22 September 2025

Office of Environmental Sustainability
Environmental Protection Agency
PO Box 3000
Johnstown Castle Estate
Co. Wexford

RE: EPA Industrial Emissions Licensing Application P1181-02

Dear Sir/Madam,

On behalf of the applicant, Amazon Data Services Ireland Limited, and further information requested 5 September 2025 by the EPA, we submit further information and clarifications in respect of the licence review application P1181-02.

The following revised attachments and documents are submitted with this response:

- Attachment-4-6-1-Water-Energy-Usage_Rev
- Attachment-7-5-Noise-Emissions
- Drawing-Noise Monitoring Locations
- IDA Letter to ADSIL - Foul 12 September 2025
- IDA Letter to ADSIL - Storm 12 September 2025
- Irish Water Connection Offer – 28 May 2020

It should be noted that a full review of all licence application documentation is being undertaken and any revised documents will be submitted to the EPA with the response to the Further Information Request issued under I-App-RFI Reg.10(2)(b)(ii), dated 30 July 2025.

1. GENERAL QUERIES

Request:

1. Section 2.1 within 'Attachment-1-2 Non Technical Summary Rev1' document the combined thermal input from the installation is calculated as 306.06 MWth not 360.06 MWth. The licensee shall clarify the reason for the difference.

Applicants Response:

The value for the combined thermal input was previously incorrect, where it was stated as 306.06 megawatt thermal input (MWth) in the Non-Technical Summary. The emergency generator capacities have since been reviewed based on the most up to date supply data, which is slightly lower than previously presented. The correct figure is 358.17 MWth, see Table 1.1 below for summary of emergency generators MWth.

Table 1.1 Generator Thermal Input

Emission Point	Plant	Previous Thermal Input (MWth)	Updated Thermal Input (MWth)	Updated Combined Thermal Input (MWth)
Building A	26 no. Emergency back-up generator	6.82	6.82	177.32
Building A	1 no. Emergency Generator	2.19	1.55	1.55
Building A	2 no. fire sprinkler pumps	0.52	0.37	0.74
Building B	26 no. Emergency back-up generator	6.82	6.79	176.54
Building B	1 no. Emergency Generator	2.19	2.02	2.02
Total				358.17

Request:

2. Correspondence received to the Agency, dated 26/08/25, states a potential for consequential implications for '…other related application documentation'. The licensee shall clarify which other application documentation may be altered.

Applicants Response:

We are currently undertaking a review of documentation to determine the full extent; we are aware that the following documents are being updated and will be submitted with the NIS on 26th September 2025:

- Attachment-1-2 Non Technical Summary
- Attachment-7-1-3-2-Soil & Water Impact Assessment
- Attachment-7-1-3-2 Air Emissions Impact Assessment

2. AIR EMISSIONS

Request:

1. Critical load for N deposition assigned to the River Boyne and Blackwater SAC for the habitat type 'alkaline fens' is documented as '15-30 kg/ha/yr'. The licensee shall clarify if this is correct and why the lower range figure min to max '5-10 kg/ha/yr' was not applied.

Applicants Response:

Revised air dispersion modelling is currently being undertaken to include the SSE Generation Ireland Ltd (Reg. Ref. P1225-01) and subsequent coordination with the Natura Impact Assessment, as requested under I-App-RFI Reg.10(2)(b)(ii) issued on 30 July 2025.

The Agency granted an I-App-RFI Extension Consent on 26 August 2025 in relation to the NIS, recognising that updated air dispersion modelling is required to inform the assessment.

A comprehensive response to this request will be provided in the revised Air Impact Assessment, which will address all items raised under Section 2 and will be submitted to the EPA by 26 September 2025. The critical levels and loads for the relevant designated sites will be reviewed and updated, where necessary, as part of this revised assessment.

Request:

2. The licensee shall:

Document how the process emissions two (2) test scenarios were chosen.

Update Table 9 and Table 10 to include the number of generators modelled, run hours considered, size of each generator and loading.

Provide further explanation on Note 2 and Note 3 associated with Table 10.

Based on the volume flow (Nm3/hr) provided in Table 9, review the mass emissions (g/s) calculated for each parameter as listed in Table 10.

Review the concentrations (mg/Nm) modelled for each parameter, and update Table 10 accordingly.

Note 1, included in Table 11, has no associated description, update accordingly.

The legend box for PEC on the figures does not include the maximum predicted environmental concentration (e.g. Figure 5; the highest PEC is 108 ug/m3, however the max PEC is 116.9 ug/m3)

Carry out a full review of the figures provided in Table 9 and Table 10.

Applicants Response:

Process emissions test scenarios

In relation to the request from the Agency to document how the process emissions for the two test scenarios were chosen, this is understood to mean that clarification is sought on how the required percentage loading and length of time for the testing was decided as well as what the emissions data was based on. The testing scenarios for the emergency generators were based on the Applicant's operating requirements, maintenance schedules and worst-case emergency scenario. The process emissions information was provided by the emergency generator supplier.

Table 9, Table 10, Table 11

The queries relating to Table 9 and Table 10 will be reviewed and revised as part of the revised Air Impact Assessment in order to address the above queries from the Agency, which will be issued on 26 September 2025 along with the Natura Impact Statement.

Note 1 on Table 11 states: *"All licensed emission points assumed to operate continuously"*. This is in reference to the cumulative assessment and cumulative IE licenced emission points included in the modelling assessment.

Legend box for PEC

In relation to the legend box for PEC on the figures, this does not include a illustrated category corresponding to the highest PEC due to the methodology for creating concentration contours. The purpose of the concentration contour plots is to show the extent and behaviour of the emission plume.

The air dispersion model (AERMOD) produces numerical output files which contain predicted pollutant concentrations at a large number of discrete receptor points across the modelling domain. These results are typically exported in tabular format, listing the predicted value (e.g. annual mean NO_2 in $\mu g/m^3$) for each receptor location defined by its X and Y coordinates.

To aid interpretation, these tabular results can be imported into contouring software (e.g. Surfer, ArcGIS, QGIS) where an interpolation algorithm is applied. The software estimates values between the discrete receptor points, allowing the creation of contour plots. These are graphical representations that join locations of equal concentration with smooth lines, giving a clear picture of concentration gradients and the spatial extent of impact.

The primary differences between concentration contours and tabular results are:

- Tabular results provide the exact model predictions at defined receptor points. These are the values to be relied upon for compliance assessment and reporting against air quality standards or guidelines.
- Contours provide a visual interpretation of how pollutant concentrations vary across the site and surrounding area. They are useful for communicating results, identifying zones of higher or lower impact. However, since contours involve interpolation between points, they are approximate representations and should not be used in place of the tabulated receptor results for regulatory comparison.

Therefore, the concentration contour plots cannot include a category corresponding to the maximum predicted environmental concentration (PEC) as these represent a singular point, rather than a contour.

3. SEWER

Request:

1. The licensee shall:

- Provide a letter of agreement from the IDA Business and Technology Park and Uisce Éireann with regard to discharge consent of foul sewage to the existing foul drainage network.

Applicants Response:

The response includes a letter dated 12 September 2025 from the IDA, confirming the Installation has consent and permission to discharge to the IDA foul network, in addition to a connection agreement with Uisce Éireann (formerly Irish Water), dated 28 May 2020.

4. COOLING WATER

Request:

AHU evaporative cooling water sumps are proposed from which a residual cooling water discharges to the sites storm water drainage network. The Agency note that this form of cooling water has the potential to be trade effluent with subsequent segregation and treatment required as per BAT 14 of the LCP CID.

1. The licensee shall:

- *Provide clarification as to why storm water disposal is proposed for the cooling water waste stream.*

- *Outline if:*

  sampling and chemical testing is proposed of the storm water discharge to obtain its properties.

  alternatives were considered, for example discharge to sewer, removal for offside disposal etc.

- *Provide full details, with regard to the evaporative cooling water operation, recharge, discharge, volumes, dosing or other treatment(s), drainage, maintenance and storage capacities of the AHU water sumps for each building.*

- *Provide details on the composition and water quality of the residual cooling water at discharge.*

- *Outline the processes involved in the use of hydrogen peroxide for periodic cleaning of the system in the event that legionella, algae etc has been detected.*

- *Confirm if AHU sumps will be prefilled.*

Applicants Response:

Storm water disposal for the cooling water

Storm water disposal is proposed for the AHU evaporative cooling water as approved by Meath County Council (MCC) during the planning process and consistent with the current IE Licence. The discharge of evaporative cooling water to storm water was explicitly included in the original planning design developed prior to planning applications being made. This was included in the Environmental Impact Assessment (EIAR), and associated engineering reports lodged with the planning application(s), which addressed water demand for the Installation as well as the management of evaporative cooling water discharges. This aspect has therefore formed part of the overall site design from the outset.

The design and construction of the evaporative cooling systems, including the storm water discharge arrangements, were therefore carried out in accordance with the planning permissions granted, ensuring compliance with the MCC and ABP permissions granted.

It is noted that these facilities were granted planning permission prior to EPA Licence process as set out in Table 4.1.

Table 4.1 Development Timeline

Building	Planning Application Date	Planning Grant Date	IE License Grant Date	Operational Date
Building A	19 Dec 2019	31 March 2020 from MCC under Planning Ref.: LB191735	08 August 2024.	May 2021
Building B	12 April 2021	19 April 2022 under ABP Planning Ref.: ABP-310729-21.	Subject to IE Licence Review	November 2025

Sampling and Chemical Testing of Storm Water Discharge

With regards to the feasibility of carrying out sampling and chemical testing of the evaporative cooling water, this is currently being investigated, and a request has been made to the OEE for submission of this feasibility study by the end of Q4, 2025.

Consideration of Alternatives

As per Condition 3.17 of the existing IE Licence, AWS are undertaking a feasibility study to divert the evaporative cooling water to sewer. An extension of the submission date has been sought from OEE and it is anticipated that the results of this feasibility study will be submitted to OEE for approval by end of Q4 2025.

Evaporative Cooling Water Operation

Further information on the evaporative cooling process is provided in Table 4.3.

