

SMTW Environmental DAC
c/o Ward Cross
The Ward
Co Dublin

An Bord Pleanála,
64 Marlborough Street,
Dublin 1
Sep 15th, 2024

RE: F23A/0636

Dear An Bord Pleanála,

I would like to submit this appeal on behalf of SMTW Environmental DAC. The appeal is in relation to the decision by Fingal County Council, dated August 21st 2024, to approve planning application F23A/0636 from the daa.

I include the submission acknowledgement (245646E) dated July 31st from Fingal County Council as proof of the submission by SMTW Environmental DAC on the application.

The submissions made to the Planning Authority have not been taken into account and the documentation referenced in these submissions has clearly not been read and understood. The daa has failed to address the many issues raised in the submissions and the Planning Authority has failed to take them to task and to understand the gravity and extent of the PFAS/PFOS exposure at Dublin Airport and its risks to the environment and public health. The EIAR and AA have not adequately addressed the PFAS/PFOS issue and therefore it cannot be determined that there are no Significant risks to European sites or public health.

Yours Sincerely

Liam O'Gradaigh

(obo SMTW Environmental DAC)

The Planning Officer's Report is broken into two sections. The first part is dated December 14th, 2023, and the subsequent report is dated August 15th, 2024. The second part of the report was due to the request for additional information that was deemed Significant Additional Information.

Section 2.4 lists the main points raised in the 6 third party observations:

1. *The applicant not assessed and confirmed the presence of PFAS contamination in soils and groundwater on the Airport campus.*
2. *There is a lack of comprehensive reporting and assessment on PFAS contaminating water resources. Compensation measures need to be undertaken for the reburial of contaminated soils and removal of contaminated soils.*
3. *A consultation should be undertaken with the EPA, Fingal CC, Health and Safety Authority and daa.*
4. *PFAS contamination within Airport Campus has been known since excavation of the North Runway in 2017.*
5. *The FI response does not alleviate concerns around potential contamination of groundwater into receiving waters as a result of the development.*
6. *The applicant is ignoring the PFAS/PFOS contamination, and the NIS is deficient of proper assessment on the impact on European sites.*
7. *The cumulative impact on the contamination at the Apron 5 development site should be assessed in conjunction with this application.*
8. *FCC should refuse the application based on a lack of screening and assessment of PFAS/PFOS contamination and the impact on European sites.*
9. *Treatment and disposal of contamination on site is to be considered, proposals need to be presented in the EIAR for public knowledge.*
10. *Impact PFAS would have on the proposed Metro at the airport and how will the metro tunnel impact the PFAS and groundwater.*
11. *Page 3 of the 2020 of the Materials management Design report, contains references to 18 reports that have not been provided.*
12. *Page 19 of Materials Management Design Report noted the USEPA Regional screening levels are PFOS 0.0001 72mg/kg and PFOA 0.000378mg/kg. The actual levels in soils are reported at 1.151mg/kg for pfos and 0.015 for PFOA. This is 880- and 40- times exceedance of the USEPA guidelines.*
13. *There is buried contaminated soil around the water attenuation tank. Boulder clay will be used which is not impermeable as it will have gravel lens. The laboratory permeability test was unscientific as permeability tests must be undertaken on insitu soils.*
14. *Highly contaminated soil was put into ground where water attenuation tank is proposed, no reassurance that the proposal will ensure soil will not allow contaminants to leach out into groundwater.*
15. *No consideration given if potential leaks occur in the surface water tank accelerating the contaminants into ground water.*
16. *The burying of contaminated soil to date has been putting human lives at risk.*
17. *Full series of borehole groundwater monitors should be required around the entire airport until PFAS contamination is fully removed.*

18. *A full site investigation should be carried out to identify the extent of contamination instead of dealing with contamination as its found. Specific remedial measures and environmentally assess the entire operation should be set out in the EIAR.*
19. *Existing flooding occurring at Forrest Little Golf Club haven't been alleviated and concerns whether the proposed development will cause further flooding.*

It is very clear from the list above that the main concerns of the submissions were the major PFAS/PFOS contamination at Dublin Airport and the effects of the proposed development. In the submission from SMTW Environmental DAC to the Significant Additional Information, it stated that the response from the daa to the third party observations was wholly deficient and only a single paragraph was given to address the observations.

The response from the daa in the single paragraph did not answer the serious concerns of neighbouring communities regarding the potential contamination of groundwater and resulting migration from the Airport lands into the waters used by local communities and farm activities. The Environmental Impact Assessment Report (EIAR) did not assess the extent of contamination in groundwater or soils and therefore failed to adequately show what measure are being taken to protect human health and the environment.

It is not acceptable that statements of guarantee on 'Best Practice' regarding mitigation during the development are acceptable. It is worth highlighting that mitigation measures should not be considered when quantifying 'Significance' of a proposed development.

It was pointed out in our response that to satisfy EIA legislation that:

'there needs to be a structured grided site investigation of the entirety of the lands to fully indicate to the public and planning authorities the nature, extent and concentration of PFAS pollution. Where hotspots are found, further investigation is required to identify the size of the hotspot in more detail. Following this a detailed plan of mitigation needs to be presented as to how this contamination is to be adequately dealt with given the nature and extent of the proposed works and how these measures will mitigate against migration to the neighbouring communities.'

The response from the daa failed to go into any detail about the treatment and/or disposal of contaminated soil. This information needs to be presented in clear detail so that they can be assessed by the public and relevant authorities.

In Section 2.5.4 the planning report states:

"The DAA have declined to avail of the opportunity to prioritise remediation of the consequences of past and ongoing actions and inactions for stated reasons of a commercial nature. It is important at this point to acknowledge that the purpose of this assessment is to facilitate the planning authority to consider and reach a conclusion on the proposal by the applicant. The consequences of actions or inactions of the DAA to a longstanding known pollution event falls outside the remit of this report."

It's clear that this application fails to address the longstanding and ongoing pollution event arising from airport operations. Therefore, the application fails to screen for in-combination pollution events and is

deficient. We find it unbelievable that the ongoing pollution and remediation of past pollution is being overlooked “for commercial” reasons.

This is our community that is being polluted by the daa, for commercial gain in the name of the Irish State and is being overlooked. We appeal to An Bord Pleanála to ensure that daa are forced to tackle this issue and refuse permission for this proposal until the daa get their house in order in the interest of protection of the health of us Irish Citizens.

In section 2.6.3 it states:

“The Planning Authority's environment division reviewed the submitted response to Request for Additional Information’ Section 2 A to G and the updated Water Framework Directive Assessment Screening Report. The senior engineer reports that the reduction in load to the river is significant and on this basis recommends approval of the project, notwithstanding the uncertainty over the projected BOD level in the river, This recommendation is based on the proposal catering for the current 32million passenger limit.”

It is known that this passenger limit has been exceeded and that it will continue to be exceeded. Therefore the submitted response is NOT acceptable unless the projected BOD levels are clearly set out by the daa and proven by continuous monitoring to the local authority that are available for public review on the compliance portal.

In section 2.12.2 it states under ‘The Natura Impact Statement’ that:

“B (i) While not included in the original NIA, contamination testing of soil when removed from the site is now included as a mitigation measure in the EIAR.”

The updated NIS states:

“Soils within the airport will require the excavation and there is a possibility that these soils have been contaminated by airport-related activities in the past. Mitigation measures will be in place in relation to soils and soil movements within areas of excavation airside. A watching brief will be in place on site in consultation with the project ecologist. Each excavation area will be inspected for contamination. If the site is within 30m of a drain or watercourse or soil is to be removed off site, contamination testing by a registered facility will be carried out. If the soil contains contaminants above the compliance levels remedial action will be taken in line with legislative guidelines and removed to a registered facility.”

This is an astonishing statement to add to the NIS. It is not a ‘possibility’ that the soils have been contaminated. This has been proven and large scale PFAS contamination exists throughout the airport. It is incredible that the NIS does not refer to PFAS. In fact, in the whole of the document titled ‘Folder B – Updated Report to Inform Appropriate Assessment (AA) – AA Screening & Natura Impact Statement (NIS)’, there is no mention of PFAS. It is very apparent that the consultants working for the daa and the Fingal Planners did not read the information provided in the further information request detailing the extensive PFAS contamination and providing links to the various reports detailing the contamination. It is very clear that PFAS contamination has not been screened out in the AA assessment and NIS. This is an incredible omission, and the Planning Authority have failed to take account of the gravity of PFAS

contamination and its effects on the water streams and European Natura sites and on the health of the public.

