

Electricity Supply Board
 One Dublin Airport Central
 Dublin Airport
 Cloughran
 Co. Dublin

24 January 2020

Our Reference
 PR-427640

Preliminary Site Assessment - Site 23 Bedford Row – Francis Street

AECOM Ireland Limited (AECOM) completed a Preliminary Site Assessment (PSA) of a cable fluid leak on a 38 kV underground electrical cable running from Bedford Row to Francis Street in Dublin City on behalf of Electricity Supply Board (ESB). The location of the leak is at John's Lane East immediately north of Christchurch Cathedral, Dublin 8 (the site). The PSA report was issued 24 January 2020 (Report Ref. PR-427640_ACM_RP_ENV_010_4). AECOM understand that ESB has undertaken these works on behalf of ESB Networks.

It is estimated that 5,396 litres of cable fluid (Linear Alkyl Benzene (T 3788)) was released between 2009 and September 2011. Due to its high biodegradability, it is considered that LABs are of less concern for adverse environmental impact than other hydrocarbon fluids. A summary of the source audit findings is as follows:

Table A Area of Potential Environmental Concern

Number	APEC	Potential Contaminants of Concern	Potential Media Impacted
1	Leak at (23) Bedford row - Francis Street 38 kV (September 2011)	LABs	Soil Groundwater Surface Water Ground Gas

The preliminary conceptual site model (CSM) developed for the site looked at potential source-pathway-receptor (SPR) linkages identified during the assessment works and identified a moderate risk to site users due to the potential for ground gas generation resulting from degradation of LAB NAPL (if present).

Risks associated with other potential source-pathway-receptor linkages were considered to be very low to low.

The PSA is preliminary in nature as it was based on an evaluation of qualitative data sources, meaning that identification of potential risk does not necessarily indicate a risk to a receptor, rather that further assessment may be required.

Given that a potential risk was identified in the PSA, it is considered that intrusive site assessment is required to further assess assumptions made in the preliminary CSM and potential SPR linkages. The findings of the PSA should form the basis of the scope of work for further detailed site assessment (DSA), and it is recommended that an iterative approach be adopted for intrusive assessment works. Given that the leak location has been confirmed, the first (exploratory) step in the DSA process would be to assess soil and groundwater conditions (as well as the presence of NAPL) through the excavation of slit trenches / trial pits in the vicinity of the leak location. A key aspect of these investigation points would be to expose the cable backfill materials to assess if they have acted as a migration pathway.

An indicative scope of work for the exploratory phase of the DSA is outlined as follows:

Table B Indicative Scope of Work – Detailed Site Assessment

Investigation Type	Indicative Number	Target Depth	Justification
Trial pit / slit trench	6	3 m bgl	Source Assessment - Assessment for the presence of contamination (including NAPL) in unsaturated and (if possible) saturated soil through collection of soil samples along the cable route, adjacent to and beyond the leak location. If possible, temporary monitoring wells could be installed into slit trenches to allow gauging of NAPL and completion of an indicative assessment of groundwater / soil vapour / ground gas quality.

An outline schedule of laboratory analysis is provided as follows:

Table C Preliminary Laboratory Schedule – Detailed Site Assessment – Exploratory Phase

Parameter	Number of Soil Samples	Number of Soil Leachate Samples	Number of Groundwater Samples
TPH Criteria Working Group Analysis	12	6	2
Extractable Petroleum Hydrocarbons	12	6	2
BTEX Compounds	12	6	2
VOCs & SVOCs	6	6	2
PCBs	6	6	2
Whole Oil Analysis	-	-	1 (if present)

Once the exploratory phase of the DSA is completed, recommendations can be made for further site investigation works required to assess potential SPR linkages identified as part of the PSA.

Yours sincerely,


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