

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

26th June 2009

**Re: D0295-01 - Schull Waste Water Discharge Licence Application –
Reply to Notice in accordance with Regulation 18(3)(b) of the Waste
Water Discharge (Authorisation) Regulations 2007**

Dear Mr. Clabby,

I refer to your letter of the 18th May 2009 concerning the above. The following is my reply to your request for further information in accordance with Regulation 18(3)(b) dealing in sequence with the points raised:

Regulation 16 Compliance Requirements

Section A: Non Technical Summary

Revised Non Technical Summary attached.

- i. The current pe for Schull agglomeration is 1,680. The design pe of the proposed WWTP is 3,000 for horizon year 2020. However, for the purposes of this application, the relevant pe chosen for the possible licence period is 2,000, being the pe estimated at the end of that period.
- ii. Between March 2000 and March 2001, detailed water consumption figures were obtained for the Schull area. The fish factory had a total water consumption of 6,078 litres/day, which gives a P.E. of 26 on the basis of 230 litres/head/day.
- iii. There are currently no plans to accept leachate and/or industrial sludges at the proposed WWTP.

Section B10: Capital Investment Programme

- i. Proposed Completion of Works, Phase 1 – December, 2009.

Phase 1 – 95% complete

Proposed Start Construction, Phase 2 - early 2010.
Proposed Completion of Works, Phase 2 - June 2011.

- ii. Section B attachments have been amended in relation to sampling and discharge points and are attached as part of this submission.

Section C: Infrastructure & Operation

- i. Errors in the relevant section of the Application Form regarding the labelling and description of the Stormwater discharge points have been amended as follows:

"There are two stormwater overflows in the network. They are as follows:

Table C.1.1 Description of Stormwater Discharge Points

Type of Discharge	Unique Point Code	Receiving Water Body Type	Receiving Water Body Name	Grid Reference
Outfall Pipe	SW03 Schull	Coastal	Schull Harbour	E:093171 N:031557
Overflow Pipe in MH	SW04 Schull	Coastal	Schull Harbour	E:092813 N:031436

- Overflow at Septic Tank – SW03 Schull

SW03 Schull is the storm overflow from the septic tank. In the inlet manhole to the tank, the invert of the 225mm diameter overflow pipe is 1.77m above the invert of the outgoing 150mm diameter pipe discharging to the tank. This overflow pipe discharges to desludging manhole on the septic tank that is connected to the outfall pipe thereby bypassing tank.

- Overflow at Pier Road – SW04 Schull

In this manhole, when the level of wastewater rises more than 225mm above the invert of the outgoing pipe, the wastewater flows over a weir in the manhole and out into the western stream."

- ii. In the design phase of Schull Sewerage Scheme a number of outfall locations were considered both within and outside Schull Harbour. The locations within Schull Harbour were eliminated at an early stage and the next proposal to locate the outfall at Schull Point showed that on the flood tide full dispersion outside of the Harbour could not be achieved. The final location for the outfall was relocated approximately 600 metres west of Schull Point to avoid any dispersion migrating towards the Harbour and therefore discharge could be allowed at all stages of the tidal cycle thus eliminating the need for a tidal holding tank as required by the other possible outfall locations.
- iii. The proposed treatment plant is designed to cater for a flow of 86 m³/hr through the plant, which equates to 3DWF. The existing septic tank is being utilised as a storage tank with a storage

capacity of approximately 230 m³. This in turn would give over 2 hours storage of the balance of the Formula A flow with the remainder overflowing to the harbour. This storage is greater than that required in table 3 of the DoEHLG document "Procedures and Criteria in relation to Storm Water Overflows".

Section E: Monitoring

E.2 Monitoring and Sampling Points

The outlet from the proposed Waste Water Treatment Plant will contain a facility for sampling of the primary discharge by utilising a composite sampler. Safe access for this purpose will be afforded at this facility which will also include metering of the discharge.

Section F: Existing Environment & Impact of the Discharge(s)

F.1 Assessment of Impact on Receiving Surface or Ground Water

Existing Primary Discharge

The following are excerpts on the existing discharge from the Dixon Brosnan Ecology Report on the Assessment of the ecological impacts of providing an upgraded wastewater treatment system at Schull, Co. Cork:

"At present the sewage outfall discharges to an enclosed bay and where movement of water is limited. Limited dispersal of effluent would be expected, especially during low tides. It is probable that this is having a negative ecological impact in the immediate area of the discharge.

At present wastewater from Schull is treated via a septic tank. The main function of a septic tank is to act as a primary settlement tank removing some of the BOD and the majority of the suspended solids. The EPA publication 'Primary, secondary and tertiary treatment' (EPA 1997) estimates that typically 50-70% of suspended solids are removed in primary settlement tanks; BOD is reduced by 20-50% and the bacterial count by 25-75%. Assuming that the septic tank at Schull is currently working at average efficiency the approximate reductions are estimated as 60% for suspended solids and 35% for BOD. The reduction in bacterial count is estimated at 50%

This would result in a BOD discharge to the bay of 20.99 kg/day based on current population figures and could reach 63.88 kg/day in summer (3,250 predicted p.e.). The volume of suspended solids reaching the bay is estimated at 12.54 kg/day at present and could reach a maximum value 38.14 kg/day in summer based on predicted increases in population. These figures assume that all waste is domestic in origin.