In section 2.12.3 the Planner's Report states:

"The revised AA Screening Report has satisfactorily addressed all points raised in the FCC RFI. There is no possibility of any significant effects arising on any European site, during either the construction or operational phase, other than, potentially, on Baldoyle Bay SAC and SPA, either caused by the Airfield Drainage Project alone or in combination with another plan or project. There is a direct pathway, via water (surface water) between the proposed development site and Baldoyle Bay. As confirmed in the AASR there is no other pathway to these (or any other) European sites, such as via air."

Again, this is an incredible statement to make from the Planning Authority who obviously are not equipped with the skills to understand the gravity of the PFAS contamination. The revised AA Screening Report does NOT address the points raised in the submissions with PFAS contamination.

The report further states that:

"The revised Natura Impact Statement has acknowledged (with an additional paragraph in Table 13) that potentially contaminated soils within the airport will require excavation. The NIS now includes additional mitigation measures to address this possibility. The mitigation measures set out in Table 13 of the NIS are comprehensive. The revised NIS does not specifically include an analysis of quantitative improvements on water quality compared to the existing situation, as requested in the RFI. It is nevertheless accepted that the applicant has provided sufficient evidence to confirm that the construction and operation of the proposed Airfield Drainage Project will not result in direct, indirect or In-combination effects which would adversely affect the Integrity of the relevant European Sites (Baldoyle Bay SAC and Baldoyle Bay SPA) in light of their conservation objectives."

The only additional wording added to Table 13 was:

"Soil Contamination

Soils within the airport will require the excavation and there is a possibility that these soils have been contaminated by airport-related activities in the past. Mitigation measures will be in place in relation to soils and soil movements within areas of excavation airside. A watching brief will be in place on site in consultation with the project ecologist. Each excavation area will be inspected for contamination. If the site is within 30m of a drain or watercourse or soil is to be removed off site, contamination testing by a registered facility will be carried out. If the soil contains contaminants above the compliance levels remedial action will be taken in line with legislative guidelines and removed to a registered facility."

That is the extent of the mitigation added by the daa. This is wholly inadequate. The RFI requested an analysis of quantitative improvements on water quality compared to the existing situation and the daa failed to provide the requested information. Yet the Planning Authority accepted this. This is clearly not acceptable.

The conclusion in section 2.12.4 that the proposed development will not have a significant adverse impact on any European site cannot be justified with reference to the known major existing PFAS contamination at Dublin Airport.

Section 2.13.2 references a schedule of 72 mitigation measures in Appendix 9 of the RFI addendum. However, Appendix 9 does not exist in the RFI material uploaded by Fingal County Council to their planning portal. Therefore, it is impossible for the public to comment on material not available to them.

In section 3.1 it states:

“No further intensification could be achieved and demonstrated by no increase in ATMS, no increase in the number of de-icing activities as indicated by no increase in importation of de-icing materials.”

What this statement fails to take on board and into consideration is planning application F23A/0781. The intent of this application is an intensification of use of the airport and the application seeks to lift the passenger cap from 32m passengers per year to 40 passengers per year. The planning authority have failed to consider the extra aircraft movements and the additional associated de-icing materials. Therefore, this application fails to consider in-combination effects of parallel projects and is a classic case of project-splitting.

In section 3.2.9 commentary is provided on the assessment by Brady Shipman Martin and WSP on Soil, Waste and Contamination:

“It was noted that submissions have been received from third parties with concerns regarding the presence of PFAS. The Council is aware of historic PFAS contamination from firefighting foam at the Airport. Recently the Airport published a report on the monitoring undertaken by them of the soils at contamination sites, groundwater and of streams draining the airport.

The proposed works in this application are intended to address the ongoing pollution from de-icing activities and not intended to address PFAS contamination. *The Planning authority consider it unnecessary to make the implementation of the proposal contingent on addressing PFAS contamination. There are measures to deal with the monitoring for contamination of excavated soils in this application and the disposal off site if they arise which is an acceptable mitigation measure.*

The local authority has powers under the water pollution acts which are separate to the planning acts to require measures to abate water pollution or the risk of water pollution, The issue of PFAS pollution is subject of ongoing interaction with the Dublin Airport Authority.”

The statement highlighted in bold above shows that the proposed works will not address the PFAS contamination. The very fact that it is known that there is PFAS contamination at Dublin Airport and that this application is to excavate through this contaminated material which will cause it to migrate during rainy weather etc, it is alarming that the planning authority are of the opinion that they have no input into safeguarding the environment as a result. The entire area to be worked on must firstly be evaluated for the concentrations of PFAS contamination and other contamination and only then can an environmental assessment be made as to the consequences of the proposed works and the necessary

mitigation measures put forward to deal with these issues. Leaving such serious concerns to a contractor during the works is not a proper way to deal with this serious environmental problem.

“It is noted in the application that contamination when excavating is a risk and may require special disposal off site. The reburied soil highlighted by the third parties, is not a part in this application and consultation held between different parties around PFAS at the airport is outside the remit of planning and is a matter that is dealt with under the water pollution act and the health and safety authority. The planning authority acknowledge PFAS contamination has been known since excavation of the North Runway in 2017 and it should be noted that Apron 5 development did not cause PFAS contamination however historic PFAS was identified and exported for disposal. Excavation of contaminated soils if they occur on this project will require them to be disposed of appropriately. Disposal off site of contaminated soils does not need to be considered as part of this application. The disposal site will require assessment under the appropriate legislation of the jurisdiction where the site is located.”

The above opinion is seriously flawed. It should be a condition of any planning that contaminated material found on site MUST be disposed of offsite in accordance with statutory regulations. Contaminated soil cannot be buried elsewhere on site WITHOUT a full EIAR assessment on the potential consequences of same and a full analysis of proposed mitigation measures with backup monitoring to the specific locations. There are a large number of groundwater wells in the vicinity of the airport used for food production that will spread this contamination if not adequately dealt with through a proper EIA. Secondly and more importantly as admitted by the Planning Authority, they are well aware of PFAS contamination at Dublin Airport for years now. However, we the public have only been made aware of this recently and are seriously worried about our environment and the mitigation of pollution. What is being suggested by the report is that it is nothing to do with planning and we should go elsewhere to prevent such further occurrences at Dublin Airport. This is not right and not acceptable. After all, the application is supposed to be for the cleaning up of pollution of waters due to airport operations. The removal and disposal of contaminated soil WILL NOT solve the remaining groundwater contamination that this material has caused and therefore this must be dealt with by the daa NOW under the EIAR and not left to a contractor who has no commercial interest in cleaning up the contamination. This is a cope out by the polluter to get what they want and again leave the past inactions on pollution behind.

We disagree that the topic of PFAS contamination is outside the remit of planning. The Planning Authority must ensure no degradation of European sites or public health and ensure the safety of all staff working at the airport. Any plans for the testing and disposal of soils needs to be screened as it's directly related to this planning application. The remedial works cannot be separated from the proposed development. The public have a right under the Aarhus Convention to see the full details of plans and measures to tackle the issue. The PFAS contamination is known and therefore a plan needs to be prepared and approved for planning so the public can be consulted.

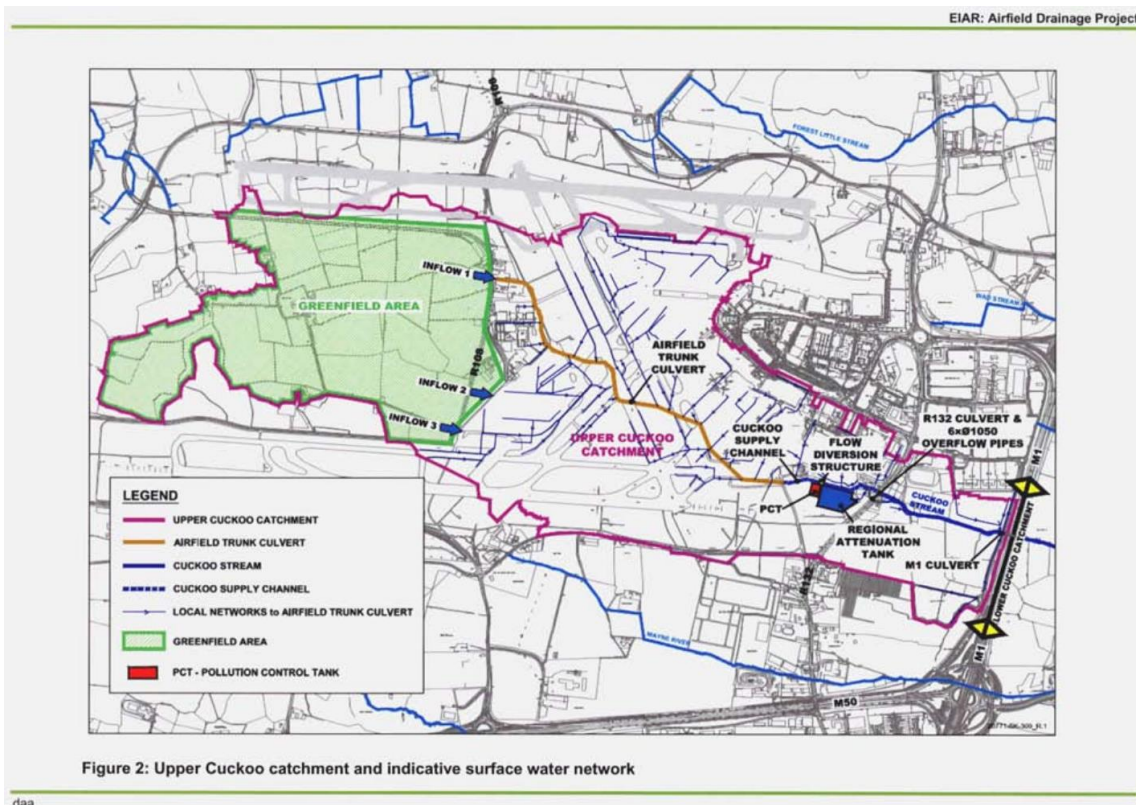
“Concerns were raised from third parties around USEPA Regional screening levels in the Materials Management Design Report, these levels refer to contamination at locations not subject to works in this application. The location of the water attenuation tank is not located in the area of works where highly contaminated has been found. The proposed works which address de-icer pollution should not be made contingent on a series of boreholes being installed

