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Bord  
Pleanála

## Inspector's Report ABP308935-20

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<b>Development</b>	Water Pollution Licence Discharge
<b>Location</b>	Grantstown, Wellingtonbridge, County Wexford.
<b>Planning Authority</b>	Wexford County Council
<b>Planning Authority Reg. Ref.</b>	SS/G675/20
<b>Applicant(s)</b>	Grantstown Voluntary Housing Association.
<b>Type of Application</b>	Water Pollution Licence
<b>Planning Authority Decision</b>	Refuse the licence
<b>Type of Appeal</b>	Applicant V refusal
<b>Appellant(s)</b>	Grantstown Voluntary Housing Association.
<b>Observer(s)</b>	None.
<b>Date of Site Inspection</b>	17 <sup>th</sup> February 2021
<b>Inspector</b>	Hugh Mannion

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## **1.0 Introduction.**

- 1.1. This is appeal against a decision by Wexford County Council to refuse a licence under Section 4 of the Water Pollution Act 1977 (as amended) to discharge of sewage effluent to groundwaters at Grantstown, Wellingtonbridge, County Wexford.

## **2.0 Site Location and Description**

- 2.1. The application site is at Grantstown, County Wexford about 1km south of Wellingtonbridge and is accessed over a local road network which has a junction north of the application site with the R733 which links Wellingtonbridge in the west to Wexford town to the east. There is an existing sheltered housing scheme of 24 units, a church, personal services/administration buildings within the site. These buildings are accessed over a private lane which has a junction with the public road network to the north of the site. Adjoining the application site on the northeast is the Bannow/Ballymitty GAA club with a large club house.
- 2.2. The existing sheltered housing scheme currently drains through a treatment system to a reed bed/constructed wetland just south of the housing development which in turn discharges to a local stream and then into Bannow Bay.

## **3.0 Background to the Application**

- 3.1. Permission was granted under planning register reference 20200002 for the erection of 8 two bed dwelling houses, 1 four bed dwelling house, 6 one-bedroom units and 1 communal unit and the replacement of the existing wastewater treatment system (WWTS) with an upgraded system to treat effluent from the existing and proposed development on site.
- 3.2. The planning permission included conditions 5, 6, 7 referred to the treatment of foul effluent arising from existing and proposed development and a note attached to the grant of permission notified the applicant that a discharge licence was required under the Water Pollution Acts.

## 4.0 Planning Authority Decision

### 4.1. Decision – Refuse a licence.

The discharge of effluent to groundwater would be prejudicial to public health and the environment because of.

- The presence of total and faecal coliforms in all three boreholes sampled exceed the 0 limit for these in the Drinking Water Regulations 2014.
- The elevated levels of BOD and nitrates in GW2 (the second groundwater sampling borehole on site) are above the threshold value in the groundwater regulations and the EPA interim guide value.
- The concentration of phosphates in the groundwater is above the threshold value of 0.035mg/l specified in the groundwater regulations.
- A number of farms/houses in the area are dependent of private wells for their supply.

### 4.2. Planning Authority Reports

#### 4.2.1. Environmental Report

4.2.2. The initial Environmental Scientist's report requested further information.

- Clarify the hydraulic gradient given in the application.
- Confirm that the grease trap *in situ* is designed to capture all oils, fats and grease emitted from the proposed development.
- Submit a copy of the contract for the collection and disposal of oils, fats and grease emitted from the proposed development.
- Confirm that the proposed treatment plant is capable of treating effluent from the proposed hairdressers and launderette on site.
- Clarify the T value obtained on the site.
- Clarify the size of the percolation area and the calculation basis for this size.
- The expected concentration of discharges to ground water are dependent on the capacity of the percolation area and these should be reworked.

- Total and faecal coliform results exceed the limits set out in the European Union (Drinking Water) Regulations 2014. Comment on this.
- The WWTP specifications give expected figures for BOD, suspended solids and ammonia-nitrogen only. Submit figures for Nitrate (N) and Phosphorus (P).
- Clarify the origin of a background concentration of 1mg/l BOD. The figures for Nitrates, phosphorus and orthophosphates are confused. Clarify the results of the study and units of measurement adopted.
- Nitrate, not total nitrogen, is the parameter in the relevant regulations – amend the report to show expected nitrate concentrations in the ground water.
- Explain why only one bore hole (GW2) was used to calculate background concentrations in the aquifer and not an average over the three boreholes.
- Provide details of fencing for the percolation area to avoid compaction by animals or vehicles.

