Appendix 12C

WFD Screening Assessment

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Proposed Derrygreenagh Power Project, Co. Offaly

WFD Screening Assessment

Delivering a better world

Prepared for: Bord na Móna Powergen Limited

Prepared by:

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1. Introduction

Background

1.1 AECOM Infrastructure & Environment UK Limited (AECOM) has been commissioned by Bord na Móna Powergen Limited and Fichtner Consulting Engineers to undertake a Water Framework Directive (WFD) Screening Assessment in support of the planning application for the Derrygreenagh Power Project (the Proposed Development).

1.2 The Proposed Development consists of an Open Cycle Gas Turbine (OCGT) c. 170MW a Combined Cycle Gas Turbine (CCGT) c. 540MW, a gas Above Ground Installation (AGI) and ancillary items hereafter referred to as the Power Plant Area, which will export power through an Electricity Grid Connection (via a 220kV tail substation, hybrid transmission of overhead line and 220kV underground cable to a proposed 400kV loop-in substation which seeks to connect into the existing Oldstreet-Woodland 400kV network). The Power Plant Area will operate off natural gas primarily from the Dublin-Galway high pressure line (BGE/77) which will connect to the Derrygreenagh AGI via a Gas Connection Corridor (underground pipeline and AGI at high pressure line) which is being assessed for the purposes of this application but will be subject to further detailed design and separate consenting processes by Gas Networks Ireland (GNI).

1.3 The Proposed Development will comprise of the construction (inclusive of demolition of pre-existing infrastructure within the Power Plant Area), operation of the Power Plant Area and Electricity Grid Connection and future decommissioning of the Power Plant Area. The Power Plant Area for the Proposed Development is 17.4 ha in area. The Gas Connection Corridor is integral to the Overall Project and is assumed to be c. 9.7km in length.

1.4 The principal components of the Proposed Development and Overall Project are as follows:

- The 'Power Plant Area' relating to the main thermal power plant area and gas above ground installation (AGI) east of the R400 road, and the process water discharge pipe which will extend west of the R400 road before discharging into the Yellow River to the south.
- 'Electricity Grid Connection' relating to the 220 kV substation west of the R400 road, pylon towers, overhead lines, line-cable interface compound, underground cabling, associated cabling and connections to a new 400 kV substation site and compound.
- 'Gas Connection Corridor' relating to the underground gas connection corridor to the existing high pressure gas pipeline to the west, north of the Power Plant Area via AGI at tie-in location and underground routing of the pipeline.
- The 'Overall Project' relates to the Proposed Development (i.e., the components for which planning permission is being sought (Power Plant Area and Electricity Grid Connection), and to ensure a robust assessment, includes the Gas Connection Corridor as described above.

1.5 The Proposed Development is located entirely within Co. Offaly, primarily on Bord na Móna land (i.e., Drumman, Derryarkin and Ballybeg Bogs which are located in the Derrygreenagh Bog Group), with the exception of an area of agricultural land required for a loop-in connection to the Oldstreet-Woodland 400kV line. The Derrygreenagh Bog Group lands, in which the Proposed Development is largely located, are regulated under Integrated Pollution Control (IPC) Licence Reg No. P0501-01 per activity class 1.4 of First Schedule of the Environmental Protection Agency (EPA) Act as amended.

1.6 Condition 6 and Condition 9 of the current IPC licence deal with control of 'Emissions to Water' and 'Water Protection' respectively.

- **Condition 6.1 –** No specified emission to water shall exceed the emission limit values set out in *Schedule 1(i) Emission to Water* subject to Condition 3 of this licence. There shall be no other emission to water of environmental significance.
- **Condition 9.1.1 –** No potentially polluting substance or matter shall be permitted to discharge to off-site surface waters, off site storm drains or groundwaters.

1.7 The site of the Proposed Development has operated and will continue to operate in compliance with the conditions of the current IPC Licence (P0501-01). A copy of the IPC licence is included in Appendix B. where

further detail on conditions of the licence and schedule of monitoring for Emission Limit Values (ELVs) to water can be found. It is envisaged that the prior to the commencement of operation, the IPC licence will be surrendered and that the site of the Power Plant Area will operate under an Industrial Emission (IE) Licence subject to agreements and approvals by the EPA.

Statement of Authority

1.8 The report has been prepared by the Technical Team. Lead for this chapter has been Neil Williams, Technical Director, CGeog, CEnv, CSci, CWEM. Neil Williams is AECOM's lead fluvial geomorphologist, managing a team of eight river restoration specialists. He is a Chartered Geomorphologist, Environmentalist, Scientist, and Water and Environment Manager. He is a registered Practitioner with the River Restoration Centre, supporting UK river restoration with extensive experience in research and consultancy in a comprehensive range of river environments across the UK and Canada.

Aim

1.9 This report provides the relevant information, as required under schedule 7 and 7A of the Planning and Development Regulations 2001 as amended to allow the planning authority to make a screening determination of the Proposed Development and Overall Project.

Study Area

1.10 The Proposed Development and Overall Project is located approximately 5.5 km north-west of Rhode, in County Offaly, Ireland. The Proposed Development is located entirely in County Offaly mainly within Bord na Móna lands; 3 No. Bogs within the Derrygreenagh Bog Groups (regulated by IPC Licence Register Number P0501-01) though a small portion is on third-party agricultural land to facilitate the new loop-in 400kV substation as part of the Electricity Grid Connection. The Gas Connection Corridor is located within the counties of Offaly and Westmeath and includes c. 1.4km through the R400 road.

1.11 The Proposed Development and Overall Project is within the Boyne WFD Catchment and extends across nine WFD surface water bodies:

- CASTLEJORDAN_020 (WFD ID: IE_EA_07C040100).
- YELLOW (CASTLEJORDAN)_020 (WFD ID: IE_EA_07Y020100).
- YELLOW (CASTLEJORDAN)_010 (WFD ID: IE_EA_07Y020070).
- CASTLETOWN TARA STREAM_010 (WFD ID: IE_EA_07C080190).
- ESKER STREAM_010 (WFD ID: IE_SE_14E010100).
- Grand Canal Main Line West (Barrow) (WFD ID: IE_14_AWB_GCMLW).
- CASTLEJORDAN_010 (IE_EA_07C040050)
- ROCHFORTBRIDGE STREAM_010 (IE_EA_07R040300)
- BROSNA_040 (IE_SH_25B090200)

1.12 The Proposed Development and Overall Project also extends across three WFD groundwater bodies:

- Athboy (WFD ID: IE_EA_G_001).
- Daingean (WFD ID: IE_SE_G_049).
- Clara (IE_SH_G_240)

1.13 The study area, comprising the Proposed Development and Overall Project red line boundary and a 1km buffer zone, is summarised in Figure 1-1, with WFD water bodies and flow directions.

1.14 Risks of effects to protected aquatic habitats are also considered within WFD assessments, although there are no Special Protection Areas (SPA) or Special Areas of Conservation (SAC) in the study area.

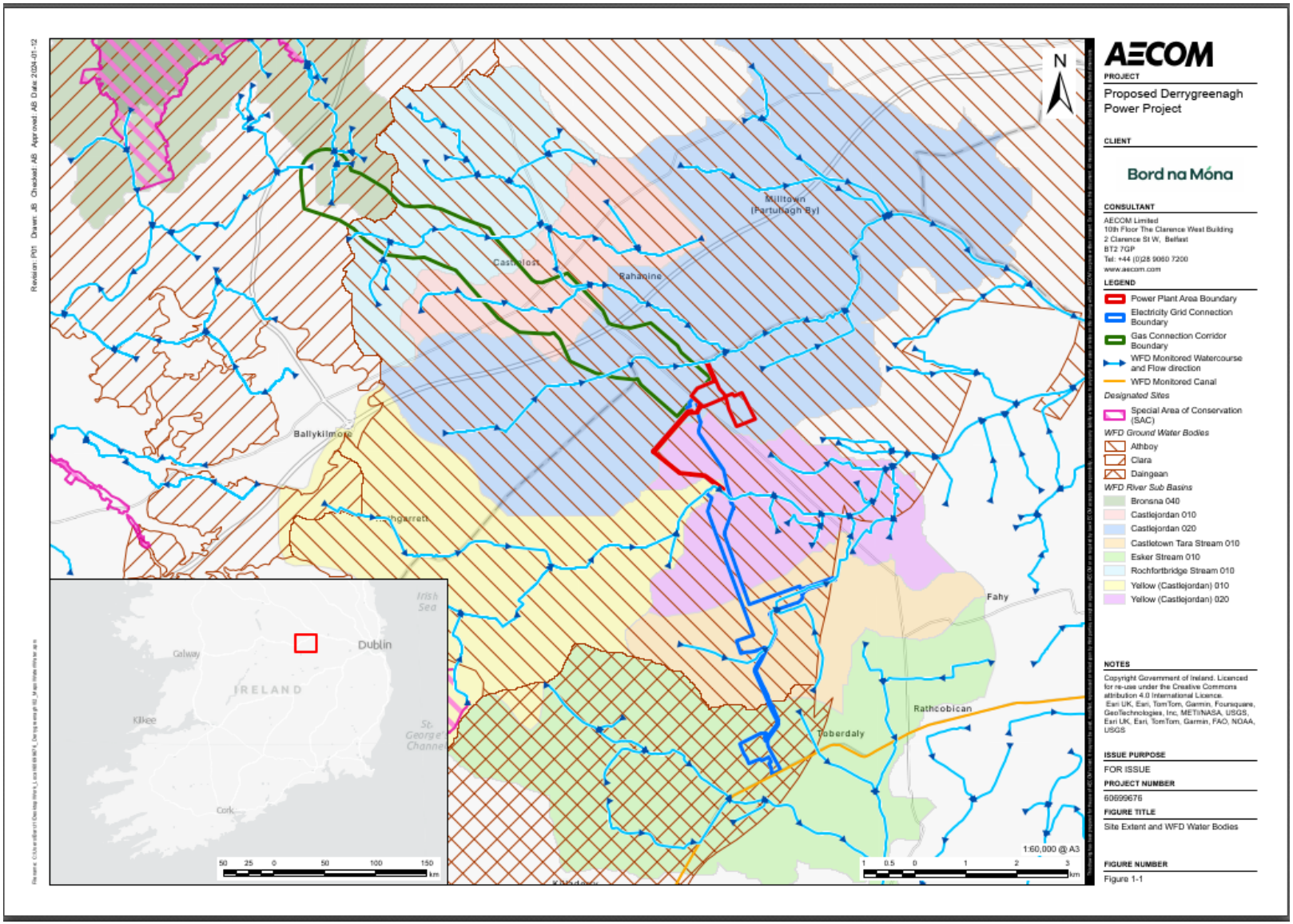

Figure 1-1 Site extent and WFD water bodies

The Water Framework Directive

1.15 The EU Water Framework Directive (2000/60/EC) as amended by Directives 2008/105/EC, 2013/39/EU and 2014/101/EU ('WFD') requires all Member States to protect and improve water quality in all waters so that they achieve good ecological status by 2015 or, at the latest, by 2027. Article 4 of the WFD states that Member States shall 'prevent deterioration of groundwater status and ensure a balance between abstraction and recharge of groundwater'. It was given legal effect in Ireland by the European Communities (Water Policy) Regulations 2003 (S.I. No. 722 of 2003). It applies to rivers, canals, lakes, groundwater, and transitional coastal waters.

1.16 The WFD requires that management plans be prepared on a river basin basis and specifies a structured method for developing these plans. S.I. No. 77/2019- European Union Env Objectives (Surface Waters) (Amendments) Regulations 2019 (Commenced 30th July 2009) sets out objectives in terms of surface water status for ecological, biological, morphological and physico-chemical status. S.I. No. 366/2016 - European Union Environmental Objectives (Groundwater) (Amendment) Regulations 2016. (Commenced January 2010) sets out objectives in terms of Ground water status for and physio-chemical threshold limits.

1.17 The WFD takes a holistic approach to sustainable management of the water environment by considering interactions between surface water, groundwater, and water-dependent ecosystems. Ecosystem conditions are evaluated according to interactions between classes of biological, chemical, physico-chemical and hydromorphological elements known as 'Quality Elements'.

1.18 Under the WFD, 'water bodies' are the basic management units, defined as all or part of a river system or aquifer. Water bodies form part of a larger 'river basin district' (RBD), for which 'River Basin Management Plans' (RBMPs) are used to summarise baseline conditions and set broad improvement objectives. RBMPs are produced every six years, in accordance with the river basin management planning cycle. The current RBMPs at the date of this assessment are the 2015 Cycle 3 plans, updated in 2021.

1.19 The WFD requires water bodies to be classified according to their current condition (i.e. the 'Status' or, in the case of heavily modified or artificial water bodies, the 'Potential') and to set a series of objectives for maintaining or improving conditions so that water bodies maintain or reach Good Status or Potential.