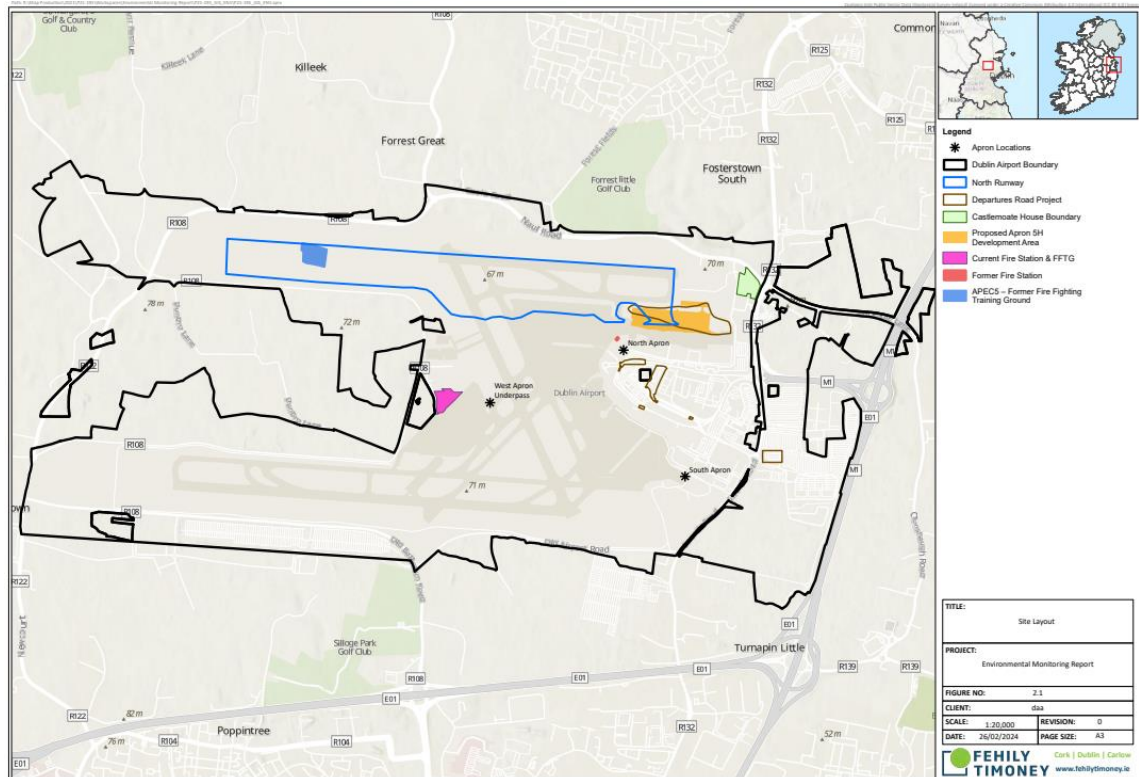
to monitor groundwater and PFAS contamination. The application including the underground tank is not to address PFAS contamination but to address de-icer contaminated runoff.”

“The Planning Authority notes that both the NIS and EIAR submitted as part of this application set out that works will be carried out in accordance with all relevant legislation and to best practice requirements. In the further information response, the applicant details site investigation and laboratory analysis will be carried out to determine potential contamination of ground that will be excavated during the construction phase, including testing for PFAS. If contaminated soil/ water is identified it would be removed by a licensed waste contractor for treatment or disposal in accordance with Waste Management Act 1996 and regulations. Additionally, Section 11.6.1.2 and Section 11.7 outlines the potential for contaminating surface water during construction and mitigation measures. As outlined in the revised Natura Impact Statement (with an additional paragraph in Table 13), there is potential for contaminated soil in the airport that will require excavation. The NIS now includes additional mitigation measures to address this possibility (see section 3.3).”

Again, this is an incredible narrative. PFAS contamination has been found already in the Cuckoo Stream and therefore it's not a case of 'if'. Therefore, it's a known fact and it must be addressed in this planning application. The daa's own documents show that the highest PFOS concentration in surface water was detected in the Cuckoo Stream at **50.6ng/l** (May 2023).

The Cuckoo Stream catchment area includes the former fire station where the highest Sum of 20 PFAS concentrations in groundwater were detected at maximum concentration levels of **4,111ng/l**.





“Overall, the Planning Authority is satisfied that the identification and treatment of contamination of soils will appropriately be addressed as part of a Construction and Demolition Resource Waste Management Plan (RWMP) for the proposed development.”

Again, the plan is to brush the problem under the carpet and not address it in planning. It should be noted that previous excavations and disposals of contaminated soil did not have any environmental assessment carried out on the works. This is not acceptable. The first the public became aware of the issue was via the internet when Geminor announced details of the shipment of 80k tonnes of PFAS contaminated soil to Norway. Fingal County Council was unaware of this activity.

In section 3.2.10 it again references that the proposed development does not include intensification, yet it's stated that it has been designed to take account of 40mppa. This is clear evidence of project splitting. Planning application F23A/0781 is currently with Fingal County Council and therefore the two applications need to be assessed as one:

“Notwithstanding the clearly set out position that the applicant is not seeking consent for intensification of use, airfield derived pollution control aspects of the proposal have been designed with reference to an intensity of use described in the application as 40mppa. Dublin Airport is currently limited to an intensity of use defined as 32mppa the construction of this proposal with associated landscape, biodiversity, hydrological and construction carbon impacts may exceed that which is required. However the purpose of this assessment is to consider that which is presented within the policy context. For that reason these aspects although referenced are not determinant of the assessment.”

This section also makes reference to the rerouting of the Cuckoo Stream. The stream is already polluted with PFAS/PFOS, and no screening has been performed on how the rerouting works could be impacted by further PFAS/PFOS contamination. The current pollution is just brushed aside:

“The pollution of the Cuckoo Stream although relevant to this report is not the subject of this assessment, report or permission in the event of a grant.”

Therefore, it is impossible to determine that there could be no Significant impacts on a European site.

Section 3 of the Planning Report deals with Appropriate Assessment and the Planning Authority was aided by Brady Shipman Martin. On page 121 it states:

“Given the scale of the proposed development a further assessment of the likelihood of discharges to streams outside the Cuckoo Stream catchment is required.”

For the construction phase it states:

“Notwithstanding this, the Construction phase of the Project will require the excavation of soils at the airport. The possibility that these soils have been contaminated by airport-related activities in the past has not been addressed, and further information was required in order to address any potential risks. This includes a review of the potential effects of the removal and safe disposal of historically contaminated soils that may be present within the construction site”

The report further outlines the concerns of contaminated PFAS/PFOS soils impacting on the Cuckoo Stream. It references the same paragraph in Table 13 of the NIS as the solution for contaminated soils. This is the extent of dealing with highly polluted soils and is not acceptable when the existence of such contaminated lands is well known. Brady Shipman Martin make no reference to the extensive PFAS documentation that exists which was referenced in the submissions to the planning authority. One can only assume that Brady Shipman Martin did not read the referenced material.

Conditions:

Condition 24 states:

“Prior to the commencement of development, the applicant shall prepare a Construction and Demolition Resource Waste Management Plan (RWMP) as set out in the Best Practice Guidelines for the Preparation of Resource and Waste Management Plans for C&D Projects (2021). The RWMP shall include details of the various waste streams and expected tonnages which will be generated during site clearance, demolition and construction phases and any proposed exportation or importation of soil and stone material including destination/source locations, quantities and if any material will be assessed under By-Product notification. The RWMP shall also include specific proposals as to how the RWMP will be measured and monitored for effectiveness. All records (including for waste and all resources) pursuant to the agreed RWMP shall be made available for inspection at the site office at all times.”