Based on the above, the current discharge of sewage would be expected to cause deteriorations in water quality in respect of nutrients and bacterial levels."

Existing Secondary Discharge

The secondary discharge is mainly from the Fish Plant adjacent to the Pier and consists of essentially raw waste water which can be considered domestic in nature as fish waste is not discharged and is recycled (see sampling results in Attachment E.4 of Application). Water supply demand at the plant indicates a population equivalent of 26 and while the effluent is raw the impact on the environment could be considered relatively minor.

Proposed Primary Discharge

The proposed WWTP upgrade at Schull will substantially improve the quality of the effluent discharged to Roaringwater Bay. In the absence of an upgraded treatment plant and given the predicted rise in population, the amount of nutrients and bacteria reaching the harbour will significantly increase in the future.

Dixon Brosnan Environmental Consultants were appointed by T.J. O'Connors & Associates to carry out an ecological impact assessment in respect of an upgraded wastewater treatment plant to be constructed at Schull, Co. Cork and their conclusions are as follows:

- This (discharge from septic tank) would result in a BOD discharge to the bay of 20.99 kg/day based on current population figures and could reach 63.88 kg/day in summer (3,250 predicted p.e.). The volume of suspended solids reaching the bay is estimated at 12.54 kg/day at present and could reach a maximum value 38.14 kg/day in summer based on predicted increases in population.
- For ease of comparison between the current and proposed treatment the discharge per person is again estimated at 180 l/day and the current population is left unchanged at 1,068 p.e. Using these figures the estimated loading of BOD discharged to Roaringwater Bay from the upgraded treatment plant is 4.81 kg/day based on the current population and an upgraded treatment plant. Using a predicted maximum summer population of 3,250 p.e the maximum summer discharge is estimated at 14.63 kg/day. Using the same figures the amount of suspended solids discharging to the bay is estimated at 6.73 kg/day based on the current population and the maximum summer discharge is estimated at 20.48 kg/day.
- The location of the proposed outflow pipe is such that effective dispersal of effluent will occur.
- Overall the reduction in suspended solids, nutrients and bacterial loadings should have a beneficial impact on the ecology and water quality of Roaringwater Bay.

Bacterial contamination risk from the proposed and existing primary discharge to the designated shellfish waters in Roaringwater Bay

Irish Hydrodata were commissioned by M.C. O Sullivan & Co. Consulting Engineers to investigate the bacterial impact on the marine environment of treated wastewater discharges from the proposed outfall. Field studies including drogue and dye tracking, current metering and depth profiling were conducted at Schull point approximately 600m east of the final position of the proposed outfall. Field measurements indicate that the ebb tide is stronger (average 0.3 mm/s) and longer in duration than the flood tide (average 0.08 mm/s). Model simulations of the discharge show that bacterial concentrations will rapidly decrease away from the outfall and will be within statutory requirements where they reach the coastline. The location of the proposed outflow pipe is such that effective dispersal of the effluent will occur. Overall the reduction in suspended solids, nutrients and bacterial loadings should have a beneficial impact on the ecology and water quality of Roaringwater Bay.

The existing outfall is located in the inner harbour of Schull where there are no designated shellfish waters. The results of hydrographic studies of the harbour suggest limited amount of movement of its waters and in also considering dilution in the harbour it can be concluded that by the time the tide reaches the outer harbour in Roaringwater bay, the bacterial risk to shellfish is considerably reduced.

Circular L8/08

The report, 'Assessment of the ecological impacts of providing an upgraded wastewater treatment system at Schull, Co Cork was appended with the Application as Attachment F.1.

The DoEHLG Circular letter BC14/2003 provides guidance for consent authorities regarding sub-threshold development Environmental Impact Assessment. Cork Co. Co. produced a determination in August 2004 in respect of Schull Sewerage Scheme as to whether it would or would not be likely to have significant effects on the environment. This determination was produced as part of the Part 8 Planning Approval process for the proposed waste water treatment plant and found that "the proposed Schull Sewerage Scheme is unlikely to have significant effects on the environment".

Cork County Council approved the Part 8 Planning Application for Schull WWTP on 27th June 2005 without modification of the documentation.

Therefore, an appropriate assessment has been carried out in respect of the proposed wastewater treatment plant, a baseline survey has been completed, the development has been screened for likely impacts, and these impacts have been assessed and mitigation measures proposed. This process was concluded in advance of the publication of the Circular L8/08 but the requirements of Article 6 of the habitats Directive have been taken into account when Cork Co. Co. considered the scheme.

