Submission	
Submitter:	Mr. Jerry O'Brien
Submission Title:	Dairygold Submission
Submission Reference No.:	S005930
Submission Received:	03 January 2020
Application	
Applicant:	Dairygold Co-Operative Society Ltd and TINE Ireland Ltd
Reg. No.:	P1103-01
See below for Submission details. Attachments are displayed on the following page(s).	

Submission

by

Saleen and District Residents' Association

re. Application Reg No P 1103-01

to The EPA

by ***Dairygold Co-operative Society*** Ltd and ***TINE Ltd***. for an outfall license at Rathcoursey West, for the discharge of effluent from the Applicants' Cheese plant at Mogeely, Co Cork

Saleen and District Residents' Association *is an elected, voluntary body representing the interests of residents in the areas of Saleen, Scartleigh Upper, Bawnard West, Rathcoursey East, Rathcoursey Village, Rathcoursey West, East Ferry, Garranekinnefeake and Jamesbrook. The Association works for the environmental protection and appropriate development of the areas that it serves.*

The Association asks that the EPA refuse the abovementioned application for the reasons outlined below.

INDEX

Section1

Waste water treatment plant and data integrity

Concerns regarding current waste water treatment process management and EIS data review and a review of potential emission point impacts within the complex marine environment, such as at East Ferry.

Current waste water treatment plant condition and maintenance:

There are many indications that the current waste water system at Mogeely is poorly run and poorly maintained and has had little investment since its initial construction. We have referenced examples below which are taken directly from Michael O'Sullivan survey report of the existing system.

Page 5 of 32 4th paragraph

Referring to the inlet screen chamber *'This chamber is no longer ''fit for purpose'' and, given the condition of the concrete, would not pass integrity test'.*

Page 10 of 32 last paragraph

'The visible steelwork in BioTower No. 1 is very badly corroded to the extent that a structural examination needs to be carried out urgently to assess whether it is safe to continue operating this tower.'

Page 12 of 32 1st Paragraph

'The total extended aeration treatment volume provided is approximately 1,426m3 which gives a hydraulic retention time (HRT) of just over 48 hours for the licensed throughput of 700 m3/d. This is a long HRT and could give rise to a filimentaceous floc which is difficult to settle.'

Page 12 of 32 2nd Paragraph

Referring to observed DO (dissolved oxygen) level it was noted that. *'These are high DOS for an EA plant where one would expect Dos of between 2.5 mg/l in the first tank and 1.2mg/l in the second from which the liquor is re-circulated to the anoxic tank'.*

Page 9 of 32 paragraph 2

'As mentioned earlier grease accumulation is a major problem in the balance tank which has no mechanism to clean it.'

Page 7 of 32 paragraph 2

'As with the screening chamber the concrete in this channel is in poor condition and is unlikely to pass integrity test.'

With this in mind it seems incredible that the plant has achieved 100% compliance with its discharge permit requirements. However, water quality data of the The data presented with the EIS where samples were taken above and below the discharge point into the Kiltha river indicate that the current discharges from Mogeely (despite being '100% compliant') are having a negative effect on the receiving water quality.

Concerns regarding current and future waste water treatment plant management and maintenance:

Given the poor state of repair and the obvious lack of ongoing investment and preventative maintenance into the existing waste water treatment facility at Mogeely there are significant concerns that through lack of maintenance or poor management the potential for an uncontrolled or unregulated release from the proposed waste water treatment plant cannot be over looked. The impact of such a release either through a single unexpected discharge or ongoing discharges above acceptable limits will have a detrimental effect on the sensitive habitats surrounding the proposed waste water discharge point.

Review of existing waste water treatment performance data:

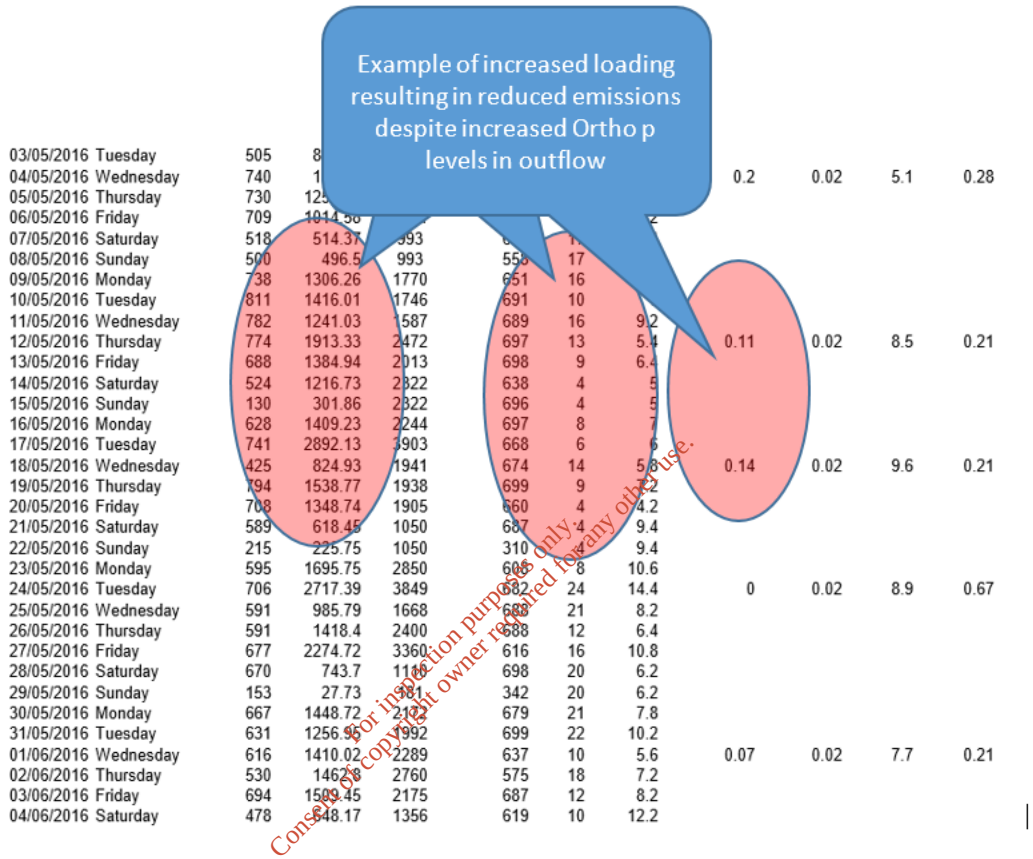
A review the waste water treatment and discharge data presented in the EIS raise a number of important questions.

1. There are significant gaps in the data. While some missing data could be attributed to plant winter shutdown there are at least thirty occasion when data should be present but it is missing. Example Figure 1. Why is this data missing from the data set?
2. While COD emission are reported no data is given on BOD which is a required permitting parameter. Why is this data associated with periodic monitoring of BOD missing from the data set?
3. The relationship between high input to the existing plant is not correlated with changes to the output figures. One would expect to see high COD input loads result in increases to levels of COD in the output. The data does not show this. Figures 1, 2 and 3 show examples of the relationship between increase WWT Plant Loading and output from the existing plant. High input load does not show a corresponding increase in COD in the output. In most cases the output COD concentration reduces despite increases in observed levels of ortho phosphate. Example see Figure 2.
4. Increased levels of ortho phosphate in the outflow are not associated with any variation on COD levels which could be expected. Example see Figure 2.
5. The used of averaged data over a three-year period to assess loading to Rathcoursey water body gives a poor representation of the actual loading given that the data contains low input levels during for Saturday and Sundays and low emissions during winter months. These low levels screw the data and give a false representation of the true daily loading figures which are included in the averaged calculation. Highest discharge levels will occur with 'peak milk' during the midsummer periods, periods during which biological activity in the receiving waters will be most active.

