

Lila

Daragh Cassells

From: John Clery <john.clery@spl.ie>
Sent: Wednesday 19 August 2026 11:43
To: Appeals2
Subject: FW: Case Number: PL-500313-CE-25 RFI Response
Attachments: Drumline Response to Section 132 Notice.pdf; Drumline Response to Section 131 Notice.pdf; 3700-26-04 Drumline Screening for AA & NIS, rev. 2 App.pdf

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Hi

Could you please confirm receipt of this submission.

Many thanks

Regards

John Clery
Drumline FlexGen
087 2702244

From: Marc Grenow <marc.grenow@fingleton.ie>
Date: Tuesday 18 August 2026 at 16:51
To: "communications@pleanala.ie" <communications@pleanala.ie>, "appeals@pleanala.ie" <appeals@pleanala.ie>
Cc: John Clery <john.clery@spl.ie>
Subject: Case Number: PL-500313-CE-25 RFI Response

Dear Sir/Madam,

Please see attached for the requested updated AA Screening and NIS, as well as our response to Section 131 Notice and Section 132 Notice in regards to Case Number PL-500313-CE-25.

Please could you reply to this email to acknowledge receipt of the submission.

Kind Regards,

Marc



marc.grenow@fingleton.ie

D: +353 5786 65400

Bridge Street Centre, Portlaoise, Co Laois, Ireland, R32 W0CC

fingleton.ie

An Coimisiún Pleanála
64 Marlborough Street
Dublin 1
D01 V902
18th August 2026

Re: Drumline FlexGen Ltd - 12 no. 2 MW HVO generators and associated site works, Drumline, Co. Clare

ACP Ref: PL-500313-CE-25

Planning Authority Ref: 2560529

Matter: Response to section 132 notice - Appropriate Assessment

Dear Sir/Madam,

We act for Drumline FlexGen Ltd and refer to the Commission's letter dated 30 July 2026 requiring further information under section 132 of the Planning and Development Act 2000, as amended, concerning the northern drainage ditch and Appropriate Assessment.

1. Updated AA Screening and NIS

The section 132 notice requires an updated AA Screening addressing the northern drainage ditch and states that, subject to the screening conclusion, a Natura Impact Statement may be required. The applicant encloses the updated AA Screening and NIS (Document No. 3700-26-04, Revision 2, dated 14 August 2026). The updated screening concludes that likely significant effects on European sites cannot be excluded in the absence of mitigation and that Stage 2 Appropriate Assessment is therefore required. The NIS is submitted with the updated screening so that the Commission has the information necessary to undertake that assessment. The formal screening and Appropriate Assessment determinations remain matters for the Commission as competent authority.

Public-notice and consultation procedure

The Commission's section 132 notice requires submission of the updated AA Screening Report by 19 August 2026 and states that an NIS may be required, but it does not direct the applicant to publish a newspaper notice or erect a site notice. The applicant respectfully requests the Commission's directions concerning the public-notice and consultation procedure applicable to the accompanying NIS and confirms that it will comply promptly with any such direction.

This submission is made within the period specified in the section 132 notice and without prejudice to any further procedural steps the Commission may direct in respect of the NIS.

2. Matters addressed

Northern drainage ditch and hydrological pathway

The updated assessment identifies the northern drainage ditch and assesses its connection to the Mogulla Stream / EPA Urlan Beg_010 River and, downstream, the Lower River Shannon SAC and

the River Shannon and River Fergus Estuaries SPA. The report concludes that this constitutes a potential hydrological pathway to those European sites.

Construction and operational effects

The report assesses potential effects during both phases, principally sediment-laden or contaminated run-off and accidental releases entering the ditch during construction, together with contaminated run-off or loss of containment during operation.

Project controls and mitigation

The report distinguishes between embedded design controls and measures required specifically to avoid or reduce harmful effects on European sites. The controls include isolation of the ditch from active works; containment of construction run-off; restrictions on storing pollutants near the ditch; controlled concrete washout; fuel, spill and refuelling controls; and inspection and maintenance of the drainage system, interceptors, bunds and double-skinned tanks during operation. The measures are set out in detail in Section 6 of the NIS.

3. Assessment conclusion

The updated AA Screening addresses the potential hydrological pathway identified by the Commission.

The NIS concludes, beyond reasonable scientific doubt and subject to the full and effective implementation of the specified mitigation measures, that the proposed development will not adversely affect the integrity of the Lower River Shannon SAC, the River Shannon and River Fergus Estuaries SPA, or any other European site, either individually or in combination with other plans or projects.

Yours faithfully,
Marc Grenow



Marc Grenow
Fingleton White & Co. Ltd.
Bridge Street Centre
Portlaoise, Co. Laois
Ph: +353 (0)57 866 5400



Screening for Appropriate Assessment & Natura Impact Statement (NIS)

On behalf of
Drumline Flex Gen Limited



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Niamh Mc Mahon	Mark Mc Garry	Fingleton White	
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1	27/08/2025	All	New Report
2	09/08/2026	All	Updated following ACP RFI: northern drainage ditch screened in to provide hydrological connection to Natura 2000 sites. Report updated to NIS & Mitigation added.

Executive Summary

Drumline Flex Gen Limited (DFG) commissioned this Appropriate Assessment and Natura Impact Statement (NIS) to support the planning application for the HVO Emergency Generator Project at Drumline, Newmarket-on-Fergus, Co. Clare.

The Stage 1 Appropriate Assessment Screening has been updated in response to the request for further information issued by An Coimisiún Pleanála and to reflect a potential hydrological pathway from the northern drainage ditch to the Mogullaan Stream / EPA Urlan Beg_010 River and, ultimately, to the downstream Lower River Shannon SAC and River Shannon and River Fergus Estuaries SPA.

The proposed development comprises:

- Twelve Hydrotreated Vegetable Oil (HVO) Flex Gen Emergency Generators
- Six HVO fuel tanks,
- Ad Blue tanks,
- HVO & Ad Blue filling point,
- a customer compound with a transformer
- an ESB compound,
- a building for a control room, WC, storage room, substation room and ESB room; and
- associated infrastructure.

The Appropriate Assessment was conducted in accordance with Article 6(3) of the Habitats Directive and aimed to assess the potential effects of the planned development works on Natura 2000 sites within close proximity of the site.

The Appropriate Assessment aids the planning process by providing information to the competent authority on the proposed project, its potential impacts, and any significant effects on European sites.

Following the amended Stage 1 screening, the northern drainage ditch is identified as a hydrological pathway to the Mogullaan stream / EPA Urlan Beg_010 River and downstream Lower River Shannon SAC and River Shannon and River Fergus Estuaries SPA. A likely significant effect on these European sites cannot be excluded in the absence of mitigation and the assessment therefore proceeds to Stage 2 Appropriate Assessment. Subject to the full and effective implementation of the embedded design measures and the specific mitigation measures set out in this NIS, it is concluded beyond reasonable scientific doubt that the proposed development will not adversely affect the integrity of the Lower River Shannon SAC, the River Shannon and River Fergus Estuaries SPA, or any other European site.

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1.0 Introduction

Axis Environmental Services Ltd. were commissioned by Drumline Flex Gen Limited (DFG) to support a planning application to Clare County Council for the following;

- 12 no. HVO generators,
- 6 no. HVO fuel tanks,
- Ad Blue tanks,
- HVO & Ad Blue filling point,
- a customer compound with a transformer
- an ESB compound,
- a building for a control room, WC, storage room, substation room and ESB room; and
- associated infrastructure.

The subject site is located approximately 2km north east of Shannon Town Centre in Drumline, Newmarket-on-Fergus, Co. Clare.

The appropriate assessment was conducted in accordance with Article 6(3) of the Habitats Directive and aimed to assess the potential effects of the project on European sites within 15km of the proposed development site.

The appropriate assessment is to be provided to the competent authority as supporting information to the planning application to provide all necessary information on the proposed project, its potential effects and the significance of those effects on European sites.

The proposed project does not form part of any European site, nor is it necessary to the management of any European Designated Site, nor is it adjacent to any European site.

1.1 Appropriate Assessment Screening Process

Appropriate Assessment (AA) is a requirement of the Habitats Directive, where Article 6(3) specifies 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 an appropriate assessment of its implications for the site in view of the sites conservation objectives.'

Appropriate Assessment is a 4 -stage process as illustrated in figure 1. below.

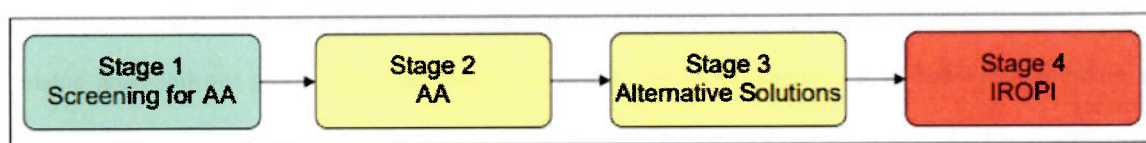


Figure 1 Schematic of Appropriate Assessment (DoEHLG, 2010)

Screening for Appropriate Assessment is Stage 1 and is completed to assess whether the project will have significant effects either individually or in combination with other plans or projects on Natura 2000 sites in view of its conservation objectives and considering whether these effects will be significant.

Screening determines whether appropriate assessment (stage 2) is necessary by examining:

- 1) whether a plan or project can be excluded from AA requirements because it is directly connected with or necessary to the management of the site, and
- 2) the potential effects of a project or plan, either alone or in combination with other projects or plans, on a Natura 2000 site in view of its conservation objectives and considering whether these effects will be significant.

