

**RILTA ENVIRONMENTAL LTD. (W0185-01)  
Block 14A1 Grants Road,  
Greenogue Business Park,  
Rathcoole,  
Co. Dublin**

# **Appropriate Assessment Screening Report for Technical Amendment (Storage Only)**

October 2016

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# REPORT

**PROJECT:**

**RILTA AA 2016**

**CLIENT:**

**RILTA Environmental Ltd.**

**COMPANY:**

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**DOCUMENT AMENDMENT RECORD**

**Client:** RILTA Environmental Ltd.

**Project:** RILTA AA 2016

**Title:** Appropriate Assessment Screening Report (Storage Only)

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<b>TOBIN Consulting Engineers</b>							

**TABLE OF CONTENTS**

**1 INTRODUCTION ..... 1**

**2 THE APPROPRIATE ASSESSMENT PROCESS ..... 1**

2.1 INTRODUCTION TO APPROPRIATE ASSESSMENT .....1

2.2 APPROPRIATE ASSESSMENT METHODOLOGY .....2

2.3 GUIDANCE .....3

**3 SCREENING ASSESSMENT..... 4**

3.1 INTRODUCTION.....4

3.2 RACKING FOR STORAGE .....4

3.2.1 *Site Location*..... 4

3.2.2 *Description of Project*..... 4

3.3 DESCRIPTION OF THE EXISTING ENVIRONMENT.....7

3.3.1 *Information Sources* ..... 7

3.3.2 *Existing Environment*..... 7

3.4 IDENTIFICATION OF RELEVANT NATURA 2000 SITES .....10

3.5 POTENTIAL ADVERSE EFFECTS ON NATURA 2000 SITES.....15

3.5.1 *Potential for direct impacts*..... 15

3.5.2 *Potential for indirect impacts* ..... 15

3.5.3 *Potential for in-combination or cumulative effects*..... 15

**4 SCREENING CONCLUSION ..... 16**

**TABLES**

Table 3-1 Designated sites within 15km of RILTA Environmental Ltd. ....10

Table 3-2 Assessment of Relevant Designated Natura 2000 Sites .....11

**FIGURES**

Figure 1 Site Location .....6

Figure 2 Surface Water Features within the wider study area of RILTA Environmental Ltd .....9

Figure 3 Designated Natura 2000 sites within a 15km radius of RILTA Environmental Ltd.....14

**Appendix 1: Site Synopsis**

## 1 INTRODUCTION

RILTA has requested a Technical Amendment to Waste Licence W0185-01, for the installation of pallet racking for storage purposes at the existing RILTA Waste Facility, Block 14A1 Greenogue Business Park, Rathcoole, Co. Dublin. The waste material for storage will consist of both flue gas residue and boiler ash, produced at the Dublin Waste to Energy (WtE) Covanta Plant located in Poolbeg, Co. Dublin. Following storage, the waste residue will be shipped to a treatment facility in Norway for sustainable re-use. This report forms a Screening for Appropriate Assessment to inform the Technical Amendment.

The purpose of this Screening Report is to inform the Appropriate Assessment (AA) process, which is undertaken by the appropriate competent authority. Appropriate Assessment is an assessment of whether a plan or project, either alone or in combination with other plans or projects, could have a significant effect on a European site, otherwise known as Natura 2000 sites (EC Habitats Directive 92/43/EEC), in view of the site's conservation objectives.

## 2 THE APPROPRIATE ASSESSMENT PROCESS

### 2.1 INTRODUCTION TO APPROPRIATE ASSESSMENT

European and national legislation places a collective obligation on Ireland and its citizens to maintain habitats and species in the Natura 2000 network at a favourable conservation condition. The Government and its agencies are responsible for the implementation and enforcement of regulations, in particular Part XAB of the Planning and Development (Amendment) Act 2010 and the European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. 477) (often referred to as the Habitats Regulations), to ensure the ecological integrity of these sites.

An AA is an assessment of whether a plan or project, alone or in combination with other plans or projects, could result in significant effects on a European site in view of the site's conservation objectives.

Council Directive 92/43/EEC of the 21 May 1992 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 (Birds and Natural Habitats) Regulations 2011 (S.I. No. 477). The Birds Directive, Directive 2009/147/EC of the European Parliament, 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). The requirement for an AA is outlined in Article 6(3) and 6(4) of the EU Habitats Directive. Article 6(3) of the Habitats Directive requires that:

*“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.”*

Furthermore, Article 6(4) of the Habitats Directive requires that:

*“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.”*

An AA should be based on best scientific knowledge and Planning Authorities should ensure that scientific data is utilised. This report provides details regarding the AA Screening, which will inform the AA process undertaken by the statutory authority. Information for this Screening Report was obtained by a desk study undertaken by a professional Ecologist from TOBIN Consulting Engineers who is familiar with the RILTA site.

## 2.2 APPROPRIATE ASSESSMENT METHODOLOGY

There are four main stages in the AA process, the requirements for each depending on likely impacts to European Sites (candidate SAC/ SPA).

**Stage One: Screening** – This process identifies the likely significant impacts upon a European site from a proposed project or plan. Its purpose is to determine, on the basis of a preliminary assessment and objective criteria, whether a plan or project which is not directly connected with or necessary to the management of the site as a European Site, individually or in combination with other plans or projects, is likely to have a significant effect upon the European site. A project may be “screened-in” if there is a possibility or uncertainty of significant adverse effects upon the European site, requiring a Stage Two AA. If there is no evidence to suggest significant effects due to the proposed plan or development the project is “screened-out” and progression to AA is not required.

**Stage Two: Appropriate Assessment** - Consideration is given if the project or plan may adversely impact the integrity of surrounding European Sites, 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 adverse impacts have been identified, an assessment of the potential mitigation to reduce/minimise/avoid such impacts is required. This stage is the responsibility of the planning authority

which is informed by a Natura Impact Statement. Stage Two, i.e. AA, is required where uncertainty of effect arises or a potential effect has been defined which requires further procedures/ mitigation to remove uncertainty of a defined impact.

**Stage Three: Assessment of Alternative Solutions** – Where adverse effects on a European Site are identified at the end of Stage Two despite the application of mitigation, this third stage examines alternative ways of achieving the objectives of the project or plan that avoid adverse impacts on the integrity of the European Site.

**Stage Four: Assessment Where Adverse Impacts Remain** - The fourth and final stage applies where the project can only proceed for Imperative Reasons of Overriding Public Interest (IROPI), despite the plan or project resulting in adverse effects on European Site(s). This stage requires an assessment of compensation measures to maintain or enhance the overall coherence of the Natura 2000 network.

## 2.3 GUIDANCE

This report has been carried out using the following guidance:

- Appropriate Assessment under Article 6 of the 'Habitats Directive: Guidance for Planning Authorities. (Circular NPW 1/10 & PSSP 2/10)<sup>1</sup>
- Appropriate Assessment of Plans and Projects in Ireland - Guidance for Planning Authorities. (Department of Environment, Heritage and Local Government, 2010)<sup>2</sup>.
- 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)<sup>3</sup>.
- 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 2002)<sup>4</sup>.
- 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)<sup>5</sup>.

<sup>1</sup> NPWS (2010). Legislation Unit, NPWS Department of Environment, Heritage and Local Government, 7 Ely Place Dublin 2.

<sup>2</sup> National Parks and Wildlife Services (2010):

[http://www.npws.ie/sites/default/files/publications/pdf/NPWS\\_2009\\_AA\\_Guidance.pdf](http://www.npws.ie/sites/default/files/publications/pdf/NPWS_2009_AA_Guidance.pdf)

<sup>3</sup> European Commission (2000)

[http://ec.europa.eu/environment/nature/natura2000/management/docs/art6/provision\\_of\\_art6\\_en.pdf](http://ec.europa.eu/environment/nature/natura2000/management/docs/art6/provision_of_art6_en.pdf)

<sup>4</sup> European Commission (2000)

[http://ec.europa.eu/environment/nature/natura2000/management/docs/art6/natura\\_2000\\_assess\\_en.pdf](http://ec.europa.eu/environment/nature/natura2000/management/docs/art6/natura_2000_assess_en.pdf)

<sup>5</sup> European Commission (2007)

[http://ec.europa.eu/environment/nature/natura2000/management/docs/art6/guidance\\_art6\\_4\\_en.pdf](http://ec.europa.eu/environment/nature/natura2000/management/docs/art6/guidance_art6_4_en.pdf)

## 3 SCREENING ASSESSMENT

### 3.1 INTRODUCTION

This stage of the process identifies any likely significant effects upon European sites from a project or plan, either alone or in combination with other projects or plans. A series of questions are asked during the Screening Stage of the AA process in order to determine:

- Whether a plan or project can be excluded from AA requirements because it is directly connected with or necessary to the management of a European Site; and
- Whether the project or plan will have a potentially significant effect on a European Site, either alone or in combination with other projects or plans, in view of the site's conservation objectives or if residual uncertainty exists regarding potential impacts.