Composition and Quality of Cooling Water Discharge

In relation to the composition and water quality of the residual cooling water at discharge, it should be noted that on the existing licensed site, this discharge stream is currently monitored at Monitoring Point SW1-1, i.e. the combined discharge from all surface water discharges sources, as per current Licence conditions. Specifically, regarding the cooling water discharge quality, the water used for cooling is potable water, and does not have any chemicals added to it. As outlined above, ADSIL is currently undertaking a feasibility study that will include sampling of the evaporative cooling water discharge at the Installation.

As per the assimilative capacity assessment (Appendix A to Attachment-7-1-3-2-Soil and Water Impact Assessment). Estimated maximum evaporative cooling water concentrations and discharge flow from the site are presented in Table 4.2 below. As can be seen in Table 4.2, the conductivity does not reach more than 1,500 µS/cm, as the water is bled off once it reaches this level. Additional information regarding the cooling system operations can be found in Table 4.3.

Table 4.2 Estimation of Evaporative Cooling Water Concentrations

Parameter	Unit	Value [1]
Conductivity	µS/cm	1,500
TDS	mg/l	943
Alkalinity	mg/l	359
Ca (as CaCO3)	mg/l	550
Chloride	mg/l	42
Silicone (as SiO2)	mg/l	13.6
Sulphate (SO4)	mg/l	323
Barium	mg/l	0.150
Magnesium	mg/l	70
Potassium	mg/l	4.3
Sodium	mg/l	86

Note: 1. Data obtained from the Operator's water team

Use of Hydrogen Peroxide for periodic cleaning of the system

Cleaning of the water-based evaporative cooling systems, including all AHUs and pipelines with hydrogen peroxide solution, is undertaken if positive legionella samples have been detected in the unit. Further information on the legionella management is provided in Section 4.3.2 of the Operational Report (Attachment 4-8-1).

Pre-filling of AHU Sumps

For Building A, the AHU sumps pre-fill when the ambient temperature reaches a set temperature (28.6 °C), and for Building B they pre-fill when the temperature reaches 30.1 °C. However, when cooling water discharge is not occurring, recirculated evaporative cooling water within the AHU sumps is typically drained every 7 days to the storm water drainage network. This drain-down occurs when the evaporative cooling system has remained unused for a continuous period of 7 days. The purpose of this regular drain-down is to prevent stagnation and minimise the risk of legionella growth within the system.

Table 4.3 Additional Information on Evaporative (Adiabatic) Cooling process

Building	Criteria for When Evaporative Cooling Water is Required	Description of Cooling Units	Operation When Evaporative Cooling is Required	Operation When Evaporative Cooling is Not Required	Draining / Maintenance
Building A	Evaporative cooling water sumps prefill when outside air temperature is 28.6 °C Evaporative cooling activates when outside air temperature exceeds 28.9 °C and IT equipment requires additional cooling.	100 no. AHU's cooling units installed. Each AHUs includes two 60-litre sump.	- Evaporative cooling water sumps prefill at 28.6 °C and are maintained full for operational readiness. - Units stage into evaporative cooling when outside air > 28.9°C and IT equipment requires additional cooling. - Evaporative cooling water recirculates through the sumps (~60 L/unit) over the evaporative pads. - fresh mains water top ups the sump as the cooling water is circulated and evaporated. - when water in the sump is >1,500 µS, the drain opens for gradual discharge from the units. - units exit evaporative cooling when outside air falls below threshold 28.9 °C. - when the temperature drops below 28.6°C evaporative cooling is no longer required, each evaporative cooling unit automatically drains its sump to stormwater (~60 L/unit). - No flow meters are installed on the cooling water discharges. A conservative estimate of the maximum potential evaporative cooling discharge for the existing installation (~241 m^3 per day) was calculated based on the system design and available on-site water storage. In reality, the discharge volumes will be significant lower.	- Evaporative cooling system remains idle if outside air ≤ 28.9 °C - Free cooling mode is active, and cooling is provided using outdoor air.	- Water stored in on site tanks recirculates through UV and 25-micron filters in plant room . - outside of winterisation, the anti-stagnation drain-down occurs when the evaporative cooling system has remained unused for a continuous period of 7 day to prevent stagnation and minimise the risk of legionella growth within the system. - anti-stagnation drain-down the mains water from within pipework, through the sump, to the stormwater network, this is at minimum 40 litres per unit (~4 m^3 per flush cycle). - Cleaning of the water-based cooling systems including all AHUs and pipelines with hydrogen peroxide solution is undertaken if positive legionella samples have been detected in the unit. During dosing, the AHU is placed in blowdown mode, continuously cycling water through the unit to flush it out. - the cooling system is designed for winterised operation from 30 September to 30 March.

Building B	Evaporative cooling water sumps prefill when outside air temperature is 30.1 °C Evaporative cooling activates when outside air temperature exceeds 30.5 °C and IT equipment requires additional cooling.	100 no. AHU's cooling units installed. Each AHUs includes two 60-litre sump.	- Evaporative cooling water sumps prefill at 30.1 °C and are maintained full for operational readiness. - Units stage into evaporative cooling when outside air > 30.5 °C and IT equipment requires additional cooling. - Evaporative cooling water recirculates through the sumps (~60 L/unit) over the evaporative pads. - fresh mains water top ups the sump as the cooling water is circulated and evaporated. - when water in the sump is >1,500 µS, the drain opens for gradual discharge from the units. - units exit evaporative cooling when outside air falls below threshold 30.5 °C. - when the temperature drops below 30.1 °C evaporative cooling is no longer required, each evaporative cooling unit automatically drains its sump to stormwater (~60 L/unit). - No flow meters are installed on the cooling water discharges. A conservative estimate of the maximum potential evaporative cooling discharge for the extended installation (~241 m^3 per day) was calculated based on the system design and available on-site water storage. In reality, the discharge volumes will be significant lower.	- Evaporative cooling system remains idle if outside air ≤ 30.5 °C - Free cooling mode is active, and cooling is provided using outdoor air.	- Water stored in on site tanks recirculates through UV and 25-micron filters in plant room. - outside of winterisation, the anti-stagnation drain-down occurs when the evaporative cooling system has remained unused for a continuous period of 7 day to prevent stagnation and minimise the risk of legionella growth within the system. - anti-stagnation drain-down the mains water from within pipework, through the sump, to the stormwater network, this is at minimum 40 litres per unit (~4 m^3 per flush cycle). - Cleaning of the water-based cooling systems including all AHUs and pipelines with hydrogen peroxide solution is undertaken if positive legionella samples have been detected in the unit. During dosing, the AHU is placed in blowdown mode, continuously cycling water through the unit to flush it out. - the cooling system is designed for winterised operation from 30 October to 30 March.

Request:

2. What measures are proposed to prevent refrigerant system leaks?

Applicants Response:

The potential release of fluorinated greenhouse gases are controlled under the F Regulation (EU) No. 517/2014 on fluorinated greenhouse gases. The Installation have implemented management procedures to ensure compliance and prevention of refrigerant system leaks, including periodic leak testing of relevant equipment, prompt repair of any detected leaks, and proper maintenance records. Routine checks are carried out every 6 months.

An external contractor undertakes all maintenance, repair and leakage testing of relevant equipment. The external contractor holds an EPA Certificate to certify that they fulfil the requirements of Commission Implementing Regulation (EU) 2015/2067 to undertake the relevant activities, including: leakage checking, recovery, installation, repair, maintenance, servicing and decommissioning of equipment containing fluorinated greenhouse gases.

5. STORM

Request:

1. Confirm the minimum volume of water, that is retained in detention basin under dry weather conditions.

Applicants Response:

There is negligible retained water within the detention basin under dry weather conditions.

Request:

2. The licensee shall:

- Provide a letter of agreement from the IDA Business and Technology Park with regard to discharge consent of site storm water to the existing storm water drainage network.

- Obtain, from the IDA, the exact location of the outfall of the IDA storm water network into the River Boyne, currently stated as 'not known' (Attachment 7-1-3-2 Surface Water and Ground Emissions Impact Assessment) to confirm storm water is discharged to where it is 'assumed' to discharge.

- Clarify if a climate change freeboard factor has been added to the 1 in 100 year rainfall event for the determination of the detention basin volume?

- Confirm that FRS1 is located downstream of the full 'Fuel Unloading Area' (as is with FRS2). The schematic 'Surface Water Layout Plan' appears to show a gully, in the 'Fuel Unloading Area', but downstream of the Class 1 interceptor leading to the detention basin.

- Clarify if trigger level values for the stormwater monitoring have been established, confirm parameters and monitoring frequencies, as approved by the Agency.

- Outline any inspection/sampling processes with regard to storm water discharge points.

- Provide further commentary with regard to impacts associated with the negative assimilative capacity of BOD identified for the 95% hydrological condition in the River Boyne as outlined in Table 5.1 and Table 5.3.

- Clarify the statement in Section 5.2 'As such, the evaporative discharge of cooling water improves the water quality within the river' against the conclusion statement 'The effect of the evaporative cooling water discharge is considered to be temporary and not significant' in terms of assimilative capacity of the river.

Applicants Response:

IDA Consent for Storm Water Discharge

The response includes a letter date 12 September 2025 from the IDA, confirming the Installation has consent and permission to discharge to the IDA storm water network.

Storm Water Outfall Location Confirmation

The storm water outfall location is shown in Appendix A. The drawings show the surface water drainage route from the IDA Park to the outfall located close to the Ramparts / St Dominics Park, approximately 1.5 km to the northeast of the site.