Where it cannot be excluded beyond reasonable scientific doubt at the screening stage, that a proposed plan, either individually or in combination with other plans or projects, would have a likely significant impact on the conservation objectives of a European site, then an Appropriate Assessment (AA) resulting in a Natura Impact Statement (NIS) will be completed.

The guidelines state that screening is an iterative process which involves consideration of the plan or project and its likely effects, and of the Natura 2000 sites and their ecological sensitivities and the likely interaction between these.

The screening process should include the following:

1. A description of the plan or project and local site or plan area characteristics
2. Identification of relevant Natura 2000 sites, and compilation of information on their qualifying interests and conservation objectives.

Where the screening report, taking account of the precautionary principle, cannot rule out an impact or potential impact of the proposed project on a European Site, then a stage 2 Appropriate Assessment must be undertaken.

Where the plan or project is deemed to have a negative impact on a European site, the plan may only go ahead where all reasonable alternative solutions have been exhausted and the plan or project is undertaken for imperative reasons of overriding public interest (IROPI), including economic or social reasons. Where priority habitats or species are at risk, the requirements for IROPI become stricter and will only be approved where human health, public safety, or beneficial consequences of primary importance to the environment occur. Where IROPI is being claimed, then a request from the Commission must be made via the Minister before finalisation of the AA (DoEHLG, 2010).

This following screening for appropriate assessment report has been prepared in accordance with the guidance below;

- Department of Environment, Heritage and Local Government (2010), Appropriate Assessment of Plan and Projects in Ireland- Guidance for Planning Authorities
- European Commission (2001), 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
- 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 (2007)
- Managing Natura 2000 Sites: the provisions of Article 6 of the 'Habitats' Directive 92/43/EEC (EC, 2000)
- EPA (2012), Note on Appropriate Assessments for the purposes of the Wastewater Discharge (Authorization) Regulations, 2007 (S.I. No. 684 of 2007), as amended.
- European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. No. 477/2011).

The report is generated by a combination of site survey and desk top review using the following online databases;

- National Parks & Wildlife Services (NPWS)
- National Biodiversity Data Centre (NBDC)
- EPA maps (<https://gis.epa.ie/epamaps/>)
- Environmental Sensitivity Mapping (enviromap.ie)

1.2 Limitations

There were no limitations of note relating to this project.

1.3 Statement of Authority

Niamh Mc Mahon (Msc.in Biodiversity and Land Use Planning, BSc. Environmental Science & Technology,) completed the report related to this project. Niamh has over 20 years' experience in the environmental sector and has acted as lead environmental consultant on many projects ranging from Appropriate Assessment, Ecological Impact Assessment Reports, Environmental Impact Assessments, ISO 14001 certification, and EPA licenced reports

2.0 Description of the Site Location & Proposed Development

The site location of the proposed flexible generation power plant is immediately north of the R458, approximately 2km northeast of Shannon Town, Co. Clare. The location of the site has been selected as it lies adjacent to an existing 110kV substation. Cattle currently actively graze the proposed site area.

The project site is level and is accessed via an existing farm gate directly from the R468. The project area is part of an existing open field with access into additional land on the northern and western boundaries. The boundary of the existing field is delineated on the south and east boundaries by a sheep wire fence. Treelines and a stream delineate the western boundary with a Treeline and a drainage drain delineating the northern boundary. Where planning is successful, it is planned to secure the project boundary before any works commence. As can be seen in figure 3 below, there is no development planned for the northern section of the development area.

The following development is proposed;

- Provision of a platform for 12 no. HVO generators all with their own sealed bunded base.
- 6 no. HVO tanks each with a storage capacity of 69m³, steel construction, twin skin self-bunded
- 6 no. Ad Blu tanks located adjacent to each HVO tank; MDPE twin skin self-bunded
- HVO & Ad Blue filling point, with a minimum of 7,700L separator to collect a tanker section should it fail during offloading. Working on principle of large artic load deliveries with the tanker divided into 7000L which is the industry norm
- a customer compound with a transformer and an ESB compound,
- a building for a control room, WC, storage room, substation room and ESB room. The WC will discharge to a 5 m³ holding tank which will be removed by a licenced waste management company.
- associated infrastructure.

The site will have the following control measures implemented as part of the overall design;

- a HVO fuel management system installed for the facility as a whole
- individual fill lines to avoid cross/over filling
- high level alarms for HVO and AdBlue
- digital display for fill levels
- all tanks will be fitted with a tell-tale system to notify via alarm if the inner liner is leaking into the bund annulus
- HVO engines will be subject to routine maintenance based on run hours but all of this will be within the bunded section of the containerised unit; i.e. no potential for oil/HVO leaks escaping
- Transformer will be bunded to 110%

The planning application and development will be supported with a detailed construction and environmental management plan which include measures for good housekeeping and environmental control, such as;

- the installation of silt fences, wash out areas, dewatering measures etc.
- Security fencing installation.
- Strip topsoil, and remove offsite to a licenced facility.
- Install any hedge and trees for screening at an early stage of project to promote early growth.
- Excavate for soakaway construction as required.
- Reduce site to formation level removing excess subsoil material not required or suitable for fill, to a licenced facility.
- Install terram as required and stone the compounds; note that this will be completed on a phased basis to ensure trucks are driving on solid clean stone material at all times.
- Install interceptor and drainage system to levels.
- Complete the drainage connections
- Install RC support slabs.
- Install ducts and cables for the generators

- Mechanical installation
- Construct the electrical building
- Kerbing and internal roads
- Complete the security fencing to the perimeter
- Landscaping
- Commissioning

The works are expected to last approximately 9-10 months and will commence once a grid connection is agreed. The contractors working hours will be 7:00 am to 5pm Monday to Friday. In the event of unsettled weather conditions, working hours may have to be increased to avail of dry weather conditions.

All equipment and machinery used on this project will be standard and suitable for the nature of the works. The scope will require excavators, articulated and rigid dumpers, tipper trucks, concrete trucks, crane for placing precast units and tanks, along with various power and hand tools.

Before entering the work area, all plant will be inspected for oil or fluid leaks. Refuelling will be carried out in a designated catchment area to prevent environmental contamination.

Typical plant and equipment to be used includes:

- 20-tonne excavator (max)
- 6-tonne excavator
- Rigid trucks for removal of clay and delivery of stone
- 6-tonne site dumper
- 100-tonne crane (used periodically for offloading generator units and tanks)
- Concrete delivery trucks
- A range of power tools and hand tools as required

The project plan is anticipated to take 9-10 months with typical phases and timelines illustrated in the Gantt chart below;

Task	Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	Month 7	Month 8	Month 9	Month 10
Site Set-up & Preparation- including establishment of boundaries & installation of fencing, contractors compound, concrete wash out, lined soakaway pit etc.										
Development of drainage soakaway and associated pipe work.										
Ground works – including site stripping to a depth of 150mm, laying of geomembrane and importation of stone										
Installation of shuttering, DPM liner, rebar and pour concrete for construction of platform for tanks.										
Construct Control Building										
Installation of Tanks										
Finalise Access Road, kerbing security and landscaping in the area.										
Snag Listing & Commissioning										