This report comprises a Screening Assessment of the storage activities in which potential impacts to European Sites are considered. Best practice methods described below will be required and are evaluated as an integral part of the activities being considered in the Technical Amendment.

### 3.2 RACKING FOR STORAGE

#### 3.2.1 Site Location

The Technical Amendment submission is for a change of storage equipment within an existing industrial building in Greenogue Business Park, Rathcoole, County Dublin. The immediate locality of the business park is characterised by industrial development, in an otherwise agricultural landscape, located on the outskirts of Dublin City (see Figure 1). The business park is located less than 2km north of the N7 dual carriageway. From there, the Regional R120 Road links the N7 to the internal road network of the business park.

#### 3.2.2 Description of Project

The installation works will comprise of:

- Preparatory works;
- Installation of a pallet racking system for the warehouse; and
- Control measures to prevent fugitive emissions.

Once the racking area is installed, RILTA proposes to aid in the recovery of waste residues from the DWtE Covanta Plant. The DWtE Covanta Plant will produce three solid residues, two of which will be received by the RILTA Facility;

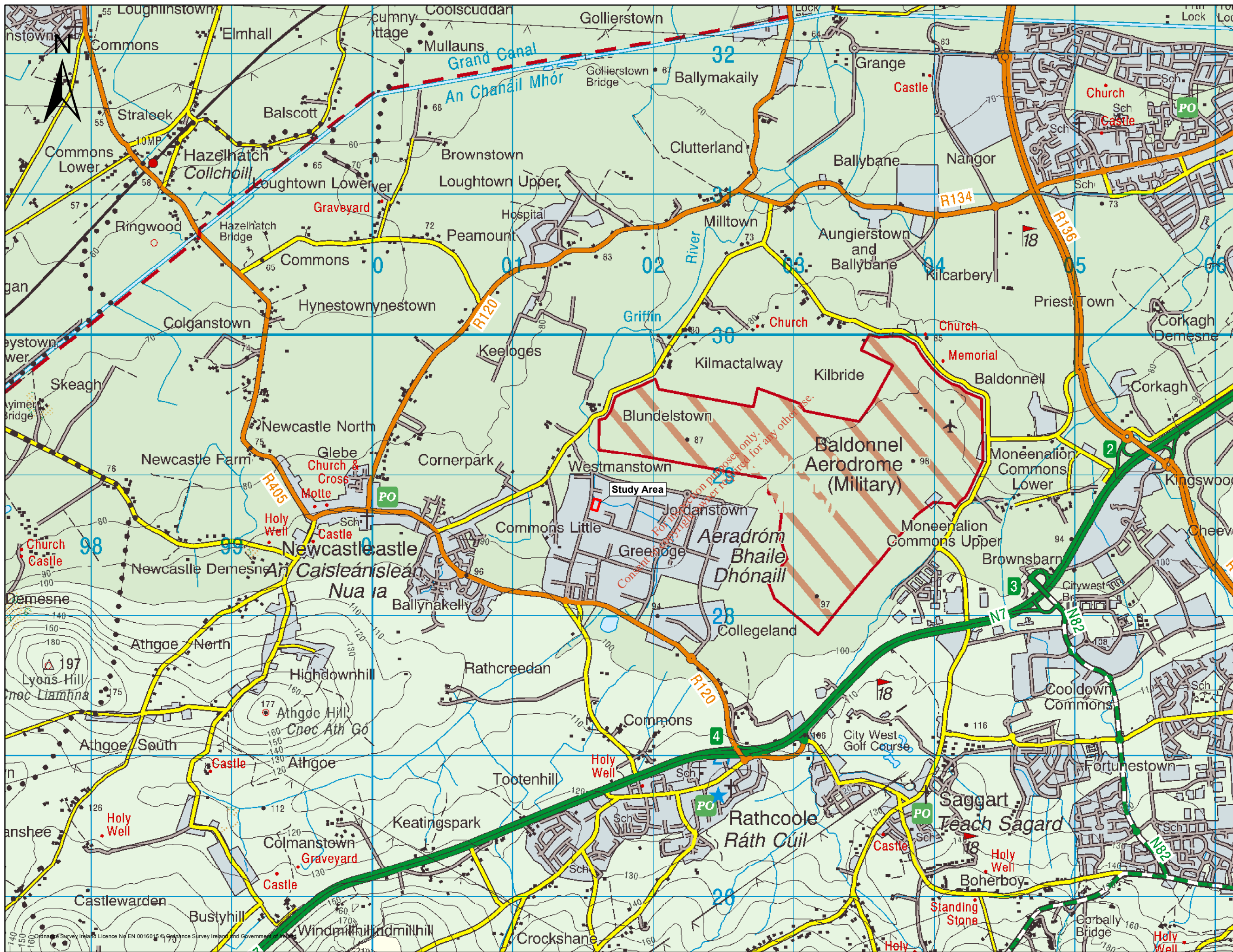
- Boiler ash (approximately 3,000 tonnes per annum); and



- Flue gas treatment residues (approximately 25,000 tonnes per annum).

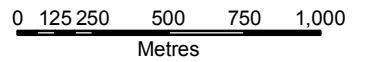
All works associated with the Installation and Operational phases of the activities will occur within an existing building. In addition, the outdoor area of the premises is existing hardstanding.

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**Legend**

Application 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 OF ANY DISCREPANCIES BEFORE ANY WORK COMMENCES
  4. ALL LEVELS RELATE TO ORDNANCE SURVEY DATUM AT MALIN HEAD

Issue	Date	Description	By	Chkd.
A	SEP-16	ISSUED	G.F.	J.Q.



Project: RILTA Technical Amendment AA (Storage Only)

Title: Site Location

Scale @ A3: 1:25,000

Prepared by: G.Fil  
Checked: J.Quinn  
Date: September 2016

Project Manager: S.Tinnelly

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Figure 1 A

### 3.3 DESCRIPTION OF THE EXISTING ENVIRONMENT

#### 3.3.1 Information Sources

The ecological desktop study to inform the Appropriate Assessment Screening comprised the following elements:

- Identification of European Sites within the Zone of Influence (Zol) of the licensed facility through the identification of potential pathways/links from the licensed facility and European sites and/or supporting habitats;
- Review of the National Parks and Wildlife Service (NPWS) site synopses (Natura 2000 data form) and conservation objectives for European Sites<sup>6</sup> with identification of potential pathways from the licensed facility ; and
- Review of available literature and web data. This included a detailed review of the NPWS website including mapping and available reports<sup>7</sup> for relevant sites and in particular Qualifying Interests described and their conservation objectives.

An outline of the key datasets and information sources reviewed as part of the study are provided below:

- National Parks and Wildlife Service (NPWS) database of areas designated (and proposed) for nature conservation;
- National Biodiversity Data Centre database (NBDC);
- Water Framework Directive website<sup>8</sup>; and
- EPA Envision database (<http://gis.epa.ie/Envision>); and
- OSI and Google aerial photography and mapping were used to identify non-designated semi-natural habitats of local ecological importance.

#### 3.3.2 Existing Environment

The licensed facility is located within an existing industrial building in the north-western sector of Greenogue Business Park, Rathcoole, County Dublin. The Facility encompasses approximately 0.5 hectares of hard standing of low ecological value. Buildings onsite have 2,183m<sup>2</sup> of gross floor area comprising of a main warehouse, ancillary offices, a hazardous chemical store with an underground water retention tank, three covered and bulk-tanker bays and a covered dispatch area along with a weighbridge, parking and associated surface water infrastructure. The industrial estate is located 1.5km

<sup>6</sup> National Parks and Wildlife Service: <http://www.npws.ie/protectedsites/> (accessed June, 2016)

<sup>7</sup> National Parks and Wildlife Service: <http://www.npws.ie/mapsanddata/> (accessed June, 2016)

<sup>8</sup> EPA & RBD Coordinating Bodies <http://www.wfdireland.ie/wfd-more.html> (accessed June, 2016)

south-east of the village of Newcastle. The immediate locality of the business park is characterised by industrial development, in an otherwise agricultural landscape, located on the outskirts of Dublin City (see Figure 1). The business park is located less than 2km north of the N7 dual carriageway. From there, the Regional R120 Road links the N7 to the internal road network of the business park.