4.3. The planning authority's Environmental Department reviewed the submission of further information and recommended refusal of the surface water discharge licence.

## 5.0 Planning History

5.1. Register reference 20200002 was an application for the erection of 8 two bed dwelling houses, 1 four bed dwelling house, 6 one-bedroom units and 1 communal living unit and the replacement of the existing wastewater treatment system (WWTS) with an upgraded system to treat effluent from the existing and proposed development on site.

## 6.0 Policy and Context

### 6.1. Development Plan

6.2. The Wexford County Development Plan 2013 to 2019 (as extended) is the relevant County Development Plan for the area. The plan includes objectives in relation to wastewater as follows.

### 6.3. Objective WW01

6.4. To ensure that all wastewater generated is collected, treated and discharged after treatment in a safe and sustainable manner, having regard to the standards and requirements set out in EU and national legislation and guidance and subject to complying with the provisions and objectives of the EU Water Framework Directive, relevant River Basin Management Plan, relevant Pollution Reduction Programmes for Shellfish Waters, Urban Wastewater Water Directive and the Habitats Directive

### 6.5. Objective WW04

6.6. To consider the provision of private wastewater treatment facilities to serve commercial/employment generating developments where it is demonstrated that the proposed wastewater treatment system will meet all the relevant environmental criteria of the EPA and the Planning Authority, and subject to complying the provisions and objectives of the EU Water Framework Directive, relevant River Basin Management Plan, relevant Pollution Reduction Programmes for Shellfish Waters and the Habitats Directive. An annual renewed contract for the management and maintenance of the system contracted to a reputable company/ person will be required; details of which shall be submitted to the Planning Authority.

### 6.7. Objective WW07

6.8. To work with relevant agencies and to assist in the research and development of new sustainable effluent treatment systems including zero discharge systems such as Willow Beds or Reed Beds.

### 6.9. Water Quality Standards.

6.10. The EPA **Wastewater Treatment Manual for Treatment Systems for Small Communities, Business, Leisure Centres and Hotels (1999)** provides guidance

on the selection, operation and maintenance of wastewater treatments systems with a pe of 10-500.

6.11. The EPA **Guidance on the Authorisation of Discharges to Ground Water (2011)** provides guidance on the assessment needed to authorise discharges to ground water in order to satisfy the requirements of the European Communities Environmental Objectives (Groundwater Regulations) 2010.

6.12. The **European Communities Environmental Objectives (Groundwater) Regulations 2010** implement the requirements of the Water Framework and the Groundwater Directive. The regulations impose duties on public authorities in relation to groundwater;

- Prevent or limiting input of pollutants into groundwater bodies,
- Protect, enhance and restore all ground water bodies to achieve good groundwater status by December 2015,
- To reverse any significant and sustained upward trend in pollutants in groundwater bodies arising from human activity,
- To achieve compliance with any standards established for groundwater dependent protected areas.

6.13. Article 5 of requires that a public authority shall not in the performance of its functions undertake those functions in a manner that knowingly causes or allows deterioration in the quantitative status or chemical status of a body of ground water. Local authorities and the Board are defined in the first schedule as public authorities.

6.14. The **European Union (Drinking Water) Regulations 2014** and the **European Union (Drinking Water) (Amendment) Regulations 2017** prescribe quality standards to be applied in relation to drinking water.

## 7.0 The Appeal

### 7.1 Grounds of Appeal

- The voluntary housing association which runs the development has been in existence since the 1990's on the site of a former Augustinian seminary. The overall development includes a medical centre. There are 30 permanent

residents and a day-care centre for 40 persons with 2 nurses, 10 carers and additional staff.

- Permission was granted for in May 2020 for additional housing in the site and the replacement of the existing wastewater treatment system (WWTS) with an upgraded system to treat effluent from the existing and proposed development on site under reference number 20200002.
- That permission included conditions requiring the installation of the (WWTS) in accordance with the manufacturers recommendations, certification that the system would accord with the EPA Code of Practice for Wastewater Treatment Systems for Single Houses, the decommissioning of the existing wastewater treatment system and the decommissioning of an existing private well and connection to the public mains.
- The discharge licence was refused because the effluent discharge to the ground would be prejudicial to public health and pose a risk to the environment. The borehole samples showed total and faecal chloroforms in excess of the limits set in the Drinking Water Regulations 2014, an elevated concentration of BOD and nitrates which exceed the levels set in the ground water regulations, the concentration of orthophosphates in the groundwater is above the limit value of 0.035mg/l P set out in the groundwater regulations and the dependence of a number of dwellings/farms in the area on private wells.
- The grant of permission under reference number 20200002 implied the upgrading of an existing system of an existing WWTP, piped effluent to a wetland and discharge to a stream. The refusal of the discharge licence means that permission cannot be implemented.
- There is no alternative to discharging as proposed.
- The boreholes were constructed as monitoring wells and not disinfected. Slurry spreading or livestock in the area could have resulted in the bacterial contamination reported. The poor standard of the existing WWTP could be a source of ground water pollution. The bacterial contamination levels are low and the matter may be dealt with chlorine/UV treatment.



