BORD NA MÓNA

Response to Article 14(2)(b)(ii)
Waste Management (Licensing) Regulations
Request from the EPA
EPA Reference: W0283-01

August 2013

TOBIN CONSULTING ENGINEERS

TOBIN
Patrick J. Tobin & Co. Ltd.

REPORT

PROJECT: **Drehid MBT Facility**

CLIENT: **Bord na Móna Plc.**

COMPANY: **TOBIN Consulting Engineers**
Block 10-4 Blanchardstown Corporate Park
Dublin 15

www.tobin.ie

Template rep 003
DCO 0084

DOCUMENT AMENDMENT RECORD

Client:	Bord na Móna Plc.
Project:	Drehid MBT Facility
Title:	Response to Article 14(2)(b)(ii) Waste Management (Licensing) Regulations Request from the EPA

PROJECT NUMBER: 6301				DOCUMENT REF: 6301-05-01			
Final	Response to Article 14(2)(b)(ii)	Tobin	01/07/13	ST/BW	26/07/13	DG	14/08/13
Revision	**Description & Rationale**	**Originated**	**Date**	**Checked**	**Date**	**Authorised**	**Date**
TOBIN Consulting Engineers							

TABLE OF CONTENTS

1 INTRODUCTION 1

2 RESPONSES TO REQUEST FOR FURTHER INFORMATION 1

2.1 ITEM 1 (ARTICLE 12 COMPLIANCE) – APPROPRIATE ASSESSMENT 1

2.1.1 EPA text - Item 1 1

2.1.2 Response to EPA - Item 1 1

2.2 ITEM 2 (ARTICLE 12 COMPLIANCE) – AIR EMISSIONS 2

2.2.1 EPA text - Item 2 2

2.2.2 Response to EPA - Item 2 2

2.3 ITEM 3 (ARTICLE 12 COMPLIANCE) – WASTE HIERACHY 5

2.3.1 EPA text - Item 3 5

2.3.2 Response to EPA- Item 3 5

2.4 ITEM 4 (ARTICLE 12 COMPLIANCE) – STORM WATER DISCHARGE 6

2.4.1 EPA text - Item 4 6

2.4.2 Response to EPA - Item 4 6

2.5 ITEM 5 (ARTICLE 12 COMPLIANCE) – COMPLIANCE WITH BAT 10

2.5.1 EPA text - Item 5 10

2.5.2 Response EPA - Item 5 10

2.6 ITEM 6 (ARTICLE 12 COMPLIANCE) – COMPLIANCE WITH DIRECTIVES 15

2.6.1 EPA text - Item 6 15

2.6.2 Response to EPA - Item 6 15

2.7 ITEM 7 (ARTICLE 12 COMPLIANCE) – LIABILITY, CLOSURE AND FINANCIAL PROVISION 22

2.7.1 EPA text - Item 7 22

2.7.2 Response to EPA- Item 7 22

2.8 ITEM 1 (ARTICLE 13 COMPLIANCE) - MATRIX OF INTERACTIONS 23

2.8.1 EPA text - Item 8 23

2.8.2 Response to EPA – Item 8 23

2.9 NON-TECHNICAL SUMMARY AND DRAWINGS 23

Appendix A –Screening Statement and Supplementary Ecological Information
Appendix B - Air Emissions (Tables E.1(ii) and E.1(iii))
Appendix C-Water Emissions (Tables E.2(i) and E.2(ii)),Figure 3A, Figure 3B & Figure 6.3
Appendix D - CRAMP, ELRA and Financial Provision Report

1 INTRODUCTION

A Waste Licence Application (W0283-01) for the Drehid Mechanical Biological Treatment (MBT) Facility was submitted to the Environmental Protection Agency (EPA) on the 27th June 2012, under the *Waste Management Acts 1996 (as amended).*

In accordance with Article 14(2)(b)(ii) of the Waste Management (Licensing) Regulations, additional information has been requested by the EPA regarding compliance with Articles 12 and 13.

This document provides responses to each of the requested information items. For the reader's convenience, the EPA's text for each of the requested information items has been reproduced and included ahead of each response within this document.

2 RESPONSES TO REQUEST FOR FURTHER INFORMATION

2.1 ITEM 1 (ARTICLE 12 COMPLIANCE) – APPROPRIATE ASSESSMENT

2.1.1 EPA text - Item 1

Undertake a screening for Appropriate Assessment and state whether the activity, individually or in combination with other plans or projects is likely to have a significant effect on a European Site(s), in view of best scientific knowledge and of the conservation objectives of the site(s).

Where it cannot be excluded, on the basis of objective scientific information, following screening for Appropriate Assessment, that an activity, either individually or in combination with other plans or projects, will have a significant effect on a European Site, you should provide a Natura Impact Statement, as defined in Regulation 2(1) of the European Communities (Birds and Natural Habitats) Regulations (S.I. No. 477 of 2011). Where based on the screening it is considered that an Appropriate Assessment is not required, a reasoned response should be provided.

You are furthermore advised to refer to the document 'Appropriate Assessment of Plans and Projects in Ireland – Guidance for Planning Authorities', issued in 2009 by the Department of the Environment, Heritage and Local Government, and revised in 2010. This document is available at:

http://www.npws.ie/publications/archive/NPWS_2009_AA_Guidance.pdf

2.1.2 Response to EPA - Item 1

In March of this year, Bord na Móna was granted planning permission (An Bord Pleanála Reference: PL09.PA0027) to develop the Drehid Mechanical Biological Treatment (MBT) Facility. As part of the planning application, Screening for Appropriate Assessment was carried out with consideration for all aspects of the development and the outcome was a determination that no significant effect to Natura 2000 sites will arise as a result of the development.

The outcome of the Screening for Appropriate Assessment was reported in a Screening Statement which was included in Appendix 4.1 of the EIS submitted to the EPA with the Waste Licence Application in June 2012 and is included in Appendix A herein.

During the planning process (and post the submission of the Waste Licence Application to the EPA) further information was requested by An Bord Pleanála regarding particular aspects of the Screening for Appropriate Assessment.

In its decision to grant planning permission, An Bord Pleanála noted the following in its reasons and considerations:

"*The Board completed a screening exercise and, having regard to the screening assessment submitted by the applicant, the Inspector's report and the submissions on file, the Board concluded that, based on the information available, the proposed development, either individually or in combination with other plans or projects, would not be likely to have a significant effect on any European site, having regard to the conservation objectives of those sites*."

Given the request for additional information by An Bord Pleanála, supplementary information to the Screening Statement (Appendix 4.1 of the EIS) is included in Appendix A herein.

In summary, this supplementary information clarifies (and accords with the conclusions of the submitted Screening Statement) that the development of the Drehid MBT Facility, individually or in combination with other plans or projects, is not likely to have a significant effect on any European Sites, in view of best scientific knowledge and of the conservation objectives of the sites.

2.2 ITEM 2 (ARTICLE 12 COMPLIANCE) – AIR EMISSIONS

2.2.1 EPA text - Item 2

- **Complete Tables E.1(ii) and E.1(iii) of the application form for each main emission point to air.**

- **With respect to the proposed CHP plant, provide an air dispersion modelling assessment for SO_2, CO, H_2S, HCl and HF at appropriate emission levels that will provide assurance that relevant air quality standards will not be exceeded.**

2.2.2 Response to EPA - Item 2

Completed Tables E.1(ii) and E.1(iii) of the Waste Licence Application form are included in Appendix B.

Air Dispersion Modelling Of Drehid MBT Facility For SO_2, CO, H_2S, HCl and HF

AWN Consulting Ltd. previously undertook an air quality impact assessment of the Drehid MBT Facility including an air dispersion modelling study of air, odour and bioaerosol emissions as part of the EIS for the facility. The facility is designed to process municipal solid waste with an overall capacity of 250,000 tonnes per annum.

The purpose of that assessment was to determine whether the air, odour and bioaerosol emissions from the facility would lead to ambient concentrations which were in compliance with the relevant ambient air quality standards and guidelines for odour, NO_2 & PM_{10}/$PM_{2.5}$. The assessment was conducted using the methodology outlined in "*Air Dispersion Modelling from Industrial Installations Guidance Note (AG4) (EPA, 2010)*".

The Air chapter (Chapter 8) of the Drehid MBT Facility EIS described the outcome of that study. The study consisted of the following components:

- Review of emission data and other relevant information needed for the modelling study;
- Summary of background NO_2 & PM_{10}/$PM_{2.5}$ levels;
- Dispersion modelling of released substances (including odour and bioaerosols) under worst-case emission scenarios;

- Presentation of predicted ground level concentrations of released substances;
- Evaluation of the significance of these predicted concentrations, including consideration of whether these ground level concentrations are likely to exceed the relevant ambient air quality limit values and guideline values.

Full assessment methodology and study inputs were presented in Chapter 8 of the EIS.

The air modelling assessment has been updated in order to respond to Item 2 of the information requested by the EPA as part of its assessment of the Waste Licence Application.

Air Modelling Inputs

The source information used as input into the AERMOD air dispersion model is outlined in Table 2.1 for SO_2, CO, H_2S, HCl and HF for each of the two CHP emission points. In relation to SO_2, CO, HCl and HF, the emission levels, as a worst-case, are based on the 30-minute mean emission limits outlined in Council Directive 2010/75/EC (the Industrial Emissions Directive (IED)) for waste incineration. In reality, levels over the course of a year will be significantly lower than these levels.

In relation to H_2S, emission levels have been conservatively assumed to be 50 mg/Nm^3. It is expected that actual emission concentrations will be a small fraction of this level.

Air Modelling Output Results

The AERMOD air dispersion model output results are shown in Table 2.2 for SO_2, CO, H_2S, HCl and HF based on emissions from each of the two CHP emission points. Ambient levels of all parameters are well below the ambient air quality standards. Based on conservative background concentrations, the predicted environmental concentrations (PECs) of pollutants, arising from the operation of the Drehid MBT Facility, are less than 7% of the relevant ambient air quality standard with process contributions accounting for less than 4% of the relevant ambient air quality standard.

Thus, results confirm that ambient ground level concentrations of all relevant pollutants are in compliance with the relevant ambient air quality standards.

Table 2.1 **HCl, HF, SO_2, H_2S and CO Emissions From The Two Proposed CHP Emission Points**

Parameters	Max Volume Flow (Nm^3/hr) (each CHP)	Exit Velocity (m/sec actual, wet) (for each CHP)	EU Maximum Emission Concentration	Maximum Operating Values: Emission Rate (g/s) (for each CHP)
Hydrogen Chloride (HCl)	3113	12.7	60 mg/m^3	0.052
Hydrogen Fluoride (HF)			4 mg/m^3	0.003
Sulphur Dioxide (SO_2)			200 mg/m^3	0.173
Hydrogen sulphide (H_2S)			50 mg/m^3	0.043
Carbon Monoxide (CO)			100 mg/m^3	0.0865

Table 2.2 **HCl, HF, SO_2, H_2S and CO Ambient PEC Due To Emissions From The Proposed CHP Emission Points**

Compound	Background ($\mu g/m^3$)[Note 1]	Process Contribution ($\mu g/m^3$)	Predicted Environmental Concentration (PEC) ($\mu g/m^3$)	Ambient Air Quality Standard Limit Value For Protection Of Human Health ($\mu g/m^3$)	Process Contribution As A % Of The Ambient Limit
SO_2 (1-Hr)	8	13.2	21.2	350	3.8%
SO_2 (24-Hr)	4	4.7	8.7	125	3.7%
CO (8-hr)	400	4.1	404.1	10000	0.1%
HCl (1-hr)	0.02	5.5	5.5	800	0.7%
HCl (Annual Mean)	0.01	0.29	0.3	20	1.5%
HF (1-hr)	0.01	0.37	0.4	160	0.2%
HF (Annual Mean)	0.005	0.020	0.0	16	0.1%
H_2S (1-Hr)	0.6	4.6	5.2	150	3.1%
H_2S (Annual Mean)	0.3	0.24	0.5	140	0.2%

Note 1 *Background data taken from EPA & WHO sources*
Note 2 Ambient standards taken from EU Ambient Air Quality Standards and EAL Determined By EA (2003) – IPPC H1 – Environmental Assessment & Appraisal Of BAT

2.3 ITEM 3 (ARTICLE 12 COMPLIANCE) – WASTE HIERACHY

2.3.1 EPA text - Item 3

Address the requirement of Article 12(1)(v) of the Waste Management (Licensing) Regulations in relation to the application of the waste hierarchy at the proposed facility.

2.3.2 Response to EPA- Item 3

In accordance with Article 12(1)(v) of the Waste Management (Licensing) Regulations, the following waste hierarchy shall apply as a priority order in waste prevention and management legislation and policy:

(a) prevention;
(b) preparing for re-use;
(c) recycling;
(d) other recovery (including energy recovery); and
(e) disposal.

The profile of the activities proposed for the Drehid MBT Facility, including the optional Dry Anaerobic Digestion element, means that the proposed development can be classified as a recycling and recovery (including energy recovery) facility as per the Waste Hierarchy.

