the Agency for its agreement. This report shall address methods to contribute to the achievement of the recovery targets stated in national and European Union waste policies and shall include the following:-

- a) proposals for the contribution of the facility to the achievement of targets for the reduction of biodegradable waste to landfill as specified in the Landfill Directive;
- b) the separation of recyclable materials from the waste;

- c) the recovery of Construction and Demolition Waste;
- d) the recovery of metal waste and white goods;
- e) the recovery of commercial waste, including cardboard; and
- f) other wastes.

10.5 Monitoring Locations

Within three months of the date of grant of this licence, the licensee shall submit to the Agency an appropriately scaled drawing(s) showing all the monitoring locations that are stipulated in this licence. The drawing(s) shall include the reference code of each monitoring point.

10.6 Annual Environmental Report

10.6.1 The licensee shall submit to the Agency for its agreement, by 31st of January 2004, and one month after the end of each calendar year thereafter, an Annual Environmental Report (AER).

10.6.2 The AER shall include as a minimum the information specified in *Schedule F: Content of the Annual Environmental Report*, of this licence and shall be prepared in accordance with any relevant written guidance issued by the Agency.

REASON: To provide for proper reporting and notification of the Agency.

CONDITION 11 CHARGES AND FINANCIAL PROVISIONS

11.1 Agency Charges

11.1.1 The licensee shall pay to the Agency an annual contribution of €17,401.84 or such sum as the Agency from time to time determines, towards the cost of monitoring the activity or otherwise in performing any functions in relation to the activity, as the Agency considers necessary for the performance of its functions under the Waste Management Act, 1996. The licensee shall in 2004 and subsequent years, not later than January 31 of each year, pay to the Agency this amount updated in accordance with changes in the Public Sector Average Earnings Index from the date of the licence to the renewal date. The updated amount shall be notified to the licensee by the Agency. For 2003, the licensee shall pay a pro rata amount from the date of this licence to 31st December. This amount shall be paid to the Agency within one month of the date of grant of this licence.

11.1.2 In the event that the frequency or extent of monitoring or other functions carried out by the Agency needs to be increased the licensee shall contribute such sums as determined by the Agency to defraying its costs.

11.2 Financial Provision for Closure, Restoration and Aftercare

11.2.1 The licensee shall arrange for an independent third party risk assessment of the facility to be carried out. The risk assessment shall have particular regard to any accidents, emergencies, or other incidents, which might occur at the facility and their effect on the environment. The risk assessment shall include a comprehensive and fully costed Environmental Liabilities Risk Assessment for the facility together with a proposal for

Financial Provision arising from the carrying on of the activities to which this licence relates including the restoration of the facility. The risk assessment shall be submitted to the Agency for its agreement within six months of the date of grant of this licence.

11.2.2 The licensee shall within six months establish and maintain a fund, or provide a written guarantee for the costs determined under Condition 11.2.1. The type of fund established and means of its release/recovery shall be agreed by the Agency prior to its establishment.

11.2.3 The licensee shall within two weeks of purchase, renewal or revision of the financial provision required under Condition 11.2.1, forward to the Agency written proof of such indemnity.

11.2.4 Unless otherwise agreed any revision to the fund shall be computed using the following formula:

$$\text{Cost} = (\text{ECOST} \times \text{WPI}) + \text{CiCC}$$

Where:

Cost = Revised decommissioning and aftercare cost.

ECOST = Existing decommissioning and aftercare cost.

WPI = Appropriate Wholesale Price Index [Capital Goods, Building & Construction (i.e. Materials & Wages) Index], as published by the Central Statistics Office, for the year since last closure calculation/revision.

CiCC = Change in compliance costs as a result of change in site conditions, changes in law, regulations, regulatory authority charges, or other significant changes.

11.3 Sanitary Authority Charges

11.3.1 Upon connection to the sewer the licensee shall pay to the Sanitary Authority a charge per cubic meter of trade effluent discharged to the foul sewer or such sum as may be determined by the Agency, having regard to the variations in the cost of providing drainage and the variation in effluent reception and treatment costs. This amount shall be paid to the Sanitary Authority within one month of connection to the sewer and annually thereafter within one month of the date of notification by the Sanitary Authority of the updated annual amount.

11.3.2 The licensee shall pay to the Sanitary Authority a charge or such sum as may be determined by the Agency towards the cost of monitoring the discharge of trade effluent. This amount shall be paid to the Sanitary Authority within one month of connection to the sewer and annually thereafter within one month of the date of notification by the Sanitary Authority of the updated annual amount.

REASON: To provide for adequate financing for monitoring and financial provisions for measures to protect the environment.

SCHEDULE A : Waste Acceptance

A.1 Waste Acceptance

Table A.1 Waste Categories and Quantities

WASTE TYPE	MAXIMUM (TONNES PER ANNUM) ^{Note 1}
Construction and Demolition Waste	4,500
Commercial and Industrial	70,000
Municipal	15,500
TOTAL	90,000

Note 1: The quantities of the individual waste types may be adjusted, only with the agreement of the Agency, subject to the total waste quantity remaining the same.

SCHEDULE B : Specified Engineering Works



Installation of any new silt traps and oil interceptors.

Installation of waste handling, processing, recycling/recovery infrastructure and installation of increased waste processing capacity.

Construction of a designated secure storage area for overnight storage of waste within the Waste Transfer Building.

Any other works notified in writing by the Agency.

SCHEDULE C : Emission Limits

C.1 *Noise Emissions:* (Measured at the monitoring points indicated in Table D.1.1).

[Redacted]	
55	45

C.2 *Dust Deposition Limits:* (Measured at the monitoring points indicated in Table D.1.2).

[Redacted]	
350	

Note 1: 30 day composite sample with the results expressed as mg/m³/day.

C.3 Surface Water Discharge Limits (i.e. discharges from oil interceptor):
 Measured at the monitoring point FE1.

Mineral oils	5mg/l for discharges from Class I interceptor to receiving water
Suspended Solids	60 mg/l

C.4 Sewer Emission Limits

Emission Point Reference No. FE2

Volume to be emitted: ^{Note 1}

Maximum in any one day: m³ ^{Note 1}

BOD	10,000
COD	30,000
Ammoniacal Nitrogen	50
Suspended solids	2,000
Sulphate	500
PH	6-9
Temperature (degrees Celsius)	42
Other parameters	

Note 1: To be agreed with the Sanitary Authority and the Agency and may be amended subject to the agreement of the Sanitary Authority and the Agency.

Note 2: Additional parameters may be included by the Sanitary Authority and agreed by the Agency.

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SCHEDULE D : Monitoring

Monitoring to be carried out as specified below.

D.1 Monitoring Locations

Monitoring locations shall be those as set out in Table D.1.1 and/or Drawing No. C98-101-02-Rev.2.

Table D.1.1 Noise, surface water and wastewater Monitoring Locations

GMB1	WS0	WS9	FE1 (Outlet from oil interceptors <i>Note 1</i>)
GMB2	WS10	WS11	FE2 (Outlet from wastewater treatment plant <i>Note 2</i>)
GMB3	WS12		

Note 1: Outlet from oil interceptors, prior to discharge to percolation area

Note 2: Outlet from wastewater treatment plant, if one is installed

Table D.1.2 Emissions to Atmosphere Monitoring Locations

DM1	NI1
DM2	NI2
DM3	NI3
	NI4

D.2 Dust

Table D.2.1 Dust Monitoring Frequency and Technique

Dust	Three times a year <i>Note 2</i>	Standard Method <i>Note 1</i>
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Note 1: Standard method VD12119 (Measurement of Dustfall, Determination of Dustfall using Bergerhoff Instrument (Standard Method) German Engineering Institute). A modification (not included in the standard) which 2-methoxy ethanol may be employed to eliminate interference due to algae growth in the gauge.

Note 2: Twice during the period May to September.

D.3 Noise

Table D.3.1 Noise Monitoring Frequency and Technique

L(A)₂₀ [30 minutes]	Annual	Standard ^{Note 1}
L(A)₁₀ [30 minutes]	Annual	Standard ^{Note 1}
L(A)₅₀ [30 minutes]	Annual	Standard ^{Note 1}
Frequency Analysis(1/3 Octave band analysis)	Annual	Standard ^{Note 1}

Note 1: "International Standards Organisation, ISO 1996, Acoustics - description and Measurement of Environmental noise. Parts 1, 2 and 3."

D.4 Surface Water Emissions

Table D.4.1 Surface water/Groundwater Monitoring Frequency and Techniques

PH	Bi-annually	Bi-annually	Electrometry ^{Note 1}
Biological Oxygen Demand	Bi-annually	Bi-annually	Standard Methods ^{Note 1}
Suspended Solids	Bi-annually	Bi-annually	Standard Methods ^{Note 1}
Mineral Oils	Bi-annually	Bi-annually	Standard Methods ^{Note 1}
Fats, Oils, Grease	Bi-annually	Bi-annually	Standard Methods ^{Note 1}
Diesel Range Hydrocarbons	Not applicable	Bi-annually	Standard Methods ^{Note 1}
Aliphatic Hydrocarbons	Not applicable	Bi-annually	Standard Methods ^{Note 1}
Undecane	Not applicable	Bi-annually	Standard Methods ^{Note 1}

Note 1: "Standards Methods for the Examination of Water and Wastewater", (prepared and published jointly by A.P.H.A., A.W.W.A & W.E.F) 20th Ed., American Public Health Association, 1015 Fifteenth Street, Washington DC 20005, USA.

D.5 Wastewater Emissions

Table D.5.1 Waste water Monitoring Frequency and Techniques

PH	Bi-annually	Electrometry ^{Note 1}
Biological Oxygen Demand	Bi-annually	Standard Methods ^{Note 1}
Suspended Solids	Bi-annually	Standard Methods ^{Note 1}
Fats, Oils, Grease	Bi-annually	Standard Methods ^{Note 1}
Temperature	Bi-annually	Temperature probe
Sulphate	Bi-annually	Standard Methods ^{Note 1}
Ammoniacal nitrogen	Bi-annually	Standard Methods ^{Note 1}
Total Phosphorus	Bi-annually	Standard Methods ^{Note 1}
Total Nitrogen	Bi-annually	Standard Methods ^{Note 1}
Other parameters		

Note 1: "Standards Methods for the Examination of Water and Wastewater", (prepared and published jointly by A.P.H.A., A.W.W.A & W.E.F) 20th Ed., American Public Health Association, 1015 Fifteenth Street, Washington DC 20005, USA.

Note 2: May be amended by agreement with the Sanitary Authority and the Agency.

Note 3: Additional parameters may be included by the sanitary authority and agreed by the Agency.

SCHEDULE E : Recording and Reporting to the Agency

Environmental Management System Updates	Annually	One month after the end of the year reported on.
Annual Environment Report (AER)	Annually	Thirteen months from the date of grant of licence and one month after the end of each calendar year thereafter.
Record of Incidents	As they occur	Within five days of the incident.
Bund, tank and container integrity assessment	Every three years	Six months from the date of grant of licence and one month after end of the three year period being reported on.
Specified Engineering Works reports	As they arise	Prior to the works commencing.
Monitoring of Surface Water Quality	Bi-annually	Ten days after end of the quarter being reported on.
Monitoring of Groundwater Quality	Bi-annually	Ten days after end of the quarter being reported on.
Monitoring of Wastewater	Bi-annually	Ten days after end of the quarter being reported on.
Dust Monitoring	Three times a year	Ten days after the period being reported on.
Noise Monitoring	Annually	One month after end of the year being reported on.
Any other monitoring	As they occur	Within ten days of obtaining results.

Note 1: Unless altered at the request of the Agency.

SCHEDULE F : Content of the Annual Environmental Report

Reporting Period.

Waste activities carried out at the facility.

Quantity and Composition of waste recovered, received and disposed of during the reporting period and each previous year (relevant EWC codes to be used).

Summary report on emissions.

Summary of results and interpretations of environmental monitoring, including a location plan of all monitoring locations.

Resource and energy consumption summary.

Development / Infrastructural works in place and planned, to process waste quantities projected for the following year (including plant operating capacity, provision of adequate standby capacity and provision of contingency, backup and spares in the case of breakdown).

Schedule of Environmental Objectives and Targets for the forthcoming year.

Report on biodegradable waste targets, as per Condition 11.3.

Report on the progress towards achievement of the Environmental Objectives and Targets contained in previous year's report.

Full title and a written summary of any procedures developed by the licensee in the year which relates to the facility operation.

Tank, drum, pipeline and bund testing and inspection report.

Reported Incidents and Complaints summaries.

Review of Nuisance Controls.

Reports on financial provision made under this licence; management and staffing structure of the facility, and a programme for public information.

Volume of foul water produced and volume of foul water transported off-site.

Any other items specified by the Agency.

Note 1 Content to be revised subject to the agreement of the Agency after cessation of waste acceptance at the facility.

Sealed by the seal of the Agency on this the 6th day of November 2003

**PRESENT when the seal of the Agency
was affixed hereto:**

Dr Padraic Larkin, Director/Authorised Person

Appendix 2

Waste Water Treatment Plant Assessment

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Foul Water Monitoring

Foul water is treated in the on-site Klargestor treatment plant, with the treated effluent discharged to an on-site percolation area. Following a request by the Agency in December 2011 a detailed Waste Water Treatment System Risk Assessment was completed by IE Consulting Engineers in 2012. The report showed that the average daily treated effluent discharge to the percolation area is 0.4m³/day, which is a relatively low volume of discharge. When rainfall over the percolation area is taken into consideration, the total hydraulic loading is 0.483m³/day. Effluent monitoring data from 2011 to date indicates concentrations of all parameters within the treated effluent (pre sand filter) are within the Agency's recommended minimum performance standards and within the manufacturer's design standards.

The Waste Licence requires foul water monitoring to be carried out at two monitoring locations, FE2 which is the discharge from the treatment plant and at the truckwash discharge. The truckwash has not been used since Q3 2010. The monitoring results for 2012 are presented in the Table below.

There are no emission limit values set in the Licence and for comparative purposes the Table includes the performance standards set in the EPA Waste Water Treatment Manual Guidelines. The discharge was generally of good quality, with the exception of TSS levels in January and October. The TSS is however relatively low and at this level is not considered significant. The treated effluent discharges to ground and it is understood that the percolation area is not categorised as being located in a nutritionally sensitive area.

Table 3.7 – Foul Water Monitoring Results 2012

Parameter	Units	Jan*	Feb	Apr	June	July	Oct	Dec	Performance Standards
pH	pH units	7.6	6.72	8.21	7.35	7.46	6.73	7.55	Ns
BOD	mg/l	3.8	1	<1	2	6	11	-	20
TSS	mg/l	37	26	23	<2	26	81	7	30
Ammoniacal Nitrogen	mg/l	0.06	2	0.43	0.2	<1	0.12	0.49	20
Fats Oils Grease	mg/l	-	<0.01	<0.01	<1	3.4	<1	6.6	Ns
Sulphate	mg/l	33	65.61	76.8	26.8	44.3	160.5	56.9	Ns
Total Phosphorous	mg/l	-	0.569	0.609	0.17	<1	2.54	0.32	Ns
Total Nitrogen	mg/l	-	22.1	14.2	<7	10.47	40.51	<10	Ns
Nitrate	mg/l	-	33.6	54.5	15.59	32.60	136.2	26.89	Ns
Nitrite	mg/l	-	0.70	0.38	0.16	1.68	<0.66	<0.66	Ns
COD	mg/l	44	30	22	15	51	116	29	Ns

*EPA monitoring.

