

Method Statement

Windowless Sampling (Premier, Terrier or Dart Competitor Rigs)

The rig will be delivered to site by road vehicle and trailer. Each is track mounted and operates using hydraulics, powered by an on board diesel engine. Although they operate primarily as a soil sampling tool, they are also capable of conducting Standard Penetration Tests (SPT and SPT(C)) and Dynamic Probing (DP). General dimensions of rigs when tracking are approx 780mm width, 2360mm length and 1350mm height.

The driving head of the Dart rig can also be detached from power unit, connected by a 20m hydraulic hose, allowing works within buildings or restricted areas (minimum working space 2.5m x 2m with headroom of 2.4m).

Proposed drilling locations will require a firm and level working space of at least 3m x 4m and minimum headroom of 2.4m.

They will be set out with reference to utility information and drawings/plans, access and egress routes, as well as other hazards such as obstacles, soft, uneven or sloping ground etc; maintaining safe distances from any overhead cables, lifting covers where required and CAT scanning each position. Any surface concrete/other hard cover will be broken out to a suitable size and an inspection pit excavated by hand to a minimum depth of 1.2m bgl, with continuous scanning as the pit is deepened.

The rig will then be manoeuvred into position and erected in a safe manner. It may be necessary to protect the ground surface from contaminated arisings using plastic sheeting, wooden boards etc. and to use sand-bags or other methods to contain liquids. Each rig consists essentially of a mechanized drop-weight that repeatedly falls onto an anvil, driving attached sample tubes or probe rods into the ground, and are designed to sink boreholes up to 130 mm diameter through soils and weak rock, including clays, silts, sands, gravels and chalk.

The sampler comprises a high tensile steel tube with a hardened cutting shoe. The first, and widest, sampler is driven fully into the ground and withdrawn with a complete soil profile retained in a rigid clear plastic liner. This sequence is repeated to the required depth or limit of the technique. After driving samplers to the required depth, they can be simply extracted using an integral hydraulic ram on the rig. No separate jacking system is required.

The rigs have the facility to drive casing into the ground, simultaneously with a soil sample tube, allowing sampling without hole collapse. This system also allows for the easy installation of standpipes, gas monitoring tubes or other instrumentation, within the restrictions of the borehole diameter.

Once the desired depth is reached, final measurements of the depth of the hole and groundwater level are taken and the holes will be backfilled. Alternatively, if a groundwater/gas monitoring installation is required, this is constructed carefully by the drilling crew under instruction from the Engineer and the top of the borehole fitted with an appropriate cover. An installation generally comprises plain pipe with a Bentonite surround over the top section with slotted pipe in a granular surround over the lower section. On completion, surfaces will be reinstated (if specified), and the site left tidy.

Risk Scoring and Assessment

Health, Safety and Environmental Risk is measured using a 5 x 5 matrix to obtain a result that, after control measures have been applied is scored as: Low (Proceed with care), Medium (If no alternative, proceed with care), High (Do not proceed, seek alternative).

		Severity					
		1	2	3	4	5	
		No Injury or Impact	Minor Injury or Impact	Reportable Injury or Impact	Serious Injury or Impact	Fatality, Disability or Major Impact	
Likelihood	Unlikely or Rare	1	1 LOW	2 LOW	3 LOW	4 LOW	5 LOW
	Remote possibility	2	2 LOW	4 LOW	6 LOW	8 MED	10 MED
	Possibly occur	3	3 LOW	6 LOW	9 MED	12 MED	15 MED
	Probably occur	4	4 LOW	8 LOW	12 MED	16 HIGH	20 HIGH
	Certain to occur	5	5 LOW	10 MED	15 HIGH	20 HIGH	25 HIGH

Hazard/Risk	Type	Affected	Control Measures	Score	Residual Risk
Operating equipment	H&S	Oprs	Trained and competent operators only.	2 x 3	Low
Contact with services	H&S	Oprs	Review positions with reference to utility plans & maintain safe distances. CAT scan positions prior to breaking ground.	1 x 5	Low
Access and rig stability	H&S	Oprs	Check access /egress routes in advance. Level rig on set up.	2 x 3	Low
Internal works	H&S	Oprs	Situate power unit externally. Check ventilation & lighting	2 x 4	Med
Entrapment	H&S	Oprs	Operatives protected from moving parts by a fixed guard	2 x 3	Low
Lifting and Handling injuries	H&S	Oprs	Adopt good lifting and manual handling practices. Two-man lifts wherever possible.	2 x 3	Low
Noise	H&S/Env	Oprs/Env	Noise a maximum of 102dB within 2m. Operators to wear ear defenders. Use warning signs if required.	2 x 2	Low
Encountering Contamination	H&S/Env	Oprs/Env	Separate contaminated arisings and store on plastic sheeting, boards etc. Use only non-hydrocarbon lubricants on all down-hole tooling. All operatives to wear PPE/RPE based on site categorisation.	2 x 3	Low