16/06/2016 Thursday	564	1023.66	1815	637	10	9.8				
17/06/2016 Friday	684	991.12	1449	513	12	8.4				
18/06/2016 Saturday	136	150.96	1110	510	14	10.8				
19/06/2016 Sunday	149	165.39	1110	247	14	10.8				
20/06/2016 Monday	558	959.2	1719	638	13	10.8				
21/06/2016 Tuesday	595	917.49	1542	606	9	7.2				
22/06/2016 Wednesday	617	1867.66	3027	557	10	10				
23/06/2016 Thursday	541	1041.23	1925	668	18	11.2	0.5	0.02		0.53
24/06/2016 Friday	564	551.59	978	632	18	10.6				
25/06/2016 Saturday	57	24.11	423	171	13	10.4				
26/06/2016 Sunday	57	24.11	423	171	13	10.4				
27/06/2016 Monday	671	740.78	1104	650	16	14.2				
28/06/2016 Tuesday	618	765.7	1239							
29/06/2016 Wednesday	566	925.41	1635							
30/06/2016 Thursday	528	465.7	882							
01/07/2016 Friday	400	412.8	1032	453	17	6.4				
02/07/2016 Saturday	22	13.65	620	133	25	4.6				
03/07/2016 Sunday	153	94.92	620	241	25	4.6				
04/07/2016 Monday	554	809.39	1461	636	21	8.4				
05/07/2016 Tuesday	564	1204.7	2136	607	15	6.8				
06/07/2016 Wednesday	492	1068.62	2172	521	10	10.2				
07/07/2016 Thursday	694	880.69	1269	636	10	11	0.5	0.02	9.8	0.75
08/07/2016 Friday	674	879.57	1305	695	4	6.4				
09/07/2016 Saturday	121	103.09	852	553	24	13.4				

Example of missing data

Figure 1 example of one of a number of situations where data is missing from WWT performance data provided



03/05/2016 Tuesday	505	8								
04/05/2016 Wednesday	740	1					0.2	0.02	5.1	0.28
05/05/2016 Thursday	730	125								
06/05/2016 Friday	709	1014.56				2				
07/05/2016 Saturday	518	514.37	993							
08/05/2016 Sunday	500	496.5	993	558	17					
09/05/2016 Monday	738	1306.26	1770	651	16					
10/05/2016 Tuesday	811	1416.01	1746	691	10					
11/05/2016 Wednesday	782	1241.03	1587	689	16	9.2				
12/05/2016 Thursday	774	1913.33	2472	697	13	5.4	0.11	0.02	8.5	0.21
13/05/2016 Friday	688	1384.94	2013	698	9	6.4				
14/05/2016 Saturday	524	1216.73	2322	638	4	5				
15/05/2016 Sunday	130	301.86	2322	696	4	5				
16/05/2016 Monday	628	1409.23	2244	697	8	7				
17/05/2016 Tuesday	741	2892.13	3903	668	6	6				
18/05/2016 Wednesday	425	824.93	1941	674	14	5.8	0.14	0.02	9.6	0.21
19/05/2016 Thursday	794	1538.77	1938	699	9	5.2				
20/05/2016 Friday	708	1348.74	1905	660	4	4.2				
21/05/2016 Saturday	589	618.45	1050	687	4	9.4				
22/05/2016 Sunday	215	225.75	1050	310	4	9.4				
23/05/2016 Monday	595	1695.75	2850	606	8	10.6				
24/05/2016 Tuesday	706	2717.39	3849	682	24	14.4	0	0.02	8.9	0.67
25/05/2016 Wednesday	591	985.79	1668	688	21	8.2				
26/05/2016 Thursday	591	1418.4	2400	688	12	6.4				
27/05/2016 Friday	677	2274.72	3360	616	16	10.8				
28/05/2016 Saturday	670	743.7	1116	698	20	6.2				
29/05/2016 Sunday	153	27.73	181	342	20	6.2				
30/05/2016 Monday	667	1448.72	2172	679	21	7.8				
31/05/2016 Tuesday	631	1256.96	1992	699	22	10.2				
01/06/2016 Wednesday	616	1410.02	2289	637	10	5.6	0.07	0.02	7.7	0.21
02/06/2016 Thursday	530	1462.8	2760	575	18	7.2				
03/06/2016 Friday	694	1589.45	2175	687	12	8.2				
04/06/2016 Saturday	478	648.17	1356	619	10	12.2				

Figure 2 one of many examples where increased loading of existing WWT plant results in reduced

Figure 2 one of many examples where increased loading of existing WWT plant results in reduced COD levels in the Outflow despite increases in observed orto phosphate levels.

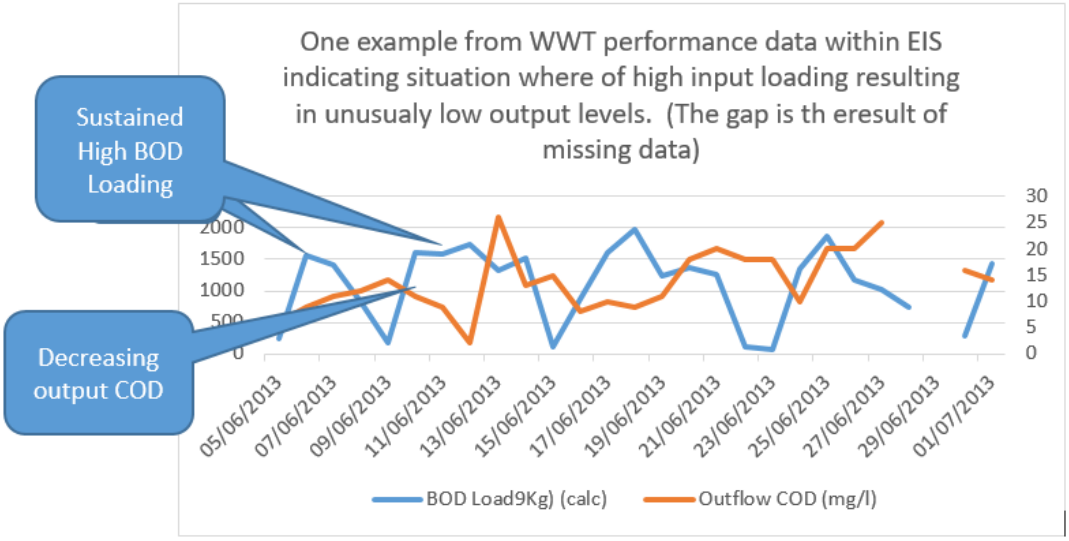


Figure 3 Graphical representation of a situation where high input loads results in unusually low

Concerns regarding WWT data provided in the EIS:

The suspicion is that the data presented with the EIS and the calculations based on averaged data over the three year period is not showing the true picture. If the full data set was available statistical detailed statistical testing could be carried out to test the trends in the data. Despite requests for the raw data file during consultation meetings it has not been provided by Dairygold or their representatives.

We have a concern that the base data provided is suspect and as a result every other calculations/assessments on the potential impact to receiving water bodies is compromised.

Hydrodynamic consideration and concerns associated with the proposed WWT Discharge point at Rathcoursey and their potential ecological Impacts

It is noted that sections 5.0 to 5.2.1 of Chapter 5 Ecological Impacts are missing from the PDF copy of the Main EIS document received by local residents of the East Ferry area.

Salinity profiles and Boundary Layers structures within East Ferry and Rathcoursey Areas:

The points at which fresh and saline waters meet generate complex missing zones. Fresh water tends to flow under a 'wedge' of more saline water. The interfaces within fresh water and saline environments create complex mixing zones and local current profiles which can in some cases give rise to turbidty maximums (McMahon T 1988). This situation arises at the mixing currents between the saline and fresh waters result resuspension of sedimentary material and changes to the chemistry and flocculation of suspended matter. There is an added complexity in that the mixing zone is not stationary but moves up and down the waterbody with the ebb and flow of the tide.

Salinity profile study in Cork Harbour as the river Lee enters the more saline environment of Cork Harbour conducted by Andy Wheeler of University College Corks School of Biological Earth and Environmental Sciences give an indication of the complexity of mixing processes within the based on the variations in the Salinity profiles. Extracts of salinity profiles from this report are presented below. Fig. 3 and Fig 4. It is to expected that similar complexity is present in the Water bodies making up the Rathcoursey and East Ferry.

