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LIHAF - Kilcock Pumping Station

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For the attention of: Owen Sullivan

Introduction

The following letter has been produced for the purposes of confirming suitable ground conditions at the proposed Kilcock Pumping Station (PS) and to support the planning submission on behalf of Irish Water. A review of intrusive site investigations undertaken by Priority Geotechnical during November 2020 has therefore been undertaken in relation to the proposed PS design.

Kilcock Pumping Station Scope of Works

The proposed Kilcock Pumping Station comprises an underground wastewater pump station (a wetwell, 7.2mbgl); welfare building 6.25sqm and 3m in height; 472m of 125mm OD rising main and 250m of gravity sewer along the R148; an underground emergency storage tank (230m^3, 5.55mbgl); above ground lifting gantry ; valve and flowmeter chambers (2mbgl); a chemical dosing facility for odour control; Passive Carbon Unit; Kiosks; above ground surge vessel (<13 m^3); landscaping, fencing and access off the R148.

The proposed development includes all necessary ancillary pipework and manholes, diversion of existing utilities, new power supply and water connection for the pump station, ducting, mechanical and electrical services, plant, instrumentation, automation, controls and equipment. It also includes all associated site development works, hardstanding areas and access and site drainage.

As noted above, the PS design includes below ground structures to a maximum depth of 7.2m

Review of Intrusive SI

The following review of ground conditions on site at the proposed Kilcock PS location is based on the factual SI report provided by Priority Geotechnical (report ref P20078_01_RP_F01), attached for reference.

The key exploratory hole locations relevant to the PS design are:

- BH1306
- BH1307
- BH1308
- TP1309
- TP1310

The above boreholes and trial pits confirm the following ground conditions on site at Kilcock PS:

- Firm to stiff CLAY to a depth of between 6.4mbgl and 7.4mbgl, overlaying
- Medium weak to medium strong LIMESTONE to the end of all BHs undertaken.
- Groundwater level was identified between 1.3mbgl and 1.8mbgl.

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Conclusion

The above review of intrusive SI undertaken by Priority Geotechnical in relation to the proposed PS design at Kilcock confirms that the below ground structures will be founded on either stiff clays or limestone bedrock. This will therefore provide sufficient bearing capacity for the required pumping station construction.

A minimal volume of rock excavation will be required for the proposed wet well chamber which has a depth of 7.2mbgl.

Due to the high-water table (approx. 1.3mbgl) flotation risk will need to be considered during detailed design but this is not considered a significant risk and can be managed through standard design methods.

Regards,

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