On the 7th February 2008 a letter was received from the Department of Environment, Heritage and Local Government outlining the nature conservation recommendations in relation to the West Cork Grouped Waste Water Treatment Plants and in particular Schull WWTP. This states, "The above development is not likely to result in a significant loss of habitat in areas of high conservation value. It is also likely to result in an improvement in water quality in the area."

Surface Water Monitoring Points

There is only one monitoring point in Schull Harbour, located at Coosheen. It is labelled as aSW1d and aSW2d to reflect the sampling required for both the Primary Discharge (SW01) and Secondary Discharge (SW02).

The following table indicates the Point codes and Grid Coordinates:

Point Code	Location	Easting, Northing	Discharge Reference
aSW1d	Coosheen	093979E, 031186N	Primary Discharge SW01
aSW2d	Coosheen	093979E, 031186N	Secondary Discharge SW02

List of Drawing Titles:

Revised Drawings:

- (a) B2.03 Proposed WWTP Rev B
- (b) B3.01 Primary Discharge Point Rev B
- (c) B4.01 Secondary Discharge Point Rev B

Yours sincerely,



Declan Groarke,
Senior Executive Engineer,
Cork County Council

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SECTION A: NON-TECHNICAL SUMMARY

Advice on completing this section is provided in the accompanying Guidance Note.

A non-technical summary of the application is to be included here. The summary should identify all environmental impacts of significance associated with the discharge of waste water associated with the waste water works. This description should also indicate the hours during which the waste water works is supervised or manned and days per week of this supervision.

The following information must be included in the non-technical summary:

A description of:

- the waste water works and the activities carried out therein,
- the sources of emissions from the waste water works,
- the nature and quantities of foreseeable emissions from the waste water works into the receiving aqueous environment as well as identification of significant effects of the emissions on the environment,
- the proposed technology and other techniques for preventing or, where this is not possible, reducing emissions from the waste water works,
- further measures planned to comply with the general principle of the basic obligations of the operator, i.e., that no significant pollution is caused;
- measures planned to monitor emissions into the environment.

Supporting information should form **Attachment N^o A.1**

The Wastewater Works and Activities Carried Out Therein

Introduction

Schull is a coastal town approximately 24km west of Skibbereen, on the Mizen Peninsula with a permanent population of approximately 600 persons but increasing to at least three fold during the summer. It is an important tourism and commercial centre for a large area of the Mizen Peninsula and beyond.

Schull Harbour is a sheltered harbour of about 2 km² in area and is used for both commercial and leisure activities. A lobster holding area is located at the eastern side of the Bay and a fish plant operates on the Pier. A sailing school also operates off the Pier and the entire area is used for bathing during the summer months. The main areas for swimming are off the strands at the east of the town and at the pier.

The Existing Collection System

The town has an existing gravity sewerage scheme, consisting of approximately 4,500 lin.m. of pipework. The collection system currently in place in Schull is a combined system, and caters for large quantities of stormwater. Consequently, the non-domestic dry weather flow represents a small component of this flow.

The system was originally started approximately 50 years ago and has been expanding over the years to cover the entire town. The network, with the exception of the pipework in Pier Road, collects and transports the wastewater to a septic tank located between the Ballydehob Road and the shoreline, to the north east of the town.

The septic tank provides primary treatment which discharges into Schull Harbour about 350m north of the Pier.

Although the majority of the network operates by gravity, some developments and institutions connect into it via pumps.

The pumped systems in the town include the following:

- The Moorings Holiday Homes, Colla Road
- The Hospital, Colla Road,
- Secondary School, Colla Road
- Holiday home development at Colla Road
- Houses in Ballydehob Road
- Development to south of Ballydehob Road

Cork County Council is not responsible for the maintenance of any of these pumping stations.

Table A.1.1: Location of existing Pumping Stations

Pumping Station	Pump Station Coordinates (Irish National Grid) (E,N)
P.S. 1 – Development South of Ballydehob Road	093045E, 031660N
P.S. 2 – Holiday Homes North of Ballydehob Road	093213E, 031865N
P.S. 3 – ‘The Moorings’, Colla Road	092858E, 031230N
P.S. 4 – Schull Community College	092710E, 031085N
P.S. 5 – Hospital at Colla Road	092763E, 030969N
P.S. 6 – Holiday Home Development at Colla road	092678E, 030622N

The Existing Wastewater Treatment Plant

The existing treatment works in Schull was built in the mid 1960’s and is a primary settling tank, (or septic tank), located at Meenvane to the north east of the town close to the shoreline. When the works were constructed the population of Schull was less than 500 people. The design of the works allowed for some increase in the town population and an allowance of port related industry.

The treated effluent discharges via a 225 mm outfall to below the LWM located in the inner harbour approximately 350m north of the pier. The capacity of the tank is 230m³ with an overflow weir present at SW01 Schull. The septic tank was designed for a small winter population in the town and cannot cater with the present influx of summer holiday makers, therefore the discharge

standard for BOD and SS cannot be achieved on occasions. The septic tank is de-sludged annually.