Condition 25 states:

“The Resource and Waste Management Plan shall include a detailed assessment of all potential ground contamination or contaminated soils linked with PFAS as part of the assessment prior to any works taking place with appropriate measures put in place to deal with any contaminated waste materials generated during site works. Any soil excavated during site preparation or construction phases contaminated with PFAS should be disposed of at an authorised facility and not reused on site. The disposal of PFAS contaminated materials should be agreed in writing by Fingal County Council prior to removal off site.

Reason: In the interest of protecting the environment and in the interest of public health.”

This is the extent of the conditions attached to the grant of permission in relation to PFAS. The public have no opportunity to scrutinise and be consulted on any proposed PFAS/PFOS works. The public cannot be guaranteed that these conditions alone will protect the environment or public health. The known contamination has not been addressed in this report and the cause of the contamination and its extents should be thoroughly identified. The daa have in the past excavated contaminated soil without proper authorisation and without informing Fingal County Council. Therefore, this was unauthorised development and needs to be addressed before any new works can be granted.

At a minimum, conditions 24 and 25 must be changed to ensure that all proposals from the RWMP must be agreed in writing by the Local Authority prior to commencement and that the works be monitored and certified by a fully licenced and insured Environmental Specialist for both the proposed plan and the works themselves. As is stands the conditions give no responsibility for the adequacy of the measures to be dealt with and monitored in a proper fashion. All of the plans monitoring etc MUST also be available for review on the Planning Authority Compliance portal whereby the public are informed.

Appendix A:

SMTW Environmental DAC submission on the Further Information request

SMTW Environmental DAC
c/o Ward Cross
The Ward
Co Dublin

Fingal County Council,
Planning Department
July 29th, 2024

RE: F23A/0636

Dear Planning Department,

I would like to make a submission on behalf of SMTW Environmental DAC on the Further Information request from Fingal County Council dated December 15th 2023 and the corresponding material received from the daa dated June 13th 2024, with regard to planning application F23A/0636.

It's public knowledge that there's a sizeable PFAS contamination issue at Dublin Airport. The request for Further Information from Fingal County Council did not refer specifically to PFAS. However, request item number 6 stated:

“6. The applicant is invited to provide a response to the third party observations received.”

RFI responses are contained in the document titled ‘Volume IV – RFI Memorandum and Appendices’. Section 6 of the report, 3rd Party Submission Topics Of Concern, has a single paragraph response on PFAS contamination at daa:

“The potential for encountering contaminated material is considered Chapter 11 - Lands, Soils, Geology and Hydrogeology of the EIAR. As described in Section 11.6.1.1, site investigation and laboratory analysis will be carried out to determine potential contamination of ground that will be excavated during the construction phase, including testing for PFAS. As described, if contaminated soil/water is encountered, it is proposed that it be removed by a licensed waste contractor for treatment for disposal at a suitably licensed facility in accordance with the Waste Management Act 1996 (as amended), the Waste Management (Collection Permit) Regulations 2007 (as amended). Where appropriate daa propose to use a structured approach in line with the Environmental Protection Agency's (EPA's) Guidance on the Management of Contaminated Land and Groundwater at EPA Licensed Sites, taking account of best international practice, evolving standards and emerging knowledge and experience in remediation technologies to determine the most appropriate environmental solution for its management. Section 11.6.1.2 describes the potential for accidental contamination of surface water run-off during construction activity. Section 11.7 lists mitigation measures to reduce the risk including development of the Construction and Environmental Management Plan (CEMP), measures to control soil excavation to ensure that exposed soils are stable and minimise erosion including ensuring works are carried out within the main excavation site as far as possible, application of pre-treatment and silt reduction measures, and careful management of storage areas. EIAR Appendix 13.1 – resource & Waste Management Plan outlines how to manage contaminated soil should this be identified prior to starting works.”

The above paragraph is the extent of the response in relation to PFAS contamination. This is an extraordinary response considering the known contamination and its potential impacts on health and the environment. There are no 'ifs and buts' about PFAS / PFOS contamination. This has been known by the daa since 2017 during excavation on the North Runway.

The above paragraph does not answer the serious concerns of neighbouring communities regarding the potential contamination of groundwater and resulting migration from the Airport lands into the waters used by local communities and crop production. It is a requirement for the applicant who already knows that there is serious PFAS contamination in and under lands at Dublin airport to assess the extent of contamination in soils and groundwater and to present this information to neighbouring communities so that they can assess whether or not adequate measures are to be taken during the works within the Environmental Impact Assessment Report. The exact extent and concentrations of contamination need to be tested and reported on PRIOR to any works being carried out on site to ensure that adequate measures to mitigate the problems can be compiled in an informed fashion. Nowhere near enough analysis has been carried out by the applicant to satisfy an informed Environmental Impact Assessment of the gravity of the situation. We would remind Fingal County Council that the daa previously decided to bury such contamination elsewhere within daa owned lands without prior public Environmental Assessment and consultation on the matter.

The daa are of the opinion that statements of guarantee on best practice regarding mitigation DURING the works are sufficient. They are not and these measures need to be clearly set out in the Environmental Impact Assessment Report for review and comment on by the public at large. It is our communities that will pay the price in the long term. Not only are the daa polluting our environment with air and noise pollution way above Health guidelines, they now are polluting our ground and ground waters but suggest that they are above the law and do not have to assess the environmental hazards or provide detailed mitigation against the hazards that they know exist.

In order to satisfy Environmental Impact Assessment legislation there needs to be a structured grided site investigation of the entirety of the lands to fully indicate to the public and planning authorities the nature, extent and concentration of PFAS pollution. Where hotspots are found further investigation is required to identify the size of the hotspot in more detail. Following this a detailed plan of mitigation needs to be presented as to how this contamination is to be adequately dealt with given the nature and extent of the proposed works and how these measures will mitigate against migration to the neighbouring communities.

Of course the contaminated soil and groundwater need to be disposed of in accordance with statutory legislation but where treatment and disposal on site is to be considered clear detailed proposals need to be presented within the EIAR for public knowledge and comment if they so wish.

What effects will the PFAS contamination have on the proposed Metro at the airport and how will the provision of a metro tunnel affect the migration of PFAS in the groundwater? Questions that need to be answered.

We urge Fingal County Council to request that these studies and mitigation proposals be put forward now

Daa – Environmental Management of PFAS Compounds

In April 2024 the daa uploaded 4 documents to their website at

<https://www.dublinairport.com/corporate/environmental-social-governance/sustainability>

- 1) Daa Statement April 2024
- 2) PFAS FAQ April 2024
- 3) 2021 – 2023 Environmental Monitoring Non-Technical Summary
- 4) 2021-2023 Environmental Monitoring Report

In section 5.1 of the document ‘2021 – 2023 Environmental Monitoring Non-Technical Summary’, it states:

- **Groundwater:**
 - o The highest Sum of 20 PFAS concentrations in groundwater were detected at the site of a former firefighting training ground, where maximum concentrations of **4,111ng/l** were reported.
- **Surface Water:**
 - o The highest PFOS concentration in surface water was detected in the Cuckoo Stream at 50.6ng/l (May 2023).
 - o The highest PFOS concentration in airside surface water (**1,430ng/l** in March 2022) was recorded in a manhole to the north of the North Apron. The source of PFOS is indicated to be from the Former Fire Station at the North Apron.
- **Soil/Concrete:**
 - o The highest concentrations of individual PFAS constituents in soils/concrete were **568µg/kg** in Apron 5H.

These are alarming levels of PFOS / PFAS. The recommendations of the report are:

“Based on the findings of this report, it is recommended to quantify the risk from PFAS present in soil, concrete, groundwater and surface water at the airport and further investigations should be carried out having regard to the process outlined in the EPA’s Guidance on the Management of Contaminated Land and Groundwater at EPA Licensed Sites. This is likely to include further site investigations to assist in the further development of the Conceptual Site Model (CSM) to assess potential source, pathway and receptor linkages, together with a Detailed Quantitative Risk Assessment (DQRA) to inform future mitigation options, if required.

It is recommended that engagement with the regulators (Fingal County Council and EPA) continues to assist in informing the scope of the further studies and investigations.”

It is evident from this report that further site investigations are required to inform future mitigation options. Therefore, no construction activity should be carried out until the full extents of the PFAS exposure can be quantified and mitigations measures put in place. It’s also worth noting that Fingal County Council are responsible for the overall management of this issue, having been delegated by the EPA. Therefore, it’s incumbent on the Planning Authority to fully understand the extent of the issue and liaise with other internal Fingal County Council stakeholders.