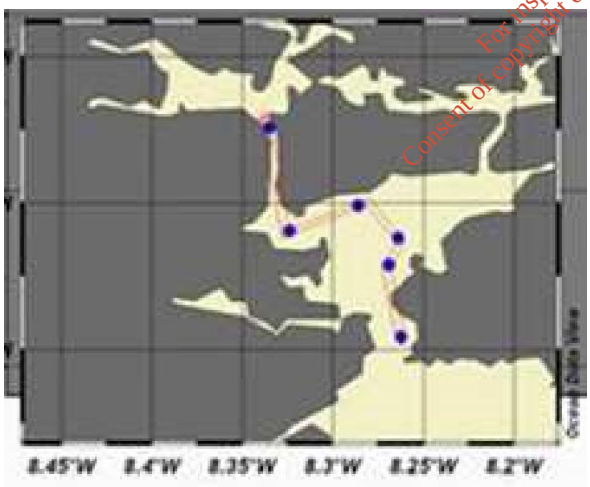


Fig. 3 Salinity Sampling locations UCC study

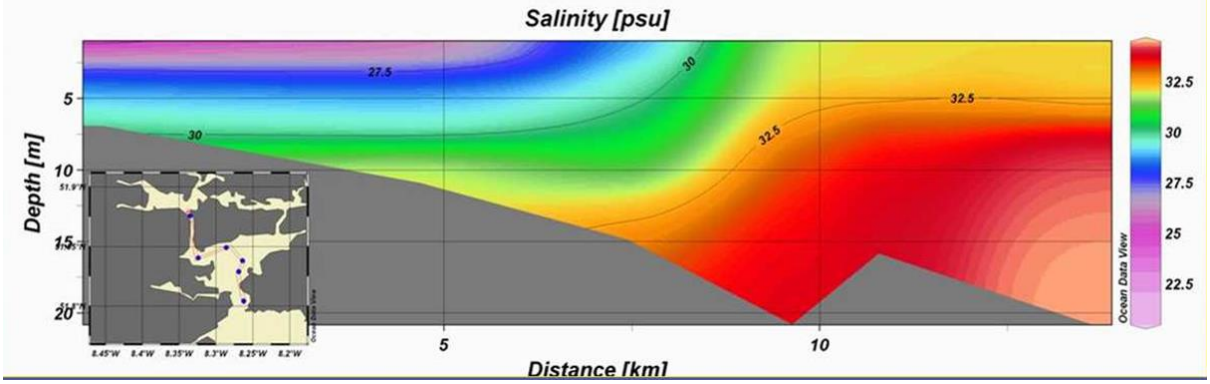


Fig. 4 Extract from Andy Wheeler's study of Salinity profiles in Cork Harbour showing complex boundary Layers between salinity profiles.

Concerns in relation to mixing zone complexity

There has been no attempt to investigate the salinity profiles and the structure of the various boundary layers proposed waste water discharge point within the EIS Study. These boundary layer profiles could result in the concentrated of effluent discharges into very defined profiles as they are released on the ebb tide. The result could be visible colouration, accumulation of residual Fats Oils and Grease along defined stretches of the East Ferry Channel.

The complexity of the salinity profiles may also expose bottom dwelling organisms to higher level of BOD that expected based on the EIS calculations as the discharges are in effected trapped within defined salinity profiles exposing bottom dwelling vertebrates and invertebrates to higher concentrations of BOD and the associated risk of de oxygenation of deeper water layers. It may also expose these creatures to higher levels of residual waste water treatment chemicals such as complex polyelectrolytes and aluminium salts used to aid settlement in the proposed dissolved air flotation (DAF) unit and pH variations. No account has been taken of the potential impact of chemicals used within the treatment process such as Polyelectrolytes used in the dissolved air flotation system (DAF), and aluminium salts and the use of antifoaming agents.

Residence Times in the areas of discharge point:

The recent study described in by *Nash, S,Hartnett, M,Dabrowski, T (2011) 'Modelling phytoplankton dynamics in a complex estuarine system'. Proceedings of The Institution Of Civil Engineers-Water Management, 164 :35-54*. This study used detailed current and salinity profile information to generate simulation models of the movement of the water bodies in the Rathcoursey and East East Ferry. The computer modelling was backed up by physical dye studies and remote sensing. The study indicated significant residence times and low exchange rates of water bodies in the Rathcoursey and North Eastern Corners of Cork harbour. Nash's study suggest that whiles the flow through East Ferry significant there are a number of significant back eddies that significantly **extend the 'Flushing Period' to between 50 and 60 days See Fig 5 and 6**

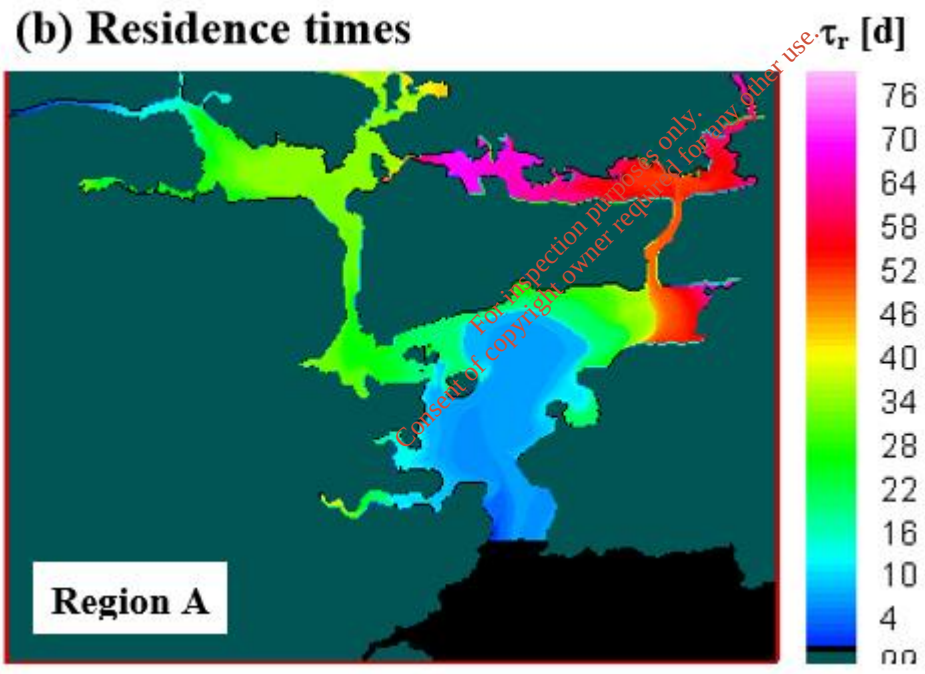


Fig 5 Nash (2011) p 43. showing residence times in the East Ferry water body of between 50 and 60 days.

'The spatial variation of residence times within the harbour provides a very good insight into hydrodynamic circulation patterns and a means of identifying possible hotspots for phytoplankton growth. From the results for Region A in Figure 14(b), it is apparent that the harbour can be divided into four separate sub-regions with different flushing characteristics.

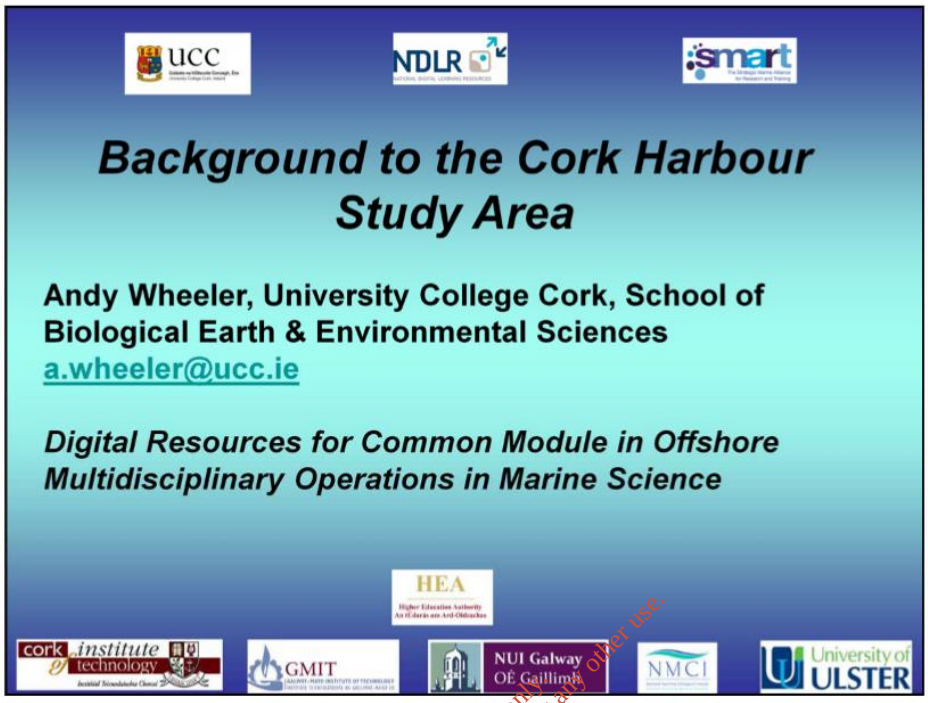
The Main Channel and central section of the Main Harbour are well flushed with residence times in the region of 10 days; residence times elsewhere are substantially greater. Those in Passage West and Lough Mahon are in the region of 25-35 days while those in Passage East are in the region of 50-60 days. Finally, residence times in the semi-enclosed North Channel are in excess of 70 days, indicative of a poorly flushed region.' Nash, S,Hartnett, M,Dabrowski, T (2011)

Concerns regarding Residence Times in the areas of discharge point and potential ecological impacts:

It is clear from the Nash study that water bodies within the region of the proposed discharge point do not have the necessary mixing process to prevent the accumulation and potential concentration of flow from the discharge point into specific area of the harbour name Rathcoursey which is already recognised as a sensitive ecological area and the north East Region of Cork Harbour

No survey has been undertaken of the tidal fauna (sponges, crustaceans, polychaete worms etc) in the receiving waters and the potential impacts from treatment process chemicals or changes in bottom salinity/oxygen levels caused by the increased discharge. In addition, only a cursory mention is given to the resident Otter population and no mention is made of the presence of breeding pairs of kingfisher along East Ferry.

