

Comhairle Contae Chorcaí
Cork County Council

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Administration,
Environmental Licensing Programme,
Office of Climate, Licensing & Resource Use,
Environmental Protection Agency,
Headquarters,
PO Box 3000,
Johnstown Castle Estate,
County Wexford

28th January 2011

Re: A0397-01 – Goleen Waste Water Discharge Certificate of Authorisation
– Reply to Notice in accordance with Regulation 25(c)(ii) of the Waste Water
Discharge (Authorisation) Regulations 2007

Dear Ms. Stafford,

I refer to your letter of the 14th December 2010 concerning the above. The following is our reply to your request for further information in accordance with Regulation 25(c)(ii).

1. Assessment of Effects of the Waste Water Discharges on European Sites

With reference to Circular L8/08 and the flow diagram in Appendix 1 attached, it can be concluded that the wastewater discharging from the agglomeration will not have significant effects on any relevant European sites.

The discharge points relating to Goleen agglomeration discharge into Ballydivlin Bay and are within Barley Cove to Ballyrisode Point SAC (Site Code 001040). Ballydivlin Bay is a large, well exchanged body of water with high dilution and the pe of the agglomeration is <500pe. A Habitats Directive Assessment (Screening Report) for Goleen Agglomeration has been carried out and is attached. It can be concluded from this that an appropriate assessment is not required for this agglomeration.

2. Agglomeration Boundary

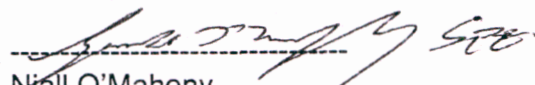
See attached drawing no. GOLE B1-01 Rev A for revised agglomeration boundary.

3. Design Capacity of Treatment Plants

Goleen sewerage scheme consists of two independent collection systems draining to two septic tanks with outfalls to Ballydivlin Bay. Tank no. 1 is the larger tank with a design PE of 217 and is the primary discharge form the agglomeration. The second and secondary discharge has a design PE of 94. The population of the village varies greatly between summer & winter. The Summer maximum average weekly PE is

approx 407 (Tank 1 = 285pe, Tank 2 = 122pe) and the average winter PE is approx 150 (Tank 1 = 105, Tank 2 = 45)

Yours sincerely,



Niall O'Mahony,
Senior Engineer,
Cork County Council

Enclosures

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Wastewater Discharge Certificate of Authorisation: A0397-01 Goleen

Circular L8/08 2 September 2008

Water Services Investment and Rural Water Programmes – Protection of Natural Heritage and National Monuments

