

GENERAL LEGEND

ACTIVITY BOUNDARY —

CHP STACK ⊙

STAND BY GAS FLARE STACK ⊙

BIOFILTER STACK ⊙

SURFACE WATER EMISSION POINTS ⊙

NOTE:

CHP STACK AND STAND BY GAS FLARE STACK ARE ONLY RELEVANT TO CONFIGURATION B.
(MBT With dry Anaerobic digestion and composting)

- NOTES:**
- FIGURED DIMENSIONS ONLY TO BE TAKEN FROM THIS DRAWING.
 - ALL DRAWINGS TO BE CHECKED BY THE CONTRACTOR ON SITE
 - ENGINEER/EMPLOYERS REPRESENTATIVE, AS APPROPRIATE, TO BE INFORMED BY THE CONTRACTOR OF ANY DISCREPANCIES BEFORE ANY WORK COMMENCES
 - THE CONTRACTOR SHALL UNDERTAKE A THOROUGH CHECK FOR THE ACTUAL LOCATION OF ALL SERVICES/UTILITIES, ABOVE AND BELOW GROUND, BEFORE ANY WORK COMMENCES
 - ALL LEVELS SHOWN RELATE TO ORDNANCE SURVEY DATUM AT MALIN HEAD

Issue	Date	Description	By	Chkd.
A	27.06.12	ISSUED FOR WASTE LICENCE	M.N.	D.C.

Client:

BORD NA MÓNA

Project:

**DREHID
MECHANICAL BIOLOGICAL
TREATMENT (MBT) FACILITY**

Title:

**EMISSION POINT
LOCATIONS
(Configuration B: MBT with dry Anaerobic
Digestion & Composting)**

Scale @ A3: 1:2,500

Prepared by: M. Nolan Checked: D. Conneran Date: May 2012

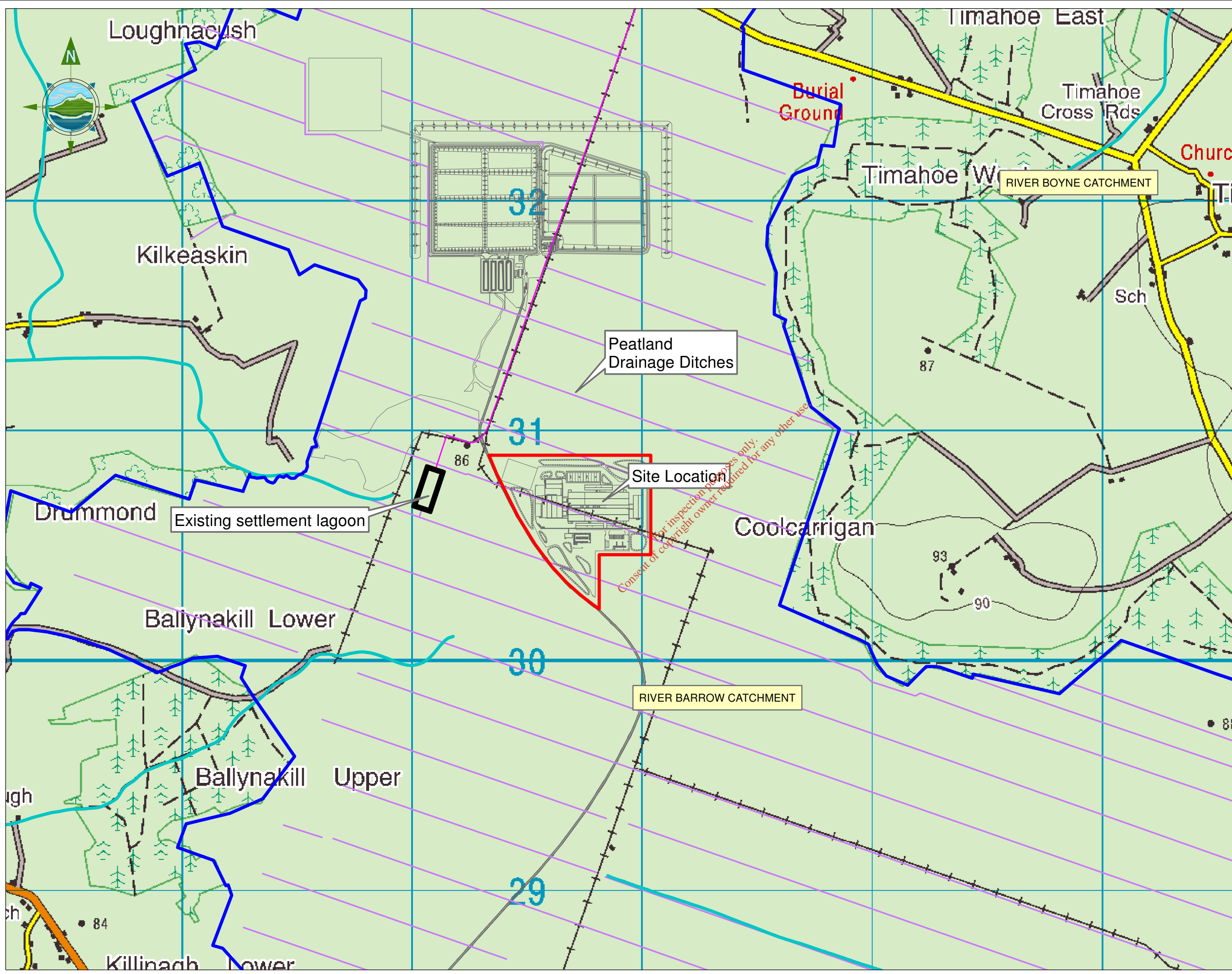
Project Director: D. Grehan

TOBIN
Patrick J. Tobin & Co. Ltd.

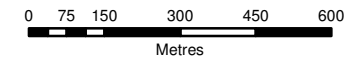
Consulting, Civil and Structural Engineers,
Block 10-4, Blanchardstown Corporate Park,
Dublin 15, Ireland.
tel: +353-(0)1-8030406
fax: +353-(0)1-8030409
e-mail: info@tobin.ie
www.tobin.ie

No part of this document may be reproduced or transmitted in any form or stored in any retrieval system of any nature without the written permission of Patrick J. Tobin & Co. Ltd. as copyright holder except as agreed for use on the project for which the document was originally issued.

Drawing No.: **Figure 3B** Issue: **A**



- Legend**
- Ownership Boundary
 - Site Boundary
 - Rivers
 - Drainage Ditches
 - Main Drain
 - Settlement lagoon



- 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.	J.D.

Client:
BORD NA MÓNA

Project:
 DREHID
 MECHANICAL BIOLOGICAL
 TREATMENT (MBT) FACILITY

Title: SITE DRAINAGE LAYOUT
 AND SURFACE WATER
 FEATURES

Scale @ A3: 1:15,000

Prepared by: G.Fil Checked: J.Dillon Date: 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

No part of this document may be reproduced or transmitted in any form or stored in any retrieval system of any nature without the written permission of Patrick J. Tobin & Co. Ltd. All copyright holder except as agreed for use on the project for which the document was originally issued.

6301
Figure 6.3 **A**

APPENDIX D

CRAMP, ELRA and Financial Provision Report

*For inspection purposes only.
Consent of copyright owner required for any other use.*

DREHID MECHANICAL BIOLOGICAL TREATMENT FACILITY EPA WASTE LICENCE APPLICATION W0283-01

CRAMP, ELRA & FINANCIAL PROVISION

For inspection purposes only.
August 2013

Consent of copyright owner required for any other use.

TOBIN CONSULTING ENGINEERS



**DREHID MECHANICAL BIOLOGICAL TREATMENT FACILITY
EPA WASTE LICENCE APPLICATION W0283-01**

CRAMP, ELRA & FINANCIAL PROVISION

PROJECT:

**Drehid Mechanical Biological Treatment
Facility
EPA Waste Licence Application W0283-01
CRAMP, ELRA & Financial Provision**

CLIENT:

Bord Na Móna

*For inspection purposes only.
Consent of copyright owner required for any other use.*

COMPANY:

TOBIN Consulting Engineers
Block 10-4
Blanchardstown Corporate Park
Dublin 15
Tel: 01-8030401
Fax: 01-8030409

www.tobin.ie

DOCUMENT AMENDMENT RECORD

Client:	Bord na Móna
Project:	Drehid Mechanical Biological Treatment Facility
Title:	CRAMP, ELRA & Financial Provision

For inspection purposes only.
Consent of copyright owner required for any other use.