In section 4.6.3 of the ‘2021 – 2023 Environmental Monitoring Report’,

<https://www.dublinairport.com/docs/default-source/sustainability-reports/2021-2023-environmental-monitoring-report.pdf>, it lists possible receptors:

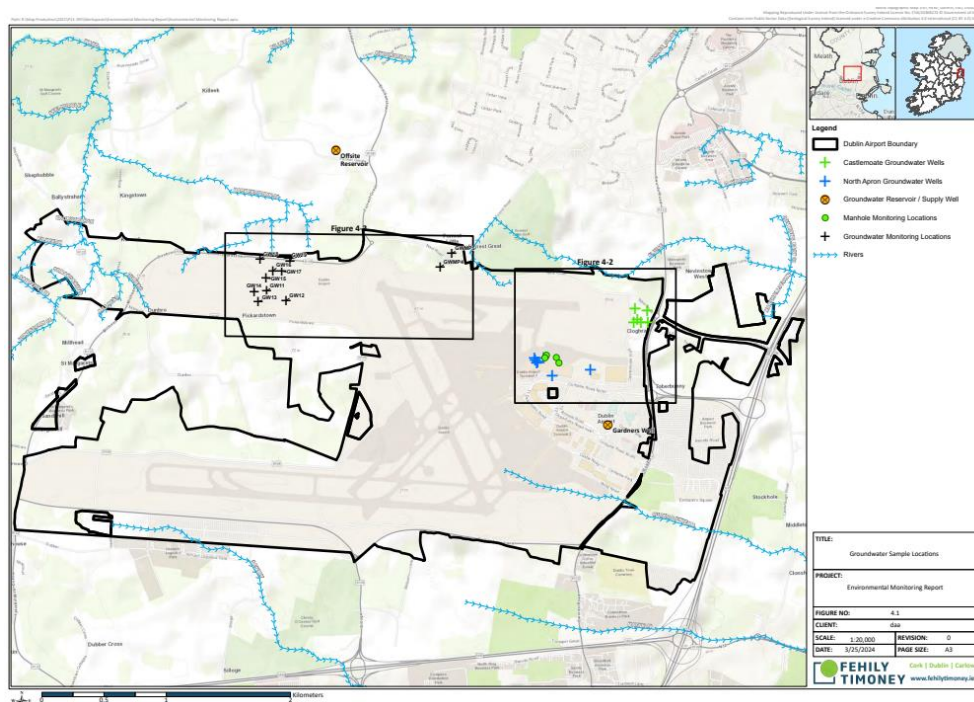
- Special Areas of Conservation:
 - Malahide Estuary (Site code 000205)
 - Baldoyle Bay (Site code 000199)
 - North Dublin Bay (Site code 000206)
- Special Protection Areas:
 - Malahide Estuary (Site code 004025)
 - Baldoyle Bay (Site code 004016)
 - North-West Irish Sea (Site code 004236)
 - North Bull Island (Site code 004006)

This again is an extraordinary finding as surface water containing PFAS / PFOS discharges to these SPAs and SACs. What is extremely concerning is that the daa have never screened for PFAS / PFOS in this drainage application, nor any other project since they have become aware of the PFAS / PFOS contamination.

Another erroneous comment in this section is:

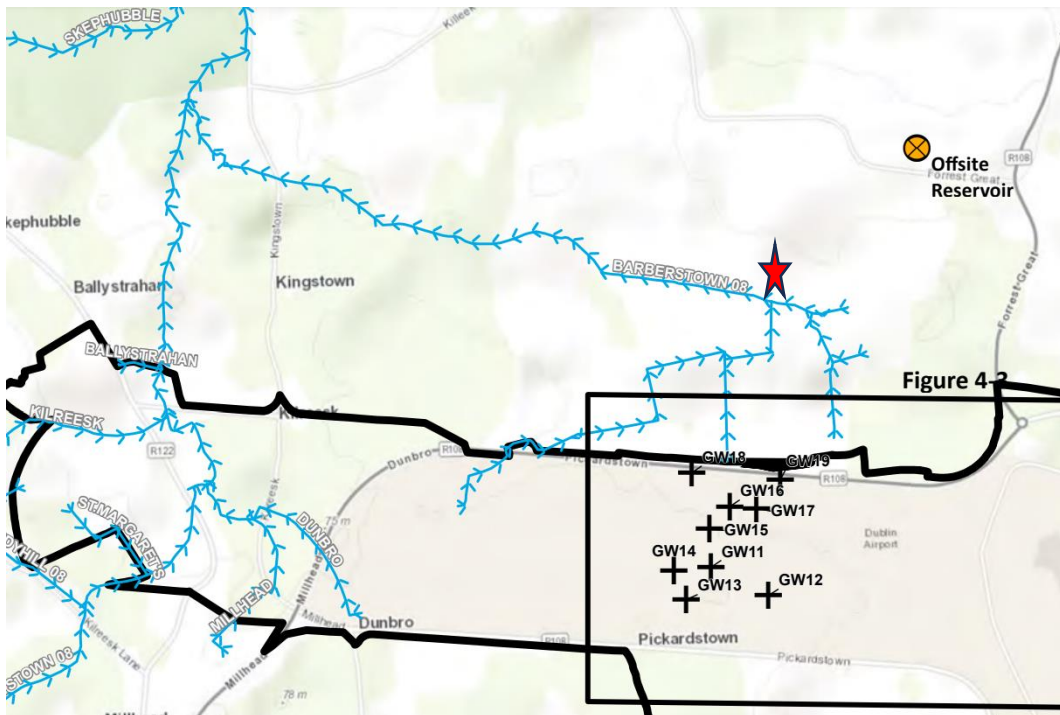
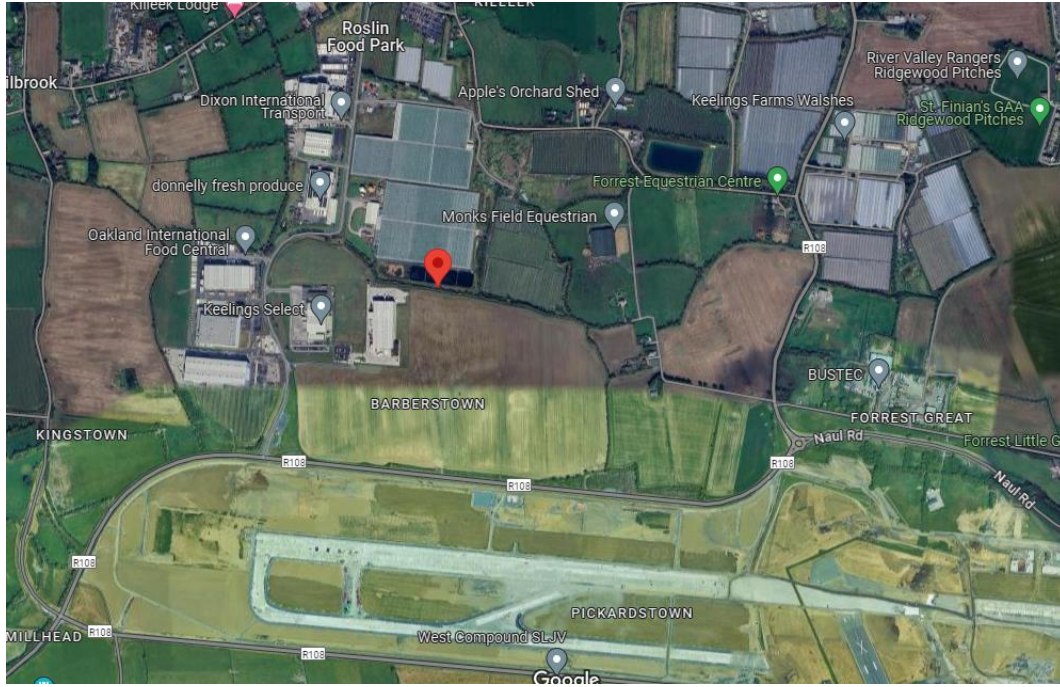
“Available information indicates there are likely not any groundwater abstraction points or drinking water users. The main receptors will arise from interactions with surface water.”

However, the EPA’s Water Abstraction Register – December 2023, <https://www.epa.ie/publications/monitoring--assessment/freshwater--marine/Abstraction-Register-December-2023-for-publication.xlsx>, shows that Keelings Retail have 9 abstraction locations registered with the EPA for the Swords area. The report only references a single private offsite reservoir which is further away from the Airport lands than some of the EPA registered abstraction locations.



The private offsite reservoir is not close to the rivers discharging water from the Airport lands.