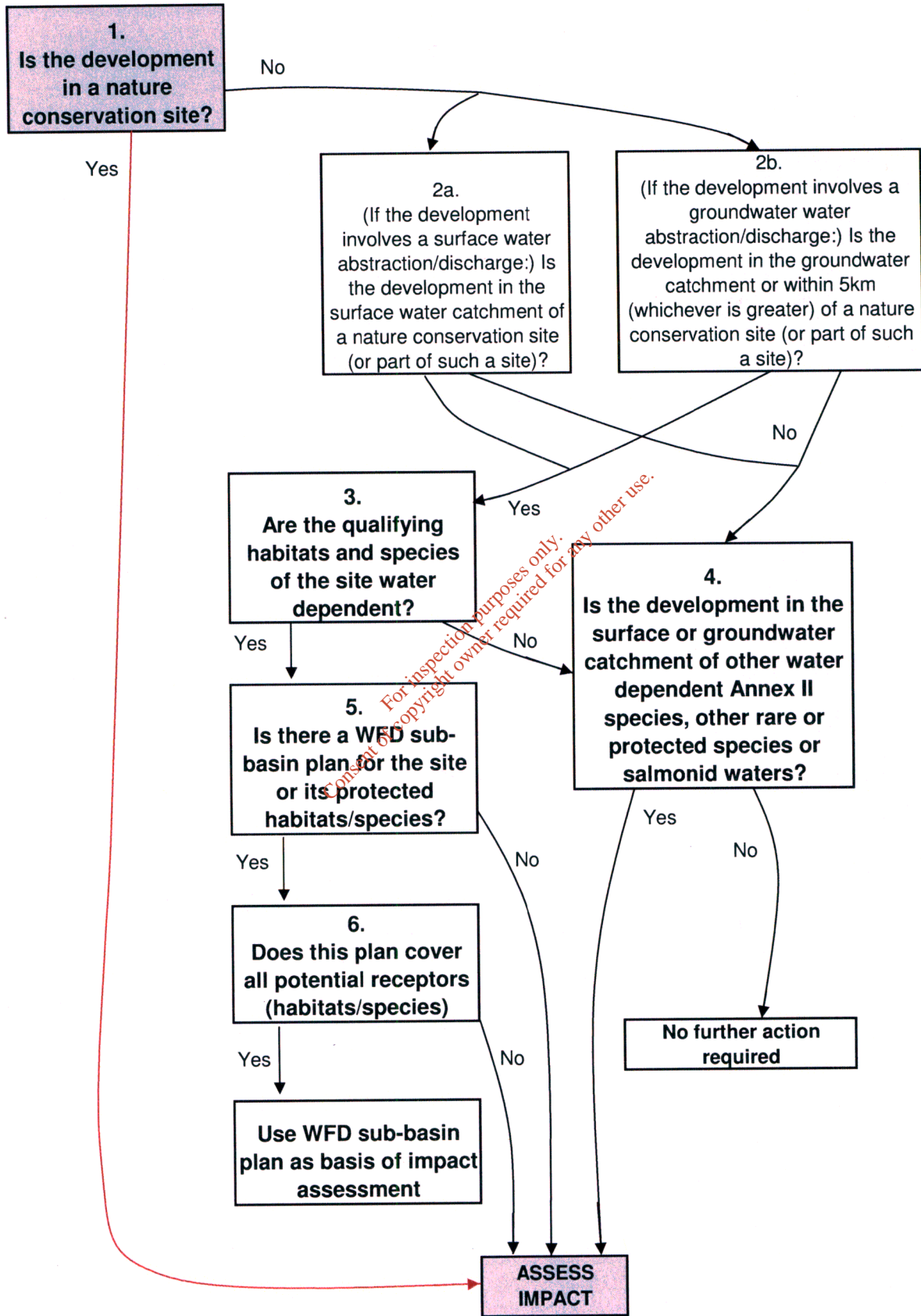
APPENDIX 1

Water Services Schemes - Natural Heritage Checklist for Local Authorities

What projects must be screened?

For new projects and significant changes to any existing operations, if the answer is 'yes' to any of the following, the project (i.e. construction, operation and maintenance) must be screened for its impacts:	
1. Is the development in or on the boundary of a nature conservation site NHA/SAC/SPA?	Yes
2. Will nationally protected species be directly impacted? Wildlife Acts (1976 and 2000), Flora Protection order (S.I. 94 of 1999)?	No
3. Is the development a surface water discharge or abstraction in the surface water catchment, or immediately downstream of a nature conservation site with water dependant qualifying habitats/ species?	No
4. Is the development a groundwater discharge or abstraction in the ground water catchment or within 5 km of a nature conservation site with water-dependant qualifying habitats/species?	No
5. Is the development in the surface water or groundwater catchment of salmonid waters?	No
6. Is the treatment plant in an active or former floodplain or flood zone of a river, lake, etc?	No
7. Is the development a surface discharge or abstraction to or from marine waters and within 3km of a marine nature conservation site?	No
8. Will the project in combination with other projects (existing and proposed) or changes to such projects affect the hydrology or water levels of sites of nature conservation interest or the habitats of protected species?	No

Flow Diagram - Route Highlighted Red & Shaded Grey



Conclusion: A Screening Report is required for Goleen

Habitats Directive Assessment (Screening Report) in respect of

Application by Cork County Council to the EPA

for discharge certificate in respect of

Goleen Agglomeration

A0397-01

January 2011

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1 Introduction

1.1 Goleen is situated 14km south-west of Schull on the eastern fringe of a highly scenic area that stretches from the village of Goleen to Crookhaven and Mizen Head. The current treatment system in Goleen is by primary treatment plants (2 no. septic tanks) adjacent to the shoreline. The septic tanks have design capacities of 41m³ & 19m³, with design PE's of 217 & 94 respectfully. Treated effluent from the septic tanks outfall to Ballydivlin Bay via existing outfall pipes.