1.20 In Ireland, the Local Authority Waters Programme (LAWPRO) is a Local Authority (LA) shared service, responsible for coordinating the LAs response to The European Union Water Framework Directive statutory obligations on placed on Member States and Local Authorities. There are five local authority regional committees, known as Water and Environment Management Committees, LAWPRO supports each one; and they have responsibility for the co-ordinated delivery of measures at the regional and local level and to ensure a consistency of approach across the regions. The five regional committees are chaired at Chief Executive level, with active participation and technical advice from the Environmental Protection Agency (EPA).

1.21 In determining whether a development is compliant or non-compliant with the WFD objectives for a water body, the conservation objectives of any Protected Areas such as Special Areas of Conservation and adjacent WFD waterbodies, where relevant, should be considered.

2. Methodology

2.1 There are no fixed methods for the WFD assessment. The nature of the water environment and the breadth of the legislation mean that assessments are tailored to proposals on a case-by-case basis.

2.2 The following general guidance is available which has been applied for this assessment:

- EU-level guidance document Water Framework Directive Project assessment checklist tool (2018), published by the Joint Assistance to Support Projects in European Regions (JASPERS).
- Planning Inspectorate Advice Note 18: The WFD (PINS, 2017), which provides an overview of the WFD and provides an outline methodology for considering the WFD.

2.3 A stepwise approach consisting of screening, scoping and impact assessment phases is generally followed in order to: (a) rationalise the levels of WFD assessment and impact mitigation that are required; and (b) verify that proposals meet the requirements of the WFD. The general approach is described by the UK Planning Inspectorate (2017) and briefly summarised below.

2.4 This WFD comprises of a Screening assessment, identifying the zone of influence of the Proposed Development and Overall Project , and whether the activities involved the Proposed Development and Overall Project are going to negatively impact the water environment.

Stage 1 Screening

2.5 Screening identifies the zone of influence of a proposed development, and if proposed activities pose a risk to the water environment. It is used to identify if there are activities that do not require further consideration for WFD objectives, for example activities which have been ongoing since before the current RBMP cycle and which have thus formed part of the baseline.

Stage 2: Scoping

2.6 Scoping is used to identify any potential impacts of the proposed activities to specific WFD receptors and their water quality elements. This involves review of WFD impact pathways, shortlisting which WFD water bodies and quality elements could or could not be affected by proposed activities, and collecting baseline information from the relevant RBMP on the status and objectives for each water body.

Stage 3: Impact Assessment

2.7 This involves rationalised assessment of water bodies and quality elements that could be affected by proposed activities, in order to identify any areas of WFD non-compliance. Proposed activities are reviewed in terms of both positive and negative impacts, and the baseline mitigation measures, enhancements, and contributions to the WFD objectives described in the RBMP. Any proposed activities with potentially deleterious impacts are reviewed simultaneously with their corresponding mitigation proposals, to determine a net effect on WFD objectives.

Mitigation Commitments

2.8 Proposed mitigation activities relied upon to demonstrate compliance at any of the stages referred to above must be appropriately defined and sufficiently secured. Mitigation measures are proposed and will be implemented through the Construction Environmental Management Plan (CEMP) which is included in Appendix 5A of the EIAR. Mitigation measures which are relevant to ensure the protection of waterbodies in compliance with the WFD are outlined in Section 5 and Section 6 below.

Further Assessments and Article 4.7

2.9 Where the potential for deterioration of water bodies is identified, and an overriding need is robustly proven, with regards to all relevant legislation and legal processes, that it is not realistically feasible to mitigate impacts to a level where deterioration or failure to improve can be avoided, the proposals would need to be assessed further in the context of WFD Article 4.7. Where an Applicant considers that a derogation case could be prepared, the Applicant will need to provide the necessary information to justify its case, bearing in mind that Applicants must always seek to avoid deterioration of the water environment. It is a matter for the EPA to consider whether derogation under Article 4.7 is justified in relation to a proposed development. At this stage a derogation under Article 4.7 is not considered necessary.

Desk Study and Information Sources

2.10 A desk-based study was carried out to capture information pertaining the Proposed Development and Overall Project. This was undertaken for the study area, which is the Proposed Development and Overall Project red line boundary and a 1km buffer zone. Reviewal of relevant information relating to the study area was undertaken to develop a baseline for WFD catchments, watercourses, and surrounding areas. The following data sources were used for the desk study:

- Proposed Development and Overall Project information including treated waste water discharge rates and mitigation measures.
- Integrated Pollution Control (IPC) Licence Reg No. P0501-01 (Refer to Appendix B).
- EPA thematic environment maps including WFD catchment online mapping and data, https://gis.epa.ie/EPAMaps/, www.catchments.ie, Download Data (epa.ie).
- Ordnance Survey Ireland (OSI) website for historical maps of 1:2,500 scale and 1:10,560 scale and aerial photographs [Accessed January 2024].
- OSI Discovery series of 1:50,000 scale [Accessed January 2024].
- Geological Survey of Ireland (GSI) online map viewer www.gsi.ie/mapping [Accessed January 2024].
- EPA Hydronet online map viewer, https://epawebapp.epa.ie/hydronet/ [Accessed January 2024].
- National Parks and Wildlife Service (NPWS) designated sites and protected areas online map viewer, www.npws.ie/mapping [Accessed January 2024].
- Wetland Surveys Ireland wetland inventory online map viewer, www.wetlandsurveys.ie [Accessed January 2024].
- GeoHive historic maps online map viewer, https://webapps.geohive.ie/mapviewer/index.html [Accessed January 2024].
- Office of Public Works (OPW), Fluvial and Coastal Flood information mapping from the Catchment Flood Risk Assessment and Management Program (CFRAM), https://www.floodinfo.ie [Accessed January 2024].
- Glover Site Investigations Limited, 2008, Derrygreenagh CCGT, Report No. 08-0221.
- Mott McDonald, 2008. Derrygreenagh CCGT, Geo-environmental Interpretative Report, 240674/CAR/004.
- Bord na Móna, 2022. Annual Environmental Report (AER) for Integrated Pollution Control (IPC) Licence No. P0501-01.
- GSI, 2004. Athboy groundwater body description.
- IDL, 2023. Derrygreenagh Thermal Power Project, Site investigation contract factual report.
- Triturus, 2023. *Aquatic baseline report for Derrygreenagh.*
- GSI, 1996. *Toberdaly Public Supply Groundwater Source Protection Zones* report.

Calculation of Emission Limit Values for Water Quality Compliance

2.11 AECOM has undertaken a desk-based assessment of environmental Emission Limit Values (ELVs) and discharge flow rates for the Proposed Development that will achieve compliance with the aims of the WFD and relevant Irish enacting regulations. These have been calculated based on EPA river flow gauging data and EPA water river quality data.

2.12 The ELV Calculation Technical Note is appended and summarises the ELVs and effluent discharge flow rates that the Proposed Development will need to achieve for WFD compliance. The Applicant, Bord na Mona, is committed to WFD compliance and will ensure that the constructed plant, including Emission Limit Values (ELVs) and discharge flow rates for the Proposed Development, will maintain compliance with the aims of the WFD and relevant Irish enacting regulations at all times.

Limitations and Assumptions

2.13 This screening exercise is has been undertaken for the Proposed Development as well as the Overall Project (Gas Connection Corridor). It is important to note that elements of the Project, including the exact route of the Gas Connection Corridor, remain subject to detailed design. Accordingly, some recommendations are made within this WFD Screening Assessment for verifying WFD compliance through ongoing monitoring as detailed design and operation progresses.

2.14 Information for WFD water status has been based on the latest available information. However, there are gaps in EPA's information for some WFD water bodies. In some instances, the only available information is the overall ecological status or potential, without details such as chemical or physico-chemical monitoring.

2.15 AECOM has undertaken an assessment of the ELVs that will need to be achieved in the receiving waters into which treated waste water will be discharged. The Applicant, Bord na Mona, is committed to WFD compliance and will ensure that all constructed plant and infrastructure will achieve the required Emission Limit Values (ELVs) and discharge flow rates for the Proposed Development to ensure that compliance with the aims of the WFD and relevant Irish enacting regulations is maintained at all times. The ELV Calculations, which are appended to this WFD Screening Assessment, are based on available data as described in Appendix A. Mitigation measures, i.e. wastewater treatment processes, will be designed to achieve these ELVs for WFD compliance and performance of same will be monitored on an ongoing basis during the operational phase.

3. Desk Study

Catchment Characteristics

General Characteristics

3.1 Across the nine surface waterbodies in the Study Area, the general land use is predominantly degraded cutover peatland with some smaller areas of agricultural grassland, with very sparsely populated one-off residential properties, which consist of some existing buildings and hardstanding areas used for parking and footpaths. The closest dwelling to the Power Plant Area of the Proposed Development and Overall Project is approximately 1.1 km to the south-east.

3.2 There are no Special Protection Areas (SPA) within the Proposed Development and Overall Project. However, 6km upstream of the Proposed Development and Overall Project, located in the YELLOW (CASTLEJORDAN)_010 WFD sub basin, is the Raheenmore Bog Special Area of Conservation (SAC), with Water Dependent Habitats/ Species. In addition to this, approximately 17.5 km downstream of the Yellow River/ River Boyne confluence is the River Boyne and River Blackwater SPA and SAC.

Catchment Geology and Soils

3.3 The Power Plant Area is mapped as being underlain by the Lucan Formation (commonly known as Calp), which comprises of dark grey to black, fine-grained, occasionally cherty, micritic limestones that weather paler, usually to pale grey. This formation is mapped as being a locally important aquifer (Ll), bedrock which is moderately productive only in local zones. The Lucan Formation contains intrusions of Volcaniclastic Agglomerate, the closet being mapped at approximately 500m to the south of the Power Plant Area. This formation is mapped as being a locally important aquifer (Lm), bedrock which is generally moderately productive.

3.4 The majority of the Electricity Grid Connection route is underlain by Carboniferous limestone and shale of the Lucan Formation.

3.5 The Power Plant Area is largely underlain by Made Ground (i.e. the existing BnM Derrygreenagh Works site which comprises a workshop, stores and office complex, including workshops for mobile plant overhaul and for wagon and locomotive maintenance). There are also some smaller areas of the Power Plant Area which adjoin the Derrygreenagh Works which are underlain by blanket peat (largely cutaway), made ground and deep well drained mineral (mainly basic) soils (to the south and west). The proposed surface water and process water discharge pipelines follow the existing industrial railway lines. The process water discharge pipeline deviates from the rail line for a section in respect of the area around the proposed 220kV substation.

3.6 The above ground section of the Electricity Grid Connection route is almost totally underlain by ‘Cut Peat’ and the below-ground section crosses some minor areas mapped as various types of ‘Till derived chiefly from limestone’, consisting of either poorly drained peaty gley soils or deep well drained mineral soil, depending on grain size. These non-peat areas are all located along the southern underground cable section of the Electricity Grid Connection route.

3.7 The Gas Connection Corridor is mapped as being underlain by Waulsortian Limestones, which comprises of dominantly pale-grey, crudely bedded or massive limestone. In addition to this the Southern extent of the corridor is mapped as being underlain by the Lucan Formation (commonly known as Calp), which comprises

of dark grey to black, fine-grained, occasionally cherty, micritic limestones that weather paler, usually to pale grey. These formations are mapped as being a poor aquifer (Pl), bedrock which is generally unproductive in zones.

3.8 The above ground section of the Gas Corridor Connection is underlain entirely by Till derived from Limestones.

Catchment Hydrology

3.9 The closest Met Éireann monitoring station (Derrygreenagh (3431)) is located 100 m south of Bord na Móna Energy Park. Data is available between 1955 and 2023 for both rainfall and temperature. The annual rainfall recorded at this location in 2022 was 857.8 mm, which is some way lower than the Ireland average of 1288 mm. Spring is the driest time of year and autumn is the wettest. Variations in monthly temperature are typical of Ireland, with December-January-February recorded as the coldest period and June-July-August the warmest.

3.10 The nearest Office of Public Works (OPW) hydrological gauging station to the Proposed Development and Overall Project is Tinker's Bridge (07049). This is located approximately 8 km upstream of the Proposed Development and Overall Project. Flow conditions at this location are unlikely to be representative of those within the study area since the river and catchment area drained are much smaller.

Historical Channel Change

3.11 Comparing a Geographical Section, General Staff (GSGS) Map dated 1941 to 1943, with current aerial imagery shows there has been a modification to the Yellow River, this change is approximately 1.7 km South of the Proposed Power Plant Area, and in the same area as the proposed discharge pipeline. A 0.45 km section of the Yellow River was previously meandering, the planform is now a straight single thread channel. This change is likely attributed to the installation of a small bridge at this location, thus is a human modification to the channel. There are also other sections of the rivers which have been straightened, but this predates historical maps.

