

This memo has been cleared for submission to the Director by the Senior Inspector Pat Byrne.

Signed: M. Buckley Date: 3/5/13



Máire Buckley

**OFFICE OF CLIMATE,  
LICENSING & RESOURCE USE.**

**INSPECTORS REPORT ON A WASTE WATER DISCHARGE LICENCE APPLICATION**

<b>To:</b>	DIRECTOR	
<b>From:</b>	Éimer Godsil	<b>Environmental Licensing Programme</b>
<b>Date:</b>	03 MAY 2013	
<b>RE:</b>	Application for a Waste Water Discharge Licence from Cork County Council Southern Division, for the agglomeration named <b>Kilbrittain</b> , Reg. No. D0425-01	

**Application Details**

Schedule of discharge licensed:	Discharges from agglomerations with a population equivalent of 500 to 1000
Licence application received:	22 June 2009
Notices under Regulation 18(3)(b) issued:	22 September 2010 16 November 2012
Information under Regulation 18(3)(b) received:	29 December 2011 10 December 2012
Site notice check:	20 July 2009
Site visit:	06 November 2012
Submission(s) Received:	None

**1. Agglomeration**

This application refers to the agglomeration of Kilbrittain Co. Cork. The village of Kilbrittain is located 10km south of Bandon, Co. Cork on the R603. The agglomeration consists of Kilbrittain village and its immediate surrounding area. It is primarily a residential catchment and has a population equivalent (p.e.) of 598 (2011).

The waste water treatment plant (WWTP) is located on the western outskirts of the agglomeration, on the R603 road to Ballinspittle. A partially combined waste water collection system is used. There are a number of separate storm drains in the village for collection of surface water, which is then discharged to local watercourses. The foul water flows by gravity from the agglomeration to the WWTP. The loading is primarily domestic in nature with a small amount of commercial. There is some infiltration present. A new plant was built under a Design Build and Operate (DBO) scheme and commissioned in 2006; this scheme is on a rolling six month contract. On entering the WWTP the waste water is pumped through a spiral screen, followed by a 6mm conveyer screen. Two forward feed pump sets direct the flow of influent at

this primary treatment stage; one is located before the inlet screening and one after. Both pump sets are fitted with an overflow and a back-up pump. Secondary treatment consists of an aeration tank, a clarifier and a sludge holding tank. The treated effluent is discharged to the Kilbriain River adjacent to the plant. There are no secondary discharges from the agglomeration. Ferric dosing for phosphate reduction is carried out in the aeration tank. Dosage is administered according to phosphate content of the effluent based on laboratory test results.

The WWTP has a treatment capacity of 800 p.e., based on 225l/head/day and currently serves a p.e. of 598. The plant is designed to achieve a 25/125/35/mg/l for BOD/COD/SS and 2mg/l for Total Phosphorus.

Under the Urban Waste Water Treatment Regulations (Amended) S.I. 254 of 2001 this agglomeration is not required to adhere to specific effluent treatment standards, but is required by *Article 7* to subject its waste water to appropriate treatment.

## **2. Discharges to waters**

The primary effluent flows from the plant by gravity a distance of approximately 20m and discharges to the Kilbriain River via an open pipe, the river flow continues for 700m where it discharges via a significant tidal area of 3km to Coolmain Bay and subsequently to Courtmacsherry Bay. Kilbriain River is a third order stream and a river waterbody until it flows into the coastal waters of Courtmacsherry Bay. The primary discharge has a composite sampler and a continuous flow meter connected. Under normal flow conditions 135m<sup>3</sup> of treated effluent is discharged, the design capacity of the plant is a Dry Weather Flow (DWF) of 180m<sup>3</sup> per day. The 95% flow in the Kilbriain River is 5428m<sup>3</sup>/day, so for the current normal discharge of 135m<sup>3</sup>/day there are 40 dilutions available in the river.

There is one storm water overflow for the agglomeration which discharges to the Kilbriain River at a point adjacent to the primary discharge. There is no record of the frequency or of the quantities discharged. There are no pumping stations in the agglomeration and no emergency overflows.