The parameters of the existing septic tank are:

- Capacity = 230m³
- Current Load = 1,680 PE
- Dry Weather Flow = 55,000 gals /day (Winter) to 120,000 gals/day (Summer)

It is proposed to install a modern treatment plant to cater for the existing and future increased loads in accordance with Cork County Development Plan 2003.

The Proposed Wastewater Treatment Scheme

A preliminary report has been carried out by M.C. O'Sullivan Consulting Engineers in 2000, for the upgrading of Schull Sewerage Scheme and has been approved by the DOEHLG.

In this report the new treatment plant is to be located adjacent to the existing septic tank site and the surrounding area, which is in the ownership of Cork County Council.

The existing collection network is being upgraded throughout the town. Construction work on this phase began in October 2008 and is due for completion in 2009.

The proposed WWTP is to be constructed under a Design, Build and Operate (DBO) Contract, and has just received Departmental approval to go through the tender process. The ultimate population equivalent is 3,000 based on a 20-year design horizon (2020). This is consistent with other agglomerations of this size and development subject to an influx of seasonal tourists.

The new WWTP will consist of preliminary and secondary treatment or their equivalent, to achieve a final effluent of 25 mg/l BOD; 35 mg/l SS; 125 mg/l COD in accordance with the Urban Waste Water Treatment Regulations, 2001 (S.I. No.254 of 2001).

Mitigation measures will be installed to maintain noise and odour emissions within recognised and acceptable limits. Standby power generation will be available in case of power failure. Thickened sludge's will be transported by tanker or skip off site for further treatment or disposal in accordance with the Sludge Management Plan for County Cork. Screenings arising from the Preliminary Treatment Stage will be disposed of at the nearest licensed landfill site.

The treated effluent is to be pumped through a rising main via Colla Road to a header manhole near Schull Point. From the header manhole, a 225 mm diameter outfall pipeline is to be laid gravitating towards Colla where it will leave the public road and discharge via the proposed outfall to a point 50 metres beyond the high water mark in Long Island Channel.

The existing septic tank would be retained and used as a storm water storage tank to reduce the frequency of overflows events to Schull Harbour. The existing outfall from the septic tank (225mm diameter), to be used as an overflow, may have to be replaced with a 525mm pipe of similar length. The

overflowed effluent shall receive screening to 6mm, and shall be heavily diluted with large amounts of surface runoff prior to discharge.

The program of proposed work is detailed in Section B.10.

The Sources of Emissions from the Wastewater Works.

The main sources of wastewater are from domestic, institutional and commercial properties in the catchment area. There is a fish factory based near the pier but otherwise there are no major water using industries in Schull. *Between March 2000 and March 2001, detailed water consumption figures were obtained for the Schull area. The fish factory had a total water consumption of 6,078 litres/day, which gave a P.E. of 26.*

The most significant loading in terms of quantity is the domestic population generated load, which varies significantly due to local tourism.

There are currently two outfalls from the combined sewer system in the town. The Primary, SW01, is the outfall from the septic tank and discharges into the harbour below the low tide level.

The secondary, SW02, located South of the Pier, takes the wastewater from the sewer along the Pier Road and is mainly discharging the untreated wastewater from the fish factory.

Both of these outfalls are discharging below the low tide level into the bathing area. While Schull Harbour is not a designated bathing area, it is prudent to comply with regulations since the area is used for bathing and leisure activities during the summer.

Schull Harbour is part of Roaring Water Bay that is named in the "Quality of Shellfish Regulations". Therefore Schull Harbour has to reach the standards set out in this directive.

For the purposes of this application the relevant pe chosen for the licence period is 2,000 being the pe estimated at end of that period.

The nature and quantities of foreseeable emissions from the wastewater works into the receiving aqueous environment as well as identification of significant effects of the emissions on the environment.

The harbour is used for numerous aquatic activities including fishing and bathing. The existing treatment plant at Schull releasing effluent on falling tide is insufficient to cater for present summer loadings and with regard to compliance with Urban Waste Water Directive effluent standards. It is envisaged that the proposed new wastewater treatment plant will ensure a major improvement in quality of effluent thus lessening the effects of the emissions on the environment.

Sewage is currently treated via a septic tank and thus it can be assumed that primary treatment occurs prior to discharge. The Environmental Protection Agency Document 'Treatment Systems for Small Communities, Business, leisure centres and Hotels' (EPA 1999) details wastewater inflow characteristics for domestic and commercial sources.

As Schull is considered mainly residential and the amount of industrial / commercial premises in the town are minimal, the only wastewater flow would be considered as small flows of domestic sewage from toilet facilities, therefore, the following are the inflow characteristics assumed; Suspended Solids 500mg/l, BOD 300mg/l.