Figure 2 Gantt Chart Detailing Project Tasks

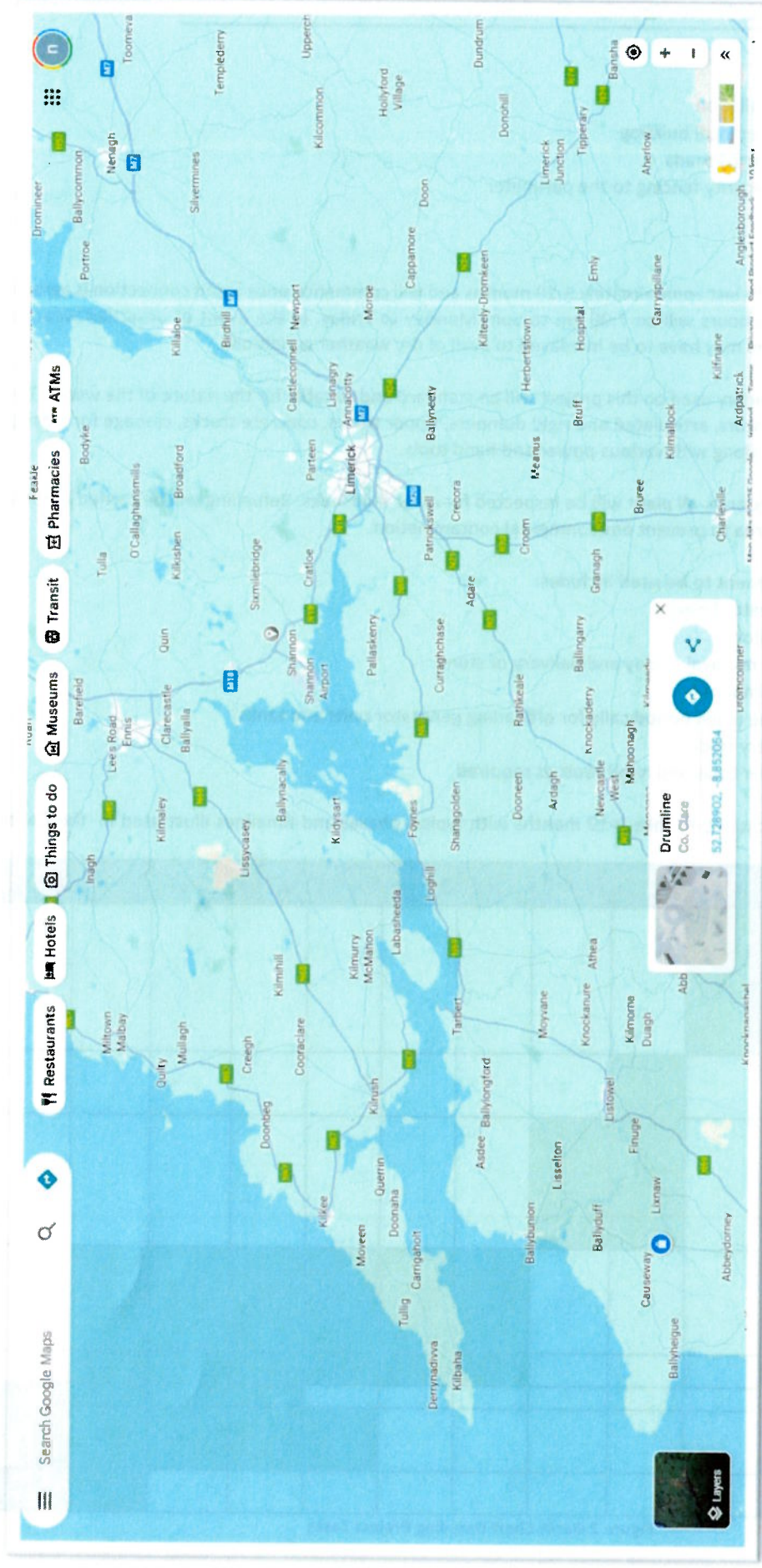


Figure 3 Location of Proposed Development
(Googlemaps.ie)





Figure 5 Satellite Imagery of the Proposed Site



Figure 6 Location of Proposed Site & Nearby Rivers (X)



Figure 7 Proposed Development Site, Rivers and Natura 2000 Sites

2.1 Site Sensitivities

The proposed development is located in the townland of Drumline on the outskirts of Shannon Town in Co. Clare.

The site is currently set in a primarily rural area. It is bound to the north by agricultural land, to the south by the R458, to the east by an ESB 110v substation and to the west by agricultural land, reference Figures 2-6 above.

The Mogullaan stream / EPA Urlan Beg_010 River, which flows along the western boundary of the agricultural land, is part of the Shannon Estuary North Hydrometric Area. It has been categorised as 'Under Review' in the latest round of monitoring under the Water Framework Directive (WFD), while the river status is considered 'Moderate' (2019-2024), reference Figure 8 below. The project red-line boundary extends northwards to the existing drainage ditch along the northern boundary. This drainage ditch flows to the Mogullaan stream / EPA Urlan Beg_010 River and therefore provides a hydrological pathway from the proposed development to the Lower River Shannon SAC and the River Shannon and River Fergus Estuaries SPA downstream.

The site is underlain with bedrock made of sandstone, mudstone & thin limestone and is overlain with fine loamy drift with limestones. The proposed site is part of the Tulla – Newmarket on Fergus groundwater body where the vulnerability status is considered high. Overall the groundwater is of good status and 'Not At risk' under the latest round of the Water Framework Directive (WFD). The site is located on a regionally important aquifer of fissured bedrock, however, is outside the Group water scheme preliminary source protection areas zones of contribution.

A review of the site was completed for flooding. The proposed site is within Flood Zone C for coastal and fluvial flooding. Given the nature of the development, the development is considered appropriate and a justification test is not required, as per Planning System and Flood Risk Management: Guidelines for Planning Authorities' DoEHLG/OPW, 2009.

A review of the biodiversity for tiles R46B & R46C covering a range of 2km in and around the proposed development site was undertaken. There were no species or habitats associated with the Natura 2000 sites listed in table 1, noted in the 2km tile associated with the development site. The habitat associated with the proposed project site is GA1, improved agricultural grassland. Small areas of scrub (WS1) and treeline (WL2) may need to be cleared on the entrance and south boundary of the proposed project area to allow for vehicular access. Any clearing will be completed outside bird nesting season, which runs from 1st March-31st August.



3.0 Identification of European Sites

A review of the European sites both in and bordering the zone of influence of 15km, as recommended by the Department of the Environment Guidance (2009), to the proposed development site was undertaken using online mapping systems from the National Parks & Wildlife Services (NPWS) and the Environmental Protection Agency (EPA).

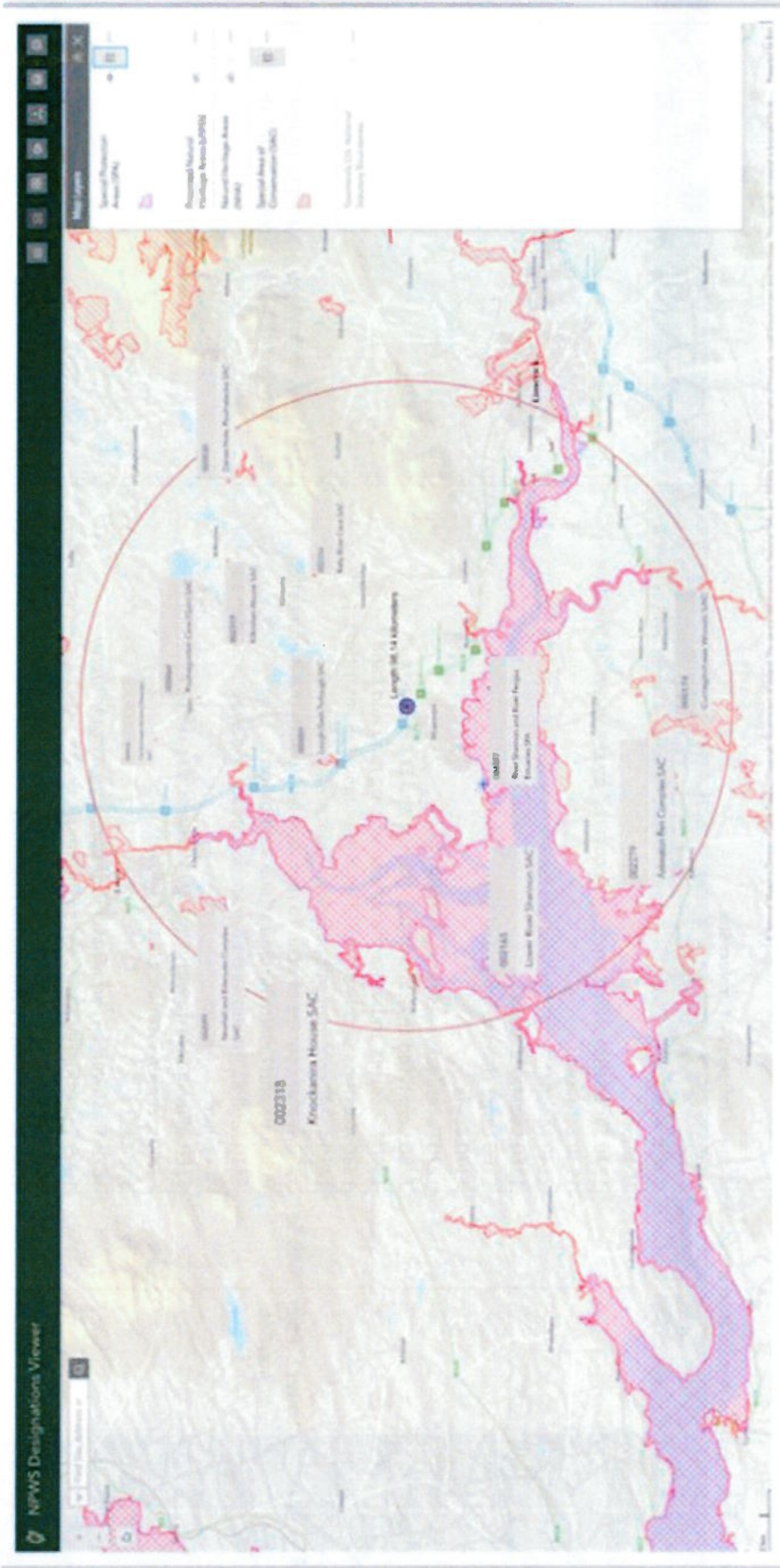


Figure 9 Republic of Ireland European sites within 15km from the proposed project site (NPWS.ie)

The table below lists the European sites, qualifying interests and provides a link to the conservation objectives of each of the sites located at NPWS.ie The table has been generated using the EPA Appropriate Assessment tool.

Table 1 Summary of Natura 2000 sites within Zone of Influence of Project Site.