The mechanical processing of the incoming waste will involve a series of treatment steps each with a specific purpose and with the common objective of reducing the volume of waste which will require treatment by disposal in landfill or incineration. In order to achieve this objective, the mechanical process will maximise recovery and recycling.

The proposed mechanical processing of waste at the Drehid MBT Facility will ensure that the organic and putresible fraction are extracted for biological treatment, that all marketable recyclables are extracted (e.g. metals, plastics, paper/cardboard etc.) and that the remaining high calorific materials are refined for use as a Solid Recovered Fuel (SRF).

The proposed development will enhance recycling rates in the Kildare Waste Management Region and the wider geographical area. The proposed MBT Facility will ensure that waste is adequately pre-treated prior to being deposited in landfill in compliance with EPA guidance on Municipal Solid Waste Pre-treatment and Residuals Management, the 1999 Landfill Directive (1999/31/EC) and prevailing waste licence conditions. Ultimately, this will allow for the most rational use of previously permitted and available disposal capacity by ensuring that all waste that is finally disposed of to landfill has been subject to treatment and optimum rates of materials re-use and recycling, in accordance with the waste hierarchy.

2.4 ITEM 4 (ARTICLE 12 COMPLIANCE) – STORM WATER DISCHARGE

2.4.1 EPA text - Item 4

- **Provide a drawing clearly indicating the location(s) at which the discharge(s) of storm water will occur.**
- **Complete Tables E.2(i) and E.2(ii) of the application form for each storm water emission point.**
- **Confirm whether the water quality in the receiving water body currently meets the relevant Environmental Quality Standards as set in the European Communities Environmental Objectives (Surface Water) Regulations, S.I. No. 272 of 2009. Quality data is included with the application but no clear comparison with the EQS is provided.**

2.4.2 Response to EPA - Item 4

Provide a drawing clearly indicating the location(s) at which the discharge(s) of storm water will occur.

Section 2.2.7.7 of the EIS (that accompanied the Waste Licence Application) notes the following two surface water emission points:

- SW7 (SW Pond discharge pt)
- SW8 (SW Pond discharge pt)

The above emission points are clearly indicated on Figure 3A and 3B in Appendix 6 of the Waste Licence Application Attachments.

Surface water from SW7 and SW8 will flow via existing drainage ditches to the existing settlement lagoon. Figure 6.3 in the EIS shows the location of the existing settlement lagoon in relation to the Drehid MBT Facility. The existing lagoon discharges to the Cushaling River. For ease of reference we have included copies of Figure 3A (Appendix 6 of the Waste Licence Application Attachments), Figure 3B (Appendix 6 of the Waste Licence Application Attachments) and Figure 6.3 (EIS Volume II).

Complete Tables E.2(i) and E.2(ii) of the application form for each storm water emission point.

Completed Tables E2 (i) and E 2(ii) are included in Appendix C herein.

Confirm whether the water quality in the receiving water body currently meets the relevant Environmental Quality Standards as set in the European Communities Environmental Objectives (Surface Water) Regulations, S.I. No. 272 of 2009. Quality data is included with the application but no clear comparison with the EQS is provided.

The receiving water body (Cushaling River) meets 'Good Status' as set out in the European Communities Environmental Objectives (Surface Water) Regulations S.I. 272 of 2009 for all parameters with the exception of Total Ammonia. This is demonstrated by way of Table 4.1 below.

Table 4.1 Surface Water Quality results for Cushaling River 2011 and 2012 (SW4)

Parameter	Statistical Measure - Arithmetic Mean, Individual values or 95%ile	SI 272 of 2009 Relevant Values	Number of Samples for Cushaling River 2011**	2011 Cushaling River (SW4) Exceedances in **Bold**	Number of Samples for Cushaling River 2012***	2012 Cushaling River (SW4) Exceedances in **Bold**
Total Ammonia	Mean	≤0.065 mg/l as N (Good Status)	46	**0.072** mg/l as N	47	**0.14**mg/l as N
	95%ile	≤0.14 mg/l as N (Good Status)	46	**0.18** mg/l as N	47	**0.23** mg/l as N
pH	Individual Values	4.5 < pH < 9 (Soft Water)	46	7.5 ≤pH≤ 8.2	46	7.1 ≤pH≤ 8.1
BOD	Mean	≤1.5 mg O_2/l (Good Status)	46	<2 mg O_2/l*	8	<2 mg O_2/l*
	95%ile	≤2.6 mg O_2/l (Good Status)	46	<2 mg O_2/l*	8	<2 mg O_2/l*
Zinc	Mean	8 or 50 or 100 µg/l (Values depending on water hardness) (For inland surface waters)	0	-	1	5 µg/l
Copper	Mean	5 or 30 µg/l (For inland surface waters)	0	-	1	2 µg/l
Arsenic	Mean	20 µg/l (For inland surface waters)	0	-	1	2 µg/l
Chromium	Mean	3.4 µg/l (For inland surface	0	-	1	2 µg/l

		waters)				
Lead	Mean	20 µg/l (For inland surface waters)	0	-	1	<2 µg/l
Nickel	Mean	7.2 µg/l (For inland surface waters)	0	-	1	4 µg/l

*Note – all BOD samples <2 mg/l

** Sampled in 2011 – included in EIS

*** Sampled in 2012 – 2012 Annual Environmental Report for Waste Licence W0201-03

On the basis of the 2011 and 2012 Annual Environmental Reports for the existing Drehid Waste Management Facility (please refer to Appendix 6.3 of the EIS and the 2012 Annual Environmental Report for Waste Licence W0201-03), concentrations of BOD were <2 mg/l during all monitoring rounds in 2011 and 2012.

Concentrations of pH varied between pH 7 and pH 8.2 and are within the limits (pH 4.5 – 9) as set out in S.I. 272 of 2009.

All metal concentrations are within acceptable limits based on the 2012 Annual Environmental Report for the existing Drehid Waste Management Facility (W0201-03).

On the basis of the 2011 and 2012 Annual Environmental Reports for the existing Drehid Waste Management Facility (please refer to Appendix 6.3 of the EIS and the 2012 Annual Environmental Report for Waste Licence W0201-03), the average Total Ammonia concentration in the Cushaling River is calculated as 0.14 mg/l in 2012 and is calculated as 0.072 mg/l in 2011 – both of which are above the good status limit of 0.065 mg/l as set out in S.I. 272 of 2009.

Total Ammonia concentrations in surface water at the discharge from the Bord na Móna landholding to the Cushaling River are elevated and reflect background levels. In 2003 (pre-development of the existing Drehid Waste Management Facility), concentrations of 0.3 mg/l Total Ammonia were monitored at the discharge to the Cushaling River. This finding was reported in Table 2.5.2 of Volume II of the EIS submitted with the Waste Licence Application (W201-03) for the existing Drehid Waste Management Facility.

It should be noted that the proposed MBT Facility will not increase Total Ammonia concentrations in the Cushaling River. In fact, the development of the MBT Facility is likely to decrease Total Ammonia concentrations due to lower Total Ammonia concentrations in the MBT Facility surface water runoff (due to roofed areas and hardstanding areas) compared to Total Ammonia concentrations in the surface water runoff from the existing peatland. The development of the MBT facility will not prevent the Cushaling River from meeting good status by 2021.

Based on the pre-development and recent monitoring data, concentrations of Total Ammonia are consistently above the Good Status limits over the last 9 years. Total Ammonia levels at the Bord na Móna landholding are naturally high due to the peat environment; however the monitoring results of the surface water discharge (SW4) from the overall Bord na Móna landholding are in good compliance with the appropriate surface water discharge standards specified in the Waste Licence (W0201-03) for the existing Drehid Waste Management Facility.

2.5 ITEM 5 (ARTICLE 12 COMPLIANCE) – COMPLIANCE WITH BAT

2.5.1 EPA text - Item 5

Provide a clear description as to how the proposed facility will comply with the relevant requirements of BAT and/or Bref. You should identify the key BAT which is to be applied to manage the relevant environmental aspect/emission associated with each unit operation.

2.5.2 Response EPA - Item 5

BAT was introduced as a key principle in the IPPC Directive 96/61/EC. This Directive has been incorporated into Irish law via the Protection of the Environment Act 2003. To meet the requirements of this Directive, relevant Sections of the Environmental Protection Agency Act 1992 and the Waste Management Act 1996 have been amended to replace BATNEEC (Best Available Technology not entailing Excessive Costs) with BAT.

According to the BAT Guidance Note on Best Available Techniques for the Waste Sector: Waste Transfer and Materials Recovery (Dec. 2011), best available techniques (BAT) is defined in Section 5 of the Environmental Protection Agency Acts, 1992 to 2007, and Section 5(2) of the Waste Management Acts 1996 to 2010, as the "most effective and advanced stage in the development of an activity and its methods of operation, which indicate the practical suitability of particular techniques for providing, in principle, the basis for emission limit values designed to prevent or eliminate or, where that is not practicable, generally to reduce an emission and its impact on the environment as a whole", where:

B *'best'* in relation to techniques, means the most effective in achieving a high general level of protection of the environment as a whole.
A *'available techniques'* means those techniques developed on a scale which allows implementation in the relevant class of activity under economically and technically viable conditions, taking into consideration the costs and advantages, whether or not the techniques are used or produced within the State, as long as they are reasonably accessible to the person carrying on the activity.
T *'techniques'* includes both the technology used and the way in which the installation is designed, built, managed, maintained, operated and decommissioned.

In the preparation of the preliminary design of the Drehid MBT Facility and the EIS, the following documents were used as guidance on the application of BAT:

- Final Draft BAT Guidance Note on Best Available Techniques for the Waste Sector: Waste Transfer and Materials Recovery – December 2011 (Guidance Document No.1 in Table 5.1 below)
- BATNEEC Guidance Note - Waste Sector (IPPC) - May 1996 (Guidance Document No.2 in Table 5.1 below)
- Integrated Pollution Prevention and Control Reference Document on Best Available Techniques for the Waste Treatments Industries - August 2006 (Guidance Document No.3 in Table 5.1 below)

A clear description is now provided to further demonstrate the implementation of appropriate preventative measures, in the design and intended operation of the Drehid MBT Facility, against pollution through the application of BAT.

The underlying objective of BAT is to prevent, eliminate, or reduce emissions from processes.

A key issue that needs to be addressed when determining BAT for a waste facility is the location of the facility. As set out in Section 1.5.2 of the EIS, TOBIN Consulting Engineers on behalf of Bord na Móna identified the site in the townlands of Coolcarrigan and Drummond within the Bord na Móna landholding at Carbury, Co. Kildare, as a suitable and appropriate site for the development of an MBT Facility.

The proposed location emerged as a suitable site for an MBT Facility due to

- the large available land bank;
- the remoteness from dwellings;
- access to national/regional roads;
- natural screening;
- distance from ecologically protected areas;
- distance from archaeologically/architecturally protected sites/structures;
- the natural protection offered by the surficial deposits to the underlying bedrock aquifer. Their nature and thickness gives a low vulnerability rating, and the most favourable groundwater protection scheme response, i.e. R1; and
- the existence of an already permitted and operational Waste Management Facility within the landholding.

The MBT Facility has been carefully designed and mitigation measures proposed (as detailed in the Waste Licence Application and accompanying EIS) that will ensure that the facility will be operated in such a way that all the appropriate preventative measures will be taken against pollution through the application of BAT and compliance with appropriate emission limit values (ELVs).

The MBT Facility has been appropriately sited to reduce potential environmental impacts and to provide a distance of approximately 1km from the development to the nearest sensitive receptors.

The various processes and equipment proposed for this facility are described in detail in Chapter 2 of the EIS and have been designed with the application of BAT. Best available techniques have been applied in the consideration of the systems and plant proposed for the mechanical processing of incoming waste, the biological treatment of materials and in the emission abatement technology proposed for the MBT Facility. These processes and abatement technologies are outlined in some detail in Chapter 2 of the EIS and shown on the drawings accompanying the Waste Licence Application. The facility as designed is considered to be state of the art and there has been extensive research carried out on the optimal facility/process configurations as described in Section 1.5 of the EIS.

As outlined in the EIS emission limit values will not be exceeded and an environmental monitoring programme has been proposed for the development, as described in Section 2.2.7 of the EIS.

The primary aim of the monitoring programme will be to comply with legislation, the requirements of the EPA, to monitor the quality of the environment in the vicinity of the site and identify any adverse impacts from the development of the facility.

As part of the requirements of the Waste Licence, it is anticipated that an Annual Environmental Report (AER) will be formulated that will collate and report all monitoring data each year. Within the AER, a comparative assessment will be made with data from previous years. An AER will be submitted to the EPA on a yearly basis.

The following Table 5.1 provides an overview of the key BAT applied, in the design and intended operation of the Drehid MBT Facility, to prevent environmental damage.