-Not Analysed

Ns – Not set

Appendix 3

Traffic Impact Assessment

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FLOOD RISK ASSESSMENT

GREENSTAR ENVIRONMENTAL SERVICES

DOCK ROAD

LIMERICK

Prepared For: -

Greenstar Environmental Services Ltd,
Dock Road,
Limerick.

Prepared By: -

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

March 2013

Project	Flood Risk Assessment GES Limerick			
Client	GES			
Report No.	Date	Status	Prepared By	Reviewed By
12-4802202	25 th March	Draft	Sean Moran, M.Sc. P.Geol	Jim O'Callaghan, MSc , CEnv
	4 th April	RevA		

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APPENDICES

Appendix 1

OPW Flood Risk Map

Appendix 2

Hydrometric Data Ball's Bridge

1 INTRODUCTION

Greenstar Environmental Services Ltd (GES) intends to apply to for planning permission for its existing waste recovery and transfer facility in the townland of Ballykeefe, County Limerick whose location is shown on Figure 1. At a pre-application meeting with Limerick County Council, the Council requested that a flood risk assessment be prepared. GES commissioned O'Callaghan Moran & Associates (OCM) to prepare the assessment.

1.1 Methodology

The Flood Risk Assessment was undertaken in accordance with "The Planning System and Flood Risk Management" Guidelines published by the Department of the Environment, Heritage and Local Government in November 2009.

The Office of Public Works is currently working on the Shannon Catchment and Flood Risk Assessment and Management Study (CFRAM) which involves the production of Flood Maps. The study is due to be completed by 2015, with the Flood Maps produced by December 2103 that will identify all areas that are likely to be inundated at some point during a flood event.

The maps have not yet been produced and, pending their publication, the assessment was based on information contained in the Southern Environs Local Area Plan 2011-2017 (SELAP), Ordnance Survey of Ireland (OSI) historic maps, the OPW Flood Maps and information contained in a Preliminary Flood Risk Assessment Report prepared by Tobin Consulting Engineers for the Oil Depot on the lot to the south of the GES site.

2 SITE CONTEXT

2.1 Location

The site is located in the townland of Ballykeefe on lands that were reclaimed in the 1970's. It is in an industrially zoned area and is bounded to the south, southeast and southwest by industrial premises. To the east and north is the Ballinacurra Creek, which is where the Ballynacrough River joins the Shannon. The lands north of the Ballinacurra and between it and the Shannon are undeveloped. The Limerick City Council wastewater treatment plant is to the west of the site and separated from it by an open field. Further west is Bunlickey Lake.

2.2 Site Layout

The facility is approximately 120m off the Dock Road and is accessed by a common access road serving the facility and other occupiers of the industrial estate. The site occupies an area of 1.8ha. There are two adjoining waste handling buildings, a separate office building and adjoining vehicle and plant maintenance workshop and an onsite sanitary wastewater treatment plant. The open yards are paved. The only unpaved area is in the vicinity of the on-site wastewater treatment plant.

The surface water and foul water drainage layout and site levels is shown on Drawing No IE 580-002A. Surface water run-off is generated by rainfall on the roof of the offices and workshop building, the waste handling buildings and the paved open yard areas. The run-off from the paved yards is collected and discharged to a perimeter man made drain at the north eastern site boundary via 2 No. three chamber oil interceptors.

Run-off from the roofs of the main buildings discharges to a manmade perimeter drain along the western boundary. The perimeter drains also receive run-off from other lots to the south of the GES site, but there are no other discharge points downstream of the site. Both perimeter drains connect to Bunlickey Lake. Foul water is treated in an on-site wastewater treatment plant and discharged to ground.

2.3 Hydrology

The facility is in the catchment of the Ballinaclogh River, which rises to the south east of the site and flows northwest to confluence with the River Shannon via the Ballinacurra Creek. Both the Ballinacurra Creek and the Shannon are tidally influenced. There are embankments along the southern bank of the Shannon and along western and eastern banks of the Ballinacurra Creek/Ballinaclogh, extending from Rosbrien to its confluence with the Shannon.

Surface water run-off at the facility discharges to Bunlickey Lake, which is a man made feature. The lake covers an area of approximately 50ha and has an estimated catchment of approximately 257ha.

The lake was originally a borrow pit for alluvial clays used in the manufacture of cement at the Irish Cement Ltd plant in Castlemungret and was formed by the discharge of groundwater pumped from the quarry at the cement plant and surface water run-off from the plant into the worked out areas. The water in the lake discharges to the Shannon River Estuary via valves and sluices that prevent tidal inflow.

3 PREDICTIVE FLOOD ZONE MAPS

In 2010 Limerick County Council commissioned flood risk assessments based on predictive flood mapping to identify the flood risk zones as defined in the Planning System and Flood Risk Management Guidelines, which are.

Flood Zone A – where the probability of flooding from rivers and the sea is highest (greater than 1% or 1 in 100 for river flooding or 0.5% or 1 in 200 for coastal flooding);

Flood Zone B – where the probability of flooding from rivers and the sea is moderate (between 0.1% or 1 in 1000 and 1% or 1 in 100 for river flooding and between 0.1% or 1 in 1000 year and 0.5% or 1 in 200 for coastal flooding); and

Flood Zone C - where the probability of flooding from rivers and the sea is low (less than 0.1% or 1 in 1000 for both river and coastal flooding)

It is important to note that Flood Zone Map was prepared at a strategic scale using an automated mapping process ('bare earth' Digital Terrain Model), and minor or local features such as embankments, bridges, culverts, weirs and sluices are not explicitly modelled. The SELAP recognises that the Map is intended for guidance purposes and does not provide details for individual properties

The zones for the Southern Environs are shown on Map No 7 Predictive Flood Zone Map in the SELAP. The GES facility is located in an area designated as Flood Zone A, where the probability of flooding is greater than 1% for river flooding or 0.5% for coastal flooding.

The Flood Risk Assessment completed as part of the SELAP states that in the case of the previously developed industrial zoning in Mungret the existing 'limiting factors' (flood defences) assisted in the preventing water reaching development and one of the main mitigating factors in this location is Bunlickey Lake, which is a flood water receptor.

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4 FLOOD RISK ASSESSMENT

4.1 Flood Data

Given its location, the site is potentially at risk of river and coastal flooding. The OS historic 6 "inch map shows the embankments along the southern bank of the Shannon and on western and eastern banks of the Ballinacurra Creek/Ballinaclough River, stretching from Rosbrien to the confluence with the Shannon.

The embankments were constructed to prevent flooding of the adjoining lands, primarily associated with tidal movements. The lands occupied by the facility are not identified on the map as being liable to flooding.

It is understood that following tidal floods in 1961 the height of the embankments was raised to 5.5m OD along the Shannon and to 4.96mOD between Bawney's Bridge on the N69 and Ballinacurra Bridge to the east.

The OPW Flood Zone Maps (Appendix 1) show that the site is not in an area designated as benefiting lands, i.e. lands that are subject to either flooding or poor drainage, which would benefit from drainage works. There is no record of any flooding either within the site boundary, or on the lands immediately adjoining the site.

There are no hydrometric stations on the Ballinaclough River and therefore flow data is not available. There is an OPW Hydrometric Station at Ball's Bridge on the River Shannon, approximately 4km north east of the site, where the flow data records extend back to 1957. The maximum water level recorded was 7.03 m AOD-Poolbeg (4 .37mOD-Malin Head) in 1961 and is attributed to a tidal peak.

The Preliminary Flood Risk Assessment prepared by Tobin Consulting Engineers for the Oil Depot on the lot immediately to the south of the GES site, estimates a 200 year tidal level of 4.80mOD and a 1000 year tidal level of 5.15mOD (Malin Head).

4.2 Surface Water Run-Off

Current Volumes

The buildings and paved areas site occupy an area of approximately 18,000m². In a rain fall event of 50mm/hr (one in 100 year return), the maximum discharge to the perimeter drains would be 250 litres/second (l/sec).

Future Volumes

The planning application relates solely to increasing the amount of waste that can be accepted at the facility and does not involve the construction of any new buildings, the alteration of any structures, provision of additional paving or changes to the existing drainage layout. This means there will be no encroachment into or reduction of the active flood plain.

There will be no reduction in the rainfall infiltration areas and no short to medium increase in the volume of surface water run-off from the facility. In the longer term (30-50 years), the amount of run-off may increase in response to climate change.

The OPW's draft guidance document 'Assessment of Potential Future Scenario for Flood Risk Management' (2009) recommends that the potential impacts of climate change be assessed using the Sensitivity Based Approach for two potential future scenarios, which are referred to as the Mid-Range Future Scenario (MRFS) and the High-End Future Scenario (HEFS).

The MRFS represents a 'likely' future scenario, based on the wide range of predictions available and with the allowances for increased rainfall events, sea level rise, landuse changes. within the bounds of widely accepted projections. The HEFS represents a more extreme potential future scenario, but one that is not significantly outside the range of accepted predictions available and at the upper the bounds of widely accepted projections.

For 1:100 year rainfall events the MRFS for increase in rainfall is 20% and the HEFS is 30%. This would result in the run-off in a 1 in 100 year rainfall ranging between 300l/sec to 325l/sec. There are no other discharge points to the drain downstream of the GES facility

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5 CONCLUSIONS

5.1 Conclusions

The site is in the catchment of the Ballinaclough River. The surface water drainage from the site enters perimeter drains that surround the Industrial Estate. These outfall to Bunlickey Lake, which connects to the River Shannon via sluices designed to prevent tidal inflow.

The site and surrounding lots are in Flood Zone A and are potentially at risk from coastal and river flooding. However, the area is extensively developed and there are existing 'limiting factors' including Bunlickey Lake and the flood embankments along the Ballinacurra Creek. There are no historic records that either the site, or the adjoining lands are liable to and have experienced flooding.

The proposed changes do not involve the provision of any additional hard surfaces that would increase the volume of rainfall run-off from the site and therefore will not increase the flood risk either within or outside the site boundaries.

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Appendix 1
OPW Flood Risk Map

Summary Local Area Report

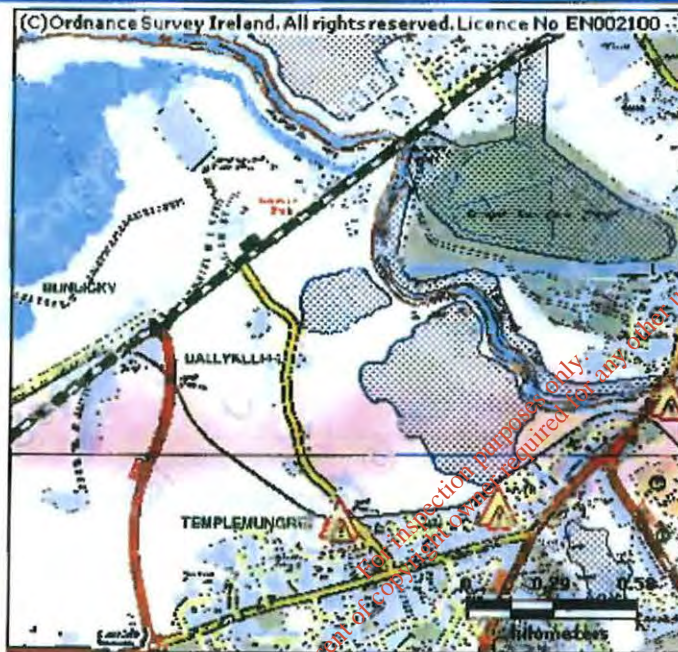
This Flood Report summarises all flood events within 2.5 kilometres of the map centre.

The map centre is in:

County: Limerick

NGR: R 552 550

This Flood Report has been downloaded from the Web site www.floodmaps.ie. The users should take account of the restrictions and limitations relating to the content and use of this Web site that are explained in the Disclaimer box when entering the site. It is a condition of use of the Web site that you accept the User Declaration and the Disclaimer



Map Scale 1:24,220

Map Legend



	Flood Points
	Multiple / Recurring Flood Points
	Areas Flooded
	Hydrometric Stations
	Rivers
	Lakes
	River Catchment Areas
	Land Commission *
	Drainage Districts *
	Benefiting Lands *

* Important: These maps do not indicate flood hazard or flood extent. Their purpose and scope is explained in the Glossary.

20 Results

	1. Shannon Dock Road Limerick Dec 1999 County: Limerick Additional Information: Reports (5) Press Archive (1) More Mapped Information	Start Date: 25/Dec/1999 Flood Quality Code:2
	2. Shannon Westfields Limerick Dec 1999 County: Limerick Additional Information: Reports (3) Press Archive (2) More Mapped Information	Start Date: 25/Dec/1999 Flood Quality Code:2
	3. Shannon Adjacent Dock Road Limerick Dec 1999 County: Limerick Additional Information: Reports (3) Press Archive (1) More Mapped Information	Start Date: 25/Dec/1999 Flood Quality Code:2
	4. Greenfield Road Rossbrien Dec 1999 County: Limerick Additional Information: Reports (3) Press Archive (1) More Mapped Information	Start Date: 25/Dec/1999 Flood Quality Code:2
	5. Shannon Condell Road Limerick Feb 2002 County:	Start Date: 11/Feb/2002 Flood Quality Code:3

Additional Information: Reports (3) More Mapped Information

	6. Limerick Condell Road Feb 1990 County:	Start Date: 01/Feb/1990 Flood Quality Code:3
Additional Information: Photos (2) More Mapped Information		
	7. Ballynacloagh River Limerick Dec 1999 County:Limerick	Start Date: 25/Dec/1999 Flood Quality Code:3
Additional Information: Reports (3) More Mapped Information		
	8. Condell Road Limerick Feb 1997 County:	Start Date: 10/Feb/1997 Flood Quality Code:3
Additional Information: Reports (2) More Mapped Information		
	9. Ballyclogh River Rossbrien Limerick Feb 1995 County:Limerick	Start Date: 07/Feb/1995 Flood Quality Code:3
Additional Information: Reports (1) More Mapped Information		
	10. Limerick Dock Rd Jan 1995 County:Limerick	Start Date: 25/Jan/1995 Flood Quality Code:3
Additional Information: Photos (1) More Mapped Information		
	11. Raheen Dooradoyle, Limerick Feb 1990 County:Limerick	Start Date: 01/Feb/1990 Flood Quality Code:1
Additional Information: Reports (1) More Mapped Information		
	12. Ballynacloagh Rosbrien August 1986 County:Limerick	Start Date: 05/Aug/1986 Flood Quality Code:3
Additional Information: Reports (1) More Mapped Information		
	13. Turlough - Loughmore Common Limerick County:Limerick	Start Date: Flood Quality Code:3
Additional Information: Reports (3) More Mapped Information		
	14. Ballynacloagh Ballinacurra Recurring County:Limerick	Start Date: Flood Quality Code:3
Additional Information: Reports (2) More Mapped Information		
	15. Ashbrook Gardens Limerick Recurring County:Limerick	Start Date: Flood Quality Code:4
Additional Information: Reports (1) More Mapped Information		
	16. South Circular Road St Mary's Limerick Recurring County:Limerick	Start Date: Flood Quality Code:4
Additional Information: Reports (1) More Mapped Information		
	17. Ballynacloagh Rosbrien Recurring County:Limerick	Start Date: Flood Quality Code:4
Additional Information: Reports (1) More Mapped Information		
	18. Dooradoyle-St Nessans/Fr Russell recurring County:Limerick	Start Date: Flood Quality Code:4
Additional Information: Reports (1) More Mapped Information		