The discharge from Schull contains a mixture of wastewater from domestic and commercial sources. Assuming that all the wastewater is derived from domestic sources and based on a current population equivalent of 1,680 multiplied by 60gBOD/person/day, the total BOD reaching the treatment plant is estimated at 100.80 kg/day. Based on a predicted summer population of 2,000 p.e, the total BOD reaching the treatment plant could be as high as 120kg/day.

The main function of the existing septic tank is to act as a primary settlement tank removing some of the BOD and the majority of the suspended solids. The EPA publication "Primary, Secondary and Tertiary Treatment (1997)" estimates that typically 50-70% of suspended solids are removed in primary settlement tanks; BOD is reduced by 20-50% and the bacterial count by 25-75%. According to the National Urban Waste Water Study (NUWWS) the reduction to the BOD load would be approximately 30% and approximately 50% to the Suspended Solids load.

Assuming that the septic tank in Schull is currently working at average efficiency, the approximate reductions are estimated as 60% for solids and 35% for BOD. The reduction in bacterial count is estimated at 50%. This would result in a BOD discharge to the bay of 65.5kg/day based on current summer population figures and could reach 78.0kg/day in summer (2,000 predicted p.e.).

Proposed technology and other techniques for preventing or, where this is not possible, reducing emissions from the wastewater works

The Dept of Environment, Heritage and Local Government has directed that the WwTP at Schull be procured through a Design, Build and Operate form of contract in conjunction with a number a similar schemes in West Cork. The final layout of the site will be governed by the contractor's proposals for the site.

It is envisaged that this offers the following advantages;

- more buildable designs,
- innovative solutions to design issues,
- improved guarantee of enhanced operational performance.

Consequently, newer technologies will be more likely to be used to optimize treatment thus ensuring compliance with the necessary effluent standards.

Upgrading of the Collection System

Work is already underway way for the upgrading of the Collection System and when complete all the foul sewage will be collected and conveyed to the proposed new Waste Water Treatment Plant located near the shoreline at Meenvane. The proposed improvements include the following: -

- Remedial works to network
- New sewer to upgrade existing foul/combined sewers
- New foul sewers to serve areas at present not catered for
- New storm sewers
- Improvements to open drains
- Elimination of overflows

Proposed New Wastewater Treatment Works

A Sequence Batch Reactor system is recommended for Schull. Such a plant (including ancillaries) would consist of the following: -

- Mechanically raked inlet screen and compactor
- Grit removal system
- Low lift pump and overflows
- Existing septic tank to be used as storm tank
- Sequence batch reactor
- Picket fence thickener
- Control house
- Site access road

The new WWTP will comply with the Urban Wastewater Treatment Regulations, 2001 and will consist of preliminary treatment, and secondary Treatment to achieve a final effluent of 25 mg/1 BOD; 35 mg/1 SS; 125mg/1 COD.

A proposed programme of works on the wastewater treatment plant is detailed in Section B.10.

Measures planned to comply with the general principle of the basic obligations of the operator, i.e., that no significant pollution is caused.

The complete process will be upgraded in the near future with the construction of a new WWTP. The treatment capacity, the discharge quality and control systems will be improved to ensure that no significant pollution is caused.

It is likely that under the DBO contract for Schull Wastewater Treatment Plant, a Performance Management System will be required. Such a system would provide a uniform approach to dealing with performance management issues, including procedures for dealing with plant operation, and in particular for dealing with emergencies or failure to meet treated effluent standards.

Failure to meet the specified treated effluent standards may result in final penalties to the operating contractor. As a result, the risk of environmental pollution from the treatment plant should be reduced.

Measures planned to monitor emissions into the environment

The emissions from the WWTP can be monitored through the sampling point SW01 Schull (see Map Schull B2-03 for location).

In the upgraded WWTP, monitoring and sampling of the emissions will be provided in inlet and outlet works. The sampling will consist of a composite sample and all emissions will be measured and can be sampled before discharged.

It is also likely that under the Employers Requirements for Operation & Maintenance of the Works for Schull Wastewater Treatment Plant, the Contractor will be obliged to implement in full, the requirements of a 'Performance Management System'. In providing this service, the Contractor would monitor the wastewater treatment plant assets and operations, which would include undertaking sampling, monitoring and analysis of the wastewater