PROJECT NUMBER: 6301				DOCUMENT REF: TR01 Environmental Liabilities Risk Assessment			
A	Issue	BW	27/06/13	ST	12/08/13	DG	14/08/13
Revision	Description & Rationale	Originated	Date	Reviewed	Date	Authorised	Date
TOBIN Consulting Engineers							

TABLE OF CONTENTS

1 INTRODUCTION..... 1

2 STEP 1: INITIAL SCREENING & OPERATIONAL RISK ASSESSMENT 3

2.1 COMPLEXITY3

2.2 INITIAL SCREENING & OPERATIONAL RISK ASSESSMENT CONCLUSION - RISK CATEGORY.....4

3 STEP 2: PREPARATION OF A CLOSURE, RESTORATION & AFTERCARE MANAGEMENT PLAN (CRAMP) FOR KNOWN LIABILITIES 6

3.1 CLOSURE PLAN6

3.2 RESTORATION AND AFTERCARE MANAGEMENT PLAN 13

4 STEP 3: ENVIRONMENTAL LIABILITY RISK ASSESSMENT (ELRA) FOR UNKNOWN LIABILITIES..... 15

4.1 RISK IDENTIFICATION 15

4.2 RISK CLASSIFICATION - OCCURRENCE ANALYSIS 18

4.3 RISK CLASSIFICATION - SEVERITY ANALYSIS 18

4.4 ASSESSMENT OF RISKS 19

4.5 QUANTIFICATION OF UNKNOWN ENVIRONMENTAL LIABILITIES.....22

5 STEP 4 - IDENTIFICATION OF FINANCIAL PROVISION (FP) AND INSTRUMENTS 25

5.1 CALCULATION OF FINANCIAL PROVISION25

5.2 FINANCIAL PROVISION.....26

6 RECOMMENDATIONS..... 27

Appendix A
Appendix B
Appendix C

Drawings
Details of Financial Provision
Insurance

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 Act 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 of the said regulations. Item 7 of the information requested (relating to Article 12 compliance) states:

"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 ELM (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)."

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 to be followed in the preparation of the CRAMP and the ELRA for the Drehid MBT Facility is set out in the EPA Guidance Document - '*Guidance on Environmental Liability Risk Assessment, Residuals Management Plans and Financial Provision*' (2006). Within this Report, the foregoing EPA guidance document is further referred to as the '*EPA Guidance Document*'.

The methodology involves 4 Main Steps, each of which will be dealt with within this Report:

- Step 1 - Initial Screening & Operational Risk Assessment;
- Step 2 - Preparation of a Closure, Restoration and Aftercare Management Plan (CRAMP) for Known Liabilities;
- Step 3 - Environmental Liability Risk Assessment (ELRA) for Unknown Liabilities; and
- Step 4 - Identification of Financial Provision (FP) and Instruments.

In order to take account of the worst case scenario, the preparation of the CRAMP and the ELRA for the Drehid MBT Facility will be based on MBT Configuration B (MBT with Dry Anaerobic Digestion and Composting). Information on the proposed MBT Configurations is provided in Section 1.2 of the EIS (that accompanied the Waste Licence Application) and in Section 3.1.3.2 of this Report.

This Report containing the CRAMP, ELRA and Financial Provision for the Drehid MBT Facility has been prepared by TOBIN Consulting Engineers, which is an independent and appropriately qualified consultancy.

2 STEP 1: INITIAL SCREENING & OPERATIONAL RISK ASSESSMENT

The first step in the process is an 'Initial Screening & Operational Risk Assessment', which will classify the Drehid MBT Facility into one of the risk categories presented in Table 2.1 below.

Table 2.1 Risk Categories

Risk Category	Total Score
Category 1	<5
Category 2	5 - 23
Category 3	>23

The Risk Category classification will determine the specific Step 2 - Closure, Restoration & Aftercare Management Plan (CRAMP), Step 3 - Environmental Liability Risk Assessment (ELRA) and Step 4 - Financial Provision (FP) requirements that apply for the facility.

The 'Initial Screening & Operational Risk Assessment' process takes into account three key elements relating to the facility:

- **Complexity** – this relates to the extent and magnitude of potential hazards present due to the operation of the facility. A Complexity Band (G1 - least complex, to G5 - most complex) for each class of activity has been assigned by the EPA and included in a 'Look-Up Table' in Appendix B of the 'EPA Guidance Document';
- **Environmental Sensitivity** – the sensitivity of the receiving environment in the vicinity of the facility;
- **Compliance Record** – the compliance history of the facility.

Each aspect of the 'Initial Screening & Operational Risk Assessment' (i.e. Complexity, Environmental Sensitivity & Compliance Record) is multiplied to give a 'Total Score' for the facility, thus placing the facility into an appropriate Risk Category (1, 2 or 3).

2.1 COMPLEXITY

'Complexity' relates to the extent and magnitude of potential hazards present due to the operation of the facility. A Complexity Band (G1 - least complex, to G5 - most complex) for each class of activity has been assigned by the EPA and included in a 'Look-Up Table' in Appendix B of the 'EPA Guidance Document'.

For activities with a Complexity of G4 or G5, the facilities are automatically classified as 'Risk Category 3'. For activities with a Complexity of G1, G2 or G3, the facilities must go on to evaluate their score using the 'Environment Sensitivity' and 'Compliance Record' scores.

Using the 'Look-Up Table' in Appendix B of the 'EPA Guidance Document', the principle activity that will be undertaken at the Drehid MBT Facility falls under Licensed Activity Class - Waste Management Act, 1996, Reference R2:

"R2: Recycling or reclamation of organic substances which are not used as solvents; where

- >25,000 tonnes per annum"

Other activities that will take place at the Drehid MBT Facility shall include the following:

- Reference D6 – Biological treatment not referred to elsewhere in this Schedule which results in final compounds or mixtures which are disposed of by means of any activity referred to in this Schedule
- Reference D11 – Blending or mixture prior to submission to any activity referred to in this Schedule
- Reference D12 – Repackaging prior to submission to any activity referred to in this Schedule
- Reference D13 – Storage prior to submission to any activity referred to in this Schedule, other than temporary storage, pending collection, on the premises where the waste concerned is produced; where
 - Non Hazardous -> 100,000 tonnes per annum
- Reference R3 – Recycling or reclamation of metals and metal compounds
 - Collection and sorting only
- Reference R4 – Recycling or reclamation of other inorganic materials
- Reference R12 – Exchange of waste for submission to any activity referred to in a preceding paragraph of this Schedule
- Reference R13 – Storage of waste intended for submission to any activity referred to in a preceding paragraph of this Schedule, other than temporary storage, pending collection, on the premises where such waste is produced; where
 - Non Hazardous -> 100,000 tonnes per annum

Based on the 'Look-Up Table', the primary activity is within a Complexity Band of G4. The 'EPA Guidance Document' states, however, that 'Where more than one scheduled activity is located at the facility, then the highest Complexity Band is applied'. Activity Reference R13 and Reference D13 are within a Complexity Band of G5, and as such, the Drehid MBT Facility has a complexity rating of G5. A G5 rating results in the Drehid MBT Facility automatically being classified as having a Risk Category of 3 and no further assessment is required.

2.2 INITIAL SCREENING & OPERATIONAL RISK ASSESSMENT CONCLUSION - RISK CATEGORY

Due to the activities proposed to take place at the facility, the Drehid MBT Facility is classified as having a 'Risk Category' of 3.

According to the EPA Guidance Document, facilities with a Risk Category of 3 require the completion of a Step 2 – Closure Plan and Restoration & Aftercare Management Plan, a Step 3 - Environmental Liability Risk Assessment and a Step 4 - Financial Provision.

*For inspection purposes only.
Consent of copyright owner required for any other use.*

3 STEP 2: PREPARATION OF A CLOSURE, RESTORATION & AFTERCARE MANAGEMENT PLAN (CRAMP) FOR KNOWN LIABILITIES

A Category 3 facility requires that a Closure Plan and Restoration & Aftercare Management Plan (CRAMP) are prepared. The CRAMP for the Drehid MBT Facility is outlined below.

3.1 CLOSURE PLAN

3.1.1 Introduction

This Closure Plan is intended to comply with the requirements outlined in the “EPA Guidance Document”.

3.1.2 Scope of Closure Plan

This Closure Plan covers the activities to be undertaken following the permanent cessation of waste acceptance and operations at the Drehid MBT Facility located in Coolcarrigan and Drummond, Carbury, Co. Kildare.

This Closure Plan outlines the measures to be undertaken to ensure that there will be no environmental impacts from the closed facility. This Closure Plan primarily encompasses:

- the removal of all waste materials from the MBT Facility to appropriately licensed facilities;
- the removal of remaining raw materials from the MBT Facility to appropriately licensed facilities or for use in other facilities;
- the decommissioning and decontamination of plant and equipment;
- the removal of plant and equipment from the MBT Facility; and
- the decontamination of all remaining buildings and structures;

3.1.3 Site Evaluation

3.1.3.1 Site Location

The site is located within a larger Bord na Móna landholding, which comprises 2,544 hectares (ha). That landholding is located within the townlands of Drehid, Ballynamullagh, Kilmurry, Mulgeeth, Mucklon, Timahoe East, Timahoe West, Coolcarrigan, Corduff, Coolearagh West, Allenwood North, Killinagh Upper, Killinagh Lower, Ballynakill Upper, Ballynakill Lower, Drummond, Kilkeaskin, Loughnacush and Parsonstown at Carbury, County Kildare.