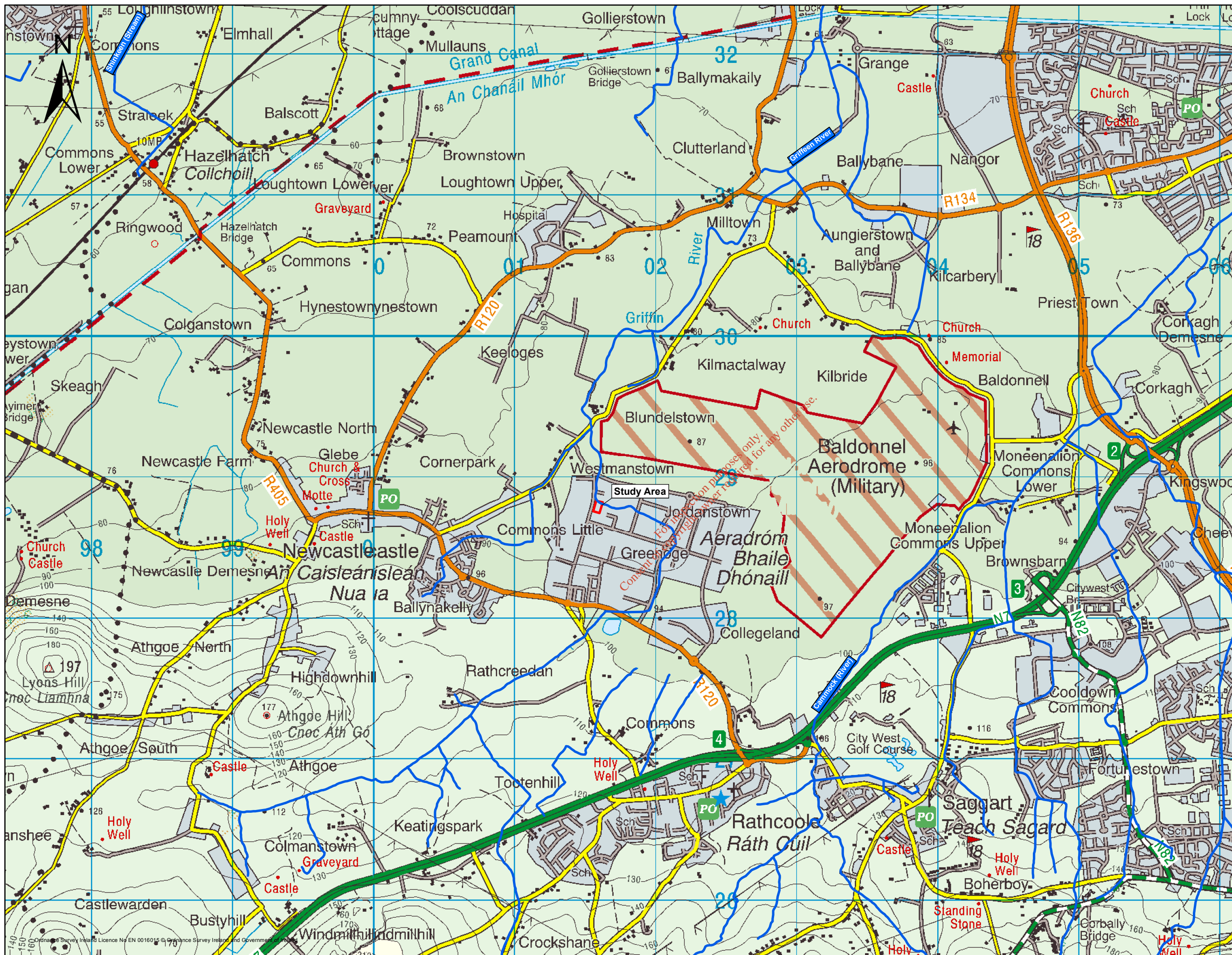
The Greenogue Business Park is drained by the Grifeen River, which bisects the business park less than 500m south of the RILTA facility. The Grifeen River is culverted under the Grand Canal and joins the River Liffey approximately 7 km downstream at Lucan Village<sup>9</sup> (see Figure 2).

Currently, all surface water runoff from tanker bays, vehicle parking and marshalling areas are directed through a Class 1 interceptor before discharging to a surface water sewer. Wastewater drains to a 5m<sup>3</sup> self-contained monitoring tank prior to discharge. Wastewater is only discharged to the sewer following confirmation that the discharge has met the requirement of Schedule C.3: Emissions Limits for Foul Water Emissions to Sewer, D.1.1 Monitoring locations, and D.4.1 monitoring and frequency technique.

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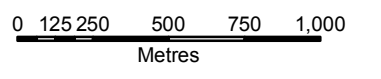
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<sup>9</sup> <http://gis.epa.ie/Envision>



### Legend

- Application Boundary
- Stream



- NOTES**
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Issue	Date	Description	By	Chkd.
A	SEP-16	ISSUED	G.F.	J.Q.

Client: **RILTA Environmental Limited**

Project: **RILTA Technical Amendment AA (Storage Only)**

Title: **Surface Water Features**

Scale @ A3: **1:25,000**

Prepared by: G.Fil  
Checked: J.Quinn  
Date: September 2016

Project Manager: S.Tinnelly

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**Figure 2** Issue: **A**

### 3.4 IDENTIFICATION OF RELEVANT NATURA 2000 SITES

A standard source-receptor-pathway conceptual model was used to identify a preliminary list of 'relevant' European sites (i.e. those which could be potentially affected). This conceptual model is a standard tool in environmental assessment. In order for an effect to occur, all three elements of this mechanism must be in place. The absence or removal of one of the elements of the mechanism means there is no likelihood for the effect to occur. In the context of the activities being considered, the model comprises:

- Source (s) – e.g. sediment run-off
- Pathway (s) – e.g. drains and streams connecting to a European site
- Receptor (s) – Qualifying habitats and species of European sites

Direct impacts will not occur to any Natura 2000 site as the licensed facility is outside of and at a distance from any designated European Site. Six European sites are located within 15km of the licensed facility site (refer to Figure 3); these sites are listed in Table 3-1 below. The Site Synopses for each site listed is included in Appendix 1.

**Table 3-1 Designated sites within 15km of RILTA Environmental Ltd.**

Site Name	Designation	Site Code	Approximate distance to licensed facility
Rye Water Valley/Cartron	SAC	001398	7km North
Glenasmole Valley	SAC	001209	8.4 South East
Red Bog	SAC	000397	11.8 South West
Poulaphuca Reservoir	SPA	004063	13 km South
Wicklow Mountains	SAC	002122	13.1 km South East
Wicklow Mountains	SPA	004040	13.1 km South East

Due to the degree of separation, dust and noise are unlikely to cause a significant impact to any of the Designated Sites listed above. The key issue being considered is the likelihood of indirect or secondary effects such as any sediment run-off or pollutants, or invasive species, entering watercourses in the study area and reaching designated sites. This could potentially interfere with the relationships that sustain Annex I habitats and Annex II species.

There are no pathways for effects identified with respect to any designated Natura 2000 sites identified within the Zol; including sites potentially occurring outside of the 15km buffer (North Dublin Bay SAC, South Dublin Bay SAC, South Dublin Bay and River Tolka Estuary SPA). Potential impacts and their significance, if any, of a plan or project in this area on these European sites are considered in Table 3-2 below, where the potential for a source-receptor-pathway relationship has been identified. Impacts are considered in light of the conservation objectives of the Annex I habitats and Annex II species for which these sites are designated.