- The elevated BOD and Nitrate levels in GW2 are attributable to the poor standard of the existing WWTP. The permission under reference number 20200002 will allow for an upgrade of this plant.
- The recorded levels of orthophosphate were 0.03mg/l which is below the limit of 0.03mg/l.
- There are about 10 dwellings downgradient of the application site and the closest is 500m away. Dilution and attenuation within the aquifer will ensure no impacts on well water quality.

## **7.2. Planning Authority Response**

- The authority applied the criteria set out in the EPA Guidance on the Authorisation of Discharges to Ground water and Surface Waters.
- The presence of Total and Faecal coliform that exceed the limits set out in the European Union (Drinking Water) Regulations 2014 is attributed potentially to cattle in the vicinity of the test boreholes but the application goes on to state that the existing WWTP is not operating properly, that breakdowns occur and that the existing wetland may be leaking contaminants into the ground water.
- Increased effluent loading would be prejudicial to public health and water quality.
- The nitrate levels reported in the groundwater samples exceed the limit values in the Groundwater Regulations 2010.
- Wexford County Council is prohibited from allowing a deterioration in ground water status by the provisions of the Groundwater Regulations 2010.

## **7.3. Observations**

- None

## 8.0 Assessment

### 8.1. Background.

- 8.2. This is an application for a licence discharge domestic effluent to ground water under section 4 of the Water Pollution Acts 1977 to 1990. The effluent will arise from the existing and proposed mix of residential accommodation, health care services and meals on wheels for off-site prepared on site for delivery off site.
- 8.3. The existing development of sheltered housing and associated services has grown over the years since the change over from a religious community to sheltered housing in the 1990's. The existing development on site comprises 24 sheltered houses, a community day care centre where occupants of the on-site houses and off-site clients receive entertainment, food and services such as physiotherapy. The centre includes administration offices, a dining room, hairdressers, a chiropodist, toilets, a kitchen and launderette. The kitchen is used for food preparation for residents/staff and visitors and also provides meals as 'meals on wheels'. The wastewater from this development discharges to an existing WWTP which in turn discharges to a constructed wetland which then discharges to a stream (Barrystown Stream) which eventually decants into Bannow Bay to the west of the site.
- 8.4. The proposed development which will also be served by the proposed WWTS (permitted under reference 20200002) comprises the erection of 8 two bed dwelling houses, 1 four bed dwelling house, 6 one-bedroom units and 1 communal residential unit with carparking and an amended entrance road layout.
- 8.5. The Groundwater Regulations generally concentrate on the chemical status of groundwaters while the Drinking Water Regulations set limits on microbial pathogens (coliform bacteria, E.Coli, enterococci and cryptosporidium).
- 8.6. The application for a discharge licence makes a number of points;
1. The effluent discharged comprises domestic wastewater only.
  2. The pe is 105.
  3. The dry weather flow is 18.56m<sup>3</sup>/day.
  4. There may be a reduced loading over weekends when some services are not offered on site.

5. A grease trap is in place.
6. Food waste is separated out and dealt with by a registered operator.
7. Storm water is collected separately and discharged to a soakway on site.
8. Desludging will be carried out as required.
9. Three groundwater sampling points are in place to monitor ground water quality.
10. There will be a sump between the WWTP and the polishing filter.
11. Groundwater background concentrations for a list of chemicals and microbial pathogens are set out in table B (page 27) of the application.