The site boundary, which is defined as the area in which all activities associated with the Drehid MBT Facility will occur, is confined to the townlands of Coolcarrigan and Drummond. It should be noted that the activities associated with the Drehid MBT Facility will be confined to a landbank of approximately 29ha.

Access has been provided into the previously permitted Drehid Waste Management Facility from the R403 regional road via a dedicated site entrance and a 4.8km access road. This entrance and road will also provide access from the R403 regional road to the MBT Facility.

The village of Derrinturn is located approximately 3km north west of the closest edge of the site activity boundary and Timahoe crossroads is located approximately 2.5km east of the closest edge of the site activity boundary.

The MBT Facility site is located within a segment of land within the Bord na Móna landholding, which is located to the east of the existing access road and approximately 1km south of the existing Drehid Waste Management Facility. The topographic landform within the site boundary consists of flat lying to gently undulating topography of cut away peatland. A site location map is provided in Appendix A.

3.1.3.2 Development Description

The proposed Drehid 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 (such as composting and anaerobic digestion) reduces the volume of waste which requires treatment by disposal in landfill or incineration. By virtue of the biological process in an MBT facility, biodegradable municipal waste can be biostabilised thereby eliminating its potential to generate methane (a harmful greenhouse gas) and leachate, thus contributing to the fulfilment of Ireland's targets under the Landfill Directive (1999/31/EC). It should be noted that biostabilised waste is not considered biodegradable municipal waste if it meets the AT4 requirements of the EPA. The AT4 is a static respiration index (SRI) test used to calculate the oxygen consumption of a sample over a period of time. The index determines the biological stability of compost or other organic materials.

In deciding on the configuration of the biological process, and in particular the inclusion of Anaerobic Digestion, consideration was had of the fiscal incentives for the development of Anaerobic Digestion – namely the Renewable Energy Feed In Tariff (REFIT). Regrettably, the current fiscal incentives in the Republic of Ireland make it difficult to create a compelling or indeed viable, economic argument for the development of Anaerobic Digestion. The REFIT for Anaerobic Digestion in the Republic of Ireland is significantly inferior to its equivalents in Northern Ireland and Italy (for example).

Therefore, Bord na Móna prepared the Planning Application and Waste Licence Application for the proposed Drehid MBT Facility such that it provides for the development of an optional Dry Anaerobic Digestion step as part of the biological treatment stage. This approach was subject to detailed pre-application discussions with both An Bord Pleanála and the EPA.

The biological treatment stage will include a composting step in any event. The Planning Application and Waste Licence Application includes for both scenarios (Configuration A (MBT with Composting)

and Configuration B (MBT with Dry Anaerobic Digestion and Composting)). The potential impacts and mitigation measures for both configurations are considered within the EIS prepared for the project.

The design of the MBT Facility is such that there are no significant external differences between Configuration A (MBT with Composting) and Configuration B (MBT with Dry Anaerobic Digestion and Composting). It is proposed that the AD plant and ancillary plant will be located within the enclosure of the biological treatment buildings. The main physical difference between the two Configurations will be that Configuration B will have a standby gas flare compound and a stack associated with the CHP plant. In addition, Configuration B will require physical infrastructure (i.e. overhead power line) to facilitate the export of electricity to the electricity network. Any required planning consents to facilitate this infrastructure will be arranged in due course by ESB Networks. Bord na Móna owned switch gear and transformers associated with the export of electricity will be located in the Electrical Room.

Existing facilities and structures onsite include the following;

- Entrance from the site onto the R403 Regional Road (including associated security gates, CCTV system and fence),
- Access road from the R403 to site,

Infrastructure which will be established for use during the MBT Facility's operational phase will include;

- Fencing surrounding the MBT Facility footprint
- Security gate at the MBT Facility entrance with CCTV system
- Administration and Welfare Building (with Laboratory)
- Mechanical Treatment Building
- Biological Treatment Buildings
- Refining Building
- SRF Building
- Maintenance Building
- SRF Storage Area
- Biofilter/Odour Abatement Buildings
- Weighbridge and Weighbridge Kiosk
- Wheelwash
- Bunded Fuel Storage Area
- Site Roads, Parking and Hardstanding
- Surface Water and Foul Water Infrastructure
- Truck Wash/ Park & Skip Storage
- Potable Water Supply
- Surface Water and Foul Water Infrastructure
- MBT Process Waste Water Infrastructure

3.1.4 Closure Considerations

Upon permanent closure of the Drehid MBT Facility and therefore permanent cessation of waste acceptance, the buildings and site infrastructure will remain in place as these have planning permission to remain in place indefinitely. The operations involved in the closure will thusly be related to:

- the removal of all waste materials from the MBT Facility to appropriately licensed facilities;
- the removal of remaining raw materials from the MBT Facility to appropriately licensed facilities or for use in other facilities;
- the decommissioning and decontamination of plant and equipment;
- the removal of plant and equipment from the MBT Facility; and
- the decontamination of all remaining buildings and structures.

The primary objective of the decommissioning and decontamination of remaining plant and equipment will be to leave such plant and equipment in a condition that does not endanger the environment or the health and safety of personnel during the subsequent removal operation.

The decontamination of all remaining buildings and structures will include:

- the power cleaning of site floor and process building walls to clear all debris and dust
- the de-sludging and cleaning of all tanks and interceptors

Upon execution of the foregoing closure operations, it is expected that there will be no remaining liabilities. As such, a Clean Closure is expected.

Assuming confirmation from the post operational monitoring programme that emissions have ceased and that remaining emissions to surface water are in accordance with background levels, it is expected that, apart from the maintenance of surface water drainage systems, there will be no requirement for long-term supervision, monitoring, control, maintenance and reporting requirements for the closed Drehid MBT Facility.

3.1.5 Closure Plan Programme

Certain infrastructural elements of the MBT Facility will have waste materials and raw materials present that will be removed from site in accordance with the schedule and timeframe outlined in Table 3.1.1.

Table 3.1.1 Closure Plan Programme

Infrastructural Element	Activity	Timeframe
Mechanical Treatment Building	<p>Removal of 5,559 tonnes of solid waste to a waste disposal/recovery facility.</p> <p>Decommissioning and decontamination of plant and equipment.</p> <p>Removal of plant and equipment.</p> <p>Decontamination of the building and structures.</p>	Within 1 month following closure
Outdoor SRF Storage Area	<p>Removal of 4,000 tonnes of solid waste to a waste disposal/recovery facility.</p> <p>Decontamination of the structure.</p>	Within 6 months following closure
Biological Treatment Building No. 1	<p>Removal of 9,272 tonnes of solid waste and 900m³ of liquid waste to a waste disposal/recovery facility.</p> <p>Decommissioning and decontamination of plant and equipment.</p> <p>Removal of plant and equipment.</p> <p>Decontamination of the building and structures.</p>	Within 6 months following closure
Biological Treatment Building No. 2	<p>Removal of 9,272 tonnes of solid waste and 900m³ of liquid waste to a waste disposal/recovery facility.</p> <p>Decommissioning and decontamination of plant and equipment.</p> <p>Removal of plant and equipment.</p> <p>Decontamination of the building and structures.</p>	Within 6 months following closure
Refining Building	<p>Removal of 1,000 tonnes of unrefined biostabilised waste, 250 tonnes of refined CLO and 250 tonnes of refined biostabilised waste to a waste disposal/recovery facility.</p> <p>Decommissioning and decontamination of plant and equipment.</p> <p>Removal of plant and equipment.</p> <p>Decontamination of the building and structures.</p>	Within 6 months following closure
Biofilter/Odour Abatement Building No. 1	<p>Removal of 2,350 tonnes of solid waste and 400m³ of process wastewater to a waste disposal/recovery facility.</p> <p>Decommissioning and decontamination of plant and equipment.</p> <p>Removal of plant and equipment.</p> <p>Decontamination of the building and structures.</p>	Within 6 months following closure
Biofilter/Odour Abatement Building No. 2	<p>Removal of 1,250 tonnes of solid waste and 400m³ of process wastewater to a waste disposal/recovery facility.</p> <p>Decommissioning and decontamination of plant and equipment.</p> <p>Removal of plant and equipment.</p> <p>Decontamination of the building and structures.</p>	Within 6 months following closure
Biofilter/Odour Abatement Building No. 3	<p>Removal of 2,350 tonnes of solid waste and 400m³ of process wastewater to a waste disposal/recovery facility.</p>	Within 6 months following closure

