

WORK INSTRUCTIONS FOR ENGINEERS

OP-3-30. CHECKLIST FOR BOREHOLE TESTING



30.0 CHECKLIST FOR BOREHOLE TESTING

No.		ACKNOWLEDGED BY	CHECKED BY		
	CHECKLIST ITEMS	S.I. Contractor	G&P GEOTECHNICS SDN BHD (G&P)		
1.0	EQUIPMENT APPRAISAL	SIGNATURE	YES	NO	
1.1	Casing: NW (I.D 76mm, O.D 89mm) HW (I.D 101mm, O.D 115mm)		0	0	
1.2	 Rod: AW (O.D 44mm) Drill rods in standard length (e.g. 3.0m, 1.5m, 1.0m). 		0	<u> </u>	
1.3	Split Spoon:Driving shoe is in good condition (not dented).Sample head has a ball check valve.		<u> </u>	<u> </u>	
1.4	 Undisturbed Sampling Tube: U60 (I.D 60mm) U75 (I.D 75mm) UD tube and cutting edge are free from surface irregularities (dents, rust, etc.) 		<u> </u>	<u> </u>	
1.5	REMARKS:				
2.0	STANDARD PENETRATION TEST (SPT)	SIGNATURE	YES	NO	
	 General procedures: Borehole advances by rotary wash boring method. (Note: percussive drilling is not allowed) SPT to be carried out below casing. Keep borehole water level equal to or higher than elevation of groundwater for silty and sandy soils to 		<u> </u>	_ _	
	 prevent 'boiling'. Marked clearly and accurately the interval for seating and test drive with chalk. 				
2.1	 The seating drive is inclusive of initial penetration under dead weight of the split spoon, rods, and hammer. 				
	Record the blow counts in the field borehole log.				
	 Second attempt to retrieve sample with retainer in the split spoon for granular soil if there is no recovery during the initial attempt. 				
	 Store collected sample under cover from direct sunlight. Supervisor to carry out immediate logging of sample. 		<u> </u>		
	 Daily measurement of water level (morning and evening) 				

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	Supervisor and driller to endorse field borehole log.			
	Backfill of borehole with suitable material (specify type of material)			
	type of material:).			
	REMARKS:			
2.2				
3.0	UNDISTURBED SAMPLING	SIGNATURE	YES	NO
	General procedures:			
	Minimum 500mm clearance of wash boring after			
	SPT to obtain undisturbed sample (UD), e.g. SPT from 1.5m to 1.95m and UD at 2.5m.			
	 Use only tube dimensions: U60 or U75. 			
3.1	UD tube and cutting edge are free from surface			
	irregularities (dents, rust, etc.)		_	_
	Tube advance by continuous and steady motion.			
	 Seal UD tube with non-shrinking microcrystalline wax. 			_
	Store UD sample under cover from direct sunlight.			
	Transportation:			
3.2	Sampler tubes lifted slowly and placed with care on			
3.2	board the transport.			
	Sampler tubes rested on transport's seat cushion.			
	REMARKS:			
3.3				
3.3				
4.0	ROCK CORING	SIGNATURE	YES	NO
	General Procedures:			
	Determine coring depth when lowering down rods			
	and core barrel.			-
4.1	 Coring by using triple tube core barrel (NMLC) for minimum 54mm dia. rock core. 			
	Drillers to stay close at machine.			
	Less than 50% core recovery, the following run			
	reduce to 0.5m coring length.			
	Extraction and Storage of Cores:			
4.2	Remove cores from barrel by hydraulic pressure.			
	Place cores in standard core box.			
Ī	 Show core loss by spacer. 	ľ		

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	Store core box under cover from rain and sunlight.			
	Photograph cores in core box with legible information.		٥	
	REMARKS:			
4.3				
5.0	VANE SHEAR TEST (VST) SIGI	NATURE	YES	NO
	Equipment:			
5.1	Vane type: Geonor/Acker			
	Vane diameter: 50mm/65mm (for Geonor Vane)			
	Calibration:			
	Calibration certificate for equipment (last calibration must be within 3 months).			
5.2	Calibration chart for vane.			
	(Note: Testing cannot proceed without the certificate)		_	_
	General Procedures:			
	Torque head measuring instrument firmly secured			
	against movement with respect to ground level.			
5.3	 Applicable vane size (for Geonor Vane): 55mm X 110mm for S_{uv}= 50 to 100 kPa; 65mm X 130mm for S_{uv}= 0 to 60 kPa. 		_	J
	 Vane to rotate at a rate of 6 degrees/min. 			
	Elapse time of 5 minutes before remoulding test.		_	
	REMARKS:			
5.4				
0.1				
	NOTE:			
	Once this copy is signed, the above guidelines have been			
	clearly defined and understood by the contractor. Therefore, there shall be no problems in repeating the			
	testing procedures for the borehole without the presence of G&P representation.			





FIELD DAILY WATER LEVEL RECORD

Project No: Measuring Device:

Project Title : Nearby Water Source And Approx. Distance :

SI Contractor : Reported By : Borehole No. : Reduced Level :

Date	Well Type	Water Leve (Time	l in meter b.g.l Recorded)	Weather Condition and
		Morning	Afternoon	Remarks
	7			

Note : - Well Type (N / H Casing, Uncased, PVC, Standpipe)

Nearby Water Resource (River, Pond, Drain etc.)

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PROJECT NO : COMMENCEMENT DATE : PROJECT TITLE : COMPLETION DATE : SI CONTRACTOR :

Borehol	e No:			Location	ı:				Ele	evation				Sheet No: of	
Date/ Time	Sample No.	Depth (m) From	То	Method	Recovery (mm)	S.P.T. 1 st 15cm	2 nd 15cm	3 rd 15cm	N	Vane C _{u, p} KN/m	Shear C _{u, r}	G.W.L Below G.L. (m)	Remarks	Soil Description & Any Other Re	marks
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NON PR	ODUCTIVE	TIME	Time	Time	Hrs	SOIL	or ROCK BOF			QUAN	NTITY	REMAINING	7	FINE GRAIN MATERIALS	COARSE GRAIN MATERIALS
Mobilization & Demobilization				Total Meters Drilled Soil Rock HA		ock A				Undrained Shear Consistency SPT.N Strength (kN/m²) Very Soft <2 <20 Soft 2-4 20-40	Consistency SPT,N Very loose <4 Loose 4-10				
Equipment Break Down Total Non Productive Time				Total Soil Samples PS		TW PS MZ				Firm 4-8 40-75 Stiff 8-15 75-150 Very Stiff 15-30 >150 Hard >30 >150	Medium 10-30 Dense 30-50 Very Dense >50				
Total Pro	ductive Time	е						S						-	
Crew No	: AILY BORIN	IG RECORI	Report by	y:										ABBREVIATIONS HA – Hand Auger TW – Thin Wall SS – Split Spoon ST – Shelby Tube PS – Piston Sampler ABBREVIATIONS MZ – Mazier Sampler VS – Vane Shear VS – Vane Shear VS – Vane Shear C – Core C – Core	CASING Size: NW / HW / PW / SW Depth: m UD TUBE Size: U1 / U2 / U3 / \$60mm / MZ\$\phi\$73mm DRILLING ROD Size: BW/NW/HW Flushing Medium: Water / Foam / Air