Site Type	Site Code	Site Name	Distance To (m)	Qualifying Interests (* denotes a priority habitat)	Conservation Objectives
SAC	2165	Lower River Shannon SAC	2689.54	Habitats 1110 Sandbanks which are slightly covered by sea water all the time 1130 Estuaries 1140 Mudflats and sandflats not covered by seawater at low tide 1150 Coastal lagoons* 1160 Large shallow inlets and bays 1170 Reefs 1220 Perennial vegetation of stony banks 1230 Vegetated sea cliffs of the Atlantic and Baltic coasts 1310 Salicornia and other annuals colonising mud and sand 1330 Atlantic salt meadows (Glauco-Puccinellietalia maritimae) 1410 Mediterranean salt meadows (Juncetalia maritimi) 3260 Water courses of plain to montane levels with the Ranunculion fluitantis and Callitriche-Batrachion vegetation 6410 Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae) 91E0 Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae)* Species 1029 Freshwater Pearl Mussel (<i>Margaritifera margaritifera</i>) 1095 Sea Lamprey (<i>Petromyzon marinus</i>) 1096 Brook Lamprey (<i>Lampetra planeri</i>) 1099 River Lamprey (<i>Lampetra fluviatilis</i>) 1106 Salmon (<i>Salmo salar</i>) 1349 Common Bottlenose Dolphin (<i>Tursiops truncatus</i>) 1355 Otter (<i>Lutra lutra</i>)	https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO002165.pdf
SAC	000051	Lough Gash Turlough SAC	4199.39	Habitats 3180 Turloughs*	https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO000051.pdf

Site Type	Site Code	Site Name	Distance To (m)	Qualifying Interests (* denotes a priority habitat)	Conservation Objectives
				3270 Rivers with muddy banks with <i>Chenopodium rubri</i> p.p. and <i>Bidenton</i> p.p. vegetation	
SAC	002316	Ratty River Cave SAC	7115.18	Habitats 8310 Caves not open to the public Species 1303 Lesser Horseshoe Bat (<i>Rhinolophus hipposideros</i>)	https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO002316.pdf
SAC	000064	Poulnagordon Cave (Quin) SAC	9942.58	Habitats 8310 Caves not open to the public Species 1303 Lesser Horseshoe Bat (<i>Rhinolophus hipposideros</i>)	https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO000064.pdf
SAC	002279	Askeaton Fen Complex SAC	10406.28	Habitats 7210 Calcareous fens with <i>Cladium mariscus</i> and species of the <i>Caricion davallianae</i> * 7230 Alkaline fens	https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO002279.pdf
SAC	002319	Kilkishen House SAC	10966.74	Species 1303 Lesser Horseshoe Bat (<i>Rhinolophus hipposideros</i>)	https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO002319.pdf
SAC	000174	Curraghchase Woods SAC	11793.80	Habitats 91E0 Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> (Alno-Padion, <i>Alnion incanae</i> , <i>Salicion albae</i>)* 91J0 <i>Taxus baccata</i> woods of the British Isles* Species 1016 Desmoulin's Whorl Snail (<i>Vertigo moulinsiana</i>) 1303 Lesser Horseshoe Bat (<i>Rhinolophus hipposideros</i>)	https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO000174.pdf
SAC	002010	Old Domestic Building (Keavagh) SAC	12081.15	Species 1303 Lesser Horseshoe Bat (<i>Rhinolophus hipposideros</i>)	https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO002010.pdf

Site Type	Site Code	Site Name	Distance To (m)	Qualifying Interests (* denotes a priority habitat)	Conservation Objectives
SAC	002091	Newhall and Edenvale Complex SAC	12644.17	Habitats 8310 Caves not open to the public Species 1303 Lesser Horseshoe Bat (<i>Rhinolophus hipposideros</i>)	https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO002091.pdf
SAC	000030	Danes Hole, Poulmalecka SAC	13004.75	Habitats 8310 Caves not open to the public 91A0 Old sessile oak woods with Ilex and Blechnum in the British Isles Species 1303 Lesser Horseshoe Bat (<i>Rhinolophus hipposideros</i>)	https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO000030.pdf
SAC	002318	Knockanira House SAC	14360.33	Species 1303 Lesser Horseshoe Bat (<i>Rhinolophus hipposideros</i>)	https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO002318.pdf
SPA	004077	River Shannon and River Fergus Estuaries SPA	2699.64	Birds A017 Cormorant (<i>Phalacrocorax carbo</i>) A038 Whooper Swan (<i>Cygnus cygnus</i>) A046 Light-bellied Brent Goose (<i>Branta bernicla hrota</i>) A048 Shelduck (<i>Tadorna tadorna</i>) A050 Wigeon (<i>Anas penelope</i>) A052 Teal (<i>Anas crecca</i>) A054 Pintail (<i>Anas acuta</i>) A056 Shoveler (<i>Anas clypeata</i>) A062 Scaup (<i>Aythya marila</i>) A137 Ringed Plover (<i>Charadrius hiaticula</i>) A140 Golden Plover (<i>Pluvialis apricaria</i>) A141 Grey Plover (<i>Pluvialis squatarola</i>) A142 Lapwing (<i>Vanellus vanellus</i>) A143 Knot (<i>Calidris canutus</i>) A149 Dunlin (<i>Calidris alpina</i>) A156 Black-tailed Godwit (<i>Limosa limosa</i>) A157 Bar-tailed Godwit (<i>Limosa lapponica</i>) A160 Curlew (<i>Numenius arquata</i>)	https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO004077.pdf

Site Type	Site Code	Site Name	Distance To (m)	Qualifying Interests (* denotes a priority habitat)	Conservation Objectives
				A162 Redshank (<i>Tringa totanus</i>) A164 Greenshank (<i>Tringa nebularia</i>) A179 Black-headed Gull (<i>Chroicocephalus ridibundus</i>) Habitats Wetlands	

4.0 Potential Impacts

This section of the report examines the potential impacts of the project – and assesses the impact, without mitigation, on each of the European sites listed above accounting for the qualifying interests and conservation objectives thereof.

Where impacts are determined to be significant, potentially significant or uncertain (in the absence of mitigation), an Appropriate Assessment will be required.

Some examples of effects that are likely to be significant are:

- Any impact on an Annex I habitat
- Causing reduction in the area of the habitat or Natura 2000 site
- Causing direct or indirect damage to the physical quality of the environment (e.g. water quality and supply, soil compaction) in the Natura 2000 site
- Causing serious or ongoing disturbance to species or habitats for which the Natura 2000 site is selected (e.g. increased noise, illumination and human activity)
- Causing direct or indirect damage to the size, characteristics or reproductive ability of populations on the Natura 2000 site
- Interfering with mitigation measures put in place for other plans or projects.

A review of the potential impacts associated with each stage of the project is first undertaken under section 4.1 before these impacts are then assessed against the individual Natura 2000 sites and their QI's in Table 2 below.

4.1 Potential Impacts of the Project

This section of the report examines the potential impacts from the project which have the potential to impact on the qualifying interests and conservation objectives of the previously identified Natura 2000 sites within its zone of influence of 15km.

The main potential for impacts from the project include;

Construction activities which include;

- Runoff of soil/sediment from the site given excavation and stockpiling activities
- Spillages of concrete/ other chemicals to ground during the project.
- Dust from construction activities
- Surface water discharges contaminated with concrete/ silt run-off
- Fuel spillages from plant

Operational activities which may result in an impact are associated with silt and other run-off from surface waters and potential for loss of containment which ultimately discharge to groundwater.

- **Habitat Loss and Fragmentation**

The proposed project site is not within, adjacent or overlapping any Natura 2000 site, therefore there is no potential for direct loss of habitat or habitat fragmentation impacts.

- **Deterioration of Habitat/ Species as a result of hydrological impacts**

The project red-line boundary extends to the existing drainage ditch on the northern boundary. The drainage ditch is therefore adjacent to the works boundary and is hydrologically connected to the Mogullaan stream / EPA Urlan Beg_010 River, which in turn flows downstream to the Lower River Shannon SAC and the River Shannon and River Fergus Estuaries SPA.

During construction, there is potential for suspended solids, concrete-contaminated water, fuels, oils or other construction pollutants to enter the northern drainage ditch and be conveyed downstream to the Mogullaan stream / EPA Urlan Beg_010 River. During operation, an uncontrolled loss of containment or contaminated surface-water run-off could also enter the ditch if appropriate controls were not in place.

Given the direct hydrological pathway and the presence of water-dependent qualifying interests of the Lower River Shannon SAC, together with the wetland habitat and wetland Special Conservation Interest (SCI) bird assemblage of the River Shannon and River Fergus Estuaries SPA, a likely significant effect cannot be excluded beyond reasonable scientific doubt at Stage 1 in the absence of mitigation. Both European sites are therefore screened in for Stage 2 Appropriate Assessment and a Natura Impact Statement is required.

- **Deterioration of Habitat/ Species as a result of hydrogeological impacts**

The potential for impact on groundwaters is low, given the limited nature of the works. It is planned to remove approximately 150mm of topsoil which will be stockpiled on site and used for landscaping. The construction and environmental management plan for the project details a number of controls in terms of best practice of storage, spill management and overall housekeeping.

The following measures are embedded / intrinsic elements of the project design and are not relied upon as Stage 1 screening mitigation:

- Installation of a holding tank for wastewater which will be emptied by an appropriately licenced waste management contractor as necessary ensuring no impact on groundwaters.
- Installation of a full retention Class 1 separator together with a soakaway pit for treatment of run-off surface waters from the fuel off-loading area.
- Kerbing of hardstand and boundary areas
- Security fencing around the boundary
- Off-loading being undertaken in catchment of interceptor
- All Liquids- HVO, Ad Blu etc. being stored in catchment of interceptor
- Tank specification are all individually bunded or double skinned with high level alarms and digital fill levels

The tanks being proposed are all individually bunded/ double skinned and will be stored in a hardstand area, all of which is in line with EPA best practice & safety data sheet guidelines. There is also an interceptor planned for the accidental release during offloading etc.