19. Dooradoyle Limerick recurring
County: Limerick

Start Date:
Flood Quality Code: 4

Additional Information: Reports (1) More Mapped Information



20. Mungret Village, Co. Limerick
County: Limerick

Start Date:
Flood Quality Code: 4

Additional Information: Reports (1) More Mapped Information

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Appendix 2
OPW Hydrometric Data Ball's Bridge

Office of Public Works			
GENERAL STATION DETAILS			
Station Name: Ball's Bridge	Station No: 25061	Watercourse: Abbey Estuary	NGR: R 582 578
Catchment Area (km ²): -	Catchment: Shannon	Gauge Type: L	Datum: Poolbeg

HYDROMETRIC YEAR ¹	WATER LEVEL (mAOD-Poolbeg)	S.G. READING (m)	ESTIMATED FLOWS (m ³ /s)	RELIABLE LIMIT ² (m ³ /s)	DATE	COMMENTS / NOTES
1957	6.02	4.16	-	-	08/01/1958	
1958	6.31	4.45	-	-	12/12/1958	
1959	6.57	4.71	-	-	29/12/1959	
1960	6.42	4.67	-	-	02/11/1960	Levels are Tidal peaks
1961	7.03	5.28	-	-	22/10/1961	Levels are Tidal peaks
1962	6.12	4.37	-	-	09/12/1962	Levels are Tidal peaks
1963	6.39	4.64	-	-	18/11/1963	Levels are Tidal peaks
1964	6.66	4.91	-	-	17/01/1965	Levels are Tidal peaks
1965	6.41	4.66	-	-	09/12/1965	Levels are Tidal peaks
1966	6.27	4.52	-	-	01/12/1966	Levels are Tidal peaks
1967	6.33	4.58	-	-	01/11/1967	Levels are Tidal peaks
1968	6.50	4.75	-	-	22/12/1968	Levels are Tidal peaks
1969	6.27	4.52	-	-	07/02/1970	Levels are Tidal peaks
1970	-	-	-	-	-	
1971	6.20	4.45	-	-	02/02/1972	Levels are Tidal peaks
1972	6.27	4.52	-	-	20/01/1973	Levels are Tidal peaks
1973	6.54	4.79	-	-	11/01/1974	Levels are Tidal peaks
1974	6.62	4.87	-	-	30/01/1975	Levels are Tidal peaks
1975	6.65	4.90	-	-	01/01/1976	Levels are Tidal peaks

1976	6.38	4.63	-	-	21/01/1977	Levels are Tidal peaks
1977	6.61	4.85	-	-	11/11/1977	Levels are Tidal peaks
1978	6.15	4.40	-	-	27/03/1979	Levels are Tidal peaks
1979	6.35	4.60	-	-	06/10/1979	Levels are Tidal peaks
1980	6.37	4.62	-	-	08/03/1981	Levels are Tidal peaks
1981	6.57	4.82	-	-	14/12/1981	Levels are Tidal peaks
1982	6.71	4.96	-	-	31/01/1983	Levels are Tidal peaks
1983	6.36	4.61	-	-	21/01/1984	Levels are Tidal peaks
1984	6.08	4.33	-	-	23/11/1984	Levels are Tidal peaks
1985	6.15	4.40	-	-	11/01/1986	Levels are Tidal peaks
1986	6.53	4.78	-	-	01/01/1987	Levels are Tidal peaks
1987	6.55	4.80	-	-	09/02/1988	Levels are Tidal peaks
1988	6.36	4.61	-	-	09/03/1989	Levels are Tidal peaks
1989	6.65	4.90	-	-	27/02/1990	Levels are Tidal peaks
1990	6.77	5.02	-	-	05/01/1991	Levels are Tidal peaks
1991	6.45	4.70	-	-	17/12/1991	Levels are Tidal peaks
1992	6.67	4.92	-	-	26/10/1992	Levels are Tidal peaks
1993	6.59	4.84	-	-	12/01/1994	Levels are Tidal peaks
1994	6.63	4.88	-	-	17/01/1995	Levels are Tidal peaks
1995	6.31	4.56	-	-	28/09/1996	Levels are Tidal peaks
1996	5.95	4.20	-	-	10/02/1997	Levels are Tidal peaks
1997	6.45	4.70	-	-	07/09/1998	Levels are Tidal peaks
1998	6.55	4.80	-	-	02/01/1999	Levels are Tidal peaks
1999	6.11	4.36	-	-	25/12/1999	Levels are Tidal peaks
2000	6.05	4.30	-	-	28/03/2001	Levels are Tidal peaks
2001	-	-	-	-	01/01/2000	Station removed 08/10/2001 to 07/08/2002 due to canal restoration

						works
2002	6.57	3.82	-	-	01/12/2002	Levels are Tidal peaks. Logger installed 16/09/02
2003	6.24	3.48	-	-	19/03/2004	Levels are Tidal Peaks
2004	6.39	3.63	-	-	08/01/2005	Levels are Tidal peaks
2005	6.47	3.72	-	-	30/03/2006	Levels are Tidal peaks
2006	6.41	3.67	-	-	08/10/2006	Levels are Tidal peaks
2007	6.49	3.74	-	-	11/03/2008	Levels are Tidal peaks
2008	6.21	3.46	-	-	20/08/2009	Levels are Tidal peaks
2009	6.37	3.62	-	-	06/12/2009	Levels are Tidal peaks
2010	6.31	3.56	-	-	20/02/2011	Levels are Tidal peaks
2011	-	-	-	-	01/01/1900	Levels are Tidal peaks

Note 1 : These are the highest recorded water levels or estimated flows in each available hydrometric year of record. A hydrometric year runs from 1st October in the given year to the 30th September the following year, i.e., the hydrometric year 2000 runs from 1st October 2000 to 30th September 2001.

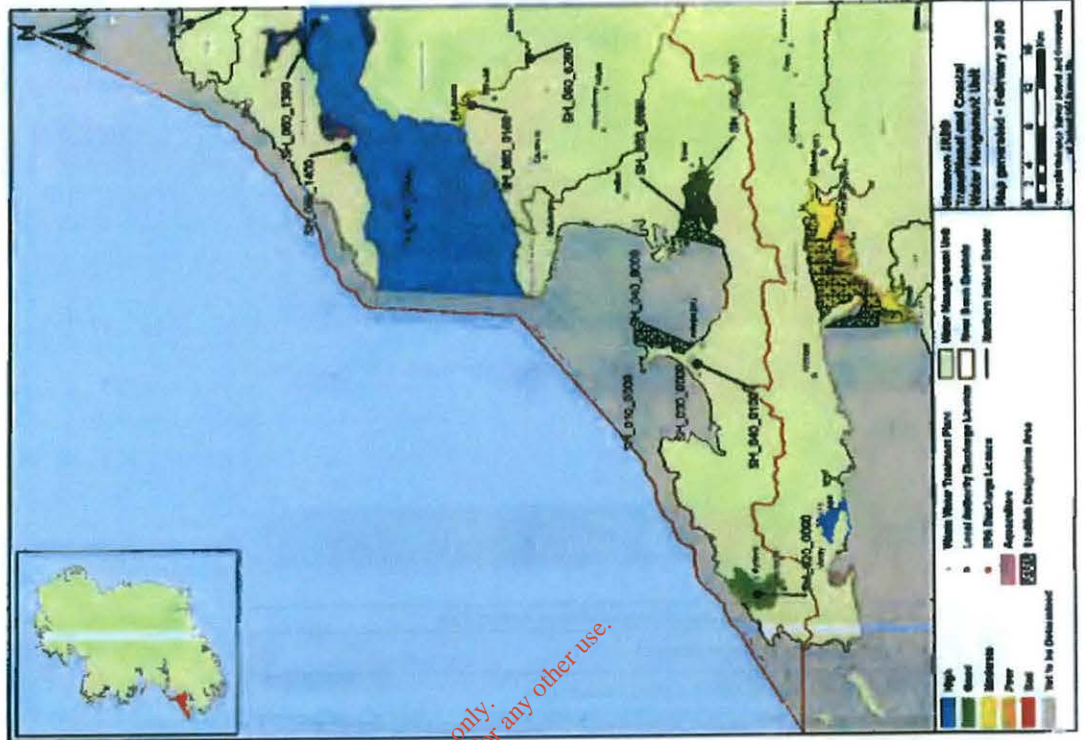
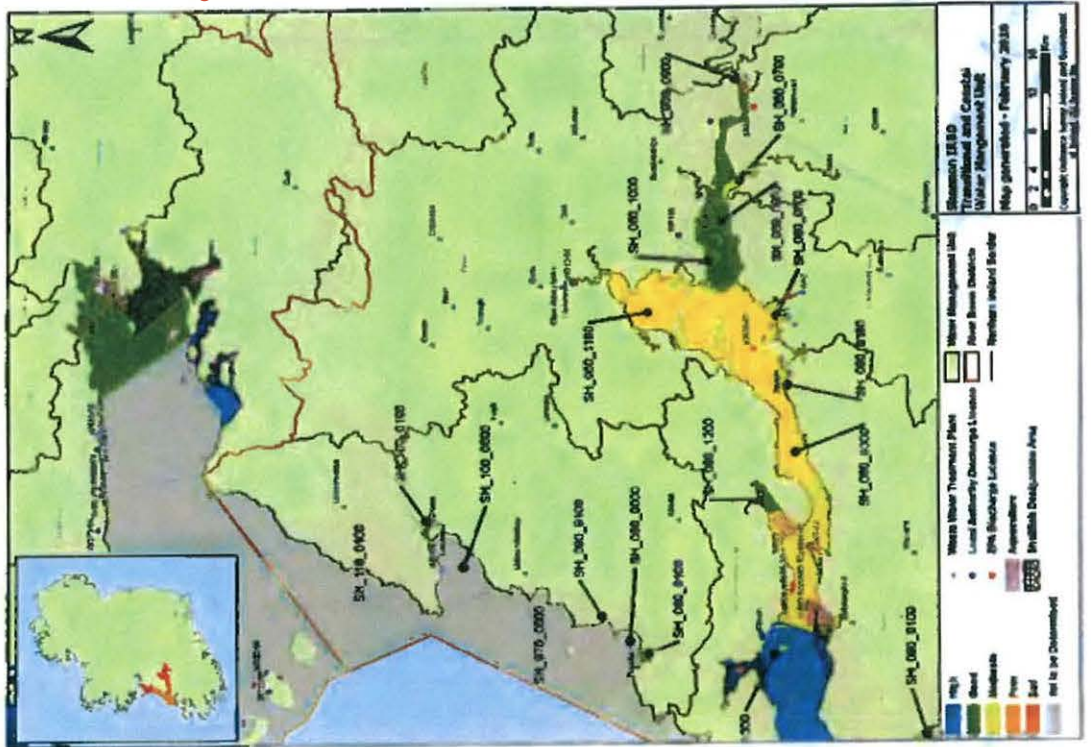
Note 2 : Limit of Reliable Rating: Estimated flows greater than the values given have been derived from an extrapolation of the rating and should be treated with caution

Appendix 5

Surface Water Quality

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Shannon RBD
 Transitional and Coastal Waters
 Action Programme



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Name	Shannon RBD Transitional and Coastal Waters Action Plan
Length of Coastline	1004km, (Mainland), 178km (Islands)
Main Counties	Clare, Limerick, Westmeath, Longford, Roscommon
Protected Areas	<p>14 Bathing Water: Ballyheigue, Ballybunion South, Maharabeg, Ballybunion North, White Strand, Doonbeg, Lahinch, Castlegregory, Fenit, Banna Strand, Spanish Point, Kilkee, Fanore, White Strand, Mitton Malbay, Cappagh Pier, Kilrush</p> <p>8 Shellfish Water: Tralee Bay, West Shannon Poulasherry Bay, West-Shannon Camigaholt, West Shannon Rinewella, West Shannon Ballylongford, Maharaees</p> <p>3 Nutrient Sensitive Water: Lee Estuary Upper (Tralee), Feale Estuary Upper, Cashen / Feale Estuary</p> <p>10 SPA, Akeragh, Banna and Barrow Harbour SPA, Cliffs of Moher SPA, Illaunoneeraun SPA, Loop Head SPA, Lough Gall, Magharee Islands SPA, Mattle Island, Mutton Island (Clare), River Shannon and River Fergus Estuarary, Tralee bay</p> <p>11 SAC, Black Head-Poutsallagh Complex, Inagh River Estuary, Akeragh, Banna And Barrow Harbour, Mount Brandon, Carrowmore Point To Spanish Point And Islands, Tralee Bay And Magharees Peninsula, West To Cloghane, Basket Islands, Carrowmore Dunes, Magharee Islands, Kerry Head Shoal, Kilkee Reefs.</p>

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STATUS/IMPACTS																																	
Overall status	<p>There are 20 Transitional Waterbodies within this RBD, 7 good, 7 moderate (or less) and the remainder are unassigned</p> <p>There are 11 Coastal Waterbodies within this RBD, 1 high 2 good and the remainder are unassigned</p> <p>2 Chemical status fails -- Lower Shannon Estuary, Limerick Dock</p>																																
Status elements	<p>Moderate (or less) water bodies with monitoring data indicating the test determining below good status classification are as follows:</p> <p>Lee K Estuary - fish Cashen - BOD Upper Feale Estuary - DO, BOD, High Phytoplankton Counts, fish Lower Shannon Estuary - Specific pollutants Deel Estuary- MRP, fish Maigue Estuary - DO, fish Fergus Estuary - DO</p>																																
Possible Impacts -	Nutrient input																																
PRESSURES/RISKS																																	
LAND BASED PRESSURES	<p>Pressure Based Risk Assessment results (2006) identify the following waterbodies as at risk from land based point source pressures</p> <table border="0"> <tr> <td>Transitional</td> <td>Risk Test Identified as "at risk" or "probably at risk"</td> </tr> <tr> <td>Cashen</td> <td>Point Source - WWTPs</td> </tr> <tr> <td>Deel Estuary</td> <td>Point Source - WWTPs</td> </tr> <tr> <td>Inagh Estuary</td> <td>Point Source - WWTPs</td> </tr> <tr> <td>Limerick Dock</td> <td>Point Source - Combined Sewer Overflows & Treatment Plant Overflows</td> </tr> <tr> <td>Maigue Estuary</td> <td>Point Source - WWTPs</td> </tr> <tr> <td>Upper Shannon Estuary</td> <td>Point Source - WWTPs</td> </tr> <tr> <td>Lower Shannon Estuary</td> <td>Point Source - WWTPs</td> </tr> <tr> <td>Coastal</td> <td>Risk Test Identified as "at risk" or "probably at risk"</td> </tr> <tr> <td>Outer Tralee Bay</td> <td>Point Source - WWTPs</td> </tr> <tr> <td>Mouth of the Shannon</td> <td>Point Source - WWTPs</td> </tr> <tr> <td>Shannon Plume</td> <td>Point Source - WWTPs</td> </tr> </table> <p>Pressure Based Risk Assessment results (2005) identifies the following waterbodies as at risk from land based diffuse pressures (nutrient input):</p> <table border="0"> <tr> <td>Transitional</td> <td>Risk Test Identified as "at risk" or "probably at risk"</td> </tr> <tr> <td>Lee K Estuary</td> <td>Nutrient Input</td> </tr> <tr> <td>Upper Feale Estuary</td> <td>Nutrient Input</td> </tr> <tr> <td>Deel Estuary</td> <td>Point Source - WWTPs and Section 4 local authority licensed discharges and Nutrient Input</td> </tr> </table>	Transitional	Risk Test Identified as "at risk" or "probably at risk"	Cashen	Point Source - WWTPs	Deel Estuary	Point Source - WWTPs	Inagh Estuary	Point Source - WWTPs	Limerick Dock	Point Source - Combined Sewer Overflows & Treatment Plant Overflows	Maigue Estuary	Point Source - WWTPs	Upper Shannon Estuary	Point Source - WWTPs	Lower Shannon Estuary	Point Source - WWTPs	Coastal	Risk Test Identified as "at risk" or "probably at risk"	Outer Tralee Bay	Point Source - WWTPs	Mouth of the Shannon	Point Source - WWTPs	Shannon Plume	Point Source - WWTPs	Transitional	Risk Test Identified as "at risk" or "probably at risk"	Lee K Estuary	Nutrient Input	Upper Feale Estuary	Nutrient Input	Deel Estuary	Point Source - WWTPs and Section 4 local authority licensed discharges and Nutrient Input
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Limerick Dock	Point Source - WWTPs, Combined Sewer Overflows & Treatment Plant Overflows, IPPC and Section 4 local authority licensed discharges
Mague Estuary	Point Source - WWTPs and Section 4 local authority licensed discharges and Nutrient Input
Lower Shannon Estuary	Point Source - WWTPs, IPPC and Section 4 local authority licensed discharges and Nutrient Input
Cashen	Point Source - WWTPs and Nutrient Input
Fergus Estuary	Point source- Section 4 Local Authority licensed discharges
Inagh Estuary	Point Source - WWTPs
Upper Shannon Estuary	Point Source - WWTPs and Section 4 local authority licensed discharges
Shannon Airport Lagoon	Point Source - WWTPs and Section 4 local authority licensed discharges
Foynes Harbour	Point Source - WWTPs