There are no records of discharges from the SWO, thus it is not known if it complies with the Department of Community, Heritage and Local Government (DCHLG) document *Procedures and Criteria in Relation to Storm Water Overflows, 1995*. *Condition 4.12* of the Recommended Licence (RL) requires the licensee to assess the storm water overflow for compliance with this DCHLG publication and *Condition 5* requires the licensee to implement a programme of improvements, if needed, to upgrade the SWO. There are no storm water holding tanks at the installation.

The applicant provided as part of the application results of regular monitoring of the effluent carried out by the plant operator from January 2008 to April 2009 and once off monitoring by the applicant, Cork County Council, on 7<sup>th</sup> May 2012. The results for all parameters tested indicate the WWTP design specification for effluent treatment is being achieved, with the exception of total phosphorous (TP). Levels in excess of the plant design standard for TP (2mg/l) have occurred on a number of occasions in March/April 2009. However ferric dosing was introduced in August 2010 and since then monitoring results indicate the plant is consistently achieving phosphorous of <2mg/l in the primary discharge.

### 3. Receiving waters and impact

The Kilbrittain River is in the Southern Western River Basin District (SWRBD) and the Bandon/Stick Water Management Unit Action Plan (WMUAP). The river has its source in the hinterland north west of Kilbrittain village, from where it flows for 8km through the agglomeration before discharging to the coastal waters of Coolmain Bay.

The discharge is not directly into a Natura 2000 site, but Courtmacsherry Estuary SAC is 700m d/s and Courtmacsherry Bay SPA is 1.5km d/s of the primary effluent discharge.

The Water Framework Directive status (2011) of the Kilbrittain River is 'good'. Monitoring upstream of the discharge at Maulmane Bridge, Q4-5 (2006) and Kilbrittain Bridge, Q4 (2012) indicate that the Kilbrittain River is unpolluted. A series of projects have been identified by the applicant with the aim of achieving the objectives of the WFD. Under the WMUAP (2009) the Kilbrittain River was given a water quality status rating of 'poor' due to 'poor fish status' and the objective was to 'restore to good status' by 2021. This data is superseded by the current 'good' status of the river as determined under the Water Framework Directive in June 2011.

There is a bathing water quality monitoring point at Coolmain strand in Coolmain Bay 4km downstream of SW001 and the water quality here is classed as 'good' as monitored in 2011 and under the WFD the coastal waters are 'strongly expected to achieve good status'.

The following table summarises the main considerations in relation to the Kilbrittain River downstream of the primary discharge

**Table 1.0 Receiving waters**

Characteristic	Classification	Comment
Receiving water name and type	Kilbrittain River	WFD Segment Code SW_20_1947
Amenity value	General	
Applicable Regulations	Surface Water Regulations <sup>Note 1</sup>	Compliant
Designations	None	
EPA monitoring stations	RS20K010100 – Maulmane Bridge RS20K010300 – Kilbrittain Bridge RS20K010400 – Batemans Bridge	2km u/s of discharge. 150m u/s of discharge. 700m d/s of discharge.
Biological quality rating (Q value)	Q4 – Q5 (RS20K010300) 2006 Q4 (RS20K010100) 2012	Unpolluted Unpolluted
WFD status	Good status - 2011	Objective - Good by 2021
WFD Risk Category	1a – at risk of not achieving good status	
WFD protected areas	SAC Courtmacsherry Estuary Site Code: 001230 SPA Courtmacsherry Bay Site Code: 004219	700m d/s of SW001  1.5km d/s of SW001

**Note 1:** European Communities Environmental Objectives (Surface Water) Regulations 2009, S.I. No. 272 of 2009, as amended.

Once off monitoring of the receiving waters, undertaken by the applicant in May 2009, both upstream and downstream of the discharge, indicates that the treated effluent being discharged is having no adverse effect on the receiving water and the quality of the waterbody complies with the Surface Water Regulations (S.I. 272 of 2009, as amended).