**Table 3-2 Assessment of Relevant Designated Natura 2000 Sites**

European Sites	Designated Features 7568	Likely Significant Effects
Rye Water Valley/ Carton SAC	<p><i>Vertigo angustior</i> [1014]  <i>Vertigo moulinsiana</i> [1016]                      Petrifying springs with tufa formation (Cratoneurion) [7220]</p>	<p>This is the nearest SAC to the licensed facility which is located ca. 7 km north of the study area. This SAC is selected for the Annex I habitat Petrifying Springs, and the Annex II species Narrow-mouthed Whorl Snail (<i>Vertigo angustior</i>) and Desmoulin's Whorl Snail (<i>Vertigo moulinsiana</i>). The designation includes wetland, woodland and spring habitats and supports several rare and threatened plant and animal species.</p> <p>Following the source-receptor-pathway model, the licensed facility is not linked to this European site. This SAC is upstream of any linkages with the River Liffey and the licensed facility and therefore there is no likelihood of significant effects on the site from the Technical Amendment changes under consideration.</p>
Glenasmole Valley SAC	<p>Semi-natural dry grasslands and scrubland facies on calcareous substrates (<i>Festuco Brometalia</i>)(*important orchid sites) [6210]                      Molinia meadows on calcareous, peaty or clayey-silt-laden soils (<i>Molinion caeruleae</i>) [6410]                      Petrifying springs with tufa formation (Cratoneurion) [7220]</p>	<p>This site is located in the Dublin Mountains and is designated for terrestrial habitats and springs. The River Dodder flows through the valley and has been impounded here to form two reservoirs which supply water to south Dublin.</p> <p>Following the source-receptor-pathway model, the licensed facility is not linked to this European site. It is hydrologically separate from the study area (River Dodder catchment) and approximately 8.4 km from the licensed facility at its nearest point. Therefore there is no likelihood of significant effects on the site from the Technical Amendment changes under consideration.</p>
Red Bog SAC	<p>Transition mires and quaking bogs [7140]</p>	<p>This site is located 11.8 km south west of the licensed facility and is designated for transition mires and quaking bogs.</p> <p>Following the source-receptor-pathway model, the licensed facility</p>

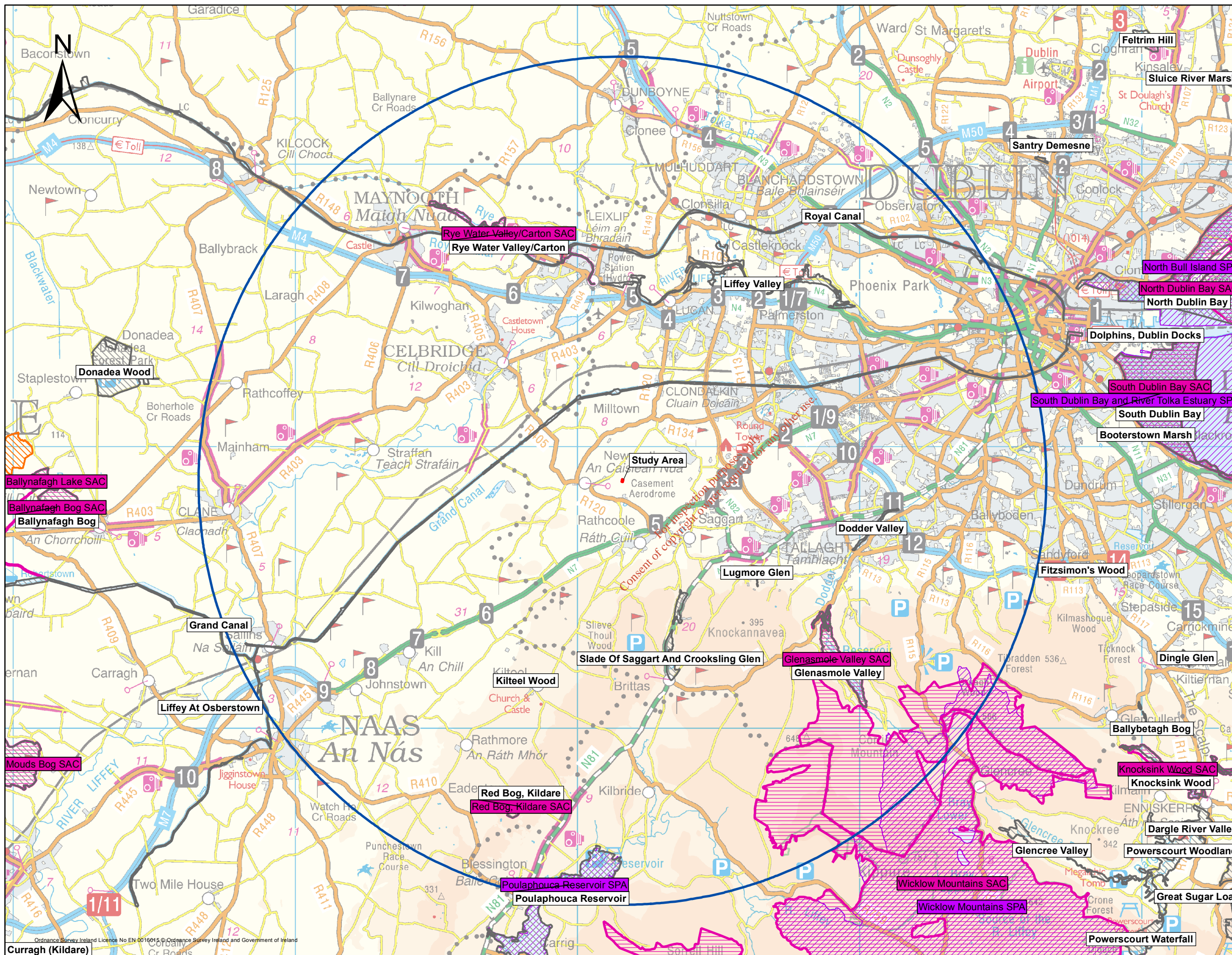
		is not linked to this European site. It is hydrologically separate from the study area and sufficiently removed. Therefore there is no likelihood of significant effects on the site from the Technical Amendment changes under consideration
Poulaphouca Reservoir SPA	<p>Greylag Goose (<i>Anser anser</i>) [A043]</p> <p>Lesser Black-backed Gull (<i>Larus fuscus</i>) [A183]</p>	<p>This site is located in the foothills of the Wicklow Mountains and is designated for Greylag Goose and Lesser Black-backed Gull.</p> <p>Following the source-receptor-pathway model, the licensed facility is not linked to this European site. It is hydrologically separate from the study area and approximately 13 km from the licensed facility at its nearest point. Therefore there is no likelihood of significant effects on the site from the Technical Amendment changes under consideration.</p>
Wicklow Mountains SAC	<p>Otter (<i>Lutra lutra</i>) [1355]</p> <p>Oligotrophic to mesotrophic standing waters with vegetation of the Littorelletea uniflorae and/or of the Isoetes-Nanojuncetea [3130]</p> <p>Natural dystrophic lakes and ponds [3160]</p> <p>Northern Atlantic wet heaths with <i>Erica tetralix</i> [4010]</p> <p>European dry heaths [4030]</p> <p>Alpine and Boreal heaths [4060]</p> <p>Calaminarian grasslands of the <i>Violetalia calaminariae</i> [6130]</p> <p>Species-rich <i>Nardus</i> grasslands, on siliceous substrates in mountain areas (and submountain areas, in Continental Europe) [6230]</p> <p>Blanket bog (*active only) [7130]</p> <p>Siliceous scree of the montane to snow levels (<i>Androsacetalia alpinae</i> and <i>Galeopsietalia ladani</i>) [8110]</p> <p>Calcareous rocky slopes with chasmophytic vegetation [8210]</p> <p>Siliceous rocky slopes with chasmophytic vegetation [8220]</p>	<p>Wicklow Mountains SAC is a complex of upland areas in Counties Wicklow and Dublin, flanked by the Blessington reservoirs to the west and Vartry reservoir in the east, Cruagh Mountain in the north and Lybagh Mountain in the south.</p> <p>Following the source-receptor-pathway model the licensed facility is not linked to this European site. It is hydrologically separate from the licensed facility and is separated by approximately 9 km at its nearest point. Therefore there is no likelihood of significant effects to the site from the Technical Amendment changes under consideration.</p>



	<p>Old sessile oak woods with Ilex and Blechnum in British Isles [91A0]</p>	
<p>Wicklow Mountains SPA</p>	<p>Merlin (<i>Falco columbarius</i>) [A098]                  Peregrine (<i>Falco peregrinus</i>) [A103]</p>	<p>This is an extensive upland site, comprising a substantial part of the Wicklow Mountains. Most of the site is in County Wicklow, but a small area lies in County Dublin.</p> <p>Following the source-receptor-pathway model the licensed facility is not linked to this European site. The SPA is hydrologically separate from the licensed facility and is approximately 13.1 km away at its nearest point. Typical foraging distance for merlin is within 5km and so this species is unlikely to forage in the licensed facility (SNH, 2013<sup>10</sup>). The core foraging distance for peregrine is 2km, with a maximum distance of 16km (SNH, 2013). It is unlikely that peregrine associated with the SPA would travel 13km to the licensed facility, which is industrial in nature. Therefore there is no likelihood of significant effects to the site from the Technical Amendment changes under consideration.</p>

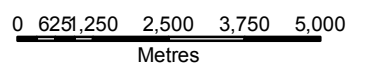
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<sup>10</sup> Scottish Natural Heritage (SNH) 2013 Guidance: Assessing Connectivity with Special Protection Areas (SPAs)



### Legend

- Application Boundary
- 15 km Buffer from Study Area
- Natural Heritage Area
- Proposed Natural Heritage Area
- Special Area of Conservation
- Special Protection Area



- NOTES**
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Issue	Date	Description	By	Chkd.
A	SEP-16	ISSUED	G.F.	J.Q.