1.2 The plants are located adjacent to Ballydivlin Bay and the discharge points are within The Barley Cove to Ballyrisode Point SAC. which is designated under the **EU Habitats Directive (92/43/EEC)** as transposed into Irish Law under the European Union (Natural Habitats) Regulations SI 94/1997. As this is the case, and in accordance with requirements under this Directive, the potential impacts of proposed developments that have the potential to impact on Special Areas of Conservation must be assessed. The procedure to do this is called a **Habitats Directive Assessment**. The purpose of such an assessment is to identify whether there may be potential for elements of the project to have a significant impact on nature conservation sites within its impact zone, and if so, to predict the potential for such impacts to affect the overall integrity of such nature conservation sites. The European Union has provided guidance as to how to make a Habitats Directive Assessment which identifies four main stages in the process as follows

Stage One: Screening

The process which identifies the likely impacts upon a Natura 2000 site of a project or plan, either alone or in combination with other projects or plans, and considers whether these impacts are likely to be significant.

Stage Two: Appropriate assessment

The consideration of the impact on the integrity of the Natura 2000 site of the project or plan, either alone or in combination with other projects or plans, with respect to the site's structure and function and its conservation objectives. Additionally, where there are adverse impacts, an assessment of the potential mitigation of those impacts.

Stage Three: Assessment of alternative solutions

The process which examines alternative ways of achieving the objectives of the project or plan that avoid adverse impacts on the integrity of the Natura 2000 site.

Stage Four: Assessment where no alternative solutions exist and where adverse impacts remain.

An assessment of compensatory measures, where in the light of an assessment of imperative reasons of overriding public interest, it is deemed that the project or plan should proceed.

1.3 This document brings together all of the information necessary to make determination as to whether there are likely to be significant

impacts arising from the Goleen Waste Water Treatment Plant on the Barley Cove to Ballyrisode Point SAC and represents the first stage of this process (Screening).

Step 1:

Provide a description of the plan and other plans and projects that, in combination, have the potential to have significant effects on Natura 2000 sites within the potential impact zone;

Step 2:

Identify Natura 2000 sites which may be impacted by the plan, and compile information on their qualifying interests and conservation objectives;

Step 3:

Determine whether the plan needs to be screened for potential impacts on Natura 2000 sites;

Step 4:

Carry out an assessment of likely effects - direct, indirect and cumulative - undertaken on the basis of available information as a desk study or field survey or primary research as necessary;

Step 5:

Assess the significance of any such effects on the Natura 2000 sites within the impact zone.

- 1.4 The assessment has been prepared in accordance with the following guidance:

European Commission (2000) Managing Natura 2000 sites: the provisions of Article 6 of the Habitats Directive 92/43/EEC.

European Commission (2001) Assessment of plans and projects significantly affecting Natura 2000 sites: Methodological guidance on the provisions of Articles 6(3) and (4) of the Habitats Directive 92/43/EEC.

Appropriate Assessment of Plans and Projects in Ireland. Guidance for Planning Authorities. Environment, Heritage and Local Government, 2009.

2 Appropriate Assessment Screening Matrix

2.1 Description of project	
Location	Goleen WWTP's, Goleen, Co. Cork. See attached Map.
Description of the key components of the project	The treatment system in Goleen is a primary treatment plant (2 no. septic tanks) adjacent to the Ballydivlin Bay. Built in the 70's with a capacity of 41m ³ & 19m ³ , with design PE's of 217 & 94 respectfully. Treated effluent from the septic tanks outfalls to Ballydivlin Bay via an existing outfall pipe east of the septic tanks.
Distance from designated sites in potential impact zone*	The discharge points are within the Barley Cove to Ballyrisode Point SAC.