3.12 The majority of watercourses in the study area have been modified by human interference, primarily for drainage purposes by channel deepening and straightening (cf Triturus (2023)[9].

WFD Status

WFD Status – Surface Water

3.13 WFD Status data for the nine WFD surface water bodies within the potential zone of influence of the Proposed Development and Overall Project are summarised in Table 1.

3.14 WFD Status data for the three WFD groundwater bodies within the potential zone of influence of the Proposed Development and Overall Project are summarised in Table 2.

Table 1: Summary of WFD Surface Water Body status data

SWB	Overall Status (2010 – 2015)	2nd Cycle WFD Pressures	Overall Status (2013 – 2018)	Overall Status (2016 – 2021)	Risk Status 3rd Cycle
CASTLEJORDAN_020	Moderate	Extractive Industry – Peat Harvesting	Good	Good	Review
YELLOW(CASTLEJORDAN)_020	Good	-	Good	Good	Not at Risk
YELLOW (CASTLEJORDAN)_010	Moderate	Agriculture - Pasture	Moderate	Poor	At Risk
CASTLETOWN TARA STREAM_010	Unassigned	Extractive Industry – Peat Harvesting	Poor	Moderate	At Risk
ESKER STREAM_010	Unassigned	Extractive Industry – Peat Harvesting	Good	Moderate	Review
Grand Canal Main Line West (Barrow)	Unassigned	-	Good	Good	Review
CASTLEJORDAN_010	Poor	Urban Run-Off – Diffuse Sources Run-Off	Poor	Poor	At Risk
ROCHFORTBRIDGE STREAM_010	Moderate	Extractive Industry – Peat	Moderate	Moderate	At Risk
BROSNA_040	Moderate	Hydromorphology – Channelisation	Moderate	Moderate	At Risk

Table 2: Summary of WFD Groundwater Body status data

GWB	Overall Status (2010 – 2015)	2nd Cycle WFD Pressures	Overall Status (2013 – 2018)	Overall Status (2016 – 2021)	Risk Status 3rd Cycle
Athboy	Good	Anthropogenic Pressures	Good	Good	Not at Risk
Daingean	Good	-	Good	Good	Review
Clara	Good	-	Good	Good	Not at Risk

4. WFD Screening

WFD Screening

4.1 The purpose of the WFD screening stage is to identify a zone of influence of the Proposed Development and Overall Project and to determine whether that influence has the potential to adversely impact upon WFD water body receptors.

4.2 The screening stage also identifies specific activities of the Proposed Development and Overall Project that could affect receptor water bodies' WFD status and objectives.

Screening of WFD Water Bodies

4.3 The zone of influence of the Proposed Development and Overall Project has potential to interact with nine WFD surface water bodies and three WFD groundwater bodies.

4.4 WFD Screening of the risk of impact to these water bodies is provided in Table 3.

Table 3: Screening of WFD Water Bodies Potentially Impacted by the Proposed Scheme

Water Body ID	Screening Outcome	Justification
CASTLEJORDAN_020 (IE_EA_07C040100)	In	These WFD water bodies may be directly impacted by the Proposed Development and Overall Project due to a range of activities which may interact with the local watercourse during the construction and operation phases, as well as the hydrological connection with the River Boyne and River Blackwater SPA and SAC
YELLOW (CASTLEJORDAN)_020 (IE_EA_07Y020100		
CASTLETOWN TARA STREAM_010 (IE_EA_07C080190)		
ESKER STREAM_010 (IE_SE_14E010100)		
Grand Canal Main Line West (Barrow) (IE_14_AWB_GCMLW)		
CASTLEJORDAN_010 (IE_EA_07C040050)		
ROCHFORTBRIDGE STREAM_010 (IE_EA_07R040300)		
BROSNA_040 (IE_SH_25B090200)		
YELLOW (CASTLEJORDAN)_010 (IE_EA_07Y020070)	Out	The interactions between this WFD water body and the Proposed Development and Overall Project will be limited due to the location of this sub basin with respect to the Proposed Development and Overall Project. The site boundary is located at the eastern most point of this sub basin and downstream of the watercourse. Whilst there is a crossover with this sub basin and the site boundary, there are no activities in this sub basin. The flow direction and geographical distance means there are no hydrological connections between the Proposed Development and Overall Project and the SAC in the upper reaches of YELLOW (CASTLEJORDAN)_010, into which the Process Water line will discharge. There is a connectivity to the River Boyne and River Blackwater SPA and SAC, but the interactions with the Proposed Development and Overall Project will not impact this.

Athboy (IE_EA_G_001)	In	The Proposed Development and Overall Project is largely situated above this WFD groundwater body and so activities within the Proposed Development and Overall Project may interact with this waterbody. There will be interactions in the Power Plant Area of the Proposed Development and Overall Project due to the abstraction of groundwater.
Daingean (IE_SE_G_049) Clara (IE_SH_G_240)	Out	A small area of the Proposed Development and Overall Project is situated over this WFD groundwater body. None of the proposed activities are likely to impact groundwater pathways.

Screening of Protected Areas

4.5 There are no Special Protection Areas (SPA) or Special Areas of Conservation (SAC) in the vicinity of the Proposed Development and Overall Project.

4.6 The Raheenmore Bog SAC, designated for water dependent habitats and species, is within the same WFD catchment and approximately 6km to the southwest. However, the Raheenmore Bog SAC is at higher catchment elevation, therefore the drainage direction from the Proposed Development and Overall Project is not towards the SAC, meaning it is screened out of any risks from the Proposed Development and Overall Project.

4.7 The River Boyne and River Blackwater SAC, designated for water dependent habitats and species, and SPA, designated for birds, is within the same WFD catchment approximately 17.5 km to the northeast and downstream along the Yellow River which flows through the Site. The proposed mitigation measures (see below) will contain and manage any risk of impact locally, and the separating distance from the Proposed Development and Overall Project mean that River Boyne and River Blackwater SAC and SPA is screened out of any risks from the Proposed Development and Overall Project.

Screening of Activities

4.8 The Proposed Development and Overall Project comprises several activities that present a potential risk to the WFD status of the water bodies identified in the previous section.

4.9 For relevant water bodies, the screening assessment of activities pertaining to the Proposed Development and Overall Project is provided in Table 4.

Table 4: Screening of the Proposed Development and Overall Project activities

Activity	Description	Screening Outcome	Justification
Construction (including demolition of Derrygreenagh Works within the red line boundary) and, operation and decommissioning of the of Main Power Station Power Plant Area (excluding water abstraction and discharge which are assessed separately below)	Open Cycle Gas Turbine (OCGT) and a Combined Cycle Gas Turbine (CCGT), with the demolition of existing Derrygreenagh works.	**Screen Out:** CASTLEJORDAN_020 (WFD ID: IE_EA_07C040100) YELLOW (CASTLEJORDAN)_020 (IE_EA_07Y020100) Athboy (IE_EA_G_001) CASTLETOWN TARA STREAM_010 (IE_EA_07C080190) ESKER STREAM_010 (IE_SE_14E010100) Grand Canal Main Line West (Barrow) (IE_14_AWB_GCMLW) CASTLEJORDAN_010 (IE_EA_07C040050) ROCHFORTBRIDGE STREAM_010 (IE_EA_07R040300) BROSNA_040 (IE_SH_25B090200)	**Waterbodies Screened Out: Not at Risk** The CASTLETOWN TARA STREAM_010 (IE_EA_07C080190), ESKER STREAM_010 (IE_SE_14E010100), Grand Canal Main Line West (Barrow) (IE_14_AWB_GCMLW) CASTLEJORDAN_010 (IE_EA_07C040050), ROCHFORTBRIDGE STREAM_010 (IE_EA_07R040300) and BROSNA_040 (IE_SH_25B090200) WFD water bodies are not in close enough proximity to these activities of the Power Plant Area for there to be risks to the water environment. **Risks Screened Out** **Construction** Whilst the Power Plant Area is located within two WFD water body sub basins (CASTLEJORDAN_020 (WFD ID: IE_EA_07C040100) and YELLOW (CASTLEJORDAN)_020 (IE_EA_07Y020100)), the nearest watercourse is located approximately 700 m north of the Power Plant Area. Thus, implementing mitigation measures which the Applicant has committed to, in order to achieve compliance with the aims of the WFD and relevant Irish enacting regulations, such as treating surface runoff, foul water and wastewater will ensure there will be no contamination during the construction of the Power Plant Area. Moreover, chemicals for use on site will be fully bunded and covered from surface water. Any onsite refuelling will take place in designated bunded areas only, with spill kits maintained near working areas. Similarly, standard construction mitigation techniques will mitigate risks of pollution pathways from surface water to groundwater body Athboy (IE_EA_G_001) groundwater. ***There will be no risks to WFD objectives subject to implementation of the CEMP (Appendix 5A of the EIAR).*** **Operation**

			Whilst the Power Plant Area is located within two WFD water body sub basins (CASTLEJORDAN_020 (WFD ID: IE_EA_07C040100) and YELLOW (CASTLEJORDAN)_020 (IE_EA_07Y020100)), the nearest watercourse is located approximately 700 m north of the Power Plant Area. Water from roof drains will discharge directly to an attenuation tank. All surface water runoff will be discharged to a tank via a hydrocarbon interceptor and silt trap. Chemicals for use on site will be fully bunded and covered from surface water. Any onsite refuelling will take place in designated bunded areas only, with spill kits. Surface water run-off will be discharged to the Mongagh River in accordance with Sustainable Urban Drainage System guidance. ***There will be no risks to WFD objectives subject to implementation of SuDS.*** **Decommissioning** The decommissioning of the Power Plant Area shall be designed to have no impact on watercourses, and therefore ***there will be no WFD risks***. Appropriate verification will be needed at the time of decommissioning.
Activity	**Description**	**Screening Outcome**	**Justification**
Installation and operation of pipelines for water abstraction and 2 no discharges	A discharge pipeline is to be installed from the Power Plant, and when operational is to drain into the Yellow River YELLOW (CASTLEJORDAN)_020 (IE_EA_07Y020070). A surface water discharge pipeline is to be installed from the Power Plant, and when operational is to drain to the Mongagh River CASTLEJORDAN_020 (WFD ID: IE_EA_07C040100).	**Screen In:** CASTLEJORDAN_020 (WFD ID: IE_EA_07C040100) YELLOW (CASTLEJORDAN)_020 (IE_EA_07Y020070) **Screen Out:** CASTLETOWN TARA STREAM_010 (IE_EA_07C080190) ESKER STREAM_010 (IE_SE_14E010100) Grand Canal Main Line West (Barrow) (IE_14_AWB_GCMLW) Athboy (IE_EA_G_001)	**Waterbodies Screened Out: Not at Risk** Both the installation and operation of this discharge pipeline will not interact with the CASTLETOWN TARA STREAM_010 (IE_EA_07C080190), ESKER STREAM_010 (IE_SE_14E010100), Grand Canal Main Line West (Barrow) (IE_14_AWB_GCMLW) or Athboy (IE_EA_G_001) WFD water bodies. **Risks Screened Out:** **Construction** During the construction of the new pipeline, silt control measures will prevent the ingress of sediments into the drainage channels and other locations along the proposed discharge pipeline route, where there is potential to impact on drains or the Yellow River itself. There is also to be a loss of natural bank habitat to the

CASTLEJORDAN_010 (IE_EA_07C040050)	outfall, however this is to be short and hence localised impact, which will not impact the WFD status at the water body scale.
ROCHFORTBRIDGE STREAM_010 (IE_EA_07R040300)	***There will be no risks to WFD objectives subject to implementation of the CEMP (refer to Appendix A of the EIAR)***.
BROSNA_040 (IE_SH_25B090200)	**Operation** Power Plant Area operations will involve water abstraction. ***Abstraction*** There is to be an abstraction of 720m^3 groundwater per day from the Athboy (IE_EA_G_001) groundwater body, but evidence from scientific data gathered during a pump test shows that this will not impact the WFD objectives, ensuring a balance of abstraction and recharge (Hydro-Environmental Services, 2023). The results of the pump test are summarised in Appendix 12D of the EIAR. As such ***there are no WFD risks to the Athboy (IE_EA_G_001) groundwater body.*** **<u>Risks Screened In:</u>** **Operation** Power Plant Area operations will involve waste water discharge. ***Discharge*** There are 2 no discharges proposed from the Power Plant Area to CASTLEJORDAN_020 (WFD ID: IE_EA_07C040100) and YELLOW (CASTLEJORDAN)_020 (IE_EA_07Y020070). Foul water will be treated before being discharged as per any development. Operational process water effluent generated at the Power Plant Area will be piped west of the R400 road before discharging into the Yellow River (YELLOW (CASTLEJORDAN)_020) at approximately 3km southwest of the Power Plant Area (Easting 649758 Northing 736428). This discharge will comprise primarily of treated effluent from the water treatment plant which treats effluent from the water treatment plant and boiler blow-down, but will also contain the treated foul water.