Project: RILTA Technical Amendment AA (Storage Only)

Title: Designated Sites

Scale @ A3: 1:125,000

Prepared by: G.Fil  
Checked: J.Quinn  
Date: September 2016

Project Manager: S.Tinnelly

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Figure 3 A

### 3.5 POTENTIAL ADVERSE EFFECTS ON NATURA 2000 SITES

#### 3.5.1 *Potential for direct impacts*

The licensed facility site is not located within or directly adjacent to any designated European Site. The Technical Amendment changes under consideration will not give rise to any direct loss, fragmentation or disturbance of Annex I habitats or Annex II species (or their supporting habitats), which may be listed as Qualifying Interests of European Sites.

#### 3.5.2 *Potential for indirect impacts*

The facility is located within an existing waste management facility at Greenogue Business Park in Rathcoole, County Dublin. All activities will occur indoors, with no ground works required. There is no potential for contamination of surface water features and no mitigation is required to protect Designated Sites from any potential impacts.

All storage and loading activities will occur indoors. Engineering measures have been incorporated in the design to ensure there are no fugitive dust emissions from the activity. No mitigation is therefore required to control dust emissions or protect Designated Sites.

The business park is bisected by the Grifeen River, which flows north, is culverted under the Grand Canal and reaches the River Liffey 7 km downstream at Lucan Village. Currently, all surface water runoff from tanker bays, vehicle parking and marshalling areas are directed through a Class 1 interceptor before discharging to a surface water sewer. Wastewater drains to a 5m<sup>3</sup> self-contained monitoring tank prior to discharge. Wastewater is only discharged to the sewer following confirmation that the discharge has met the requirement of Schedule C.3: Emissions Limits for Foul Water Emissions to Sewer, D.1.1 Monitoring locations, and D.4.1 monitoring and frequency technique. The waste residue storage and transfer activity is unlikely to result in fugitive emissions to water and no reconfiguration of water management onsite is required to mitigate any potential impacts to water bodies or Designated Sites.

There will be no direct emissions to groundwater and no reconfiguration of water management onsite is required to mitigate any potential impacts to water bodies or Designated Sites.

The waste residue storage system will be situated in an enclosed building within a busy industrial estate. Noise sensitive qualifying interests (birds of SPAs) are sufficiently removed so that no impact is likely to occur. No additional mitigation is required to protect Designated Sites.

#### 3.5.3 *Potential for in-combination or cumulative effects*

There are no potential significant adverse effects associated with the Technical Amendments under consideration within the facility.

Following the storage of the waste residue at the RILTA Greenogue facility, the material will be shipped to a treatment facility in Norway for sustainable re-use.

Below is a summary regarding this arrangement:

*“...the material will be shipped to a treatment facility in Norway for sustainable re-use. The waste residue will be used to neutralise sulphuric acid at the Langoya facility in Norway. Langoya is a small island dominated by a worked out limestone quarry which is being reinstated as a nature reserve under licence from the Norwegian government. The neutralised residue/ acid mixture is being used as part of this reinstatement...”*

All transport companies utilised by RILTA for the transport of waste on and off site are licensed operators that adhere to the strict guidance of ‘ADR Carriage of Dangerous Goods by Road A Guide for Business<sup>11</sup>’.

Norway is outside of the European Union and are therefore outside of the remit of this Appropriate Assessment Screening Report. Despite this, the author notes:

*“...the facility has an approved R treatment code... In addition, the facility has the following permits/licences/ approvals: Operation/ emission permit from the Norwegian Pollution Control Authority, 4 June 2003, renewed may 2009; EMAS registered 1998-2004; and ISO 14001 certification from Feb 2004;”*

Taking account of the absence of potential significant adverse effects associated with the Technical Amendments under consideration at any stage, it is evaluated that there are no other projects and plans which could be considered to interact ‘in-combination’ or cumulatively to give rise to the potential for significant adverse effects on the Natura 2000 network.

## 4 SCREENING CONCLUSION

The licensed facility is not located within or directly adjacent to any Natura 2000 site. The Appropriate Assessment screening process considered potential impacts which may arise during the installation and operational phases of the changes being considered.

Through an assessment of the pathways for effects and an evaluation of the activities, taking account of the processes involved and the distance of separation between Natura 2000 designations in the wider study area, it has been evaluated that there are no likely significant adverse effects on the qualifying interests or the conservation objectives of any designated European Site.

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<sup>11</sup>

[http://www.hsa.ie/eng/Publications\\_and\\_Forms/Publications/Chemical\\_and\\_Hazardous\\_Substances/ADR\\_Carriage\\_of\\_Dangerous\\_Goods\\_by\\_Road\\_A\\_Guide\\_for\\_Business.pdf](http://www.hsa.ie/eng/Publications_and_Forms/Publications/Chemical_and_Hazardous_Substances/ADR_Carriage_of_Dangerous_Goods_by_Road_A_Guide_for_Business.pdf)

It is concluded that there are no likely potential impacts, whether direct, indirect or cumulative/in-combination, which could give rise to significant adverse effects on the qualifying interests or the conservation objectives of any designated Natura 2000 site. It can be concluded that it is unlikely that the licensed facility will result in significant effects to any European site, in view of their conservation objectives of the habitats or species for which it was designated, either alone or in combination with other plans or projects. Consequently the activities which are the subject of the Technical Amendment, do not require an Appropriate Assessment; there is, therefore, no requirement to progress to Stage 2: NIS.

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# APPENDIX 1

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## Site Synopsis

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**Site Name: Rye Water Valley/Carton SAC**

**Site Code: 001398**

Rye Water Valley/Carton SAC is located between Leixlip and Maynooth, in Counties Meath and Kildare, and extends along the Rye Water, a tributary of the River Liffey.

The site is a Special Area of Conservation (SAC) selected for the following habitats and/or species listed on Annex I / II of the E.U. Habitats Directive (\* = priority; numbers in brackets are Natura 2000 codes):

- |  |
|--|
| [7220] Petrifying Springs*                                     |
| [1014] Narrow-mouthed Whorl Snail ( <i>Vertigo angustior</i> ) |
| [1016] Desmoulin's Whorl Snail ( <i>Vertigo moulinsiana</i> )  |

The Rye Water in Carton Estate is dammed at intervals, creating a series of lakes. Reed Sweet-grass (*Glyceria maxima*) is frequent around the lakes, along with Yellow Iris (*Iris pseudacorus*), Reed Canary-grass (*Phalaris arundinacea*), Bulrush (*Typha latifolia*), Water Forget-me-not (*Myosotis scorpioides*), Marsh-marigold (*Caltha palustris*) and starworts (*Callitriche* spp.). Along the remainder of the site the river has been dredged and much of the reed fringe removed.

To the north-west of Carton Bridge, a small clump of willows (*Salix* spp.), with dogwood (*Cornus* sp.), Alder (*Alnus glutinosa*), Ash (*Fraxinus excelsior*) and Elder (*Sambucus nigra*) occurs. The ground flora found here includes Golden Saxifrage (*Chrysosplenium oppositifolium*), Meadowsweet (*Filipendula ulmaria*), Common Valerian (*Valeriana officinalis*), Wavy Bitter-cress (*Cardamine flexuosa*) and Bittersweet (*Solanum dulcamara*).