2.2 Description of the Natura 2000 sites within the potential impact zone ¹	
Name	Barley Cove to Ballyrisode Point Special Area of Conservation
Site Code	001040
Site Description	<p>This site is situated on the Mizen Head peninsula in the extreme south-west of County Cork. It straddles a 10 km stretch of coastline from the Barley Cove inlet to Ballyrisode Point at Toormore Bay. The rock type is Old Red Sandstone. This displays a NE-SW folding which is especially visible at Crookhaven and Brow Head.</p> <p>The discharges from the Goleen Wastewater Treatment Plants enter Ballydivlin Bay.</p> <p>More information on the Barley Cove to Ballyrisode Point Special Area SAC is contained appendix 1 of this document.</p>
Qualifying Interests of Barley Cove to Ballyrisode Point Special Area of Conservation	<p>The site is of special interest for the follow species:</p> <ul style="list-style-type: none"> Mudflats and sandflats not covered by seawater at low tide; Perennial vegetation of stony banks; Salicornia and other annuals colonizing mud and sand; Atlantic salt meadows (<i>Glauco-Puccinellietalia maritima</i>); Mediterranean salt meadows (<i>Juncetalia maritima</i>); Shifting dunes along the shoreline with <i>Ammophila arenaria</i> (white dunes); Fixed coastal dunes with herbaceous vegetation (grey dunes); European dry heaths.
Other Notable Features of Barley Cove to Ballyrisode	The Site Synopsis is contained in appendix 1. Chough & other breeding seabirds

¹ Natura 2000 sites within the potential impact zone of the proposed development have been identified in accordance with guidance provided in the NPWS circular L8/08.

Point Special Area of Conservation	
Conservation Objectives	<p>Objective 1: To maintain the Annex I habitats for which the cSAC has not been selected at favourable conservation status: Mudflats and sandflats not covered by seawater at low tide; Perennial vegetation of stony banks; Salicornia and other annuals colonizing mud and sand; Atlantic salt meadows (<i>Glauco-Puccinellietalia maritima</i>); Mediterranean salt meadow (<i>Juncetalia maritima</i>); Shifting dunes along the shoreline with <i>Ammophila arenaria</i> (white dunes); Fixed coastal dunes with herbaceous vegetation (grey dunes); European dry heaths.</p> <p>Objective 2: To maintain the extent, species richness and biodiversity of the entire site.</p> <p>Objective 3: To establish liaison and co-operations with landowners, legal uses and relevant authorities</p> <p><i>Source - National Parks and Wildlife Service</i></p>

2.3 Assessment Criteria

Describe the individual elements of the project (either alone or in combination with other plans or projects) likely to give rise to impacts on the Natura 2000 site.	<p>Discharge from Goleen WWTP's: Treated wastewater from the Goleen Waste Water Treatment Plants discharge to Ballydivlin Bay within the Barley Cover to Ballyrisode Point SAC.</p> <p>The discharges consists of treated effluent from the Goleen Waste Water Treatment Plants.</p> <p>Other Discharges within the SAC: The discharge from Crookhaven WWTP is approximately 500m from the SAC.</p> <p>See Map in Appendix 3 for discharge locations.</p>
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Describe any likely direct, indirect or secondary impacts of the project (either alone or in combination with other plans or projects) on the Natura 2000 site taking into account the following: <ul style="list-style-type: none"> o Size and scale o Land-take o Distance from the Natura 2000 site or key features of the site: o Resource requirements (water abstraction etc.) o Emissions (disposal to land, water or air) o Excavation Requirements o Transportation 	<p>Discharges could give rise to elevated nutrients entering Ballydivlin Bay. Increased nutrient levels may impact on the ecology of an area by changing the composition of floral communities and reducing the ability of less robust plants to survive. Increased nutrient levels may also result in increasing the invertebrate populations in the estuary, thereby increasing bird population levels.</p> <p>However the potential for the treatment plant to result in elevated nutrients within the waters is reduced by two main factors:</p> <ol style="list-style-type: none"> 1. The treatment provided is considered as appropriate as set out in the Urban Wastewater Treatment Regulation standards for p.e <2000. 2. The treated effluent enters the Ballydivlin Bay which is a large and well exchanged body of water with unlimited dilution capacity. <p>1 The treatment provided is appropriate. Treated effluent from the Goleen WWTP's and receiving water quality were sampled as part of the Certificate application in 2009 (see appendix 2 for effluent testing</p>
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<p>Requirements</p> <ul style="list-style-type: none"> ○ Duration of construction, operation, decommissioning ○ Other. 	<p>results). <i>The results of monitoring indicate that the wastewater treatment plant is not having a negative effect on the receiving waters.</i></p> <p>Note 1: See appendix 2 for effluent quality results for 2009.</p> <p>Note 2: The samples taken are grab samples.</p> <p>2 <i>The treated effluent enters Ballydivlin Bay which is a large and well exchanged body of water with unlimited dilution capacity.</i></p>
<p>Describe any likely changes to the site arising as a result of:</p> <ul style="list-style-type: none"> ○ Reduction in habitat area ○ Disturbance to key species ○ Habitat or species fragmentation ○ Reduction in species density ○ Changes in key indicators of conservation value (water quality etc) ○ Climate Change 	<p>Reduction in habitat area: <i>Treated effluent is discharging to a large well-exchanged body of water where dilution and dispersion potential is high. No significant impacts are evident or predicted on species within Ballydivlin Bay from the operation of this facility.</i></p> <p>Disturbance to key species: <i>The operation of the WWTP's does not cause any disturbance to habitats & species within the SAC.</i></p> <p>Habitat or species fragmentation: <i>No habitat fragmentation has been caused as a result of the operation of this facility.</i></p> <p>Reduction in species density: <i>Treated effluent is discharging to a large well-exchanged body of water where dilution and dispersion potential is high. No significant impacts are evident or predicted on species for which the SAC is designated.</i></p> <p>Changes in key indicators of conservation value eg water quality: <i>While there is no ongoing monitoring of water quality for Ballydonegan Bay, some sampling and testing were done and submitted as part of the Wastewater Certificate Application. This testing, while insufficient for a complete analysis indicates that there is no deterioration in water quality associated with the Goleen discharges.</i></p>
<p>Describe any likely impacts on the Natura 2000 site as a whole in terms of:</p> <ul style="list-style-type: none"> ○ Interference with the key relationships that define the structure of the site ○ Interference with key relationships that define the function of the site 	<p>Interference with the key relationships that define the structure of the site: <i>The structure of the SAC is not impacted by the operation of this facility.</i></p> <p>Interference with key relationships that define the function of the site: <i>The function of the SAC is not impacted by the operation of this facility.</i></p>
<p>Describe from the above those elements of the</p>	<p>No significant impacts are predicted.</p>