Table 5.1 Implementation of BAT to Prevent Environmental Damage

Environmental Aspect	Measures to Prevent Environmental Damage	EIS Reference	BAT Guidance Document Reference
Air Quality	The nearest residential dwelling is located approximately 1km to the west of the proposed activity boundary.	EIS Volume II -Section 2.1.2	Section 4.3.2.1 in Guidance Document No.1
	All aspects of the MBT process will be undertaken in fully enclosed buildings.	EIS Volume II -Section 2.2.4.4	Section 4.3.2.1 in Guidance Document No.1 Section 5.1 (No.35 and 36) in Guidance Document No.3
	All waste delivered to the MBT Facility will be in covered/enclosed vehicles. Similarly, all waste residues being removed from the MBT Facility will be in covered/enclosed vehicles.	EIS Volume II -Section 2.2.4.4	Section 4.3.2.1 in Guidance Document No.1 Section 5.1 (No.35 and 36) in Guidance Document No.3
	The proposed Drehid MBT Facility will include a building ventilation system and an odour abatement system.	EIS Volume IV –Appendix 2.1	Section 4.3.2.1 in Guidance Document No.1 Section 4.5 in Guidance Document No.2 Section 5.1 (No.37) in Guidance Document No.3
	Air streams with a potential for high ammonia levels will be treated in an acid scrubbers prior to biofiltration.	EIS Volume II -Section 2.2.4.4	Section 4.3.2.1 in Guidance Document No.1 Section 5.1 (No.39) in Guidance Document No.3
	Air extracted from facility buildings, where there is a likelihood of dust generation, will be processed through a dust filter.	EIS Volume II -Section 8.2.4.1	Section 4.3.2.1 in Guidance Document No.1
	All internal hauls roads and access routes will be sprayed with water in periods of dry weather to help suppress dust emissions.	EIS Volume II -Section 8.2.4.1	Section 4.3.2.1 in Guidance Document No.1
	Normal operational practices will be such that the organic fines fraction (putresible fraction with the highest potential for odour) generated in any day by the mechanical treatment process will be loaded into the composting/dry AD tunnels on the same day.	EIS Volume II -Section 2.2.4.4	Section 4.3.2.1 in Guidance Document No.1
	Good housekeeping practices (internally and externally) and a closed-door management strategy will be maintained at all times.	EIS Volume II -Section 2.2.4.4	Section 4.3.2.1 in Guidance Document No.1
	An odour management plan will be developed prior to the detailed design and construction of the facility. This plan will include management strategies for the prevention of	EIS Volume II -Section 2.2.4.4	Section 4.6.22 in Guidance Document No.3

	emissions and a strict preventative maintenance and management program for ensuring that all odour mitigation techniques remain operational at optimal capacity throughout all operational scenarios.		
	There will be no external storage of waste with the exception of the baled and wrapped SRF material.	EIS Volume II -Section 2.2.4.2	Section 4.3.2.1 in Guidance Document No.1
Surface Water	The proposed MBT Facility will comprise fully enclosed dedicated buildings for the treatment and processing of waste. These buildings in turn will be fully bunded to prevent leachate and process water from entering the soils and groundwater environment at the proposed MBT Facility.	EIS Volume II -Section 5.5.1	Section 4.3.2.2 in Guidance Document No.1
	Oil interceptors will be installed through which intercepted run-off from hard stand and parking areas within the site will be diverted.	EIS Volume II -Section 2.2.1.19	Section 4.3.2.2 in Guidance Document No.1
	The settlement lagoons are sized to provide sufficient retention time to facilitate adequate settlement of suspended solids prior to discharge to the surface water environment.	EIS Volume II -Section 6.4.1	Section 4.3.2.2 in Guidance Document No.1 Section 4.6 in Guidance Document No.2
	Continuous monitoring of water quality will take place at the inlet and outlet of the surface water ponds.	EIS Volume II -Section 2.2.7.7	Section 4.3.2.2 in Guidance Document No.1
	An actuated valve at the surface water pond outlets will be controlled by the SCADA system. This valve will be programmed to close should water quality parameters fall outside permitted levels.	EIS Volume II -Section 2.2.7.7	Section 4.3.2.2 in Guidance Document No.1
	Fire water (in the event of a fire) generated in the Mechanical Treatment Building will be directed to the waste collection area which is effectively a bunded tank with a capacity of approximately 3,000m^3.	EIS Volume IV –Appendix 2.2	Section 4.1.7 in Guidance Document No.3
	Fire water (in the event of a fire) generated in the Biological Treatment Buildings will be directed to the recessed areas, which will act as bunds with a capacity of approximately 1,800m^3 (in each building).	EIS Volume IV –Appendix 2.2	Section 4.1.7 in Guidance Document No.3
	Fire water (in the event of a fire) generated elsewhere in the proposed MBT Facility site will be directed to the surface water attenuation lagoons. Any firewater would be analysed prior to a decision being made with respect to possible tankering offsite to an approved wastewater plant, or an approved alternative treatment.	EIS Volume IV –Appendix 2.2	Section 4.1.7 in Guidance Document No.3
	All potentially polluting materials, including hydraulic fluid, engine oil and fuel, will be stored in bunded areas to ensure total containment in the event of failure of the storage tank/piping. Any vehicles utilised during the operational phase will be regularly maintained and checked to ensure any damages or leakages are corrected. This reduces the risk of soil contamination due to activity of plant and equipment.	EIS Volume II -Section 5.5.1	Section 4.3.2.2 and Section 4.3.2.3 in Guidance Document No.1
	Storage tanks will include high level alarms.	EIS Volume II -Section 2.2.1.19	Section 4.1.7 in Guidance Document No.3
	The MBT process waste water collection system will be fully isolated from the surface water collection system during the lifetime of the facility.	EIS Volume II -Section 2.2.8.5	Section 4.3.2.2 in Guidance Document No.1
	Surface water quality will be monitored downstream of the proposed MBT Facility during the operational phase of the development.	EIS Volume II -Section 2.2.7.7	Section 4.3.2.2 in Guidance Document No.1
	A wheel wash will be provided at the site to ensure that waste vehicles leaving the waste reception area at the Mechanical Treatment Building do not carry excess waste onto the adjoining road infrastructure.	EIS Volume II -Section 2.2.1.13	Section 4.3.3.4 in Guidance Document No.1
Groundwater	The proposed MBT Facility will comprise fully enclosed dedicated buildings for the treatment and processing of waste. These buildings in turn will be fully bunded to prevent leachate and process water from entering the soils and groundwater environment at the proposed MBT Facility.	EIS Volume II -Section 5.5.1	Section 4.3.2.2 in Guidance Document No.1 Section 4.8.2 in Guidance Document No.3
	All potentially polluting materials, including hydraulic fluid, engine oil and fuel, will be stored in bunded areas to ensure total containment in the event of failure of the storage tank/piping. Any vehicles utilised during the operational phase will be regularly maintained and	EIS Volume II -Section 5.5.1	Section 4.3.2.2 and Section 4.3.2.3 in Guidance Document No.1 Section 4.8.2 in Guidance

	checked to ensure any damages or leakages are corrected. This reduces the risk of soil contamination due to activity of plant and equipment.		Document No.3
	Groundwater quality will be monitored at both upgradient and downgradient sampling locations.	EIS Volume II -Section 2.2.7.2	Section 4.3.2.2 in Guidance Document No.1
	Storage tanks will include high level alarms.	EIS Volume II -Section 2.2.1.19	Section 4.1.7 in Guidance Document No.3
Noise and Vibration	All aspects of the MBT process will be undertaken in fully enclosed buildings.	EIS Volume II -Section 2.2.4.4	Section 4.3.3.5 in Guidance Document No.1 Section 4.1.8 in Guidance Document No.3
	The nearest residential dwelling is located approximately 1km to the west of the proposed activity boundary.	EIS Volume II -Section 2.1.2	Section 4.3.3.5 in Guidance Document No.1
	Good housekeeping practices (internally and externally) and a closed-door management strategy will be maintained at all times.	EIS Volume II -Section 2.2.4.4	Section 4.3.3.5 in Guidance Document No.1
	Staff will be trained to switch off machinery not in use and to operate machinery with potential noise impact in mind.	EIS Volume II -Section 9.4.3	Section 4.3.3.5 in Guidance Document No.1
General Environment	All waste delivered to the MBT Facility will be in covered/enclosed vehicles. Similarly, all waste residues being removed from the MBT Facility will be in covered/enclosed vehicles.	EIS Volume II -Section 2.2.4.4	Section 4.3.3.1 in Guidance Document No.1
	General clean-up and attendance work will be carried out when required by site staff around the entire perimeter of the MBT Facility footprint, on all internal access roads and on approach roads;	EIS Volume II -Section 2.2.4.2	Section 4.3.3.1 in Guidance Document No.1
	All site areas will be inspected and cleaned regularly.	EIS Volume II -Section 2.2.4.2	Section 4.3.3.1 in Guidance Document No.1
	A detailed Vermin Control Plan has been developed by Bord na Móna as part of the Environmental Management Plan for its waste management facilities and a similar plan will be developed for the Drehid MBT Facility.	EIS Volume II -Section 2.2.4.3	Section 4.3.3.5 in Guidance Document No.1

2.6 ITEM 6 (ARTICLE 12 COMPLIANCE) – COMPLIANCE WITH DIRECTIVES

2.6.1 EPA text - Item 6

Provide a clear description as to how the proposed facility will comply with the requirements of the following legislation (where applicable): Water Framework Directive, European Communities Environmental Objectives (Surface Water) Regulations (2009); European Communities Environmental Objectives (Groundwater) Regulations (2010); IPPC Directive; EU Animal By-Products Regulation; Environmental Liabilities Directive and the Waste Framework Directive.

2.6.2 Response to EPA - Item 6

The following sections describe how the proposed MBT Facility complies with the requirements of the legislation listed above. Of relevance to demonstrating compliance with the requirements of much of the legislation listed above is the measures incorporated into the design and intended operation of the Drehid MBT Facility to protect the environment. The following Table 6.1 provides an overview of the principal measures incorporated to prevent environmental damage.

Table 6.1 Measures to Prevent Environmental Damage

Environmental Aspect	Measures to Prevent Environmental Damage	EIS Reference
Air Quality	The nearest residential dwelling is located approximately 1km to the west of the proposed activity boundary.	EIS Volume II - Section 2.1.2
	All aspects of the MBT process will be undertaken in fully enclosed buildings.	EIS Volume II - Section 2.2.4.4
	All waste delivered to the MBT Facility will be in covered/enclosed vehicles. Similarly, all waste residues being removed from the MBT Facility will be in covered/enclosed vehicles.	EIS Volume II - Section 2.2.4.4
	The proposed Drehid MBT Facility will include a building ventilation system and an odour abatement system.	EIS Volume IV – Appendix 2.1
	Air streams with a potential for high ammonia levels will be treated in an acid scrubbers prior to biofiltration.	EIS Volume II - Section 2.2.4.4
	Air extracted from facility buildings, where there is a likelihood of dust generation, will be processed through a dust filter.	EIS Volume II - Section 8.2.4.1
	All internal hauls roads and access routes will be sprayed with water in periods of dry weather to help suppress dust emissions.	EIS Volume II - Section 8.2.4.1
	Normal operational practices will be such that the organic fines fraction (putresible fraction with the highest potential for odour) generated in any day by the mechanical treatment process will be loaded into the composting/dry AD tunnels on the same day.	EIS Volume II - Section 2.2.4.4
	Good housekeeping practices (internally and externally) and a closed-door management strategy will be maintained at all times.	EIS Volume II - Section 2.2.4.4
	An odour management plan will be developed prior to the detailed design and construction of the facility. This plan will include management strategies for the prevention of emissions and a strict preventative maintenance and management program for ensuring that all odour mitigation techniques remain operational at optimal capacity throughout all operational scenarios.	EIS Volume II - Section 2.2.4.4
	There will be no external storage of waste with the exception of the baled and wrapped SRF material.	EIS Volume II - Section 2.2.4.2
Surface Water	The proposed MBT Facility will comprise fully enclosed dedicated buildings for the treatment and processing of waste. These buildings in turn will be fully bunded to prevent leachate and process water from entering the soils and groundwater environment at the proposed MBT Facility.	EIS Volume II - Section 5.5.1
	Oil interceptors will be installed through which intercepted run-off from hard stand and parking areas within the site will be diverted.	EIS Volume II - Section 2.2.1.19
	Surface water attenuation ponds/lagoons will be constructed to provide adequate capacity for a 100-year storm event.	EIS Volume II - Section 2.2.1.19
	The settlement lagoons are sized to provide sufficient retention time to facilitate adequate settlement of suspended solids prior to discharge to the surface water environment.	EIS Volume II - Section 6.4.1
	Continuous monitoring of water quality will take place at the inlet and outlet of the surface water ponds.	EIS Volume II - Section 2.2.7.7
	An actuated valve at the surface water pond outlets will be controlled by the SCADA system. This valve will be programmed to close should water quality	EIS Volume II - Section 2.2.7.7

