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Technical Note on Excavated Material

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Document history and status

Revision	Date	Description	Author	Checker	Reviewer	Approver
01	25/02/24	First Draft	CH	AC (ALG)	AC (ALG)	AC (ALG)

The purpose of this technical note is to provide an update to Chapter 24 Materials and Waste Management of the EIAR, as requested by the Inspector in the Oral Hearing on 25/02/24 in order to address the following:

- Update to reflect the unlikely position that the material cannot be re-classified under Article 27, as presented in the update session on Day 1 of the Oral Hearing
    - Updated to reflect the Current Status of the Article 27 Notification submitted to the EPA; and
    - Updated to address the proposed waste/material storage proposals at the current Lidl site at Northwood.

This technical note is divided into the following sections:

A - Excavated material scenarios and assessment, including an update on Article 27 Notification;

B - Impacts associated with waste management;

C – Explanation for variance between Article 27 and SRF Quantities and Process;

D - Impact on Lidl.

A - Excavated Material Scenarios and Assessment

3 no. scenarios were envisaged at the time of completion of the EIAR: unmitigated, Article 27 and Soil Recovery Facilities (SRF). The waste chapter did not, however, evaluate the impact associated with the third (SRF) option.

The assessment for material as waste and as by-product has been based on physical characterisation of the material from extensive ground investigation (GI) logs from in excess of 200 locations and geochemical characterisation based on around 600 soil samples obtained during the GI.

It should be noted that the categorisation of the material as a waste and assessment for suitability as a by-product (Article 27 / SRF) are based on different methodologies:

- Waste hazardous properties are initially assessed using the WM3 methodology, then Waste Acceptance Criteria (WAC) are used to define the limits between inert and non-hazardous.
- The acceptability of excavated material as a by-product is based on geochemical criteria within EPA Guidance on Waste Acceptance Criteria at Authorised Soil Recovery Facilities.

Unmitigated Scenario

In this scenario it is assumed that all the excavated material comprises a waste and has consequently been classified as detailed in the following table.

Material	Quantity (m^3)	Percentage
Hazardous	94,775	3.1%
Non-hazardous	221,121	7.3%
Increased inert	104,554	3.5%

Inert	2,605,138	86.1%
Total	**3,025,588**	

Article 27

As proposed mitigation for the impacts associated with excavated material disposal as waste, an application under Article 27 has been made to classify the majority of excavated material as a by-product and reduce the impact associated with waste.

An application (reference ART27-2538) was made to the EPA on 5th November 2021.

The application was based on the use of bespoke thresholds determined on the basis of site-specific risk assessment for organic chemicals and metals / metalloids. Adopting this approach, TII used an increased value of 10mg/kg for polycyclic aromatic hydrocarbons (PAH) and other increased values for metals / metalloids. This was based on our assessment of all the available data using risk assessed values that protect the receiving environmental whilst optimising the reusability of the spoil. In this scenario 89.7% of the material is suitable for A27, with the remaining 10.3% remaining waste.

The EPA have to date issued two consultation requests in December 2022 and April 2023, during which any requests for further information have been addressed by TII.

A specific request was made by the EPA in relation to PAH to be considered at a1 mg/kg limit and TII have provided further information in response to this request. Were this limit to be applied, this would decrease the volume of material suitable for re-use as Article 27 material by up to 10% based on very preliminary estimates.

The application is still pending and has not yet been determined.

Soil Recovery Facilities (SRF)

An assessment was undertaken as reported in the Land Contamination Interpretive Report (Appendix 20.8, Section 5 of the EIAR) of suitability of excavated material for SRF. The available GI data was screened against the criteria in EPA Guidance on Waste Acceptance Criteria at Authorised Soil Recovery Facilities. The proposed Projected is sited in geochemical Domain 2 which comprises much of the central area of Ireland including Dublin, and the majority of available SRF within 40 km of the proposed Project.

The criteria used in the assessment were unamended from those published by the EPA. 80% of the material was assessed as suitable for SRF, with the remaining 20% remaining waste.

B - Impacts

The original assessment presented in Chapter 24 includes the use of soil recovery facilities (SRFs) as a mitigation measure. However, this scenario was not assessed within Chapter 24 and the mitigation was based on a positive Article 27 determination. Given the uncertainty regarding the timing of this EPA determination, the alternative of using SRFs as mitigation has now been assessed. All the information regarding the use of SRFs is contained within Chapter 24 and the addendum (Errata Appendix 13 Addendum to EIAR Chapter 24).

The table below provides a summary of the significant effects for each scenario, where all material is sent to landfill, Article 27 is approved and where SRFs are used in the absence of Article 27.

Summary of Significant Effects for each of the scenarios

Scenario	Description	Sensitivity of the Receptor	Magnitude of Impact	Significance of Effect
No mitigation	All material is landfilled	Very High	Major	Very Large
Mitigation Article 27	89.3% of material is recovered through Article 27 and 10.3 % goes to landfill	Very High	Minor	Moderate or Large
Mitigation SRF facilities (as set out in Errata Appendix 13 Addendum to EIAR Chapter 24)	80% of material is recovered through SRF and 20 % goes to landfill	Very High	Minor	Moderate or Large

As shown in the table above, the magnitude of impact remains minor and the significance of effect remains at moderate or large whether 10.3% (with the remaining 89.7% of material recovered through Article 27) or 20% (with the remaining 80% of material recovered through SRFs) of material is sent to landfill for disposal.