The proposed discharge will be operated under a new Industrial Emissions (IE) Licence which the Applicant will apply for through the Environmental Protection Agency (EPA) and will have a requirement to comply with the relevant conditions of that licence, including Emission Limit Values (ELVs).

Any process water is to be collected in a below ground concrete Wastewater Discharge Tank prior to discharge, where it will be tested and treated to achieve the required ELVs.

ELVs have been calculated from available information as summarised in Appendix A.

- Effluent Flow Rate: 18.0 m3/hr
- BOD: 24.0 mg/l
- Ammonia 3.0 mg/l
- Orthophosphate: 0.8 mg/l

WFD compliance in terms of chemical and physico-chemical elements will be achieved with the procurement of appropriate treatment systems to achieve these ELVs. This in turn will mitigate risks to WFD biological elements.

In terms of physical (hydromorphological) impacts, discharges would be intermittent and pumped at a fixed rate when operating, with the maximum pump rate expected to be around 50 m^3/hr. Based on this information, there is a potential for local changes to hydrodynamics and for local erosion and sediment mobilisation to be transported downstream. However, it is reasonable to assume that this would be negligible at water body scale and therefore this is not considered to be a WFD risk.

WFD Screening Recommendations:

Discharge

A programme of WFD performance verification and monitoring is recommended to be carried out on an ongoing basis at detailed design and operational phase to monitor ELV performance and WFD compliance. The Applicant, Bord na Mona, is committed to WFD compliance and will ensure that the constructed plant will achieve the required Emission Limit Values (ELVs) and discharge flow rates for

the Proposed Development to maintain compliance with the aims of the WFD and relevant Irish enacting regulations at all times.

Structures

The 2 no discharges may require hard structures in watercourses including outfalls and scour protection. Structure design and mitigation is a matter for detailed design.

Outfalls and headwalls could cause loss and discontinuity of bank and riparian habitats. Outfall structures and pipe discharges could cause flow deflections and scour, and could need engineered scour protection which would extend the length of engineering impacts along the water body.

However, it is reasonable to assume that structure physical impacts would be negligible at water body scale and therefore this is not considered to be a WFD risk.

WFD Screening Recommendation*:*

Environmentally sympathetic designs are required for proof of meeting WFD objectives. Ideally for WFD objectives, discharge outfalls would be set back from watercourses and connected with ditches so there are no hard structures in watercourses including channel banks. If hard structures in watercourses are the only pragmatically feasible options available, geomorphology and hydromorphology assessments may be needed to inform appropriate WFD mitigation measures. The Applicant, Bord na Mona, is committed to WFD compliance and will ensure that the constructed plant and infrastructure will achieve the required Emission Limit Values (ELVs) and discharge flow rates for the Proposed Development to maintain compliance with the aims of the WFD and relevant Irish enacting regulations at all times.

WFD performance verification and monitoring is recommended at the detailed design operational phases to confirm morphological impacts are minimised and mitigated and that WFD compliance is maintained throughout.

Activity	Description	Screening Outcome	Justification
Construction and operation of the Electricity Grid Connection (including substations, overhead power lines and buried cable routes)	Power from the Power Plant Area to be exported to a 220kV substation connecting via a series of 220kV overhead lines and 220kV buried cables to a new loop-in 400kV substation into national transmission infrastructure	**Screen Out:** Athboy (IE_EA_G_001) CASTLEJORDAN_020 YELLOW (CASTLEJORDAN)_020 (IE_EA_07Y020100) Grand Canal Main Line West (Barrow) (IE_14_AWB_GCMLW) CASTLETOWN TARA STREAM_010 (IE_EA_07C080190) ESKER STREAM_010 (IE_SE_14E010100) CASTLEJORDAN_010 (IE_EA_07C040050) ROCHFORTBRIDGE STREAM_010 (IE_EA_07R040300) BROSNA_040 (IE_SH_25B090200)	**Waterbodies Screened Out: Not at Risk** The proposed activities will not interact with the CASTLEJORDAN_010 (IE_EA_07C040050), ROCHFORTBRIDGE STREAM_010 (IE_EA_07R040300) and BROSNA_040 (IE_SH_25B090200) WFD waterbodies. Whilst located in the ESKER STREAM_010 (IE_SE_14E010100) WFD sub basin, the proposed underground cables are unlikely to interfere with the watercourse due to proposed mitigation measures and relative locations, as previously mentioned. **Risks Screened Out** **Construction** This activity extends across all WFD sub basins previously screened in, but the location of these sub basins relative to the activities of the Electricity Grid Connection means interactions will be insignificant and risk can be effectively eliminated by implementing embedded mitigation measures. Once operational there will some discharge from substation sites into the WFD water bodies through infiltration and overflow to surface water, any surface runoff from hard standing areas is to be treated to remove contaminants. However, this will not impact the WFD status of these waterbodies hence can be screened out. The 220kV overhead line is to cross the CASTLETOWN TARA STREAM_010 (IE_EA_07C080190) WFD water body, however, construction mitigation such as silt control measures and contaminant store arrangements means that during construction these shouldn't enter the watercourse. ***There will be no risks to WFD objectives subject to implementation of the CEMP which is included in Appendix 5A of the EIAR.*** **Operation** Electricity Grid Connection operations will involve new areas of hardstanding that will affect rainfall runoff quantity and quality compared to baseline ground conditions. However, these are remote from watercourses, and footprint areas will be negligible relative to water body areas. Therefore ***there are no significant WFD risks.***

			Decommissioning The Electricity Grid Connection will be managed by the transmission asset operators (TAO) and transmission service operators (TSO) (ESBNI and EirGrid for electricity) as part of the national grid electricity. Upon decommissioning of the Power Plant Area, the 220 kV substation and 400 kV substation and associated transmission infrastructure will remain insitu and form part of the national grid infrastructure. Therefore, ***there will be no WFD risks***.
Activity	**Description**	**Screening Outcome**	**Justification**
Construction and operation of the Gas Connection Corridor	As part of the Overall Project, the Proposed Development will be connected to the existing high pressure Gas Pipeline.	**Out:** CASTLEJORDAN_020 (WFD ID: IE_EA_07C040100) CASTLEJORDAN_010 (IE_EA_07C040050) ROCHFORTBRIDGE STREAM_010 (IE_EA_07R040300) BROSNA_040 (IE_SH_25B090200) Athboy (IE_EA_G_001) YELLOW (CASTLEJORDAN)_020 (IE_EA_07Y020070) CASTLETOWN TARA STREAM_010 (IE_EA_07C080190) ESKER STREAM_010 (IE_SE_14E010100) Grand Canal Main Line West (Barrow) (IE_14_AWB_GCMLW)	**Waterbodies Screened Out: Not at Risk** The proposed activities will not interact with the Athboy (IE_EA_G_001) groundwater body, or the following surface water bodies: YELLOW (CASTLEJORDAN)_020 (IE_EA_07Y020070); CASTLETOWN TARA STREAM_010 (IE_EA_07C080190); ESKER STREAM_010 (IE_SE_14E010100); Grand Canal Main Line West (Barrow) (IE_14_AWB_GCMLW) **Risks Screened Out** **Construction** Whilst located in the CASTLEJORDAN_020 (WFD ID: IE_EA_07C040100), CASTLEJORDAN_010 (IE_EA_07C040050), and ROCHFORTBRIDGE STREAM_010 (IE_EA_07R040300) water bodies, WFD risks are minimal, as described below. The method of installation for the gas pipeline is Horizontal Directional Drilling (HDD), therefore will not directly interfere with the waterbodies crossed. Soils are to be excavated during installation. However, spoil material, overburden and topsoil excavated during construction will be stored temporarily within the Site. If necessary suitable measures will be put in place to prevent sediment being washed off site, and the stockpiles will be monitored/ measured for wash away to determine whether maintenance and/or remedial action is required. ***WFD Screening Recommendation: There will be no risks to WFD objectives subject to implementation of the CEMP which is included in Appendix 5A of the EIAR.***

Operation

The pipeline shall be located at such a depth so as to give a depth of cover of not less than 1.7m from the bottom of the watercourse, after the removal of any silting, to the top of the pipe, and to maintain a depth of cover of not less than 1.2m in the adjoining fields. All watercourses, trenches, ditches or culverts shall be maintained in effective working condition over their full working width for the duration of the Project and shall be restored to a condition at least as good as before the commencement of the Works.

Any excavations are to be no more than 1.2m in depth and so will not impact the groundwater bodies.

Accordingly there are no significant WFD risks.

Decommissioning

The Gas Connection Corridor will be managed by the transmission asset operators (TAO) and transmission service operators (TSO) (GNI for gas) as part of the national gas networks. At the end of its design life, it is expected that the gas connection pipeline may have residual life remaining and the operational life may be extended if appropriate and/or the asset refurbished and retained as part of the national transmission network. Effects of the decommissioning of the Gas Connection Corridor, therefore, are not anticipated, and ***there will be no WFD risks***.

5. Construction Risks and Mitigation

5.1 The potential risks to WFD objectives during construction are listed below, as well as mitigation measures proposed to eliminate or reduce those risks.

Potential Construction Phase Risks

5.2 During the construction phase, the following adverse impacts may occur:

- There is the potential for impact on local surface water quality during the initial site clearance and civil works phase of the Proposed development and Overall Project. The potential risk is significantly reduced due to the nearest water body (CASTLEJORDAN_020) being positioned approximately 700 m north of the main site of the Power Plant Area. Identified during the desk study, the peat harvesting sites within and adjacent to the Proposed Development and Overall Project are characterised by the presence of large drainage channels, designed to drain these peatlands. Thus, there is the potential for these channels to act as a transport route for any contaminants arising from the site during the construction phase.
- Impacts on surface water quality due to deposition or spillage of stored soils, sediments, oils, fuels, or other construction chemicals, or through mobilisation of contamination following disturbance of contaminated ground or groundwater, or through uncontrolled site run-off.
- Potential changes to the volume, rate, and flow of surface water runoff from the construction site, which could mobilise pollutants into water bodies.
- Construction activities such as earth works, excavations, site preparation, levelling and grading operations result in the disturbance of soils. Exposed soil is more vulnerable to erosion during rainfall events due to loosening and removal of vegetation to bind it, compaction, and increased runoff rates. Surface runoff from such areas can contain excessive quantities of fine sediment, which may eventually be transported to watercourses where it can result in adverse impacts on water quality, flora, and fauna. Construction works within, along the banks and across watercourses can also be a direct source of fine sediment mobilisation.
- Contamination of surface waters, groundwater and soil could result from leakage and spills of fuels, oils, chemicals, and concrete during construction affecting watercourses indirectly via site runoff or directly where works are close to and within a water body. Contamination may reduce water quality and impact aquatic fauna and flora.
- Any construction works that impede on the floodplain have the potential to increase rate and volume of runoff and increase risk of blockages in watercourses that could lead to flow being impeded, and a potential rise in flood risk. This increased flood risk would be a risk to the hydromorphological elements of rivers. This is due to an increased rate and volume of runoff within nearby watercourses, impacting the erosional and depositional processes within them. Earthworks may also alter flow pathways and ground compaction and vegetation clearance will also have the same effect on surface runoff.
- Earthworks may also alter flow pathways and the compaction of the ground and vegetation clearance will also increase the rate and volume of runoff.

5.3 Whilst there are potential risks during the construction phase, the construction is only temporary, and when completed these risks will no longer be present, as they are also only temporary.

Construction Mitigation

5.4 Although the risk of contamination of water receptors is low, due to limited surface water receptors in the immediate area of the Proposed Development and Overall Project, it is considered appropriate that mitigation measures are implemented to contain any potential losses of contaminants from the site of the Proposed Development and Overall Project.

5.5 Construction for the Proposed Development will be managed using the Construction Environmental Management Plan (CEMP) as per Appendix 5A Volime II of the EIAR. The following elements of the CEMP are of particular relevance to WFD :

- Unnecessary clearing and grading will be avoided.
- Clearing of adjacent drainage channels will be minimised.
- Silt control measures will be installed along the perimeter of the excavation areas adjacent to drainage channels and at locations along the proposed discharge pipeline routes, where there is a potential impact on drains or the Yellow River (process water discharge) and Castlejordan River (surface water discharge).
- Construction activities phased to minimise soil exposure, with large areas of grading avoided to minimise erosion potential.
- Soils are to be stabilised as soon as is practicable.
- To prevent chemical pollution, all liquid fuels and chemicals will be stored in suitable containers within bunds in designated areas away from the main construction site activities. The designated areas will be located an appropriate distance away from drainage channels and onsite boreholes.
- On-site refuelling is to be carried out in designated bunded areas only.
- Spill kits are to be maintained near working areas. All spills / leaks are to be cleaned up immediately. An emergency response plan will be put in place detailing the measures to be undertaken should pollution be identified, as detailed in the CEMP.
- Equipment will be regularly maintained, and leaks repaired as soon as is practicable. If the equipment cannot be repaired, it will be removed from the site. Accidental spillages will be contained and cleaned up immediately following emergency response procedures detailed in the CEMP.
- Contained chemical portaloo toilets will be used on site during the construction phase. All sewage will be removed from the site to an authorised treatment plant.
- Construction of the discharge pipe placement will be carried out in accordance with the Eastern Regional Fisheries Board (ERFB) guidance document “Protection of Fisheries Habitat during Construction and Development Works at River Sites”. The ERFB will also be consulted regarding discharge pipes (process water and surface water) placement to avoid disruption to the river during the most sensitive stages of salmonid or lamprey development.