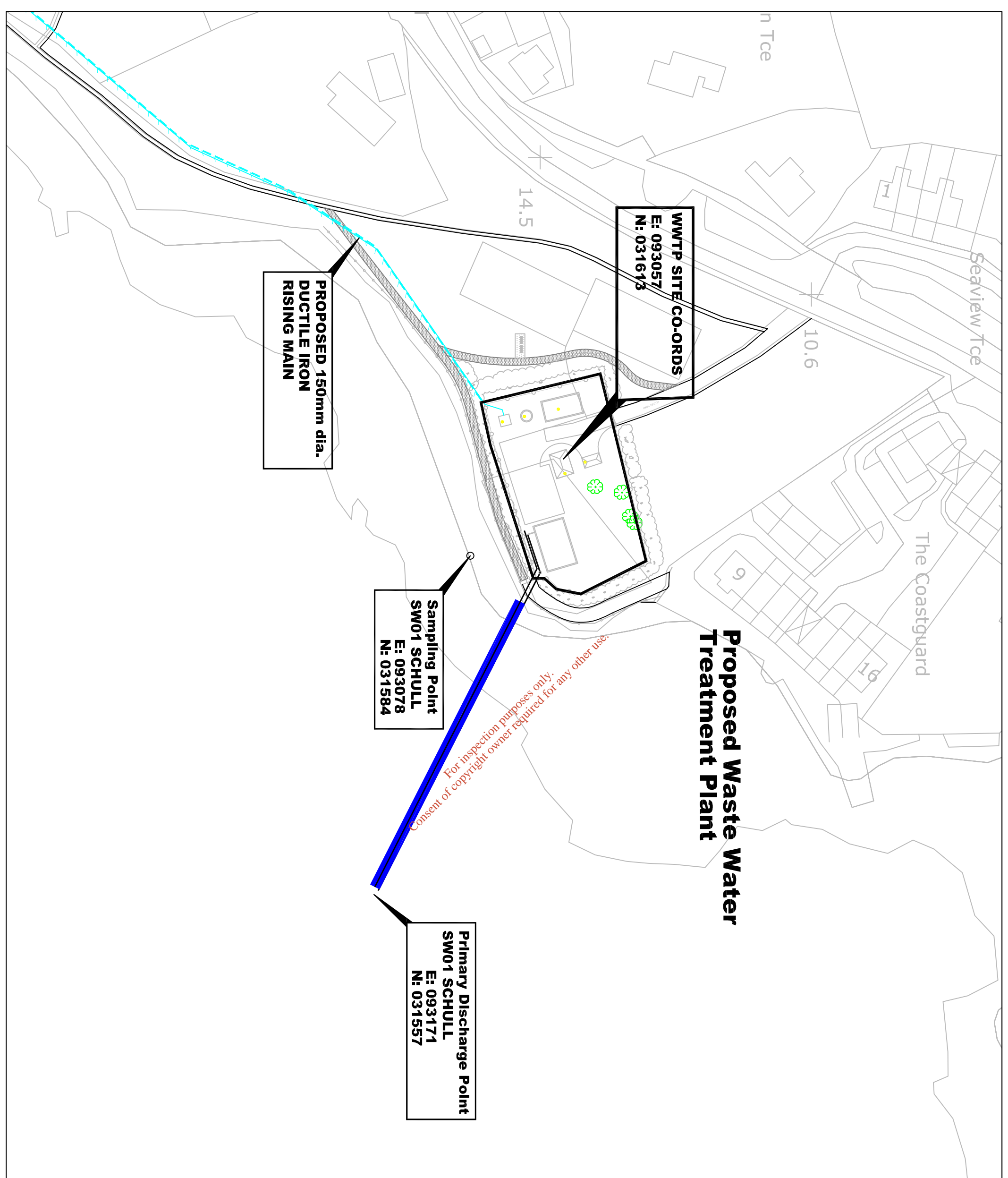
and sludge. Long term monitoring of the estuary and the final effluent from the treatment plant will also be undertaken to determine compliance or otherwise with the quality objectives set for the scheme.

A complete description of the program of works is given in section B.10.

Programme for the Completion of the Works

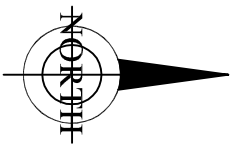
It is anticipated that the necessary works to upgrade the Collection System will be substantially complete in 2009, while the new Wastewater Treatment Plant is expected to be fully operational in 2011.

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NOTES

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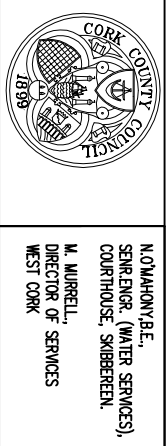


LEGEND

- SITE BOUNDARY
- RISING MAIN

No.	Date	Drawn	Child	Revision Description

Cork County Council,
Western Division.