	Decommissioning and decontamination of plant and equipment. Removal of plant and equipment. Decontamination of the building and structures.	
Sanitary Wastewater Storage Tank	Removal of 104 m ³ of water to a wastewater treatment facility. Decontamination of the structure.	Within 1 month following closure
Wheel Wash	Removal of 80 m ³ of water to a wastewater treatment facility. The decontamination of the structure.	Within 1 month following closure
Raw Materials	Removal of 5,000 litres hydraulic oil, 20,000 litres of diesel and 15 tonnes of acid to appropriately licensed facilities or for use in other facilities. Decontamination of containment structures.	Within 1 month following closure

3.1.6 Criteria for Successful Closure

The main criteria defining successful closure of the Drehid MBT Facility while ensuring minimum impact to the environment will be:

1. Removal of all waste materials and raw materials from the site;
2. All plant and equipment safely decommissioned, decontaminated and removed from site using standard procedures and authorised contractors;
3. All wastes handled, packaged, temporarily stored and disposed or recovered in a manner which complies with regulatory requirements;
4. All relevant records relating to waste and materials movement and transfer or disposal managed and retained throughout the closure process;
5. No surface water or groundwater contamination at the site as a result of the closure process (to be verified by means of environmental monitoring); and
6. The active implementation of the Environmental Management System during the closure period.

3.1.7 Closure Plan Costing

The expected costs associated with the closure plan are outlined in this section.

Table 3.1.2 Expected Costs Associated with Site Closure

MBT Facility Closure Plan - Specific Cost Items					
Infrastructural Element	Waste Disposal/Recovery	Decommissioning, Decontamination and Removal of Plant and Equipment	Decontamination of Buildings and Structures	Decommissioning Supervision	Total
Mechanical Treatment Building	€380,974	€100,000	€5,000	€2,500	€488,474
Outdoor SRF Storage Area	€200,000	€0	€2,500	€1,250	€203,750
Biological Treatment Building No. 1	€609,287	€50,000	€10,000	€5,000	€674,287
Biological Treatment Building No. 2	€609,287	€50,000	€10,000	€5,000	€674,287
Refining Building	€46,750	€50,000	€5,000	€2,500	€104,250
Biofilter/Odour Abatement Building No. 1	€93,450	€30,000	€5,000	€2,500	€130,950
Biofilter/Odour Abatement Building No. 2	€54,950	€30,000	€5,000	€2,500	€92,450
Biofilter/Odour Abatement Building No. 3	€93,450	€30,000	€5,000	€2,500	€130,950
Sanitary Wastewater Storage Tank	€2,912	€0	€1,000	€500	€4,412
Wheel Wash	€2,240	€3,000	€1,000	€500	€6,740
MBT Facility Closure Plan - General Cost Items					
Raw Materials					€0
Report to the EPA					€7,500
	Subtotal				€2,518,050
	Contingency 10%				€251,805
	Total (excl VAT)				€2,769,855

It is envisaged that any raw materials removed from the MBT Facility as part of the Closure Plan will at least generate a neutral revenue. Therefore, no costs are applied in the above table in respect of the removal of raw materials.

3.1.8 Closure Plan Update & Review

The Closure Plan will be reviewed and updated every three years following initial agreement. The updated and reviewed Closure Plan will take account of any site or process changes, technology changes and costing changes.

3.1.9 Closure Plan Implementation

The Applicant will provide four weeks written notice to the Agency in advance of the implementation of the Closure Plan. The Closure Plan will be fully implemented within 6 months of the permanent closure of the MBT Facility and therefore the permanent cessation of waste acceptance at the facility.

3.1.10 Closure Plan Test Programme

The continuance of environmental monitoring (similar to that undertaken during the operational phase of the MBT Facility) during the execution of the closure plan and for a period post closure will serve as a test programme to demonstrate the successful implementation of the closure plan.

Additional monitoring of water accumulating in any decontaminated structures (e.g. underground tanks, recessed areas, etc.) will be undertaken to further demonstrate the successful implementation of the closure plan.

3.1.11 Closure Plan Validation

A final validation report, including a certificate of completion, will be produced upon the successful completion of the Closure Plan. The validation report will consider the criteria set out in Section 3.1.6 of this Report.

It is anticipated that the Applicant would seek to surrender the Waste Licence following the submission of the Validation Report and the completion of the post operational monitoring programme.

3.2 RESTORATION AND AFTERCARE MANAGEMENT PLAN

Unlike a landfill facility, a quarry or a mine, the nature of the Drehid MBT Facility is such that restoration of the site (in the form of landform changes) following permanent closure will not be required. The buildings and site infrastructure have planning permission to remain in place indefinitely.

The requirement to remediate/restore soil and groundwater following closure is not expected to arise given that the proposed Drehid MBT Facility will comprise fully enclosed dedicated buildings for the treatment and processing of waste and that these buildings in turn will be fully bunded to prevent leachate and process water from entering the soils and groundwater environment.

Aftercare at the Drehid MBT Facility is expected to comprise of the continuance of environmental monitoring (similar to that undertaken during the operational phase of the MBT Facility) for a period post closure to confirm that emissions have ceased and that remaining emissions to surface water are in accordance with background levels. Aftercare will also include the long term maintenance of surface water drainage systems;

In summary, it is expected that, apart from the maintenance of surface water drainage systems, there will be no requirement for long-term supervision, monitoring, control, maintenance and reporting requirements for the closed Drehid MBT Facility.

*For inspection purposes only.
Consent of copyright owner required for any other use.*

4 STEP 3: ENVIRONMENTAL LIABILITY RISK ASSESSMENT (ELRA) FOR UNKNOWN LIABILITIES

Under the risk categorisation carried out in Section 2.0 above (Step 1: Initial Screening & Operational Risk Assessment), the Drehid MBT Facility is classified as having a Risk Category rating of 3. As such, the primary objectives of this ELRA are to:

- Identify and quantify environmental liabilities at the Drehid MBT Facility, focusing on unplanned, but possible and plausible events occurring during the operational phase;
- Calculate the value of financial provisions required to cover unknown liabilities;
- Identify suitable financial instruments to cover each of the financial provisions;
- Provide a mechanism to encourage continuous environmental improvement through the management of potential environmental risks.

The Site Specific ELRA will follow the process laid out in Section 4.4 of the '*EPA Guidance Document*':

1. Risk Identification;
2. Risk Classification - Occurrence Analysis;
3. Risk Classification - Severity Analysis;
4. Assessment of Risks;
5. Quantification of Unknown Environmental Liabilities.

4.1 RISK IDENTIFICATION

4.1.1 Risk Identification - Methodology

The '*EPA Guidance Document*' suggests the following method for identifying risks/potential hazards at a facility:

1. Identify all the 'Processes' on the site;
2. List the hazards associated with each process
3. Identify potential causes of failure of the processes;
4. Analysis the effect impacts on the environment.

The above information will be recorded on a Risk Identification Table, as shown in the example below:

Table 4.1 Example of Risk Identification Table

Risk ID	Process	Potential Hazard	Environmental Effect
No.	Identify Process	Describe Scenario for Occurrence of Potential Liability	Describe Consequence of Proposed Scenario on Environment

4.1.2 Risk Identification – Drehid MBT Facility

As recommended in the 'EPA Guidance Document', the method for identifying risks (presented in Section 4.1.1 above) was applied to the Drehid MBT Facility.

Firstly, the 'Processes' in operation at Drehid MBT Facility were identified using the Environmental Impact Statement and associated drawings and consultations with Bord na Móna. Drawings showing the facility infrastructure and the associated drainage features for the Drehid MBT Facility are attached in Appendix A.

Following the identification of processes, the 'Potential Hazards' associated with each process were identified, followed by identification of 'Environmental Effects' for each potential hazard. All 'Process', 'Potential Hazards' and 'Environmental Effects' identified are summarised on a Risk Identification Table for the Drehid MBT Facility in Table 4.2 overleaf.

For inspection purposes only.
Consent of copyright owner required for any other use.