	parameters fall outside permitted levels.	
	Fire water (in the event of a fire) generated in the Mechanical Treatment Building will be directed to the waste collection area which is effectively a bunded tank with a capacity of approximately 3,000m^3.	EIS Volume IV – Appendix 2.2
	Fire water (in the event of a fire) generated in the Biological Treatment Buildings will be directed to the recessed areas, which will act as bunds with a capacity of approximately 1,800m^3 (in each building).	EIS Volume IV – Appendix 2.2
	Fire water (in the event of a fire) generated elsewhere in the proposed MBT Facility site will be directed to the surface water attenuation lagoons. Any firewater would be analysed prior to a decision being made with respect to possible tankering offsite to an approved wastewater plant, or an approved alternative treatment.	EIS Volume IV – Appendix 2.2
	All potentially polluting materials, including hydraulic fluid, engine oil and fuel, will be stored in bunded areas to ensure total containment in the event of failure of the storage tank/piping. Any vehicles utilised during the operational phase will be regularly maintained and checked to ensure any damages or leakages are corrected. This reduces the risk of soil contamination due to activity of plant and equipment.	EIS Volume II - Section 5.5.1
	Storage tanks will include high level alarms.	EIS Volume II - Section 2.2.1.19
	The MBT process waste water collection system will be fully isolated from the surface water collection system during the lifetime of the facility.	EIS Volume II - Section 2.2.8.5
	Surface water quality will be monitored downstream of the proposed MBT Facility during the operational phase of the development.	EIS Volume II - Section 2.2.7.7
	A wheel wash will be provided at the site to ensure that waste vehicles leaving the waste reception area at the Mechanical Treatment Building do not carry excess waste onto the adjoining road infrastructure.	EIS Volume II - Section 2.2.1.13
Groundwater	The proposed MBT Facility will comprise fully enclosed dedicated buildings for the treatment and processing of waste. These buildings in turn will be fully bunded to prevent leachate and process water from entering the soils and groundwater environment at the proposed MBT Facility.	EIS Volume II - Section 5.5.1
	All potentially polluting materials, including hydraulic fluid, engine oil and fuel, will be stored in bunded areas to ensure total containment in the event of failure of the storage tank/piping. Any vehicles utilised during the operational phase will be regularly maintained and checked to ensure any damages or leakages are corrected. This reduces the risk of soil contamination due to activity of plant and equipment.	EIS Volume II - Section 5.5.1
	In order to provide assurance that the MBT Facility is constructed in accordance with intended design and technical specifications, a comprehensive Construction Quality Assurance (CQA) plan will be implemented during the construction stage.	EIS Volume II - Section 2.2.2.4
	Groundwater quality will be monitored at both upgradient and downgradient sampling locations.	EIS Volume II - Section 2.2.7.2
	Storage tanks will include high level alarms.	EIS Volume II - Section 2.2.1.19
	Natural protection is offered by the surficial deposits to the underlying bedrock aquifer. Their nature and thickness gives a low vulnerability rating, and the most favourable groundwater protection scheme response, i.e. R1.	EIS Volume II - Section 1.5.2
Noise and Vibration	All aspects of the MBT process will be undertaken in fully enclosed buildings.	EIS Volume II - Section 2.2.4.4
	The nearest residential dwelling is located approximately 1km to the west of the proposed activity boundary.	EIS Volume II - Section 2.1.2
	Good housekeeping practices (internally and externally) and a closed-door management strategy will be maintained at all times.	EIS Volume II - Section 2.2.4.4
	Staff will be trained to switch off machinery not in use and to operate machinery with potential noise impact in mind.	EIS Volume II - Section 9.4.3
General Environment	All waste delivered to the MBT Facility will be in covered/enclosed vehicles. Similarly, all waste residues being removed from the MBT Facility will be in covered/enclosed vehicles.	EIS Volume II - Section 2.2.4.4
	General clean-up and attendance work will be carried out when required by site staff around the entire perimeter of the MBT Facility footprint, on all internal access roads and on approach roads;	EIS Volume II - Section 2.2.4.2
	All site areas will be inspected and cleaned regularly.	EIS Volume II - Section 2.2.4.2
	A detailed Vermin Control Plan has been developed by Bord na Móna as part of the Environmental Management Plan for its waste management facilities and a similar plan will be developed for the Drehid MBT Facility	EIS Volume II - Section 2.2.4.3

Water Framework Directive (WFD) and Communities Environmental Objectives (Surface Water) Regulations (2009)
The operation of the facility will not inhibit the requirement to achieve good status in the Cushaling River by 2021. Implementation of proposed mitigation measures and the proposed environmental monitoring programme will ensure compliance with the Water Framework Directive and the European Communities Environmental Objectives (Surface Water) Regulations (2009).

The WFD sets two main targets, firstly protecting, and secondly reaching at least good ecological status including for the Cushaling River by 2021. The measures outlined within the EIS are adequate and the operation of the MBT Facility will not prevent the achievement of targets as set out under the WFD. The proposed development will not cause deterioration in the chemical status or ecological status of the River Cushaling and its tributaries.

A review of the WFD in relation to the Cushaling River indicates the following:

- There are no RPA (Registered Protected Area) nutrient sensitive rivers within 5 km of the MBT Facility site;
- There are no RPA habitat rivers within 5 km of the MBT Facility site;
- There are no RPA nutrient sensitive lakes and estuaries within 5 km of the MBT Facility site; and
- There are no RPA shell fish areas within 5 km of the MBT Facility site.

Please refer to Table 6.1 above regarding the measures incorporated into the design and intended operation of the Drehid MBT Facility to prevent environmental damage to surface water.

Water Framework Directive (WFD) and European Communities Environmental Objectives (Groundwater) Regulations (2010);
As there are no proposed discharges to groundwater from the MBT Facility site, the development will meet the requirements of the Water Framework Directive and relevant Environmental Quality Standards as set in the European Communities Environmental Objectives (Groundwater) Regulations, S.I. No.9 of 2010. The operation of the facility will not impede the requirement to maintain good status in the groundwater body. Implementation of proposed mitigation measures and the proposed environmental monitoring programme will ensure compliance with the Water Framework Directive and the European Communities Environmental Objectives (Groundwater) Regulations, S.I. No.9 of 2010.

Please refer to Table 6.1 above regarding the measures incorporated into the design and intended operation of the Drehid MBT Facility to prevent environmental damage to groundwater.

IPPC Directive;
The proposed facility will comply with the requirements of the IPPC Directive. Best Available Techniques (BAT) in the form of appropriate pollution prevention measures have been incorporated into the design and intended operation of the facility. Please refer to Table 6.1 above.

The treatment of waste at the Drehid MBT Facility will be undertaken in order to maximise recovery and recycling. To this end, the mechanical processing of the incoming waste will involve a series of

treatment steps each with a specific purpose and with the common objective of reducing the volume of waste which will require treatment by disposal in landfill or incineration.

As detailed in Attachment G.2 of the Waste Licence Application and in the accompanying EIS, Bord na Móna is committed to the operation of the facility according to BAT, such that reductive and efficiency measures, with respect to consumption of energy and raw materials, will be undertaken where possible.

EU Animal By-Products Regulation;

As part of the consultation process undertaken during the preparation of the EIS, Bord na Móna representatives had a meeting with members of the Department of Agriculture, Food and the Marine on March 23rd 2011, at the Department's Naas office to facilitate a discussion on the proposed development of MBT infrastructure and the requirements of EU Animal By-Products Regulations.

In considering alternative biological treatment processes, cognisance was had of the EU Animal By-Products Regulations and the fact that outdoor systems do not comply with the requirements of the Department of Agriculture, Food and the Marine for the processing of Animal By-Products. As a result (and for other environmental reasons), the selected design of the Drehid MBT Facility is that of a fully enclosed facility.

As referred to in Section 2.3.15 of the EIS, Compost Like Output (CLO) produced for spreading on land will meet the requirements of EU Animal By-Products Regulations.

Section 2.3.15 of the EIS notes the following:

"In order to produce a Compost Like Output (CLO), the stabilised material from the composting and maturation process will be conveyed onto a screen. This screen will produce two fractions (oversize and undersize). The undersize fraction will be used to produce a CLO material. The screen will be configured such that the undersize fraction has a maximum particle size of 12mm. This maximum particle size of 12mm is governed by the Animal By-Product Regulations – when processing material to the EU Standard (70°C for a period of one hour).

The undersize fraction will be discharged from the screen into an intermediate storage bay and subsequently fed by loading shovel into the hygienisation tunnel in order to treat the material to a standard (in compliance with Animal By-Product Regulations) that allows it to be spread on land. The material will be heated to a temperature of 70°C for a period of one hour."

"It should be noted that the design of the MBT Facility facilitates the production of CLO as a 'future proofing' measure. The ability to produce CLO will facilitate the future exploitation of more established markets that are likely to develop for the use of CLO (such as brown field restoration)."

Prior to the construction of the biological treatment infrastructure that comprises the Drehid MBT Facility, Bord na Móna will complete and submit the requisite application documentation to the

Department of Agriculture, Food and the Marine seeking its approval on the outline design of the biological treatment infrastructure.

Environmental Liabilities Directive

The *European Communities (Environmental Liability) Regulations 2008 (S.I. 547 of 2008)*, came into force in Ireland on 01 April 2009, transposing *EU Directive 2004/35/CE on Environmental Liability with Regard to Prevention and Remedying of Environmental Damage*. The purpose of these Regulations is to establish a framework of environmental liability based on the 'Polluter Pays' principle, to prevent and remedy environmental damage.

The methodology followed in the completion of the ELRA for the Drehid MBT Facility is as set out in the EPA Guidance Document - '*Guidance on Environmental Liability Risk Assessment, Residuals Management Plans and Financial Provision*' (2006) (*'EPA Guidance Document'*) in accordance with Item 7 of this Article 14 Response.

The Environmental Liabilities Directive goes beyond simply implementing the 'polluter pays' principle; it also seeks to prevent environmental damage by requiring preventive measures to be taken where an imminent threat of such damage arises.

The avoidance of impacts is integral to the design and operation of the Drehid MBT Facility. As illustrated in the EIS, the facility design and intended operation includes robust and meaningful measures to prevent environmental damage. Table 6.1 above provides an overview of the principal measures incorporated to prevent environmental damage.

Waste Framework Directive

Article 4 of the Waste Framework Directive sets out the priority order, or essentially the preferred order, by which waste should be managed. According to the Directive, the following priority order, or waste hierarchy, shall apply:

(a) prevention;
(b) preparing for re-use;
(c) recycling;
(d) other recovery (e.g. energy recovery); and
(e) disposal.

In accordance with the spirit of the Waste Framework Directive, the treatment of waste at the Drehid MBT Facility will be undertaken in order to maximise recovery and recycling.

The profile of the activities proposed for the Drehid MBT Facility, including the optional Dry Anaerobic Digestion element, means that the proposed development can be classified as a recycling and recovery (including energy recovery) facility as per the Waste Hierarchy.

The mechanical processing of the incoming waste will involve a series of treatment steps each with a specific purpose and with the common objective of reducing the volume of waste which will require treatment by disposal in landfill or incineration. In order to achieve this objective, the mechanical process will maximise recovery and recycling.

The proposed mechanical processing of waste at the Drehid MBT Facility will ensure that the organic and putresible fraction are extracted for biological treatment, that all marketable recyclables are extracted (e.g. metals, plastics, paper/cardboard etc.) and that the remaining high calorific materials are refined for use as a Solid Recovered Fuel (SRF).

The proposed development will enhance recycling rates in the Kildare Waste Management Region and the wider geographical area. The proposed MBT Facility will ensure that waste is adequately pre-treated prior to being deposited in landfill in compliance with EPA guidance on Municipal Solid Waste Pre-treatment and Residuals Management, the 1999 Landfill Directive (1999/31/EC) and prevailing waste licence conditions. Ultimately, this will allow for the most rational use of previously permitted and available disposal capacity by ensuring that all waste that is finally disposed of to landfill has been subject to treatment and optimum rates of materials re-use and recycling, in accordance with the waste hierarchy.

The Drehid MBT Facility is well positioned to contribute to the achievement of the Waste Framework Directive 2020 target of preparing for re-use and the recycling of 50% by weight of household waste materials such as at least paper, metal, plastic and glass.

The Waste Framework Directive requires that waste management is carried out without endangering human health, without harming the environment and, in particular:
(a) without risk to water, air, soil, plants or animals;
(b) without causing a nuisance through noise or odours; and
(c) without adversely affecting the countryside or places of special interest.

The avoidance of impacts is integral to the design and operation of the Drehid MBT Facility. As illustrated in the EIS, the facility design and intended operation includes robust and meaningful measures to prevent environmental damage. Table 6.1 above provides an overview of the principal measures incorporated to prevent environmental damage.

Human health has been considered in a number of areas in the EIS, including in Section 1.5.1.1 and Section 2.2.6. Section 1.5.1.1, in dealing with alternative processes, notes that it was decided to propose a mechanical treatment process which involved a high level of technology and automated equipment on the basis that the use of automated equipment is considered more favourable than picking stations from an operational health and safety perspective. Section 2.2.6 of the EIS considers the health and safety of workers and visitors to the MBT Facility during the operational phase.