Below is one of the EPA's abstraction registry points. This abstraction point is adjacent to the Barberstown 08 water feature which feeds into the Ward River.



What is of major concern is that Keelings Retail is a major grower of fresh fruit supplying the Irish market. Their website states that they produce approximately 200 million strawberries each year, as well as other fruit and vegetables. It is paramount that Fingal County Council engage with the appropriate health authorities and Food Safety authorities to ensure all produce is tested for PFAS / PFOS and that it is safe for human consumption.

The monitoring well GW11 is located at the APEC 5 site directly under the North Runway

*“The results indicate the highest residual concentrations (up to over **4,000 ng/l**) of Sum of 20 PFAS remain within the original source, i.e. within the APEC 5 boundary, with the plume primarily extending west to GW14 and north to GW16. Maximum and average Sum of 20 PFAS concentrations reduce significantly over distances of approximately 150m to GW14 (1,712; 526.8ng/l, respectively) and GW16 (257.7; 165.4ng/l, respectively).”*

Over 4,000ng/l is an astonishing level of Sum of 20 PFAS. And even the measured values at GW14 and GW16 far exceed the GAC limit of 100 ng/l.

What is also very worrying is that the trend of PFAS contamination is increasing significantly over time.

CLIENT: daa plc
PROJECT NAME: 2021 - 2023 Environmental Monitoring Report

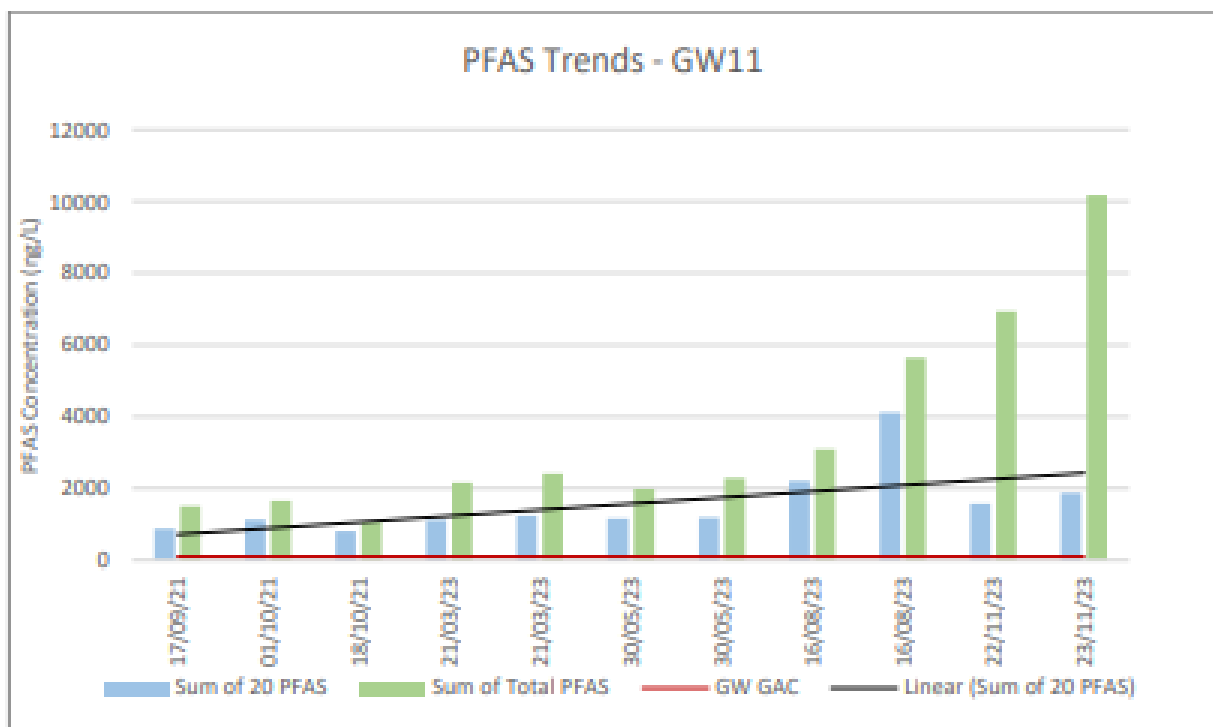


Figure 4-25: Sum of PFAS Concentrations at GW11 (Above GAC)

Parameter	Unit	01/10/21	01/10/21	18/10/21	21/03/23	21/03/23	30/05/23	30/05/23	16/08/23	16/08/23	22/11/23	23/11/23
Sum of 20 PFAS	ng/l	878	1125	810	1123	1238	1158	1183	2213	4110	1577	1878
Sum of Total PFAS	ng/l	1509	1657	1063	2157	2412	1986	2283	3095	5643	6939	10169

The report does not discuss the alarming rise in Sum of Total PFAS.

Documents released by the OCEI

Following an AIE request to Fingal County Council regarding PFAS contamination at Dublin Airport, Fingal County Council made the decision to release three documents. The daa appealed the decision to release two of the documents to the Commissioner and the Commissioner found in favour of Fingal County Council. The decision is available at:

<https://ocei.ie/en/ombudsman-decision/7db6a-daa-public-limited-company-and-fingal-county-council/>

Upon release, the daa made the documents available on their website:

<https://www.dublinairport.com/corporate/airport-development/north-runway/environment/soil-and-water-management>

The two documents are different to the documents previously made available by the daa. These two new documents were undertaken by Fehily Timoney who were retained by RoadBridge to undertake a Risk Assessment of PFAS contamination on groundwater and surface water at the former Fire Training facility at the Dublin Airport, North Runway development (APEC 5). RoadBridge were the contractors responsible for the construction of the North Runway.

The report titled '*Groundwater and Surface Water Risk Assessment and Remediation Options Appraisal*', states in section 1.1 that:

"The detected concentrations of Total PFOS at the off-site surface water monitoring points sampled between January 2018 and July 2021 exceeded the:

- *0.65 ng/l (the annual Average Environmental Quality Standards (EQS) for Inland Surface Waters for Total PFOS set by S.I. No. 386 of 2015)."*

"A number of the groundwater monitoring locations during the period January 2018 and October 2018 exceeded the Total PFOS 0.07 µg/l threshold value (defined by the United States Environmental Protection Agency (USEPA) Drinking Water Advisories for PFOS and PFOA)."

In section 6.1 on Conclusion and Recommendations, it states that PFAS contaminated soil was removed from the APEC 5 site and used as a general fill to reinstate the pre-cast concrete R2 and P5 attenuation tanks. The reports states that residual contamination remains within the APEC 5 site boundary. Regarding Groundwater, it states that the risk to potential users of shallow bedrock groundwater is inconclusive.

On Surface water, the report states that the monitoring results for Total PFOS exceeded 0.65ng/l, the Annual Average EQS for Inland Surface Waters as set out in SI No. 386 of 2015. It also states that there is evidence of elevated concentrations of other PFAS compounds, showing evidence of environmental pollution.



Section 5.1.4 lists the potential receptors of contaminants:

- The shallow weathered bedrock aquifer located around or beneath the former fire training ground (APEC 5).
- The deep limestone bedrock aquifer.
- The North Runway Development site surface water drainage which discharges to the River Sluice.
- Aquatic life located within the Sluice and Ward Rivers (which flows into the Broad Meadow River).
- Humans located within close proximity to the site.
- Irrigated Keeling production facilities located approximately 1 km north of the site.
- The Malahide Proposed Natural Heritage Areas: Malahide Estuary (Site Code 000205) and the Broadmeadow/Swords Estuary Special Protection Areas (SPA) (site code 004025). Both sites are located approximately 6 km north east of the project site.

Section 5.2.3 outlines that the risk to on and off-site surface waters and aquatic life will be medium. It also states that:

“A possible on-going risk is posed to Human Health during and post construction activities based on horizontal migration away from the source (via groundwater beneath the site) and potential human ingestion and dermal contact with groundwater or surface water during or post construction activities.”

There are some alarming statements in section 5.2.4 regarding Keelings. It states that the GSI has no records of boreholes being present on site to supplement irrigation. Yet it is clear from the EPA’s registry of abstraction licenses that Keelings have a number of abstraction locations on-site.