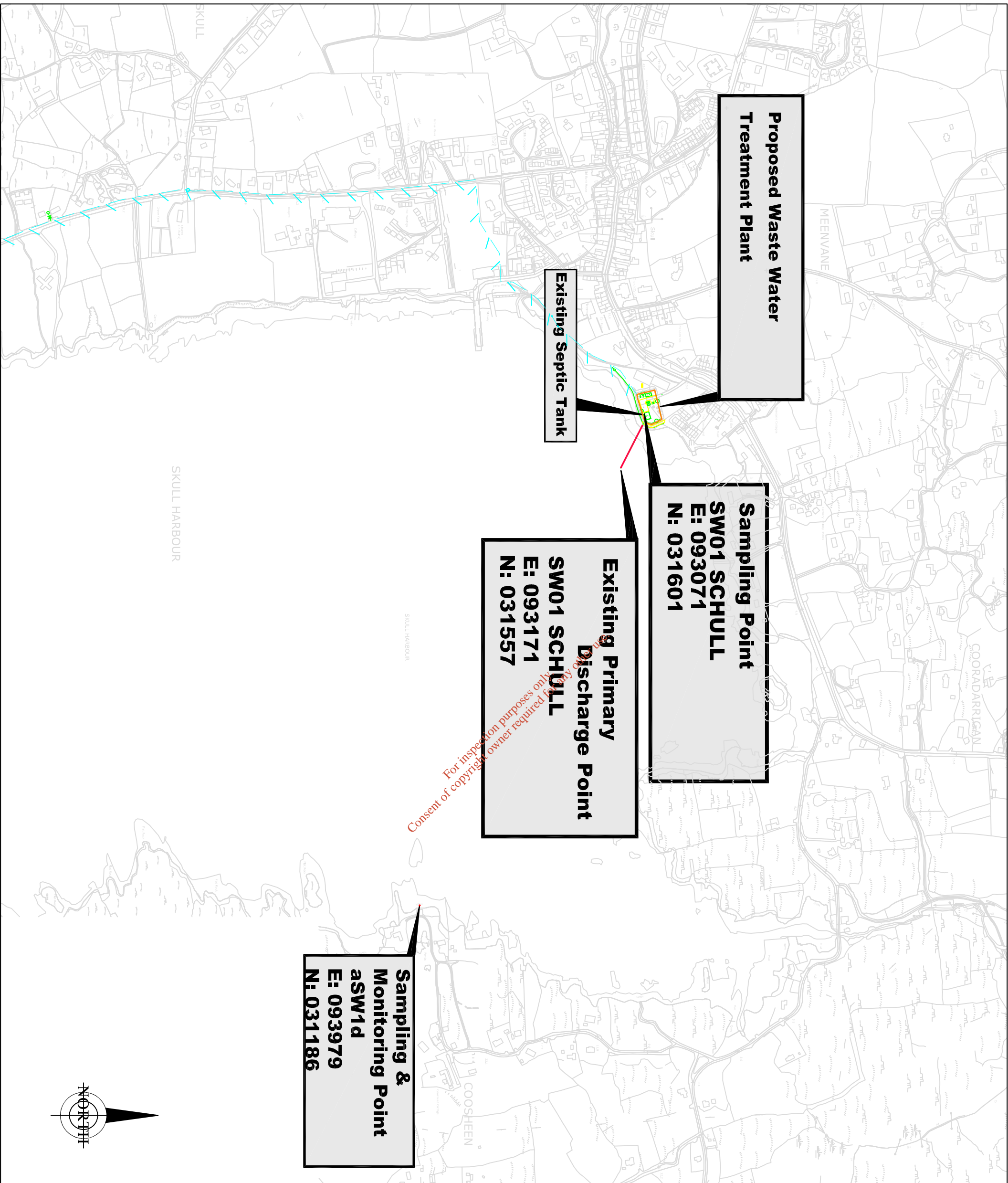


N. O'MAHONY, B.E.
SENIOR ENGR. (WATER SERVICES),
COURTHOUSE, SHIBBEREN,
M. MURRELL,
DIRECTOR OF SERVICES
WEST CORK

Job Title:
WASTE WATER DISCHARGE
LICENCE APPLICATION
SCHULL AGGLOMERATION

Drawing Title: ATTACHMENT B.2
SITE LAYOUT BOUNDARY
PROPOSED WASTEWATER
TREATMENT PLANT
(DRAWING 1 OF 2)

Prepared By: A.O'BRIEN	Checked By: D.GROARKE	Date: JUNE 2009
Drawing number: SCHULL_B2-03	Scales: 1:1000	Rev: B



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Proposed Waste Water Treatment Plant