Further detail on the land based pressures which affect marine waters in this RBD, such as WWTP discharges, septic tanks, and agriculture are detailed in the following Water Management Unit Action Plans

Transitional/Coastal Water Body	Relevant Water Management Unit Action Plan
Aille Clare Estuary	Inagh WMU
Clonderlaw Bay	South Clare Shannon Estuary WMU
Doonbeg Estuary	Inagh WMU
Inagh Estuary	Inagh WMU
Lough Donnell	Inagh WMU
Biennerville Lake East	North Kerry Tralee Bay WMU
Biennerville Lake West	North Kerry Tralee Bay WMU
Lough Gill	North Kerry Tralee Bay WMU
Poulaweala Lough / Quayfield Lough	Deel Shannon Estuary WMU
Shannon Airport Lagoon	Fergus WMU
Foynes Harbour	Feale WMU
Liscannor Bay	Inagh WMU
Smerwick Harbour	North Kerry Tralee Bay WMU
Brandon Bay	North Kerry Tralee Bay WMU
Outer Tralee Bay	North Kerry Tralee Bay WMU
Mouth of the Shannon (HAs 23, 27)	South Clare Shannon Estuary / North Kerry Tralee Bay / Deel Shannon Estuary WMUs
Doonbeg Bay	Inagh WMU
Shannon Plume (HAs 27, 28)	South Clare Shannon Estuary / Inagh WMUs
Clooncaneen Pool	South Clare Shannon Estuary WMU
Scattery Island Lagoon	--
Southwestern Atlantic Seaboard (HA 25)	North Kerry Tralee Bay WMU
Inner Tralee Bay	North Kerry Tralee Bay WMU
Lee K Estuary	North Kerry Tralee Bay WMU
Cashen	Feale WMU
Upper Feale Estuary	Feale WMU
Lower Shannon Estuary	South Clare Shannon Estuary / Feale WMUs
Deel Estuary	Deel Shannon Estuary WMU
Mague Estuary	Mague WMU
Upper Shannon Estuary	Deel Shannon Estuary / Mague / Fergus WMUs

	<p>Limerick Dock Fergus Estuary</p> <p>Maigue / Fergus WMUs South Clare Shannon Estuary / Fergus WMUs</p> <p>Transitional and coastal water bodies where Shellfish designations are located will also include more detail in the relevant Pollution Reduction Programmes:</p> <p>http://www.environment.ie/en/Environment/Water/WaterQuality/ShellfishWatersDirective/ShellfishWatersDraftCharacterisationReportsandPRPs/</p>
MARINE PRESSURES	
Morphology	<p>Pressure Based Risk Assessment results (2008) identify the following waterbodies as at risk from morphological pressures:</p> <p>Inner Tralee Bay. Embankments and shoreline reinforcement, along with port activities at Ferit Harbour. Lee K Estuary. Shoreline reinforcement. Upper Fesle Estuary: Extensive subtidal embankments on both banks Cashen: Shoreline reinforcement Limerick Dock: HMWB due to significant stretches of embankments Maigue Estuary: Embankments Foynes Harbour. HMWB due to hard defences and port activities</p>
Aquaculture	<p>There are 32 licensed aquaculture areas in the SHRBD. The waterbodies with aquaculture areas are:</p> <p>Outer Tralee Bay Mouth of the Shannon Lower Shannon Estuary</p>

SELECTED ACTION PROGRAMME	
Bathing Waters	<p>The Bathing Water Quality Regulations (SI 79 of 2008) which transposed the new Bathing Waters Directive (2006/7/EC) establishes a new classification system for bathing water quality and require monitoring and management plans to preserve, protect and improve the quality of bathing waters. Local Authority responsibilities are:</p> <p>Identify bathing waters Monitor and classify bathing water quality status. Develop Bathing Waters Management Plans, including any necessary measures, to achieve bathing water quality standards Disseminate bathing water quality information to the public.</p> <p>Guidance is being prepared in the preparation of management plans to minimise risk to bathers and human health. Where water quality problems exist, preventative and remedial action must be taken.</p>
Shellfish Waters	<p>Measures are included in the Pollution Reduction Programmes under the Quality of Shellfish Waters Regulations. DAFF licence shellfish growing areas under the under the Fisheries (Amendment) Act, 1997</p> <p>Aquaculture: Aquaculture is regulated and licensed by the Department of Agriculture, Fisheries and Food, local authorities control discharge licenses for fin fish farms. The Department of the Environment, Heritage and Local Government makes shellfish pollution reduction programmes</p>

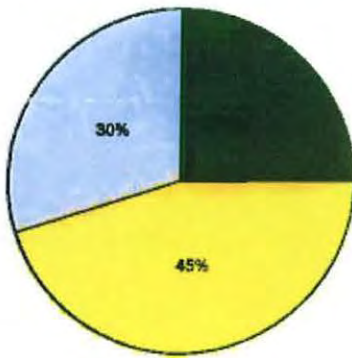


<p>Water Pollution Acts & Water Services Act & IPPC AND Foreshore</p>	<p>which provide general water quality protection. A multi-department Marine Coordination Group has recently been established to ensure ongoing co-ordination of marine management activities and application of Appropriate Assessment through strengthened regulation, and coordination of biodiversity issues at an EU level.</p> <p>Local Authority Licensing of trade effluent to surface waters (under the Local Government (Water Pollution) Acts 1977 - 1990) include discharges to transitional and coastal waters.</p> <p>IPPC licensed discharges under the integrated pollution prevention control directive and Environmental Protection Agency Acts.</p> <p>Foreshore Acts – development under the mean High Water Mark within transitional and coastal waters are subject to control under the Foreshore Acts.</p>
<p>Birds and Habitats directive</p>	<p>Key provisions of the habitat regulations introduced under these directives allow for the DEHLG to control damaging activities within and outside designated sites. All planned projects not necessary for the management of the Natura 2000 network will be subject to appropriate assessment under Article 6 of the habitats Directive.</p>
<p>Urban Wastewater Treatment</p>	<p>The Urban Waste Water Treatment Regulations (S.I No. 254 of 2001) deal with the collection, treatment and discharge of urban wastewater and wastewater from certain industrial sectors. Transitional and coastal waters receive direct discharges from Wastewater Treatment Plants and industry. Controls under these Regulations and the Environmental Objectives Regulations will provide the basis for deciding on appropriate treatment required to meet the objectives of the WFD. In addition Wastewater Discharge Authorisation Regulations (S.I No. 684 of 2007) require Local Authorities to hold a licence from the EPA authorising a discharge for WWTPs >500pe (or a certificate in the case of agglomerations <500pe).</p>
<p>Morphology (Controls on Physical Modifications)</p>	<p>Marine morphological impacts can impact ecological standards. Ireland's existing planning and development controls and marine licensing systems provide a general level of control for new development. The DEHLG is considering the introduction of new regulations to control physical modifications in our surface waters which may involve an authorisation system where low risk activities may simply be registered and higher risk works would be subject to more detailed assessment and more prescriptive licences.</p>

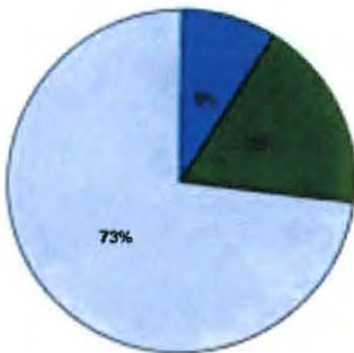
OBJECTIVES	
Protect / Restore 2015	8 Transitional, 3 coastal
Alternative Objectives	<p>Extended Deadlines – 6 Transitional. Remaining water bodies are yet to have objectives determined</p> <p>New Modifications – Foynes - future flood relief measures (modifications) by OPW under the Floods Directive; and port expansion by Port of Foynes. Limerick Dock – Flow amelioration works Abbey River</p> <p>HMWB – Limerick Dock, Foynes Harbour.</p>



TRANSITIONAL



COASTAL



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Transitional and Coastal Status

WATERBODY INFORMATION			GENERAL CONDITIONS		BIOLOGY			HYDROGRAPHIC/GEOPHYSICAL			ECOLOGICAL STATUS			PROTECTED AREAS			OBJECTIVES			
WATER ID	WQV	WQV	Temp	Dissolved Oxygen	Phytoplankton	Macroinvertebrates	Algae	Benthos	Phyto. II	Hydrology	Morphology	SEPM	Areas VII	Specific Pollutants	Ecological Status	Chemical Status	Bathing Waters	Shellfish Waters	Marine Benthic Water	SA
<p style="text-align: center;">Transitional and Coastal Status</p>																				
WA 001	001	001	001	001	001	001	001	001	001	001	001	001	001	001	001	001	001	001	001	001
WA 002	002	002	002	002	002	002	002	002	002	002	002	002	002	002	002	002	002	002	002	002
WA 003	003	003	003	003	003	003	003	003	003	003	003	003	003	003	003	003	003	003	003	003
WA 004	004	004	004	004	004	004	004	004	004	004	004	004	004	004	004	004	004	004	004	004
WA 005	005	005	005	005	005	005	005	005	005	005	005	005	005	005	005	005	005	005	005	005
WA 006	006	006	006	006	006	006	006	006	006	006	006	006	006	006	006	006	006	006	006	006
WA 007	007	007	007	007	007	007	007	007	007	007	007	007	007	007	007	007	007	007	007	007
WA 008	008	008	008	008	008	008	008	008	008	008	008	008	008	008	008	008	008	008	008	008
WA 009	009	009	009	009	009	009	009	009	009	009	009	009	009	009	009	009	009	009	009	009
WA 010	010	010	010	010	010	010	010	010	010	010	010	010	010	010	010	010	010	010	010	010
WA 011	011	011	011	011	011	011	011	011	011	011	011	011	011	011	011	011	011	011	011	011
WA 012	012	012	012	012	012	012	012	012	012	012	012	012	012	012	012	012	012	012	012	012
WA 013	013	013	013	013	013	013	013	013	013	013	013	013	013	013	013	013	013	013	013	013
WA 014	014	014	014	014	014	014	014	014	014	014	014	014	014	014	014	014	014	014	014	014
WA 015	015	015	015	015	015	015	015	015	015	015	015	015	015	015	015	015	015	015	015	015
WA 016	016	016	016	016	016	016	016	016	016	016	016	016	016	016	016	016	016	016	016	016
WA 017	017	017	017	017	017	017	017	017	017	017	017	017	017	017	017	017	017	017	017	017
WA 018	018	018	018	018	018	018	018	018	018	018	018	018	018	018	018	018	018	018	018	018
WA 019	019	019	019	019	019	019	019	019	019	019	019	019	019	019	019	019	019	019	019	019
WA 020	020	020	020	020	020	020	020	020	020	020	020	020	020	020	020	020	020	020	020	020

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Glossary & Abbreviations

Biodiversity	Word commonly used for biological diversity and defined as assemblage of living organisms from all habitats including terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part
BOD	Biological Oxygen Demand
Coastal waters	That area of surface water on the landward side of a line, every point of which is at a distance of one nautical mile on the seaward side from the nearest point of the baseline from which the breadth of territorial waters is measured, extending where appropriate up to the outer limit of transitional waters.
DAFF	Department of Agriculture, Fisheries and Food.
DEHLG:	Department of Environment, Heritage and Local Government
DETE:	Department of Enterprise, Trade and Employment
Diffuse sources (of pollution)	Non-point sources primarily associated with run-off and other discharges related to different land uses such as agriculture and forestry, from septic tanks associated with rural dwellings and from the land spreading of industrial, municipal and agricultural wastes.
DO	Dissolved Oxygen
EC.	European Commission
Ecological status	An expression of the structure and functioning of aquatic ecosystems associated with surface waters. Such waters are classified as being of good ecological status when they meet the requirements of the Water Framework Directive
Ecology	The study of the relationships among organisms and between those organisms and their non-living environment
EPA:	Environmental Protection Agency
EU:	European Union
Good status:	A collective term used to refer to the status achieved by a surface water body when both its ecological status and its chemical status are at least good or, for groundwater, when both its quantitative status and chemical status are at least good
HMWB (Heavily modified water body):	A water body that has been changed substantially in character as a result of physical alterations by human activity
Inland surface waters:	All standing or flowing water on the surface of the land (such as reservoirs, lakes, rivers) on the landward side of the baseline from which the breadth of territorial waters is measured.
Macroalgae	Multicellular algae such as seaweeds and filamentous algae
Mitigation measures	Measures to avoid, prevent, minimise, reduce or, as fully as possible, offset or compensate for any significant adverse effects on the environment, as a result of implementing a plan or programme
On-site system	Septic tank or other system for treating wastewater from unsewered properties.
Opportunistic:	One of the elements used in classification of Ecological Status of



Macroalgae	transitional and coastal waters measured by spatial extent and biomass of macroalgae. While these algae are natural components of estuarine systems and play important roles in several estuarine processes, macroalgal blooms are of ecological concern because they can reduce the habitat quality.
Phytoplankton	Solitary and colonial unicellular algae and cyanobacteria that live in the water column, at least for part of their lifecycle.
Phytoplankton Biomass	One of the elements used in classification of Ecological Status of transitional and coastal waters measured by the total weight of phytoplankton, a free-floating flora, at a given time per unit area.
PRP	Pollution reduction programme
Programme measures	of Those actions, defined in detail, which are required to achieve the environmental objectives of the Directive within a river basin district.
Protected area	Water protected by European legislation including drinking waters, shellfish waters, bathing waters, urban wastewater nutrient sensitive areas or sites designated as Special areas of Conservation or Special Protected Areas.
River Basin District (RBD) & International River Basin District (IRBD)	Administrative area for coordinated water management, composed of multiple river basins (or catchments), with cross-border basins (i.e. those covering the territory of more than one Member State) assigned to an international RBD.
River basin	The area of land from which all surface water run-off flows, through a sequence of streams, rivers and lakes into the sea at a single river mouth, estuary or delta.
SERBD	South Eastern River Basin District
Special Area of Conservation (SAC)	Site designated according to the Habitats Directive (Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora).
Special Protection Area (SPA)	Area designated under the European Directive on the Conservation of Wild Birds.
Statutory Instrument (SI)	Any order, regulation, rule, scheme or bye-law made in exercise of a power conferred by statute.
Surface water	Inland waters on the land surface (such as reservoirs, lakes, rivers, transitional waters, coastal waters) within a river basin.
Transitional waters	Bodies of surface water in the vicinity of river mouths which are partly saline in character as a result of their vicinity to coastal waters but which are substantially influenced by freshwater flows.
Water body	A coherent sub-unit in the river basin (district) to which the environmental objectives of the directive must apply. Hence, the main purpose of identifying "water bodies" is to enable the status to be accurately described and compared to environmental objectives.
Water Framework Directive (WFD)	The Water Framework Directive is European legislation that promotes a new approach to water management through river basin planning. It covers inland surface waters, estuarine waters, coastal waters and groundwater.
WMU	Water Management Unit – geographical sub unit of a river basin district.