Reference Material:



Title	Modelling phytoplankton dynamics in a complex estuarine system
Author(s)	Nash, Stephen; Hartnett, Michael; Dabrowski, Tomasz
Publication Date	2011
Publication Information	Nash, S,Hartnett, M,Dabrowski, T (2011) 'Modelling phytoplankton dynamics in a complex estuarine system'. Proceedings Of The Institution Of Civil Engineers-Water Management, 164 :35-54.
Link to publisher's version	http://dx.doi.org/10.1680/wama.800087
Item record	http://hdl.handle.net/10379/3477
DOI	http://dx.doi.org/DOI 10.1680/wama.800087

McMahon, T (1988)

Hydrographic and chemical observations in the Shannon estuary during 1987. Lough Beltra 1987. Proceedings of the 4th Annual Lough Beltra Workshop, Dublin.

Section 2

AQUATIC FINDING Dr Patrick Collins

Submission of Dr Patrick Collins, PhD, MSc, BSc

To whom it may concern,

The purpose of this letter is to discuss the Dairygold Co-operative Society Ltd., Environmental Impact Statement (EIS), carried out by Malachy Walsh and Partners, concerning the Specialty Cheese Facility Expansion at Mogeely Co. Cork. Specifically we are concerned with the environmental risk assessment of the wastewater input in to the North Channel of Cork Harbour from the said development – Chapter 5 of the EIS.

It is our understanding that the EIS document will provide decision and policy makers with a balanced assessment of the environmental implications of the proposed development. The purpose of the EIS is to provide managers with processes that, if followed will maximise legislative compliance and minimise environmental impact. The EIS incorporates an overall assessment of the entire project from implementation to execution to long-term recovery. In the EIS document the various component Environmental Impact Assessment sections are brought together and evaluated as a whole. The EIS states what actions are required during each phase of the operation. The EIS identifies parameters to be measured and defines critical boundaries. The EIS will usually examine alternative management strategies and make recommendations for further appraisal. This letter presumes that the EIS meets these assumptions as outlined under UN guidance on the EIS process (see Modal & Biswas, 1999).

Under such an interpretation of the EIS document, the EIS process is designed to minimise impacts on biodiversity and to maintain ecosystem goods and services (i.e. consider the needs of all stakeholders). This process is enshrined in National and International legislation - Ireland is a signatory to the UN Convention on Biological Diversity (1992 Rio Convention). A core principle of the Rio Convention is the idea that action should be taken to prevent harm to the environment and human health, even if scientific evidence is inconclusive. As such, Ireland supports a precautionary approach, whereby a lack of scientific certainty should not preclude the adoption off cost-effective measures to control environmental risks.

Under this approach, an assessment ecological risk must be carried out onany development that may impact the environment and attempts should be made to lower/mitigate against any identified risks. In the context of this project this would entail the application of a formal framework, analytical process or model for evaluating how likely it is that natural resources may be impacted as a result of exposure to one or more environmental stressors (such as dairy waste). This involves some level of expertise of

the ecosystems in question and a level of communication with identified experts in the field (where expertise is lacking).

A key component of the Rio Convention is the promotion of transparency through public participation. This involves the inclusion of stakeholders in the EIA of development projects that threaten biological diversity and also by carrying out outreach activities. Key provisions of this convention include: promoting environmentally sound development, rehabilitation and restoration of degraded ecosystems and the promotion of the recovery of threatened species in collaboration with local residents.

Based on our understanding of the EIS process and why the process was undertaken we wish to insist that additional analyses/dialogue be included before the EIS is signed off. Our chief concerns relate to the environmental risks associated with the wastewater discharge over the lifetime of the project. We appreciate that the majority of the risk assessment in the EIS concentrated on the terrestrial impacts from the site development, including the pipeline. However, the ecological risk assessment associated with the actual discharge from the pipeline remains vague and we, as concerned stakeholders ask for clarification.

Specifically as stakeholders in the marine environment of the North Channel, we believe that the scoping consultation process was inadequate. No effort was demonstrated in engaging with stakeholders. For example, there are quite a number of marine biologists who have experience working in the North Channel of Cork Harbour (e.g. Dr Robin Raine or Dr Tom Doyle of NUIG). If such expertise was utilised, the EIS might demonstrate an awareness of the presence of encystment sites for Harmful Algal Blooms (HABS) such as *Alexandrium minutum* or *Alexandrium ostenfeldii* in the North Channel *(*Ní Rathaille & Raine, 2011; Touzet et al., 2011). We believe that a risk assessment of any potential change in HABS status in the Harbour is a prerequisite.

We appreciate that the wastewater will not directly change bacterial concentrations that may lower water quality to a level that would impinge on oyster production. However, we feel that the EIS authors should have opened a dialogue with local Oystermen to put their concerns at ease (e.g. Utterly Oysters). Similarly, no dialogue was entered into with local anglers (e.g. Cork Sea Anglers Facebook Group). We acknowledge that in the age of social media it can be difficult for the less technologically enabled to be aware of the virtual communities. But, although the clubhouses are now largely virtual, these communities are active and engaged stakeholders in the area. The angling stakeholders have concerns regarding the impact of FOG on fish, especially Bass (*Dicentrarchus labrax*) and the IUCN red listed critically endangered Blue Skate (*Dipturus flossada*), which has historically been recorded from the Harbour. No detailed discussion was made in the EIS of the value/risks to the angling concerns in the area or on the welfare of elasmobranch apex predators. We believe that a dialogue needs to happen with these stakeholders and their concerns eased. Finally, no dialogue was carried out with

community groups of the immediate North Channel shore, rather consultation was carried out with communities close to the plant development. This lack of transparency and awareness of local ecological issues highlights poor communication and does not reflect on the competence of the ecology EIA of the EIS. The lack of dialogue with and inclusion of stakeholders in the EIS process contravenes Ireland's obligations under the 1992 RIO convention - the legislative article that underpins Ireland's regional and national environmental legislation.

We have some issues with some of the assumptions and language in the EIS text. We raise these issues in the expectation that they will be addressed in greater detail and/or the arguments presented in the EIS are further developed. We ask this to assuage stakeholder concerns and to maintain a transparent and engaged EIS (as recommended by the UN).

"As baseline conditions are naturally variable within the receiving environment owing to its transitional nature, no significant water quality impacts are envisaged. Thus, it is considered that there will be no significant direct or indirect effect on estuarine habitats or species."

This is presumptuous: baseline conditions in the immediate area have not been quantified as part of any EIA in this EIS. Without such quantification, levels of natural variability cannot be measured. Without baseline data, benthic community structure is assumed and regional variability in habitat and community structure is ignored. The presented 'baseline' data is based on quite crude estimates, with low sample replication and coverage giving poor resolution and no evidence of any sample QA/QC. With such an approach, local variability in benthic community of the North Channel is disregarded - with such an approach any assessment of 'natural variability' is impossible. Finally, without any suitable data, and no analyses, it is impossible to assess or presume any potential impacts on prey species or habitats.

At the very least, following a precautionary principle, a soft sediment benthic study to collate baseline data, with a monitoring programme for the duration of the outfall pipes activity should be proposed to mitigate risks. A precedent for this exists in Cork – see Eli-Lillys monitoring of their outfall pipe in Kinsale.

The project will not significantly affect prey abundance or distribution within the receiving environment nor will the project result in any significant direct or indirect habitat loss."

This has to be demonstrated statistically, not stated. This is an assumption based on no data or analyses (flouting the precautionary principle espoused in the Rio convention). It could also be assumed, without any data that an increase in wastewater volume and resulting flocculation of organic

material and settlement of FOG may lead to a change in benthic community structure in the immediate area of the discharge pipe.

"Trade effluent will be discharged via diffuser pipe on 6+ hour ebbing tide in a 24 hour period with water undergoing an ~80% exchange so that the subsequent discharge event will occur on new water coming in."

It is not clear if the hydrographic information pertains to the Harbour as a whole or just to the area immediate to the outfall pipe. Hydrographic data with relevant analyses for the areas needs to be presented in the EIS document.