**Table 2.0 Assimilative Capacity**

Parameter	Background Concentration (mg/l)	Notional Clean River Values Note 2	Proposed ELVs for discharge from SW-1 (mg/l)	Contribution from primary discharge (mg/l)	Predicted downstream concentration (mg/l) Note 3	Relevant standard (mg/l) Note 1
BOD	1.00	0.260	25	0.607	0.867	2.6
PO <sub>4</sub> -P	<0.05	0.005	1	0.024	0.029	0.075
Total Ammonia – N	0.10	0.008	3	0.073	0.081	0.14

**Note 1:** European Communities Environmental Objectives (Surface Waters) Regulations 2009, as amended.

**Note 2:** Notional Clean River (NCR) values for Assimilative capacity based on 1/5<sup>th</sup> of the mean 'High Status' standard in the European Communities Environmental Objectives (Surface Water) Regulations 2009, as amended.

**Note 3:** The predicted downstream Concentrations are calculated using NCR values.

Table 2.0 above presents the results of assimilative calculations for the primary discharge.

The assessment of the impact of the discharge considered the quantity and composition of the effluent, monitoring results from the receiving water and assimilative capacity calculations. A dilution factor of 40 is available on the basis of the DWF discharge volume of 135m<sup>3</sup>/day and a 95%ile river flow of 5428m<sup>3</sup>/day. The 95%ile flow is supplied by the applicant and is used in calculating the number of dilutions in the receiving water. (Flow data for the Kilbrittain river is not available from OEA). Background concentration values shown in the Table are taken from monitoring conducted for the application. The background levels for total ammonia are approaching the upper limit of the Surface Water Regulations 'Good Status' standards. and an ELV of 1.5mg/l would be required to comply with these Regulations, this ELV would be difficult for the plant to achieve and would use up 93% of the assimilative capacity of the river. For these reasons, it is the Notional Clean River (NCR) values in the Table and not the measured Background Concentration which have been used to calculate the predicted downstream concentrations as shown in Table 2. The use of NCR values shows the impact of the discharge on the receiving waters and does not include pollution from other sources.

An ELV of 25 is set for BOD based on monitoring results and the design specification of the plant. Phosphate removal technology is used at the plant, so the ELV of 1.0mg/l for ortho-phosphate is considered achievable. The ELV of 3mg/l for ammonia

is to ensure compliance with the Surface Water Regulations and is considered achievable by a plant with activated sludge treatment.

Based on the design specification of the treatment plant and the effluent monitoring data submitted with the application, the ELVs stipulated in Table 2 are achievable by the WWTP and will ensure that the discharge does not compromise the 'good' status of the receiving waterbody. Monitoring of the discharge will take place as per *Schedule A: Discharges and Discharge Monitoring*.

#### **4. Site Visit**

A visit to the WWTP at Kilbrittain was undertaken on 06 November 2012. Issues relating to ferric dosing and storm water holding capacity were discussed with Cork County Council personnel.

#### **5. Ambient Monitoring**

The RL requires monitoring of the receiving water for a range of parameters both upstream and downstream of the primary discharge. This is to verify that no deterioration of the receiving water quality is occurring due to the discharge. *Schedule B.2: Ambient Monitoring* of the RL specifies the parameters, analysis method and frequency for which ambient monitoring upstream and downstream of the primary discharge point (SW1) must be carried out. The requirements for ambient monitoring in *Schedule B.2: Ambient Monitoring* are considered sufficient to verify that there is no deterioration of the receiving water quality due to the discharge.

#### **6. Combined Approach**

The Waste Water Discharge Authorisation Regulations, 2007 (S.I. No. 684 of 2007), as amended, specify that a 'combined approach' in relation to licensing of waste water works must be taken, whereby the emission limits for the discharge are established on the basis of the stricter of either or both, the limits and controls required under the Urban Waste Water Treatment Regulations (S.I. No. 254 of 2001) as amended, where applicable, and the limits determined under statute or Directive for the purpose of achieving the environmental objectives established for surface waters, groundwater or protected areas for the water body into which the discharge is made. The RL as drafted gives effect to the principle of the Combined Approach as defined in S.I. No. 684 of 2007, as amended.