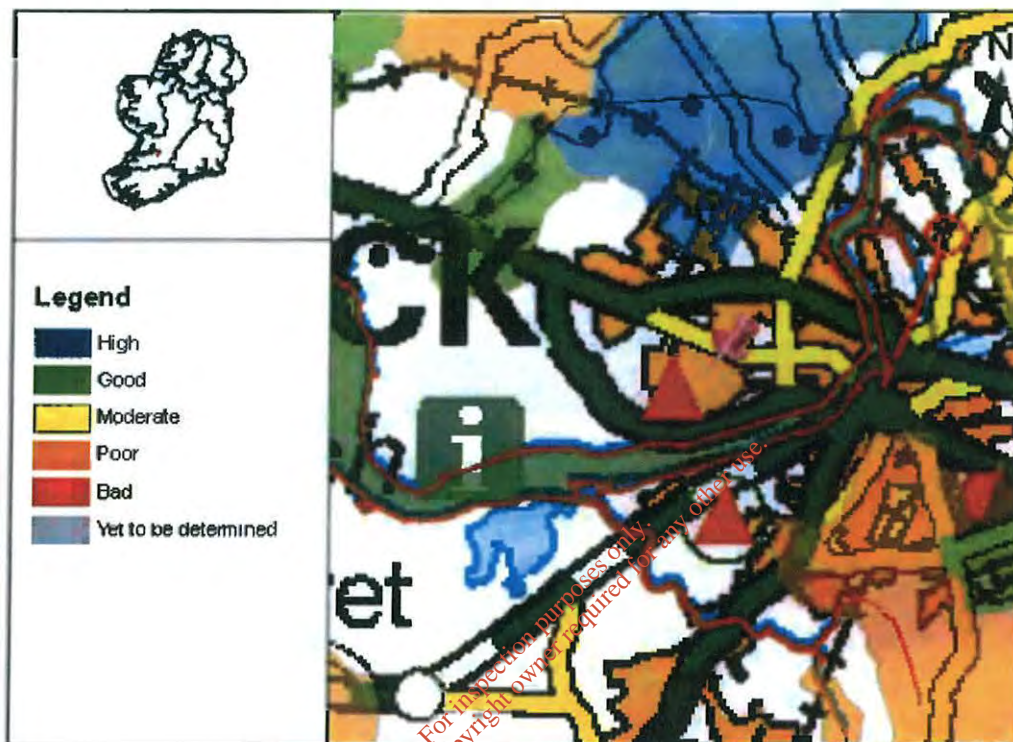


Waste Water Treatment Plant

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Full Report for Waterbody Limerick Dock



River Basin Management Plans (RBMPs) have been published for all River Basin Districts in Ireland in accordance with the requirements of the Water Framework Directive. The WaterMaps viewer is an integral part of the River Basin Management Plan and provides access to information at individual waterbody level and at Water Management Unit level for all the River Basin Districts in Ireland.

The following report provides summary plan information about the selected waterbody (indicated by the pin in the map above) relating to its status, risks, objectives, and measures proposed to retain status where this is adequate, or improve it where necessary. Waterbodies can relate to surface waters (these include rivers, lakes, estuaries [transitional waters], and coastal waters), or to groundwaters. Other relevant information not included in this report can be viewed using the WaterMaps viewer, including areas listed in the Register of Protected Areas

You will find brief notes at the bottom of some of the individual report sheets that will help you in interpreting the information presented. More detailed information can be obtained in relation to all aspects of the RBMPs at www.wfdireland.ie.

Date Reported to Europe: July 2010

Date Report Created 11/07/2012



Summary Information:

Water Management Unit: N/A
WaterBody Category: Transitional Waterbody
WaterBody Name: Limerick Dock
WaterBody Code: IE_SH_060_0900
Overall Status: Good
Overall Objective: Restore 2021
Overall Risk: 1a At Risk
Heavily Modified: Yes



Report data based upon final RBMP, 2009-2015.

The information provided above is a summary of the principal findings related to the selected waterbody. Further details and explanation of individual elements of the report are outlined in the following pages.

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Date Reported to Europe: July 2010

Date Report Created 11/07/2012

water matters

'Our Plan'



Status Report

Water Management Unit: N/A
WaterBody Category: Transitional Waterbody
WaterBody Name: Limerick Dock
WaterBody Code: IE_SH_060_0900
Overall Status Result: Good
Heavily Modified: Yes

shannon
river basin district



Status Element	Description	Result
Status information		
DIN	Dissolved Inorganic Nitrogen status	Good
MRP	Molybdate Reactive Phosphorus status	Fail
DO	Dissolved oxygen as per cent saturation status	Fail
BOD	Biochemical Oxygen Demand (5-days) status	Fail
PHY	Macroalgae - phytobiomass status	Fail
OPP	Macroalgae - opportunistic algae status	N/A
RSL	Macroalgae - reduced species list status	N/A
ANG	Angiosperms - Seagrass and Saltmarsh status	N/A
BIN	Benthic Invertebrates status	N/A
FIS	Fish status	Good
HYD	Hydrology status	N/A
MOR	Morphology status	Less than Good (pHMWB)
SP	Specific Pollutant Status	Pass
PAS	Overall protected area status	At least good
ES	Ecological Status	Good
CS	Chemical Status	Fail
SWS	Surface Water Status	N/A
EXT	Extrapolated status	N/A
DON	Donor water bodies	N/A

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Date Reported to Europe: July 2010

Date Report Created 11/07/2012

water matters

'Our Plan'



n/a - not assessed

Status

By 'Status' we mean the condition of the water in the waterbody. It is defined by its chemical status and its ecological status, whichever is worse. Waters are ranked in one of 5 status classes: High, Good, Moderate, Poor, Bad. However, not all waterbodies have been monitored, and in such cases the status of a similar nearby waterbody has been used (extrapolated) to assign status. If this has been done the first line of the status report shows the code of the waterbody used to extrapolate.

You can read more about status and how it is measured in our RBMP Document Library at www.wfdireland.ie (Directory 15 Status).

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Date Reported to Europe: July 2010

Date Report Created 11/07/2012

water matters

'Our Plan'



Risk Report

Water Management Unit: N/A
WaterBody Category: Transitional Waterbody
WaterBody Name: Limerick Dock
WaterBody Code: IE_SH_060_0900
Overall Risk Result: **1a** At Risk
Heavily Modified: Yes

shannon
river basin district



Risk Test Description	Risk
Hydrology	
THY1 Water balance - Abstraction	Not At Risk
Marine Direct Impacts	
TMDI Dangerous Substances 1	N/A
TMDI OSPAR 2	N/A
TMDI UWWT Regs Designations 3	N/A
TMDI Marine Direct Impacts Overall - Worst Case O	N/A
Morphological Risk Sources	
TM1 Channelisation	N/A
TM2 Deposition	N/A
TM3 Coastal Defences	N/A
TM4 Impoundments	N/A
TM5a Built Structures - Port Tonnage	N/A
TM5b Built Structures - Industrial Intakes	N/A
TM6 Intensive Landuse	N/A
TMO Morphology Overall - Worst Case	N/A
TMO Overall (MIMAS) Morphological Risk - Worst Case (2008)	N/A
Overall Risk	
RA Transitional Overall - Worst Case Overall (MIMAS) Morphological Risk - Worst Case (2008)	1a At Risk
Point / MDI Worst Case	
TPOL Worst case of Point Overall and MDI Overall Overall (MIMAS) Morphological Risk - Worst Case (2008)	1a At Risk

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Date Report Created 11/07/2012

water matters

'Our Plan'

Point Risk Sources		
TP1	WWTPs (2008)	Not At Risk
TP2	CSOs	1a At Risk
TP3	IPPCs (2008)	Not At Risk
TP4	Section 4s (2008)	Not At Risk
TP5	WTPs/Mines/Quarries/Landfills	N/A
TPO	Overall Risk from Point Sources - Worst Case (2008)	1a At Risk

Risk

By 'risk' we mean the risk that a waterbody will not achieve good ecological or good chemical status/potential at least by 2015. To examine risk the various pressures acting on the waterbody were identified along with any evidence of impact on water status. Depending on the extent of the pressure and its potential for impact, and the amount of information available, the risk to the water body was placed in one of four categories: 1a at risk; 1b probably at risk; 2a probably not at risk; 2b not at risk. Note that '2008' after the risk category means that the risk assessment was revised in 2008. All other risks were determined as part of an earlier risk assessment in 2005.

You can read more about risk assessment in our 'WFD Risk Assessment Update' document in the RBMP document library, and other documents at www.wfdireland.ie (Directory 31 Risk Assessments).

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Objectives Report

Water Management Unit: N/A
WaterBody Category: Transitional Waterbody
WaterBody Name: Limerick Dock
WaterBody Code: IE_SH_060_0900
Overall Objective: Restore 2021
Heavily Modified: Yes



Objectives Description	Result
Extended timescale information	
E1 Extended timescales due to time requirements to upgrade WWTP discharges	No Status
E2 Extended timescales due to delayed recovery of chemical pollution and chemical status failures	2021
E3 Extended timescales due to winter dissolved nitrogen exceedances	No Status
E4 Extended timescales due to time requirements for status recovery	No Status
E5 Extended timescales from Northern Ireland Environment Agency	No Status
E0V Overall extended timescale - combination of all extended timescales fields	2021
Objectives information	
OB1 Prevent deterioration objective	No Status
OB2 Restore at least good status objective	No Status
OB3 Reduce chemical pollution objective	Restore 2021
OB4 Protected areas objective	Protect
OBO Overall objectives	Restore 2021

Extended timescales

Extended timescales have been set for certain waters due to technical, economic, environmental or recovery constraints. Extended timescales are usually of one planning cycle (6 years, to 2021) but in some cases are two planning cycles (to 2027).

Objectives

In general, we are required to ensure that our waters achieve at least good status/potential by 2015, and that their status does not deteriorate. Having identified the status of waters (this is given earlier in this report), the next stage is to set objectives for waters. Objectives consider waters that require protection from deterioration as well as waters that require restoration and the timescales needed for recovery. Four default objectives have been set initially:-

- Prevent Deterioration*
- Restore Good Status*
- Reduce Chemical Pollution*
- Achieve Protected Areas Objectives*

These objectives have been refined based on the measures available to achieve them, the latter's likely effectiveness, and consideration of cost-effective combinations of measures. Where it is considered necessary extended deadlines have been set for achieving objectives in 2021 or 2027.

Date Reported to Europe: July 2010

Date Report Created 11/07/2012



Measures Report

Water Management Unit: N/A
WaterBody Category: Transitional Waterbody
WaterBody Name: Limerick Dock
WaterBody Code: IE_SH_060_0900
Heavily Modified: Yes



	Measures Description	Applicable
BC	Total number of basic measures which apply to this waterbody	16
BW	Directive - Bathing Waters Directive	No
BIR	Directive - Birds Directive	Yes
HAB	Directive - Habitats Directive	Yes
MAE	Directive - Major Accidents and Emergencies Directive	Yes
EIA	Directive - Environmental Impact Assessment Directive	Yes
UWT	Directive - Urban Waste Water Treatment Directive	No
PPP	Directive - Plant Protection Products Directive	Yes
NIT	Directive - Nitrates Directive	Yes
IPC	Directive - Integrated Pollution Prevention Control Directive	Yes
POI	Other Stipulated Measure - Control of point source discharges	Yes
DIF	Other Stipulated Measure - Control of diffuse source discharges	Yes
PS	Other Stipulated Measure - Control of priority substances	Yes
MOD	Other Stipulated Measure - Controls on physical modifications to surface waters	Yes
OA	Other Stipulated Measure - Controls on other activities impacting on water status	Yes
AP	Other Stipulated Measure - Prevention or reduction of the impact of accidental pollution incidents	Yes
TP1	WSIP - Agglomerations with treatment plants requiring capital works	No
TP2	WSIP - Agglomerations with treatment plants requiring further investigation prior to capital works	No
TP3	WSIP - Agglomerations requiring the implementation of actions identified in Shellfish PRPs	No
TP4	WSIP - Agglomerations with treatment plants requiring improved operational performance	No
TP5	WSIP - Agglomerations requiring investigation of CSOs	No
TP6	WSIP - Agglomerations where existing treatment capacity is currently adequate but predicted loadings would result in overloading	No
OTS	On-site waste water treatment systems	Yes
SHE	Shellfish Pollution Reduction Plan	No
IPR	IPPC licences requiring review	Yes
WPR	Water Pollution Act licences requiring review	Yes

Date Reported to Europe: July 2010

Date Report Created 11/07/2012

water matters

'Our Plan'



HQW	Protect high quality waters	No
-----	-----------------------------	----

Measures

Measures are necessary to ensure that we meet the objectives set out in the previous page of this report. Many measures are already provided for in national legislation and must be implemented. Other measures have been recently introduced or are under preparation. A range of additional potential measures are also being considered but require further development. Any agreed additional measures can be introduced through the update of Water Management Unit Action Plans during the implementation process.

You can read more about Basic Measures in 'River Basin Planning Guidance' and in other documents in our RBMP Document Library at www.wfdireland.ie.