"The discharge standards for the Mogeely treated wastewater have not yet been agreed with the EPA. However it is assumed that they will be the same as the existing Midleton municipal Wastewater Discharge Authorisation Licence (WWDA) Ref D0056-01 and the of the permitted discharge by Irish Distillers Ltd (IDL) which also discharge to the Midleton Main Drainage outfall under IE Licence (P0442-02)"

This is worrying. The nature of the discharge needs to be agreed upon before any movement forward. Without an understanding of the nature of the discharge, any impacts in the environment are impossible to assess. It must be possible at this stage to estimate the composition of the discharge (are there comparable cheese factories?). Clarity is also needed in terms of the discharge quantity – it should be related to the Midleton municipal discharge (e.g. in PPE units, comparisons of FOG concentration).

Finally, I must state that we are not against the development of the Specialty Cheese Facility Expansion. Rather we want to preserve what is left of our environment and its ability to provide the ecosystem goods and services that we all enjoy. I hope you appreciate that we do not want to this letter to ferment a diametric dichotomy in regards to the plant's development. Rather we hope that we can work together for what's best for the whole community.

Synopsis of concerns

- Greater engagement with stakeholders
- Greater focus on the impacts of the waste discharge
- Adoption of a precautionary approach where no/little scientific data exists
- Clarity relating to the nature and quantity of waste discharge

- Appropriate assessment of ecological risks to marine ecosystem, including focused hydrographical (FOG retention rates), marine biological (e.g. benthic community structure, elasmobranch nurseries, bass, HABS,) and social aspects

Kindest regards

Patrick Collins PhD, MSc, BSc

References

Modal, P., Biswas, A.K. 1999. Conducting Environmental Impact Assessments in developing countries.United Nations University Press.

Ní Rathaille, A. and R. Raine. 2011. Seasonality in the excystment of *Alexandrium minutum* and *Alexandrium tamarense* in Irish Coastal waters. Harmful Algae, 10, 629 - 635.

Raine, R., McDermott, G., Silke, J., Lyons, K., Nolan, G. and C. Cusack. 2010. A simple model for the prediction of harmful algal events in the bays of southwestern Ireland. Journal of Marine Systems, 83, 150 - 384.

Touzet, N., Lacaze, J.P., Maher, M. Turrel, E. and R. Raine. 2011. Summer dynamics of *Alexandrium ostenfeldii* (Dinophyceae) and spirolide toxins in Cork Harbour, Ireland. Marine Ecology Progress Series, 425, 21 – 33.

Section 3

Comments on Dairygold Proposed WWTF Outflow Greywater Release at Rathcoursey.

Source material: Volumes 2 and 3 Environmental Impact Statement (Dated November 2016) submitted for Planning Application 167031

1. Over twenty years ago Kilmeaden cheese factory produced 40k tonnes of cheese per annum. All waste was *managed on site*, through productive secondary industries or treatment stages culminating in a dedicated 150 acre constructed wetland. The Dairygold planning application, involving smaller cheese production quantities (37.5k tonnes pa by 2025, pg. 297 EISv3), has made no reference to such a scheme. Best modern day sustainability practices involve practices such as biological reprocessing, energy recovery and management at source. Provision for waste management practices commensurate with the achievement of accreditations such as ISO14001 ought to be a central tenet. There is no mention of progressive consideration in this regard.
2. The submission does not explain why a shorter pipeline route, directly to the ocean, has been discounted in favour of a longer pipeline route (14kms versus 10kms) to Cork's inner harbour, a harbour already under substantial pollution pressure, Heritage Area.
3. The ministerial ban placed on shellfish farming in waters proximal to the Rathcoursey outfall in 2002 has not yet been lifted. Inland Fisheries Ireland, in written consultee response, has recommended that possible issues of contention with shellfish production should be examined, [pg. 24, EISv3]. There is no specific response to this in the EIS.
4. The main water body associated with the wastewater discharge is the transitional 'North Channel Great Island' at Rathcoursey. The Water Framework Directive risk score for this transitional waterbody is described as '***at risk of not achieving good status'***, Natura Impact Statement [pg. 74 EISv3]. Under the Water Framework Directive, all waterbodies should achieve 'good' status by 2021, [S 6.3.2.1.1, pg. 187 EISv2]. It is proposed to discharge all future Dairygold WWTP emissions to the North Channel Great Island transitional waterbody through the existing Midleton Main Discharge Outfall infrastructure. {Note also that The Water Framework Directive has been adopted into national legislation by all member states of the EU.} This 'at risk' EPA determination was made in advance of this Dairygold proposal and this proposal in itself would render Dairygold into being the largest single contributor to waste outfall at Rathcoursey, an area under severe pressure as determined by the EPA. According to the EPA's most recent assessment of water quality in the Harbour it was deemed of 'moderate' status, [S 6.3.2.1.1. EISv2]. Yet, the overall objective for 2021 is to restore water quality to 'good status' This harbour contains pNHAs, SACs and SPAs, some with high ecological importance, [pg. 173 EISv3]. A treatment of how the 2021 objectives will be achieved while simultaneously factoring for such

large incremental waste water discharges is required in light of a planning application such as this.

5. This single entity connection proposal into the Rathcoursey WWTP Discharge outfall would be the largest single contributor to waste water outfalls into an area under severe pressure as determined by the EPA, ref. (4). A proposal such as this planning application could not be realistically considered until after the Midleton WWTP already receives upgrade. It is currently operating over capacity and has been designed for Population Equivalent (p.e.) of 10,000 and BOD loading of 600kg/day, [pg. 367 EISv3].
    - `Midleton WWTP **86kgs** BOD/day assuming 15000 population, Dairygold **100kgs** BOD/day [pg.102 EISv3].
6. Section 4.3.2.3 in EISv3 – Screening for Impact Assessment references the fact that the latest data available for water quality in the transitional 'North Channel-Great Island' is from 2012. Owing to the enlargement of the Midleton WWTP, which is operating at overcapacity and the expansion with Irish Distillers outfall, it is suggested that this planning application would require fresh data based on a new monitoring program, before any determinations could be made or any analyses stand up to scrutiny. In fact, because of the importance of the harbour for a variety of recreational uses, the commercial value of potential shellfish production, the fragile ecosystems at play and the pNHAs/SACs/SPAs, it is suggested that live monitoring data should be continuously available on a publicly accessible web site.
7. The discharge standards for the Mogeely treated wastewater have not yet been agreed with the EPA. Assumed limit levels based on the existing standards for Midleton WWTP and Irish Distillers have been applied. The entire submission is based on these assumed limit levels, expecting that they will be the same as the existing municipal Wastewater Discharge Authorisation (WWDA). The EPA however has made no formal comment on this proposal. Until such standards are agreed, it is inconceivable that planning permission could be granted, [pg. 99 EISv3].
8. Regarding BOD, the applicant states that *'the overall effect of the combined discharges from Midleton, IDL and Dairygold, Mogeely has a negligible impact on the receiving waters.'* [pg.102 EISv3]. This type of reasoning is used for all components of the discharge, such as COD and Suspended Solids. The conclusion is that there is no issue with Rathcoursey discharge. There is no full explanation then as to what is causing the EPA to determine that water quality is at risk of becoming poor and why is shellfish farming in the inner harbour is still banned. Factors such as lower harbour treatment schemes coming on stream will have been included in the EPA determination that the transitional waters are at risk for 2021 objectives.
9. The complexity of this planning application requires further time for analysis. There is a diverse variety of scientific and other disciplines, ranging from hydrology to biochemistry, required to make comment. The amassing of expert opinion to make comment over the Christmas and New Year's period is difficult.
10. Per the "Consultees" section, [pg. 17 EISv2]: *No formal written response was received from any of:*
    - Cork County Council Water Services Unit.

- EPA [pg.18 EISv2]
- Irish Water [pg.18 EISv2]
- NPWS (with responsibility for SACs and SPAs (No response received to notification document)

A proposal to add a greater amount of grey water waste discharge than the entire town of Midleton (pg. 570 EISv3, BOD Midleton town 86.25kgs BOD/day versus 100kgs BOD/day Dairygold) should absolutely require detailed written responses from all four of the above bodies, who have statutory ownership. Verbal response only was acknowledged for Irish Water, "indicating capacity in the existing public foul network and WWTP for sanitary waste water", [pg.18, EISv2].