Climate Change Freeboard Factor

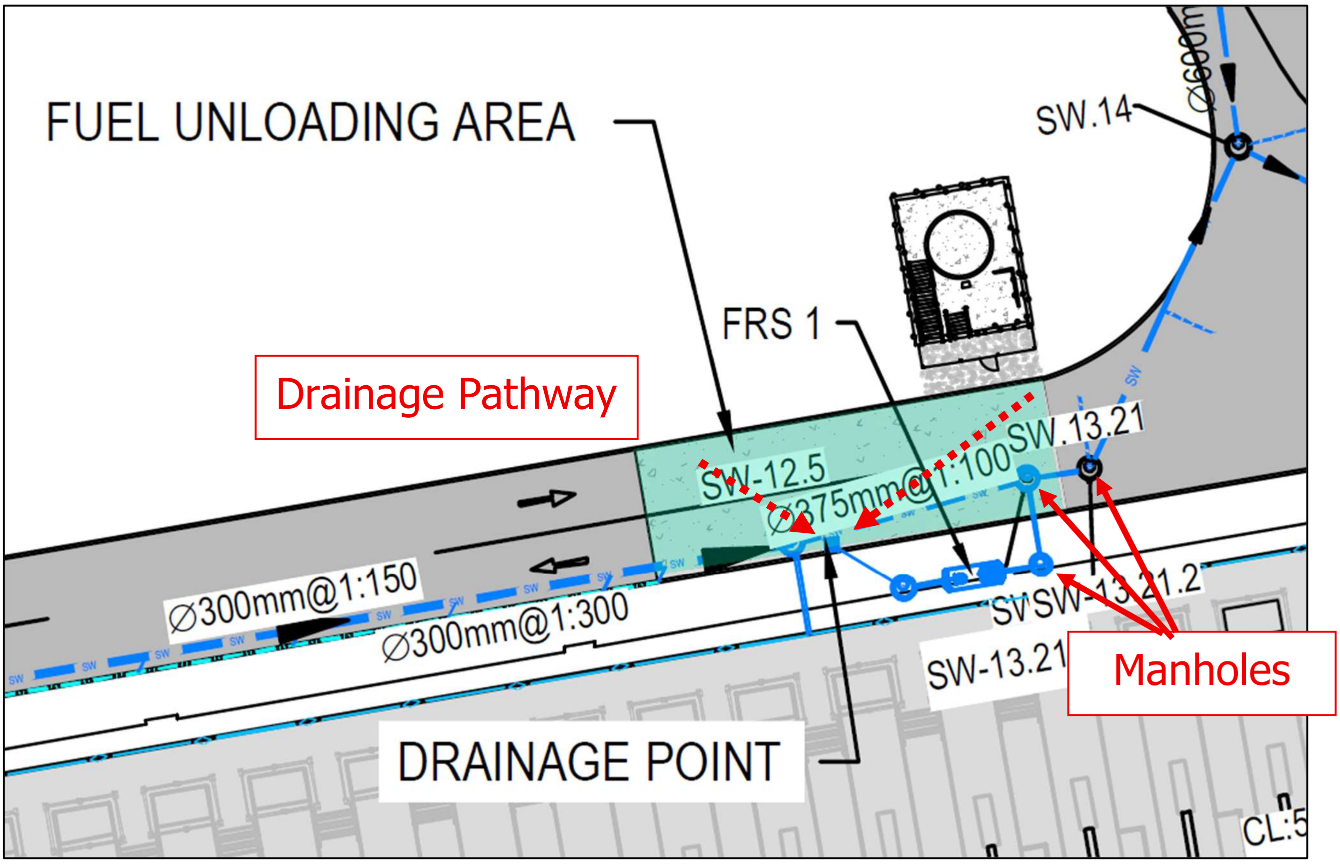
It is confirmed that a climate change freeboard factor has been added to the 1 in 100 year rainfall event for the determination of the detention basin volume. All SUDS elements have been designed as per the recommendation of the SuDS Manual 2015, including the detention basin.

The surface water network has been designed to provide sufficient capacity to contain and convey all surface water runoff associated with the 1 in 100 year event to the detention basin without any overland flooding. This is in compliance with Criterion 3 of Table 6.3 of Volume 2 of the GDSDS. The detention basin in the east of the site has been designed to attenuate flows from the entire site. All calculations have allowed for an additional allowance of 20% in rainfall intensities to allow for climate change as per Table 6.1 of Volume 2 of the GDSDS.

Fuel Unloading Area Drainage (FRS1)

It is confirmed that FRS1 is located fully downstream of the fuel unloading area for Building B. The "drainage point" at the fuel unloading area is shown on the Surface Water Layout Plan, this is the above ground collection point from drainage from the fuel unloading area, and directs stormwater via FRS1 before connecting with the main stormwater network. The circles shown downstream of the interceptors are covered manholes not drainage gully's see Figure 5.1 below.

Figure 5.1 Extract from Surface Water Layout Plan



<u>Storm Water Monitoring – Trigger Levels</u>

Trigger Levels for the site are not formally agreed with the Agency.

The proposed trigger levels for the storm water discharge have been submitted to OEE on 19 September 2025.

<u>Inspection and Sampling of Discharge Points</u>

Storm water monitoring takes place at SW1-1, at the Storm Water Monitoring Kiosk on site, in accordance with the existing licence.

There is a site SOP in place for the daily and weekly storm water sampling and monitoring of the storm water emission point (SW1-1) as required by the existing IE Licence conditions. The procedures include daily visual inspection, weekly grab sample (for laboratory analysis of TOC), and taking on-site pH, temperature and conductivity readings using a handheld meter.

The sampled storm water is collected by an external contractor and transported to a laboratory for analysis. Results are provided to ADSIL.

<u>Assimilative Capacity of the River Boyne – BOD</u>

A positive assimilative capacity indicates that the river can accommodate additional loads without breaching the Environmental Quality Standard (EQS), while a negative assimilative capacity indicates that the river is already at or above the EQS.

In the case of the River Boyne, Table 5.1 presents the assimilative capacity for biochemical oxygen demand (BOD) under the 95%ile (Q95) low-flow condition. The negative value is reported indicates that under these low-flow conditions the river is already at or above the EQS for BOD.

Table 5.3 shows the predicted downstream BOD concentrations with evaporative cooling water discharges from the cooling systems for both the existing and extended Installation. The resulting assimilative capacity remains negative, although it is slightly less negative than the Table 5.1 value. This small change reflects the slight dilution effect from the site discharges.

While the assimilative capacity is negative under low-flow conditions, the proposed discharge does not result in any exceedance of the river's EQS for BOD. It should be noted that these differences are negligible and represent a calculated variation based on the assimilative capacity method.

Clarification on Evaporative Cooling Water Discharge Statements - Attachment 7-1-3-2 Surface Water and Ground Emissions Impact Assessment

It is important that the Agency understands that the maximum evaporative cooling discharge tested in the Appendix A of Attachment 7-1-3-2 Surface Water and Ground Emissions Impact Assessment_occurs only during certain periods of elevated ambient temperatures (see Table 4.3), rarely experienced in Ireland. Under typical operation, the site operates in free cooling mode with no evaporative cooling water discharge (aside from the anti-stagnation cycle, which involves a much smaller volume of mains water). Therefore, the assessment of maximum evaporative cooling water discharge represents a conservative, worst-case scenario.

The statement in Section 5.2 that *"the evaporative discharge of cooling water improves the water quality within the river"* refers specifically to the outcome of a flow condition tested that results in a slight dilution effect of the evaporative cooling water on background concentrations of certain parameters. This results in a negligible reduction and a corresponding minor improvement in water quality as compared to the EQS.

By contrast, conclusion statement that *"The effect of the evaporative cooling water discharge is considered to be temporary and not significant (i.e., an effect which causes noticeable changes in the character of the environment but without noticeable consequences) in terms of assimilative capacity of the Boyne River"* reflects the overall impact of the discharge on the river across all hydrological conditions and over time. While Section 5.2 refers specifically to the slight improvement calculated under dry weather (Q95) conditions, this effect is minimal, temporary, and does not result in any meaningful or lasting change in the ecological or chemical status of the River Boyne.

Both statements are consistent; a measurable but negligible improvement occurs under a specific tested condition, yet in the broader context of the River Boyne, the effect is not significant and does not affect compliance with Water Framework Directive objectives, which reflect long-term water quality trends.

6. NOISE

Request:

1. The Beacon Hospital, located approximately 70m south of the site, is considered a NSL due to its function as a healthcare facility, identified in the noise impact assessment conducted in April 2025. Please clarify why noise monitoring was not carried out at this location during baseline monitoring and monitoring conducted for the January 2025 noise annual survey?

Applicants Response:

The former Beacon Hospital building, now Beacon Renal, was not proposed as a noise monitoring location in the original licence application; it was, however, included as a noise-sensitive location in all stages of the noise impact assessment supporting this licence review application. It should be noted that the Beacon Renal only operates during daytime hours Monday to Saturday.

It is now proposed to add a fifth noise monitoring location 'E' near the Beacon Renal building to cover this receptor. An updated 'Attachment 7-5 Noise Emissions' document and associated drawing showing the monitoring locations is included with this response.

Request:

2. The licensee shall:

- Please resubmit Figure 6 and Figure 7 from Attachment-7-1-3-2 Noise Impact Assessment to include 45-50 dB(A) contours.

- Provide a map with proposed noise monitoring locations.

- Under 'Scenario B', the installation will not comply with the daytime, evening time and night time noise limits. Describe how the potential for exceedances will be managed and what mitigation measures will be implemented to ensure compliance with the relevant noise limits.

Applicants Response:

Noise Figures

Figures 6-1, 6-2 and 6-3 show updated figures: Figure 5 Noise Contours for Scenario A, Figure 6 Noise Contours for Scenario B and , Figure 7 Noise Contours for scenario C; these are the same models as in the Attachment 7-3-1-2 Noise Impact Assessment submitted on 10 April 2025, with the background mapping and legends revised for clarity and with noise contours from 45 dB to 50 dB $L_{Aeq,T}$. included in each case.