Existing Septic Tank

Sampling Point
SW01 SCHULL
E: 093071
N: 031601

Existing Primary Discharge Point
SW01 SCHULL
E: 093171
N: 031557

Sampling & Monitoring Point
aSW1d
E: 093979
N: 031186

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LEGEND

- Rising Main
- Gravity Outfall

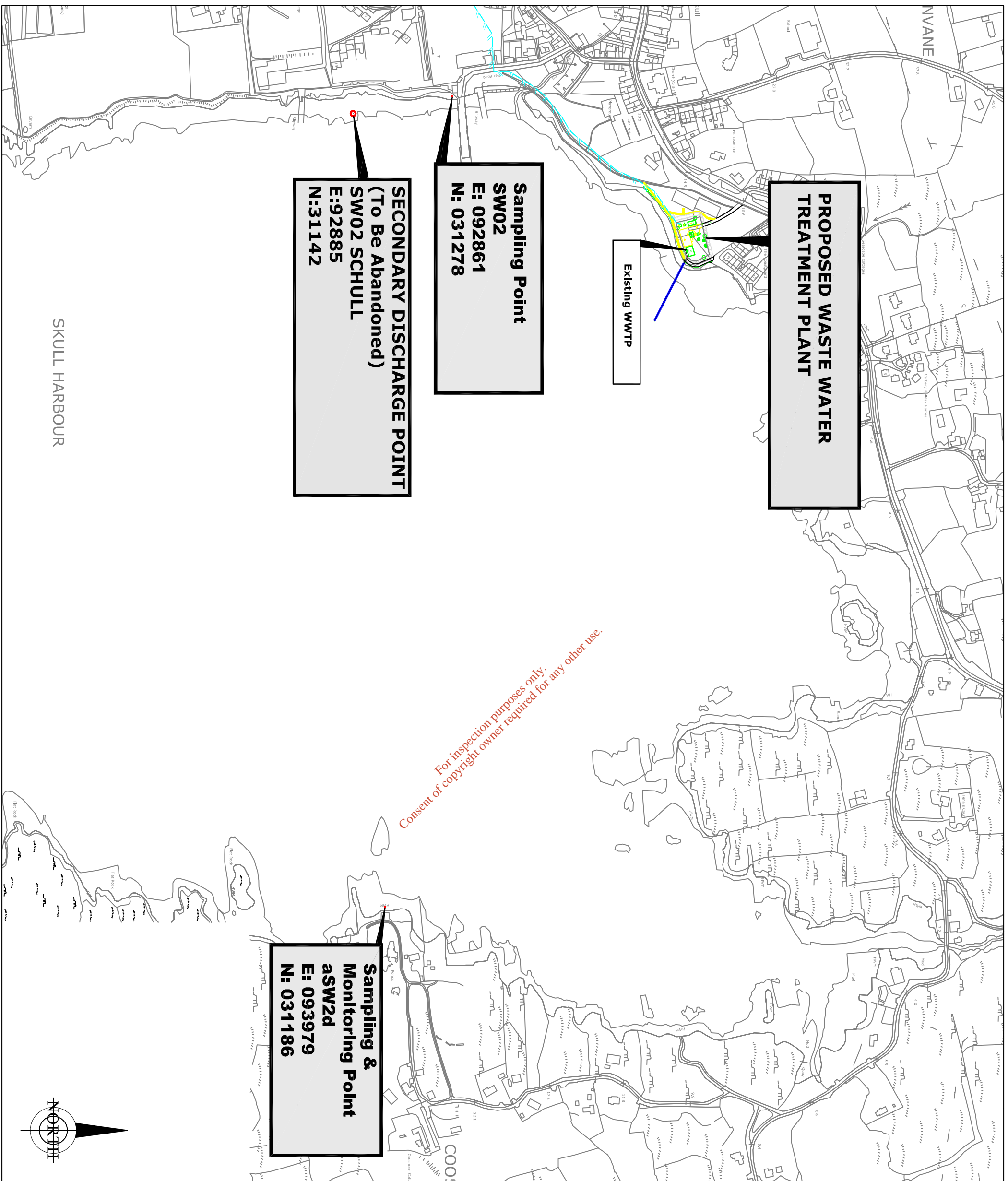
Cork County Council,
Western Division.

N. O'MAHONY, B.E.
SENIOR ENGR. (WATER SERVICES),
COURTHOUSE, SHARRIFKENNA,
WEST CORK.

Job Title:
WASTE WATER DISCHARGE
LICENCE APPLICATION
SCHULL AGGLOMERATION

Drawing Title:
ATTACHMENT B.3
EXISTING & PROPOSED
PRIMARY DISCHARGE POINTS

Prepared By: A.O'BRIEN	Checked By: A.O'BRIEN	Date: JUNE, 2009
Drawing number: SCHULL_B3_01	Scale: N.T.S.	Rev: B



PROPOSED WASTE WATER TREATMENT PLANT

Existing WWTP

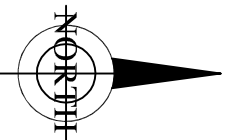
Sampling Point SW02
E: 092861
N: 031278

SECONDARY DISCHARGE POINT (To Be Abandoned)
SW02 SCHULL
E:92885
N:31142

Sampling & Monitoring Point aSW2d
E: 093979
N: 031186

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SKULL HARBOUR

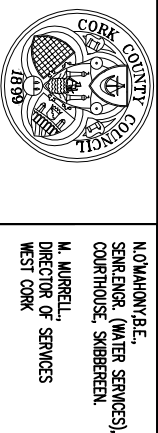


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LEGEND

 RISING MAIN

**Cork County Council,
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Job Title:
 WASTE WATER DISCHARGE
 LICENCE APPLICATION
 SCHULL AGGLOMERATION

Drawing Title:
 ATTACHMENT B.4
 SECONDARY DISCHARGE POINT

Prepared By: A.O'BRIEN	Checked By: D.GROARKE	Date: JUNE,2009
Drawing number: SCHULL_B4_01	Scales: 1:5000	Rev: B