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Appendix 6
Groundwater Quality

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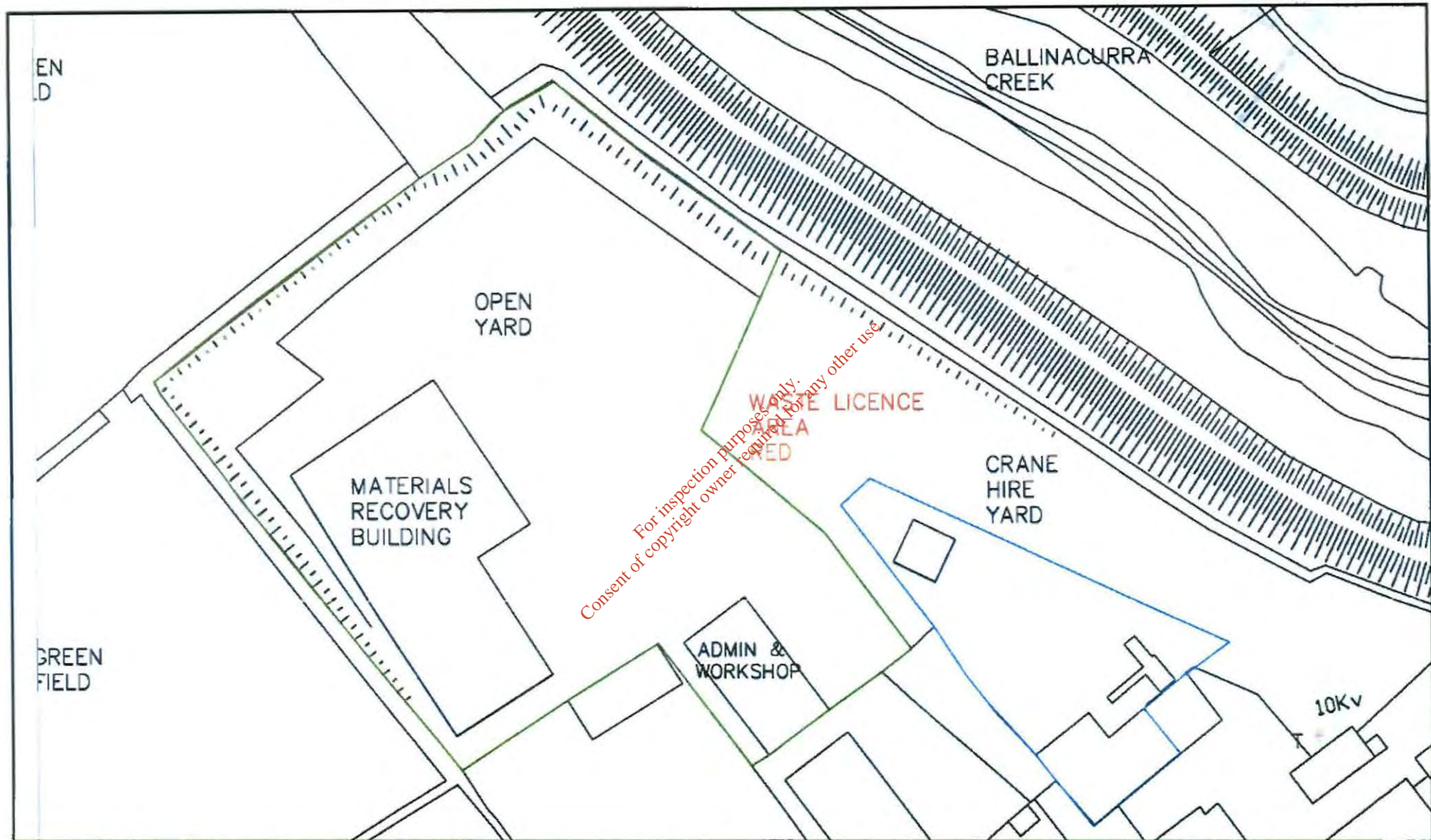
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2.5 Proposed Development

GES intends to increase the amount of waste that can be accepted to 130,000 tonnes/year. The proposed increase is to allow GES compete for business in domestic and commercial waste collection market and offer waste treatment services to authorised waste collectors in the Mid West and adjoining Regions.

There will be no change to either the types of waste accepted, or the way the waste is handled, processed and stored. The only change will be an increase in the number of vehicles that bring the unprocessed waste to the site and remove the processed materials.



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CLIENT

Greenstar Environmental Services Ltd

details

Figure No.

2.1

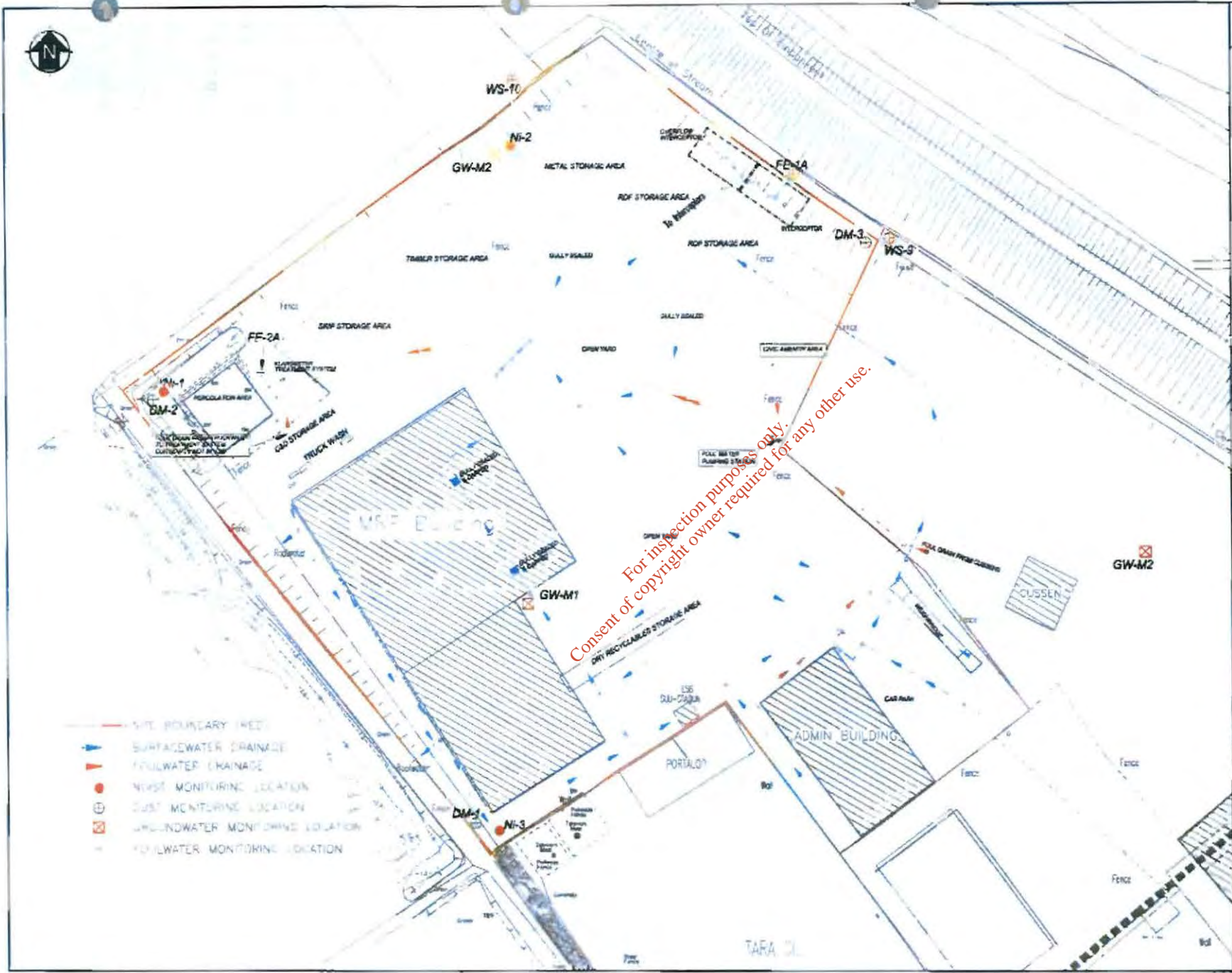
TITLE

WASTE LICENCE AREA

SCALE
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REV.
A

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NOTES

- Monitoring locations
 Grid references
 Eastings Northings
- DM-1 - 154913, 155617
 - DM-2 - 154842, 155714
 - DM-3 - 155003, 155750
 - Ni-1 - 154840, 155712
 - Ni-2 - 154920, 155745
 - Ni-3 - 154910, 155618
 - FE-1A - 154974, 155769
 - WS-9 - 155003, 155750
 - WS-10 - 154922, 155776
 - FE-2A - 154858, 155720
 - GW-M1 - 154923, 155667
 - GW-M2 - 154920, 155770
 - GW-M3 - 155049, 155684

- SITE BOUNDARY (RED)
- SURFACEWATER DRAINAGE
- FULLWATER DRAINAGE
- NEAREST MONITORING LOCATION
- ⊕ DIST MONITORING LOCATION
- ⊗ GROUNDWATER MONITORING LOCATION
- FULLWATER MONITORING LOCATION

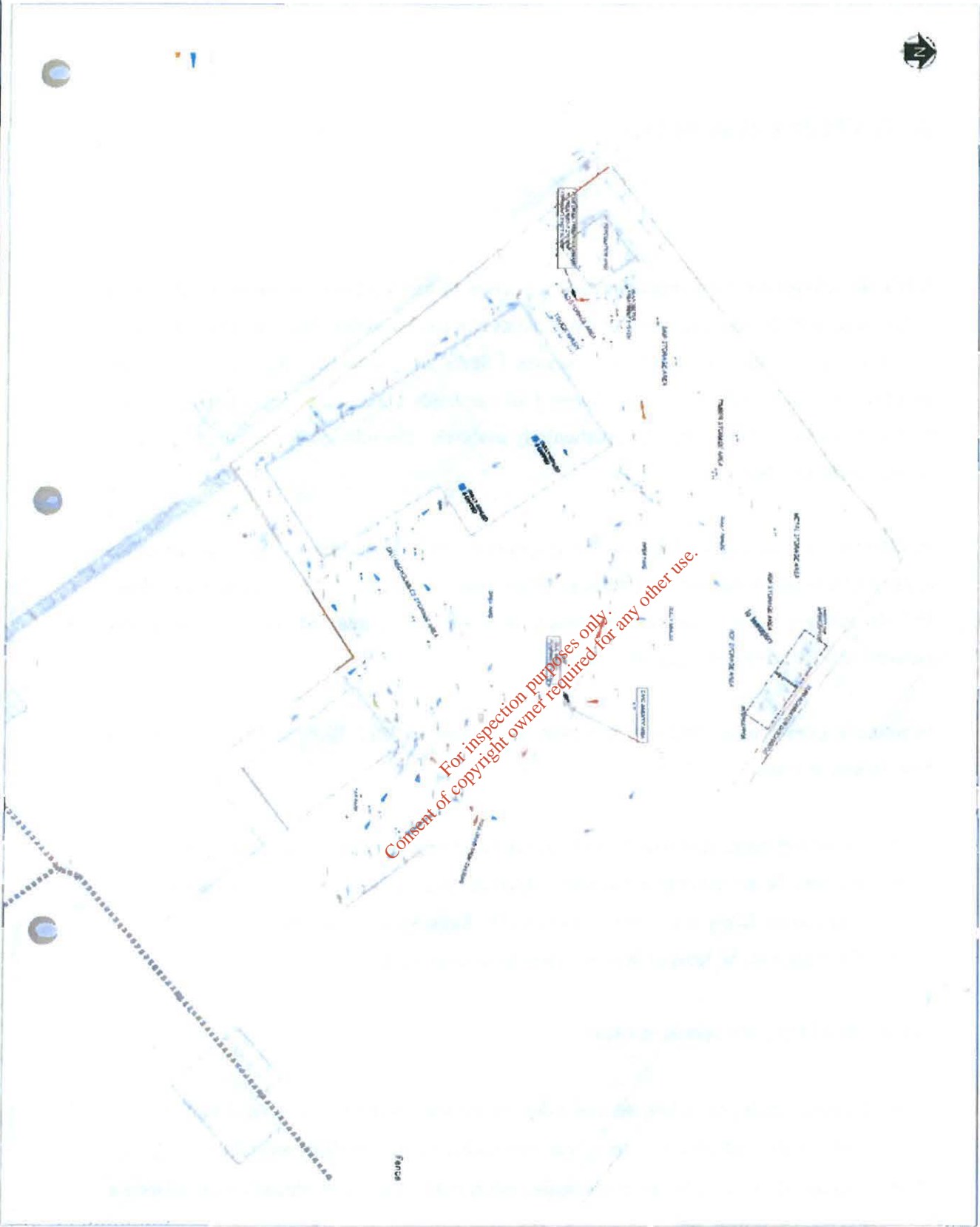
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REV	DATE	DESCRIPTION	BY	CHK	APP

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CLIENT
GES Ltd

TITLE
GES Limerick Monitoring LocationS W0082-02

SCALE	DRAWING No.	REV
NTS	AD	2.2
		A



REV	DATE	DESCRIPTION	BY	CHK
1	12/10/14	ISSUE FOR PERMIT	DES	DES

DESIGNED BY: **DESIGN**
 DRAWN BY: **DESIGN**
 CHECKED BY: **DESIGN**
 APPROVED BY: **DESIGN**

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 17 Colgan Lane & Associates
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DESIGN
 002

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3. NATURA 2000 SITES

SACs are selected for the conservation and protection of habitats listed on Annex I and species (other than birds) listed on Annex II of the Habitats Directive, and their habitats. The habitats on Annex I require special conservation measures. SPAs are selected for the conservation and protection of bird species listed on Annex I of the Birds Directive and regularly occurring migratory species, and their habitats, particularly wetlands. The selected habitats and species are termed Qualifying Interests.

A statement of Conservation Objectives is prepared for each designated site which identifies the qualifying interests or conservation features. The Conservation Objectives are intended to ensure that the relevant habitats and species present on a site are maintained, and where necessary restored, at a Favourable Conservation Status.

Favourable Conservation Status of a habitat, as defined in 2011 Birds and Natural Habitats Regulations, is when:

- its natural range, and area it covers within that range, are stable or increasing, and
- the specific structure and functions which are necessary for its long-term maintenance exist and are likely to continue to exist for the foreseeable future, and
- the conservation status of its typical species is favourable

Conservation Status of a species is when:

- the Favourable population dynamics data on the species concerned indicate that it is maintaining itself on a long-term basis as a viable component of its natural habitats,
- the natural range of the species is neither being reduced nor is likely to be reduced for the foreseeable future, and
- there is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis.

A list of designated Natura 2000 sites within 15 km of the facility is given in Table 3.1

A list of designated Natura 2000 sites within 15 km of the facility is given in Table 3.1

Table 3.1. Natura 2000 Sites Within 15 km of the AES Facility

Site	Code	Distance
SAC		
Lower River Shannon	002165	400m to the north of the site.
Glenorma Wood	1013	11.4 km to the north east
Ratty River Cave	2316	14.5 km to the north east
Danes Hole Poulnalecka	0030	15 km to the north
Tory Hill	0439	13 km to the south
Askeaton Fen Complex	002279	14km to the south west
SPA		
River Shannon & River Fergus	004077	400 m to the north of the site

3.1 Natura 2000 Sites Potentially Affected by the Project

The facility is not located in or immediately adjacent to a Natura 2000 Site. The closest Natura 2000 Sites are the Lower River Shannon SAC and the River Shannon & River Fergus SPA, which are 400m to the north.