Figure 6-1. Noise Contours for Scenario A (Figure 5 of Attachment 7-3-1-2 Noise)

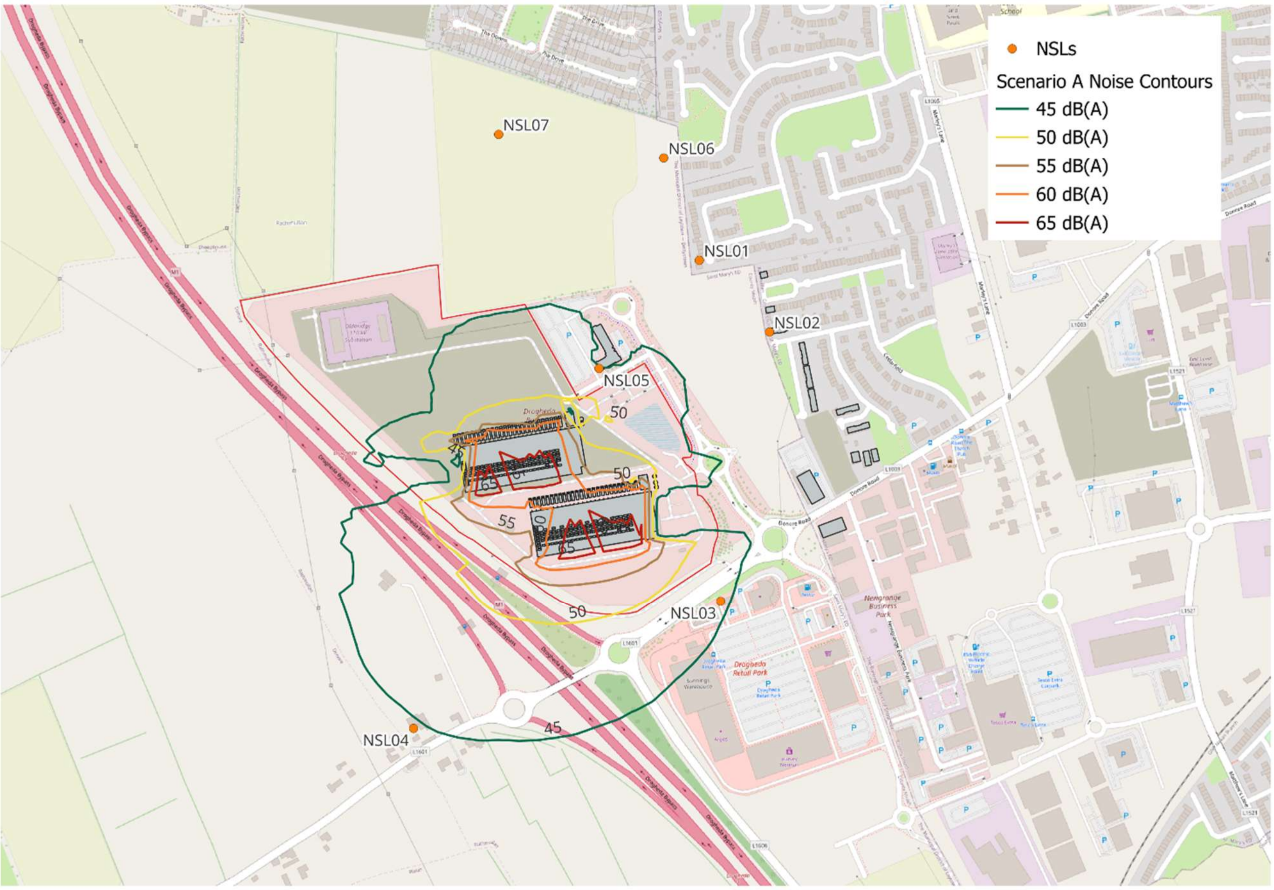


Figure 6-2. Noise Contours for Scenario B (Figure 6 of Attachment 7-3-1-2 Noise)

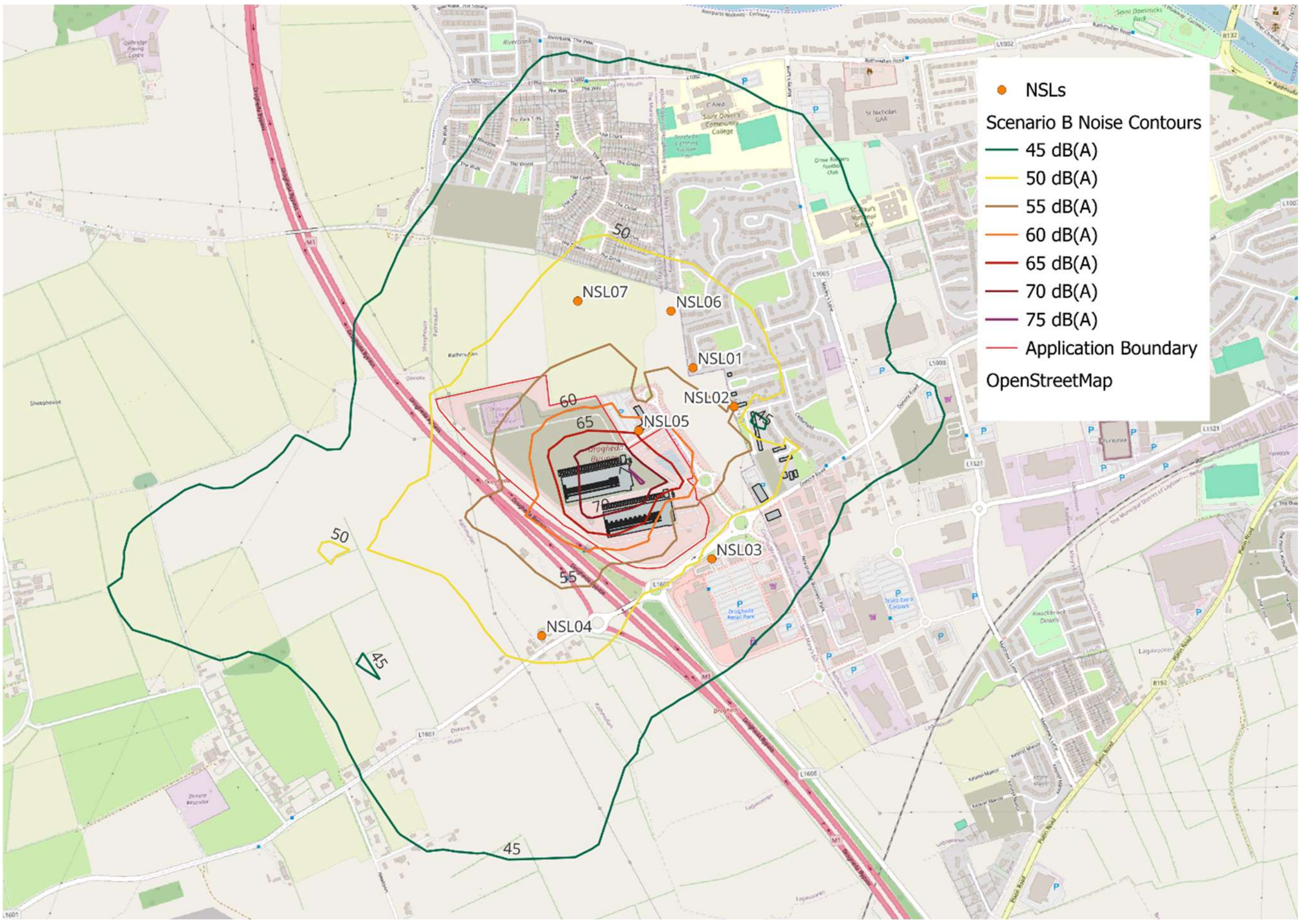
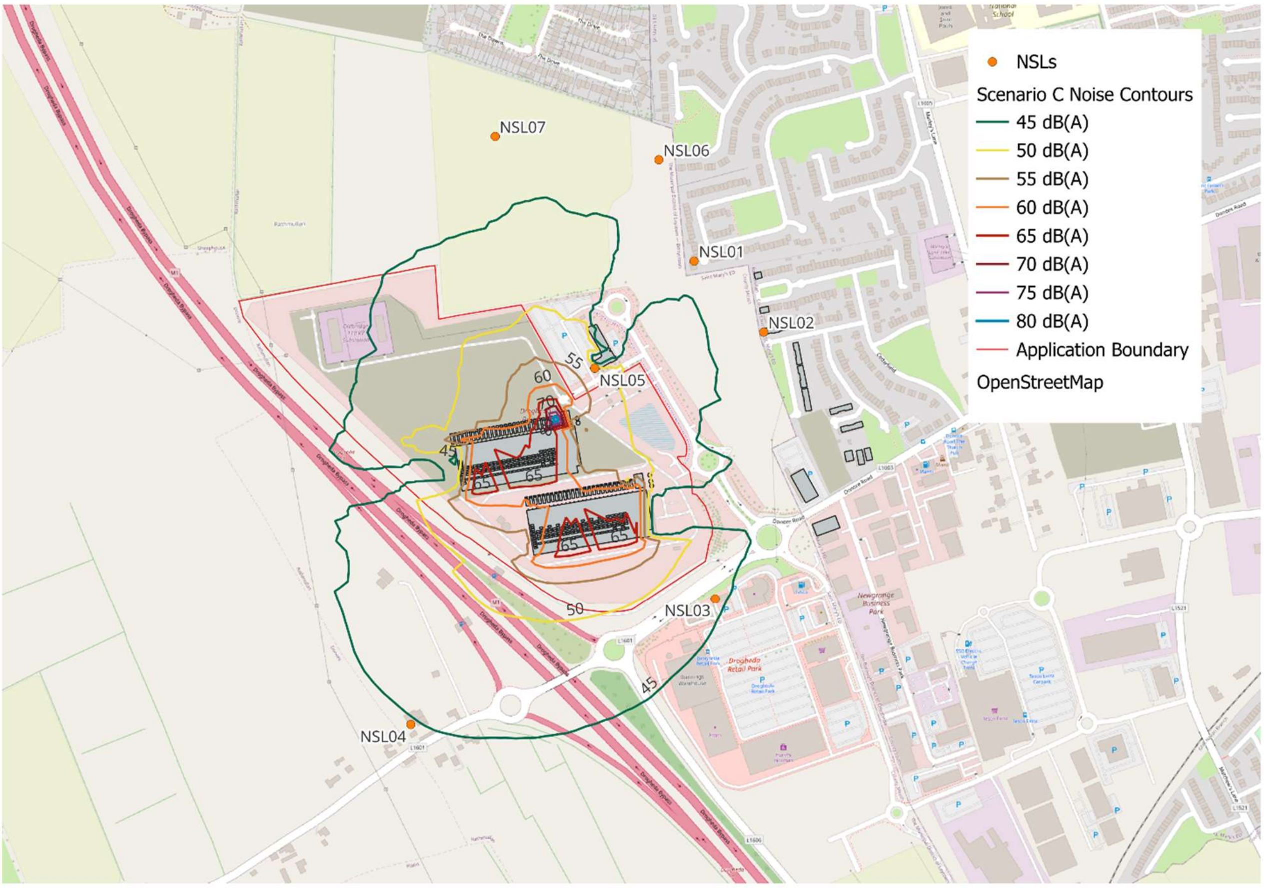


Figure 6-3. Noise Contours for Scenario C (Figure 6 of Attachment 7-3-1-2 Noise)



<u>Map of Noise Monitoring Locations</u>

A map showing the noise monitoring location, including the additional proposed 'E' is included with this Response.