5.6 The CEMP for the Proposed Development and Overall Project (refer to Appendix 5A of the EIAR) contains appropriate mitigation measures and proposals. The CEMP will remain a live working document post consent which will be updated and finalised by the Contractor prior to the commencement of construction (with agreement from Consenting Authority and accounting for any planning conditions that may arise). With the implementation of the CEMP the objectives for managing temporary WFD objectives during the construction phase will be met.

5.7 Works will be carried out in accordance with the CEMP, which will include information on:

- Permissions and Consents
- Management of Construction Site Runoff
- Management of Construction Site Spillage Risk
- Management of Flood Risks.

5.8 It is anticipated that all WFD construction risks could be adequately mitigated with appropriate planning and management.

Summary

5.9 There will be no risks to WFD objectives subject to implementation of the CEMP as outlined in Appendix 5A Volume II of the EIAR. The CEMP is to remain a live document which will ultimately be finalised and implemented by the contractor.

6. Operational Risks and Mitigation

6.1 For this WFD Screening Assessment for planning, the achievement and ongoing maintenance of required ELVs and discharge flow rates is a key mitigation measure. The Applicant, Bord na Mona, is committed to WFD compliance and will ensure that the constructed plant will achieve the required Emission Limit Values (ELVs) and discharge flow rates for the Proposed Development and Overall Project to maintain compliance with the aims of the WFD and relevant Irish enacting regulations at all times.

6.2 The potential risks to WFD objectives during operation are listed below, as well mitigation measures and proposals to eliminate or reduce those risks.

Operational Phase Risks.

6.3 During the operational phase of the Proposed Development and Overall Project the following risks have been identified:

- Surface water run-off;
- Foul water discharge;
- New outfall and potential scour protection structures and physical water discharge; and
- Process wastewater quality discharge.

Operational Phase Mitigation

Surface water run-off

6.3.1 The Proposed Development has been designed in line with Sustainable Drainage Systems (SuDS) which will mitigate risks from surface water runoff. The following SuDS principles have informed the design of the Proposed Development:

- Runoff quantity and quality controls are in accordance with the technical requirements of EPA water quality standards and Industrial Emission (IE) licences.
- All process wastewater treatment systems and surface water arrangements including interceptors and shutoff valves will need to be maintained to manufacturer specifications.
- All bunds and chemical containers comply with the appropriate standards and will be leak tested prior to commencement of operations and at a frequency thereafter to comply with the relevant conditions of the IE licence.
- The discharge water pipeline will be inspected on a routine basis, in compliance with potential IE Licence conditions.
- Firewater Retention designs for the Power Plant Area will need to include control of pollutant runoff to water bodies in accordance with the technical requirements of EPA water quality standards and IE licences.

Foul water discharge

6.4 Typical foul water treatment systems would mitigate risks from foul water.

6.5 A water quality monitoring program will be required and implemented for treated foul water discharge. Monitoring of the receiving water body upstream and downstream of the wastewater discharge point will be undertaken on a periodic basis to determine the impact of the discharge on the receiving water. The parameters, thresholds and frequency of the monitoring programmes required will be detailed and agreed with the EPA as part of the IE licence for the Power Plant Area.

New outfall and potential scour protection structures and physical water discharge

6.6 There could be a permanent loss of bank and riparian habitats and associated ecological continuity as a result of the construction of any new watercourse structures.

6.7 There is a risk that the physical rate of water discharged may cause erosion to the bed or banks of the river, increasing suspended sediments and may negatively impact the ecological status of the water body. Scour protection could be required on the bed and banks at the outfall locations, which would result in a loss of natural bank and bed habitats and may alter erosional and depositional processes.

6.8 Environmentally sympathetic designs are required for proof of meeting WFD objectives. Ideally for WFD objectives, discharge outfalls would be set back from watercourses and connected with ditches so there are no hard structures in watercourses including channel banks. If hard structures in watercourses are the only pragmatically feasible options available, geomorphology and hydromorphology assessments may be needed to inform appropriate WFD mitigation measures.

6.9 It is likely that the scale of any physical impacts relative to the scale of the local water body will be negligible, therefore there would be no significant WFD risks.

6.10 As previously stated, the Applicant, Bord na Mona, is committed to WFD compliance and will ensure that the plant will achieve the required Emission Limit Values (ELVs) and discharge flow rates for the Proposed Development and Overall Project to maintain compliance with the aims of the WFD and relevant Irish enacting regulations at all times.

6.11 Performance verification and ongoing monitoring is therefore recommended at detailed design and operational stage to confirm morphological impacts are minimised and mitigated and that WFD compliance is maintained throughout.

Process wastewater quality discharge

6.12 Process water discharge presents a risk of contaminants being released into the water body, and detailed design will ensure appropriate treatment systems are procured for WFD compliance.

6.13 Operational process water effluent generated at the Power Plant Area will be piped west of the R400 road before discharging into the Yellow River at approximately 3km southwest of the Power Plant Area (Easting 649758 Northing 736428). This discharge will comprise primarily of treated effluent from the water treatment plant which treats effluent from the water treatment plant and boiler blow-down.

6.14 Any process water is to be collected in a below ground concrete Wastewater Discharge Tank prior to discharge, where it will be tested and treated. Testing and treatment processes and technologies will be monitored and assessed on an ongoing basis to ensure that WFD compliance is maintained at all times.

6.15 The proposed discharge will be operated under a new Industrial Emissions (IE) Licence and will have a requirement to comply with the relevant conditions of that licence, including Emission Limit Values (ELVs). The Applicant has committed that the technical solution and all procured plant and infrastructural components will achieve the required Emission Limit Values (ELVs) and discharge flow rates for the Proposed Development and Overall Project to maintain compliance with the aims of the WFD and relevant Irish enacting regulations at all times.

6.16 ELVs have been calculated from available information as summarised in Appendix A.

- Effluent Flow Rate: 18.0 m3/hr
- BOD: 24.0 mg/l
- Ammonia 3.0 mg/l
- Orthophosphate: 0.8 mg/l

6.17 WFD compliance in terms of chemical and physico-chemical elements will be achieved with detailed design and procurement of treatment systems to achieve these ELVs. This in turn will mitigate risks to WFD biological elements.

6.18 Performance verification and monitoring is recommended at detailed design and operational stage to confirm that ELVs and WFD compliance are maintained.

6.19 The Applicant, Bord na Mona, will ensure that the technical solution and procured plant and infrastructural components will achieve the required Emission Limit Values (ELVs) and discharge flow rates for the Proposed Development and Overall Project to maintain compliance with the aims of the WFD at all times. A water quality monitoring program will be required under the IE licence required for process wastewater discharge. Ongoing monitoring of the receiving water body upstream and downstream of the wastewater discharge point will be undertaken on a periodic basis to determine the impact of the discharge on the receiving water. The parameters, thresholds and frequency of the monitoring programmes required will be agreed with the EPA and will be detailed in the IE licence for the Power Plant Area.

Summary

6.20 There will be no risks to WFD objectives subject to implementation of controlled discharge to WFD water bodies as described above, which the Applicant has committed to This will be monitored at detailed design and operational stages to ensure compliance with WFD objectives at all times.

7. Decommissioning Mitigation

7.1 For the Power Plant Area a Decommissioning Plan (including a Decommissioning Environmental Management Plan) will be produced and agreed with EPA as part of the permit surrender process ahead of any permit surrender.

7.2 During decommissioning and demolition there will be a requirement for office, accommodation and welfare facilities which will be located adjacent to the Power Station Site. Decommissioning activities will be conducted in accordance with the appropriate guidance and legislation at the time of the Proposed Development and Overall Project closure.

7.3 The Electricity Grid Connection will be managed by the transmission asset operators (TAO) and transmission service operators (TSO) (ESBNI and EirGrid for electricity) as part of the national grid electricity. Upon decommissioning of the Power Plant Area, the 220 kV substation and 400 kV substation and associated transmission infrastructure will remain insitu and form part of the national grid infrastructure.

7.4 The gas connection will be managed by the transmission asset operators (TAO) and transmission service operators (TSO) (GNI for gas) as part of the national gas networks. At the end of its design life, it is expected that the gas connection pipeline may have residual life remaining, and the operational life may be extended if appropriate and/or the asset refurbished and retained as part of the national transmission network. Effects of the decommissioning of the Gas Connection Corridor, therefore, are not anticipated.

8. Conclusion

8.1 AECOM was commissioned by Bord na Móna Powergen Limited and Fichtner Consulting Engineers to undertake a Water Framework Directive (WFD) Screening Assessment in support of the planning application for the Derrygreenagh Power Project (the Proposed Development and Overall Project).

8.2 As such this WFD Screening Assessment constitutes an advisory report on:

a) The local WFD water bodies and Proposed Development and Overall Project activities that can be screened out of further WFD assessment; and

b) The scope of WFD mitigation measures to be applied and maintained throughout the detailed design and operational stages.

8.3 The majority of Proposed Development and Overall Project activities can be screened out of having any risks to WFD objectives when considering mitigation measures including the Construction Environment Management Plan (CEMP) and Sustainable Drainage Systems (SuDS).

8.4 The Proposed Development and Overall Project, without mitigation, has the potential to negatively impact the WFD status of the CASTLEJORDAN_020 (WFD ID: IE_EA_07C040100) and YELLOW (CASTLEJORDAN)_020 (IE_EA_07Y020100) in terms of water quality, due to the operation of wastewater discharges. This means that, without appropriate mitigation being applied, there is a potential risk that the Proposed Development and Overall Project could prevent the achievement of the WFD objectives in the Boyne RBMP for these water bodies. This will be avoided however, through compliance with the required Environmental Emission Limit Values (ELVs) and discharge flow rates that have been calculated for the Proposed Development. WFD compliance will therefore be achieved through compliance with these ELVs and flow rates. It is recommended that the detailed design and operational phases of the Proposed Development and Overall Project include ongoing WFD monitoring to confirm that WFD objectives are upheld with regard to operational discharges throughout the operational life of the Power Plant Area.

8.5 Accordingly, subject to the above and for the purposes of WFD Screening at planning stage, it is concluded that the Proposed Development and Overall Project will NOT:

- Cause a deterioration in the status of all surface and groundwater bodies assessed.
- Jeopardise the objectives to achieve ‘Good’ surface water/groundwater status.
- Jeopardise the attainment of 'Good’ surface water/groundwater chemical status.
- Jeopardise the attainment of ‘Good’ surface water/groundwater quantity status.
- Permanently exclude or compromise the achievement of the objectives of the WFD in other waterbodies within the same river basin district.

8.6 In summary, the Proposed Development and Overall Project will comply with the requirements of the Water Framework Directive (2000/60/EC) as amended.

9. References

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[5] Available at: EPA Maps Last Accessed August 2023

[6] Available at: EPA Maps Last Accessed August 2023

[7] Available at: Realtime waterlevel Last Accessed August 2023

[8] Available at: Historical Data - Met Éireann - The Irish Meteorological Service Last Accessed August 2023

[9] Triturus Environmental Ltd (2023). Aquatic baseline report for Derrygreenagh Power, Co Offaly & Co. Westmeath. Prepared by Triturus Environmental Ltd. for Bord na Móna Powergen Limited February 2023

[10] Mott MacDonald Pettit (2010). Proposed Power Plant at Derrygreenagh, Co. Offaly, Environmental Impact Statement Chapter 6 Water Quality.

[12] Hydro-environmental Services (202)3. FACTUAL REPORT ON RECONDITIONING AND TEST PUMPING OF PW1: DERRYGREENAGH, CO. OFFALY, P1655-0 FRAFT D0. Prepared by Hydro-Environmental services for Fichter / Bord Na Mona, August 2023.