project of plan, or combination of elements, where the above impacts are likely to be significant or where the scale or magnitude of impacts is not known.	
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3. Finding of No Significant Effects Report Matrix

Name of project or plan	Goleen WWTP discharge
Name and location of Natura 2000 site	Barley Cove to Ballyrisode Point SAC
Description of the project or plan	The treatment system in Goleen is a primary treatment plant (2 no. septic tanks). Built in the 1970's with a capacity of 41m ³ & 19m ³ , with design PE's of 217 & 94 respectfully. Treated effluent from the septic tanks outfalls to Ballydivlin Bay via an existing outfall pipe east of the septic tanks.
Is the project or plan directly connected with or necessary to the management of the site (provide details)?	No
The assessment of significance of effects	
Describe how the project or plan (alone or in combination) is likely to affect the Natura 2000 Site.	Discharges from the Goleen WWTP's either alone or in combination with discharges from other sources could give rise to elevated nutrients entering Ballydivlin Bay and surrounding waters. Increased nutrient levels may impact on the ecology of an area by changing the composition of floral communities and reducing the ability of less robust plants to survive. Increased nutrient levels may also result in increasing the invertebrate populations in the estuary, thereby increasing bird population levels. The effluent discharged from Goleen is considered as appropriately treated under the Urban Wastewater Treatment Regulations, it is considered that the discharge from Goleen is not contributing negatively on the SAC.
Explain why these effects are not considered significant.	Appropriate treatment is being carried out as laid down in the Urban Waste Water Treatment Regulations and is discharging to a large well-exchanged body of water where dilution and dispersion potential is high. No significant impacts are evident or predicted on species for which the SAC is designated.
List of agencies consulted: provide contact name and telephone or email address	National Parks and Wildlife Service - Web site
Response to consultation	

Data collected to carry out the assessment			
Who carried out the assessment	Sources of data	Level of assessment completed	Where can the full results of the assessment be accessed and viewed
Orla O'Brien, Cork County Council	Water Quality Monitoring Data CCC; Waste water Discharge Certificate of Authorisation, Report prepared by Cork County Council	Desktop review of cited data.	This report.