#### **7. Programme of Improvements**

The WWTP in Kilbrittain provides secondary treatment for wastewater from the Kilbrittain agglomeration. A new WWTP plant was built for the agglomeration in 2006 and there is no programme of improvements planned for the plant or for any of the infrastructure in the agglomeration. *Condition 5* and emission limit values set out in *Schedule A* of the RL should ensure no deterioration in the quality of the receiving water as a result of the discharge.

## 8. Compliance with EU Directives

In considering the application, regard was had to the requirements of Regulation 6(2) of the Waste Water (Discharge) Authorisation, Regulations, 2007 (S.I. No. 684 of 2007), as amended, notably:

### Drinking Water Abstraction Regulations

There were previously two drinking water boreholes adjacent to the Kilbriain River in the vicinity of the discharge from the WWTP. They were put on the EPA Remedial Action List (RAL) because of failure to meet the E. coli standard in 2006 and 2007, as reported in the EPA 'Provision and Quality of Drinking Water in Ireland Supply Report 2007-2008'. The RAL is a list of PWSs (Public Water Supplies) where remedial action is required to ensure compliance with the 'Drinking Water Regulations'. The list required Cork County Council to undertake *investigation and improvement if necessary to ensure that the root cause of the problem has been rectified*. The RAL remains a working list and Kilbriain PWS, two boreholes, were decommissioned in 2009. Kilbriain drinking water is now supplied by Innishannon PWS.

### Sensitive Waters

Kilbriain River is not designated sensitive under UWWT Regulations (S.I. 254 of 2001). The coastal waters of Courtmacsherry Bay and the transitional waters at Timoleague are downstream of the discharge, however neither waterbody is designated as sensitive under the regulations.

### Water Framework Directive [2000/60/EC]

The RL, as drafted, transposes the requirements of the Water Framework Directive. In particular, *Condition 3: Discharges* provides conditions regulating discharges to waters. *Schedule A: Discharges* specifies limit values for those substances contained in the waste water discharge. These limits are determined with the aim of maintaining the WFD of 'good status' for the Kilbriain River.

### European Communities Environmental Objectives (Surface Water) Regulations 2009, S.I. No. 272 of 2009 (as amended)

Based on the monitoring data provided by the applicant the Kilbriain River complies with the environmental quality standards as set out in the Surface Water Regulations 2009, as amended. Those limits specified in the RL are determined with the aim of not causing or exacerbating a breach in the standards as outlined in these regulations.

### Urban Waste Water Treatment Directive [91/271/EEC]

As stated, the p.e. of the agglomeration is below the 2000 p.e. threshold at which the ELVs specified in Part 1 of the Second Schedule of the UWWT Regulations (S.I. No 254 of 2001) apply. For agglomerations under this threshold "appropriate treatment" is required as specified in Article 7 of the Regulations. The term "appropriate treatment" is defined in the regulations in terms of the level of treatment necessary to protect water quality. Kilbriain agglomeration complies with the requirements of the Urban Waste Water Treatment Directive in terms of the level of treatment provided. The RL, as drafted, has regard to the requirements of the Urban Waste Water Treatment Directive.

### Bathing Water Directive [2006/7/EC]

In the Agency's report on '*The Quality of Bathing Waters in Ireland 2011*', the designated bathing waters at Coolmain were deemed to comply with EU Mandatory and Guide Values (Good Quality) and National standards and has been rated 'good'

every year since 2003 with the exception of 2004, 2009, 2010 (in these three years, the bathing water quality was rated as 'sufficient'). The granting of this wastewater licence will not cause any breach of the Bathing Water Directive in the bathing waters at Coolmain. Coolmain beach, which is located 4km downstream of the discharge, is a Registered Protected Area (RPA) recreational beach under the WFD.

EC Freshwater Fish Directive [2006/44/EC]

There are no designated salmonid waters located in the vicinity of the discharge.

Shellfish Waters Directive [2006/113/EC]

There are no designated shellfish waters located in the vicinity of the discharge.