Table 4.2 Risk Identification Table – Drehid MBT Facility

Risk ID	Process	Potential Hazard	Environmental Effect
1	Mechanical Treatment Process Biological Treatment Process	Fugitive Emissions (noise, odour, dust, bioaerosols)	Air and noise pollution to surrounding environment.
2	Mechanical Treatment Process Biological Treatment Process	Fire within buildings	Air pollution, generation of contaminated fire-water. Release of fire-water to the surface water environment would result in pollution of the receiving waters.
3	Mechanical Treatment Process Biological Treatment Process Outdoor SRF Storage	Leakage of leachate/process wastewater into soil, surface water and groundwater	Pollution of soil, subsoil, surface water and groundwater.
4	Biological Treatment Process	Uncontrolled release of combustible gases to atmosphere	Air pollution to surrounding environment.
5	Fuel Storage	Leakage / spillage of hydrocarbons from fuel storage areas into soil, surface water and groundwater	Pollution of soil, subsoil, surface water and groundwater.
6	Odour Abatement Process	Improper treatment of odourous air	Air pollution to surrounding environment.
7	Outdoor SRF Storage	Fire on storage slab	Air pollution, generation of contaminated fire-water. Release of fire-water to the surface water environment would result in pollution of the receiving waters.
8	Sanitary Wastewater Storage	Toilet and wash-water effluent discharged untreated from the site	Odours at discharge point and pollution of receiving waters.

For inspection purposes only. Consent of copyright owner required for any other use.

4.2 RISK CLASSIFICATION - OCCURRENCE ANALYSIS

4.2.1 Risk Classification - Occurrence Analysis - Methodology

Risk Classification Tables are required in order to evaluate and rank the risks compared to each other.

Occurrence analysis must be completed for each identified 'Potential Hazard' to assess the likelihood/probability of its occurrence.

Table 4.3 below provides the means to quantify/rate the 'Likelihood of Occurrence' of each 'Potential Hazard'.

Table 4.3 Risk Classification Table - Occurrence

Rating	Occurrence		
	Category	Description	Likelihood of Occurrence (%)
1	Very Low	Very Low Chance of Hazard Occurring in 30 Year Period	0 - 5
2	Low	Low Chance of Hazard Occurring in 30 Year Period	5 - 10
3	Medium	Medium Chance of Hazard Occurring in 30 Year Period	10 - 20
4	High	High Chance of Hazard Occurring in 30 Year Period	20 - 50
5	Very High	Very High Chance of Hazard Occurring in 30 Year Period	>50

4.2.2 Risk Classification - Occurrence Analysis – Drehid MBT Facility

Having identified the Processes for the Drehid MBT Facility, and the Potential Hazards & Environmental Effects associated with each, the '*Likelihood of Occurrence / Occurrence Rating*' of each Potential Hazard was assessed. This assessment was based on an analysis of the proposed environmental controls at the Drehid MBT Facility.

The 'Occurrence Rating' for each Potential Hazard identified is presented on the '*Assessment of Risks Table*' (Table 4.5) in Section 4.4 below.

4.3 RISK CLASSIFICATION - SEVERITY ANALYSIS

4.3.1 Risk Classification - Severity Analysis - Methodology

Risk Classification Tables are required in order to evaluate and rank the risks compared to each other.

Severity Analysis must be completed for each identified 'Potential Hazard' to assess the magnitude of the impact should the event occur.

Table 4.4 below provides the means to quantify/rate the Severity of each 'Potential Hazard'. As per the 'EPA Guidance Document', this table includes a range of perceived costs for remediation for each Severity Rating.

Table 4.4 Risk Classification Table - Severity (Drehid MBT Facility)

Rating / Score	Severity		
	Category	Description	Site Specific Cost of Remediation
1	Trivial	No Damage or Negligible Change to the Environment	<€30,000
2	Minor	Minor Impact / Localised or Nuisance	€30,000 - €200,000
3	Moderate	Moderate Damage to the Environment	€200,000 - €400,000
4	Major	Severe Damage to the Local Environment	€400,000 - €1,000,000
5	Massive	Massive Damage to a Large Area, Irreversible in Medium Term	>€1,000,000

4.3.2 Risk Classification - Severity Analysis – Drehid MBT Facility

Having identified the Processes for the Drehid MBT Facility, and the Potential Hazards & Environmental Effects associated with each, the 'Severity Rating' of each Potential Hazard was assessed.

The 'Severity Rating' for each Potential Hazard identified is presented on the 'Assessment of Risks Table' (Table 4.5) in Section 4.4 below.

4.4 ASSESSMENT OF RISKS

4.4.1 Assessment of Risks Table

A tailored 'Assessment of Risks Table' (Table 4.5 overleaf) was required to evaluate and rank the 'Risks' (=Potential Hazards') compared with each other. This Table assesses each 'Potential Hazard', in terms of its 'Severity Rating' and 'Likelihood of Occurrence Rating' to give an overall 'Risk Score' (= Severity Rating x Occurrence Rating).

Table 4.5 Assessment of Risks Table

Risk ID	Process	Potential Hazard	Environmental Effect	Severity Rating	Basis of Severity Rating	Occurrence Rating	Basis of Occurrence Rating	Risk Score (Severity x Occurrence)
1	Mechanical Treatment Process Biological Treatment Process	Fugitive Emissions (noise, odour, dust, bioaerosols)	Air and noise pollution to surrounding environment.	2	Affects on the health and welfare of humans	2	<ul style="list-style-type: none"> Distance from nearest receptor Fully enclosed buildings Odour abatement system in operation 	4
2	Mechanical Treatment Process Biological Treatment Process	Fire within buildings	Air pollution, generation of contaminated fire-water. Release of fire-water to the surface water environment would result in pollution of the receiving waters.	3	Contamination of receiving surface water environment	2	<ul style="list-style-type: none"> Recessed waste reception area to facilitate storage of firewater Recessed areas in Biological Treatment Buildings to facilitate storage of firewater Controlled outfall from surface water lagoons Ability to isolate surface water lagoons from receiving surface water environment 	6
3	Mechanical Treatment Process Biological Treatment Process Outdoor SRF Storage	Leakage of leachate/process water into soil, surface water and groundwater	Pollution of soil, subsoil, surface water and groundwater.	3	Contamination of soil, subsoil, surface water and groundwater. Aquifer classified with low vulnerability	1	<ul style="list-style-type: none"> Fully enclosed and bunded/contained buildings Construction Quality Assurance plan in place during construction phase Environmental monitoring of surface water and groundwater during operational phase High level alarms on all tanks 	3
4	Biological Treatment Process	Uncontrolled release of combustible gases to atmosphere	Air pollution to surrounding environment	2	Affects on the health and welfare of humans	2	<ul style="list-style-type: none"> Distance from nearest receptor Standby gas flare available Fully enclosed buildings Instrumentation to detect combustible gases in fully enclosed buildings 	4
5	Fuel Storage	Leakage / spillage of hydrocarbons from fuel storage areas into soil and groundwater	Pollution of soil, subsoil, surface water and groundwater.	3	Contamination of soil, subsoil, surface water and groundwater. Aquifer classified with low vulnerability.	2	<ul style="list-style-type: none"> Bunded fuel storage area Unloading procedures in place High level alarms on all tanks 	6
6	Odour Abatement Process	Improper treatment of odourous air	Air and noise pollution to surrounding environment	2	Affects on the health and welfare of humans	3	<ul style="list-style-type: none"> Distance from nearest receptor Acid scrubber for treatment of air with high ammonia levels Maintenance programme in place 	6
7	Outdoor SRF Storage	Fire on outdoor SRF slab	Air pollution, generation of contaminated fire-water. Release of fire-water to the surface water environment would result in pollution of the receiving waters.	3	Contamination of receiving surface water environment.	2	<ul style="list-style-type: none"> Ability to isolate runoff from the SRF storage area from the surface water collection system Controlled outfall from surface water lagoons Ability to isolate surface water lagoons from receiving surface water environment 	6
8	Sanitary Wastewater Storage	Toilet and wash-water effluent discharged untreated from the site	Odours at discharge point and pollution of receiving waters.	2	Contamination of receiving surface water environment.	2	<ul style="list-style-type: none"> High level alarms on all tanks Environmental monitoring of surface water and groundwater during operational phase 	4

4.4.2 Risk Register

A 'Risk Register' (Table 4.6 overleaf) ranks the identified 'Risks/Potential Hazards' in terms of decreasing 'Risk Score', as calculated on the 'Assessment of Risks Table' (Table 4.5 above). This allows the 'Risks/Potential Hazards' to be prioritised for Prevention, Mitigation & Management Measures (to be discussed in Section 4.5 below).

4.4.3 Risk Matrix

A 'Risk Matrix' (Figure 4.1 below) provides a pictorial illustration of the critical level of each Risk/Potential Hazard (*identified by 'Risk ID'*) and the required actions. The 'Risk Matrix' uses the 'Severity Rating' on the x-axis and the 'Likelihood of Occurrence Rating' on the y-axis.