Keelings is traversed by the Barberstown 08 water feature which is connected to surface water run off from the Airport lands as can be seen in the Conceptual Site Model for Apec 5:

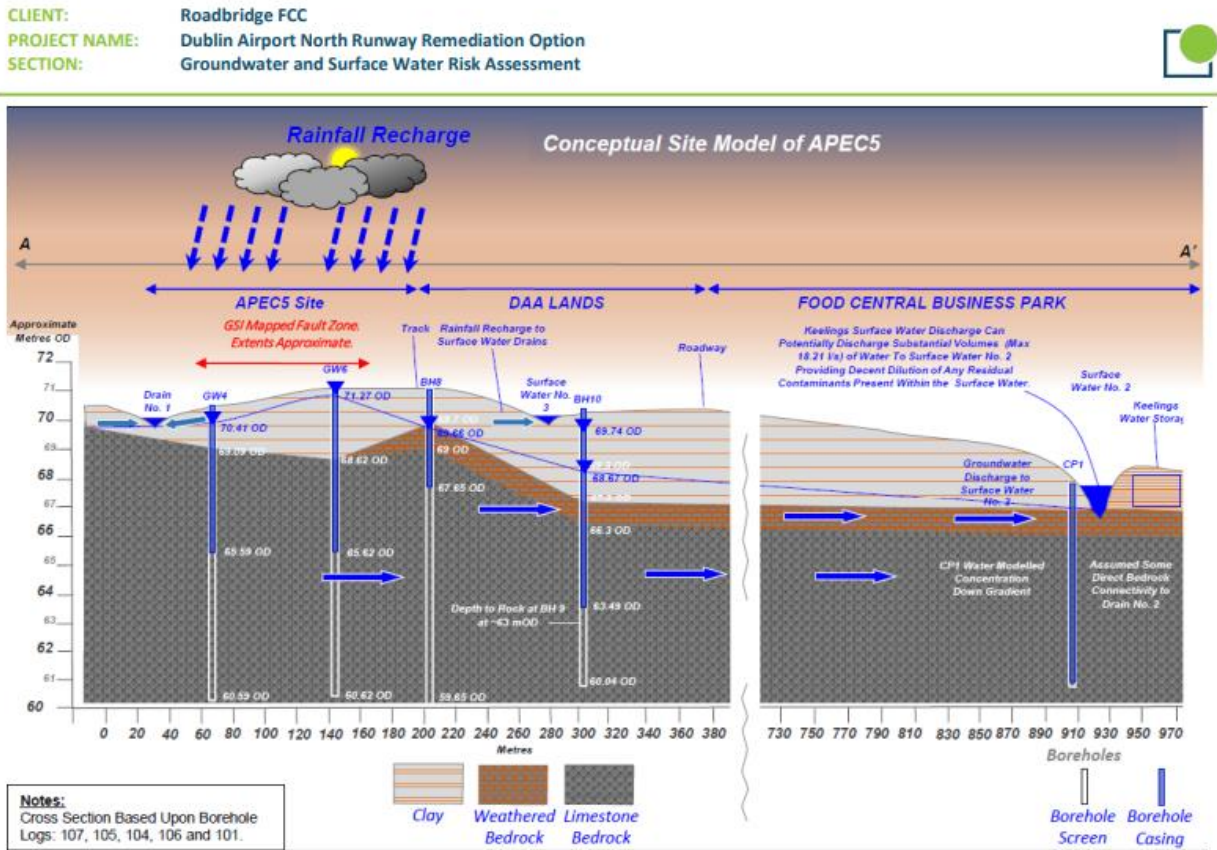


Figure 3-1: Conceptual Site Model¹ of APEC 5 Area, prepared by IE Consulting and Reproduced from the November 2018 DQRA (Section Running North-South see Figure 3-7)

This Conceptual Site Model was developed in 2018 and therefore the daa have been aware since then of the risks to the contamination of Keelings lands.

Groundwater monitoring results from January 2018 clearly showed elevated levels of PFOS:

Table 3-2: Groundwater Monitoring Results January 2018: PFOS/PFOA Screening (Reproduced from Table 4-3 of November 2018 DQRA)

Parameter	Units	No of tests	Guideline Values	Exceedances	GW4	GW5	GW6	BH08	BH09	BH10	BH105	BH107
Total PFOS	ng/l	6	1000 ²	1	1,630	884	443	201	<LOD	<LOD	<LOD	<LOD
Total PFOS & PFOA	ng/l	6	70 ²	4	2,434	2,354	745	244.1	<LOD	<LOD	<LOD	<LOD

Note 1: EPA: A Proposed Approach for the Development and Application of Guideline Values for Groundwater

Note 2: United States Environmental Protection Agency (USEPA) Drinking Water Advisories for PFOA and PFOS

* <LOD: Below Laboratory Limit of Detection

Section 3.3 states:

*“Monitoring findings from previous investigations confirmed that residual concentrations of PFOS and PFOA remain within shallow bedrock groundwater beneath the APEC 5 site. A number of the groundwater monitoring locations **exceeded USEPA Drinking Water Advisories for PFOS and PFOA threshold values.***

*The results of the surface water sampling undertaken as part of the November 2018 DQRA Dublin Airport North Runway: APEC 5 Detailed Quantitative Risk Assessment indicated that **PFOS/PFOA contaminated surface waters migrated off-site via drainage channels and impacted off-site surface water receptors (River Ward).**”*

Diversion Application form for Cuckoo Stream

In the accompanying RFI material, a Diversion Application form has been included which has been submitted to Uisce Eireann. In section 12 of this form, the question is asked 'Are there potential contaminated land issues?' and no response is given as can be seen below. Therefore, the daa have not made Uisce Eireann aware of the known large scale PFAS / PFOS contamination which is a very serious dereliction of duty.

11 *Confirmation of Land Ownership:

● Please confirm the name and address of the landowner and provide the folio details of the land where the diversion is proposed:

FINGAL CITY COUNCIL

Note:

1. Enter "My Land" if this is the case.
2. If land is in ownership of a third-party, a letter of consent to the proposed diversion works is required to be provided by the third-party landowner as part of this application. A formal easement will be required from the third-party landowner should the diversion progress.

12 *Are there potential contaminated land issues?

Yes No

Natura Impact Statement

Fingal County Council requested that the NIS should be revised and updated on 'Contaminated Soils':

"The Construction phase of the Project will require the excavation of soils at the airport. The possibility that these soils have been contaminated by airport-related activities in the past has not been addressed, and further information is required in order to address any potential risks. This includes a review of the potential effects on European sites of the removal and safe disposal of historically contaminated soils that may be present within the construction site."

The response from the daa:

"Contamination testing of soil onsite when removed can be Included (not in original NIS) as a mitigation measure. as included in the EIAR. If it is contaminated it would go to a registered licenced facility and inert soil brought in if required. Refer also to Section 6 above."

It is clear that the daa are deliberately ignoring PFAS / PFOS contamination and this response does not address the questions raised by Fingal County Council. As a result, the NIS is deficient and a proper assessment of the impact on European sites cannot be made based on the lack of material supplied by the daa.

Conclusion:

The response to the Further Information request from Fingal County Council in relation to 3rd party submissions is totally inadequate. The daa have known about PFAS contamination since as early as 2017 and yet none of their Environmental Assessments since then even mention PFAS yet alone provide mitigation and remedial measures. Fingal County Council have been delegated by the EPA as the body responsible for the oversight of the PFAS contamination at Dublin Airport and therefore is well aware of the issues. It is incumbent on Fingal County Council to ensure the health and safety of residents of Fingal and staff working at the airport. There is also a duty to protect the SACs and SPAs along the Fingal coastline. Fingal County Council must also ensure that the health of Irish people is not impacted by the produce from Keeling's farm which is adjacent to the North Runway and through which waters from the airport flows along the Barberstown 08 to the Ward River. Fingal County Council Planning Authority must ensure that the Environmental Health section is aware of the PFAS reports and their impacts on surrounding lands and rivers. Other authorities such as the HSE, Food Safety Authority, Inland Fisheries and the NPWS should be immediately notified if not already done so. The dangerous levels of PFAS / PFOS have been known for a long number of years now and the daa have only recently contacted the relevant authorities. The response from the daa was to initially remove and bury known contaminated soil from the North Runway site around attenuation tanks and continue with the North Runway development. This was a major mistake as the PFAS levels under the North Runway are at dangerous levels. PFAS contaminated soil has also been found at other sites at the airport and large amounts of contaminated soil from the Apron 5H development has been shipped to Norway for remediation. The cumulative impacts of the contamination at the Apron 5H development site should be assessed in conjunction with this drainage application. The whole airport site needs to be addressed for PFAS / PFOS contamination as a whole and not the piecemeal approach thus far.

The NIS is deficient and a proper assessment of the impact on European sites cannot be made. The daa were afforded the opportunity to submit material on PFAS / PFOS contamination but choose not to do so. In fact, they never acknowledged the contamination problem in their whole submission. This is extraordinary considering that Fingal County Council are the state body responsible for the oversight of this contamination. Fingal County Council have no choice but to refuse planning permission based on the total lack of screening and assessment of PFAS / PFOS contamination and its impact on European sites.