The Appropriate Assessment Screening Statement (Appendix 4.1 of the EIS) and the supplementary information provided in the response to Item 1 above confirms that the development of the Drehid MBT Facility, individually or in combination with other plans or projects, is not likely to have a significant effect on any European Sites, in view of best scientific knowledge and of the conservation objectives of the sites.

2.7 ITEM 7 (ARTICLE 12 COMPLIANCE) – LIABILITY, CLOSURE AND FINANCIAL PROVISION

2.7.1 EPA text - Item 7

In accordance with section 53(1) of the Waste Management Acts 1996 to 2013, please furnish particulars in respect of the ability of Bord na Mona Plc to meet the financial commitments of liabilities that will be entered into or incurred in carrying on the proposed activity and provide evidence that Bord na Mona Plc will be in position to make financial provision that is adequate to discharge these financial commitments.
Specifically:

(a) Prepare a fully detailed and costed Closure, Restoration and Aftercare Management Plan (CRAMP) for the facility, to include as a minimum the following:
- **A scope statement for the plan.**
- **The criteria which define the successful closure and restoration of the facility or part thereof, and which ensure minimum impact to the environment.**
- **A programme to achieve the stated criteria.**
- **Where relevant, a test programme to demonstrate the successful implementation of the plan.**
- **Details of the long-term supervision, monitoring, control, maintenance and reporting requirements for the restored facility.**
- **Details of the costings for the plan and the financial provisions to underwrite those costs.**

(b) Prepare a fully detailed and costed Environmental Liabilities Risk Assessment (ELRA) which addresses the liabilities and potential liabilities from past and proposed activities, including those liabilities and costs identified in the CRAMP. Provide evidence that the assessment was prepared or reviewed, and was found to be complete and accurate, by an independent and appropriately qualified consultant or expert.

(c) Provide a proposal for financial provision to cover any liabilities associated with the operation and identified in the ELRA (including closure, restoration and aftercare and unanticipated accidents, incidents and liabilities). Provide evidence that Bord na Mona Plc will be in a position to put such financial provision in place in the event that a waste licence is granted and prior to development works commencing.

The preparation of the CRAMP and ELRA and evaluation of the amount and form of financial provision should have regard to Environmental Protection Agency guidance including *Guidance on Environmental Liability Risk Assessment, Residuals Management Plans and Financial Provision (2006).*

2.7.2 Response to EPA- Item 7

A report providing a response to the above requested information in included in Appendix D.

2.8 ITEM 1 (ARTICLE 13 COMPLIANCE) - MATRIX OF INTERACTIONS

2.8.1 EPA text - Item 8

1. **Provide a matrix of the potential significant interaction of impacts of the facility in the form of a table.**

2.8.2 Response to EPA – Item 8

Table 8.1 provides a matrix of the potential significant interactions of impacts of the facility.

Table 8.1 Matrix of the Potential Significant Interactions

	EFFECT								
CAUSE	**Human Beings**	**Ecology**	**Soils, Geology and Hydrogeology**	**Water**	**Climate & Air**	**Noise and Vibration**	**Landscape and Visual**	**Traffic**	**Archaeology and Cultural Heritage**
Human Beings					●	●	●	●	
Ecology			●	●	●				
Soils, Geology and Hydrogeology		●		●					
Water		●	●						
Climate & Air	●	●						●	
Noise and Vibration	●							●	
Landscape and Visual	●							●	
Traffic	●				●	●	●		
Archaeology and Cultural Heritage									

2.9 NON-TECHNICAL SUMMARY AND DRAWINGS

As the above responses, to the Article 14(2)(b)(ii) request, do not impinge on the Non-Technical Summary submitted with the Waste Licence Application, no changes are proposed to the Non-Technical Summary.

None of the Drawings previously submitted to the EPA have been revised as a result of this Article 14(2)(b)(ii) response.

APPENDIX A

Screening Statement and Supplementary Ecological Information

BORD NA MÓNA

Drehid

Mechanical Biological Treatment (MBT) Facility

Screening Statement

In accordance with

Article 6 of EU Habitats Directive 92/43/EEC

June 2012

TOBIN CONSULTING ENGINEERS

TOBIN

Screening Statement

PROJECT: **Drehid Mechanical Biological Treatment Facility**

CLIENT: **Bord na Móna**
Main Street,
Newbridge,
County Kildare

COMPANY: **TOBIN Consulting Engineers**
Block 10-4
Blanchardstown Corporate Park
Dublin 15
Ireland

www.tobin.ie

DOCUMENT AMENDMENT RECORD

Client:	**Bord na Móna**
Project:	**Drehid Mechanical Biological Treatment Facility**
Title:	**Appropriate Assessment – Screening Report**

PROJECT NUMBER: 6301				DOCUMENT REF: 6301_001			
A	Final Report	AA	03/02/12	RMN/ST	24/05/12	DG	24/05/12
Revision	**Description & Rationale**	**Originated**	**Date**	**Checked**	**Date**	**Authorised**	**Date**
TOBIN Consulting Engineers							

TABLE OF CONTENTS

1 INTRODUCTION 1

2 LEGISLATIVE CONTEXT & GUIDANCE 4

3 STAGE 1 – SCREENING 8

3.1 INTRODUCTION 8
3.2 DESCRIPTION OF SITE LOCATION AND PROJECT 8
3.3 RELEVANT NATURA 2000 SITES 8
3.4 CONSULTATION 9
3.5 POTENTIAL FOR IMPACTS 10
3.6 ASSESSMENT OF LIKELY EFFECTS 10

4 SCREENING STATEMENT 11

TABLES

Table 1: Natura 2000 Sites within 15km of the proposed MBT development site boundary 9

FIGURES

Figure 1-1 Natura 2000 Sites

Figure 2-1 Flowchart Outlining the Appropriate Assessment Process

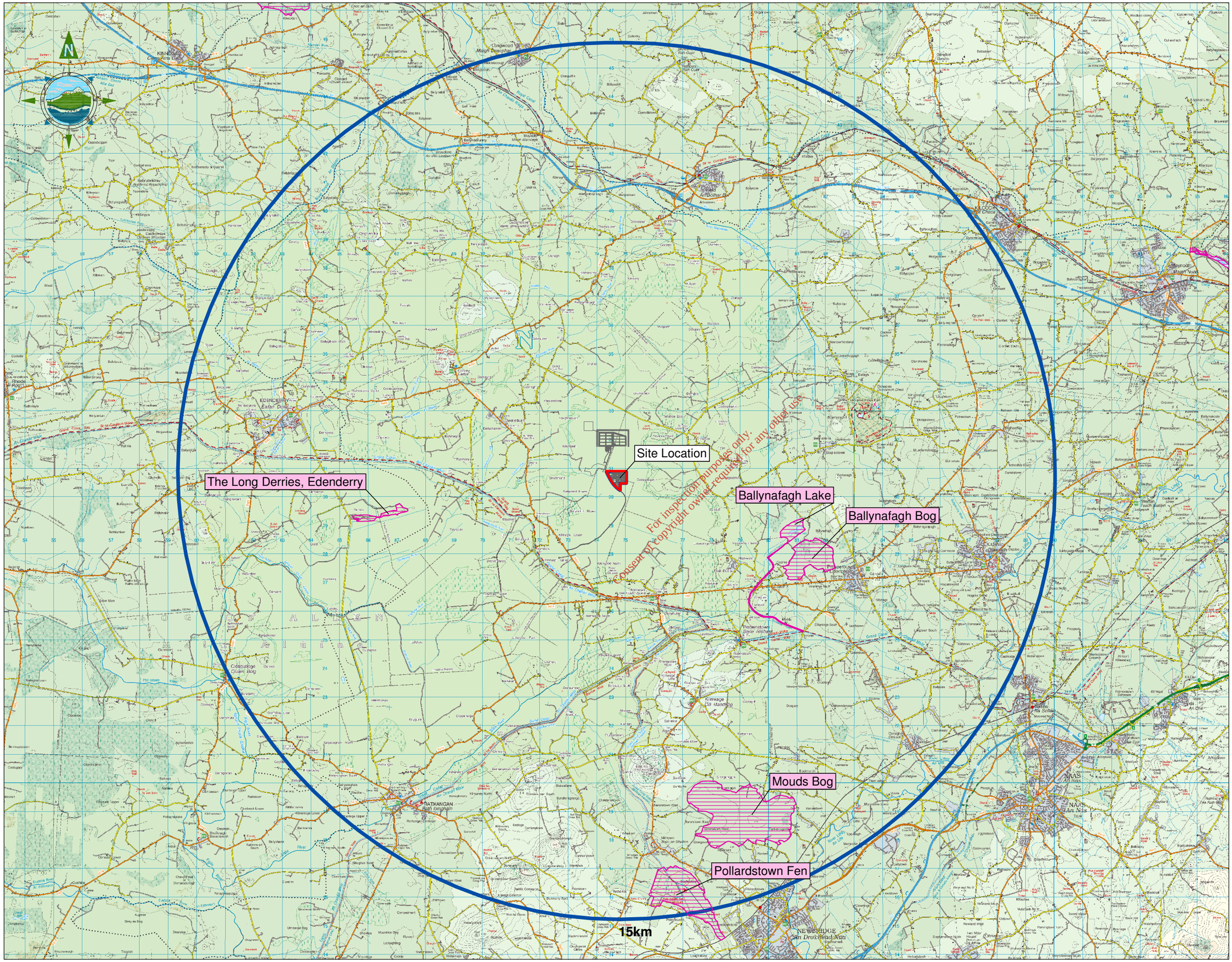
1 INTRODUCTION

Bord na Móna propose to develop a Mechanical Biological Treatment (MBT) Facility to be located in the townlands of Coolcarrigan, Drummond and Kilkeaskin within the confines of Bord na Móna's landholding at Carbury, County Kildare. The proposed Drehid MBT Facility will occupy a 29ha site within an overall 2,544ha landholding. This Screening for Appropriate Assessment Report is to assess whether or not the proposed development will impact on sites designated as Natura 2000 Sites under the EU Habitat Directive. This Screening Report is an Appendix Report (Appendix 4.1) to the Environmental Impact Statement (EIS) for this proposed development.

Department of Environment, Heritage and Local Government (DOEHLG) guidelines (December 2009) clarified the requirement for Appropriate Assessment reporting to consider the possible nature conservation implications of any plan or project which may possibly impact a European Designated (NATURA 2000) Site which include candidate Special Areas of Conservation (cSAC) and/or Special Protection Areas (SPA).

The aim of this screening process is to determine if key sensitive ecological receptors are possibly impacted in designated sites as a result of the proposed MBT development. Where impacts may arise or "uncertainty" as to impacts is determined, than a stage 2 Appropriate Assessment may be required. Figure 1.1 overleaf presents the Natura 2000 Sites within 15km of the proposed MBT Facility development site boundary.

This Screening Assessment was carried out by an experienced Ecologist with input from Hydrologists from TOBIN Consulting Engineers.



Legend

- Site Location
- Landownership Boundary
- Special Area of Conservation
- Special Protection Areas
- 15km Buffer

0 0.5 1 2 3 4
Kilometers

NOTES

1. FIGURED DIMENSIONS ONLY TO BE TAKEN FROM THIS DRAWING
2. ALL DRAWINGS TO BE CHECKED BY THE CONTRACTOR ON SITE
3. ENGINEER TO BE INFORMED OF ANY DISCREPANCIES BEFORE ANY WORK COMMENCES
4. ALL LEVELS RELATE TO ORDNANCE SURVEY DATUM AT MALIN HEAD

Issue	Date	Description	By	Chkd.
A	05.06.12	Issued for Waste License	G.F	S.T.

Client: BORD NA MÓNA

Project: DREHID MECHANICAL BIOLOGICAL TREATMENT (MBT) FACILITY

Title: NATURA 2000 SITES

Scale @ A3: 1:120,000

Prepared by:	Checked:	Date:
G.Fil	S.Tinnelly	May 2012

Project Director: D.Grehan

TOBIN
Patrick J. Tobin & Co Ltd.
Consulting, Civil and Structural Engineers,
Block 10-4, Blanchardstown Corporate Park,
Dublin 15, Ireland.
tel: +353-(0)1-8030406
fax:+353-(0)1-8030409
e-mail: info@tobin.ie
www.tobin.ie

Figure 1.1 — 6301 A

2 LEGISLATIVE CONTEXT & GUIDANCE

Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora - '*The Habitats Directive'*, has been transposed into Irish law by The European Community (Natural Habitats) Regulations 1997 (S.I. No. 94/1997). The 1997 Regulations were updated in 1998 by The European Communities (Natural Habitats) (Amendment) Regulations 1998 (S.I. No. 233/1998) to include Council Directive 97/62/EC which served to update Council Directive 92/43/EEC, adapting it to technical and scientific progress made in the intervening years.