<u>Scenario B Noise Levels</u>

In line with the existing licence for Building A, the noise criteria at residential noise-sensitive locations for day-to-day operations being applied for under the IEL are:

- Daytime: 55 dB $L_{Ar,T}$;
- Evening time: 50 dB $L_{Ar,T}$, and
- Night-time: 45 dB $L_{Aeq,T}$.

In the case of commercial locations, the noise criterion for day-to-day operations for all periods is 55 dB $L_{Ar,T}$, as these locations where occupants are less likely to be affected as they are not in use during night-time periods.

As presented in Attachment 7-1-3-2, the standard noise criteria are being met for normal day-to-day operations including generator testing and maintenance (during daytime hours). The same attachment presents Scenario B, which represents an emergency circumstance where there is a loss of electrical power to the site from the grid. These events, by their nature, are temporary, exceptionally rare, and do not form part of routine operations.

Scenario B for the purposes of the noise impact assessment represents an emergency circumstance. Guidance on noise criteria during emergency circumstances (Scenario B) is provided in Section 4.3 of Attachment 7-1-3-2. This approach is fully consistent with the EPA NG4 Guidance (pp. 19).

The emergency generators will only operate under specific emergency circumstances, as referred to in Section 1.1 of the Operational Report (Attachment 4-8-1). It is expected that the operation of the emergency generators will be limited by licence condition to a maximum of 100 hours per generator, per year (excluding testing and maintenance). This restriction ensures the Installation cannot rely upon the generators to power the site other than in an emergency scenario, e.g. in the event of a loss of mains power.

To manage and minimise noise emissions during emergency operations, the following measures will be implemented:

- Restricted Hours per Generator - The limited operational hours prevent the extended use of generators for anything other than emergency generation.
- Load Requirements - During emergency operation, the generators will only be operated at the load required to maintain critical site functionality. The noise assessment has been undertaken at 100% load for building plant equipment operating concurrently with emergency generators, this represents a conservative assumption. Actual operational loads during emergencies will be lower, matching site load.
- Engineering Controls - The emergency generators are designed with integrated attenuation measures, including acoustic enclosures and silencers, to minimise noise emissions at source.
- Operational Review - It is noted that to date there has been no instance of Scenario B Emergency Operation since the IE licence was granted in August 2024. In addition, there have been no noise complaints as a result of site operations.

An emergency scenario (the worst-case, i.e. all generators running at 100% load), is expected to be a rare occurrence and limited in duration. Running of the generators during emergencies will be managed through a Noise Management Plan (NMP) as required by Condition 6.11.2 of the existing licence. The current NMP will be revised and updated post grant of the Licence Review to incorporate Building B. The standard noise conditions and limit values based on the day, evening, night criteria will continue to apply to all normal operations.

7. WASTE

Request:

1. In 'Attachment 8-1- Waste Generated', it is noted that there is an increase in waste to 178.56 tonnes of oily water from the oil/water separators, significantly greater than what is stated for licence P1181-01. Please provide further clarification with regard to the increase in volume.

Applicants Response:

The amount provided in the original licence application for Building A was based on an estimation of the oily water waste that would be generated at the Installation. For the licence review application, recorded data from the Building A AER has been used to estimate the waste generation from the extended Installation. The amount given is a conservative figure for maximum oily waste.

8. ENERGY EFFICIENCY

Request:

1. In 'Attachment 4-6-1', the total electricity used is stated as '840,960 MWh'. This figure is electricity purchased and does not include the row 'Total renewable electricity generated and used and the site' or

the energy used from on-site generators (non-renewable electricity generated and used at the site). Please provide clarification on this. Provide the figure for the latter and re-adjust the 'total electricity used' figure if required.

Applicants Response:

The maximum electricity used for the site is 840,960 MWh, as stated in Attachment 4-6-1. The site is connected to the National Grid with a secure connection, via the onsite substation. During normal operations that the site will be provided power from the national grid.

The EPA template automatically sums all figures entered; therefore, this would result in double-counting and over stating the Total Electricity Used at the sited. Furthermore, the renewable electricity generated from onsite photovoltaic (PV) panels, and non-renewable electricity emergency backup generators had not been included in this table for the following reasons:

- Photovoltaic (PV) generation – The output from the PV system cannot be controlled on demand, as is no guarantee of the amount of electricity generated by the PV system; therefore, it has therefore been conservatively assumed that PV does not contribute to the site's electricity generation.
- Emergency backup generators - The annual electricity used is not a fixed amount, as this is only required during an abnormal or emergency events to supply electricity instead of the grid:
  - During maintenance and testing, no non-renewable electricity is generated and used from the generators.
  - In emergency circumstances, when the National Grid supply is unavailable, the generators provide non-renewable electricity instead of grid supply, not in addition to it. Therefore, the Total Electricity Used (840,960 MWh) remains unchanged.
  - The maximum operation of the emergency generators is 100 hours per generator per year, which equates to a potential maximum of 9,600 MWh per year.

The total electricity figure reflects the site's maximum annual consumption from the National Grid and is not adjusted for PV or emergency generation to avoid overestimating the actual demand. Revised Attachment-4-6-1-Water-Energy-Usage_Rev is included with this submission.

Request:

2. Clarify why HVO figure under is absent under 'Thermal Energy Consumption'.

Applicants Response:

Attachment 4-6-1 has been revised to include the maximum potential HVO use. As outlined in the Operational Report (Attachment-4-8-1), it would be either HVO or diesel used and so the figures presented in Attachment4-6-1 show the maximum HVO if <u>only</u> HVO was used, and the maximum diesel if <u>only</u> diesel was used, these figures are not to be aggregated.

It should be noted that the fuel usage figures have also been revised to reflect updated information provided by the Applicant.

9. GREENHOUSE GAS EMISSIONS (GHG)

Request:

1. Please detail both the direct and indirect GHG emission figures for each of the following and provide a breakdown of the origin of the figures:

-The indirect GHG emissions from National Grid electricity based on annual energy consumption for the proposed installation (i.e. both building A and B).

-The direct GHG emissions from both the estimated use and the maximum expected use of the on-site generators (both building A and B generators).

Applicants Response:

Greenhouse gas (GHG) emissions from the Installation have been calculated using the Sustainable Energy Authority of Ireland (SEAI)[1] published conversion factors (most recent figures available are 2024), reproduced in Table 9.1 and 9.2. The CO_2e estimation was undertaken using two calculation methods based on the indirect GHG emissions from National Grid electricity, and direct GHG emissions from fuel usage. In both cases, the assumptions applied are precautionary in nature and are considered to represent conservative operational scenarios. It should be noted that the assessment has been updated based on the most recent figures, which may have changed since the EIA was carried out. The results indicate a reduction in the GHG emissions.

Table 9.1 Emission factors for CO_2 electricity consumption

Electricity	gCO_2/kWh	gCO_2/MJ	Note
Electricity consumption	226.3	62.85	• CO_2 emissions arising within Ireland per unit of electricity available for final consumption. • Calculated as total CO_2 from electricity generation in Ireland divided by electricity available for final consumption. • Use this factor to calculate CO_2 emissions, arising in Ireland, for electricity consumption including generation, transmission and distribution losses, and own-use of electricity in power plants. • CO_2 emissions arising outside of Ireland are not included in this factor. • 2024 provisional values.

Table 9.2 Emission factors for CO_2 produced from combustion of Liquid fuels

Liquid	gCO_2/kWh	gCO_2/MJ	$kgCO_2/kg$	$kgCO_2/l$
Diesel / gasoil (100% petroleum)	263.9	73.30	3.174	2.682

<u>Estimation of Indirect Emissions</u>

Estimation of the indirect emissions is based on the annual electricity demand of the Installation. The electricity supply is from the National Grid. The Maximum grid import is 840,960 MWh.

[1] SEAI conversion factors: https://www.seai.ie/data-and-insights/seai-statistics/conversion-factors

The indirect GHG emissions associated with the electricity requirements for the Installation are shown in Table 9.3 based on the SEAI emission factor from Table 9.1. These figures assume no contribution from on-site PV generation.

Table 9.3 Total Annual Indirect CO_2e emissions based on electricity supplied by National Grid

Indirect Emissions from Electricity Consumption	840,960	MWh/annum
	226.3	gCO_2/kWh
	190,309,248	$kgCO_2$
	190,309	tCO_2e/annum

Estimation of Direct Emissions

Estimation of the direct emissions has been calculated based on the maximum and expected annual fuel consumption. It should be noted that the maximum potential consumption represents an unrealistic worst-case scenario, and is based on the maximum volume of fuel capable of being combusted on site over a year.

- Maximum potential annual fuel consumption: 3,371.99 tonnes (3,920,915 l).

The assumed maximum potential annual fuel usage is based on

- 50 generators running for 100 hours at 100% load
- All 54 generators testing and maintenance (6.75 hrs at 25% load, and 16 hrs at 90% load).

Expected annual fuel consumption is expected to be lower, i.e. 2,717 tonnes (3,196,624 l), as the generators will not operate at 100% load during an emergency scenario. The final estimation of CO_2e is conservative as it assumes all liquid fuel used diesel/gasoil, despite the Installations intention to use HVO fuel. HVO fuel has an 80–90% lower lifecycle GHG emission compared with fossil diesel/gasoil.

Taking into account the assumptions above, the GHG emissions associated with the total fuel usage required for the Installation are detailed in Table 9.4. This includes the CO_2e emissions from both the maximum potential fuel consumption and expected fuel consumption.