While negative impacts on the immediate water table and soil cannot be ruled out in the event of a large spill of HVO in the vicinity of the project site, a significant effect through the groundwater / hydrogeological pathway is not anticipated given the properties of the material, the embedded project design and the hydrogeological distance to the European sites. This conclusion relates only to the groundwater pathway and does not alter the

Stage 1 finding that a surface-water pathway exists via the northern drainage ditch and downstream Mogullaan stream / EPA Urlan Beg_010 River.

Table 2 Assessment of Potential Impact of the Project vs Natura 2000 sites

Site Type	Site Code	Site Name	Distance To (m)	Qualifying Interests (* denotes a priority habitat)	Potential Significant Impact	Potential Significant Impact (in the absence of Mitigation)
SAC	2165	Lower River Shannon SAC	2689.54	Habitats 1110 Sandbanks which are slightly covered by sea water all the time 1130 Estuaries 1140 Mudflats and sandflats not covered by seawater at low tide 1150 Coastal lagoons* 1160 Large shallow inlets and bays 1170 Reefs 1220 Perennial vegetation of stony banks 1230 Vegetated sea cliffs of the Atlantic and Baltic coasts 1310 Salicornia and other annuals colonising mud and sand 1330 Atlantic salt meadows (Glauco-Puccinellietalia maritima) 1410 Mediterranean salt meadows (Juncetalia maritimi) 3260 Water courses of plain to montane levels with the Ranunculion fluitantis and Callitriche-Batrachion vegetation 6410 Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae) 91E0 Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae)* Species 1029 Freshwater Pearl Mussel (<i>Margaritifera margaritifera</i>) 1095 Sea Lamprey (<i>Petromyzon marinus</i>) 1096 Brook Lamprey (<i>Lampetra planeri</i>) 1099 River Lamprey (<i>Lampetra fluviatilis</i>) 1106 Salmon (<i>Salmo salar</i>) 1349 Common Bottlenose Dolphin (<i>Tursiops truncatus</i>) 1355 Otter (<i>Lutra lutra</i>)	The Lower River Shannon SAC is located over 2 km south and east of the proposed greenfield site and includes water-dependent habitats and species. The project boundary extends to the drainage ditch on the northern boundary. The drainage ditch connects to the Mogullaan stream / EPA Ullan Beg_010 River and provides a hydrological pathway to the Lower River Shannon SAC. In the absence of mitigation, construction run-off, suspended solids, concrete-contaminated water or accidental fuel / chemical releases, together with operational contaminated run-off or loss of containment, could be conveyed downstream. A likely significant effect on the Lower River Shannon SAC cannot therefore be excluded at Stage 1 and further assessment is required.	Yes - screened in for Stage 2 Appropriate Assessment / NIS

Site Type	Site Code	Site Name	Distance To (m)	Qualifying Interests (* denotes a priority habitat)	Potential Significant Impact	Potential Significant Impact (in the absence of Mitigation)
SAC	000051	Lough Gash Turlough SAC	4199.39	Habitats 3180 3270 Rivers with muddy banks with Chenopodion rubri p.p. and Bidenton p.p. vegetation Turloughs*	Lough Gash Turlough SAC is located over 4 km north of the proposed development site. Following a review of the karst landforms on GSI.ie, it can be seen that the Lough Gash Turlough SAC is the most southerly karst landform. As such the proposed development location is downstream of Lough Cash Turlough with no pathway for groundwater flow from the Drumlina Site to Lough Cash Turlough. Given the limited nature and scale of the development together with the above, a potential significant impact is not anticipated and so this SAC can be screened out from further review.	No- screened out from further review
SAC	002316	Ratty River Cave SAC	7115.18	Habitats 8310 Caves not open to the public Species 1303 Lesser Horseshoe Bat (<i>Rhinolophus hipposideros</i>)	Ratty River Cave SAC is located over 7km north east of the proposed development site. The QI's for the site are associated with Cave habitats used by the Lesser Horseshoe Bat species. The Lesser Horseshoe bat species has a typical foraging range of 1-5km with most activity within the 2km range. As such, there is no potential for this project to impact this Natura 2000 site	No- screened out from further review

Site Type	Site Code	Site Name	Distance To (m)	Qualifying Interests (* denotes a priority habitat)	Potential Significant Impact	Potential Significant Impact (in the absence of Mitigation)
					and so it is screened out from further review.	
SAC	000064	Poulhagordon Cave (Quin) SAC	9942.58	Habitats 8310 Caves not open to the public Species 1303 Lesser Horseshoe Bat (<i>Rhinolophus hipposideros</i>)	Poulhagordon Cave (Quin) SAC is located approximately 10km north of the proposed development site. The QI's of the site are the same as the Ratty River Cave SAC above, being both caves and Lesser Horseshoe Bats. As above, the foraging range of the Lesser Horseshoe Bat means that the proposed project site is outside the zone of influence for the Lesser Horseshoe Bat and so this SAC can be screened out from further review.	No- screened out from further review
SAC	002279	Askeaton Fen Complex SAC	10406.28	Habitats 7210 Calcareous fens with <i>Cladium mariscus</i> and species of the <i>Caricion davallianae</i> * 7230 Alkaline fens	Askeaton Fen Complex SAC is located over 10km south of the proposed project site. there is no hydrological connection between the proposed site and this SAC. As such, the SAC can be screened out from further review.	No- screened out from further review
SAC	002319	Kilkishen House SAC	10966.74	Species 1303 Lesser Horseshoe Bat (<i>Rhinolophus hipposideros</i>)	Kilkishen House SAC is located over 10km north east of the proposed development site. As above, the foraging range of the Lesser Horseshoe Bat of 1-5km means that the proposed project site is outside the zone of influence for the Lesser	No- screened out from further review

Site Type	Site Code	Site Name	Distance To (m)	Qualifying Interests (* denotes a priority habitat)	Potential Significant Impact	Potential Significant Impact (in the absence of Mitigation)
					Horseshoe Bat and so this SAC can be screened out from further review.	
SAC	000174	Curraghchase Woods SAC	11793.80	Habitats 91E0 Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> (Alno-Padion, Alnion incanae, Salicion albae)* 91J0 Taxus baccata woods of the British Isles* Species 1016 Desmoulin's Whorl Snail (<i>Vertigo moulinsiana</i>) 1303 Lesser Horseshoe Bat (<i>Rhinolophus hipposideros</i>)	Curraghchase Woods SAC is located approximately 11.5 km south of the proposed project site. There is no hydrological link between the sites	No- screened out from further review
SAC	002010	Old Domestic Building (Keevagh) SAC	12081.15	Species 1303 Lesser Horseshoe Bat (<i>Rhinolophus hipposideros</i>)	As above, the foraging range of the Lesser Horseshoe Bat of 1-5km means that the proposed project site is outside the zone of influence for the Lesser Horseshoe Bat and so this SAC can be screened out from further review.	No- screened out from further review
SAC	002091	Newhall and Edenvale Complex SAC	12644.17	Habitats 8310 Caves not open to the public Species 1303 Lesser Horseshoe Bat (<i>Rhinolophus hipposideros</i>)	As above, the foraging range of the Lesser Horseshoe Bat of 1-5km means that the proposed project site is outside the zone of influence for the Lesser Horseshoe Bat and so this SAC can be screened out from further review.	No- screened out from further review

Site Type	Site Code	Site Name	Distance To (m)	Qualifying Interests (* denotes a priority habitat)	Potential Significant Impact	Potential Significant Impact (in the absence of Mitigation)
SAC	000030	Danes Hole, Poulnalecka SAC	13004.75	Habitats 8310 Caves not open to the public 91A0 Old sessile oak woods with Ilex and Blechnum in the British Isles Species 1303 Lesser Horseshoe Bat (<i>Rhinolophus hipposideros</i>)	As above, the foraging range of the Lesser Horseshoe Bat of 1-5km means that the proposed project site is outside the zone of influence for the Lesser Horseshoe Bat and so this SAC can be screened out from further review.	No- screened out from further review
SAC	002318	Knockanira House SAC	14360.33	Species 1303 Lesser Horseshoe Bat (<i>Rhinolophus hipposideros</i>)	As above, the foraging range of the Lesser Horseshoe Bat of 1-5km means that the proposed project site is outside the zone of influence for the Lesser Horseshoe Bat and so this SAC can be screened out from further review.	No- screened out from further review
SPA	004077	River Shannon and River Fergus Estuaries SPA	2699.64	Birds A017 Cormorant (<i>Phalacrocorax carbo</i>) A038 Whooper Swan (<i>Cygnus cygnus</i>) A046 Light-bellied Brent Goose (<i>Branta bernicla hrota</i>) A048 Shelduck (<i>Tadorna tadorna</i>) A050 Wigeon (<i>Anas penelope</i>) A052 Teal (<i>Anas crecca</i>) A054 Pintail (<i>Anas acuta</i>) A056 Shoveler (<i>Anas clypeata</i>) A062 Scaup (<i>Aythya marila</i>) A137 Ringed Plover (<i>Charadrius hiaticula</i>) A140 Golden Plover (<i>Pluvialis apricaria</i>) A141 Grey Plover (<i>Pluvialis squatarola</i>) A142 Lapwing (<i>Vanellus vanellus</i>) A143 Knot (<i>Calidris canutus</i>) A149 Dunlin (<i>Calidris alpina</i>) A156 Black-tailed Godwit (<i>Limosa limosa</i>) A157 Bar-tailed Godwit (<i>Limosa lapponica</i>) A160 Curlew (<i>Numenius arquata</i>)	The River Shannon and River Fergus Estuaries SPA is located approximately 2.7 km from the site and supports a wetland habitat and a range of wetland SCI bird species. The red-line boundary extends to the northern drainage ditch, which connects to the Mogullaan stream / EPA Urlan Beg_010 River and provides a downstream hydrological pathway to the estuarine SPA. In the absence of mitigation, construction run-off, suspended solids, concrete-contaminated water, accidental fuel / chemical releases, or operational contaminated run-	Yes - screened in for Stage 2 Appropriate Assessment / NIS

Site Type	Site Code	Site Name	Distance To (m)	Qualifying Interests (* denotes a priority habitat)	Potential Significant Impact	Potential Significant Impact (in the absence of Mitigation)
				A162 Redshank (<i>Tringa totanus</i>) A164 Greenshank (<i>Tringa nebularia</i>) A179 Black-headed Gull (<i>Chroicocephalus ridibundus</i>) Habitats Wetlands	off / loss of containment could be conveyed downstream and could affect water quality and wetland supporting habitat. A likely significant effect cannot therefore be excluded at Stage 1 and further assessment is required.	