The woods on Carton Estate are mostly old demesne woods with both deciduous and coniferous species. Conifers, including some Yew (*Taxus baccata*) – a native species, are dominant, with Beech (*Fagus sylvatica*), oak (*Quercus* sp.), Sycamore (*Acer pseudoplatanus*), Ash and Hazel (*Corylus avellana*) also occurring. The ground flora is dominated by Ivy (*Hedera helix*), with such species as Hedge Woundwort (*Stachys sylvatica*), Wood Speedwell (*Veronica montana*), Woodruff (*Galium odoratum*), Wood Avens (*Geum urbanum*), Common Dog-violet (*Viola riviniana*), Wild Angelica (*Angelica sylvestris*), Ramsons (*Allium ursinum*), Ground-ivy (*Glechoma hederacea*) and Ivy Broomrape (*Orobanche hederaceae*) also found.

Hairy St. John's-wort (*Hypericum hirsutum*), a species legally protected under the Flora (Protection) Order, 1999, occurs in Carton Estate and there is an old record from the estate for the similarly protected Hairy Violet (*Viola hirta*). However, this latter species has not been recorded from the site in recent years. Another species

listed in the Red Data Book, Green Figwort (*Scrophularia umbrosa*), occurs on the site in several locations by the Rye Water. The woods at Carton Demesne are the site of a rare Myxomycete fungus, *Diderma deplanatum*.

The marsh, mineral spring and seepage area found at Louisa Bridge supports a good diversity of plant species, including stoneworts, Marsh Arrowgrass (*Triglochin palustris*), Purple Moor-grass (*Molinia caerulea*), sedges (*Carex* spp.), Common Butterwort (*Pinguicula vulgaris*), Marsh Lousewort (*Pedicularis palustris*), Grass-of-parnassus (*Parnassia palustris*) and Cuckooflower (*Cardamine pratensis*). The mineral spring found at the site is of a type considered to be rare in Europe and is a habitat listed on Annex I of the E.U. Habitats Directive. The Red Data Book species Blue Fleabane (*Erigeron acer*) is found growing on a wall at Louisa Bridge.

Within the woods, Blackcap, Woodcock and Long-eared Owl have been recorded. Little Grebe, Coot, Moorhen, Tufted Duck, Teal and Kingfisher, the latter a species listed on Annex I of the E.U. Birds Directive, occur on and about the lake.

The Rye Water is also a spawning ground for Trout and Salmon, and the rare, White-clawed Crayfish (*Austropotamobius pallipes*) has been recorded at Leixlip. The latter two species are listed on Annex II of the E.U. Habitats Directive. The rare Narrow-mouthed Whorl Snail and Desmoulin's Whorl Snail occur in marsh vegetation near Louisa Bridge. Both are rare in Ireland and in Europe, and are listed on Annex II of the E.U. Habitats Directive. The scarce dragonfly, *Orthetrum coerulescens*, has also been recorded at Louisa Bridge.

The conservation importance of the site lies in the presence of several rare and threatened plant and animal species, and the presence of petrifying springs, a habitat type listed on Annex I of the E.U. Habitats Directive. The woods found on Carton Estate and their birdlife are of additional interest.



**Site Name: Glenasmole Valley SAC**

**Site Code: 001209**

Glenasmole Valley in south Co. Dublin lies on the edge of the Wicklow uplands, approximately 5 km from Tallaght. The River Dodder flows through the valley and has been impounded here to form two reservoirs which supply water to south Dublin. The non-calcareous bedrock of the Glenasmole Valley has been overlain by deep drift deposits which now line the valley sides. They are partly covered by scrub and woodland, and on the less precipitous parts, by a herb-rich grassland. There is much seepage through the deposits, which brings to the surface water rich in bases, which induces local patches of calcareous fen and, in places, petrifying springs.

The site is a Special Area of Conservation (SAC) selected for the following habitats and/or species listed on Annex I / II of the E.U. Habitats Directive (\* = priority; numbers in brackets are Natura 2000 codes):

[6210] Orchid-rich Calcareous Grassland\*

[6410] *Molinia* Meadows

[7220] Petrifying Springs\*

At this site, examples of calcareous fen and flush occur between the two reservoirs, where sedges (including *Carex flacca* and *C. panicea*) are joined by such species as Grass-of-parnassus (*Parnassia palustris*), Few-flowered Spike-rush (*Eleocharis quinqueflora*), Zig-zag clover (*Trifolium medium*) and the scarce Fen Bedstraw (*Galium uliginosum*). Tufa depositing springs are long-known from the site, along the valley sides, and some have substantial tufa mounds and banks. Tufa formation is also known from small streams within the woodland at the site. Within the hazel woods, and associated with the springs and flushes, a distinctive flora with Marsh Hawk's-beard (*Crepis paludosa*) and luxuriant stands of Great Horsetail (*Equisetum telmateia*) has developed.

Orchid-rich grassland occurs in the drier parts of this site and in places grades into *Molinia* meadow. Orchids recorded in these habitats include Frog Orchid (*Coeloglossum viride*), Northern Marsh-orchid (*Dactylorhiza purpurella*), Fragrant Orchid (*Gymnadenia conopsea*), Marsh Helleborine (*Epipactis palustris*), Early-purple Orchid (*Orchis mascula*) and Greater Butterfly Orchid (*Platanthera chlorantha*). Two further orchid species, both Red Data Book-listed, have also been found here, Green-winged Orchid (*Orchis morio*) and Small-white Orchid (*Pseudorchis albida*). Common grasses in the sward include Sweet Vernal-grass (*Anthoxanthum odoratum*), Creeping Bent (*Agrostis stolonifera*) and Crested Dog's-tail (*Cynosurus cristatus*). Other species which occur are Common Bird's-foot-trefoil (*Lotus corniculatus*), Kidney Vetch (*Anthyllis vulneraria*), Common Restharrow (*Ononis repens*), Yellow-wort (*Blackstonia*

*perfoliata*) and Autumn Gentian (*Gentianella amarella*). While much of the calcareous grassland has been improved to some extent for agriculture, a suite of typical species still remain.

The areas of *Molinia* meadows at the site occur associated with the grasslands on the valley sides, and in particular in seepage and flushed areas. Typical and indicative species include Greater Bird's-foot-trefoil (*Lotus uliginosus*), Tormentil (*Potentilla erecta*), Purple Moor-grass (*Molinia caerulea*), Sharp-flowered Rush (*Juncus acutiflorus*), Adder's-tongue (*Ophioglossum vulgatum*), Meadow Thistle (*Cirsium dissectum*) and Fen Bedstraw. As noted above, orchids are frequent in the grasslands at this site.

Woodland occurs in patches around the site. On the east side of the valley, below the northern lake, a Hazel (*Corylus avellana*) wood has developed on the unstable calcareous slopes and includes other species such as Ash (*Fraxinus excelsior*), Downy Birch (*Betula pubescens*), Goat Willow (*Salix caprea*) and (Irish) Whitebeam (*Sorbus hibernica*). Spring Wood-rush (*Luzula pilosa*), Wood Speedwell (*Veronica montana*) and Bramble (*Rubus fruticosus* agg.) are present in the ground flora.

Wet semi-natural broadleaved woodland is also found around the reservoirs and includes Alder (*Alnus glutinosa*) and willow (*Salix* spp.) with Yellow Iris (*Iris pseudacorus*), horsetails (*Equisetum* spp.), Bramble and localised patches of Japanese Knotweed (*Reynoutria japonica*), an introduced and invasive species.

The lake shore vegetation is not well developed, which is typical of a reservoir. There are occasional patches of Reed Canary grass (*Phalaris arundinacea*) and Purple-loosestrife (*Lythrum salicaria*), which are more extensive around the western shore of the northern lake, along with Common Marsh-bedstraw (*Galium palustre*) and Water Mint (*Mentha aquatica*). Other vegetation includes Shoreweed (*Littorella uniflora*) and the scarce Water Sedge (*Carex aquatilis*).

As well as the Green-winged Orchid and Small-white Orchid, two other threatened species which are listed in the Irish Red Data Book occur in the site, Yellow Archangel (*Lamiastrum galeobdolon*) and Yellow Bird's-nest (*Monotropa hypopitys*). Small-white Orchid is legally protected under the Flora (Protection) Order, 1999.

The site provides excellent habitat for bats, with at least four species recorded: Pipistrelle, Leisler's, Daubenton's and Brown Long-eared. Otter occurs along the river and reservoirs.

The site supports Kingfisher, an Annex I species under the E.U. Birds Directive.

Glenasmole Valley contains a high diversity of habitats and plant communities, including three habitats listed on Annex I of the E.U. Habitats Directive. The presence of four Red Data Book plant species further adds to the value of the site, as does the presence of populations of several mammal and bird species of conservation interest.