Appendix A: Emission Limit Value Calculations

DERRYGREENAGH WASTEWATER ASSIMILATIVE CAPACITY CALCULATION

Design Effluent Flow Rate	18.0	m^3/hr	0.005	m^3/s	
River Flow Rate					
Yellow River Q_{95} Flow	0.11	m^3/s	Dilutions at Q_{95}	22.00	Q_{95}/C_{eff}
Yellow River Q_{30} Flow	0.64	m^3/s	Dilutions at Q_{30}	128.00	Q_{30}/C_{eff}

Upstream Water Quality			Notionally Clean Proxy	
	Mean	95%ile	Mean	95%ile
BOD (mg/l)	1.32	2.19	0.26	0.44
Ammonia (mg/l)	0.097	0.216	0.008	0.018
Orthophosphate (mg/l)	0.009	0.036	0.005	0.009

Environmental Quality Standards

	High Status		Good Status	
	Mean	95%ile	Mean	95%ile
BOD (mg/l)	1.30	2.20	1.5	2.6
Ammonia (mg/l)	0.040	0.09	0.065	0.14
Orthophosphate (mg/l)	0.025	0.045	0.035	0.075

Notes:

Current ambient mean BOD concentrations slightly exceed the EQS for high status - target good status
Use ambient BOD concentrations when calculating ELVs
Current ambient ammonia concentrations exceed the EQS for good status - ELV cannot deliver good status
Use notionally clean proxy concentrations for ammonia ELV to account for upstream water quality pressures
Target good status EQS for ammonia
Current ambient orthophosphate concentrations are below the EQS for high status - target high status
Use ambient orthophosphate concentrations when calculating ELVs

Target Downstream Concentrations			River Concentrations Used in Calculations
	Mean	95%ile	Mean
BOD (mg/l)	1.5	2.6	1.32
Ammonia (mg/l)	0.065	0.14	0.008
Orthophosphate (mg/l)	0.025	0.045	0.009

Mass Balance Equation: $$C_{downstream} = \frac{(C_{eff}Q_{eff}) + (C_{river}Q_{river})}{Q_{eff} + Q_{river}}$$

$C_{downstream}$ = downstream substance concentration (target)
C_{eff} = substance concentration in effluent
C_{river} = ambient river concentration upstream of discharge point
Q_{eff} = effluent flow rate
Q_{river} = river flow rate at the discharge point

Equation for ELVs: $$C_{eff} = \frac{\left(C_{downstream}(Q_{eff} + Q_{river})\right) - (C_{river}Q_{river})}{Q_{eff}}$$

Equation for Effluent Flow Rate: $$Q_{eff} = \frac{\left(C_{downstream}(Q_{eff} + Q_{river})\right) - (C_{river}Q_{river})}{ELV_a}$$

ELV_a = minimum achievable concentration in the effluent

ELV Calculation: BOD

ELV (Mean)
$$C_{eff} = \frac{(1.5(0.005+0.64)) - (1.32\times0.64)}{0.005} = 24.54 mg/l$$

ELV (95%ile)
$$C_{eff} = \frac{(2.6(0.005+0.11)) - (1.32\times0.11)}{0.005} = 30.76 mg/l$$

ELV Calculation: Ammonia

ELV (Mean)
$$C_{eff} = \frac{(0.065(0.005+0.64)) - (0.008\times0.64)}{0.005} = 7.36 mg/l$$

ELV (95%ile)
$$C_{eff} = \frac{(0.14(0.005+0.11)) - (0.008\times0.11)}{0.005} = 3.04 mg/l$$

ELV Calculation: Orthophosphate

ELV (Mean)
$$C_{eff} = \frac{(0.025(0.005+0.64)) - (0.009\times0.64)}{0.005} = 2.07 mg/l$$

ELV (95%ile)
$$C_{eff} = \frac{(0.045(0.005+0.11)) - (0.009\times0.11)}{0.005} = 0.84 mg/l$$

Final Recommended ELV
BOD = 24mg/l
Ammonia = 3mg/l
Orthophosphate = 0.8 mg/l

10. Appendix B: IPC Licence Reg. No. P0501-01

This licence was amended on 27th September 2012 under Section S96(1) of the Environmental Protection Agency Acts, as amended. The details of Amendment A must be read in conjunction with this licence. The amendment document is entitled "Technical Amendment A"

This licence was amended on 18th June 2013 and 25th February 2014 under Section S96(1)(c) of the Environmental Protection Agency Acts, as amended. The details of Amendments B and C must be read in conjunction with this licence. The amendment documents are entitled "Technical Amendment B " and "Technical Amendment C"

Headquarters,
Johnstown Castle Estate,
County Wexford, Ireland

INTEGRATED POLLUTION CONTROL LICENCE

Licence Register Number: 501

Licensee: Bord na Móna Energy Limited

Location of Activity: Derrygreenagh Group,
c/o Derrygreenagh Works
Rochfordbridge
Mullingar
County Westmeath

Table of Contents

Glossary of Terms

The Agency	Environmental Protection Agency.
The Licensee	Bord na Móna Energy Limited, Boora, Leabeg, Tullamore, County Offaly.
Location of Activity	Derrygreenagh Works, Rochfordbridge, Mullingar, County Westmeath.
AER	Annual Environmental Report.
Annually	All or part of a period of twelve consecutive months.
BATNEEC	Best Available Technology Not Entailing Excessive Cost.
Bi-annually	All or part of a period of six consecutive months.
COD	Chemical Oxygen Demand.
Daily	During all days of plant operation, and in the case of emissions, when emissions are taking place; with no more than 1 measurement on any one day.
Day	Any 24 hr. period.
Day-time	0800 hrs to 2200 hrs.
dB(A)	Decibels (A weighted).
Dust sensitive location	Any dwelling house, hotel or hostel, health building, educational establishment, place of worship or entertainment, or any other facility or area of high amenity which for its proper enjoyment requires the absence of dust at nuisance levels.
EMP	Environmental Management Programme.
EWC	European Waste Catalogue (94/3/EEC, see also Agency Guidance Note on the EWC)
Fortnightly	At least 20 measurements in a calendar year with no more than one measurement in any one week.
IPC	Integrated Pollution Control.
Leq	Equivalent continuous sound level.
Lighting-up time	30 minutes after sun set.
Local Authority	Meath County Council; Offaly County Council; Westmeath County Council.
Monthly	At least 12 times per year at approximately monthly intervals.

Night-time	2200 hrs to 0800 hrs.
Noise sensitive location	Any dwelling house, hotel or hostel, health building, educational establishment, place of worship or entertainment, or any other facility or area of high amenity which for its proper enjoyment requires the absence of noise at nuisance levels.
Quarterly	All or part of a period of three consecutive months beginning on the first day of January, April, July or October.
Screenings	Wood, stone and other debris removed from milled peat (by screening) prior to introduction to processing
Standard Methods	As detailed in "Standard Methods for the Examination of Water and Wastewater", (prepared and published jointly by A.P.H.A., A.W.W.A & W.E.F) 19th Ed. 1995, American Public Health Association, 1015 Fifteenth Street, N.W., Washington DC 20005, USA.
TA Luft	Technical Instructions on Air Quality Control - TA Luft in accordance with art. 48 of the Federal Immission Control Law (BImSchG) dated 15 March 1974 (BGBI. I p.721). Federal Ministry for Environment, Bonn 1986 and amendments.
Waste disposal operation	Means any of the operations included in the Third Schedule to the Waste Management Act 1996.
Waste recovery operation	Means any of the operations included in the Fourth Schedule to the Waste Management Act 1996.
Weekly	During all weeks of plant operation, and in the case of emissions, when emissions are taking place; with no more than one measurement in any one week.

Reasons for the Decision

The Agency is satisfied, on the basis of the information available that, subject to compliance with the conditions of this licence, any emissions from the activity will comply with and not contravene any of the requirements of Section 83(3) of the Environmental Protection Agency Act, 1992.

In reaching this decision the Agency has considered the application and supporting documentation received from the applicant, all submissions and objections received and the report of its inspectors.

Activities Licensed

In pursuance of the powers conferred on it by the Environmental Protection Agency Act, 1992, the Agency hereby grants a licence to:

Bord na Móna Energy Limited, Boora, Leabeg, Tullamore, County Offaly

under Section 83(1) of the said Act to carry on the following activity,

:- the extraction of peat in the course of business which involves an area exceeding 50 hectares

at lands labelled as Derrygreenagh Group on Location Map Drawings 2.1 and 2.2 (Attachment 2) of the IPC Application subject to the following fourteen Conditions, with the reasons therefor and associated schedules attached thereto.

Conditions

Condition 1 Scope

1.1 The activity shall be controlled, operated, and maintained and emissions shall take place as set out in this Integrated Pollution Control licence. All programmes required to be carried out under the terms of this licence, become part of this licence.

1.2 No alteration to, or reconstruction in respect of, the activity or any part thereof which would, or is likely to, result in a material change or increase in:

1.2.1 The nature or quantity of any emission,

1.2.2 The abatement/treatment or recovery systems,

1.2.3 The range of processes to be carried out,

1.2.4 The fuels, raw materials, intermediates, products or wastes generated,

or any changes in:

1.2.5 The site management and control with adverse environmental significance

shall be carried out or commenced without prior notice to, and without the prior written agreement of, the Agency.

1.3 This licence is for the purposes of IPC licensing under the EPA Act, 1992 only and nothing in this licence shall be construed as negating the licensee's statutory obligations or requirements under any other enactments or regulations.

1.4 Any reference in this licence to 'site' shall mean the plan area outlined in black and labelled Derrygreenagh Group on Location Map Drawings 2.1 and 2.2 of Attachment 2 in the IPC licence application.

Reason: To clarify the scope of this licence.

Condition 2 Management of the Activity

2.1 The licensee shall establish and maintain an Environmental Management System (EMS) which shall fulfil the requirements of this licence. The EMS shall assess all operations and review all practicable options for the use of cleaner technology, cleaner production and the reduction and minimisation of waste, and shall include as a minimum those elements specified in the Conditions 2.2 to 2.7 below:

2.2 Environmental Management Programme (EMP)

2.2.1 The licensee shall, not later than six months from the date of grant of this licence, establish and maintain an EMP, including a time schedule, for achieving objectives and targets. The EMP shall thereafter, form part of the AER and shall be agreed with the Agency prior to implementation. It shall include:

(i) designation of responsibility for targets;

(ii) the means by which they may be achieved;

(iii) the time within which they may be achieved.

2.2.2 The EMP shall as a minimum include the following objectives:

(i) Minimisation of suspended solids movement to surface water systems via peatland surface water drainage channels during development and operation of boglands.

(ii) Rationalisation of surface water discharge points.

(iii) Investigation of reed-bed systems for final polish of silt pond discharges.

(iv) Reduction of fugitive dust emissions during loading and transfer operation on the bog and during unloading operations at the tippler and works yard areas.

(v) Provision of measures to protect dust sensitive areas.

(vi) Provision of measures to prevent suspended solids from works yards entering surface waters.

(vii) Reuse of silt pond waste.

(viii) Collection, storage and reuse of polyethylene covering.

(ix) Use of reusable material for stockpile protection.

(x) Use of wind power technology for pumped drainage.

(xi) Separation of storm water runoff from process and non-process areas.

(xii) Effective spill/leak management of mobile fuelling units.

(xiii) Replacement (and remediation where necessary) of all underground fuel tanks.

2.2.3 A report on the programme, including the success in meeting agreed targets, shall be prepared and submitted to the Agency as part of the AER. Such reports shall be retained on-site for a period of not less than seven years and shall be available for inspection by authorised persons of the Agency.

2.3 Documentation

2.3.1 The licensee shall establish and maintain an environmental management documentation system which shall be to the satisfaction of the Agency.

2.3.2 The licensee shall issue a copy of this licence to all relevant personnel whose duties relate to any condition of this licence.

2.4 Corrective Action

2.4.1 The licensee shall establish procedures to ensure that corrective action is taken should the specified requirements of this licence not be fulfilled. The responsibility and authority for initiating further investigation and corrective action in the event of a reported non-conformity with this licence shall be defined.

2.5 Awareness and Training

2.5.1 The licensee shall establish and maintain procedures for identifying training needs, and for providing appropriate training, for all personnel whose work can have a significant effect upon the environment. Appropriate records of training shall be maintained.

2.5.2 Personnel performing specifically assigned tasks shall be qualified on the basis of appropriate education, training and/or experience, as required.

2.6 Responsibilities

2.6.1 The licensee shall ensure that a person in charge, as defined under the terms of the Environmental Protection Agency Act, 1992 shall be available on-site at all times when the activity is in operation. The person in charge shall also be available to meet with authorised persons of the Agency at all reasonable times.

2.7 Communications

2.7.1 The licensee shall, within six months of date of grant of this licence, put in place a programme to ensure that members of the public can obtain information concerning the environmental performance of the licensee at all reasonable times.

2.7.2 The licensee shall submit to the Agency, by 1 March each year commencing in 2001, an AER which shall be to the satisfaction of the Agency. This report shall include as a minimum the information specified in *Schedule 4 Recording and Reporting to the Agency* and shall be prepared in accordance with any relevant guidelines issued by the Agency.

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

Condition 3 Interpretation

3.1 Emission limit values for emissions to atmosphere in this licence shall be interpreted in the following way:-

3.1.1 Dust deposition at dust sensitive locations.

(i) No value shall exceed the emission limit value.