4.2 Likely Cumulative & In-combination Impacts

A review of the planning applications for the last 5 years in the vicinity of the proposed development was undertaken using a combination of myplan.ie and Limerick County Council e-plan platform. Special consideration was given to Planning Application 25260 GP Joule Ireland Limited which has been granted planning permission and is associated with Mogullaun Clare Solar Farm, ESBs Drumline 110 kV substation, Drumline and Drumline East Park, Shannon Freezone.

Other projects assessed include:

- Clare County Development Plan 2023-2029
- Clare Biodiversity Action Plan (2017 -2023)
- Shannon Town & Environs Local Area Plan 2012-2018
- Planning applications in the area
- National Development Plan Ireland (2021-2030)
- National Energy & Climate Plan (2021-2030)
- Climate Action Plan 2025
- National Biodiversity Action Plan 2022-2030

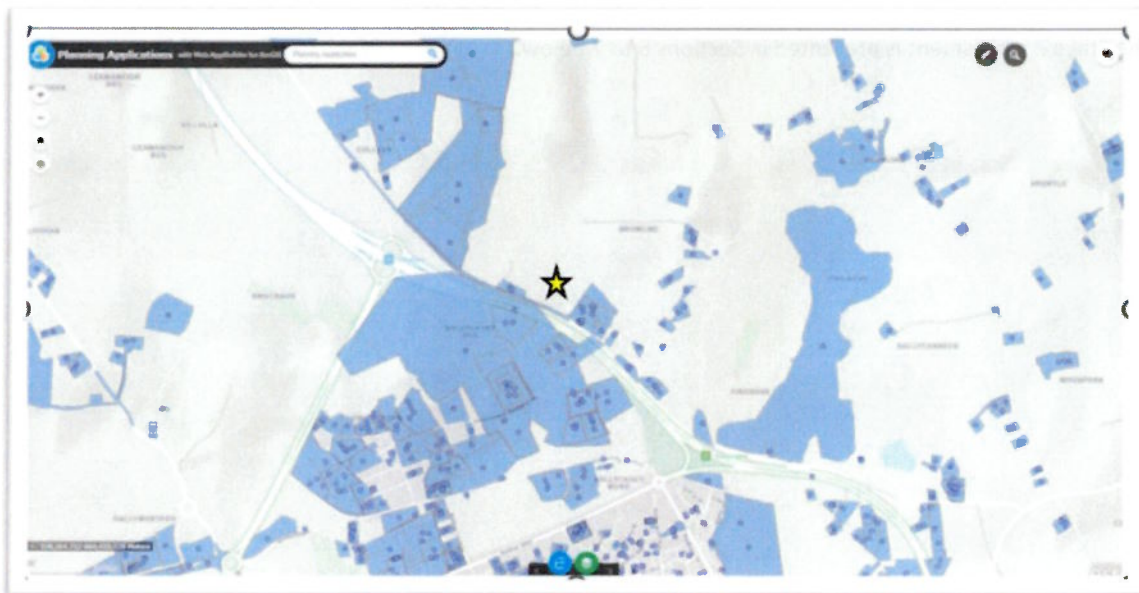


Figure 10 Planning applications in the close proximity to the proposed site



The principal plausible in-combination mechanism for the European sites carried forward is deterioration in downstream water quality where construction or operational pollutant loads from separate projects could reach the same receiving waters. Particular regard has therefore been given to nearby development, including Planning Application 25260 (Mogullaun Clare Solar Farm), and to the potential for overlapping construction activity to contribute sediment or contaminated run-off to the wider catchment. The mitigation measures in Section 6 are designed to prevent this development from discharging contaminated run-off or pollutants to the northern drainage ditch. With those measures fully implemented, this project will not make a material contribution to a combined deterioration in water quality, and adverse in-combination effects on the Lower River Shannon SAC or River Shannon and River Fergus Estuaries SPA are not anticipated.

4.3 Screening Statement Conclusions

Following examination of the project boundary and the northern drainage ditch, the source-pathway-receptor assessment has identified a hydrological pathway from the proposed development to the Mogullaan stream / EPA Urlan Beg_010 River and downstream Lower River Shannon SAC and River Shannon and River Fergus Estuaries SPA.

In the absence of mitigation, potential effects from construction-phase surface-water run-off and accidental releases, and from operational contaminated run-off or loss of containment, cannot be excluded for the Lower River Shannon SAC or the River Shannon and River Fergus Estuaries SPA.

The remaining European sites identified within the zone of influence can continue to be screened out for the reasons set out in Table 2. However, significant effects on the Lower River Shannon SAC and the River Shannon and River Fergus Estuaries SPA are uncertain at screening stage and the assessment therefore proceeds to Stage 2 Appropriate Assessment for both sites.

A Natura Impact Statement has therefore been prepared to assess the potential for adverse effects on the integrity of the Lower River Shannon SAC and the River Shannon and River Fergus Estuaries SPA in view of their conservation objectives and to identify the mitigation measures required to avoid or reduce those effects.

The Stage 2 assessment is presented in Sections 5 to 7 below.

5.0 Natura Impact Assessment

Based on the Stage 1 screening assessment, the Lower River Shannon SAC (Site Code 002165) and the River Shannon and River Fergus Estuaries SPA (Site Code 004077) are carried forward to Stage 2 because the red-line boundary extends to the northern drainage ditch, which connects to the Mogullaan stream / EPA Urlan Beg_010 River and provides a downstream hydrological pathway to both European sites.

5.1 Impact Assessment

During Stage 2 Appropriate Assessment, the potential for the proposed project, individually and in combination with other plans or projects, to adversely affect the integrity of the Lower River Shannon SAC and the River Shannon and River Fergus Estuaries SPA is considered in greater detail with reference to the sites' conservation objectives. The principal pathway is hydrological connectivity through the northern drainage ditch and downstream watercourse.

Potential construction-phase effects comprise the mobilisation of sediment and suspended solids from stripped or disturbed ground; concrete-contaminated water; accidental releases of fuel, oil or other chemicals; and contaminated surface-water run-off entering the northern drainage ditch. If uncontrolled, these pollutants could be transported downstream and could deteriorate water quality, with potential effects on water-dependent qualifying interests of the Lower River Shannon SAC and on the wetland supporting habitat and SCI bird assemblage of the River Shannon and River Fergus Estuaries SPA.

Potential operational effects comprise contaminated surface-water run-off or a loss of containment entering the northern drainage ditch and being conveyed downstream. The HVO / AdBlue storage arrangements, hardstanding, interceptor, kerbing, holding tank and associated containment systems described in Section 4.1 are embedded / intrinsic elements of the project design. They reduce the inherent environmental risk but are distinguished from the Stage 2 mitigation measures set out below.

No direct habitat loss within either European site will occur and the proposed works are remote from the designated boundaries. The potential effect requiring Stage 2 assessment is therefore an indirect deterioration in water quality and associated aquatic / wetland supporting habitat through the identified hydrological pathway.

5.2 Lower River Shannon SAC 002165

This extensive site spans approximately 120 km along the Shannon valley, from Killaloe in County Clare to Loop Head/Kerry Head. It covers several key areas, including the Shannon, Feale, Mulkear, and Fergus estuaries, the freshwater stretch of the River Shannon from Killaloe to Limerick, and the marine region between Loop Head and Kerry Head. The site also includes the lower reaches of various rivers, such as the Galey, Smearlagh, Oolagh, Allaughaun, Owveg, Clydagh, Caher, Breanagh, and Glenacarne within the Feale sub-catchment, and the Killeenagarraiff, Annagh, Newport, Dead River, Bilboa, Glashacloonaraveela, Gortnageragh, and Cahernahallia in the Mulkear sub-catchment.

This area has been designated as a Special Area of Conservation (SAC) due to its habitats and species protected under the EU Habitats Directive, which include both priority and non-priority habitats and species. These include sandbanks, estuaries, tidal mudflats, coastal lagoons, large shallow inlets and bays, reefs, stony bank vegetation, vegetated sea cliffs, salt meadows, freshwater river vegetation, and alluvial forests. Notable species in the site include the freshwater pearl mussel, sea lamprey, brook lamprey, river lamprey, Atlantic salmon, bottle-nosed dolphin, and otter.