Yours Sincerely

Liam O'Gradaigh

On behalf of SMTW Environmental DAC

Appendix B:

St Margarets The Ward Residents Group Submission

St Margarets The Ward
Residents Group
c/o Ward Cross
The Ward
Co Dublin

Fingal County Council,
Planning Department

November 12th, 2023

RE: F23A/0636

Dear Planning Department,

I would like to make a submission on behalf of St Margarets The Ward Residents Group on the planning application F23A/0636 from DAA PLC.

It has become public knowledge that there's a sizeable PFAS contamination issue at Dublin Airport.

<https://www.irishtimes.com/transport/2023/03/17/dublin-airport-operator-examining-potential-impact-of-forever-chemicals/>

Also, at a DAEWG meeting on the 15th of March 2023, the daa's Head of Environmental Sustainability "*advised members that daa is examining the potential impact of PFAS at Dublin Airport and is engaging with the relevant environmental regulators to ensure best practice in managing this issue*".

<https://www.dublinairport.com/docs/default-source/community-engagement/15-march-2023---daewg-meeting-minutes-approved.pdf>

This current planning application makes no reference to PFAS contamination and yet it involves the removal of large quantities of material. PFAS contamination has not formed part of the screening and assessment process and therefore the screening is deficient.

It has also been reported that Geminor have been appointed to ship 150,000 tonnes of PFAS contaminated soil from Dublin Airport to Norway for processing:

<https://www.energiaktuelt.no/sender-80-000-tonn-pfas-forurensede-jordmasser-til-sikker-deponering.6623054-575505.html>

(Translation in appendix)

This work by Geminor also has not formed part of any planning application or environmental assessment and has involved no public consultation. This PFAS treatment and removal needs to be investigated by the Planning Authority and the current application cannot proceed until proper screening and assessment has been carried out.

Surface Water Quality Objectives

It is noted at Section 1.1.1 of the Engineering Design Report by Nicholas O Dwyer that the Airfield Drainage Project (ADP) has been developed in accordance with the targets set out in the Dublin Airport Drainage Management Plan (DMaP) which is said to have been developed by daa following extensive engagement with Fingal County Council, Inland Fisheries Ireland, LAWPRO and the EPA during preparation of the ADP. We note the public announcement by Geminor who confirmed that they have been engaged by daa to excavate and remove 150,000 tonnes of PFAS contaminated material and transport it abroad.

We at St Margarets The Ward Residents Group attend meetings with DAA and Fingal on Community issues and the issue of PFAS has had very little airing. The local communities have been kept in the dark. LAWPRO the Local Authorities Waters Program clearly state that Community Engagement is the cornerstone of their approach to combine local and expert knowledge for a better understanding of what's happening in a local catchment and waterbody.

None of the documentation submitted by the daa deals with the contamination, the effects on our groundwater and surface water and what mitigation measures are required. This is an outrageous omission from the application and should be rejected as it is obvious that the entire project is as a result of the ground contamination caused and therefore all of the European Environmental Impact legislation has been bypassed by not identifying the impact, its effects on our community and the proposed mitigation measures. In fact, we are not sure if residual damage has been caused and the contamination may have migrated off site to our community receptors.

Excavated Material

It is noted that 306,000 cubic meters of soil is to be excavated and transported off site resulting in a huge increase in construction traffic on the local roads. Daa also applied to construct an underpass at Dublin Airport which is under appeal to An Bord Pleanála and which is to remove over 350,000 cubic meters of soil from Dublin airport. Daa have announced that they will be applying to increase capacity at Dublin Airport above the 32m passenger cap in December which will include major infrastructure development. The construction of the North Runway also involved extensive ground works and there has been no accountability as to the effects of this construction on PFAS contamination of the waterways. There has never been full Appropriate Assessment carried out on the North Runway project to date, and its extension, in breach of the Aarhus Convention.

The accumulative effects of all of these projects have not been reviewed for the total Environmental Impact and not properly mitigated against. This is a blatant case of Project Splitting by daa and as such this application should be rejected until a full and proper Environmental Impact Assessment on all proposed works at Dublin Airport is carried out and presented to us as an affected community and in accordance with European and Irish Legislation.

F19A/0149

Planning application F19A/0149 was for the:

“Remediation by excavation and removal of circa 22,000 cubic metres of mixed waste material illegally deposited on lands at Belcamp. The project will involve site preparatory works, excavation and infill works, installation of a cut-off wall to the south and south west and restoration with grass and treeline where applicable. An Environmental Impact Assessment report (EIAR) and Natura Impact Statement (NIS) has been prepared and accompanies this planning application and is available for inspection.”

The lands affected belong to the IDA and in section 1.2.1 of the EIAR attached to the project, it states that the *“final step in the screening process is to determine the need for an EIA on a discretionary basis. It has been determined in consultation with Fingal County Council (September 26th, 2018) that an EIAR should be undertaken. The EIAR allows the sensitivity of the environment to be assessed and determine whether the project is likely to cause significant effects.”*

F19A/0149 sets a clear precedence for the current application. PFAS chemicals are a serious health concern and an EIAR and AA are necessary.

It is also clear from recommendation #20 in the EPA’s National Hazardous Waste Management Plan 2021-2027 that an EIA and AA are necessary:

“Ensure that all plans, projects and activities requiring consent arising from the NHWMP are subject to the relevant regulatory environmental assessment requirements including SEA, EIA and AA as appropriate.”

However, there is no mention of PFAS in the EIAR or AA. There is a clear requirement to screen this contamination out. It can not be deliberately hidden in the assessment.

The soil removed from site cannot be sent to landfill knowing the PFAS contamination on-site.

Enforcement

In parallel to this submission, the PFAS removal has been reported to the enforcement section of Fingal County Council.

Unauthorised Development

Another matter to consider is that the Planning Department has served the daa with an enforcement notice citing unauthorised development over the continued use of more than 65 nighttime flights. The daa also carried out unauthorised development in 2019 with breaching the 32mppa cap and are on course to do the same this year. As the daa are knowingly carrying out unauthorised development, no planning applications can be approved by Fingal County Council until the unauthorised development has been complied with.

Yours Sincerely

Liam O'Gradaigh

St Margarets The Ward Residents Group

Appendix

<https://www.energiaktuelt.no/sender-80-000-tonn-pfas-forurensede-jordmasser-til-sikker-deponering.6623054-575505.html>



Photo: Geminor

Sends 80,000 tonnes of PFAS-contaminated soil for safe disposal

Written by the editors
Published 29 September 2023
Updated September 29, 2023

The Karmøy-based recycling company Geminor is participating this autumn in the removal of large quantities of PFAS-contaminated masses from Ireland's largest airport, Dublin International Airport.

- PFAS pollution is an extensive problem in Europe, where industry and especially airports are affected, says responsible for hazardous waste in Geminor, Bjørn Håland.

In collaboration with local partners in Ireland, this autumn Geminor will provide handling, logistics and final treatment of PFAS-contaminated soil masses from Dublin International Airport. In total, more than 150,000 tonnes of earth masses will be removed from the airport in the project, of which around half of the masses will be handled by Geminor, the company reports in a press release.

The PFAS-contaminated soil masses are removed in connection with the airport undergoing a major development project of outdoor area. The project has required extensive mapping, planning and facilitation in order to be carried out at the same time as normal operation of the airport.

The PFAS masses are sent to Norway for regulatory and safe final treatment, explains Håland.

- This is an extensive project and one of the larger individual projects we have been involved in when it comes to contaminated masses in Europe. The masses are transported to Norway with bulk carriers of the order of 6,000 to 9,500 tonnes per transport, explains Håland.

Share the article.



A significant and pending problem

The project at Dublin International Airport is an example of how extensive the current PFAS challenges are in Europe today, explains Håland.

- A great many airports and industrial areas have been contaminated with various PFAS compounds over many decades. The main culprit at airports is foam from fire drills. Today, there are millions of tonnes of PFAS-contaminated masses waiting to be handled properly. Many of these tonnes are located in Norway, explains Bjørn Håland.

Projects like this – which involve handling permits, logistics and final processing – often mean lengthy and demanding processes. Both time consumption, costs and a lack of knowledge mean that many players are reluctant to tackle absolutely necessary clean-up, Håland believes.

- In Europe today, there is a lack of good solutions for these polluted masses. It is often complicated for contractors and local waste companies to handle PFAS, as they often have to comply with international laws and regulations.

- The solution to the challenges is complex, but is about more people having to take responsibility. Long lead times mean that the actors who get rid of PFAS must plan this thoroughly and early. At the same time, authorities must facilitate a more flexible bureaucracy, whether we are talking about landfill or other solutions. We are keen to contribute to this work internationally, concludes Bjørn Håland, responsible for hazardous waste in Geminor.



Cian O'Hora, Managing Director, IMS Site Services Ltd. (tv) is a partner of Geminor in the project. On the right, Bjørn Håland in Geminor. Photo: Geminor