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Appendix 1: Ecological Data

SITE SYNOPSIS

SITE NAME: BARLEY COVE TO BALLYRISODE POINT SAC

SITE CODE: 001040

This site is situated on the Mizen Head peninsula in the extreme south-west of County Cork. It straddles a 10 km stretch of coastline from the Barley Cove inlet to Ballyrisode Point at Toormore Bay. The rock type is Old Red Sandstone. This displays a NE-SW folding which is especially visible at Crookhaven and Brow Head.

While rocky heath is the dominant habitat, the site is most important for the sand dunes and related habitats which occur at Barley Cove. A fine gradation of habitat is shown, from the outer sandy beach, through dunes and salt marshes, and then brackish lagoon. Of particular importance is the fixed dune habitat, as this is a priority habitat on Annex I of the EU Habitats Directive, and is one of the few examples in county Cork and south Co. Kerry. This dune system is of moderate size and relatively intact. It grades from an outer ridge of white *Ammophila* dunes, through fixed dune hills and into an extensive area of dune grassland. A characteristic flora is displayed, with species such as Lady's Bedstraw (*Galium verum*), Common Birds-foot-trefoil (*Lotus corniculatus*), Wild Pansy (*Viola tricolor* subsp. *curtisii*) and Red Fescue (*Festuca rubra*). The moss and lichen component is well developed in places and includes *Tortula ruraliformis* and *Peltigera canina*. Long-term erosion by the tidal river has reduced the size of the dune system, though sand has been deposited elsewhere in the area.

The dunes merge with a substantial area of salt marsh which displays characters of both Atlantic and Mediterranean salt meadows (both Annex I habitats). Sea Rush (*Juncus maritimus*) is a dominant species, while other salt marsh species include Common Saltmarsh-grass (*Puccinellia maritima*), Sea-milkwort (*Glaux maritima*) and Sea Plantain (*Plantago maritima*). A fringe of Glasswort (*Salicornia* spp.) occurs at the lowermost part of the salt marsh and above the tidal river. Lissagriffin Lake, while of artificial origin, displays characteristics of a brackish lagoon, with such species as Sea Club-rush (*Scirpus maritimus*) and Tasselweed (*Ruppia* sp.). Reeds occur along the eastern and northern margins of the lagoon.

Fine sandy beaches, with associated intertidal sand flats, occur at Barley Cove and White Strand. The intertidal flats at White Strand are well sheltered and have a typical invertebrate macrofauna. Molluscs are well represented in the mid shore zone, including the Common Cockle (*Cerastoderma edule*) and the Thin Tellin (*Tellina tenuis*). The low shore is characterised by an abundance of polychaetes, especially the Sand Mason (*Lanice conchilega*). The razorshells *Ensis arcuatus* and *Solen marginatus* are also typical low shore species, as is the Sand Gaper (*Mya arenaria*).

The site has extensive lengths of rocky shoreline, which develop into low cliffs in places. Shingle, another important coastal habitat listed on Annex I, occurs mostly in sheltered coves. At one location, Sea Kale (*Crambe maritima*), a Red Data Book species, occurs commonly on the shingle.

The dominant habitat over much of the remainder of the site is coastal heath, which is of high conservation value. This occurs from the maritime shoreline to the highest point of the site (164 m). It is varied in character, ranging from shallow dry soils to wet peaty pockets. The heath is primarily made up of woody species, including Western Gorse (*Ulex gallii*), Bell Heather (*Erica cinerea*) and Ling (*Calluna vulgaris*). Purple Moor-grass (*Molinia caerulea*) is ubiquitous, with other character species such as Tormentil (*Potentilla erecta*), Lousewort (*Pedicularis sylvatica*) and Heath Milkwort (*Polygala serpyllifolia*).

A notable feature of the site is the concentration of rare plants associated with the heath habitat: two legally protected species (Flora (Protection) Order 1999), Hairy Bird's-foot-trefoil (*Lotus subbiflorus*) and Lanceolate Spleenwort (*Asplenium billotii*), and three Red Data Book species, Pale Dog-violet (*Viola lactea*), Green-winged Orchid (*Orchis morio*), Bird's-foot (*Ornithopus perpusillus*) and Spotted Rock-rose (*Tuberaria guttata*), occur in places. A further scarce plant which occurs at the site is the Strawberry Tree (*Arbutus unedo*).