**8.7. Refusal reasons.**

- 8.8. The local authority sought additional information, *inter alia*, in relation to the presence of E coli and coliform bacteria in the ground water samples taken on site when the limit values in the Drinking Water Regulations is zero. The local authority also questioned the sampling and reporting methodology in relation to these parameters.
- 8.9. The applicant responded that the original samples were taken soon after the drilling of the wells and that soil or dirt may have entered the wells or the elevated contaminant levels may be attributable to livestock or slurry spreading or to the existing but malfunctioning WWTP. Further sampling in July 2020 showed the presence of faecal coliforms and total coliforms in excess of zero for all three sampling points. The applicant makes the point that there are no limits for faecal coliforms and total coliforms in Groundwater Regulations and that applying the standards in the Drinking Water Regulations is too stringent since raw groundwater can be treated to make it suitable for use.
- 8.10. I disagree with the applicant on this point. There are general duties placed on local authorities to protect water quality under the Water Pollution Acts and the Groundwater Regulations. It is the case that zero limit values for faecal coliforms and total coliforms are set out in the Drinking Water Regulations but the local authority cannot limit its consideration of water quality to the Groundwater Regulations and exclude from its consideration threats to public health from the presence of microbial pathogens.

- 8.11. The applicant makes a further point that these microbial pathogens may have entered the groundwater from other sources (cattle, slurry spreading an existing malfunctioning WWTP). In this regard the requirement to protect groundwater quality is explicit in the Groundwater Regulations and the applicant must demonstrate that the effluent emitted under the proposed licence would not give rise to any pollution of the groundwater resource.
- 8.12. The chemical status of groundwater is determined by reference to the groundwater threshold values set out in schedule 5 of the Groundwater Regulations. The limit for nitrate as measured in mg/l NO<sub>3</sub> is 37.5. The local authority requested that the Hydrogeological Assessment be amended to report in mg/l NO<sub>3</sub> and not in total nitrogen as N (see point 11 in the assessment). The applicant revised the submission in the response to the request for additional information giving a value below the threshold for two of the sampling wells (GW1 and GW3) but a value for 44.6mg/l NO<sub>3</sub>. This value exceeds the threshold set out in the Groundwater Regulations.
- 8.13. In relation to BOD the local authority sought clarification as to the BOD of the final effluent from the system. The applicant states (point 9 of the response to the request for further information) that the design BOD of the final effluent will be 6mg/l.
- 8.14. **Analysis.**
- 8.15. The EPA Guidance on the Authorisation of Discharges to Groundwater (EPA 2011) recommends a source-pathway-receptor methodology for the assessment of applications for discharge of trade effluent to ground water and classifies this application as Tier 2 application. In my view two basic aspects of the proposed discharge remain unresolved and these are hydraulic loading and chemical loading.
- 8.16. The appropriate standard for effluent disposal in this case is set out in the EPA Wastewater Treatment Manual for Treatment Systems for Small Communities, Business, Leisure Centres and Hotels (1999). The application states that the design criterion is for 105pe allocating a hydraulic loading of 150 l/day per resident. The EPA manual (table 3) recommends calculating hydraulic loading at 250 l/day for elderly residents, 300 l/day where nursing assistance is provided and 350 l/day in convalescent homes. Applying the EPA standards, the residential element alone (say 26 existing and 28 proposed residents) would give rise to a hydraulic loading of

between 13,500 l/day and 18,900 l/day whereas the application is based on a figure of 8,100 l/day. Additionally, the applicant is unclear as to how the hydraulic loading associated with the other activities (for example visitor facilities and meals on wheels) carried out on site have been arrived at. I conclude that the hydraulic loading would be well in excess of the total proposed in the application of 8,100 l/day.

- 8.17. The expected hydraulic loading determines the size of the percolation area. The local authority (see points 6 and 7) of the request for further information requested clarification as to the sizing and exact location of the percolation area. The applicant responded that total area of the percolation area is 930m<sup>2</sup>. The percolation area is located close to the eastern boundary between the existing constructed wetland and the eastern boundary.
- 8.18. The EPA Wastewater Treatment Manual for Treatment Systems for Small Communities, Business, Leisure Centres and Hotels does not give figures for percolation area sizes but the EPA code of practice for single houses (table 10.1) gives a range of sizes depending on the method of discharge (direct, pumped, gravity) of between 45m<sup>2</sup> and 240m<sup>2</sup> for a 5 person domestic house. The site suitability assessment provided with the application states that the average t value 16.81. The application is unclear as to the basis for the sizing of the percolation area and it is not possible to conclude that the percolation area has been properly sized to accommodate the expected hydraulic loading and therefore the retention time for effluent to ensure that it is not carrying contaminants into the groundwater as infiltration.
- 8.19. **Chemical Status.**
- 8.20. The local authority in its refusal reason referenced the existing polluted nature of the groundwater within the application site as sampled in preparation for the application. The appeal makes several points as to the origin of these pollutants and the appropriate standards against which the risk of further pollution should be assessed. Additionally, the applicant makes the point that the proposed WWTP/percolation area will represent an improvement of the quality of effluent entering the overall water environment.
- 8.21. Article 5 of the Groundwater Regulations prohibits public authorities from carrying out its functions in a manner that knowingly causes or allows deterioration in the

quantitative status or chemical status of a body of groundwater. I agree with the local authority that the correct standard is the Drinking Water regulations since the aquifer is used as a drinking water resource both on site and off site. In the present case it is not possible to conclude that WWTP/percolation has been designed and sized in a manner which will prevent a further deterioration in the chemical status of groundwater underlying the site.