Stormwater run-off from the site discharges to Bunlickey Lake which is in the River Shannon & River Fergus SPA and is hydraulically connected to the River Shannon. The remaining Sites are between 10 and 15 km from the facility and there is no pathway by which the current and proposed site activities can impact on these Sites.

3.2 Lower Shannon SAC

The Site Synopsis for the Lower Shannon SAC that lists the full Qualifying Interests are in Appendix 2, and the Conservation Objective are in Appendix 3 and the information is summarised below.

Qualifying Interests

The Lower Shannon SAC is selected for the following habitats listed in Annex 1 of the Habitats Directive: lagoons and alluvial wet woodlands, floating river vegetation, *Molinia* meadows, estuaries, tidal mudflats, Atlantic salt meadows, Mediterranean salt meadows, *Salicornia* mudflats, sand banks, perennial vegetation of stony banks, sea cliffs, reefs and large shallow inlets and bays all habitats

The site is also selected for the following species listed in Annex II of the Directive – Bottle Nosed Dolphin, Sea Lamprey, River Lamprey, Brook Lamprey, Freshwater Pearl Mussel, Atlantic Salmon and Otter.

Conservation Objectives

The conservation objectives are to maintain or restore the favorable conservation condition of the Annex I habitat(s) and/or the Annex II species for which the SAC has been selected:

- [1029] Freshwater pearl mussel *Margaritifera margaritifera*
- [1095] sea lamprey *Petromyzon marinus*
- [1096] Brook Lamprey *Lampetra planeri*
- [1099] River Lamprey *Lampetra fluviatilis*
- [1106] Atlantic Salmon *Salmo salar* (only in fresh water)
- [1110] sandbanks which are slightly covered by sea water all the time
- [1130] Estuaries
- [1140] Mudflats and sandflats not covered by seawater at low tide
- [1150] *Coastal lagoons

For those parameters for which ELVs have not been established the Environmental Quality Standards (EQS) specified for 'Good Status' in the Environmental Objectives (Surface Water) Regulations 2009 (S.I. No.272 of 2009) are provided. The EQS are not emission limit values, but are the concentrations that must be achieved in a water body, taking into consideration the available assimilative capacity, if the water body is to meet the objectives set for the water body.

The monitoring indicates that, with the exception of BOD and TSS, all of the parameters are below the proposed ELV and significantly below the EQS. In particular mineral oils have never been detected. It is noted that the BOD and ammonia levels in the drain upstream of the discharge point exceed the EQS.

In 2012, GES conducted an extensive CCTV survey of the surface water drainage system. The survey identified a number of defects in the surface water lines, some small cracks in the first chamber of the interceptor and further cracks in the pipeline connecting the final chamber of the interceptors to the discharge point. These defects were repaired in May 2012.

2.4.2 Foul Water

Sanitary wastewater and wastewater from the vehicle wash area is treated in to the on-site Klargester Biodisc wastewater treatment plant. The vehicle wastewater passes through a grit trap and oil interceptor before connecting to the Klargester. Sanitary wastewater from the neighbouring Cussen Crane Hire Yard is also connected to the Klargester. The treated effluent discharges to a percolation area and the quality of the discharge is monitored in accordance with the requirements of the Waste Licence.

In 2012 GES commissioned a detailed assessment of the operation of the treatment plant. The assessment established that the average daily discharge to the percolation area is 0.4m³/day. Taking into consideration rainfall on the percolation area, the total hydraulic loading is 0.483m³/day. The effluent quality monitoring has established that the quality meets the recommended minimum performance standards set by the EPA and are within the manufacturer's design standards.

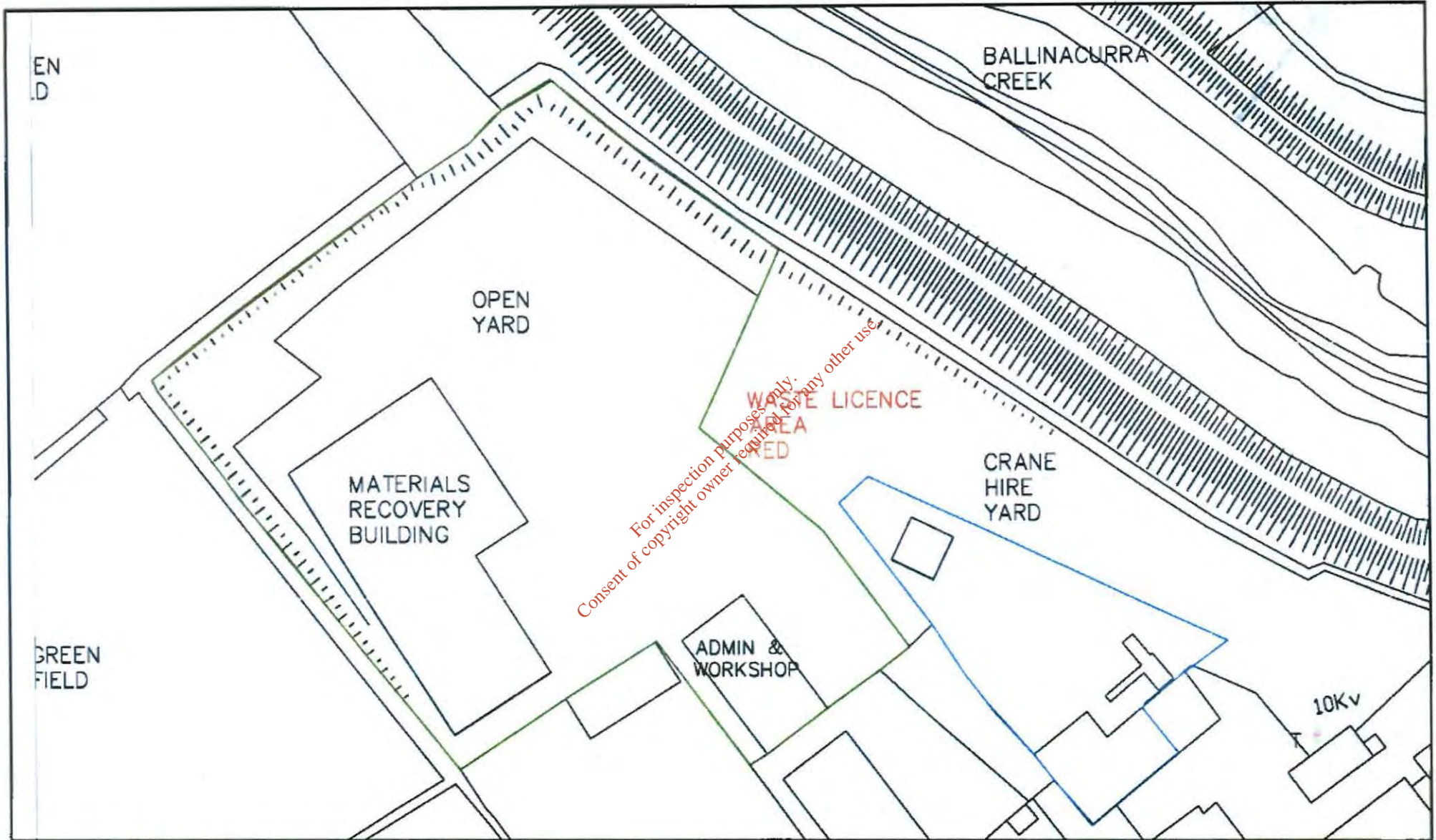
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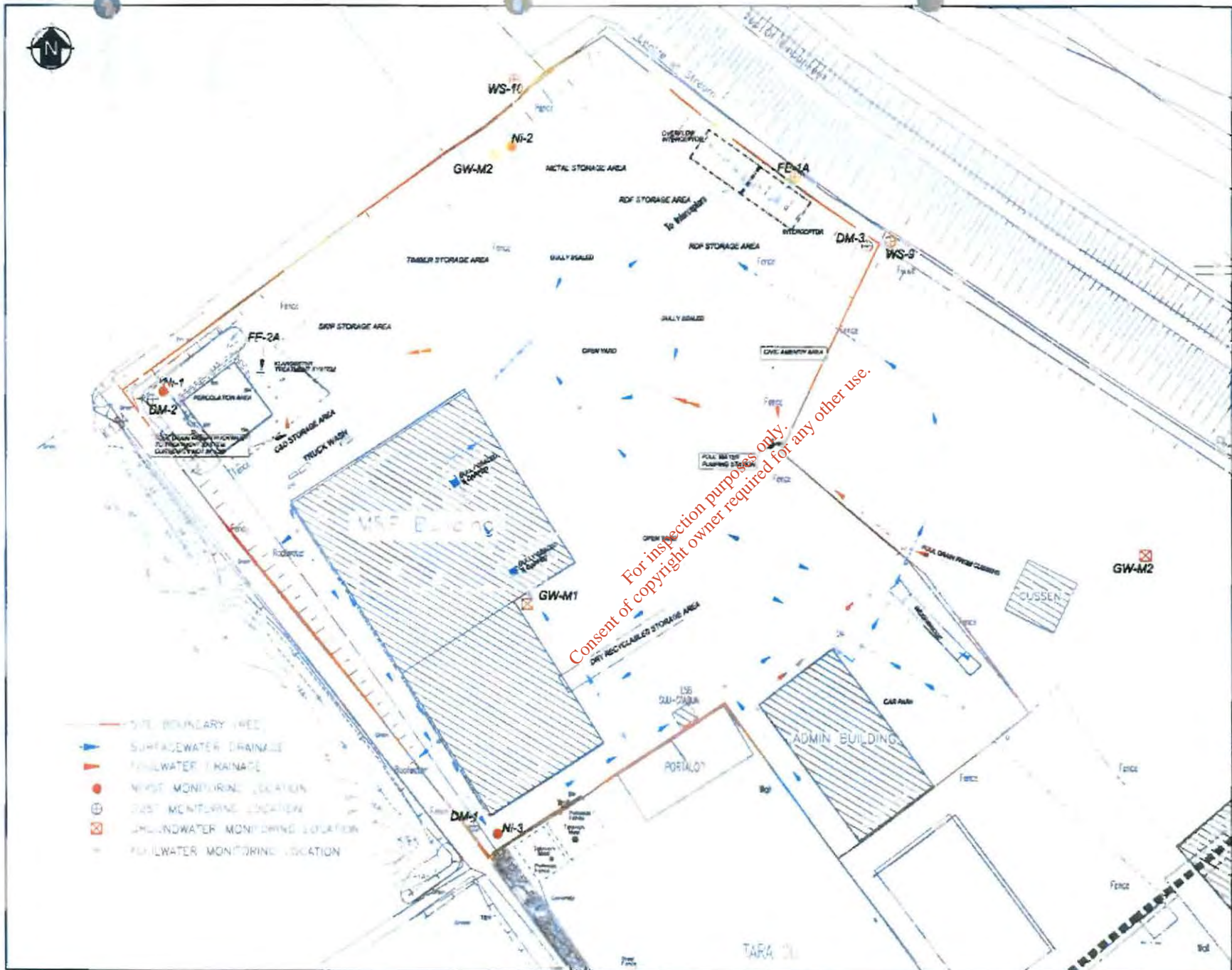
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 Granary House, Rutland Street,
 Cork, Ireland.
 Tel. (021) 4321521 Fax. (021) 4321522
 email : info@ocallaghanmoran.com

CLIENT	Greenstar Environmental Services Ltd	
TITLE	WASTE LICENCE AREA	

details
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 REV. A

Figure No.	2.1
SCALE	1:750 A4
REV.	A

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NOTES

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 GW-M1 - 154923, 155667
 GW-M2 - 154920, 155770
 GW-M3 - 155049, 155684

REV	DATE	DESCRIPTION	BY	CHKD	APP

OC
 O'Connell Group
 17 Colclough Street, 4th Floor, Dublin 1, Ireland
 Tel: (01) 4521221 Fax: (01) 4521225
 Email: info@ocgroup.ie

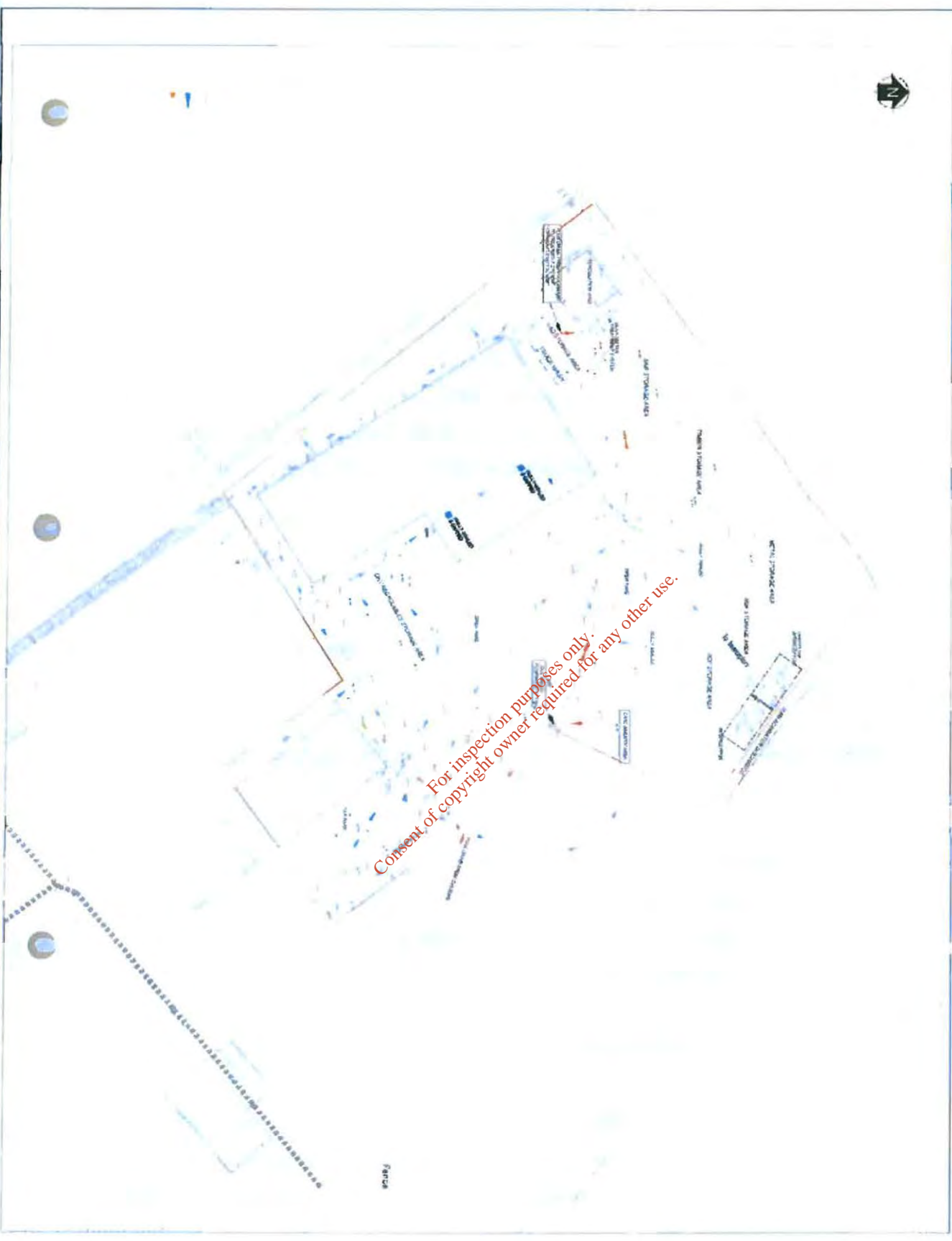
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CLIENT: **GES Ltd**

TITLE: **GES Limerick Monitoring Locations WQ02-02**

SCALE	DRAWING No.	REV
NTS	2.2	A

DGS File name:



1	Project	Regulator's 000	001	001
2	State	00000000	000	000
3	City	00000000	000	000
4	County	00000000	000	000
5	Address	00000000	000	000
6	Zip	00000	000	000

CES Limerick

Site Office

Storage Area

Storage Tanks

Fence

3. NATURA 2000 SITES

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The site is also selected for the following species listed in Annex II of the Directive – Bottle Nosed Dolphin, Sea Lamprey, River Lamprey, Brook Lamprey, Freshwater Pearl Mussel, Atlantic Salmon and Otter.