The site is of notable ornithological importance for Chough (Annex I Birds Directive species), with 9 breeding pairs in 1992. In addition to nesting, substantial numbers of Choughs utilise the heath and sandy habitats for feeding and socialising. Lissagriffin Lake is of some local importance for wintering waterfowl, including Whooper Swans (up to 16 at times) and Mute Swans (up to 40). Small numbers of seabirds breed on the cliffs, including Fulmar (41 pairs), Lesser Black-backed Gull (9 pairs), Herring Gull (133 pairs), Shag (39 pairs), and Black Guillemot (1-5 pairs) (all counts in 1985).

The main landuses at this site are grazing and tourism related activities. Most of the site is grazed by livestock, though not intensively. Rabbits, however, are frequent at the sand dunes and have caused serious damage. The beach and dunes at Barley Cove are utilised by day-trippers and campers during the summer months and parts of the dune system has been damaged by heavy usage.

This site is of conservation importance for the presence of a number of good examples of coastal habitats. Of particular significance are the areas of dry heath and fixed dune (the latter, a priority habitat listed on Annex I of the EU Habitats Directive). The concentration of rare plants is of especial note, as is the high density of Choughs.

2 Map of Barley Cover To Ballyrisode Point SAC & location of Goleen.



The treatment system in Goleen is a primary treatment plant (2 no. septic tanks). Built in the 1970's with a capacity of 41m³ & 19m³, with design PE's of 217 & 94 respectfully. Treated effluent from the septic tanks outfalls to Ballydivlin Bay via an existing outfall pipe east of the septic tanks.

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Appendix 2: Treated Effluent Quality Data 2009.