Table 9.4 Total Annual Direct CO_2e emissions based on maximum and expected fuel consumption

Direct Emissions from Fuel Usage (assuming all diesel and maximum use)	3,920,915	max. litres diesel/annum
	2.682	$kgCO_2$/l
	10,515,894	$kgCO_2$
	10,516	tCO_2e / annum
Direct Emissions from Fuel Usage (assuming all diesel and expected use)	3,196,624	expected litres diesel/annum
	2.682	$kgCO_2$/l
	8,573,344	$kgCO_2$
	8,573	tCO_2e / annum

The maximum fuel usage estimate represents a conservative upper bound. In practice, the Installations actual emissions are expected to be significantly lower due to the usage of grid electricity, HVO fuel use, and limited emergency generator use.

Summary

The Direct and Indirect Emissions are not additive, in practice, the National Grid Supply and emergency operation emergency generators does not involve concurrent operation. The emergency generators only supply power when the National Grid is not supplying electricity.

HVO fuel will be used as a replacement for fossil fuel (conventional diesel), wherever practicable. HVO Fuel will be sourced from reputable suppliers that can provide Proof of Sustainability (PoS) under the Renewable Energy Directive (RED) Voluntary Scheme system. Ireland does not have its own national RED certification scheme so compliance must be demonstrated through a European Commission approved scheme or the national scheme of another Member State such as the International Sustainability and Carbon Certification (ISCC) or similar. The preferential use of HVO over diesel will deliver a reduction in lifecycle GHG emissions compared to conventional fossil fuels, thereby contributing to the mitigation of the Installation's climate impact.

The installation will be required to operate under a Greenhouse Gas (GHG) Permit under the EU Emissions Trading System (EU ETS) Directive, in accordance with the European Communities (Greenhouse Gas Emissions Trading) Regulations 2012 (S.I. No. 490 of 2012 and amendments). The quantity of allowances made available on the market or by free allocation is controlled at EU level and is reducing each year to ensure that overall emissions from the EU ETS sector meet EU GHG reduction targets. As the site will form part of the EU ETS, the impact of CO_2 emissions is addressed through this market-based scheme. Under the Greenhouse Gas (GHG) Permit the operator will be required to report annually all direct CO_2 emissions from the Installation and to surrender EU allowances to cover the emissions of the previous calendar year. Fuel usage will be metered and recorded for all relevant combustion plant, and this data will form the basis of GHG reporting and verification.

Indirect GHG emissions associated with electricity consumed from the national grid are also covered under the EU ETS Directive, as these emissions are accounted for at the electricity generating plant.

Energy usage will be reported to the EPA as part of the Annual Environmental Report, along with Environmental Performance Reporting as required by the IE Licence. These reports are made publicly available.

10. ETS PERMIT

Request:

1. The ETS permit register number provided in the application form was IE-GHG200-10527-1. According to the EPA's ETS website, this appears to have been replaced by GHG200-02. Please clarify and confirm the register number of your ETS permit.

Applicants Response:

The EU ETS permit IE-GHG200-10527-1 has been replaced by GHG200-02. A further amendment to EU-ETS has been lodged to include the emissions sources from Building B on 19 September 2024, this application is awaiting EPA final decision.

Request:

2. Clarify what the 'roll-up emergency back-up generators' are as noted in permit GHG200-02. If details on these generators are provided somewhere in the previously submitted review documentation, verify where? If not described in application review documentation, provide detailed information on these generators.

Applicants Response:

The roll-up emergency back-up generators (or 'RUGs') are mobile generators which would be deployed as a replacement to one of the stationary emergency generators in the event that they are unavailable due to maintenance or otherwise. The RUGs provide further redundancy backup to the stationary emergency generators.

In accordance with EU ETS permit requirements, all emission sources must be accounted for. As the RUGs may be located on site and operated on a temporary basis, they have been included in the GHG permit to ensure comprehensive and robust reporting. They have not been included in the EPA Industrial Emissions Licence, as they operate as direct replacements for the fixed emission sources, rather than as additional air emission sources.

At present, there are no RUGs located at the Installation. These are mobile generators that available to the Operator across its facilities in Ireland, and would only be operated as a direct replacement for one of the stationary emergency generators.

The RUGs are permitted under the current licence under Schedule A1(2), A1(3) which states:

> *2. In the event that a generator is unavailable due to maintenance or otherwise, then a mobile generator may be used.*
>
> *3. Notwithstanding Schedule A.I Generator operation, other than testing/maintenance, Paragraphs 1 and 2 above, the combined thermal input of both the stationary and mobile generators, which are operated at any one time, shall not exceed 165.87 MWth.*

There are 4 no. RUGs that included on the GHG permit (EPA Ref. GHG200-02) for the Installation, as follows:

- 2 no. 4.90 MWth roll-up emergency back-up generators
- 2 no. 3.03 MWth roll-up emergency back-up generators

The combined thermal input of both stationary and mobile generators operated at any one time shall not exceed the thermal input of the stationary emergency generators.

Sincerely,

Jonathan Gauntlett
Associate
AWN Consulting

Appendix A – Stormwater Outfall Location

Sheet 1 - IDA BP - 3rd Party Lands

9/17/2025

1:3,848

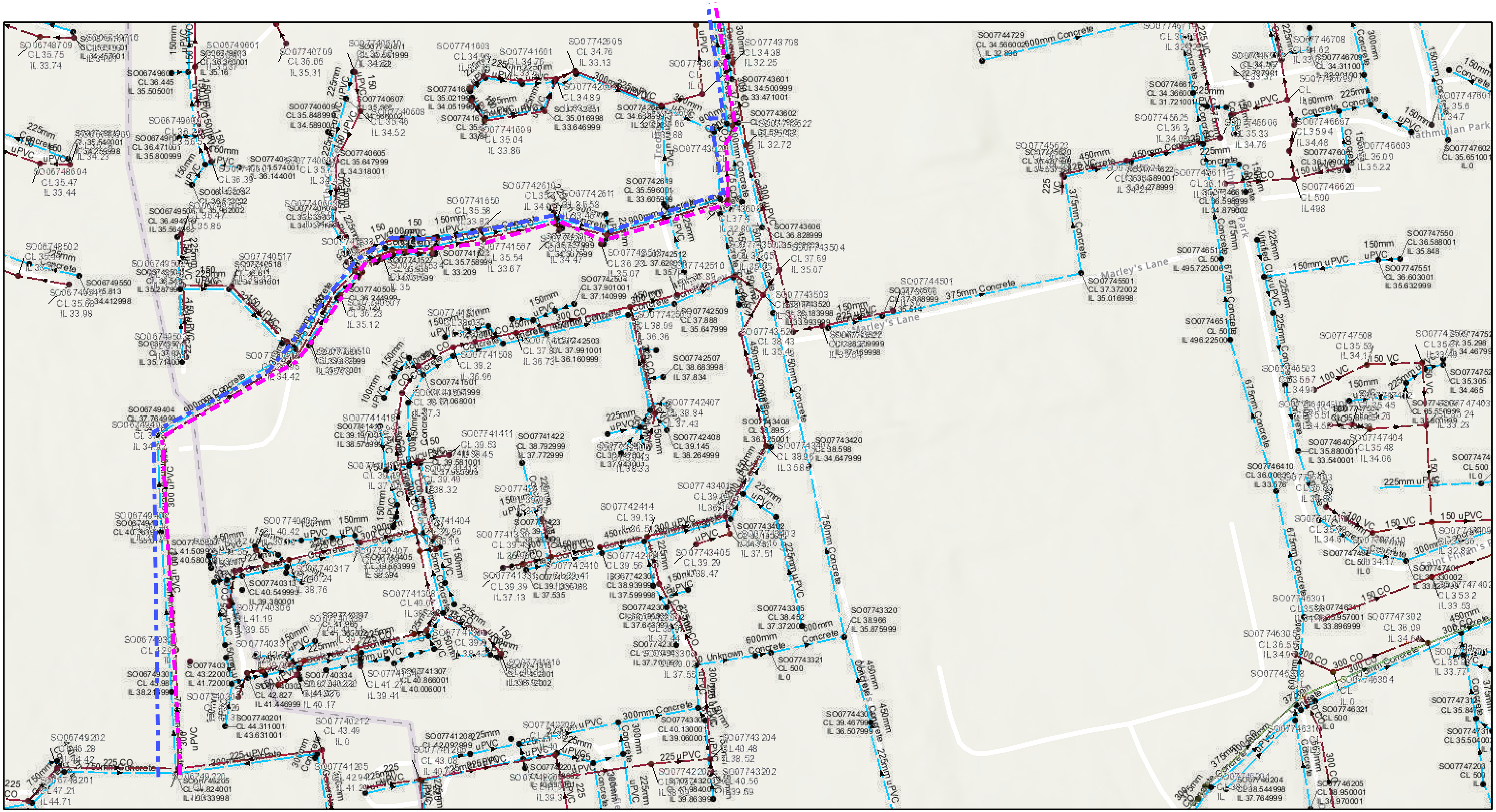
0 0.03 0.06 0.11 mi

0 0.04 0.09 0.18 km

Sewer Manholes
Standard
Backdrop
Cascade
Catchpit
Bifurcation
Hatchbox
Lamphole
Hydrobrake
Other; Unknown
Sewer Discharge Points
Outfall
Overflow
Soakaway
Other; Unknown
Sewer Clean Outs
Rodding Eye
Flushing Structure
Other; Unknown
Waste Water Treatment plant
Waste Water Pump station
Waste Water Network Structures
Sewer Inlets
Standard
Catchpit
Gully
Other; Unknown
Sewer Chambers
Sewer Mains
Gravity - Combined
Gravity - Foul
Gravity - Overflow
Gravity - Unknown
Pumping - Combined
Pumping - Foul
Pumping - Overflow
Pumping - Unknown
Syphon - Combined
Syphon - Foul
Syphon - Overflow
Overflow
Sewer Mains (Private)
Gravity - Combined
Gravity - Foul
Gravity - Overflow
Gravity - Unknown
Pumping - Combined
Pumping - Foul
Pumping - Overflow
Pumping - Unknown
Syphon - Combined
Syphon - Foul
Syphon - Overflow
Overflow
Sewer Detention Areas
Waste Water Asset Site Boundary
Wastewater Discharge Authorisation Boundary
Storm Manholes
Standard
Backdrop
Cascade
Catchpit
Bifurcation
Hatchbox
Lamphole
Hydrobrake
Other; Unknown
Storm Discharge Points
Outfall
Overflow
Soakaway
Other; Unknown
Surface Water Mains
Surface Gravity Mains
Surface Gravity Mains Private
Surface Water Pressurised Mains
Surface Water Pressurised Mains Private
Storm Inlets
Gully
Standard
Other; Unknown
Storm Culverts
Storm Clean Outs
Storm Weirs
Storm Open Drains
Storm Detention Areas
Storm chambers
World_Hillshade

Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community, Sources: Esri, Maxar, Airbus DS, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA, Geodatastyrelsen, Rijkswaterstaat, GSA, Geoland,

Sheet 2 - Through Respond Housing to Marleys Lane Public Networks



9/17/2025

1:3,848

0 0.03 0.06 0.11 mi

0 0.04 0.09 0.18 km

Sewer Manholes
- Standard
- Backdrop
- Cascade
- Catchpit
- Bifurcation
- Hatchbox
- Lamphole
- Hydrobrake
- Other; Unknown

Sewer Discharge Points
- Outfall
- Overflow
- Soakaway
- Other; Unknown

Sewer Clean Outs
- Rodding Eye
- Flushing Structure
- Other; Unknown
- Waste Water Treatment plant
- Waste Water Pump station
- Waste Water Network Structures

Sewer Inlets
- Standard
- Catchpit
- Gully
- Other; Unknown

Sewer Chambers

Sewer Mains
- Gravity - Combined
- Gravity - Foul
- Gravity - Overflow
- Gravity - Unknown
- Pumping - Combined
- Pumping - Foul
- Pumping - Overflow
- Pumping - Unknown
- Syphon - Combined
- Syphon - Foul
- Syphon - Overflow
- Overflow

Sewer Mains (Private)
- Gravity - Combined
- Gravity - Foul
- Gravity - Overflow
- Gravity - Unknown
- Pumping - Combined
- Pumping - Foul
- Pumping - Overflow
- Pumping - Unknown
- Syphon - Combined
- Syphon - Foul
- Syphon - Overflow
- Overflow
- Sewer Detention Areas
- Waste Water Asset Site Boundary
- Wastewater Discharge Authorisation Boundary

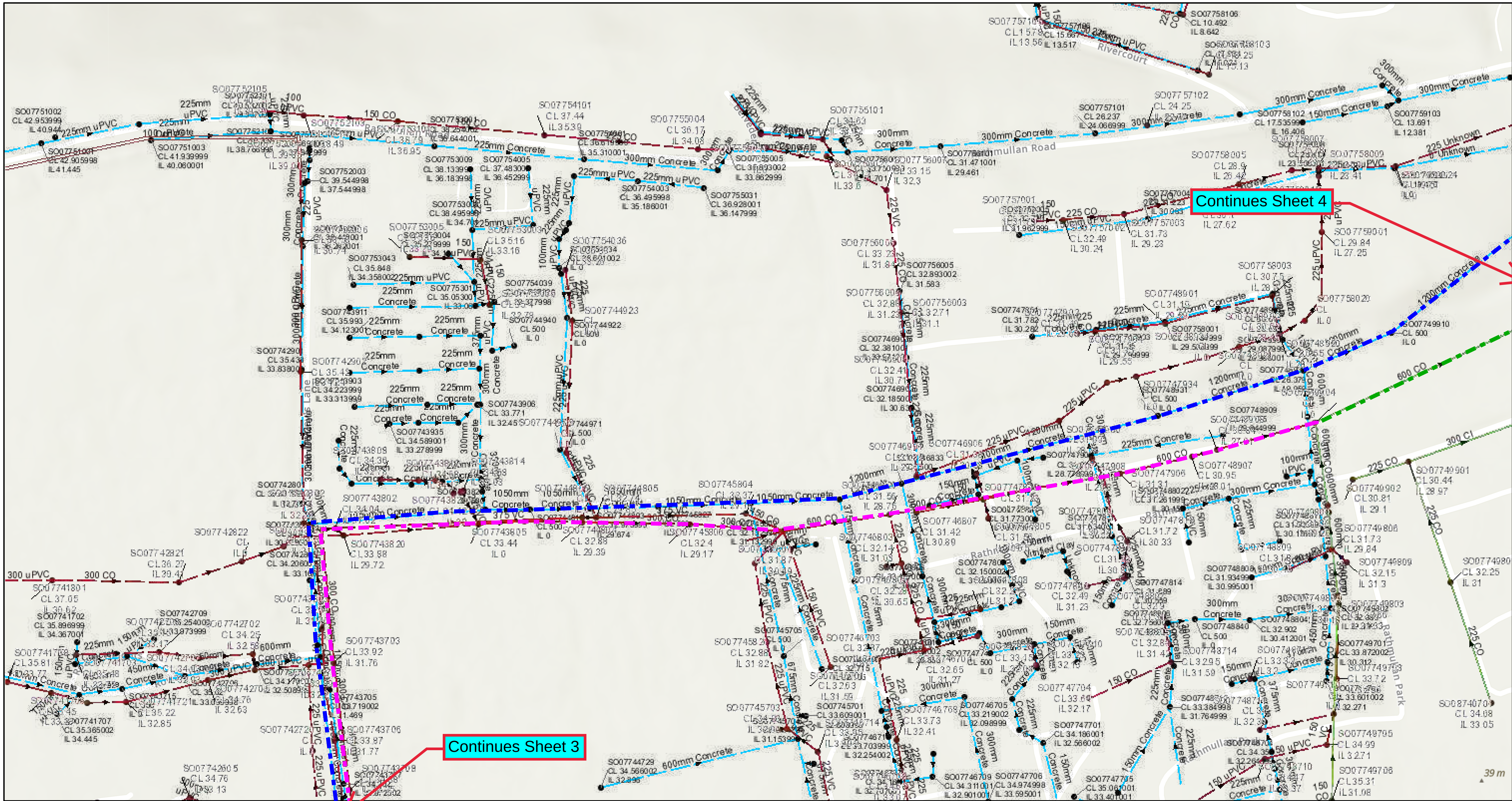
Storm Manholes
- Standard
- Backdrop
- Cascade
- Catchpit
- Bifurcation
- Hatchbox
- Lamphole
- Hydrobrake
- Other; Unknown

Storm Discharge Points
- Outfall
- Overflow
- Soakaway
- Other; Unknown

Surface Water Mains
- Surface Gravity Mains
- Surface Gravity Mains Private
- Surface Water Pressurised Mains
- Surface Water Pressurised Mains Private

Storm Inlets
- Gully
- Standard
- Other; Unknown
- Storm Culverts
- Storm Clean Outs
- Storm Weirs
- Storm Open Drains
- Storm Detention Areas
- Storm chambers
- World_Hillshade

Sheet 3 - Marley's Lane - Drogheda Boys Pitches/St. Nicholas GFC - Rathmullen



9/17/2025

1:3,848

0 0.03 0.06 0.11 mi

0 0.04 0.09 0.18 km

Sewer Manholes
- Standard
- Backdrop
- Cascade
- Catchpit
- Bifurcation
- Hatchbox
- Lamphole
- Hydrobrake
- Other; Unknown

Sewer Discharge Points
- Outfall
- Overflow
- Soakaway
- Other; Unknown

Sewer Clean Outs
- Rodding Eye
- Flushing Structure
- Other; Unknown
- Waste Water Treatment plant
- Waste Water Pump station
- Waste Water Network Structures

Sewer Inlets
- Standard
- Catchpit
- Gully
- Other; Unknown

Sewer Chambers

Sewer Mains
- Gravity - Combined
- Gravity - Foul
- Gravity - Overflow
- Gravity - Unknown
- Pumping - Combined
- Pumping - Foul
- Pumping - Overflow
- Pumping - Unknown
- Syphon - Combined
- Syphon - Foul
- Syphon - Overflow
- Overflow

Sewer Mains (Private)
- Gravity - Combined
- Gravity - Foul
- Gravity - Overflow
- Gravity - Unknown
- Pumping - Combined
- Pumping - Foul
- Pumping - Overflow
- Pumping - Unknown
- Syphon - Combined
- Syphon - Foul
- Syphon - Overflow
- Overflow

Sewer Detention Areas

Waste Water Asset Site Boundary

Wastewater Discharge Authorisation Boundary

Storm Manholes
- Standard
- Backdrop
- Cascade
- Catchpit
- Bifurcation
- Hatchbox
- Lamphole
- Hydrobrake
- Other; Unknown

Storm Discharge Points
- Outfall
- Overflow
- Soakaway
- Other; Unknown

Surface Water Mains
- Surface Gravity Mains
- Surface Gravity Mains Private
- Surface Water Pressurised Mains
- Surface Water Pressurised Mains Private