OCCURRENCE RATING	Very High	5					
	High	4					
	Medium	3					
	Low	2		6			
	Very Low	1		1,4,8	2,5,7		
			1	2	3	4	5
			Trivial	Minor	Moderate	Major	Massive
			SEVERITY RATING				

Figure 4.1 Risk Matrix

Where:

Red: High Level Risk, Requiring Priority Attention

Yellow: Medium Level Risk, Requiring Attention, But Not Priority

Green (Light & Dark): Low Level Risk, Requiring Continuing Awareness & Monitoring on Regular Basis

The above Risk Matrix indicates that there are presently no risks in the 'Red Zone', or in the 'Yellow Zone', which represents medium level risks, requiring attention (mitigation or management action), but not priority attention. All risks/potential hazards are in or below the 'Green Zone' of the Risk Matrix, which represents low level risks, requiring continuing awareness and monitoring on a regular basis.

Table 4.6 Risk Register

Risk ID	Potential Hazard	Severity Rating	Occurrence Rating	Risk Score (Severity x Occurrence)
2	Fire within buildings	3	2	6
5	Leakage / spillage of hydrocarbons from fuel storage areas into soil and groundwater	3	2	6
6	Improper treatment of odourous air	2	3	6
7	Fire on outdoor SRF slab	3	2	6
1	Fugitive Emissions (noise, odour, dust, bioaerosols)	2	2	4
4	Uncontrolled release of combustible gases to atmosphere	2	2	4
8	Toilet and wash-water effluent discharged untreated from the site	2	2	4
3	Leakage of leachate/process water into soil, surface water and groundwater	3	1	3

During the detailed design process additional risk mitigation measures may be identified which may further reduce the risk assessment carried out above. It is therefore considered both reasonable and necessary that the Applicant be afforded an opportunity to revise the CRAMP and ELRA to reflect the detailed design of the facility which will take place following the granting of a waste licence.

4.5 QUANTIFICATION OF UNKNOWN ENVIRONMENTAL LIABILITIES

The ELRA for the Drehid MBT Facility requires that a 'Financial Model' be drawn up to estimate the environmental liability associated with all 'Unknown Liabilities' identified in the preceding Sections.

Each risk has two characteristics that are derived from the Risk Classification Tables (Table 4.3 - Occurrence Rating & Table 4.4 - Severity Rating and as applied in Table 4.5 - Assessment of Risks), that are used in the 'Financial Model':

- The range in probability (X - Y%) of the risk occurring (i.e. Occurrence Rating);
- The range in cost implications (€A - €B) if the risk occurs (i.e. Severity Rating).

The requirements of the Financial Model can be defined in terms of worst, most likely or best case scenarios. If the model is for the worst case scenario, then the higher end of each range is used in the calculations, if the model is for the most likely case then the medium of each range is used and similarly, if the best case scenario is required, then the lower end of each range is used, resulting in the lowest cost.

The simplest form of Financial Model can be based on simply multiplying the minimum, medium or maximum value of each range for each risk (depending on the scenario considered) and totalling the value for each risk in the register.

For the Drehid MBT Facility, the 'Worst Case Scenario' was calculated. Table 4.7 (overleaf) illustrates how the financial output for the worst-case scenario is calculated.

Based on the 'Worst Case Scenario Financial Model' (Table 4.7 overleaf), the 'Financial Instruments for Unknown Liabilities' can be selected, as outlined in Section 5.0.

*For inspection purposes only.
Consent of copyright owner required for any other use.*

Table 4.7 Worst Case Scenario Financial Model

Risk ID	Potential Hazard	Occurrence Rating	Likelihood of Occurrence Range (%)	Severity Rating	Cost Range (€)	Worst Case Probability (%) A	Worst Case Severity (€) B	Most Likely Scenario Cost (€) = A x B
1	Fugitive Emissions (noise, odour, dust, bioaerosols)	2	5 – 10	2	€30,000 - €200,000	10	€200,000	€20,000
2	Fire within buildings	2	5 – 10	3	€200,000 - €400,000	10	€400,000	€40,000
3	Leakage of leachate/process water into soil, surface water and groundwater	1	0 – 5	3	€200,000 - €400,000	5	€400,000	€20,000
4	Uncontrolled release of combustible gases to atmosphere	2	5 – 10	2	€30,000 - €200,000	10	€200,000	€20,000
5	Leakage / spillage of hydrocarbons from fuel storage areas into soil and groundwater	2	5 – 10	3	€200,000 - €400,000	10	€400,000	€40,000
6	Improper treatment of odourous air	3	10 - 20	2	€30,000 - €200,000	20	€200,000	€40,000
7	Fire on outdoor SRF slab	2	5 – 10	3	€200,000 - €400,000	10	€400,000	€40,000
8	Toilet and wash-water effluent discharged untreated from the site	2	5 – 10	2	€30,000 - €200,000	10	€200,000	€20,000
							TOTAL:	€240,000

For inspection purposes only.
Consent of copyright owner required for any other use.

5 STEP 4 - IDENTIFICATION OF FINANCIAL PROVISION (FP) AND INSTRUMENTS

The main objective of 'Financial Provision' for the Drehid MBT Facility is to ensure that sufficient financial resources are available to cover:

- Known environmental liabilities that will arise at the time of facility closure;
- Known environmental liabilities that are associated with the aftercare and maintenance of the facility until such time as the facility is considered to no longer pose a risk to the environment, and
- Unknown environmental liabilities that may occur during the operating life of the facility.

Financial Provision encompasses two aspects:

- Quantifying the financial amount of the environmental liabilities (known and unknown)
- Selecting appropriate financial instrument(s) to underwrite the liabilities.

5.1 CALCULATION OF FINANCIAL PROVISION

The calculation for Financial Provision required for the Drehid MBT Facility is determined using the combined figure from the 'Quantification of Environmental Liabilities' from the Step 2 - CRAMP and the Step 3 – ELRA and is summarised in Table 5.1 below.

Table 5.1 Outline Financial Provision

Liability Type	Description	Method of Quantification	Total Amount of Provision (€)	Total Amount €	Possible Financial Instruments
Known Liability (Closure)	Planned liabilities that will arise upon closure	Preparation of site specific Closure Plan	€2,769,855	Known: €2,769,855	Bond for Total Amount of €3,009,855
Unknown Liability	Risk of Unplanned Events Occurring on Site	ELRA Report, Including Analysis of Likely Cost Scenario	€240,000	Unknown: €240,000	

The extent of known environmental liabilities (i.e. CRAMP) and unknown environmental liabilities (i.e. ELRA) set out in this Report is based on the development of all infrastructural elements (mechanical treatment and biological treatment) of the proposed Drehid MBT Facility for the treatment of 250,000 tonnes of waste per annum. In order to provide for circumstances where the Applicant might not develop all of the proposed MBT infrastructural elements and throughput capacity at the outset, it is considered both reasonable and necessary that the Applicant be afforded an opportunity, following the granting of a waste licence and prior to the commencement of any development works, to revise the CRAMP and the ELRA to reflect the extent of MBT infrastructure and throughput capacity to be developed initially. Indeed, the format of Table 3.1.1 (Closure Plan Programme) and Table 3.1.2 (Expected Costs Associated with Site Closure) would

facilitate such an approach in that closure details and costs associated with the various infrastructural elements of the MBT Facility are set out.

It is also considered both reasonable and necessary that the Applicant be afforded an opportunity, to revise the CRAMP and ELRA to reflect the detailed design of the facility which will take place following the granting of a waste licence.

In the event that the EPA decides to grant a waste licence, the Applicant invites a Condition therein requiring the revision of the CRAMP and ELRA to reflect the detailed design of the MBT Facility.

5.2 FINANCIAL PROVISION

The proposal for financial provision to cover any environmental liabilities is set out as follows.

As evidence that Bord na Mona Plc will be in a position to put financial provision in place in the event that a waste licence is granted, updated company financial information is provided in Appendix B.

Known Environmental Liabilities

In respect of providing for known environmental liabilities connected with the closure of the Drehid MBT Facility, it is proposed to set up a Cash Deposit, Escrow Account or other alternative provision that satisfies the requirements of the EPA.

Unknown Environmental Liabilities

In respect of providing for unknown environmental liabilities arising from the operation of the Drehid MBT Facility, it is proposed to provide accidental pollution liability insurance that satisfies the requirements of the EPA. As an example, details of Bord na M6na's accidental pollution liability insurance for the existing Drehid Waste Management Facility are provided in Appendix C.

6 RECOMMENDATIONS

The CRAMP and ELRA will be reviewed as necessary to reflect any significant change at the Drehid MBT Facility, and in any case every three years following initial agreement. The results of the review shall be notified as part of the AER.

In particular, these reviews should:

- Update the Risk Identification Table, Assessment of Risks Table, Risk Register & Risk Matrix, through the addition of new risks or the omission of redundant risks;
- Ensure that the 'Financial Provision' continues to cover the environmental liabilities at the facility;
- Verify that the 'Financial Instruments' continue to effectively provide the adequate financial provision.