11. There has been no reference to any systemic changes in Dairygold's Management or Management Information Systems to describe how the new on site treatment plant will be managed to appropriate standards. The existing treatment facility has not been correctly managed over many years. There is no evidence of any systemic changes being effected to provide any assurance that maintenance and management if the new on-site facility will be satisfactory.
    - The existing facility has *a chamber is no longer "fit for purpose" and, given the condition of the concrete, would not pass an integrity test. The pitting of the walls encourages* the growth of bacteria, [pg. 301 EISv3].
    - *As mentioned earlier grease accumulation is a major problem in the Balance tank which has no mechanism to clean it, [pg. 305, EISv3].*
    - *As with the other tanks the concrete of this tank is in poor condition and is unlikely to pass an integrity test, [pg. =306, EISv3].*
    - *As can be seen, from the photograph below, the visible steelwork in BioTower No. 1 is very badly corroded to the extent that a structural examination needs to be carried out urgently to assess whether it is safe to continue operating this tower, [pg.306 EISv3].*
    - *No information is available on the pH or FOG characteristics of the wastewater, [pg.317 EISv3]*

      These are examples pertaining to the current management and facilities systems regarding the existing on site waste treatment facility at Mogeely. New and substantially upgraded Systemic management systems and practices would need to be put in place. The existing facility has clearly been sub-standard and there is no evidence that a new and indeed enlarged facility would be operated correctly over the longer term.

12. The applicant has been, on an ongoing basis, discharging grey water waste into and causing pollution to the Kiltha river. Refer to Table 5-15: Q values and Pollution Status of Kiltha River, [pg. 131 EISv2]. Generally the discharges have been within the terms of the IED limits and contamination levels in discharges at the outfalls SW2, SW3, SW4 have been within licensed levels (as per Section 1.2.4 Existing WWTP Performance, pg. 299 EISv3) but the fact remains that discharges have caused the Kiltha water quality to be classified as "poor". The fact is that a progressive industry exhibiting modern day Best Practice Corporate Environmental and Social Responsibilities would take efforts to ensure that its local river would not be

polluted to "poor" classification. The applicant's submission includes details on how it has complied with licensing discharge terms but does not provide any evidence as to how it has ever attempted to resolve the pollution to "poor" water quality issue. The solution for Kiltha, the submission suggests repeatedly, is to move the waste to Cork harbour. This is not a correct redress approach for the Kiltha. It represents flawed thinking. Pollution is pollution, whether the discharges are within licensing terms or not. The applicant has demonstrated that it does not have the management vision, structures or capabilities to manage waste in a modern and sustainable way. If these were in place, the Kiltha waters would not have been polluted to have poor quality*. There is also a question to be answered here by the EPA. If discharges have been within licensed terms and the waters have been polluted to poor, then the licence limits should have required review.*

13. The terms of the existing EPA licence no. P0817-01C.2.2. [pg. 359, EISv3] stipulate that FOG is to be monitored monthly. Yet '*no information was made available on the pH or FOG characteristics of the wastewater, to Malachy Walsh and Partners, Section 2.4, [pg.317 EISv3]'.* There are many other references to continual breaching of the EPA licensing terms. No outline has been made of higher level changes to be effected to ensure that any new licensing terms will be met.
14. 'As discharges will be on an ebb tide, effluent will be carried away from the Natura 2000 designated areas of the receiving waterbody. The effluent emanating from the discharge point is lighter than sea water so it rises to the surface, spreading out as it does so, thus becoming more diluted by the friction of the seawater on the rising column. ***Generally it occupies the top one third of the waterbody at the surface*** and continues to be diluted further. As it sinks deeper as it travels, it eventually diffuses through the entire waterbody15. ***The discharge will quickly diffuse into the overall waterbody and owing to the ebb tide, will be carried out and away from the SAC/SPA.',*** [pg. 102 EISv3] This argument is a central tenet of this application. It is too vague and is a qualitative judgement in nature. This point is so central that a quantitative analysis which will withstand rigorous scrutiny is required, for all polluting components in the discharge. The 'mixing zone' needs more analysis. Computer models and drawings are required.
15. Figure 7, page 146 EISv3, indicates that the SAC and SPA limits are too close to the discharge zone. This mixing zone with contours of pollution levels for all discharge components needs to be included.
16. In the Malachy Walsh and Partners 'Screening for Appropriate Assessment Document' [pg.157 EISv3]; states in November 2016: *'However, potential does exist for **significant** water quality impacts to Cork Harbour SPA (004030) and or Great Island Channel SAC (000077) during the operation phase of the proposal owing to operational discharges from the Dairygold WWTP. Therefore, it is concluded that significant water quality impacts to the Cork Harbour SPA and/or the Great Island Channel SAC cannot be ruled out at this stage.* **Further assessment is required.**'* Formal scientific closure of this open point is required with quantitative and modelling data made available. Refer to comments regarding residence times and mixing zone depth profiling in point 20 below.
17. In the Malachy Walsh and Partners 'Screening for Appropriate Assessment Document' [pg.157 EISv3] states in November 2016: '*However, during the operational phase, habitat alteration could potentially occur as a result of water*

quality impacts from WWTP discharge to the harbour. Therefore, it is concluded that significant habitat alteration impacts to the Cork Harbour SPA and/or the Great Island Channel SAC cannot be ruled out at this stage. ***Further assessment is required****.'* Formal scientific closure of this open point is required with quantitative and modelling data made available. Refer to comments regarding residence times and mixing zone depth profiling in point 20 below.

18. In the Malachy Walsh and Partners 'Screening for Appropriate Assessment Document' [pg.157 EISv3] states in November 2016: Regarding Cork Harbour SPA Section 4.6.2 *concluded that significant water quality impacts cannot be ruled out and therefore disturbance/displacement of SCI species within the Cork Harbour SPA owing to water quality impairment arising from operational discharges cannot be rule out. Therefore, it is concluded that significant disturbance/displacement impacts to the Cork Harbour SPA cannot be ruled out at this stage.* ***Further assessment is required****.'* Formal scientific closure of this open point is required with quantitative and modelling data made available. Refer to comments regarding residence times and mixing zone depth profiling in point 20 below.
19. In the Malachy Walsh and Partners 'Screening for Appropriate Assessment Document' [pg.157 EISv3] states in November 2016: *'It has been concluded that the proposed Dairygold development is likely to have a significant effect, or significant effects cannot be ruled out at this stage, on the following Natura 2000 sites: Cork Harbour SPA (004030), Great Island Channel SAC (001058). Further assessment is required to determine whether the project is likely to adversely affect the integrity of these Natura 2000 sites. This assessment is presented in the Natura Impact Statement (NIS)', [pg. 160 EISv3].* ***Further assessment is required****.'* Formal scientific closure of this open point is required with quantitative and modelling data made available. Refer to comments regarding residence times and mixing zone depth profiling in point 20 below.
20. The integrity of the entire Natura Impact Statement depends the applicant's premise [NIS Section 7.7 pg. 117 EISv3] that '*The trade effluent is being discharged immediately south of the Ballynacorra River Estuary of Cork Harbour SPA and SAC into the Ballynacorra River channel. Water quality of the trade effluent discharge will meet the proposed Emission Limit Values (ELV) and will have no discernible effect on receiving waters outside the mixing zone. Trade effluent will be discharged via diffuser pipe on 6+ hour ebbing tide in a 24 hour period with water undergoing an ~80% exchange so that the subsequent discharge event will occur on new water coming in. Thus, considering the water exchange within Cork harbour it is unlikely that significant cumulative water quality will arise.*' The modelling data to support this point is not present. Impacts on habitats and Species of Conservation Interest, SCIs, per table 9, Section 7.6.1, EISv3, also depend primarily on this unsupported statement. The study by *Nash, S,Hartnett, M,Dabrowski, T (2011) 'Modelling phytoplankton dynamics in a complex estuarine system', Proceedings of The Institution Of Civil Engineers-Water Management,* used detailed current and salinity profile information to generate simulation models of the movement of the water bodies in the Rathcoursey and East Ferry. The computer modelling was backed up by physical dye studies and remote sensing. The study indicated significant residence times and low exchange rates of water bodies in the Rathcoursey and North Eastern Corners of Cork harbour. Nash's study suggest that while the flow

through East Ferry is significant there are a number of significant back eddies that significantly **extend the 'Flushing Period' to between 50 and 60 days.** This is a peer reviewed work and Dr. Steven Nash (has published 30 peer-reviewed publications in international journals and conference proceedings) is a director of research in NUI Galway's Ryan Institute for Environmental, Marine and Energy Research and in the newly-established national centre for Marine Renewable Energy Ireland (MaREI). His models typically show residence times in the region of 40-50 days in the areas adjacent to the mixing zone.

This extremely long residence time effect is practically and visibly very evident in many areas of the harbour and in fact is suspected to lead to indefinite and long term accumulation of waste sediment.