3.2 Emission limit values for emissions to water in this licence shall be interpreted in the following way:-

3.2.1 Non-Continuous Monitoring:

(i) Eight out of ten consecutive results, on the basis of 24 hr flow proportional composite sampling, shall not exceed the emission limit value. No individual daily result similarly calculated shall exceed 1.5 times the emission limit value.

(ii) 75% of grab samples for each monitored discharge shall not exceed the emission limit value; and no individual grab sample value shall exceed 3 times the emission limit value.

3.3 Noise

3.3.1 Noise from the activity shall not give rise to sound pressure levels (Leq,T) measured at noise sensitive locations which exceed the limit value(s) by more than 2 dB(A).

Reason : To clarify the interpretation of emission limit values fixed under the licence.

Condition 4 Notification

4.1 The licensee shall notify the Agency by both telephone and facsimile, if available, to the Agency's Headquarters in Wexford, or to such other Agency office as may be specified by the Agency, as soon as practicable after the occurrence of any of the following:

4.1.1 Any release to atmosphere resulting in significant impairment of, or significant interference with amenities or the environment.

4.1.2 Any emission which does not comply with the requirements of this licence.

4.1.3 Any incident with the potential for environmental contamination of surface water or groundwater, or posing an environmental threat to air or land, or requiring an emergency response by a Local Authority.

The licensee shall include as part of the notification, date and time of the incident, details of the occurrence, and the steps taken to minimise the emissions and avoid recurrence.

4.2 The licensee shall make a record of any incident as set out in Condition 4.1 above. The notification given to the Agency shall include details of the circumstances giving rise to the incident and all actions taken to minimise the effect on the environment and minimise wastes generated.

4.3 A summary report of reported incidents shall be submitted to the Agency as part of the AER. The information contained in this report shall be prepared in accordance with any relevant guidelines issued by the Agency.

4.4 In the case of any incident as set out in Condition 4.1 above which relates to discharges to water, the licensee shall notify the appropriate Regional Fisheries Board, as soon as practicable after such an incident.

4.5 In the event of any incident, as set out in Condition 4.1.3 having taken place, the licensee shall notify the appropriate Local Authority as soon as practicable, after such an incident.

4.6 In the case of any incident, as set out in Condition 4.1.3, which has the potential to impact the conservation objectives of the Special Areas of Conservation and Natural Heritage Areas identified in Attachment 10.1 of the IPC application having taken place, the licensee shall notify Dúchas of the Department of Arts, Heritage, Gaeltacht and the Islands as soon as practicable after such an incident.

4.7 The licensee shall as part of their AER, or more frequently as may be necessary, notify and supply maps to the Agency of boglands, and discharges from same, intended to be included in the subsequent years' development and operational programmes.

Reason : To provide for the notification of incidents and update information on the activity.

Condition 5 Emissions to Atmosphere

5.1 Boiler Combustion Efficiency shall be tested annually and results reported on annually as part of the AER.

5.2 The licensee shall ensure that all operations on-site shall be carried out in a manner such that air emissions and/or dust do not result in significant impairment of, or significant interference with amenities or the environment beyond the site boundary.

5.3 Within three months of the date of grant of the licence, the licensee shall submit to the Agency for agreement, a proposal for the identification and monitoring of Dust Sensitive Locations (DSL's) on and off site for dust deposition. A report on this monitoring shall be submitted annually as part of the AER.

5.4 Activities on-site shall not give rise to dust levels off site at any Dust Sensitive Location which exceed an emission limit of 350 mg/m^2/day. [The sampling method to be in accordance with German TA Luft Immission Standards for Particle Deposition (IW1)].

5.5 In relation to Dust Control the licensee shall, within six months of date of grant of this licence, develop and implement procedures to ensure that:

- shelter belts are planted in sensitive areas,
- harvesting in sensitive areas is avoided during windy weather,
- where possible machinery use grassed pathways,
- headlands are kept clean and free of excessive loose peat,
- stockpiles are sheeted where possible,
- moving machinery maintains slow speeds when travelling along dusty headlands,
- when harvesting, the jib is maintained low to the stockpile,
- shelter belts are planted around outloading facilities,
- road transported peat is adequately covered (sheeted or similar),
- wind breaks are planted where-ever possible.

Reason: *To provide for the protection of the environment by way of control, limitation, treatment and monitoring of emissions.*

Condition 6 Emissions to Water

6.1 No specified emission to water shall exceed the emission limit values set out in *Schedule 1(i) Emissions to Water* subject to Condition 3 of this licence. There shall be no other emissions to water of environmental significance.

6.2 The licensee shall within three months of date of grant of this licence submit to the Agency for approval, a proposal for a surface water discharge monitoring location programme. This programme shall, *inter alia*, have regard to the current status of each bogland (virgin, under development, operational or worked out), sensitivity of the receiving water, status of silt pond upgrade programme. This programme shall be reviewed and revised as necessary each year as part of the AER.

6.3 Monitoring and analyses of each agreed emission monitoring location shall be carried out as specified in *Schedule 1(ii) Monitoring of Emissions to Water* of this licence. A report on the results of this monitoring shall be submitted to the Agency quarterly.

6.4 The licensee shall, within six months of date of grant of licence, present a proposal for the installation (on a long term basis) of a composite sampler to one representative discharge point within the licensed area. The proposal shall set out the rationale for selection of the nominated discharge point as well as the sampling programme. The results of this monitoring are to be reported each year as part of the AER. Any proposal to relocate the composite sampler is to be dealt with under Condition 6.3.

6.5 A summary report of emissions to water shall be submitted to the Agency as part of the AER. The information contained in this report shall be prepared in accordance with any relevant guidelines issued by the Agency.

6.6 The licensee shall, within six months of the date of grant of licence, develop and implement a programme to ensure that all drainage water from all boglands in the licensed area is discharged via an appropriately designed silt pond treatment arrangement. The programme, to be implemented within a period to be agreed with the Agency, shall ensure that all discharges associated with operational boglands should be prioritised within this programme.

6.7 Within three months of the date of grant of licence, the licensee shall prepare an operational procedure for de-silting of the silt ponds. The procedure shall as a minimum provide for visual inspection of all ponds on a fortnightly basis. The de-silting roster shall be based on recommendations of such visual inspection. A log of visual inspection and de-silting shall be maintained and a summary report on the de-silting programme shall be included in the AER. The licensee shall, within twelve months of the date of grant of this licence, demonstrate to the satisfaction of the Agency that the programme of inspection is adequate.

6.8 Silt ponds serving operational bogs shall be cleaned as a minimum twice a year, once before ditching and once before harvesting, and more frequently as inspections may dictate (refer Condition 6.7).

6.9 Within six months of the date of grant of licence, the licensee shall prepare a programme, for agreement with the Agency, to upgrade all the sedimentation pond treatment systems. The programme shall, *inter alia*, address provision of additional ponds, weir or pipe installation (inlet and outlet), pond configuration, use of baffles, performance efficiency and frequency of de-silting. The upgrade shall have regard to the minimum silt pond specifications detailed in Condition 6.10.

6.10 Within three years of date of grant of this licence all existing silt ponds serving operational bogs shall achieve the following minimum performance criteria (flood periods excepted):

- Maximum flow velocity < 10 cms^{-1}
- Silt design capacity of lagoons, minimum 50 m^3 per nett ha of bog serviced

All new ponds installed shall be designed to achieve these stated minimum design criteria.

6.11 All silt ponds prone to flooding shall be de-silted by 1st November of each year. Excavated sludge shall be removed for disposal to a location outside the flood plain.

6.12 In respect of silt control the licensee shall, within nine months of date of grant of this licence, prepare and implement procedures to ensure that:

- drainage manholes are protected and maintained free of excessive peat,
- headlands are kept clean and free of excessive loose peat,
- all new manholes and outfalls are set well back from turning grounds, drivers of bog plant do not turn short (over drains) at headlands,
- harrows, millers, ridgers do not drag loose peat onto manholes or into drains, outside harrow spoons are directed away from drains,
- silt run-off, while piping or ditching, is minimised,
- outfalls are controlled to minimise silt discharge during cleaning operations,

- drains are ditched in dry weather,
- while ditching, outfalls are blocked and ditch towards outfall,
- outlets from stockpile field drains are blocked during stockpile loading,
- field drains adjacent to stockpiles are cleaned as soon as practicable after stockpile loading,
- adequate room is allowed for rail bed beside Peco stockpiles,
- all fields that have been milled are ridged at the end of the production season,
- all fields liable to winter flooding have been cleared of milled peat or re-compacted at the end of the production season.

Reason: *To provide for the protection of the environment by way of control, limitation, treatment and monitoring of emissions.*

Condition 7 Waste Management

7.1 Disposal or recovery of waste shall take place only as specified in *Schedule 2(i) Hazardous Wastes for Disposal/Recovery* and *Schedule 2(ii) Other Wastes for Disposal/Recovery* of this licence and in accordance with the appropriate National and European legislation and protocols. No other waste shall be disposed of/recovered either on-site or off-site without prior notice to, and prior written agreement of, the Agency.

7.2 Waste sent off-site for recovery or disposal shall only be conveyed to a waste contractor, as agreed by the Agency, and only transported from the site of the activity to the site of recovery/disposal in a manner which will not adversely affect the environment.

7.3 A full record, which shall be open to inspection by authorised persons of the Agency at all times, shall be kept by the licensee on matters relating to the waste management operations and practices at this site. This record shall as a minimum contain details of the following:

7.3.1 The names of the agent and transporter of the waste.

7.3.2 The name of the persons responsible for the ultimate disposal/recovery of the waste.

7.3.3 The ultimate destination of the waste.

7.3.4 Written confirmation of the acceptance and disposal/recovery of any hazardous waste consignments sent off-site.

7.3.5 The tonnages and EWC Code for the waste materials listed in *Schedule 2(i) Hazardous Wastes for Disposal/Recovery* and *Schedule 2(ii) Other Wastes for Disposal/Recovery* sent off-site for disposal/recovery.

7.3.6 Details of any rejected consignments.

A copy of this Waste Management record shall be submitted to the Agency as part of the AER for the site.

7.4 Within nine months of the date of grant of licence, the licensee shall submit to the Agency for agreement, a proposal for identification and management of all ash and screening

disposal areas. Once agreed, the proposal shall be implemented within a time-scale stipulated by the Agency.

Reason: To provide for the disposal of waste and the protection of the environment.

Condition 8 Noise

8.1 Activities on-site shall not give rise to noise levels off site at any noise sensitive location which exceed the following sound pressure limits ($Leq_{,30min}$) subject to Condition 3 of this licence:

Day-time: 55 dB(A)

Night-time: 45 dB(A).

8.2 There shall be no clearly audible tonal component or impulsive component in the noise emission from the activity at any noise sensitive location.

Reason: To provide for the protection of the environment by control of noise.

Condition 9 Water Protection

9.1 Surface & Groundwater Protection - Workshop areas and Depots

9.1.1 No potentially polluting substance or matter shall be permitted to discharge to off-site surface waters, off site storm drains or groundwaters.

9.1.2 Monitoring and analyses of surface water discharges shall be carried out as specified in *Schedule 3 Monitoring of Workshop/Depot Surface Water Run-off* of this licence. A report on the results of this monitoring shall be submitted to the Agency quarterly.

9.1.3 In the event that any analyses or observations made on the quality or appearance of surface water runoff should indicate that contamination has taken place, the licensee shall carry out an immediate investigation to identify and isolate the source of the contamination,

(i) put in place measures to prevent further contamination and to minimise the effects of any contamination on the environment,

(ii) and notify the Agency as soon as is practicable.

9.1.4 Within twelve months of the date of grant of licence, all tank and drum storage areas shall be rendered impervious to the materials stored therein. In addition, tank and drum storage areas shall, as a minimum be bunded, either locally or remotely, to a volume not less than the greater of the following;

(i) 110% of the capacity of the largest tank or drum within the bunded area

(ii) 25% of the total volume of substance which could be stored within the bunded area.

9.1.5 Drainage from bunded areas shall be diverted for collection and safe disposal.

9.1.6 The integrity and water tightness of all the bunding structures and their resistance to penetration by water or other materials stored therein shall be tested and demonstrated by the licensee to the satisfaction of the Agency and shall be reported to the Agency within eighteen months from the date of grant of this licence and every two years thereafter. A report on such tests shall be included in the AER.

9.1.7 Within twelve months of the date of grant of licence, the loading and unloading of fuel oils shall be carried out in designated areas protected against spillage and leachate run-off. While awaiting disposal, all materials shall be collected and stored in designated areas protected against spillage and leachate run-off.

9.1.8 With the exception of roof water, all surface water discharges from workshop areas shall, within twenty-four months of date of grant of this licence, be fitted with oil interceptors.