The 1997 Regulations were again updated in 2005, by The European Communities (Natural Habitats) (Amendment) Regulations 2005 (S.I. No. 378/2005). This amendment served to consolidate the main nature conservation legislation enacted in Ireland, meaning The Wildlife Act 1976, The Wildlife (Amendment) Act 2000, The European Communities (Natural Habitats) Regulations 1997, The European Communities (Natural Habitats) (Amendment) Regulations 1998, and to draw direct reference upon Council Directive 79/409/EC on the conservation of wild birds – '*The Birds Directive'*.

The Birds Directive seeks to protect birds of special importance by the designation of Special Protection Areas (SPAs) whereas the Habitats Directive does the same for habitats and other species groups with Special Areas of Conservation (SACs). It lists certain rare habitats (Annex I) and species (Annex II) whose conservation is of community interest. It is the responsibility of each member state to designate SPAs and SACs, both of which will form part of Natura 2000, a network of protected areas throughout the European Community.

The legislation detailing the requirement for an Appropriate Assessment is detailed in Article 6, paragraphs 3 and 4 of the Habitats Directive which states that:
"*6(3) Any plan or project not directly connected with or necessary to the management of the site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subject to appropriate assessment of its implications for the site in view of the site's conservation objectives. In the light of the conclusions of the assessment of the implications for the site and subject to the provisions of paragraph 4, the competent national authorities shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the site concerned and, if appropriate, after having obtained the opinion of the general public."*

If, in spite of a negative assessment of the implications for the site and in the absence of alternative solutions, a plan or project must nevertheless be carried out for imperative reasons of overriding public interest, including those of a social or economic nature, the Member State shall take all compensatory measures necessary to ensure that the overall coherence of Natura 2000 is protected. It shall inform

the Commission of the compensatory measures adopted. Where the site concerned hosts a priority natural habitat type and/or a priority species, the only considerations which may be raised are those relating to human health or public safety, to beneficial consequences of primary importance for the environment or, further to an opinion from the Commission, to other imperative reasons of overriding public interest.

This screening statement has been carried out using the following guidance:

- "Appropriate Assessment of Plans and Projects in Ireland, Guidance for Planning Authorities, Environment, Heritage and Local Government (December 2009)";
- EPA Ireland guidelines "Waste Water Licensing Appropriate Assessment Guidance Notes" (2009)[1];
- "*Guidance document on Article 6(4) of the 'Habitats Directive' 92/43/EEC – Clarification of the concepts of: alternative solutions, imperative reasons of overriding public interest, compensatory measures, overall coherence, opinion of the commission. Office for Official Publications of the European Communities, Luxembourg (EC 2007)";*
- "*Assessing Development Plans in Terms of the Need for Appropriate Assessment: Interim Guidance. Scottish Executive and Scottish Natural Heritage (2006) [2]*";
- "*Assessment of Plans and Projects Significantly Affecting Natura 2000 Sites: Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC, Office for Official Publications of the European Communities, Luxembourg (EC 2001)"* ;and
- "*Managing Natura 2000 Sites: the provisions of Article 6 of the 'Habitats' Directive 92/43/EEC, Office for Official Publications of the European Communities, Luxembourg (EC 2000)*".

Based on these documents, the overall Appropriate Assessment (AA) procedure as detailed in the guidelines is a four stage approach consisting of the following stages:

[1] http://www.epa.ie/downloads/forms/lic/wwda

[2] http://www.scotland.gov.uk/Publications/2006/06/02093425/0

Stage One: Screening / Test of Significance - the process which identifies the likely impacts upon a Natura 2000 site of a project or plan, either alone or in combination with other projects or plans, and considers whether these impacts are likely to be significant.

This Report details stage 1 of the process only. The conclusion of this Screening Report (see below) determines if there is a requirement or not for further stages.

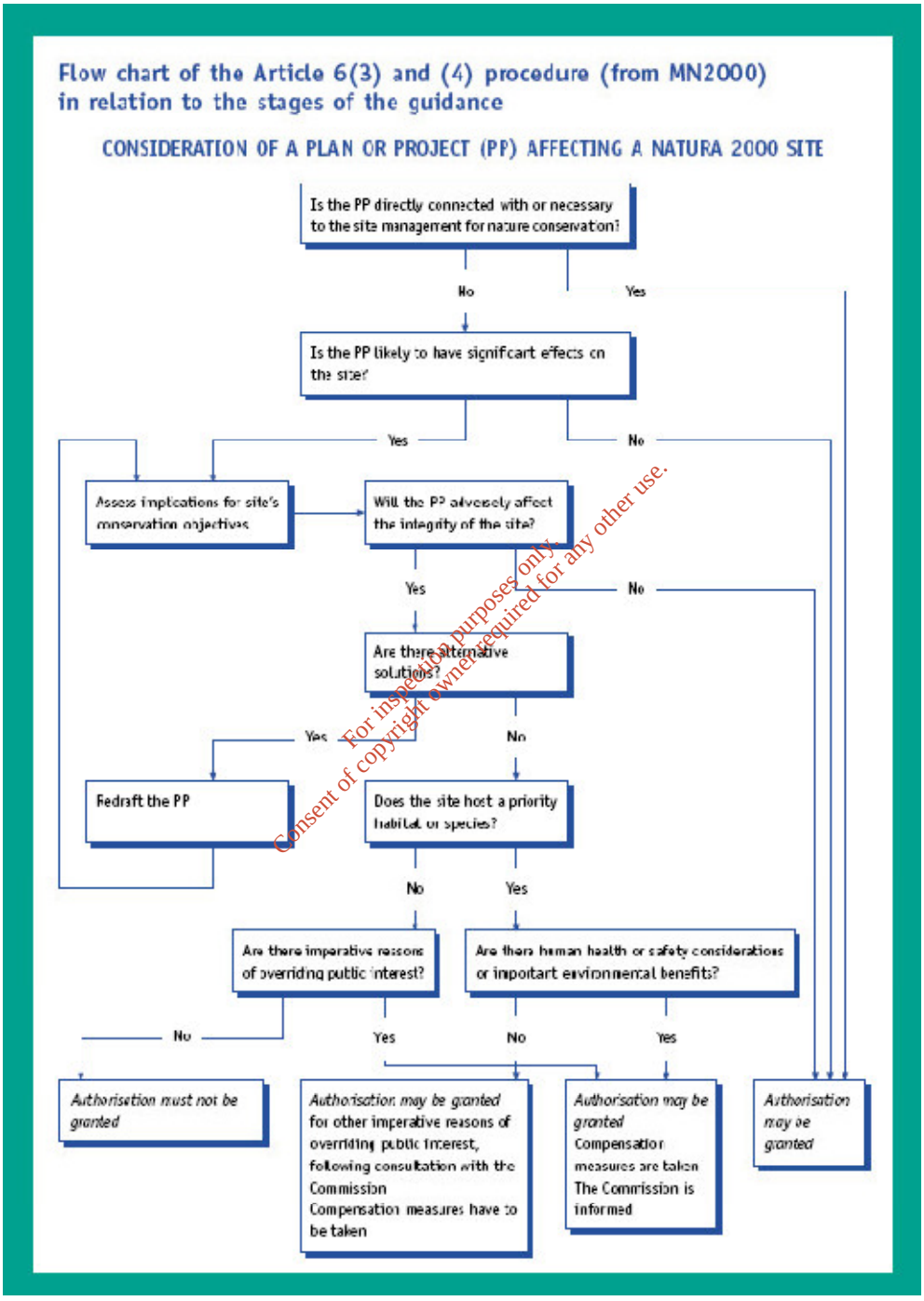
Stage Two: Appropriate Assessment - the consideration of the impact of the project or plan on the integrity of the Natura 2000 site, either alone or in combination with other projects or plans, with respect to the site's structure and function and its conservation objectives. Additionally, where there are adverse impacts, an assessment of the potential mitigation of those impacts is detailed. If adverse impacts can be satisfactorily avoided at this stage then the process is complete.

Stage Three: Assessment of Alternative Solutions – the process which examines alternative ways of achieving the objectives of the project or plan that avoid adverse impacts on the integrity of the Natura 2000 site.

Stage Four: Assessment Where Adverse Impacts Remain - an assessment of compensatory measures where, in the light of an assessment of Imperative Reasons of Overriding Public Interest (IROPI), it is deemed that the project or plan should proceed.

These four stages are summarised in Figure 2-1 overleaf.

Figure 2-1 Flowchart Outlining the Appropriate Assessment Process (Extracted from Assessment of Plans and Projects – EC 2001)



3 STAGE 1 – SCREENING

3.1 INTRODUCTION

This stage of the process identifies the likely impacts upon a Natura 2000 site of a project or plan, either alone or in combination with other projects or plans, and considers whether these impacts are likely to be significant.

3.2 DESCRIPTION OF SITE LOCATION AND PROJECT

The proposed Drehid MBT Facility development will be located in the townlands of Coolcarrigan, Drummond and Kilkeaskin within the confines of Bord na Móna's landholding at Carbury, County Kildare. The site will occupy 29ha within an overall 2,544ha landholding. The site currently comprises re-vegetating cutover bog beside an existing access road to the Drehid Waste Management Facility which is located approximately 1km north of the proposed MBT Facility site. The entire landholding, including the site, was previously used by Bord na Móna up to approximately twenty two years ago for production of sod peat for energy generation. In general, the habitats present on site are typical of re-vegetating cutover bog, with bare peat areas now mostly overgrown with scrub, woodland, heath and grassland communities.

The project description is detailed in Chapter 2 of the main EIS. The proposed MBT Facility will primarily accept and process municipal solid waste and will provide for an overall capacity of 250,000 tonnes per annum (TPA). Mechanical Biological Treatment through a combination of mechanical processing and biological treatment reduces the volume of waste which requires treatment by disposal in landfill or incineration.

3.3 RELEVANT NATURA 2000 SITES

The site is not located within a Natura 2000 site. No Special Protection Areas (SPA) for birds exist within 15km of the proposed MBT development. Candidate Special Areas of Conservation (cSAC) within 15km of the proposed development are detailed in Table 1 below.

Table 1: Natura 2000 Sites within 15km of the proposed MBT development site boundary

Name	Site Code	Designation	Approximate distance from site/activity boundary
Ballynafagh Bog	000391	cSAC	6.4 km,
Ballynafagh Lake	001387	cSAC	5.8 km,
Long Derries, Edenderry	000925	cSAC	7.2 km,
Mouds Bog Pollardstown Fen	000395 000396	cSAC cSAC	11 km 13.2km

None of the sites listed in Table 1 will be impacted by the development of the proposed MBT Facility.

An important consideration is that while there is the potential for localised silt or sediment run-off created by the construction of the proposed development to enter watercourses through drains on site, potential impact to downstream aquatic receptors will be insignificant including in the River Barrow cSAC (not listed) located approximately 20km from here. Precautionary pollution controls will be implemented during the site clearance phase to prevent significant silt and sediment entering the surface water drains. During the operational phase controls as per an EPA waste license will be implemented and monitored by site environmental technicians to ensure waste license compliance and to avoid significant discharges to water and air.

3.4 CONSULTATION

As part of the EIS for this project, consultation letters describing the proposed development were sent to relevant authorities including Department of the Arts, Heritage and the Gaeltacht, National Parks and Wildlife Services, BirdWatch Ireland, Inland Fisheries Ireland (IFI), Kildare County Council Conservation Officer, Irish Wildlife Trust, Irish Forestry Board (Coillte Teoranta), Irish Native Woodland Trust, and Irish Peatland Conservation Council) on the 24th January 2012.

All responses received are detailed in Chapter 1 of this EIS and all responses received are presented in Appendix 1.5. All relevant consultation responses and recommendations are fully considered in this Report.

3.5 POTENTIAL FOR IMPACTS

3.5.1 Alone

The possibility exists for localised sediment and contaminant discharges to enter watercourses during the construction phase of the proposed development particularly when peat excavation is required. During the operational phase of the development there is the possibility of accidental emissions, in the form of oil, petrol, diesel, or leachate which could cause contamination of local surface water channels and/or the underlying groundwater. These discharges will not significantly impact any designated site.

3.5.2 In-combination

The proposed development will be located approximately 1km south of the Bord na Móna permitted landfill facility and composting facility. This development will be subject to a waste licence from the EPA to control any significant potential for impacts to local watercourses and air quality. It is considered that no significant in-combination impacts will arise which may impact Natura 2000 sites.

3.6 ASSESSMENT OF LIKELY EFFECTS

No detectable significant impacts are likely to affect the Natura 2000 Sites listed in Table 1 as project design and controls detailed below will prevent significant localised sediment and contaminant discharges entering any undesignated watercourses which drain the site. In order to ensure no impacts occur as a result of this proposed MBT development, best practice works to be undertaken will include:

- A buffer zone of at least 5m will be retained between any works area and drainage ditches on site;
- Appropriately placed silt traps will be used to prevent increased silt deposition in the watercourses that exist on site;
- Soil storage will be in a manner which avoids impacts to surface waters and instability issues;
- Any hydrocarbons will be stored in appropriate containers, either double skinned or bunded;
- Fuelling of machinery will be carried out away from the watercourses to prevent pollution;
- Extensive site works such as site excavation will not take place during extended periods of heavy rain in order to minimise soil and silt water run off to silt traps;
- Spill kits will be retained on site during the construction phase. These kits will be equipped with suitable materials for the appropriate cleanup and storage of any contaminants which are accidently released into the environment; and
- Pollution control measures will be implemented at work areas within 50m of drains which drain into the site. These will include an environmental and earthworks management plan, which will have the objective of avoiding significant negative impacts such as excess silt runoff entering local water features. Suitable reference for best practice is detailed in National Roads Authority (NRA) (2005) [3] and Masters-Williams *et al.,* (2001)[4].