Saleen & District Residents' Association occasionally organize litter pick-ups in the Saleen Creek area and the propensity for waste to settle in the lower flow areas of the harbour is always in evidence. This is borne out by contrasting experience with high flow rate areas of the harbour, such as in the Aghada pier area.

Mixing zone complexity and inadequate models are also central to the outfall impact on the adjacent SACs, SPAs and pNHAs. This point has been covered in a separate comment by Saleen and District Residents' Association by reference to a salinity profile study in Cork Harbour as the River Lee enters the more saline environment of Cork Harbour conducted by Professor Andrew Wheeler, Chair of Geology, Head of Geology, School of Biological, Earth and Environmental Sciences of University College Corks. *'Generally the effluent will occupy the top one third of the waterbody at the surface and continues to be diluted further. As it sinks deeper as it travels, it eventually diffuses through the entire waterbody' a*s stated in the NIS is not sufficiently rigorous, [pg. 102 EISv3].

21. Section 1.2.1 EISv3. Irish Water have (verbally) dictated the WWTP Outflow connection point and but have not stipulated discharge waste content limit levels. This fact in itself for a polluter larger in scale than projected Midleton town upon population growth indicates that more consultation and cooperation needs to occur between Irish Water, the EPA and Cork County Council Water Department.
22. Many of Cork Harbour's Key Regional and Local Stakeholders have not been consulted. Port of Cork, for example has a Recreational and Leisure Strategy for Cork Harbour as one of its core objectives. ECADs remit extends to its environs. No communication, for example has been initiated.

Conclusion

Cork harbour is one of the world's finest natural harbours. Its waters, habitats and ecosystems need to be protected to the highest possible standards. It attracts large numbers of anglers from Ireland and UK, such as during the Annual Cork Small Boats Festival, when it is fished as a species hunt, with a reputedly high species count. Cork harbour angling service companies such as Gearys' Angling Services, include East Ferry in their destination. Ireland is recognised as being an outstanding fishing holiday destination in Europe. The value of rod and line tourists is very high and should be enhanced by ensuring that sustainable effluent discharge into the harbour only is

tolerated. This means than no effluent should ever comprise an ‘excellent’ water quality status and incremental effluent should only be accommodated upon achievement of ‘excellent’ water quality rating. There is much more than the harbour water quality at stake here. Ireland’s reputation as a country tolerating only high quality industrial waste management systems must be enhanced. Food exports alone constitute ~E10B of our exports. Food companies such as Kerry Group, trading internationally, have market capitalisations in the tens of billions of Euro. For industries ranging Tourism right through Food production, the incremental cost of only tolerating ‘excellent’ water quality is a very small price to pay and is an investment which will deliver huge return. Any planning proposal for effluent into the harbour should only be considered in light of an ‘excellent’ water quality target.

Section 5

LACK OF CONSULTATION

Good practice in preparing EISs involves clear and focussed consultation with various parties at key stages in the assessment process. Statutory consultation requirements concern decisions by competent authorities taking account of feedback from public consultation along with observations and submissions from other authorities with specific environmental responsibilities.

The EPA draft Guidelines and Advice Notes on the EIS/EIA process make reference to **'FACILITATING BETTER CONSULTATION'**

'*Consultation is a key element of each stage of the EIA process. The requirement for consultation is included in the definition of EIA in the EU Directives and there are procedures for statutory consultation at various stages in the EIA process. These are detailed in the regulationsand they include a provision for formal scoping consultation which is triggered when a developer makes a formal scoping request. This section concentrates on pre-application consultation that is carried out to inform the preparation of the EIS. Successful consultation when preparing an EIS is methodical, proactive, informative and focused. While it is generally best to commence consultation as early as possible, it is not obligatory during the preparation of an EIS and the extent to which it is carried out is decided by applicant and their team on a case by case basis'*.

Most consultation carried out for the preparation of an EIS takes place normally with the Planning Authority or other competent authorities and those **parties that are most likely to be directly affected**. Consultation by a developer with the wider public during preparation of an EIS tends to be used where the affected population may be very large and/or difficult to identify. To be of value, such consultation must have a sufficient time allocation and be expertly structured to ensure clarity and consistency.

In preparing for this major development, limited consultation took place with a small number of people that lives near to the site of the new factory. No meaningful consultation took place with residents or residents' bodies along the proposed pipeline route or adjacent to the outfall point was undertaken. The proposed outfall point is considered to be a significant aspect of the Dairygold/Tine application and the lack of consultation in this regard is unacceptable practice.

The Dairygold proposal constitutes a major and very technical planning application, the full analysis of which requires considerable time and expertise. The proposed effluent outfall of this application would be at one of the most precious beauty spots in our district. The proposal therefore presents the danger of potential serious ramifications for the environment, ambience and people of our district.

We believe that, in these circumstances, the applicant should have consulted with the people and representative bodies of our area, before planning permission was applied for. No such consultation or contact of any kind was engaged in or offered during this 'pre-planning' stage.

The first that local people and members of our Association knew about this planning application and its ramifications for our district was on Sunday December 4th, when one of our members saw a planning notice near the side of the road by a sewage holding-tank at Rathcoursey West. This was four days following the initial application for planning.

When news of the application then spread rapidly throughout our district, many local people expressed annoyance and surprise that this application was made without they or their representative local bodies being consulted. Dairygold and its consultant spokesperson then expressed willingness to hold post-application group meetings or private meetings with concerned individuals. One such meeting subsequently took place with members of the Aghada Community Council, at the request of that Council and two small 'public meetings' were later organised by Dairygold at a room in Midleton Park Hotel.

Our Association is keen to point out that meetings such as the above-mentioned in no way constituted 'consultation' with the people or representative bodies of our district, who should have been but were not approached or consulted by the applicant during the pre-planning stage. We believe that the primary purpose of post-application meetings organised by the applicant was to mollify public reaction and reduce formal objections to the application. Their purpose was not to 'consult' but to 'pacify'.

Saleen and District Residents' Association believes that lack of consultation with numerous, significant stake-holders in our area constitutes a serious flaw in this application.

Section 5

NATURA IMPACTPaul Whelan

Comments on the Natura Impact Statement

The Natura report examines the current state of the environment at habitats possibly affected by the Dairygold development. It does not examine the possible effects of the Dairygold development on these habitats in any scientific way; it simply draws 'hopeful' conclusions that the development will not adversely affect the habitats.

The report appreciates the value of the benthic fauna on the Natura habitats and yet fails to survey this important habitat.
The benthic fauna are essential as a food source for the Natura species described in the report. Damage to the benthic fauna (and indeed flora) will affect all the habitats at the eastern end of the harbour.

The report draws conclusions as to how the Dairygold development will affect the habitats (no appreciable deterioration) in the future without examining or referring to existing reports on the abiotic environment factors that will be affected by the development. I refer specifically to the following:

1. The report fails in particular to examine the physical and chemical properties of the discharge at Rathcoursey and its possible affect on living organisms.
2. The report does not refer to the factors affecting the dispersal of the discharge at Rathcoursey in the light of the following processes / parameters:
    a. The turbidity currents in the East Ferry channel
    b. The 'mixing area' which is described in other reports on Cork harbour as being mobile under the influence of the tide

c. The flush of water in the harbour. Extensive studies have being carried out on this and none have be referenced in the report.

Without considering the above it is impossible to draw conclusions on the future effects of the Daiygold discharge at Rathcoursey, yet the report draws positive conclusion after positive conclusion. The report, it seems, was written without scientific logic or with a disinterest in discovering the true nature of the Rathcoursey discharge on the habitats.

Below are some specific points worth noting in the Natura report.

Specific considerations on the Natura report

Sections 5.0 to 5.2.1 of Chapter 5 on Ecological Impacts are missing from the PDF copy of the Main EIS document received by local residents of the East Ferry area.

Page 8: states that the main water body associated with the waste water discharge is the transitional 'North Channel Great Island'. I think this is an oversimplification as the Saleen Estuary must also be included specifically as it is a similar habitat and will be vulnerable to grey water influx as soon as a discharge occurs. Indeed it is possible more vulnerable to discharge that other bodies of water within the examined area.

The flushing of water at both these sites can take up to 76 days (see Nash report). Thus the Saleen Estuary would be at risk (high risk) '*of not achieving good status*' .

Re 7.3.1

This paragraph makes many assumptions and has many tenuous words or statements such as '*considered to be highly variable'* or *'discharge is not expected to significantly negatively impact'* prior to concluding with an assertive *'therefore'.*

This is a very unscientific way to come to a conclusion. Specific field work needs to be carried out to evaluate many of the statements in the paragraph.