While domestic and industrial waste is discharged into the Shannon, water quality remains generally good, although there are some concerns in the upper estuary due to sewage from Limerick City. The estuary shows little trace of industrial pollution, based on metal analysis. However, future industrial growth and pollution are potential risks. Fishing is a popular activity on the Shannon, attracting many tourists and local angler associations, some of which maintain fishing stands and beats. The River Feale is recognized as a designated Salmonid Water. Other activities in the area include oyster farming, boating, dolphin-watching trips, and shooting, some of which could disturb the wildlife, particularly birds and dolphins. Specific risks to dolphins include noise from boats, entanglement in fishing gear, and collisions with fast vessels.

This site holds significant ecological value, supporting a wide variety of habitats and species listed in the EU Habitats Directive, such as priority habitats like lagoons and alluvial forests. It also hosts Ireland's only known resident population of bottle-nosed dolphins and all three species of Irish lamprey. Several Red Data Book species, including a thriving population of Triangular Club-rush, are present, along with species listed in the EU Birds Directive. The Shannon and Fergus Estuaries make up Ireland's largest estuarine complex, hosting the highest number of wintering wildfowl and waders in the country. Much of the estuarine area is also protected as a Special Protection Area (SPA) under the EU Birds Directive to safeguard migratory bird populations during the winter.

Table 3 Review of QI's associated with Lower River Shannon SAC 002165

Qualifying Interest (QI)/ Special conservation Interest (SCI)	Conservation Objective	Overall Conservation Status & Trend 2025	Potential Threat from Project	Mitigation Measures required	Potential for Significant Impact following implementation of Mitigation
[1110] Sandbanks	To maintain the favourable conservation condition of Sandbanks which are slightly covered by sea water all the time in the Lower River Shannon SAC	Favourable & Stable	Potential for deterioration in water quality from sediment, concrete-contaminated water, hydrocarbons or other pollutants conveyed through the northern drainage ditch and downstream watercourse.	Yes	No
[1130] Estuaries	To maintain the favourable conservation condition of Estuaries in the Lower River Shannon SAC	Unfavourable-- Bad & Stable			
[1140] Tidal Mudflats and Sandflats	To maintain the favourable conservation condition of Mudflats and sandflats not covered by seawater at low tide in the Lower River Shannon SAC	Unfavourable-- Inadequate & Stable			
[1150] Coastal Lagoons*	To restore the favourable conservation condition of Coastal lagoons in the Lower River Shannon SAC	Unfavourable-- Bad & Declining			
[1160] Large Shallow Inlets and Bays	To maintain the favourable conservation condition of Large shallow inlets and bays in the Lower River Shannon SAC	Unfavourable-- Bad & Declining			
[1170] Reefs	To maintain the favourable conservation condition of Reefs in the Lower River Shannon SAC	Unfavourable-- Bad & Stable			
[1220] Perennial Vegetation of Stony Banks	To maintain the favourable conservation condition of Perennial vegetation of stony banks in the Lower River Shannon SAC	Unfavourable-- Inadequate & Declining			
[1230] Vegetated Sea Cliffs	To maintain the favourable conservation condition of Vegetated sea cliffs in the Lower River Shannon SAC	Unfavourable-- Inadequate & Stable			
[1310] Salicornia Mud	To maintain the favourable conservation condition of Salicornia and other annuals colonizing mud and sand in the Lower River Shannon SAC	Unfavourable-- Bad & Declining			
[1330] Atlantic Salt Meadows	To maintain the favourable conservation condition of Salicornia and other annuals colonizing mud and sand in the Lower River Shannon SAC	Unfavourable-- Bad & Declining			
[1410] Mediterranean Salt Meadows	To restore the favourable conservation condition of Mediterranean salt meadows (Juncetalia maritimi) in the Lower River Shannon SAC	Unfavourable-- Inadequate & Declining			
[3260] Floating River Vegetation	Water courses of plain to montane levels with the Ranunculus fluitans and Callitriche Batrachion vegetation	Unfavourable-- Inadequate & Declining			

[6410] Molinia Meadows	To maintain the favourable conservation condition of Molinia meadows on calcareous, peaty or clayey-silt laden soils (Molinion caeruleae) in the Lower River Shannon SAC	Unfavourable- Bad & Declining
[91E0] Alluvial Forests*	To restore the favourable conservation condition of Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae) in the Lower River Shannon SAC	Unfavourable- Bad & Declining
[1029] Freshwater Pearl Mussel (Margaritifera margaritifera)	To restore the favourable conservation condition of Freshwater Pearl Mussel in the Lower River Shannon SAC	Unfavourable- Bad & Declining
[1095] Sea Lamprey (Petromyzon marinus)	To restore the favourable conservation condition of Sea Lamprey in the Lower River Shannon SAC	Unfavourable- Bad & Declining
[1096] Brook Lamprey (Lampetra planeri)	To maintain the favourable conservation condition of Brook Lamprey in the Lower River Shannon SAC	Favourable & Stable
[1099] River Lamprey (Lampetra fluviatilis)	To maintain the favourable conservation condition of River Lamprey in the Lower River Shannon SAC	Unfavourable & Inadequate (Unknown)
[1106] Atlantic Salmon (Salmo salar)	To restore the favourable conservation condition of Salmon in the Lower River Shannon SAC	Unfavourable- Bad & Declining
[1349] Bottle-nosed Dolphin (Tursiops truncatus)	To maintain the favourable conservation condition of Bottlenose Dolphin in the Lower River Shannon SAC	Favourable & Stable
[1355] Otter (Lutra lutra)	To restore the favourable conservation condition of Otter in the Lower River Shannon SAC	Favourable & Stable

5.3 River Shannon and River Fergus Estuaries SPA 4077

The estuaries of the River Shannon and River Fergus create Ireland's largest estuarine complex. This site covers the entire estuarine habitat from Limerick City, extending west to Doonaha in County Clare and Dooneen Point in County Kerry. It features expansive intertidal flats that are home to a variety of macro-invertebrates, like *Macoma*, *Scrobicularia*, and *Nereis*, which provide a vital food source for migratory birds during winter. Salt marshes often border the mudflats, offering crucial high-tide resting spots for these birds. In other parts of the site, the shoreline consists of stony or shingle beaches.

Designated as a Special Protection Area (SPA) under the EU Birds Directive, this site is of particular conservation value for several species, including Cormorant, Whooper Swan, Light-bellied Brent Goose, Shelduck, Wigeon, Teal, Pintail, Shoveler, Scaup, Ringed Plover, Golden Plover, Grey Plover, Lapwing, Knot, Dunlin, Black-tailed Godwit, Bar-tailed Godwit, Curlew, Redshank, Greenshank, and Black-headed Gull. The site is also recognized for supporting over 20,000 wintering waterbirds. Wetlands play a significant role in the site, and both the wetlands and the waterbirds are essential for conservation under the EU Birds Directive.

The site is the most crucial coastal wetland in Ireland, regularly hosting over 50,000 wintering waterfowl (with a five-year average of 57,133 from 1995/96 to 1999/2000), a concentration that is internationally significant. Notably, it supports globally important populations of Light-bellied Brent Goose (494), Dunlin (15,131), Black-tailed Godwit (2,035), and Redshank (2,645). Additionally, 17 species have nationally significant populations, including Cormorant (245), Whooper Swan (118), Shelduck (1,025), Wigeon (3,761), Teal (2,260), Pintail (62), Shoveler (107), Scaup (102), Ringed Plover (223), Golden Plover (5,664), Grey Plover (558), Lapwing (15,126), Knot (2,015), Bar-tailed Godwit (460), Curlew (2,396), Greenshank (61), and Black-headed Gull (2,681). Among these, some species like Dunlin (13% of the national population), Lapwing (6%), and Redshank (9%) are particularly important in a national context.

The site also hosts a significant breeding population of Cormorants, with 93 pairs recorded in 2010. Other species found here include Mute Swan (103), Mallard (441), Red-breasted Merganser (20), Great Crested Grebe (50), Grey Heron (38), Oystercatcher (551), Turnstone (124), and Common Gull (445), based on five-year average peak counts from 1995/96 to 1999/2000.

Besides its importance for wintering birds, the site also serves as a migration stopover for various species in both spring and autumn. As an internationally significant area, the River Shannon and River Fergus Estuaries SPA supports over 20,000 wintering waterbirds and holds key populations of four species—Light-bellied Brent Goose, Dunlin, Black-tailed Godwit, and Redshank. Additionally, 17 species have nationally important wintering populations. The site also supports a nationally important breeding population of Cormorants. Three species that regularly occur here—Whooper Swan, Golden Plover, and Bar-tailed Godwit—are listed on Annex I of the EU Birds Directive. Parts of the SPA are also designated as Wildfowl Sanctuaries.