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- [1099] River Lamprey *Lampetra fluviatilis*
- [1106] Atlantic Salmon *Salmo salar* (only in fresh water)
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- [1130] Estuaries
- [1140] Mudflats and sandflats not covered by seawater at low tide
- [1150] *Coastal lagoons

- [1170] Reefs
- [1220] Perennial vegetation of stony banks
- [1230] vegetated sea cliffs of the atlantic and Baltic coasts
- [1310] *Salicornia* and other annuals colonizing mud and sand
- [1330] Atlantic salt meadows (*glauco-puccinellietalia maritimae*)
- [1349] Bottlenose Dolphin *Tursiops truncatus*
- [1355] Otter *lutra lutra*
- [1410] Mediterranean salt meadows (*Juncetalia maritima*)
- [3260] water courses of plain to montane levels with the *ranunculon fluitantis* and *Callitricho- Batrachion* vegetation
- [91EO] *Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-padiion, alnion incanae, salicion albae*)

3.3 River Shannon & River Fergus SPA

The Site Synopsis and for the River Shannon & River Fergus SPA listing the Qualifying Interests and the Conservation Objective are in Appendix 2 and are summarised below.

Qualifying Interests

The Shannon and Fergus Estuaries SPA comprises the entire estuarine habitat west of Limerick City and south of Ennis extending approximately 25 km west to Killadysert and Foynes on the north and south shores of the Shannon.

The Site is the most important coastal wetland site in the country and regularly supports in excess of 50,000 wintering waterfowl. Other species occurring include Common Cockle (*Cerastoderma edule*), Lugworm (*Arenicola marina*), polychaete *Nephtys hombergii*, gastropod *Hydrobia ulvae* and the crustacean *Corophium volutator*. Eelgrass (*Zostera* spp.) is present in places, along with green algae (e.g. *Ulva* spp. and *Enteromorpha* spp.). The Site also has extensive intertidal flats, which is a listed habitat in Annex I of the Habitats Directive.

Conservation Objectives

The conservation objectives are to maintain or restore the favorable conservation condition of the Annex I habitat(s) and/or the Annex II species for which the SPA has been selected:

- [A017] Cormorant *phalacrocorax carba*
- [A038] Whooper swan *Cygnus Cygnus*
- [A046] Light-bellied Brent Goose *Branta bernicla hrota*
- [A048] Shelduck *Tadorna tadorna*
- [A050] Wigeon *Anas Penelope*
- [A052] Teal *Anas crecca*
- [A054] Pintail *Anas acuta*
- [A056] Shoveler *Anas clypeata*
- [A062] Scaup *Aythya marila*
- [A137] Ringed Plover *chahrius hiaticula*
- [A140] golden plover *pluvialis apricaria*
- [A141] Grey plover *pluvialis apricaria*
- [A142] Lapwing *Vanellus vanellus*
- [A143] Knot *Calidris canutus*
- [A149] Dunlin *Calidris alpina*
- [A156] Blacktailed Godwit *Limosa limosa*
- [A157] Bar-tailed godwit *limosa lapponica*
- [A160] Curlew *Numenius arquata*
- [A162] Redshank *Tringa tetanus*
- [A164] Greenshank *Tringa nebularia*
- [A179] Black headed Gull *Chroicocephalus ridibundus*
- [A999] Wetlands

4. LIKELY EFFECTS

4.1 Proposed Development

The proposed increase in the annual waste throughput will not require the expansion of the site, the construction/provision of any new buildings/structures, or any alteration to the existing site layout and operations.

There will be no change to the waste acceptance and operational hours and it will not require the use of any new raw materials that have the potential to cause contamination. It will not result in any new or additional abstraction from groundwater or surface water. It will not give rise to any new emissions to surface water or sewer, nor will it contribute to increased noise, dust and odour emissions or illumination.

4.2 Direct Impacts

The GES facility is not located within any designated Natura 2000 Site and therefore the proposed changes will not result in any direct habitat loss or fragmentation of either the Lower River Shannon SAC or the River Shannon and River Fergus Estuaries SPA.

These Natura 2000 Sites are approximately 400m to the north and west of the GES facility. The facility is extensively developed and almost entirely covered with paving and buildings, which means it does not support the species for which the Natura 2000 sites were selected.

Based on the above, the project does not present any risk of a direct adverse affect on either the habitats or species for which the Natura 2000 Sites were selected.



Full Report for Waterbody Limerick Dock



River Basin Management Plans (RBMPs) have been published for all River Basin Districts in Ireland in accordance with the requirements of the Water Framework Directive. The WaterMaps viewer is an integral part of the River Basin Management Plan and provides access to information at individual waterbody level and at Water Management Unit level for all the River Basin Districts in Ireland.

The following report provides summary plan information about the selected waterbody (indicated by the pin in the map above) relating to its status, risks, objectives, and measures proposed to retain status where this is adequate, or improve it where necessary. Waterbodies can relate to surface waters (these include rivers, lakes, estuaries [transitional waters], and coastal waters), or to groundwaters. Other relevant information not included in this report can be viewed using the WaterMaps viewer, including areas listed in the Register of Protected Areas.

You will find brief notes at the bottom of some of the individual report sheets that will help you in interpreting the information presented. More detailed information can be obtained in relation to all aspects of the RBMPs at www.wfdireland.ie.

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Summary Information:

Water Management Unit: N/A
WaterBody Category: Transitional Waterbody
WaterBody Name: Limerick Dock
WaterBody Code: IE_SH_060_0900
Overall Status: Good
Overall Objective: Restore 2021
Overall Risk: 1a At Risk
Heavily Modified: Yes

shannon
RIVER DRAIN DISTRICT



Report data based upon final RBMP, 2009-2015.

The information provided above is a summary of the principal findings related to the selected waterbody. Further details and explanation of individual elements of the report are outlined in the following pages.

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water matters

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Status Report

Water Management Unit: N/A
WaterBody Category: Transitional Waterbody
WaterBody Name: Limerick Dock
WaterBody Code: IE_SH_060_0900
Overall Status Result: Good
Heavily Modified: Yes

shannon
river basin district



Status Element Description		Result
Status information		
DIN	Dissolved Inorganic Nitrogen status	Good
MRP	Molybdate Reactive Phosphorus status	Good
DO	Dissolved oxygen as per cent. saturation status	Good
BOD	Biochemical Oxygen Demand (5-days) status	Good
PHY	Macroalgae - phytobiomass status	Good
OPP	Macroalgae - opportunistic algae status	N/A
RSL	Macroalgae - reduced species list status	N/A
ANG	Angiosperms - Seagrass and Saltmarsh status	N/A
BIN	Benthic Invertebrates status	N/A
FIS	Fish status	Good
HYD	Hydrology status	N/A
MOR	Morphology status	Less than Good (pHMWB)
SP	Specific Pollutant Status	Pass
PAS	Overall protected area status	At least good
ES	Ecological Status	Good
CS	Chemical Status	Fail
SWS	Surface Water Status	N/A
EXT	Extrapolated status	N/A
DON	Donor water bodies	N/A

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n/a - not assessed

Status

By 'Status' we mean the condition of the water in the waterbody. It is defined by its chemical status and its ecological status, whichever is worse. Waters are ranked in one of 5 status classes: High, Good, Moderate, Poor, Bad. However, not all waterbodies have been monitored, and in such cases the status of a similar nearby waterbody has been used (extrapolated) to assign status. If this has been done the first line of the status report shows the code of the waterbody used to extrapolate.

You can read more about status and how it is measured in our RBMP Document Library at www.wfdireland.ie (Directory 15 Status).

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Risk Report

Water Management Unit: N/A
WaterBody Category: Transitional Waterbody
WaterBody Name: Limerick Dock
WaterBody Code: IE_SH_060_0900
Overall Risk Result: **1a** At Risk
Heavily Modified: Yes

shannon
river basin district



Risk Test Description		Risk
Hydrology		
THY1	Water balance - Abstraction	Not At Risk
Marine Direct Impacts		
TMDI 1	Dangerous Substances	N/A
TMDI 2	OSPAR	N/A
TMDI 3	UWWT Regs Designations	N/A
TMDI O	Marine Direct Impacts Overall - Worst Case	N/A
Morphological Risk Sources		
TM1	Channelisation	N/A
TM2	Deposition	N/A
TM3	Coastal Defences	N/A
TM4	Impoundments	N/A
TM5a	Built Structures - Port Tonnage	N/A
TM5b	Built Structures - Industrial Intakes	N/A
TM6	Intensive Landuse	N/A
TMO	Morphology Overall - Worst Case	N/A
TMO	Overall (MIMAS) Morphological Risk - Worst Case (2008)	N/A
Overall Risk		
RA	Transitional Overall - Worst CaseOverall (MIMAS) Morphological Risk - Worst Case (2008)	1a At Risk
Point / MDI Worst Case		
TPOL	Worst case of Point Overall and MDI OverallOverall (MIMAS) Morphological Risk - Worst Case (2008)	1a At Risk

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water matters

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Point Risk Sources

TP1	WWTPs (2008)		Not At Risk
TP2	CSOs	1a	At Risk
TP3	IPPCs (2008)		Not At Risk
TP4	Section 4s (2008)		Not At Risk
TP5	WTPs/Mines/Quarries/Landfills		N/A
TPO	Overall Risk from Point Sources - Worst Case (2008)	1a	At Risk

Risk

By 'risk' we mean the risk that a waterbody will not achieve good ecological or good chemical status/potential at least by 2015. To examine risk the various pressures acting on the waterbody were identified along with any evidence of impact on water status. Depending on the extent of the pressure and its potential for impact and the amount of information available, the risk to the water body was placed in one of four categories: 1a at risk; 1b probably at risk; 2a probably not at risk; 2b not at risk. Note that '2008' after the risk category means that the risk assessment was revised in 2008. All other risks were determined as part of an earlier risk assessment in 2005.

You can read more about risk assessment in our 'WFD Risk Assessment Update' document in the RBMP document library, and other documents at www.wfdireland.ie (Directory 31 Risk Assessments).

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Objectives Report

Water Management Unit: N/A
WaterBody Category: Transitional Waterbody
WaterBody Name: Limerick Dock
WaterBody Code: IE_SH_060_0900
Overall Objective: Restore 2021
Heavily Modified: Yes

shannon
river basin district



	Objectives Description	Result
	Extended timescale information	
E1	Extended timescales due to time requirements to upgrade WWTP discharges	No Status
E2	Extended timescales due to delayed recovery of chemical pollution and chemical status failures	2021
E3	Extended timescales due to winter dissolved nitrogen exceedances	No Status
E4	Extended timescales due to time requirements for status recovery	No Status
E5	Extended timescales from Northern Ireland Environment Agency	No Status
E0V	Overall extended timescale - combination of all extended timescales fields	2021
	Objectives information	
OB1	Prevent deterioration objective	No Status
OB2	Restore at least good status objective	No Status
OB3	Reduce chemical pollution objective	Restore 2021
OB4	Protected areas objective	Protect
OBO	Overall objectives	Restore 2021

Extended timescales

Extended timescales have been set for certain waters due to technical, economic, environmental or recovery constraints. Extended timescales are usually of one planning cycle (6 years, to 2021) but in some cases are two planning cycles (to 2027).

Objectives

In general, we are required to ensure that our waters achieve at least good status/potential by 2015, and that their status does not deteriorate. Having identified the status of waters (this is given earlier in this report), the next stage is to set objectives for waters. Objectives consider waters that require protection from deterioration as well as waters that require restoration and the timescales needed for recovery. Four default objectives have been set initially:-

- Prevent Deterioration*
- Restore Good Status*
- Reduce Chemical Pollution*
- Achieve Protected Areas Objectives*

These objectives have been refined based on the measures available to achieve them, the latter's likely effectiveness, and consideration of cost-effective combinations of measures. Where it is considered necessary extended deadlines have been set for achieving objectives in 2021 or 2027.

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Measures Report

Water Management Unit: N/A
WaterBody Category: Transitional Waterbody
WaterBody Name: Limerick Dock
WaterBody Code: IE_SH_060_0900
Heavily Modified: Yes



	Measures Description	Applicable
BC	Total number of basic measures which apply to this waterbody	16
BW	Directive - Bathing Waters Directive	No
BIR	Directive - Birds Directive	Yes
HAB	Directive - Habitats Directive	Yes
MAE	Directive - Major Accidents and Emergencies Directive	Yes
EIA	Directive - Environmental Impact Assessment Directive	Yes
UWT	Directive - Urban Waste Water Treatment Directive	No
PPP	Directive - Plant Protection Products Directive	Yes
NIT	Directive - Nitrates Directive	Yes
IPC	Directive - Integrated Pollution Prevention Control Directive	Yes
POI	Other Stipulated Measure - Control of point source discharges	Yes
DIF	Other Stipulated Measure - Control of diffuse source discharges	Yes
PS	Other Stipulated Measure - Control of priority substances	Yes
MOD	Other Stipulated Measure - Controls on physical modifications to surface waters	Yes
OA	Other Stipulated Measure - Controls on other activities impacting on water status	Yes
AP	Other Stipulated Measure - Prevention or reduction of the impact of accidental pollution incidents	Yes
TP1	WSIP - Agglomerations with treatment plants requiring capital works	No
TP2	WSIP - Agglomerations with treatment plants requiring further investigation prior to capital works	No
TP3	WSIP - Agglomerations requiring the implementation of actions identified in Shellfish PRPs	No
TP4	WSIP - Agglomerations with treatment plants requiring improved operational performance	No
TP5	WSIP - Agglomerations requiring investigation of CSOs	No
TP6	WSIP - Agglomerations where existing treatment capacity is currently adequate but predicted loadings would result in overloading	No
OTS	On-site waste water treatment systems	Yes
SHE	Shellfish Pollution Reduction Plan	No
IPR	IPPC licences requiring review	Yes
WPR	Water Pollution Act licences requiring review	Yes

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HQW	Protect high quality waters	No
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Measures

Measures are necessary to ensure that we meet the objectives set out in the previous page of this report. Many measures are already provided for in national legislation and must be implemented. Other measures have been recently introduced or are under preparation. A range of additional potential measures are also being considered but require further development. Any agreed additional measures can be introduced through the update of Water Management Unit Action Plans during the implementation process.

You can read more about Basic Measures in 'River Basin Planning Guidance' and in other documents in our RBMP Document Library at www.wfrireland.ie.

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