**Site Name: Red Bog, Kildare SAC**

**Site Code: 000397**

Red Bog, Kildare is located 3 km north of the village of Blessington in east Co. Kildare, close to the boundary with Co. Wicklow. It comprises a wetland complex of lake, fen and bog situated in a hollow between ridges of glacially-deposited material and underlain by rocks of Ordovician age.

The site is a Special Area of Conservation (SAC) selected for the following habitats and/or species listed on Annex I / II of the E.U. Habitats Directive (\* = priority; numbers in brackets are Natura 2000 codes):

[7140] Transition Mires
-------------------------

The shores of the lake are muddy and support such species as Bog Stitchwort (*Stellaria alsine*), Brooklime (*Veronica beccabunga*) and Soft Rush (*Juncus effusus*). Fringing the lakeshore is a narrow zone with emergent Soft Rush, Water-plantain (*Alisma plantago-aquatica*), Bottle Sedge (*Carex rostrata*), as well as the moss *Climacium dendroides*. In places, particularly at either end of the lake and along its south-eastern side, this zone grades into extensive areas of quaking scraw vegetation of dense Bogbean (*Menyanthes trifoliata*) and Marsh Cinquefoil (*Potentilla palustris*), accompanied by such species as Sharp-flowered Rush (*Juncus acutiflorus*), Cuckooflower (*Cardamine pratensis*), Marsh Speedwell (*Veronica scutellata*), Common Marsh-bedstraw (*Galium palustre*), Water Horsetail (*Equisetum fluviatile*), Common Sedge (*Carex nigra*), Common Spotted-orchid (*Dactylorhiza fuchsii*) and the mosses *Rhytidiadelphus squarrosus* and *Sphagnum squarrosum*. Bulrush (*Typha latifolia*) and areas of Willow (*Salix* spp.) scrub also occur in association with this vegetation.

The deeper water supports submerged aquatic plants such as Water-starworts (*Callitriche* spp.) and Water-crowfoots (*Ranunculus* spp.), while in sheltered areas floating plants including Common Duckweed (*Lemna minor*) and the liverwort *Riccia fluitans* are found.

At the north-east end of the site, bog vegetation has developed, with Heather (*Calluna vulgaris*) and Hare's-tail Cottongrass (*Eriophorum vaginatum*) being the most frequent species. Other bog plants found here include Bog Asphodel (*Narthecium ossifragum*), Cross-leaved Heath (*Erica tetralix*), Tormentil (*Potentilla erecta*), Heath Wood-rush (*Luzula multiflora*), the mosses *Sphagnum palustre*, *S. capillifolium*, *S. subnitens*, *Hypnum cupressiforme*, *Polytrichum commune* and *Dicranum scoparium*, and the lichen *Cladonia portentosa*.

Red Bog is of ornithological significance and breeding birds recorded from the site include Mute Swan, Mallard, Tufted Duck, Coot, Moorhen, Snipe and Black-headed Gull (estimated <20 pairs).

Gravel extraction, drainage and eutrophication of the wetland from agricultural activities in the surrounding lands all pose a threat to the site.

Red Bog, Kildare is a site of particular conservation significance, supporting a good example of transition mire, a habitat that is listed on Annex I of the E.U. Habitats Directive.

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## SITE SYNOPSIS

**SITE NAME: POULAPHOUCA RESERVOIR SPA**

**SITE CODE: 004063**

Poulaphouca Reservoir SPA, located in the western foothills of the Wicklow Mountains, was created in 1944 by damming of the River Liffey for the purpose of generating electricity from hydropower. The reservoir covers an area of approximately 20 square kilometres and is the largest inland water body in the mid-east and south-east regions. The reservoir receives water from two main sources, the River Liffey at the northern end, and the Kings River at the southern end. The exit is into the River Liffey gorge at the western end. Underlying the reservoir are sands and gravels deposited during the last glaciation. The shores of the lake are mostly sandy. When water levels are low the exposed lake muds are colonised by an ephemeral flora of annual plant species. Wet grassland areas occur in sheltered bays around the lake but especially in the northern part. Reed Canary-grass (*Phalaris arundinacea*) is the main grass species present, but other plant species characteristic of wet grasslands occur, including Creeping Bent (*Agrostis stolonifera*), Meadowsweet (*Filipendula ulmaria*), Yellow Iris (*Iris pseudacorus*) and Water Mint (*Mentha aquatica*). Sedges (*Carex* spp.) are locally common, while Rusty Willow (*Salix cinerea* subsp. *oleifolia*) scrub is often found associated with the wet grassland. In some places the water washes against grassy banks which are generally less than a metre high, and in a few places there are steep sand and clay cliffs, up to 15 m high - these are remnants of the old River Liffey channel. In many places the banks are actively eroding, and a strip of conifers has been planted around much of the perimeter of the reservoir in an attempt to stabilize the banks.

The site is a Special Protection Area (SPA) under the E.U. Birds Directive, of special conservation interest for the following species: Greylag Goose and Lesser Black-backed Gull.

Poulaphouca Reservoir is of national importance for its Greylag Goose population, which is one of the largest in the country. The site provides the main roost for the birds, with feeding occurring mostly on improved grassland outside of the site. A mean peak of 701 individuals occurred during the five seasons 1995/96 to 1999/2000. Other waterfowl species occur in relatively low numbers, including Whooper Swan (22), Wigeon (180), Teal (107), Mallard (186), Goldeneye (22), Cormorant (11), Great Crested Grebe (8), Curlew (86) and Mute Swan (11). The site is also used by Grey Heron (6).

The reservoir attracts roosting gulls during winter, most notably a large population of Lesser Black-backed Gull (651), which in Ireland is rare in winter away from the south coast. Black-headed Gull (915) and Common Gull (183) also occur.

Breeding birds at the site include Great Crested Grebe (several pairs), which is localised in its distribution in eastern Ireland, as well as Snipe and Lapwing.

The principal interest of the site is the Greylag Goose population, which is of national importance. A range of other wildfowl species also occurs, including Whooper Swan, a species that is listed on Annex I of the E.U. Birds Directive. The site is also notable as a winter roost for gulls, especially Lesser Black-backed Gull. Part of Poulaphouca Reservoir SPA is a Wildfowl Sanctuary.

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8.7.2014

**Site Name: Wicklow Mountains SAC**

**Site Code: 002122**

Wicklow Mountains SAC is a complex of upland areas in Counties Wicklow and Dublin, flanked by the Blessington reservoir to the west and Vartry reservoir in the east, Cruagh Mountain in the north and Lybagh Mountain in the south. Most of the site is over 300 m, with much ground over 600 m. The highest peak is 925 m at Lugnaquilla. The Wicklow uplands comprise a core of granites flanked by Ordovician schists, mudstones and volcanics. The form of the Wicklow Glens is due to glacial erosion. The topography is typical of a mountain chain, showing the effects of more than one cycle of erosion. The massive granite has weathered characteristically into broad domes. Most of the western part of the site consists of an elevated moorland, covered by peat. The surrounding schists have assumed more diverse outlines, forming prominent peaks and rocky foothills with deep glens. The dominant topographical features are the products of glaciation. High corrie lakes, deep valleys and moraines are common features of this area. The substrate over much of the area is peat, usually less than 2 m deep. Poor mineral soil covers the slopes, and rock outcrops are frequent. The Wicklow Mountains are drained by several major rivers including the Dargle, Liffey, Dodder, Slaney and Avonmore. The river water in the mountain areas is often peaty, especially during floods.

The site is a Special Area of Conservation (SAC) selected for the following habitats and/or species listed on Annex I / II of the E.U. Habitats Directive (\* = priority; numbers in brackets are Natura 2000 codes):

- [3110] Oligotrophic Waters containing very few minerals
- [3160] Dystrophic Lakes
- [4010] Wet Heath
- [4030] Dry Heath
- [4060] Alpine and Subalpine Heaths
- [6130] Calaminarian Grassland
- [6230] Species-rich *Nardus* Grassland\*
- [7130] Blanket Bogs (Active)\*
- [8110] Siliceous Scree
- [8210] Calcareous Rocky Slopes
- [8220] Siliceous Rocky Slopes
- [91A0] Old Oak Woodlands
  
- [1355] Otter (*Lutra lutra*)

The vegetation over most of Wicklow Mountains SAC is a mosaic of heath, blanket bog and upland grassland (mostly on peaty soil, though some on mineral soil), stands of dense Bracken (*Pteridium aquilinum*), and small woodlands mainly along the rivers. Mountain loughs and corrie lakes are scattered throughout the site.

