**FAO Anthony Roberts**

Waste and Industry Regulation Team
NATURAL RESOURCES WALES
Maes Y Fynnon
BANGOR
LL57 2DW

Ref: 9025

12th October 2021

Dear Mr Roberts,

**Re: Installation of groundwater monitoring boreholes at Penhesgyn Landfill Site, B5420, Menai Bridge LL59 5RY – Construction Quality Assurance Plan**

I write behalf of our client, Isle of Anglesey County Council, the permit holder and operator of the above site.

In order to comply with the environmental permit for the site (ref EPR/KP3994FG), condition 3.5 Monitoring, and the requirement of Compliance Assessment Report (CAR_NRW0038775, dated on 28/09/2021), the site operator proposes to install four groundwater monitoring boreholes. These monitoring points will replace the existing boreholes BH1/88, BH2/88, BH96B which are damaged, crumbling and silted to an extent that this compromises their intended use. Groundwater monitoring point BH22 is situated within a wetland; it will be relocated to a suitable place along the landfill boundary where it could be readily accessed and prevented from being flooded and silted up. The new location of borehole BH22 has been agreed with both the project hydrogeologist and NRW.

In the email to the site operator on 1st October you have requested that this engineering work to be accompanied by *"a brief construction quality assurance document with the specifications of the boreholes, the location and the target depths etc. before they are drilled."* This letter addresses the CQA requirements and forms a CQA Plan for the proposed drilling works.

The proposed boreholes will be installed to a depth of 5.0m below ground level (BGL) or to the extent of Superficial geological strata (if shorter). A rotary drilling method will be used to form a borehole 90mm in diameter. Within each borehole, the top 0.5m BGL section of the standpipe will be plain casing with the remaining length to base, will be a perforated casing coupled with Geowrap. The perforated section will be slotted with a nominal 10% open area. (note: the total length of plain casing used in each borehole should be 1m to allow the borehole to be finished 0.5m above ground level).

A securely fastened end cap of the same material as the borehole casing will be fixed onto the base of the perforated casing. The annulus will be filled to a depth of 4.5 m BGL with clean 6 mm smooth, non-calcareous stone. Above this, dry bentonite granules will be placed to the ground level. Finally, a concrete seal will be installed at the ground level, and lockable steel headworks installed to 0.5m above ground level.

A typical design of groundwater monitoring point is shown on Drawing ECL.5273.D01.001, enclosed.

The above works will be supervised on a full-time basis by a CQA Inspector provided by Egniol, the CV of whom shall be provided to NRW for approval prior to the commencement of works. The CQA inspector shall record:

- Daily logs detailing activities undertaken, personnel and plant utilised
- A check of operative competence certification to operate the drilling rig (a copy of which shall be retained and provided in the CQA letter-report)
- A borehole log for each well, detailing the nature of any arisings (described in accordance with BS 5390) and showing the details of the completed installation
- Delivery notes for the stone and bentonite materials used
- A photographic log of the works.

Following completion of the borehole installation, a CQA Report letter containing the above and noting any issues arising shall be provided to NRW within 30 days.

I trust the above meets with your approval. Should you have any queries or wish to discuss this matter, please do not hesitate to contact me.

Yours Sincerely,

Anna Cole
**For Egniol Consulting Ltd**

Enc. Borehole Location Plan
Groundwater Monitoring Borehole Design Drawing ECL.5273.D01.001