'*The receiving water at Rathcoursey is dynamic in terms of its physicochemical properties, owing to the tidal nature of the waterbody and the various freshwater influences acting upon it. The benthic community,* ***which is integral to the habitats and species designated within the area****, is considered to be highly variable in terms of density and composition across the various physicochemical gradients within the receiving environment. The proposed discharge is* ***not expected*** *to significantly negatively impact or indeed alter the dynamic, typically estuarine properties of the receiving water as the concentration of nitrogen and BOD will have* ***no discernible effect on the receiving waters****. Therefore, it is envisaged that the benthic and infaunal community and subsequently the associated habitats and species of the Cork Harbour SPA and the Great Channel Island SAC will not be significantly impacted owing to operational discharges*.'

The simplified conclusion cannot be made in the light of the above and is one of the major weaknesses in the report. The statement that the benthic community will not be adversely affected needs more scientific attention as it is critical to the Natura 2000 evaluation on the area.

Re 7.4.1.1

This paragraph is again an example of poor scientific thinking. Because there are no known '*qualifying species listed*' does not mean '*that there is no potential for disturbance of species*'.

Re 7.4.1.2

This section considers only the bird populations of the area. There are other species that can be affected by the discharge.

The lichen and diatom populations will be under threat from the discharges. These organisms, for example, do not depart when the discharge occurs, and then return.

Taking the irresponsible assumption that only birds are of interest (probably because of their appeal to amateurs whom have contributed significantly to data collection) the following statement from 7.4.1.2 is naive and fails miserably to follow any Aristotelian logic that a biologist, environmentalist or any scientist or school boy or girl would apply, namely:

'the majority of SCI species feed in the intertidal, and are unlikely to be impacted by operational discharges, ***as these species are unlikely to be present during discharge events****.'*

It needs to be pointed out that many of these species feed on material (invertebrates in particular) that are likely to be affected by the discharge. The conclusion drawn at the end of this section is **not reasonable**:

It is reasonable to conclude that significant habitat alteration impacts within the Cork Harbour SPA will not arise as a result of the proposed discharge.

Further under section 7.4.1.2 many unreasonable and unscientific conclusions are made under the heading **Operational phase**.

Some examples are,

(i) it refers specifically to bird populations again without evaluating their dependence on the benthic fauna

(ii) its uses the assumption that benthic species will not be impacted (no study to support)

(iii) '*the dilution and flushing capacity of the receiving water is considered adequate to assimilate the proposed discharges.*'

Re point (iii) above:

Dilution: due to the complex nature of water flow in the channel and the further complex mixing of fresh and salt water and its tidal nature and the physical and chemical properties of the discharge, it is reasonable to conclude that discharged material will not be diluted adequately, indeed parts of it may be concentrated by vortex currents, surface wind and other forces.

Flushing: the flushing cycle and rate in Cork Harbour has undergone considerable study over the years. Flushing is not adequate in the area of the discharge pipe, or in any of the mudflats at the east end of the harbour. Indeed a duration of 76 days has be calculated for much of the east end of the harbour due to its extensive shallow depth abutting the deeper shipping channel to the west.

Conclusion re the Natura report

1. Too many assumptions
2. It does not differentiate between the proposed discharges when the project is concluded (700m3) to 2700m3 in the medium term to a possible 4000m3 (nearly 6 times more that in the initial phase) in the long term.
3. The report fails to understand the complex nature of the water system carrying the discharge
4. The report fails to acknowledge in any way the very very poor flushing rate of the waters in the area of the discharge.
5. The report is focused on bird populations only
6. Data on bird populations in the area is of high quality but data on other species in inadequate and desk-top studies should have illustrated that point. Much work on biodiversity needs to be done in Ireland. This is not a criticism of our National Biodiversity Data Centre, but rather a criticism of the lack of field work carried out in the preparation of the Natura report.
7. The report treats the species protected as isolated object whereas they depend on a significant food chain which is likely to be adversely affected by discharges.
8. It is worrying that this Natura Impact Statement has NO worries at all about the proposed development and the discharge. It describes NO areas for further study. All will be perfect and we should all be so happy that potentially 4000m3 of discharge will enter Cork Harbour in an area where the flush duration is as long as 76 days!

Comments on Screening for Appropriate Assessment

No comment.

Comments on Field Surveys

1. The Natura 2000 report states that the benthic fauna will not be impacted by the discharge at Rathcoursey, yet there is no survey of the benthic fauna.
2. There is no survey of lichens which are critical for evaluation of the effect of the discharge in rocky seashore areas that potentially would be washed by the water carrying the discharge.

The Water Quality survey which shows poor quality of the river Kiltha is valuable in that it shows the how Dairygold has polluted the waterway it currently uses. It also calls into question the value of its discharge licence

Section 7

Assessment of Alternatives in the EIS

Lack of Alternatives

We believe that in an application of this magnitude, the applicant is obliged to properly and *seriously examine and consider* suitable alternatives in matters such as the emission of effluent and the suitability of emission locations.

The company's EIS assessed a number of alternative pipeline routes but *failed to assess alternative outfall sites*. This contravenes **Directive 2014/52/EU**. *

Dairygold appears from the beginning to have been wedded to the emission of its effluent into the inner waters of Cork Harbour at Rathcoursey West; one of the most picturesque parts of the harbour. It argues that it was pointed in this direction by *Irish Water*; which already manages a sewerage pipeline to and a holding tank at Rathcoursey West. Dairygold's further investigations into the matter appeared to concentrate on supporting and justifying the usage of the Rathcoursey West outfall point; to the neglect or virtual exclusion of properly examining the feasibility of any other outfall alternatives.

We believe, for example, prior to its application for planning permission and a discharge license, the company neglected to examine in any detail the feasibility of emitting its waste-water into the open sea somewhere to the south or southwest of its Mogeely plant. Such outfall points would be nearer to the plant than an outfall at Rathcoursey West. More importantly, they would lead directly to the open ocean, where dilution would many times greater and the risk of pollution much less than in the inner waters of our enclosed 'Dalmation-type' Harbour, where water retention levels are high.

We now understand that, at the end of August 2019, the Company has made a belated submission to the EPA on such alternatives. We would point that, by that time, the Company had *already* laid down virtually all of its pipeline between Mogeely and Rathcoursey West and that such a submission might therefore be considered to be a cynical 'after-the-fact' ploy to cover up the Company's failure to actually and seriously examine and consider alternatives, as it is required to do in the first place.

*The EIA Directive requires an EIS to contain: 'The presentation and consideration of the **various reasonable alternatives investigated by the applicant** is an important requirement of the EIA process. These indicate the main reasons for choosing the project that is being submitted for consent describing how environmental considerations were taken into account. The objective is for the developer to present a representative range of practicable alternatives to clearly show how environmental issues were considered at key relevant stages in the design process and how these were balanced against other issues to arrive at the final selected option.

Section 7

Tourism

Paragraph 4.2.4 **Tourism and Amenity Resources** does not include Rathcoursey West / East Ferry in its evaluation for tourism. East Ferry is famous amongst bass anglers, the lower channel between the mouth and the marina at Marlogue is a very productive bass fishing area. East Ferry is usedas a recreational facility by tourists, locals and children. Sailing courses are based in Marlogue. East Ferry is used daily by kayakers, sailors, windsurfers, rowers and fishermen. East Ferry Pier is the headquarters for East Ferry Rowing Club. A special area of conservation lies immediately to the north of the proposed waste outfall point & Saleen creek lies on the far side which is a tidal mudflat where waders, wildfowl & many other bird species gather.

On the south side of Saleen creek, is the site of a Megalithic tomb that is partly submerged at high tide.

Section 8

CONCLUSION

We request that the Competent Authority **REFUSE** permission. Any consideration to grant consent for this project by the relevant authority in our opinion contravenes EU directives.

In Malachy Walsh and Partners "Screening for Appropriate Assessment document" PG 157 eisV3 "*It has been concluded that the proposed Dairygold development is likely to have a significant effect, or significant effects cannot be ruled out at this stage, on the following Natura 2000 sites: Cork Harbour SPA (004030), Great Island Channel SAC (001058). Further assessment is required to determine whether the project is likely to adversely affect the integrity of these Natura 2000 sites.*

We are of the opinion that a much greater scientific study needs to be carried out to assess the impact of this effluent on the ecological system of Rathcoursey West / East Ferry

****

Signed on behalf of Saleen and District Residents' Association:

Jerry O'Brien (Chairperson)

7 Ferry Grove,

Midleton,

Co.Cork.

0868262746