



## EXPLANATION SHEET DIRECT-PUSH PISTON SAMPLERS

23 February 2021

### Our Vertek and Geomil Ranger Floating Piston Samplers

Our Vertek Samplers and our Geomil Ranger Samplers are floating piston devices that can take samples in almost any soil type. The samplers operate by direct-push; no borehole is required.

In soft to hard cohesive materials it is possible to retain the sample in either a U35, U46 or U66 configuration in a wax sealed thin walled stainless steel tube; diameter depends on the sampler deployed. Alternatively in all materials it is possible to take the samples in a split tube configuration, then bag them.



Vertek Sampler



Ranger Sampler

### Our Unique PPI Sampler (possibly the highest quality fixed piston sampler reasonably available)

Our flagship sampler, designated PPI<sup>1</sup> takes 63 or 75mm diameter samples about 800mm long that are arguably as close to undisturbed as you can get by means other than research-level block sampling. This sampler is used in very soft to firm cohesive soils; typically used for sampling for high quality laboratory strength and compressibility testing..

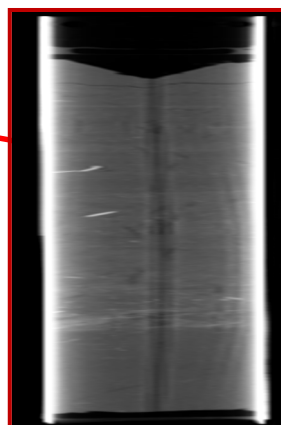
This is a thin walled fixed piston sampler developed by IGS that:

- first captures the sample in the normal fixed-piston manner;
- then cuts the sample free from the soil mass;
- then totally eliminates tension in the sampled material inside the tube as the sampler is withdrawn from the ground.

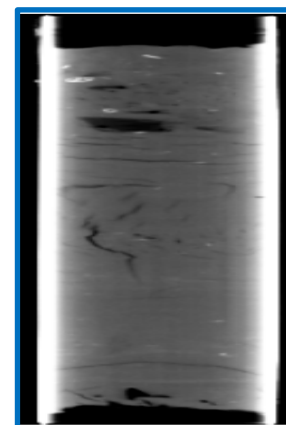
A separate data sheet for the PPI Sampler is available – explaining its mode of operation.



A PPI Sample



CAT Scan of a PPI sample showing no tension cracks in the sample



CAT Scan of a driller's U75 piston sample showing many tension cracks in the sample

<sup>1</sup> The PPI Sampler is described in the technical paper *"Performance Of An Innovative Direct-Push Piston Sampler in Soft Clay"*, by Dr Jubert A. Pineda, Allan McConnell and Dr Richard Kelly, presented at the 3<sup>rd</sup> International Symposium on Cone Penetration Testing, Las Vegas, Nevada, USA – 2014.