Storm Inlets
- Gully
- Standard
- Other; Unknown

Storm Culverts

Storm Clean Outs

Storm Weirs

Storm Open Drains

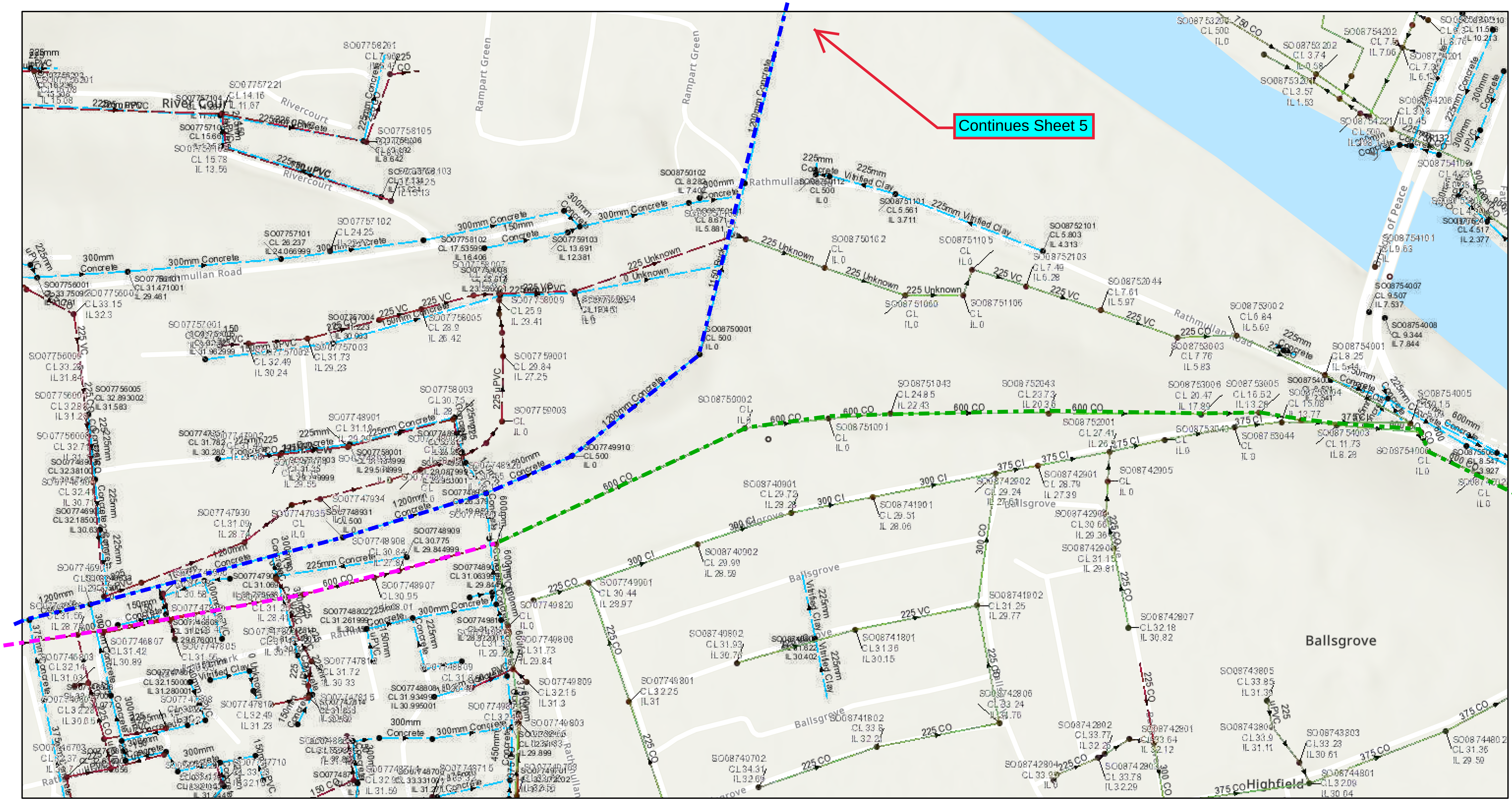
Storm Detention Areas

Storm chambers

World_Hillshade

Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community, Sources: Esri, Maxar, Airbus DS, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA, Geodatastyrelsen, Rijkswaterstaat, GSA, Geoland,

Sheet 4 - S.W. Rathmullen - Ramparts /F.S. - Rathmullen - Bridge of Peace



9/17/2025

1:3,848

0 | 0.03 | 0.06 | 0.11 mi

0 | 0.04 | 0.09 | 0.18 km

Storm Manholes
- Standard
- Backdrop
- Cascade
- Catchpit
- Bifurcation
- Hatchbox
- Lamphole
- Hydrobrake
- Other; Unknown

Storm Discharge Points
- Outfall
- Overflow
- Soakaway
- Other; Unknown

Surface Water Mains
- Surface Gravity Mains
- Surface Gravity Mains Private
- Surface Water Pressurised Mains
- Surface Water Pressurised Mains Private

Storm Inlets
- Gully
- Standard
- Other; Unknown
- Storm Culverts
- Storm Clean Outs
- Storm Weirs
- Storm Open Drains
- Storm Detention Areas
- Storm chambers
- World_Hillshade

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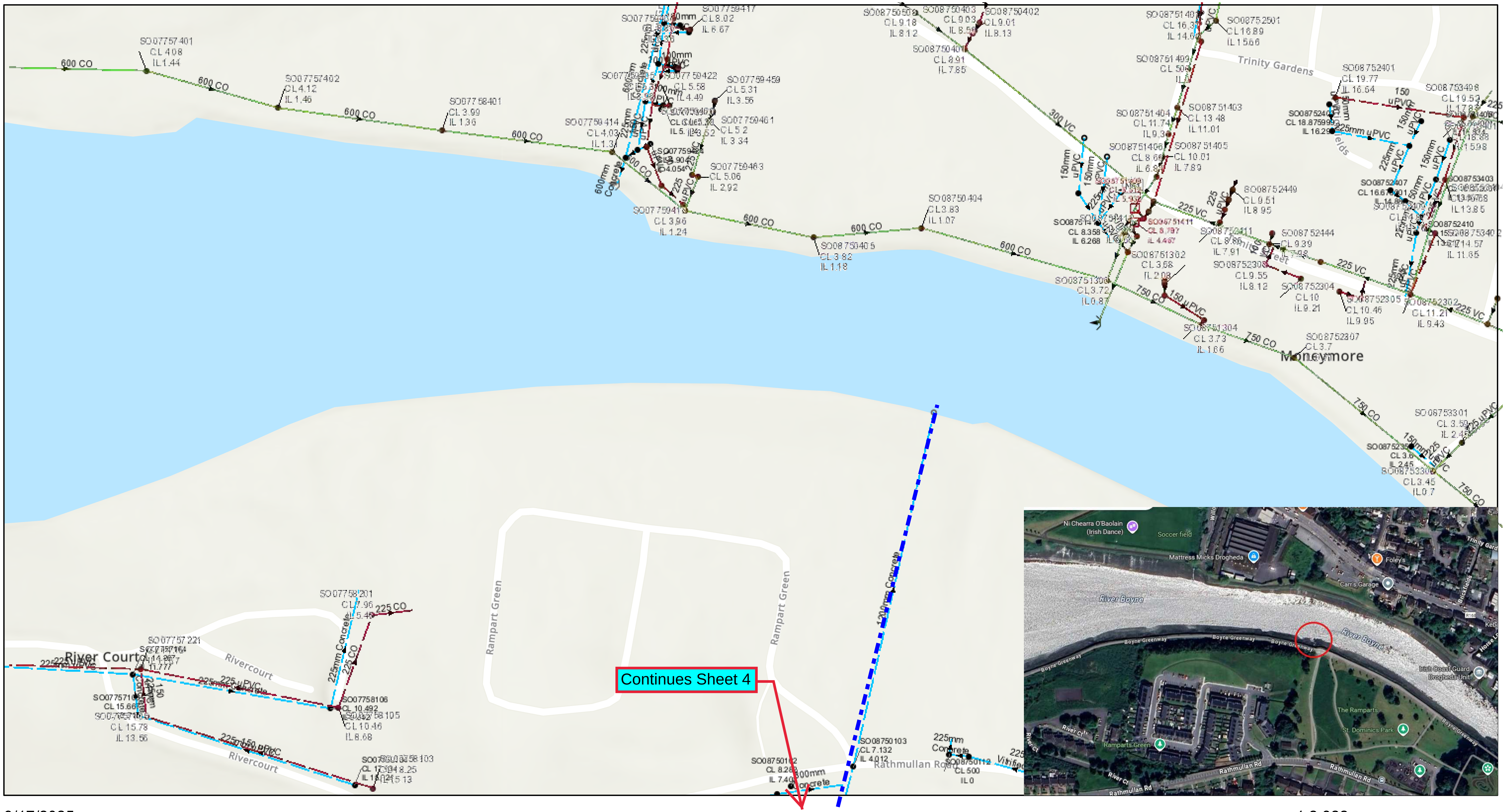
Sheet 5 - SW- Ramparts to Boyne Outfall



9/17/2025

1:2,822

0 0.02 0.04 0.08 mi

0 0.03 0.07 0.13 km

Sewer Manholes
- Standard
- Backdrop
- Cascade
- Catchpit
- Bifurcation
- Hatchbox
- Lamphole
- Hydrobrake
- Other; Unknown

Sewer Discharge Points
- Outfall
- Overflow
- Soakaway
- Other; Unknown

Sewer Clean Outs
- Rodding Eye
- Flushing Structure
- Other; Unknown
- Waste Water Treatment plant
- Waste Water Pump station

Sewer Inlets
- Standard
- Catchpit
- Gully
- Other; Unknown
- Sewer Chambers

Sewer Mains
- Gravity - Combined
- Gravity - Foul
- Gravity - Overflow
- Gravity - Unknown
- Pumping - Combined
- Pumping - Foul
- Pumping - Overflow
- Pumping - Unknown
- Syphon - Combined
- Syphon - Foul
- Syphon - Overflow
- Overflow

Sewer Mains (Private)
- Gravity - Combined
- Gravity - Foul
- Gravity - Overflow
- Gravity - Unknown
- Pumping - Combined
- Pumping - Foul
- Pumping - Overflow
- Pumping - Unknown
- Syphon - Combined
- Syphon - Foul
- Syphon - Overflow
- Overflow
- Sewer Detention Areas
- Waste Water Asset Site Boundary
- Wastewater Discharge Authorisation Boundary

Storm Manholes
- Standard
- Backdrop
- Cascade
- Catchpit
- Bifurcation
- Hatchbox
- Lamphole
- Hydrobrake
- Other; Unknown

Storm Discharge Points
- Outfall
- Overflow
- Soakaway
- Other; Unknown

Surface Water Mains
- Surface Gravity Mains
- Surface Gravity Mains Private
- Surface Water Pressurised Mains
- Surface Water Pressurised Mains Private

Storm Inlets
- Gully
- Standard
- Other; Unknown
- Storm Culverts
- Storm Clean Outs
- Storm Weirs
- Storm Open Drains
- Storm Detention Areas
- Storm chambers
- World_Hillshade