The two dominant vegetation communities in the area are heath and blanket bog. Heath vegetation, with both wet and dry heath well represented, occurs in association with blanket bog, upland acid grassland and rocky habitats. The wet heath is characterised by species such as Heather (*Calluna vulgaris*), Cross-leaved Heath (*Erica tetralix*), cottongrasses (*Eriophorum* spp.), Tormentil (*Potentilla erecta*), Mat-grass (*Nardus stricta*), bent grasses (*Agrostis* spp.) and bog mosses (*Sphagnum* spp.). In places the wet heath occurs in conjunction with flush communities and streamside vegetation, and here species such as Heath Rush (*Juncus squarrosus*) and sedges (*Carex* spp.) are found. Dry heath at this site is confined to shallow peaty soils on steep slopes where drainage is better and particularly in sheltered conditions. It is characterised by species such as Heather, gorse (*Ulex* spp.), Bell Heather (*Erica cinerea*), Bilberry (*Vaccinium myrtillus*), Purple Moor-grass (*Molinia caerulea*) and lichens (*Cladonia* spp.). In places the heath grades into upland grassland on mineral soil.

Blanket bog is usually dominated by cottongrasses, Heather and bog mosses. On steeper slopes there is some flushing and here Purple Moor-grass, Heath Rush and certain *Sphagnum* species become more common. The Liffey Head blanket bog is among the best of its kind in eastern Ireland, with deep peat formations and an extensive system of dystrophic pools developed among the hummocks and hollows on the bog surface. The vegetation is largely dominated by Heather and Cross-leaved Heath, with cottongrasses (*Eriophorum vaginatum* and *E. angustifolium*), Deergrass (*Scirpus cespitosus*) and Bog Asphodel (*Nartheceum ossifragum*). In drier areas, Bilberry and Cowberry (*Vaccinium vitis-idaea*) are common, while the scarce Bog-rosemary (*Andromeda polifolia*) is also found. Blanket bog occurs over extensive areas of deeper peat on the plateau and also on gentle slopes at high altitudes.

Due to the underlying rock strata, the water of the rivers and streams is acid rather than alkaline. The water is generally oligotrophic and free from enrichment. The lakes within the area range from the high altitude lakes of Lough Firrib and Three Lakes, to the lower pater-noster lakes of Glendalough, Lough Tay and Lough Dan. Spectacular corrie lakes, such as Loughs Bray (Upper and Lower), Ouler, Cleevaun, Arts, Kellys and Nahanagan, exhibit fine sequences of moraine stages. The deep lakes are characteristically species-poor, but hold some interesting plants including an unusual form of Quillwort (*Isoetes lacustris* var. *morei*), a stonewort (*Nitella* sp.) and Floating Bur-reed (*Sparganium angustifolium*).

Alpine vegetation occurs on some of the mountain tops, notably in the Lugnaquilla area, and also on exposed cliffs and scree slopes elsewhere in the site. Here alpine heath vegetation is represented with heath species such as Crowberry (*Empetrum nigrum*) and Cowberry, and others such as Dwarf Willow (*Salix herbacea*), the grey-green moss *Racomitrium lanuginosum*, and scarce species such as Mountain Clubmoss



(*Diphasiastrum alpinum*), Firmoss (*Huperzia selago*), and Starry Saxifrage (*Saxifraga stellaris*). Some rare arctic-alpine species have been recorded, including Alpine Lady's-mantle (*Alchemilla alpina*) and Alpine Saw-wort (*Saussurea alpina*).

Old lead mine workings at Glendasan support an estimated 3.6 hectares of Calaminarian Grassland, with a suite of rare metallophyte (metal-loving) bryophytes, including the moss *Ditrichum plumbicola* and the liverworts *Cephaloziella integerrima*, *C. massalongi* and *C. nicholsonii*.

Small areas of old oakwood (Blechno-Quercetum petraeae type) occur on the slopes of Glendalough and Glenmalure, near Lough Tay and Lough Dan, with native Sessile Oak (*Quercus petraea*) trees, many of which are 100-120 years old. On wetter areas, wet broadleaved semi-natural woodlands occur which are dominated by Downy Birch (*Betula pubescens*). Mixed woodland with non-native tree species also occurs.

The site supports a range of rare plant species. Parsley Fern (*Cryptogramma crispa*), Marsh Clubmoss (*Lycopodiella inundata*), Lanceolate Spleenwort (*Asplenium billotii*), Small-white Orchid (*Pseudorchis albida*) and Bog Orchid (*Hammarbya paludosa*) are all legally protected under the Flora (Protection) Order, 2015. Greater Broomrape (*Orobanche rapum-genistae*), Alpine Saw-wort and Alpine Lady's-mantle are listed in the Irish Red Data Book. The rare Myxomycete fungus *Echinostelium colliculosum* has been recorded from the Military Road.

The Red Data Book fish species Arctic Char has been recorded from Lough Dan, but this population may now have died out.

Mammals and birds which occur are typical of the uplands. Deer are abundant, mainly hybrids between Red and Sika Deer. Other mammals include Hare, Badger and Otter, the latter being a species listed on Annex II of the E.U. Habitats Directive. Pine Marten has recently been confirmed as occurring within the site. Among the birds, Meadow Pipit, Skylark, Raven and Red Grouse are resident throughout the site. Wheatear, Whinchat and the scarce Ring Ouzel are summer visitors. Wood Warbler and Redstarts are rare breeding species of the woodlands. Dipper and Grey Wagtail are typical riparian species. Merlin and Peregrine, both Annex I species of the E.U. Birds Directive, breed within the site. Recently, Goosander has become established as a breeding species.

Large areas of the site are owned by the National Parks and Wildlife Service (NPWS) and are managed for nature conservation based on traditional land uses of upland areas. The most common land use is traditional sheep grazing, but others include turf cutting, mostly hand-cutting but some machine-cutting also occurs. These activities are largely confined to the Military Road, where there is easy access. Large areas which had been previously hand-cut and are now abandoned are regenerating. In the last 40 years, forestry has become an important land use in the uplands, and has affected both the wildlife and the hydrology of the area. Amenity use is very

high, with Dublin city close to the site. Peat erosion is frequent on the peaks. This may be a natural process, but is likely to be accelerated by activities such as grazing.

Wicklow Mountains is important as a complex, extensive upland site. It shows great diversity from a geomorphological and a topographical point of view. The vegetation provides examples of the typical upland habitats with heath, blanket bog and upland grassland covering large, relatively undisturbed areas. In all, twelve habitats listed on Annex I of the E.U. Habitats Directive are found within the site. Several rare or protected plant and animal species occur, adding further to its value.

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## SITE SYNOPSIS

**SITE NAME: WICKLOW MOUNTAINS SPA**

**SITE CODE: 004040**

This is an extensive upland site, comprising a substantial part of the Wicklow Mountains. Most of the site is in Co. Wicklow, but a small area lies in Co. Dublin. The underlying geology of the site is mainly of Leinster granites, flanked by Ordovician schists, mudstones and volcanics. The area was subject to glaciation and features fine examples of glacial lakes, deep valleys and moraines. Most of site is over 300 m, with much ground being over 600 m; the highest peak is Lugnaquilla (925 m). The substrate over much of site is peat, with poor mineral soil occurring on the slopes and lower ground. Exposed rock and scree are features of the site. The predominant habitats present are blanket bog, heaths and upland grassland.

The site is a Special Protection Area (SPA) under the E.U. Birds Directive, of special conservation interest for the following species: Merlin and Peregrine.

A series of surveys of the Wicklow Mountains SPA indicates that up to 9 pairs of Merlin breed within the site in any one year. Traditionally a ground-nesting species, Merlin in the Wicklow Mountains are usually found nesting in old crows nests in conifer plantations. The open peatlands provide excellent foraging habitat for Merlin with small birds such as Meadow Pipit being their main prey. The cliffs and crags within the site also provide ideal breeding locations for Peregrine (20 pairs in 2002). Other birds of the open peatlands and scree slopes that have been recorded within the site include Ring Ouzel and Red Grouse.

The Wicklow Mountains SPA is of high ornithological importance as it supports nationally important populations of Merlin and Peregrine, both species that are listed on Annex I of the E.U. Birds Directive. Part of Wicklow Mountains SPA is a Statutory Nature Reserve.

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