

Rock and Alluvium Comments on Environmental Guidelines for the CFA piling works at St. Ann's Hospital Harringay

Environmental Guidelines

Reference National Groundwater & Contaminated Land Centre Report NC/99/73 "Piling and Penetrative Ground Improvement Methods on Land Affected by Contamination, Guidance on Pollution Prevention"

We would make the following general comments:

Section 2.2 Environment Agency Concerns - Page 7 of the EA document states..."Where sites are underlain by aquifers, piling should be avoided wherever possible, where this is not possible and there is no alternative to piling, continuous flight auger piles probably pose the least risk of groundwater pollution."

- The EA report refers to 6 no pollution scenarios summarized in table 5.1 of the report, these are discussed below:-

Pollution scenario 1 - Creation of preferential pathways, through a low permeability layer, to cause contamination of groundwater in an aquifer

- CFA boring process will always drive the made ground upwards not downwards during construction.
- CFA process requires that during boring the weight of spoil on the auger and during concreting the head of concrete, both always exceed the head of groundwater so that there is no flow in to the bore.
- Displacement of the soil surrounding the pile is minimised and there is minimal radial and vertical soil movements.
- Concrete is cast directly on to the surrounding soil.

Pollution scenario 2 - Creation of preferential pathways to allow migration of landfill gas or contaminant vapours to surface

- Refer to above.
- Page 21 of the latter report refers to no cases being reported.

Pollution scenario 3 - Direct contact with contaminated arisings which have been brought to the surface

- This will apply to the CFA process and procedures / mitigation will need to be in place. Currently allowed for standard procedures and PPE.

Pollution scenario 4 - Direct contact with contaminated soil or leachate causing degradation of pile materials

- Appropriate design sulphate class adopted to meet site conditions.

Pollution scenario 5 – The driving of solid contaminants down into an aquifer during pile driving

- This does not apply to CFA and only applies to driven piles.

Pollution scenario 6 – Contamination of groundwater and, subsequently, surface waters by concrete cast, cement paste or grout

- The document refers to this being localised and can be reduced by immediately removing spoil away from the location of the pile installation to an agreed location/ skip or lorries provided by the main contractor.
- The use of drip trays for our rigs and concrete.