[3] NRA 2005. Guidelines for the crossing of watercourses during the construction of national road schemes. National Roads Authority (NRA), Dublin.

Refer to Chapters 4 "Ecology" and 6 "Water" of the EIS for further details on proposed work practices and mitigation measures to prevent any impacts to the ecological environment which may also be relevant to Natura 2000 sites within 15km of here.

4 SCREENING STATEMENT

No significant impacts will arise to Natura 2000 sites from the proposed MBT development. Hence there is no requirement for further stages (Stage 2, 3 and 4) of the appropriate assessment process.

Signed off by:

Roger Macnaughton
Senior Ecologist

[4] Masters-Williams et al (2001). Control of water pollution from construction sites. Guidance for consultants and contractors (C532). CIRIA.

TOBIN
Patrick J. Tobin & Co. Ltd.

INTERNATIONAL NETWORK

Galway
Fairgreen House,
Fairgreen Road,
Galway.
Ph +353 (0)91 565211

Dublin
Block 10-4,
Blanchardstown Corporate
Park, Dublin 15.
Ph +353 (0)1 803 0406

Castlebar
Market Square,
Castlebar,
Co. Mayo.
Ph +353 (0)94 902 1401

Poland
Ul. Cystersów 9
31-553 Kraków

Ph +48 12 353 8646
Fax +48 12 353 7329

United Kingdom
CAB International,
Nosworthy Way,
Wallingford,
Oxfordshire OX10 8DE
Ph +44 1491 829327

Appendix A

Supplementary Information to the Appropriate Assessment Screening Statement

1) Supplementary Information on Water Abstraction

One of the main aims of an Appropriate Assessment Screening Statement is to identify likely significant impacts on Natura 2000 sites.

Abstraction impacts (alone and in-combination) on Natura 2000 sites and specifically Ballynafagh Lake SAC were considered by the project team at an early stage of the Appropriate Assessment Screening process. Potential impacts of the proposed borehole abstraction on Ballynafagh Lake (alone and in-combination) were assessed as part of the Appropriate Assessment screening exercise, however potential impacts were not considered to be likely.

By way of explanation, the following facts informed this initial assessment that potential impacts of the proposed borehole supply on Ballynafagh Lake (alone and in-combination) were not considered to be likely:

- The key consideration is that groundwater flow, to Ballynafagh Lake or to any other Natura 2000 sites, is not connected to groundwater abstraction from the proposed borehole. There are no Natura 2000 sites or other sites of nature conservation interest with any groundwater flow connection to the proposed groundwater abstraction. The Drehid MBT facility borehole will be fed by groundwater in the immediate vicinity of the proposed MBT Facility.
- Ballynafagh Lake is influenced by the local geology and hydrogeology in the immediate vicinity of the lake. A review of surface water drainage patterns; topography; soils and bedrock, indicates that Ballynafagh Lake is fed from surface water and a number of small springs which rise to the northeast of the lake (Appendix 1 attached, Figure 1). This was confirmed during a walkover at Ballynafagh Lake in June 2007 and November 2011 where groundwater was seen to discharge to deep drainage ditches to the northeast of the lake. The source area of the springs to Ballynafagh Lake is upgradient lands to the north, northeast and east of the lake. It is unlikely that land to the west contributes groundwater to Ballynafagh Lake as this land appears to be downgradient based on surface water patterns, soils and topography.
- Moreover, given the distance of 5.8 km between the proposed water abstraction borehole and Ballynafagh Lake, the change in geology between the location of Ballynafagh Lake and the location of the proposed water abstraction borehole, and the change in the aquifer characteristics, it is not possible for the proposed water abstraction borehole to impact on Ballynafagh Lake SAC. In terms of geology change, the Allenwood and Boston Hill Formations lie between Ballynafagh Lake and the proposed water abstraction borehole. While both locations lie within the Waulsortian Formation, the bedrock around Ballynafagh Lake is likely to have increased fracturing and fissuring close to a major NE-SW fault at the Kildare Inlier (Appendix 1, Figure 3). The groundwater flow characteristics within the Waulsortian Formation limestones are dominated by secondary permeability, i.e. fissure flow. Where folding/faulting occurs, increased dissolution and secondary permeability occurs. The proposed MBT Facility is located further away from this major SE-NW fault and therefore likely to have a lower permeability. Borehole site investigation data and pumping test data for the Bord na Móna landholding confirms the relatively low permeability of the underlying bedrock aquifer. Details of the pumping test and hydrogeological maps are included in Appendix 1 of this Submission.
- The aquifer characteristics of a Locally Important (LI) aquifer indicate that the aquifer has low transmissivity values and a relatively poorly connected network of fractures, fissures and joints, giving a *low* fissure permeability which tends to decrease further with depth. Some recharge will occur in the upper, more fractured/weathered zone which is likely to

flow along the relatively short flow paths and rapidly discharge to streams, small springs and seeps. As illustrated below in Figure 1, an Ll aquifer is characterised by groundwater path lengths typically less than 1km. Transmissivity values (T) of between 2 m^2/day and 16 m^2/day which were calculated for GW6 and nearby observation wells confirm the aquifer category (as included in the EIS which supported the Waste Licence Application for the extension and intensification of the Drehid Waste Management Facility). As noted above, details of the pumping test and hydrogeological maps are included in Appendix 1 of this Submission.

- A borehole pumping test, conducted at the Bord na Móna landholding (Refer to Section 5.3.5 of the EIS (Volume II)) as part of a previous EIS (referenced in previous bullet point), confirms the relatively low permeability of the underlying bedrock aquifer and Locally Important aquifer classification of the underlying geology at the Bord na Móna landholding (See Appendix 1, Figure 3). The localised nature of the cone of depression, generated by the pumping test, demonstrates the poor and localised nature of the permeability in the bedrock underlying the Bord na Móna landholding.
- In addition, a groundwater discharge zone, the Blackwood Feeder and associated tributaries, acts as a groundwater divide and is situated between Ballynafagh Lake and the proposed borehole abstraction. Hence, there is no link/ groundwater pathway and therefore no potential effect of the proposed abstraction borehole (alone or in combination) on Ballynafagh Lake.

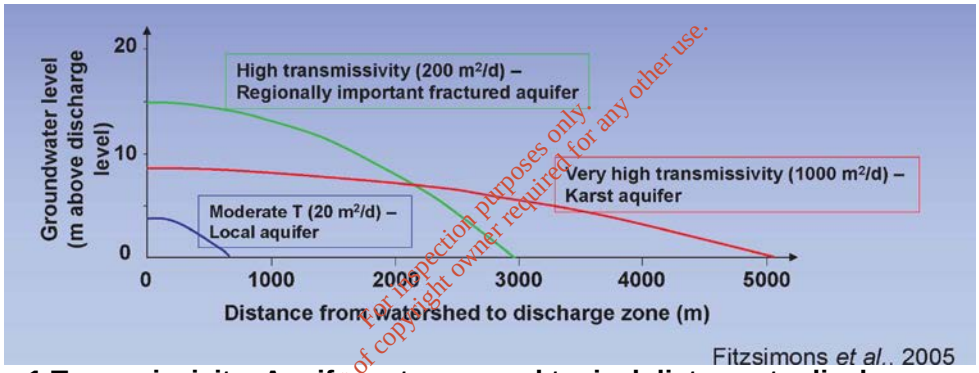


Figure 1 Transmissivity, Aquifer category and typical distance to discharge zones

The above information confirms that potential impacts/effects of the proposed groundwater abstraction, in combination with other water abstractions, on Natura 2000 sites are not likely. Precautionary mitigation procedures to minimise impacts to ground and surface waters (detailed in the EIS) are comprehensive and prevent significant localised impacts and indeed impacts to distant SAC sites. The key conclusion of the Water Chapter of the EIS (Section 6.5, page 234 in EIS (Volume II)) is that the measures employed will ensure that there is no adverse impact on the surface water or groundwater environment.

Potential effects on Ballynafagh Lake were not considered likely based on consideration of the available information including distance from proposed borehole abstraction, limited abstraction, pump testing, aquifer classification, and understanding of the aquifer properties.

It is confirmed that no potential impacts on any qualifying conservation interests are likely to arise as a result of the proposed development.

2) Supplementary Information on Appropriate Assessment Screening Statement Conclusions having regard to the Conversation Objectives of the European Sites

In reaching the conclusion outlined in the Appropriate Assessment Screening Statement, consideration was given to the conservation objectives of the European sites identified in Table 1 of the Screening Statement. Section 3.3 of the Appropriate Assessment Screening Statement (Appendix 4.1 of the EIS (Volume IV)) identifies relevant Natura 2000 sites that might be affected by the proposed development. Table 1 therein identifies the relevant Natura 2000 sites within 15km of the proposed development. Table 1 is reproduced below for reference.

Table 1: Natura 2000 Sites within 15km of the proposed MBT development site boundary

Name	Site Code	Designation	Approximate distance from site/activity boundary
Ballynafagh Bog	000391	cSAC	6.4 km
Ballynafagh Lake	001387	cSAC	5.8 km
Long Derries, Edenderry	000925	cSAC	7.2 km
Mouds Bog	000395	cSAC	11 km
Pollardstown Fen	000396	cSAC	13.2km

The conservation objectives of the European sites identified in Table 1 are provided below. The subsequent section of this response provides the considerations leading to the conclusion that none of the sites listed in Table 1 will be impacted by the proposed MBT facility**.**

Conservation Objectives

Ballynafagh Bog cSAC

Location

As noted in Table 1 of the Appropriate Assessment Screening Statement, Ballynafagh Bog cSAC is located approximately 6.4km from the proposed development.

Conservation Objectives

Data with regard to the conservation objectives[1] for Ballynafagh Bog cSAC [Site Code 000391] designated by the NPWS was considered as part of the screening process and is given below:

"*To maintain or restore the favourable conservation condition of the Annex I habitat(s) and / or the Annex II species for which the SAC has been selected:*

- *[7110] * Active raised bogs*
- *[7120] Degraded raised bogs still capable of natural regeneration*
- *[7150] Depressions on peat substrates of the Rhynchosporion"*

Ballynafagh Lake cSAC

Location

As noted in Table 1 of the Appropriate Assessment Screening Statement, Ballynafagh Lake cSAC is located approximately 5.8km from the proposed development.

[1] 'NPWS (2011) Conservation objectives for Ballynafagh Bog SAC [000391]. Generic Version 3.0. Department of the Arts, Heritage & the Gaeltacht'

Conservation Objectives

Data with regard to the conservation objectives[2] for Ballynafagh Lake cSAC [Site Code 001387] designated by the NPWS was considered as part of the screening process and is given below:

"To maintain or restore the favourable conservation condition of the Annex I habitat(s) and / or the Annex II species for which the SAC has been selected:

- *[1016] Vertigo moulinsiana*
- *[1065] Euphydryas (Eurodryas, Hypodryas) aurina*
- *[7230] Alkaline fens"*

The Long Derries cSAC

Location

As noted in Table 1 of the Appropriate Assessment Screening Statement, The Long Derries cSAC is located approximately 7.2km from the proposed development.

Conservation Objectives

Data with regard to the conservation objectives[3] for The Long Derries cSAC [Site Code 000925] designated by the NPWS was considered as part of the screening process and is given below:

"To maintain or restore the favourable conservation condition of the Annex I habitat(s) and / or the Annex II species for which the SAC has been selected:

- *[6210] Semi-natural dry grasslands and scrubbed facies on calcareous substrates (Festuco Brometalia) (* important orchid sites)"*

Mouds Bog cSAC

Location

As noted in Table 1 of the Appropriate Assessment Screening Statement, Mouds Bog cSAC is located approximately 11km from the proposed development.

Conservation Objectives

Data with regard to the conservation objectives[4] for Mouds Bog pNHA / cSAC [Site Codes 00395 / 002331] designated by the NPWS was considered as part of the screening process and is given below:
"To maintain or restore the favourable conservation condition of the Annex I habitat(s) and / or the Annex II species for which the SAC has been selected:

- *[7110] * Active raised bogs*
- *[7120] Degraded raised bogs still capable of natural regeneration*
- *[7150] Depressions on peat substrates of the Rhynchosporion"*

---

[2] 'NPWS (2011) Conservation objectives for Ballynafagh Lake SAC [001387]. Generic Version 3.0. Department of the Arts, Heritage & the Gaeltacht'

[3] 'NPWS (2011) Conservation objectives for The Long Derries SAC [000925]. Generic Version 3.0. Department of the Arts, Heritage & the Gaeltacht'

[4] 'NPWS (2011) Conservation objectives for Mouds Bog SAC [002331]. Generic Version 3.0. Department of the Arts, Heritage & the Gaeltacht'

Pollardstown Fen cSAC

Location

As noted in Table 1 of the Appropriate Assessment Screening Statement, Pollardstown Fen cSAC is located approximately 13.2km from the proposed development.