Dangerous Substances Directive [2006/11/EC]

The applicant has provided sampling results for all of the 19 dangerous substances in the primary discharge for the purposes of the licence application. The measured concentrations are not considered significant. Monitoring of receiving waters has shown compliance with the Dangerous Substances Directive.

Birds Directive [79/409/EEC] & Habitats Directive [92/43/EEC]

The agglomeration discharges 700m upstream of the northern tip of Courtmacsherry Estuary SAC 001230 and Courtmacsherry Bay SPA 004219. These two Natura 2000 sites overlap and only differ in that the SPA extends further out to sea as far as Barry's Point to the south and Coolmain Point to the west, thus encompassing Coolmain beach.

Courtmacsherry Estuary SAC 001230

This site is located south of Bandon, County Cork and runs eastward from Timoleague to Coolmain Bay, as far as Broadstrand in the south and Kilbrittain Estuary in the north. The site is largely estuarine in nature with extensive mudflat, which is mostly unvegetated, salt marsh has developed in a number of areas, the most significant being in the Kilbrittain River Estuary. The site also includes small areas of sand dune, sandy and shingle beaches, reedbeds and broad leaved woodland.

The site contains a complex of coastal habitats including ten habitats listed on Annex I of the EU Habitats Directive. The site is of ornithological importance for the many waders and wildfowl that feed on the mud and sandflats.

Courtmacsherry Bay SPA 004219

The nature and vegetation of the site corresponds to the SAC described above. This site is an important site for wintering birds. It holds internationally important numbers of Black-tailed Godwit and nationally important numbers of a further eleven species, including three that are listed on Annex I of the E.U. Birds Directive. Both Courtmacsherry (D0294-01) and Timoleague (D0466-01) agglomerations discharge into this SAC.

A screening (Stage 1) for Appropriate Assessment of the discharge from the agglomeration was undertaken to assess, in view of best scientific knowledge and the conservation objectives of the site, if the discharge, individually or in combination with other plans or projects, is likely to have a significant effect on the European Sites.

The screening demonstrates to my satisfaction that the discharge will not adversely affect the integrity of the European Sites adjacent to the discharge.

In accordance with the European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. No. 477 of 2011), pursuant to Article 6(3) of the Habitats Directive, the discharge will not adversely affect the integrity, in terms of maintaining

favourable conservation status of the qualifying interests of the European Sites, having regard to its conservation objectives.

Environmental Impact Assessment Directive [85/337/EEC]

An EIS was not submitted with the licence application and should one be required as part of any future programme of improvements, it will be dealt with as per Condition 1.8 of the RL. A copy of the planning approval was submitted in accordance with the Wastewater Discharge (Authorisation) Regulations 2007, as amended.

Cross Office Liaison

Advice and guidance issued by the Technical Working Group (TWG) was followed in my assessment of this application. Advice and guidance issued by the TWG is prepared through a detailed cross-office co-operative process, with the concerns of all sides taken into account. The Board of the Agency has endorsed the advice and guidance issued by the TWG for use by licensing Inspectors in the assessment of wastewater discharge licence applications.

**Submissions**

No submissions were received in relation to this application.

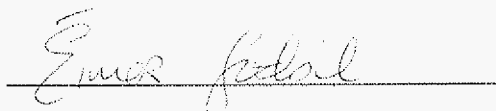
**Charges**

The RL sets an annual charge for the agglomeration at €4,152.18 and is reflective of the monitoring and enforcement regime being proposed for the agglomeration.

**Recommendation**

I recommend that a Final Licence be issued subject to the conditions and for the reasons as set out in the attached Recommended Licence.

Signed

A handwritten signature in cursive script, appearing to read 'Éimer Godsil', is written over a horizontal line.