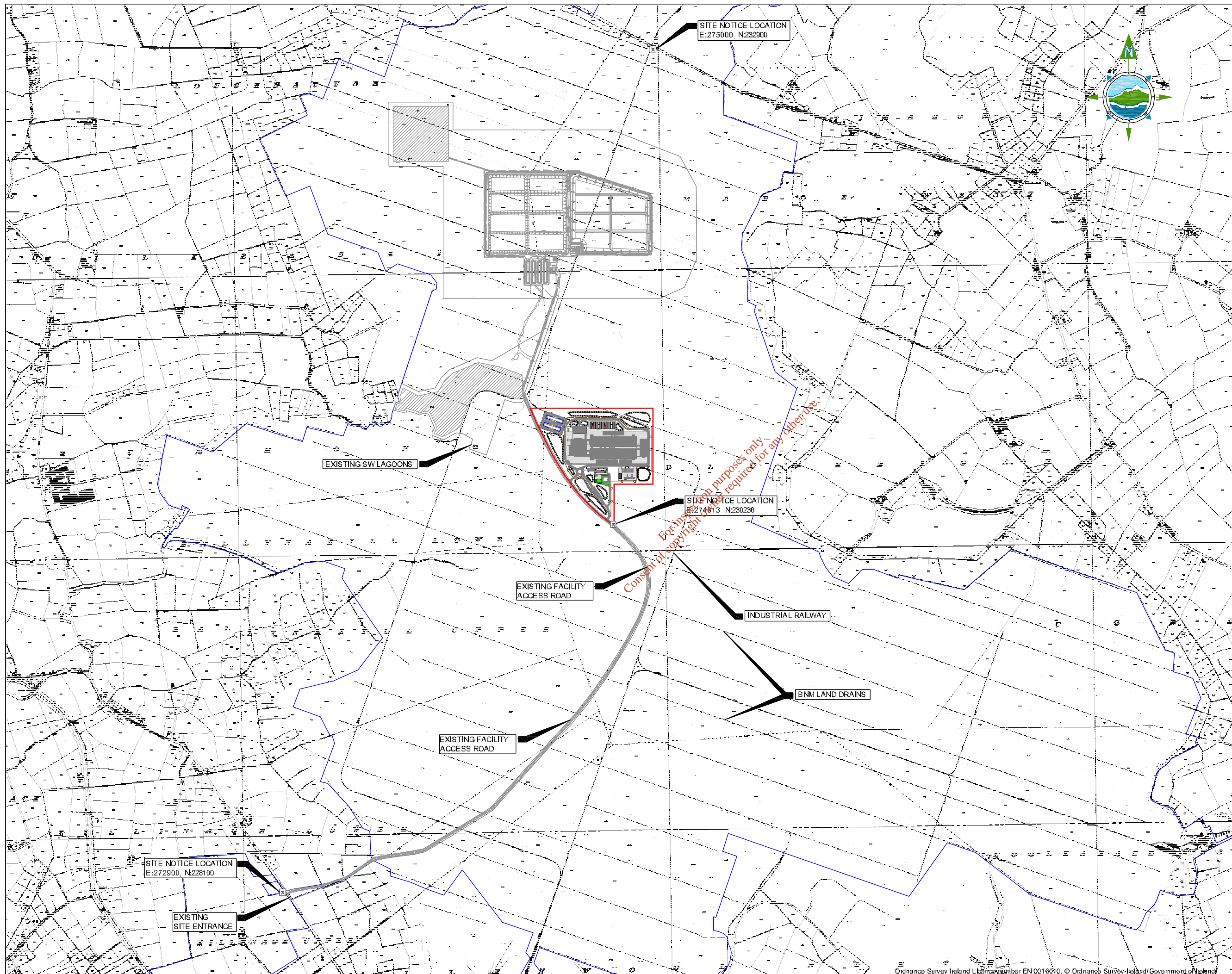
*For inspection purposes only.
Consent of copyright owner required for any other use.*

APPENDIX A

DRAWINGS

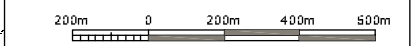
Drawing 6301-2301	Site Location Map
Drawing 6301-2304	Site Infrastructure
Drawing 6301-2305	Surface Water – General Arrangement
Drawing 6301-2306	Foul Water – General Arrangement

For inspection purposes only.
Consent of copyright owner required for any other use.



GENERAL LEGEND
 BORD NA MÓNA OWNERSHIP BOUNDARY
 SITE ACTIVITY BOUNDARY
 PERMITTED FACILITY BOUNDARY

- 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 BY THE CONTRACTOR OF ANY DISCREPANCIES BEFORE ANY WORK COMMENCES
 4. ALL LEVELS SHOWN RELATE TO ORDINANCE SURVEY DATUM AT MALINHEAD
 5. 6" OS SHEET NOS: KILDARE 3, 4, 5, 9 & 13



Rev	Date	Description	By	CHKD
A	27.06.12	ISSUED FOR WASTE LICENSE	WJ	DC

Client:
BORD NA MÓNA

Project:
DREHID MECHANICAL BIOLOGICAL TREATMENT (MBT) FACILITY

Title:
SITE LOCATION MAP

Scale @ A3: **1:20,000**

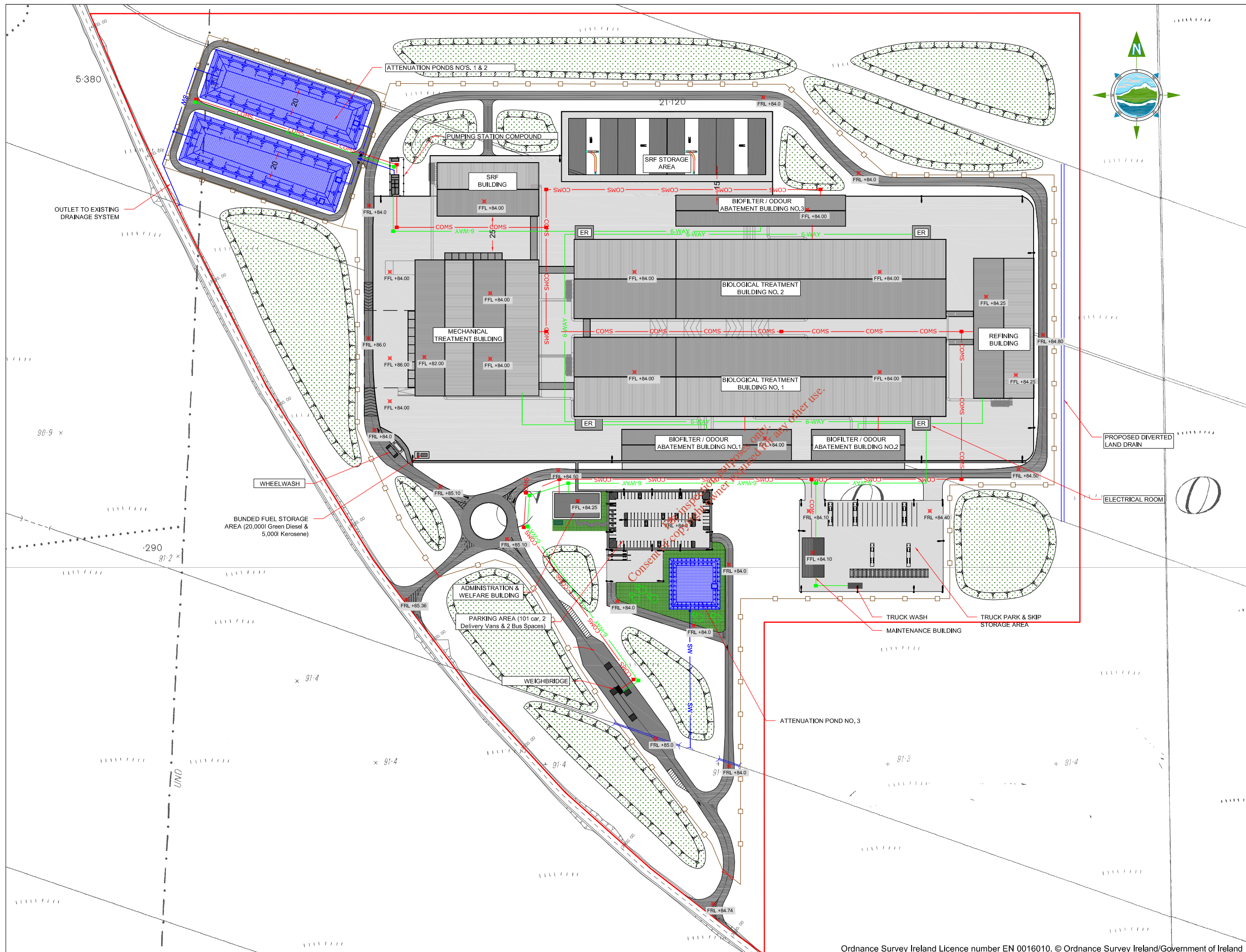
Prepared by: **M. Nolan** Created: **D. Conneran** Date: **May 2012**