**8.22. Appropriate Assessment.**

8.23. Article 42(1) of the European Communities (Birds and Natural Habitats) Regulations 2011 requires that a screening for Appropriate Assessment (AA) be carried out in relation to a plan or project, not connected with or necessary for the management of a European site, for which an application for consent is received by a public authority before a consent is given. A local authority and the Board are defined as public authorities in Article 2 for the purposes of these regulations. The public authority must determine if an AA is required for the project and at any time following receipt of the application for consent may seek submission of an NIS. In the present case the local authority did not carry out a screening assessment of the application for a discharge to groundwater or seek an NIS.

8.24. Having regard to the nature of the application I am satisfied that the project is not connected with or necessary for the management of a European site.

8.25. The Bannow Bay SAC (000697) is the closest European site to the application site lying about 1.7km to the west. The conservation objective for the site is the maintenance of habitats and species (qualifying interests) within Natura 2000 sites at favourable conservation condition so as to contribute to the overall maintenance of favourable conservation status of those habitats and species at a national level. The qualifying interests are;

- Estuaries
- Mudflats and sandflats not covered by seawater at low tide
- Annual vegetation of drift lines
- Perennial vegetation of stony banks
- Salicornia and other annuals colonizing mud and sand

- Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*)
- Mediterranean salt meadows (*Juncetalia maritimi*)
- Mediterranean and thermo-Atlantic halophilous scrubs (*Sarcocornetea fruticosi*)
- Embryonic shifting dunes
- Shifting dunes along the shoreline with *Ammophila arenaria* ('white dunes')
- Fixed coastal dunes with herbaceous vegetation ('grey dunes')

8.26. The standard conceptual model for examining impacts between projects and any European site is the source-pathway-receptor model. Noting that the surface water system in the area (Barrystown Stream and the Coolbrock stream) discharges to Bannow bay and having regard to the Hydrogeological Assessment with the application I conclude that the groundwater in the area of the proposed WWTP and percolation area also flows into Bannow bay. Therefore, the proposed WWTP and percolation area may be understood as the source of contaminants, the groundwater as the pathway and the SAC as the receptor.

8.27. Having regard to the proximity of the application site to the European site, the capacity of the project to give rise groundwater pollution and the aquatic dependent nature of the qualifying interests for which the SAC has been designated I conclude on the basis of the information provided with the application and appeal and in the absence of a Natura Impact Statement the Board cannot be satisfied that the proposed development individually, or in combination with other plans or projects would not be likely to have a significant effect on the Bannow Bay SAC (000697), or any other European site, in view of the site's Conservation Objectives. In such circumstances the Board is precluded from granting the licence.

## 9.0 Recommendation

9.1. I recommend refusal.

## 10.0 Reasons and Considerations

1.	<p>Having regard to;</p> <p>(1) the lack of clarity regarding hydraulic loading predicted to arise from the existing development and proposed development to which the application for a discharge licence relates,</p> <p>(2) the lack of clarity regarding the sizing of the percolation area proposed as part of the WWTP to which the application for a discharge licence relates,</p> <p>(3) the lack of clarity of the effect on the chemical status of the groundwater underlying the application site that would arise from discharge of domestic effluent to which this groundwater discharge licence relates,</p> <p>It considered that the application has not demonstrated that the grant of a discharge licence would not give rise to a deterioration in the chemical or biological status of the groundwater body underlying the application site.</p>
2.	<p>On the basis of the information provided with the application and appeal and in the absence of a Natura Impact Statement the Board cannot be satisfied that the proposed project individually, or in combination with other plans or projects would not be likely to have a significant effect on Bannow Bay SAC (000697) or any other European site, in view of the site's Conservation Objectives. In such circumstances the Board is precluded from granting a licence.</p>

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Hugh Mannion  
Senior Planning Inspector

24<sup>th</sup> May 2021.