Éimer Godsil

Office of Climate, Licensing and Resource Use



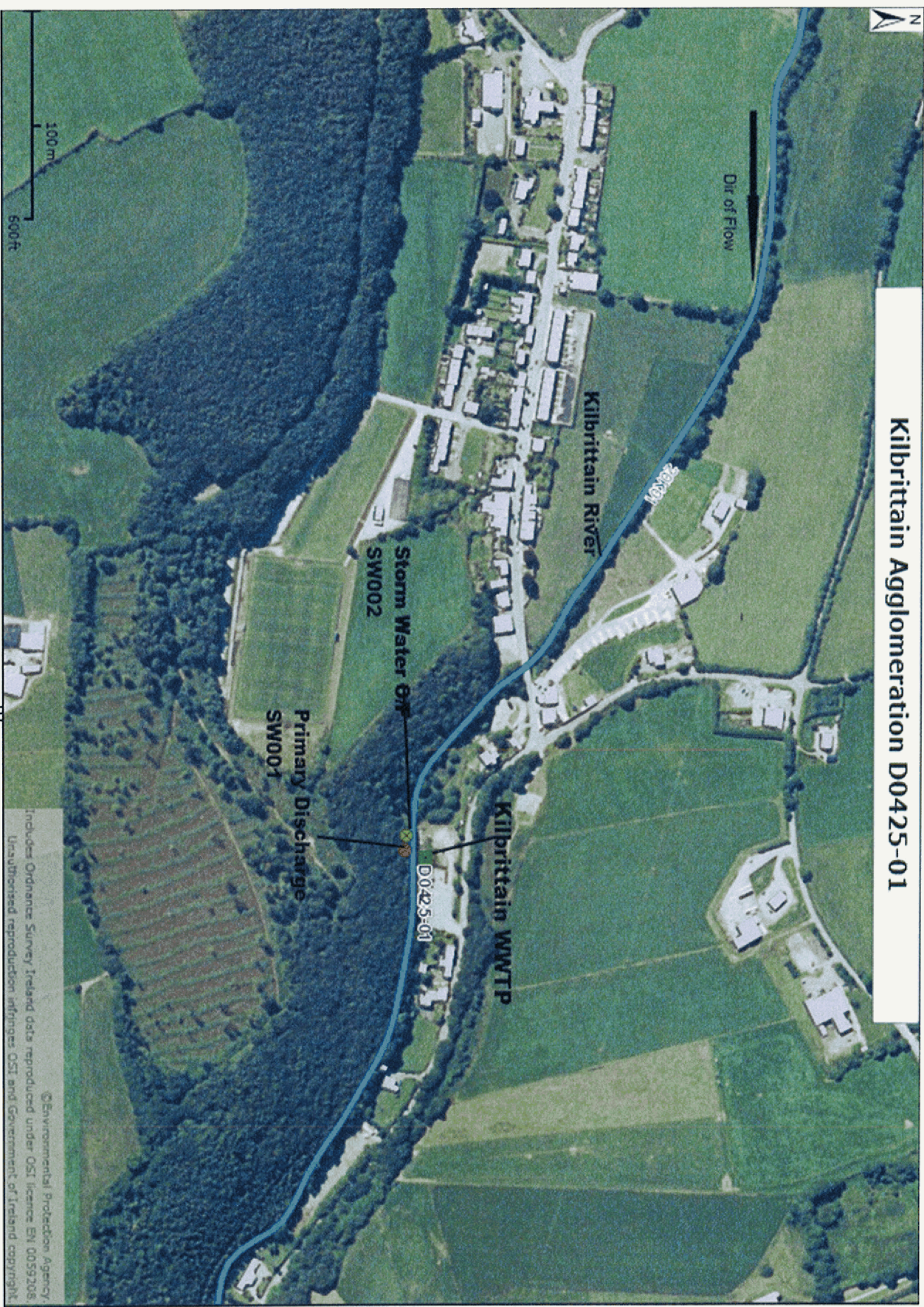
# Kibrittain Village Location Map



© Environmental Protection Agency  
Includes Ordnance Survey Ireland data reproduced under OSI licence EN 0059208  
Unauthorized reproduction infringes OSI and Government of Ireland copyright.



# Kilbrittain Agglomeration D0425-01



©Environmental Protection Agency,  
Includes Ordnance Survey, Ireland data reproduced under OSI licence EN 0059208  
Unauthorised reproduction infringes OSI and Government of Ireland copyright.