Project Director: **D. Grehan**

Drawing Status: **Waste License**

TOBIN
 Part of the...
 TOBIN Consulting Engineers,
 Block 7, Old Belfrage Station, Coombe Park,
 Dublin 15, Ireland.
 Tel: +353-1-8330405
 Fax: +353-1-8330406
 E-mail: tobin@tobin.ie
 www.tobin.ie

Drawing No: **6301-2301** Revision: **A**



- GENERAL LEGEND**
- ACTIVITY BOUNDARY
 - PROPOSED ROAD
 - PROPOSED HARDSTAND
 - PROPOSED ATTENUATION POND
 - PROPOSED GREEN AREA
 - PROPOSED BUILDINGS
 - PROPOSED LANDSCAPED SCREENING BERM
 - PROPOSED POWER SUPPLY DUCTING
 - PROPOSED COMMS DUCTING
 - FINISHED ROAD LEVEL FRL +###.##
 - FINISHED FLOOR LEVEL FFL +###.##
 - PROPOSED STREET LIGHTING
 - PROPOSED LANDSCAPED SCREENING BERM

- NOTES:**
1. FIGURED DIMENSIONS ONLY TO BE TAKEN FROM THIS DRAWING.
 2. ALL DRAWINGS TO BE CHECKED BY THE CONTRACTOR ON SITE.
 3. ENGINEER/EMPLOYERS REPRESENTATIVE, AS APPROPRIATE, TO BE INFORMED BY THE CONTRACTOR OF ANY DISCREPANCIES BEFORE ANY WORK COMMENCES.
 4. THE CONTRACTOR SHALL UNDERTAKE A THOROUGH CHECK FOR THE ACTUAL LOCATION OF ALL SERVICES/UTILITIES, ABOVE AND BELOW GROUND, BEFORE ANY WORK COMMENCES.
 5. ALL LEVELS SHOWN RELATE TO ORDANCE SURVEY DATUM AT MALIN HEAD.

Issue	Date	Description	By	Chkd.
A	27.06.12	ISSUED FOR WASTE LICENCE	M.N.	D.C.

Client:

 Project:
DREHID MECHANICAL BIOLOGICAL TREATMENT (MBT) FACILITY
 Title:
FACILITY INFRASTRUCTURE & SERVICES GENERAL ARRANGEMENT

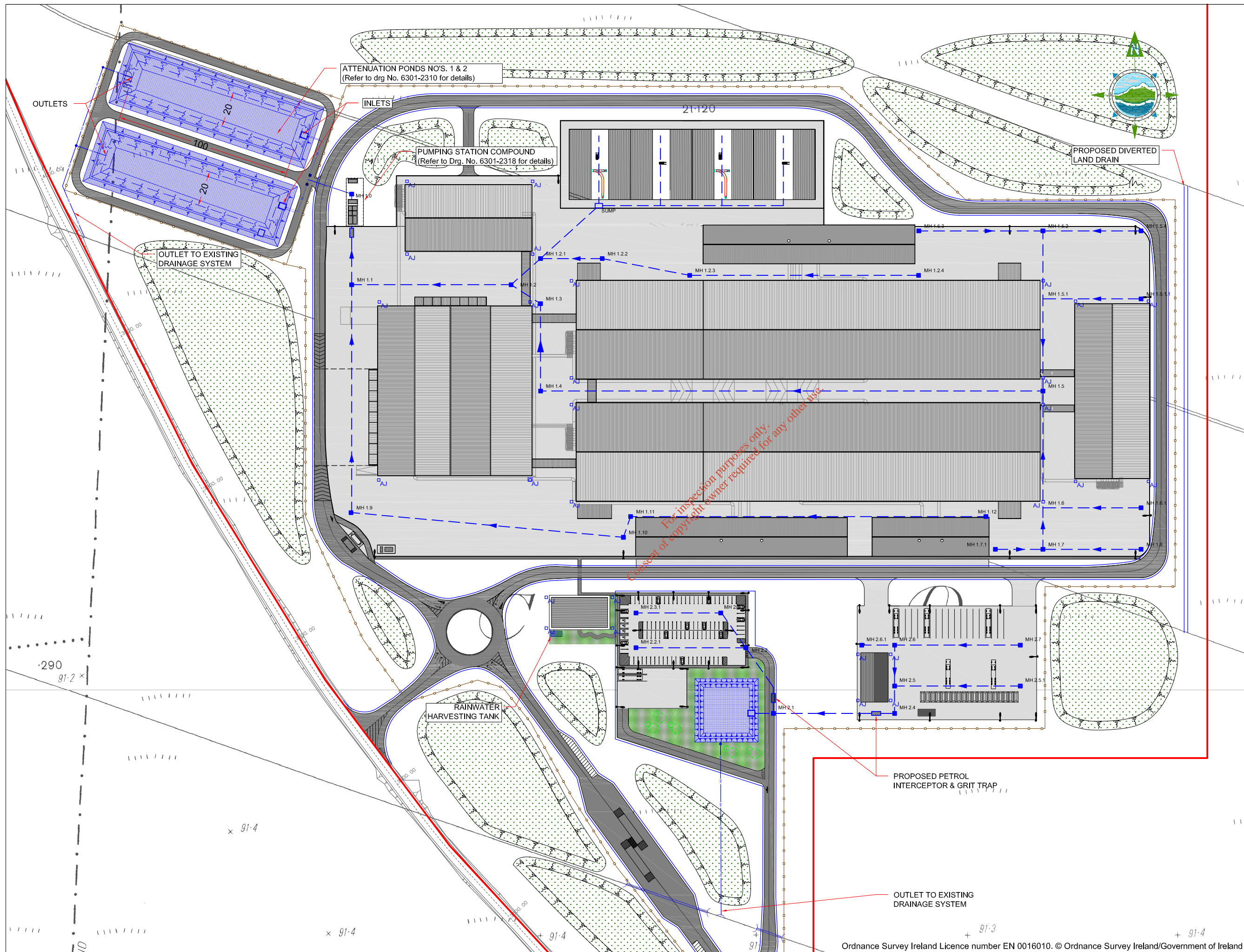
Scale @ A3: 1:2,500

Prepared by:	Checked:	Date:
M. Nolan	D. Conneran	May 2012
Project Director: D. Grehan		


 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

No part of this document may be reproduced or transmitted in any form or stored in any retrieval system of any nature without the written permission of Patrick J. Tobin & Co. Ltd. as copyright holder except as agreed for use on the project for which the document was originally issued.

Drawing No.: **6301-2304** Issue: **A**



- GENERAL LEGEND**
- ACTIVITY BOUNDARY
 - PROPOSED ROAD
 - PROPOSED HARDSTAND
 - PROPOSED ATTENUATION POND
 - PROPOSED GREEN AREA
 - PROPOSED BUILDINGS
 - PROPOSED LANDSCAPED SCREENING BERM
- DRAINAGE LEGEND**
- PROPOSED SURFACE WATER DRAIN
 - PROPOSED FRENCH DRAIN
 - PROPOSED ATTENUATION POND
 - PROPOSED SURFACE WATER MH
 - PROPOSED DIVERTED DRAINAGE DITCH
 - AJ'S FOR DRAINAGE OF BUILDING ROOFS

- NOTES:**
1. FIGURED DIMENSIONS ONLY TO BE TAKEN FROM THIS DRAWING.
 2. ALL DRAWINGS TO BE CHECKED BY THE CONTRACTOR ON SITE
 3. ENGINEER/EMPLOYERS REPRESENTATIVE, AS APPROPRIATE, TO BE INFORMED BY THE CONTRACTOR OF ANY DISCREPANCIES BEFORE ANY WORK COMMENCES
 4. THE CONTRACTOR SHALL UNDERTAKE A THOROUGH CHECK FOR THE ACTUAL LOCATION OF ALL SERVICES/UTILITIES, ABOVE AND BELOW GROUND, BEFORE ANY WORK COMMENCES
 5. ALL LEVELS SHOWN RELATE TO ORDNANCE SURVEY DATUM AT MALIN HEAD

Issue	Date	Description	By	Chkd.
A	27.06.12	ISSUED FOR WASTE LICENCE	M.N.	D.C.

Client:

BORD NA MÓNA

Project:

**DREHID
MECHANICAL BIOLOGICAL
TREATMENT (MBT) FACILITY**

Title:

**SURFACE WATER
LAYOUT PLAN**

Scale @ A3: 1:2,000

Prepared by: M. Nolan Checked: D. Conneran Date: 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

Drawing No.: **6301-2305** Issue: **A**