It is important to note that the assessment has been carried out in accordance with internationally recognised IEMA guidance and assesses the impact of waste that is sent to landfill.

C – Explanation for the variances between Article 27 and SRF Quantities and Process

The A27 application is a process which is subject to application to and determination by the EPA.

Licensed SRF accept material based on compliance with EPA guidance on acceptance criteria on an individual site basis.

In circumstances where it is not possible to predict with certainty the outcome of the Article 27 notification, adopting a precautionary approach, it was considered appropriate to assess this scenario without reference to the possibility that the Art 27 notification may be successful in part. The Errata Appendix 13 Addendum to EIAR Chapter 24 notes, however, that should the Art 27 notification be approved in the terms requested or other terms, then the impacts will be further reduced. This explains at p. 11 that:

In the event of the Article 27 notification process being successful, it is predicted that between 80%-90% of excavated soil could be sent to Article 27 sites instead of being managed via the mitigation measure assessed in this Addendum (use of SRF) which would result in less waste going to landfill and therefore would be the same or an improvement. However, based on previous analysis set out in Chapter 24(where 90% of excavated soil was processed through Article 27) the Magnitude of impact would remain Minor and the Significance of effect would remain Moderate to Large in this scenario.

D- Impact on Lidl

This section provides a response to queries raised by Lidl Ireland GmbH, about waste management activities taking place on their site in respect of excavated materials.

The Lidl site is located to east of Ballymun Road – R108 and forms the North East part of the proposed Northwood Station and TBM Portal. The construction sequence is set out in Appendix A5.3 Construction Sequence Report in Section 8 (pages 78-85) of the EIAR.

At Stage 6 (see figure below) of the construction excavation of the station box will take place on the east side of Ballymun Road – R108 on Lidl's land. The excavated material will be removed from the site however it is envisaged that there may be some temporary storage for no more than 5 days, to accommodate onward logistics. Excavated material from the TBM will not be stored on Lidl owned land.

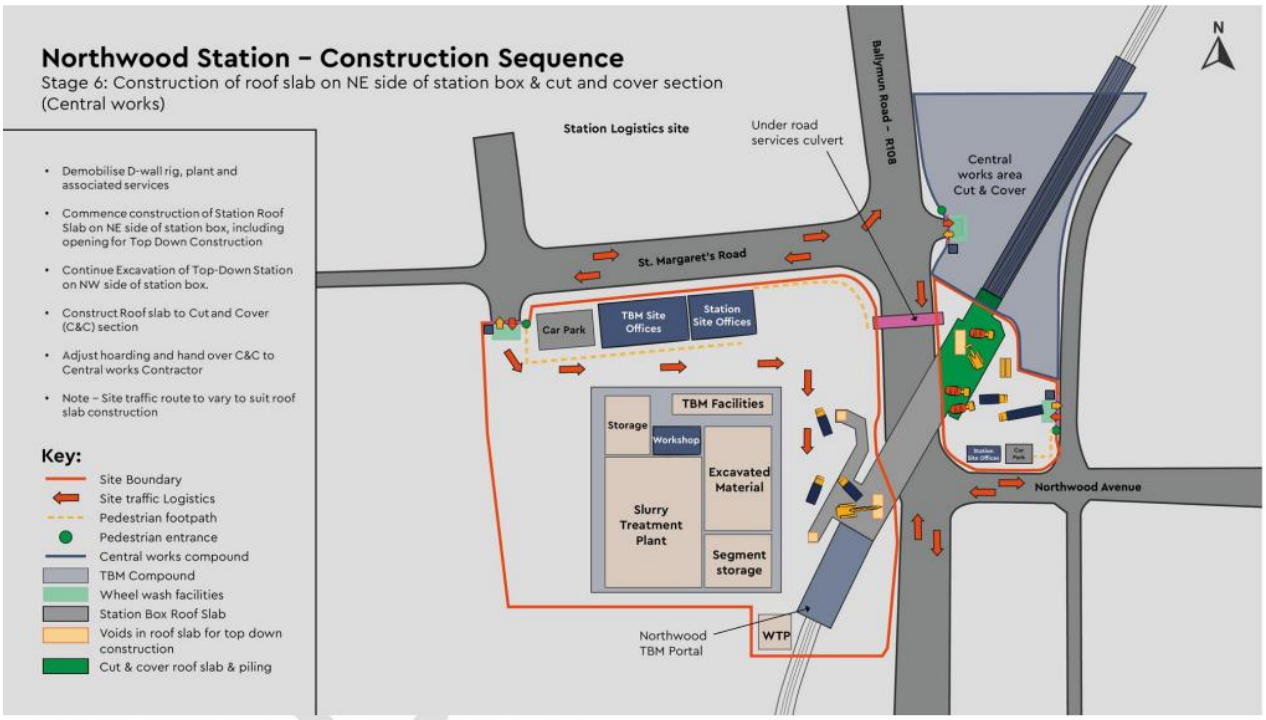

Figure 8-6 Northwood Station and Portal Stage 6 - Construction of Roof Slab