Table 4 Review of QI's associated with River Shannon and River Fergus Estuaries SPA 4077

Qualifying Interest (QI)/ Special conservation Interest (SCI)	Conservation Objective	Overall Conservation Status & Trend 2020-2026	Potential Threat from Project	Mitigation Measures required	Potential for Significant Impact following implementation of Mitigation
Shoveler (<i>Anas clypeata</i>) [A056] Scaup (<i>Aythya marila</i>) [A062] Grey Plover (<i>Pluvialis squatarola</i>) [A141] Golden Plover (<i>Pluvialis apricaria</i>) [A140] Lapwing (<i>Vanellus vanellus</i>) [A142] Knot (<i>Calidris canutus</i>) [A143] Dunlin (<i>Calidris alpina</i>) [A149] Black-tailed Godwit (<i>Limosa limosa</i>) [A156] Bar-tailed Godwit (<i>Limosa lapponica</i>) [A157] Curlew (<i>Numenius arquata</i>) [A160] Redshank (<i>Tringa totanus</i>) [A162] Cormorant (<i>Phalacrocorax carbo</i>) [A017] Whooper Swan (<i>Cygnus cygnus</i>) [A038] Light-bellied Brent Goose (<i>Branta bernicla hrota</i>) [A046] Shelduck (<i>Tadorna tadorna</i>) [A048] Wigeon (<i>Anas penelope</i>) [A050] Teal (<i>Anas crecca</i>) [A052] Pintail (<i>Anas acuta</i>) [A054] Ringed Plover (<i>Charadrius hiaticula</i>) [A137] Greenshank (<i>Tringa nebularia</i>) [A164] Black-headed Gull (<i>Chroicocephalus ridibundus</i>) [A179] Wetland and Waterbirds [A999]	To maintain the favourable conservation condition of each species in the River Shannon and River Fergus Estuaries SPA,	High conservation Concern	Potential for indirect deterioration in downstream water quality / wetland supporting habitat if pollutants enter the drainage ditch and are conveyed to the estuary.	Yes	No

Table 5 Stage 2 assessment of relevant receptors and residual effects

European site	Relevant QI / SCI receptor	Potential adverse effect	Mitigation relied upon	Residual effect / integrity conclusion
Lower River Shannon SAC (002165)	Water-dependent habitats and aquatic species listed in Table 1	Deterioration in water quality from sediment, concrete-contaminated water, hydrocarbons or other pollutants conveyed through the northern drainage ditch and downstream watercourse.	Isolation of the ditch from active works; no storage of pollutants within 10 m; contained construction run-off; controlled concrete washout; fuel / spill controls; inspection and ECoW oversight.	With the mitigation fully implemented, pollutants will be prevented from entering the identified hydrological pathway. No adverse effect on the integrity of the SAC is anticipated.
Lower River Shannon SAC (002165)	Other qualifying habitats / species	No direct land-take within the SAC and no additional source-pathway-receptor linkage has been identified for habitat loss or direct disturbance.	Embedded project design and the Section 6 measures; no works within the designated site.	No adverse effect on site integrity is anticipated.
River Shannon and River Fergus Estuaries SPA (004077)	Wetland habitat and wetland SCI bird assemblage listed in Table 1	Indirect deterioration in downstream water quality / wetland supporting habitat if pollutants enter the drainage ditch and are conveyed to the estuary.	The same Section 6 water-protection measures applied to the shared hydrological pathway, including ditch isolation, containment of run-off, spill prevention and inspection.	With the mitigation fully implemented, no material deterioration in wetland supporting habitat is anticipated and the conservation objectives of the SPA will not be undermined.
River Shannon and River Fergus Estuaries SPA (004077)	SCI birds - direct disturbance / habitat use	The SPA is approximately 2.7 km from the project. The development does not involve land-take from the SPA; the project field is improved agricultural grassland and better wetland habitat occurs closer to the estuary, as assessed at Stage 1.	No additional mitigation is required for a direct disturbance pathway; Section 6 controls address the hydrological pathway carried forward to Stage 2.	No adverse effect on the integrity of the SPA is anticipated.

6.0 Mitigation

Without mitigation, adverse effects on the Lower River Shannon SAC and the River Shannon and River Fergus Estuaries SPA cannot be excluded through the northern drainage ditch / Mogullaan stream hydrological pathway. The following measures are required specifically to avoid or reduce harmful effects on these European sites.

Table 6 Proposed Mitigation Measures for the Development Site

Phase	Aspect	Mitigation measure
Throughout project	General Site Management	- Environmental responsibilities to form part of contract negotiations - Site management including environmental responsibilities and general housekeeping to be clearly stipulated as part of contract negotiations - Structured site layout, completed in line with CIRIA, Good Practice Guidelines - All contractors will be made aware of the SAC/ SPA and the impact of their work. No materials will be disposed of to ground/ drain. - A permeable lined soakaway is to be set up on the southern boundary of the site. All surface waters from the construction area shall be discharged to this point during the construction phase. The soakaway will be designed in line with BRE digest 365 or equivalent - A silt trap/ hoarding (with no gaps) is to be up to isolate the site from the surrounding area. - All storage of materials should be stored within the contractors compound and silt fence - Waste management facilities to be put in place. - Daily checks to be completed on site, overall house-keeping, skip management, surface/ ground waters etc. The boundary should be inspected to ensure no impact off site. - Plant shall be checked for leaks before use. Refuelling and maintenance shall be undertaken only in a designated impermeable area away from the northern drainage ditch. - Emergency response procedures to be put in place for spills etc. and to include notification procedures for regulatory authorities - All fuels, chemicals/ paints to be used on-site should be approved for use, and be appropriately bunded (where possible in an enclosed bund to prevent rainwater entry), hold minimum quantities and have a relevant safety data sheet. - Regular site checks should be implemented by site management. - A detailed programme of works should be implemented which reduces the amount of exposed surface available at any time.
Construction	Surface/storm water run-off & Groundwater protections	- The northern drainage ditch shall be treated as a sensitive hydrological pathway. A continuous silt fence / suitable hoarding or equivalent physical barrier shall be installed between the active works area and the ditch before ground disturbance begins. The barrier shall be inspected regularly and after significant rainfall, with accumulated sediment removed as required.

		- A silt fence/ hoarding (with no gaps) will be put in place around the perimeter of the construction area to prevent access of dust to waterbodies and roadways. - The silt fence/ hoarding (with no gaps) is to be installed at the perimeter of the project site and are to be monitored and maintained as required. - A permeable lined soakaway is to be set up on the southern boundary of the site. All surface waters from the construction area shall be discharged to this point during the construction phase. The soakaway will be designed in line with BRE digest 365 or equivalent - Groundworks will not be undertaken when heavy rainfall is expected or ongoing. - No soil, spoil, waste, construction materials, fuel, oils, chemicals or other potentially polluting materials shall be stored or placed within 10 m of the northern drainage ditch. No construction materials or liquids shall be discharged to the ditch or to any drain connected to it. - Materials excavated/ stored will be stockpiled and managed by covering/ containing to ensure there is no blow off from dust or run off of sediment to drains. - Excavated materials will be reused for landscaping on-site otherwise it will be removed by a suitably licensed contractor; - Concrete will be delivered to site rather than made up on site; - An impermeable lined concrete wash-out pit or skip shall be designated for concrete truck wash out on site. it will be located at least 15m from the boundary. - Wash down water from concrete trucks, cast in place concrete etc. will be collected in a suitable containment structure and then taken off-site for appropriate disposal. - Fuels, lubricants and hydraulic fluids for equipment used in the construction site will be carefully handled to avoid spillage, properly secured against unauthorised access or vandalism, and provided with spill containment according to current best practice. - Refuelling during construction will be carried out in designated areas, protected from spills and will be supervised at all times. - Spill trays to be used under all diesel containing items - The perimeters of the work site, should be visually inspected on a daily basis during project works to ensure there is no impact off-site - Run-off from disturbed construction areas shall be contained within the site and directed to the lined soakaway / for the works. There shall be no direct discharge of construction run-off to the northern drainage ditch. - An adequate supply of spill kits and absorption packs will be made available on site and personnel trained on the correct use and disposal of such items. Appropriate spill control equipment, including oil booms and oil soakage pads, will be kept within the construction site to deal with any accidental spillage. .
Operation	Surface/storm water run-off & Groundwater protection	- Installation of permeable liner to catch solids before discharge to approved soakaway pit. - To prevent soil compaction; Works will only be taken when the soil is not water logged & no heavy rain is promised - Permeable paving will be used throughout the development

Construction	Biodiversity	- No trees/ hedging/scrub to be removed between 1st March and 31st August - Works will be undertaken during full daylight hours - Stockpiles will be maintained on flat ground and covered where necessary to prevent dust/ run-off.
Operation		- The interceptor, drainage system, bunds / double-skinned tanks and associated level detectors, hardstanding and associated containment infrastructure shall be routinely inspected and maintained so that contaminated run-off or loss of containment cannot discharge to the northern drainage ditch. Spill response procedures shall remain in place for the operational phase.

7.0 Impact Assessment Conclusion

The boundary brings the proposed development into direct hydrological connectivity with the northern drainage ditch, which connects to the Mogullaan stream / EPA Urlan Beg_010 River and downstream Lower River Shannon SAC and River Shannon and River Fergus Estuaries SPA. Accordingly, these European sites could not be screened out at Stage 1 and a Stage 2 Appropriate Assessment was required.

The Stage 2 assessment identified potential indirect effects associated principally with contaminated surface-water run-off and accidental releases during construction, together with contaminated run-off or loss of containment during operation. The receptor assessment in Table 4 and the mitigation measures in Section 6 demonstrate how the source-pathway-receptor linkage will be broken by preventing pollutants from entering the northern drainage ditch and downstream watercourse.

Subject to the full and effective implementation of the embedded project design measures and the specific Stage 2 mitigation measures set out in this NIS, it can be concluded beyond reasonable scientific doubt, in view of best scientific knowledge, on the basis of objective information and in light of the conservation objectives of the relevant European sites, that the proposed project, individually or in combination with other plans and projects, will not adversely affect the integrity of the Lower River Shannon SAC (Site Code 002165), the River Shannon and River Fergus Estuaries SPA (Site Code 004077), or any other European site.

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