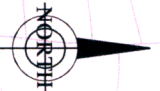
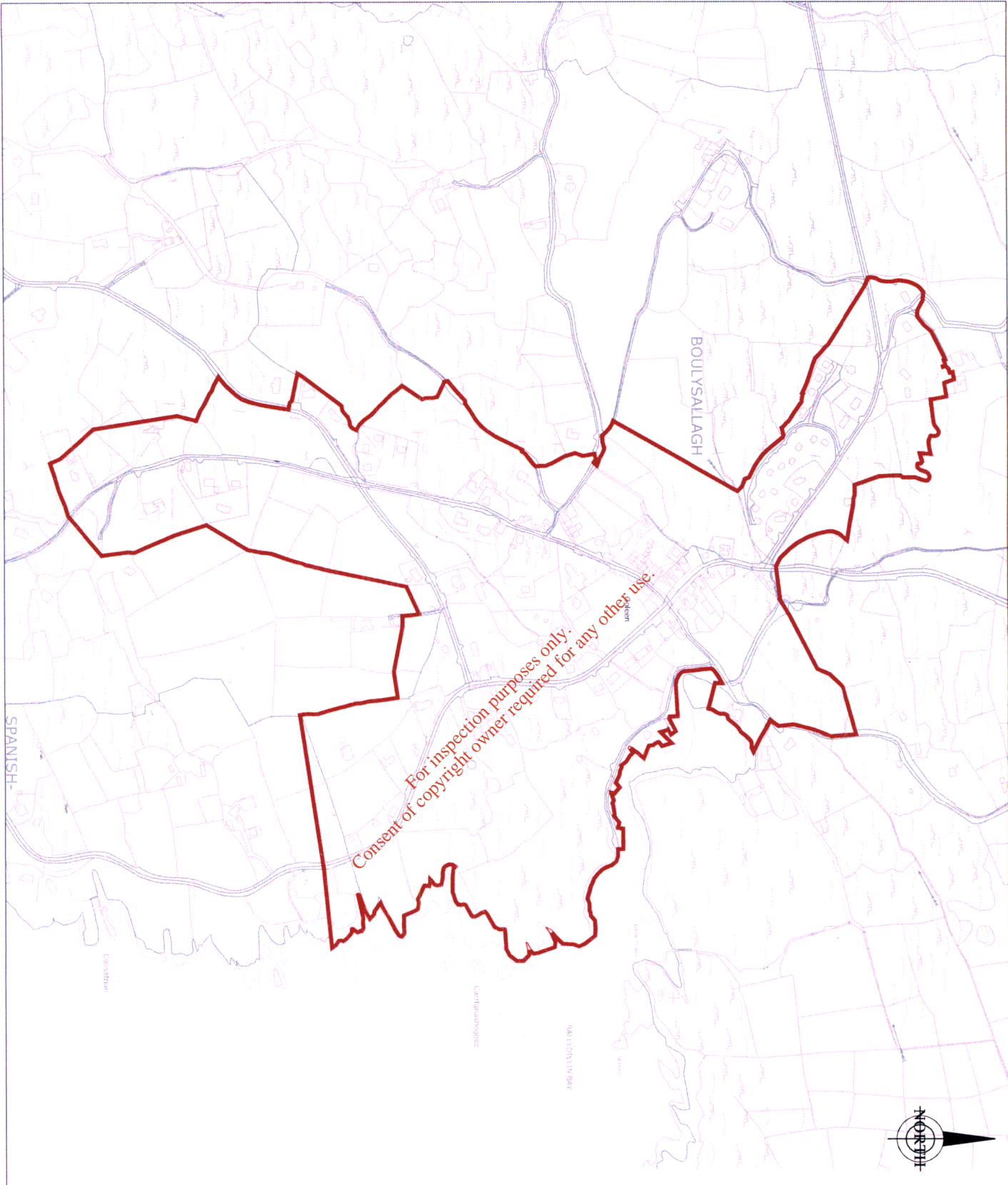
Attachment E4 Goleen Discharge Outlet Table E4					
Sample Date	13/10/2009				
Sample	Septic tank no. 1	ambient downstream septic tank 1	Septic tank no. 2	ambient downstream septic tank 2	
Sample Code	G11265	G11264	G11266	G11267	
Flow M ³ /Day	not available	not available	not available	not available	
pH	7.3	8.0	7.2	8.0	
Temperature °C	not available	not available	not available	not available	
Cond 20 °C	412	40600	325	47100	
SS mg/L	20	12	17	15	
NH ₃ mg/L	10.3	0.3	0.5	0.5	
BOD mg/L	25	1	2.4	1	
COD mg/L	34	27	<21	31	
TN mg/L					
Nitrite mg/L					
Nitrate mg/L					
TP mg/L	1.37	<0.95	0.199	<0.95	
C-PO ₄ -P mg/L	1.48	<0.95	0.15	<0.95	
SO ₄ mg/L	<30	saline interference	<30	saline interference	
Phenols µg/L	<0.10		<0.10		
Atrazine µg/L	<0.01		<0.01		
Dichloromethane	<1		<1		
Simazine µg/L	<0.01		<0.01		
Toluene µg/L	<0.28		<0.28		
Tributyltin µg/L	not required		not required		
Xylenes µg/L	<0.73		<0.73		
Arsenic µg/L	0.5		0.2		
Chromium µg/L	<20	<20	<20	<20	
Copper µg/L	<20	<20	<20	<20	
Cyanide µg/L	<5		<5		
Fluoride µg/L					
Lead µg/L	<20	<20	<20	<20	
Nickel µg/L	<20	<20	<20	<20	
Zinc µg/L	<20	<20	<20	<20	
Boron µg/L	<20	2876	<20	3259	
Cadmium µg/L	<20	<20	<20	<20	
Mercury µg/L	<0.03		<0.03		
Selenium µg/L	3.2		3.3		
Barium µg/L	<20	<20	<20	<20	

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Appendix 3:
Map showing locations of all discharges into Barley Cove To Ballyrisode Point SAC.



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LEGEND

— AGGLOMERATION BOUNDARY

No.	Year	Date	Scale	Author	Revision

**Cork County Council,
Western Division.**



**N. O'DONOVAN, B.E.
SHELDON, (WATER SERVICES),
COMMISSIONER, SUPERCHIEF,
M. MURRILL,
DIRECTOR OF SERVICES
WEST COAST**

Job Title:
WASTE WATER DISCHARGE
CERTIFICATE APPLICATION
GOLEEN AGGLOMERATION

Drawing Title:
ATTACHMENT B.1
AGGLOMERATION BOUNDARY

Prepared By: A. O'BRIEN	Checked By: D. GROARKE	Date: JUN 2009
Drawing number: COLE_B1_01	Scale: 1:5000	Rev: A