9.1.9 A maintenance/cleaning log for all oil interceptors and septic tanks shall be maintained. This log shall also record the observations made during weekly inspections of all oil interceptors and bi-annual inspections of septic tanks.

9.1.10 An inspection for leaks on all flanges and valves on over-ground pipes used to transport materials other than water shall be carried out weekly.

9.1.11 The provision of a catchment system to collect any leaks from flanges and valves of all over ground pipes used to transport material other than water shall be examined.

9.1.12 The licensee shall undertake a programme of testing and inspection of underground fuel pipelines to ensure that all underground fuel lines are tested at least every three years. A report on the first testing shall be submitted to the Agency within twelve months of the date of grant of licence and as part of the AER thereafter.

9.1.13 The licensee shall have in storage an adequate supply of containment booms and/or suitable absorbent material to contain and absorb any spillage.

9.1.14 The licensee shall within twelve months of the date of grant of licence, arrange for the removal and safe disposal of waste oil and oil contaminated soil from the scrap storage area at Derrygreenagh Works.

9.1.15 The licensee shall maintain a log of bi-annual inspections of all rail and tractor transported fuelling units. These inspections as a minimum should record any damage or leaks or flaws in rolling stock that could result in accidental spillage.

Reason: To provide for the protection of surface waters and groundwater.

Condition 10 Cutaway Bog Rehabilitation

10.1 Following termination of use or involvement of all or part of the site in the licensed activity, the licensee shall:

10.1.1 Decommission, render safe or remove for disposal/recovery, any soil, subsoils, buildings, plant or equipment, or any waste, materials or substances or other matter contained therein or thereon, that may result in environmental pollution.

10.1.2 Implement the agreed cutaway bog rehabilitation plan (refer Condition 10.2).

10.2 Cutaway Bog Rehabilitation Plan:

10.2.1 The licensee shall prepare, to the satisfaction of the Agency, a fully detailed and costed plan for permanent rehabilitation of the cutaway boglands within the licensed area. This plan shall be submitted to the Agency for agreement within eighteen months of the date of grant of this licence.

10.2.2 The plan shall be reviewed every two years and proposed amendments thereto notified to the Agency for agreement as part of the AER. No amendments may be implemented without the written agreement of the Agency.

10.3 The Rehabilitation Plan shall include as a minimum, the following:

10.3.1 A scope statement for the plan, to include outcome of consultations with relevant Agencies, Authorities and affected parties (to be identified by the licensee).

10.3.2 The criteria which define the successful rehabilitation of the activity or part thereof, which ensures minimum impact to the environment.

10.3.3 A programme to achieve the stated criteria.

10.3.4 Where relevant, a test programme to demonstrate the successful implementation of the rehabilitation plan.

10.3.5 A programme for aftercare and maintenance.

10.4 A final validation report to include a certificate of completion for the Rehabilitation Plan, for all or part of the site as necessary, shall be submitted to the Agency within six months of execution of the plan. The licensee shall carry out such tests, investigations or submit certification, as requested by the Agency, to confirm that there is no continuing risk to the environment.

Reason: *To make provision for the proper closure of the activity ensuring protection of the environment.*

Condition 11 Monitoring

11.1 The licensee shall carry out such sampling, analyses, measurements, examinations, maintenance and calibrations as set out in Schedules:-

Schedule 1(ii) Monitoring of Emissions to Water

Schedule 3 Monitoring of Workshop/Depot Surface Water Run-off

of this licence.

11.2 Where the ability to measure a parameter is affected by mixing before emission, then, with prior written agreement from the Agency, the parameter may be assessed before mixing takes place.

11.3 All automatic monitors and samplers shall be functioning at all times (except during maintenance and calibration) when the activity is being carried on unless alternative sampling or monitoring has been agreed in writing by the Agency for a limited period. Prior written agreement for the use of alternative equipment, other than in emergency situations, shall be obtained from the Agency.

11.4 Monitoring and analysis equipment shall be operated and maintained as necessary so that monitoring accurately reflects the emission or discharge.

11.5 The frequency, methods and scope of monitoring, sampling and analyses, as set out in this licence, may be amended with the written agreement of the Agency following evaluation of test results.

11.6 The licensee shall clearly identify and label all emission points.

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

11.8 The licensee shall provide safe and permanent access to the following sampling and monitoring points:

(i) Waste storage areas on-site,

(ii) Surface water discharges,

(iii) Dust sampling locations,

and safe access to any other sampling and monitoring points required by the Agency.

Reason: *To ensure compliance with the requirements of other conditions of this licence by provision of a satisfactory system of measurement and monitoring of emissions.*

Condition 12 Recording and Reporting to Agency

12.1 The licensee shall record all sampling, analyses, measurements, examinations, calibrations and maintenance carried out in accordance with the requirements of this licence.

12.2 The licensee shall record all incidents which affect the normal operation of the activity and which may create an environmental risk.

12.3 The licensee shall record all complaints of an environmental nature related to the operation of the activity. Each such record shall give details of the date and time of the complaint, the name of the complainant and give details of the nature of the complaint. A record shall also be kept of the response made in the case of each complaint. The licensee shall submit a report to the Agency, during the month following such complaints, giving details of any

complaints which arise. A summary of the number and nature of complaints received shall be included in the AER.

12.4 The format of all records required by this licence shall be to the satisfaction of the Agency. Records shall be retained on-site for a period of not less than seven years and shall be available for inspection by the Agency at all reasonable times.

12.5 Reports of all recording, sampling, analyses, measurements, examinations, calibrations and maintenance as set out in *Schedule 4 Recording and Reporting to the Agency* of this licence, shall be submitted to the Agency Headquarters as specified in this licence. The format of these reports shall be to the satisfaction of the Agency. One original and three copies shall be submitted as and when specified.

12.6 Provision shall also be made for the transfer of environmental information, in relation to this licence, to the Agency's computer system, as may be requested by the Agency.

12.7 All reports shall be certified accurate and representative by the licensee's Plant Manager or other senior officer designated by the Plant Manager.

12.8 All written procedures controlling operations affecting this licence shall be available on-site for inspection by the Agency at all reasonable times.

12.9 The frequency and scope of reporting, as set out in this licence, may be amended with the written agreement of the Agency following evaluation of test results.

Reason: To provide for the collection and reporting of adequate information on the activity.

Condition 13 Emergency Response

13.1 The licensee shall, within six months of date of grant of this licence, ensure that a documented Emergency Response Procedure is in place which shall address any emergency situation which may originate on-site. This Procedure shall include provision for minimising the effects of any emergency on the environment.

Reason: To provide for the protection of the environment.

Condition 14 Financial Provisions

14.1 Agency Charges

14.1.1 The licensee shall pay to the Agency an annual contribution of £4,070 or such sum as the Agency from time to time determines, towards the cost of monitoring the activity as the Agency considers necessary for the performance of its functions under the Environmental Protection Agency Act, 1992. The licensee shall in 2001 and subsequent years, not later than January 31 of each year, pay to the Agency this amount updated in accordance with changes in the Consumer Price Index from the date of the licence to the renewal date. The updated amount shall be notified to the licensee by the Agency. For 2000, the licensee shall pay a pro rata amount from the date of this licence to December 31 2000. This amount shall be paid to the Agency within one month of the date of grant of this licence.

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

Schedule 1(i) Emissions to Water

Emission Point Reference No.: All surface water outfalls from boglands within the licensed area

Location : As detailed in Section 11 and Attachment 11 of the IPC licence application form, and any additional locations as may be agreed under Condition 4.7

Parameter	Emission Limit Value
Suspended Solids	35 mg/l

Schedule 1(ii) Monitoring of Emissions to Water

Emission Point Reference No's: As agreed under Condition 6.3

Parameter	Monitoring Frequency	Analysis Method/Technique
pH	Quarterly	Standard Methods
Flow	Quarterly	Agreed Method
Suspended Solids	Quarterly	Standard Methods
Total Solids	Quarterly	Standard Methods
Total Phosphorus	Quarterly	Standard Methods
Ammonia	Quarterly	Standard Methods
Colour	Quarterly	Standard Methods
COD	Quarterly	Standard Methods

Schedule 2(i) Hazardous Wastes for Disposal/Recovery

Waste Materials	Method of disposal/recovery Notes 1 - 4
Lubricating Oils	Agreed hazardous waste disposal contractor.
Hydraulic Oils	Agreed hazardous waste disposal contractor.
Oil/Fuel Filters	Agreed hazardous waste disposal contractor.
Lead Acid Batteries	Agreed hazardous waste disposal contractor.
Fluorescent lights	Agreed hazardous waste disposal contractor.
Degreasing still-bottoms	Agreed hazardous waste disposal contractor.
Anti- freeze liquid	Agreed hazardous waste disposal contractor.
Other Note 4	

Note 1: The licensee may treat, reuse, recycle or recover waste subject to the prior written agreement of the Agency.

Note 2: Any variation from those contractors named in the IPC licence application, or subsequent agreements, must have the prior written agreement of the Agency. In cases where a previously agreed waste contractor is considered by the Agency not to exercise due care in respect of the transport and disposal of the licensee's waste, the Agency may at any time instruct a licensee to stop using this contractor.

Note 3: Other method to be agreed with the Agency.

Note 4: No other waste shall be disposed of/recovered on or off-site without prior notice to, and prior written agreement of the Agency.

Schedule 2(ii) Other Wastes for Disposal/Recovery

Waste Materials	Method of disposal/recovery Notes 1 - 4
Scrap Metal / Welding Rods	Agreed waste recovery contractor.
Ash/Cinders	Agreed waste disposal contractor/On- site landfill.
Polythene covering	Agreed recycling disposal contractor.
Wooden pallets and timber	Agreed waste disposal/recovery contractor.
Hand cleansing rags	Agreed waste disposal contractor.
General Office & Canteen Waste	Agreed waste disposal contractor.
Paint waste	Agreed waste disposal contractor.
Other Note 4	

Note 1: The licensee may treat, reuse, recycle or recover waste subject to the prior written agreement of the Agency.

Note 2: Any variation from those contractors named in the IPC licence application, or subsequent agreements, must have the prior written agreement of the Agency. In cases where a previously agreed waste contractor is considered by the Agency not to exercise due care in respect of the transport and disposal of the licensee's waste, the Agency may at any time instruct a licensee to stop using this contractor.

Note 3: Other method to be agreed with the Agency.

Note 4: No other waste shall be disposed of/recovered on or off-site without prior notice to, and prior written agreement of the Agency.

Schedule 3 Monitoring of Workshop/Depot Surface Water Run-off

Emission Point Reference No's: All surface water discharges from workshops and depots associated with the licensed activity.

Parameter	Monitoring Frequency	Analysis Method/Technique
Visual inspection	Weekly	-
COD	Monthly	Standard Methods

Schedule 4 Recording and Reporting to the Agency

Completed reports shall be submitted to: The Environmental Protection Agency
Headquarters, PO Box 3000
Johnstown Castle Estate
Co Wexford
Ireland

or Any other address as may be specified by the Agency

Reports are required to be forwarded as set out below:

Recurring Reports:

Report	Reporting Frequency	Report Submission Date
Surface Water (Schedule 1(ii) and Schedule 3)	Quarterly	Ten days after end of the quarter being reported on.
Complaints (where these arise)	Monthly	Ten days after end of the month being reported on.
Annual Environmental Report (AER)	Annually	1 March of each year

Annual Environmental Report Content	
• Emissions to water summary	• Environmental management programme - proposal
• Waste management report.	• Environmental management programme - report
• Resource consumption summary	• Reported incidents summary
• Complaints summary	• Bog development and operational programme
• Air emissions report (dust/boiler efficiency)	• Bog rehabilitation progress report
• Report on de-silting programme	• Bund integrity (every two years, refer Condition 9.1.6)
• Surface water discharge monitoring location programme	• Integrity of underground fuel pipelines (refer Condition 9.1.12)

Once-off Reports:

Report	Report Submission Date
Bund integrity assessment.	Within eighteen months of the date of grant of licence.
Environmental management programme proposal.	Within six months of the date of grant of licence.
Proposal for dust monitoring locations (Condition 5.3)	Within three months of the date of grant of licence.
Proposal for surface water monitoring locations (Condition 6.2)	Within three months of the date of grant of licence.
Proposal for installation of a composite sampler (Condition 6.4)	Within six months of the date of grant of licence.
Programme for fitting of silt ponds to all bog discharges (Condition 6.6)	Within six months of the date of grant of licence.
Upgrade of sedimentation pond treatment system (Condition 6.9)	Within six months of the date of grant of licence.
Proposal for screenings disposal (Condition 7.4)	Within nine months of the date of grant of licence.
Integrity of underground fuel pipelines (Condition 9.1.12)	Within twelve months of the date of grant of licence.
Bog rehabilitation programme (Condition 10.2)	Within eighteen months of the date of grant of licence.

Signed on behalf of the Agency

Padraic Larkin

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Director/Authorised Person

Dated this 26th day of April 2000

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