Conservation Objectives

Data with regard to the conservation objective[5] for Pollardstown Fen cSAC [Site Code 000396] designated by the NPWS was considered as part of the screening process and is given below:

"To maintain or restore the favourable conservation condition of the Annex I habitat(s) and / or the Annex II species for which the SAC has been selected:

- *[1013] Vertigo geyeri*
- *[1014] Vertigo angustior*
- *[1016] Vertigo moulinsiana*
- *[7210] * Calcareous fens with Cladium mariscus and species of the Caricion davallianae*
- *[7220] * Petrifying springs with tufa formation (Cratoneurion)*
- *[7230] Alkaline fens"*

Guidance on Stage 1 – Screening

The guidance document from the Department of the Environment, (Department of the *Environment, Heritage and Local Government (2009), "Appropriate Assessment of Plans and Projects in Ireland, Guidance for Planning Authorities"*), details the stages required in undertaking an Appropriate Assessment and the methodology for Stage 1, 'Appropriate Assessment Screening'.

For Appropriate Assessment Screening, the guidance notes that an assessment is required to establish whether the proposed activity is likely to have an effect on a Natura 2000 site, and if so, to follow with a determination of whether there is a risk that the effects identified could be significant,

"All likely sources of effects arising from the plan or project under consideration should be considered together with other sources of effects in the existing environment and any other effects likely to arise from proposed or permitted plans or projects."

"As a guide, any element of a plan or project that has the potential to affect the conservation objectives of a Natura 2000 site, including its structure and function, should be considered significant".

Consideration on whether development is likely to have effect on relevant Natura 2000 sites

The considerations that informed the overall conclusion that the proposed activity is not likely to have an effect on the Natura 2000 sites (listed in Table 1 of the Appropriate Assessment Screening Statement), are detailed below.

Each of the Natura 2000 sites listed in Table 1 of the Appropriate Assessment Screening Statement was considered to identify if the proposed development has the potential to impact on the Natura 2000 site in question. As the assessment and responses below are the same for each

[5] 'NPWS (2011) Conservation objectives for Pollardstwon Fen [000396]. Generic Version 3.0. Department of the Arts, Heritage & the Gaeltacht'

of the Natura 2000 sites listed in Table 1, the considerations are presented altogether in relation to:
Ballynafagh Bog cSAC, Ballynafagh Lake cSAC, The Long Derries cSAC, Mouds Bog cSAC and Pollardstown Fen cSAC.

There are no likely effects on any of the Natura 2000 sites identified in Table 1 of the Screening Statement due to the lack of any potential or definite source-pathway-receptor links between the proposed development and the Natura 2000 sites.

There are no source-pathway-receptor links, potential or definite, between the proposed development and any of the Natura 2000 sites listed in Table 1: Ballynafagh Bog cSAC, Ballynafagh Lake cSAC, The Long Derries cSAC, Mouds Bog cSAC and Pollardstown Fen cSAC.

No hydrogeological pathway or source-pathway-receptor link exists between the cSACs listed and the potential activities at the proposed Drehid MBT Facility site based on site investigation data, pump testing, aquifer classification, aquifer characteristics and the distance between the Natura 2000 sites and the proposed MBT Facility. Details of the pumping test and hydrogeological maps are included in Appendix 1. The aquifer underlying the cSAC's listed and the proposed development is classified by the Geological Survey of Ireland (GSI) as a Locally Important aquifer / poorly productive aquifer. For clarity, it should be noted that poorly productive aquifers include the generally unproductive aquifer categories and Locally Important aquifers as per the Water Framework Directive working group 2003[6]. As defined by the GSI, a Locally Important aquifer is characterised by groundwater path lengths typically less than 1km [See Figure 1 above in previous Section 1]. All Natura 2000 sites are at least or in excess of 5.8km removed from the proposed development. (See Appendix 1, Figure 2 for Aquifer categories and Natura sites).

In relation to any potential groundwater abstractions at the proposed development, alone and in combination with other existing groundwater abstractions in the existing environment, the effect of the abstractions will be restricted to a local influence, due to the characteristics of the aquifer being poorly productive and having short flow paths.

No hydrological pathway or surface water link exists between the cSACs listed in Table 1 and the potential activities at the proposed Drehid MBT Facility site. All Natura 2000 sites within 15kms of the Drehid MBT Facility site (listed in Table 1) are situated in a separate sub-catchment within the surface water catchment in the area.

The conservation qualifying interests of the Natura 2000 sites detailed (see Table 1) are groundwater dependent. As detailed above there is no linkage between the proposed development and these conservation qualifying interests. There are no other effects likely to conversation qualifying interests of the Natura 2000 sites (listed in Table 1) from the Drehid MBT Facility. Other effects considered included possible noise, dust, odour, flight risk (to birds) etc. This is fundamentally due to the fact that these Natura 2000 sites are situated at a significant distance (at least 5.8km) from the proposed Drehid MBT Facility.

In conclusion, there will be no likely effects from the proposed development on the sites listed in Table 1 of the Screening Statement or on the habitats or species for which the sites have been selected as a protected site (i.e. the conservation objectives of the Natura 2000 sites). As there are no likely effects, there is no following determination required as to whether there is a risk that the effects could be significant.

[6] Groundwater Working Group (2003) Guidance Document GW3. *Water Framework Directive (WFD) River Basin District Management Systems: Approach to delineation of Groundwater Bodies*. Paper by Working Group on Groundwater, 16 pp.

APPENDIX 1

Hydrogeology and Geology Figures

Details of the 72 Hour Pumping Test

Site Location

UPGRADIENT SOURCE AREA FOR BALLYNAFAGH LAKE

Springs in Drainage Ditches

Ballynafagh Lake

Ballynafagh Bog

Legend

- Site Boundary
- Ownership Boundary
- Special Area of Conservation - SAC

0 105210 420 630 840
Metres

NOTES

1. FIGURED DIMENSIONS ONLY TO BE TAKEN FROM THIS DRAWING
2. ALL DRAWINGS TO BE CHECKED BY THE CONTRACTOR ON SITE
3. ENGINEER TO BE INFORMED OF ANY DISCREPANCIES BEFORE ANY WORK COMMENCES
4. ALL LEVELS RELATE TO ORDNANCE SURVEY DATUM AT MALIN HEAD

Issue	Date	Description	By	Chkd.
D01	03-10-12	Issued	M.N.	J.D.

Client: BORD NA MÓNA

Project: DREHID MECHANICAL BIOLOGICAL TREATMENT (MBT) FACILITY

Title: DESIGNATED SITES - Special Areas of Conservation -

Scale @ A3: 1:30,000

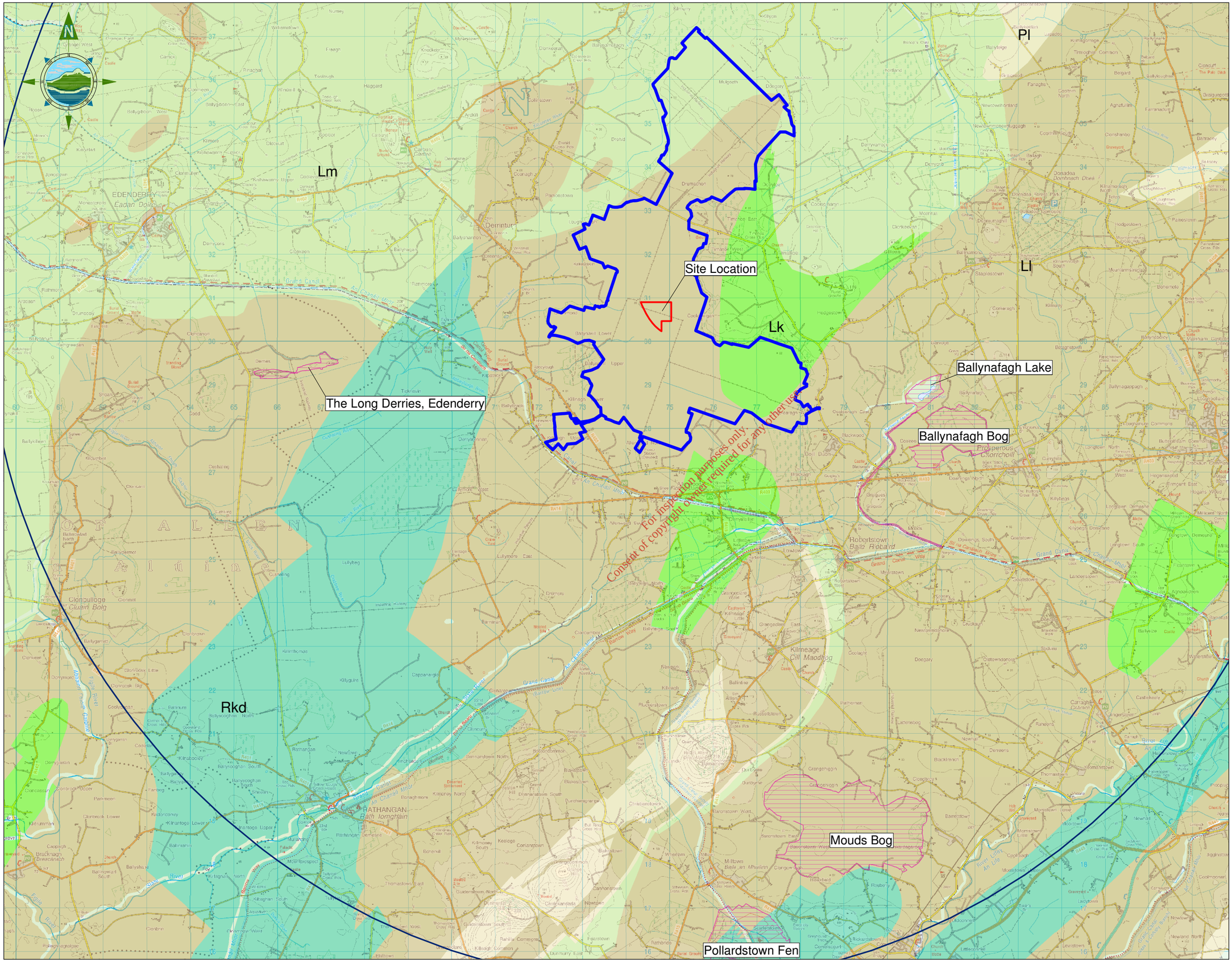
Prepared by:	Checked:	Date:
M. Nolan	J.Dillon	October 2012

Project Director: D.Grehan

TOBIN
Patrick J. Tobin & Co. Ltd.
Consulting, Civil and Structural Engineers,
Block 10-4, Blanchardstown Corporate Park,
Dublin 15, Ireland.
tel: +353-(0)1-8030406
fax:+353-(0)1-8030409
e-mail: info@tobin.ie
www.tobin.ie

6301 A

Figure 1



Legend

- Site Boundary
- Ownership Boundary
- 15Km Buffer
- Locally Important Aquifer - Karstified
- Locally Important Aquifer - Bedrock which is Moderately Productive only in Local Zones
- Locally Important Aquifer - Bedrock which is Generally Moderately Productive
- Regionally Important Aquifer - Karstified (diffuse)
- Poor Aquifer - Generally Unproductive except for Local Zones
- Rivers
- Lakes
- Special Area of Conservation - SAC

0 300 600 1,200 1,800 2,400
Metres

NOTES

1. FIGURED DIMENSIONS ONLY TO BE TAKEN FROM THIS DRAWING
2. ALL DRAWINGS TO BE CHECKED BY THE CONTRACTOR ON SITE
3. ENGINEER TO BE INFORMED OF ANY DISCREPANCIES BEFORE ANY WORK COMMENCES
4. ALL LEVELS RELATE TO ORDNANCE SURVEY DATUM AT MALIN HEAD

Issue	Date	Description	By	Chkd.
D01	03-10-12	Issued	M.N.	J.D.

Client: BORD NA MÓNA

Project: DREHID MECHANICAL BIOLOGICAL TREATMENT (MBT) FACILITY

Title: AQUIFER CLASSIFICATION MAP WITH DESIGNATED SPECIAL AREAS OF CONSERVATION

Scale @ A3: 1:80,000

Prepared by:	Checked:	Date:
M. Nolan	J.Dillon	October 2012

Project Director: D.Grehan

TOBIN
Patrick J. Tobin & Co. Ltd.
Consulting, Civil and Structural Engineers,
Block 10-4, Blanchardstown Corporate Park,
Dublin 15, Ireland.
tel: +353-(0)1-8030406
fax:+353-(0)1-8030409
e-mail: info@tobin.ie
www.tobin.ie

6301

Figure 2 A