



ESB Networks,
Engineering & Major Projects,
One Dublin Airport Central,
Dublin Airport,
Cloghran,
Co Dublin.

6th March 2020

Verde Ref: 52458

RE: Recommended Additional Work following completion of a Preliminary Site Assessment Report for Griffith Avenue, Dublin 9. (ESB Site Ref: 5 Ballymun - Fairview 38kV)

To Whom it May Concern,

Verde Environmental Consultants (Verde) have prepared this letter to provide detail in relation to recommended future site investigations and risk assessments proposed for the above site. These proposals follow on from the completion of a Preliminary Site Assessment (PSA) report which identified potential environmental impacts associated with a suspected cable fluid leak from a power cable on Griffith Avenue, Dublin 9 (ESB Ref: 5 Ballymun – Fairview) in Verde's updated Report dated 6th March 2020.

As you are aware the updated March 2020 PSA report was completed in response to an ESB electricity cable fluid leak, predominantly comprising of linear alkyl benzenes (LAB) with an estimated loss volume of 5,170 litres (l). This was lost to ground from two leaks points on Griffith Avenue (ESB Ref: 5 & 6) at an approximate rate of 575l/month for nine months. The leaks were reported to have started in December 2017 and were repaired in August 2018. The known leak point (ESB Ref: 5) is located on the southern side of the roadway of Griffith Avenue which is in a residential area consisting of detached and semi-detached houses.

This report was intended as a preliminary stage assessment of the site in question and, as such, all assessments and risk analysis of the environmental aspects of the site, whilst based of the best-available data and information, are theoretical and conservative in nature. This is in-keeping with best practice guidelines and does not necessarily reflect the actual environmental scenario on site. Further environmental information, as it becomes available, would likely change the assessments and analysis contained within the report



Based on the findings of the site walkover and desk study, consideration of the known cable leak points, identification of contaminants of potential concern (COPC) and their likely fate and transport, a conceptual site model (CSM) was developed. At the time of reporting, Irish Water have examined all available drinking water quality sample data and have concluded that there is no evidence that COPCs from the leak site have infiltrated the local drinking water supply. This evaluation is based on a review of all samples taken from customer-points, between 2014 and 2019; which showed no evidence that the COPCs (PAHs and Benzenes) were present in the water supply at levels above drinking water standards (PAHs: 0.1µg/L; Benzene: 1.0µg/L). These results (which are from samples taken at the customer tap) would not indicate that leaks from oil filled cables have contaminated the drinking water supply for these areas, or at least to an extent where any contamination arising has resulted in a breach of the parametric value for PAHs and Benzene (Appendix G).

The findings identified that the risk for the majority of the potential pollutant linkages was considered to be low and identified one potential pollutant linkages requiring further investigation and assessment as follows:

- Low/Moderate risk potential for Linear Alkyl Benzene (LAB) contamination in soils and or groundwater to migrate through preferential pathways such as service ducts, then volatilisation and inhalation by nearby residents and other nearby building users.

Proposed Site Investigation

The Low/Moderate Human Health risk is from potential LAB volatilisation from soil, groundwater and LNAPL into soil pore spaces (Vapour Phase in unsaturated soils), upward migration into houses and other properties to indoor air and then inhalation. In order to further develop the CSM and determine required remediation, if any, Verde recommend that slit trenches are excavated at leak point or the downgradient area to examine the potential for contamination migration along preferential pathways including the ESB cable route or other service trenches. This site assessment will allow for visual inspection, soil sampling and also tracing contaminant movement along service trenches and in any service trenches leading towards properties. Monitoring for soil, shallow groundwater and air will be assessed and undertaken as required in order to determine any human health risks.

Additional Precautionary Recommendation

Should the slit trenches identify LAB NAPL next to mains water supply pipes, then drinking water samples should be collected, where access has been permitted, to determine whether LAB has permeated through any plastic pipes to contaminant drinking water. It is envisaged that samples will be collected from the properties closest to the identified NAPL locations. Sampling should be undertaken in accordance with sampling best practice documents such as that produced by the EPA titled "Handbook on implementation for Water Services Authorities for public water supplies".



It should be noted here that, whilst the current risk rating relating to water supply pipes is currently assessed to be Low, the recommendation to carry out potable water sampling is entirely precautionary in nature. This is not a regular approach but has been included in the event that NAPL is identified during slit trenching investigations.

Revision of Risk Assessment

Following completion of the above scope of work at the Griffith Avenue site, Dublin 9 (ESB Ref: 5 Ballymun – Fairview), the results should be used to update the Conceptual Site Model and risk assessment in regard to potential risks to human health, water and ecological receptors. This will determine the necessary next steps such as further investigations and assessments potentially including a Detailed Quantitative Risk Assessment (DQRA) and/or remedial measures/corrective actions required to break the plausible pollutant linkages.

Yours sincerely,


Principal Hydrogeologist


Project Director