

Engineering Log - Hand Auger

Borehole ID: **HA01**

sheet: 1 of 1

project no.

client:

date started: **06 Feb 2015**

principal:

date completed: **06 Feb 2015**

project:

logged by: **PM**

location: **Katikati**

checked by:

position: Not Specified surface elevation: Not Specified angle from horizontal: 90°
 drill model: hole diameter : 50 mm vane id.: SL588

drilling information				material substance										
method & support	1 penetration	2 penetration	3 penetration	water	samples & field tests	RL (m)	depth (m)	graphic log	classification symbol	material description	moisture condition	consistency / relative density	vane shear (kPa)	structure and additional observations
							0.5		ML	SILT: low liquid limit, dark brown, trace rootlets.	M	St		TOPSOIL/FILL
									ML	SILT: low liquid limit, dark brown mottled pale brown, trace fine rootlets.				VS 75/ 11 kPa
									ML	SILT: low liquid limit, dark brown, trace fine grained sand, trace fine rootlets.		VSt		HAMILTON ASH? VS 103/ 22 kPa
									CI	0.4 m: with trace fine grained pumiceous gravels, trace fine carbonaceous fragments 0.6 m: becoming dark brown mottled pale orange brown Silty CLAY: medium plasticity, dark brown mottled pale orange-brown, minor fine grained sand. 0.8 m: becoming pale orange-brown-yellow, minor rootlets and root material				VS 117/ 14 kPa
							1.0							VS 155/ 22 kPa
							1.5							VS 171/ 34 kPa
							2.0		ML	1.6 m: no fine sand Sandy SILT: non plastic to low liquid limit, pale orange-brown, sand is fine to medium grained, trace rootlets, trace clay.				VS 132/ 26 kPa
									SM	Silty SAND: fine grained, uniform, pale orange brown with black specks.				VS 187/ 34 kPa
									SP	2.1 m: trace fine rootlets				VS 191/ 50 kPa
							2.5		CH	SAND: fine grained, brown. Silty CLAY: high plasticity, dark brown, trace fine grained sand, trace rootlets. 2.4 m: with some limonite staining 2.6 m: no limonite staining				WHITE TEPHRA VS 210/ 34 kPa
							3.0							VS 160/ 12 kPa
							3.5							VS 166/ 26 kPa
							4.0		CH	CLAY: high plasticity, pale brown.		St		PALEOSOL VS 178/ 42 kPa
							4.5		CH	CLAY: high plasticity, orange-brown, trace fine grained sand, trace fine rootlets.		VSt		VS 70/ 26 kPa
							5.0			4.5 m: becoming pale orange-brown mottled pale brown-pink	<WI			VS 109/ 50 kPa
														VS 98/ 50 kPa
														VS 121/ 44 kPa
														VS 78/ 42 kPa
														LIMONITE WEATHERED VS 83/ 70 kPa VS 90/ 55 kPa
														SENSITIVE PINK ORANGE VS 89/ 40 kPa VS 79/ 59 kPa
														VS 40/ 23 kPa
							5.0			Hand Auger HA01 terminated at 5.0 m Target depth				VS 50/ 23 kPa

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method AD auger drilling* AS auger screwing* HA hand auger W washbore	support M mud C casing N nil	samples & field tests B bulk disturbed sample D disturbed sample E environmental sample SS split spoon sample U## undisturbed sample ##mm diameter HP hand penetrometer (kPa) N standard penetration test (SPT) N* SPT - sample recovered Nc SPT with solid cone VS vane shear: peak/remoulded (kPa) R refusal HB hammer bouncing	classification symbol & soil description based on Unified Classification System	consistency / relative density VS very soft S soft F firm St stiff VSt very stiff H hard Fb friable VL very loose L loose MD medium dense D dense VD very dense
* bit shown by suffix e.g. AD/T B blank bit T TC bit V V bit	penetration no resistance ranging to refusal	moisture D dry M moist W wet Wp plastic limit WI liquid limit	water 10-Oct-12 water level on date shown water inflow water outflow	

Engineering Log - Hand Auger

Borehole ID: **HA02**

sheet: 1 of 1

project no.

client:

date started: **11 Feb 2015**

principal:

date completed: **11 Feb 2015**

project:

logged by: **PM**

location: **Katikati**

checked by:

position: Not Specified surface elevation: Not Specified angle from horizontal: 90°
 drill model: hole diameter: vane id.: DR4523

drilling information				material substance										
method & support	1 penetration	2	3	water	samples & field tests	RL (m)	depth (m)	graphic log	classification symbol	material description	moisture condition	consistency / relative density	vane shear (kPa)	structure and additional observations
							0.0		ML	SILT: non plastic, dark brown, trace fine grained sand, trace fine rootlets.	D to M	VSt	⊕ ⊙	TOPSOIL / FILL
							0.3		ML	0.3 m: with minor fine grained sand, minor pale orange mottles 0.4 m: becoming pale orange-brown		St	⊕ ⊙	VS 131/ 38 kPa
							0.4		ML	Sandy SILT: non plastic to low liquid limit, pale orange-brown, sand is fine grained, trace rootlets, friable.		VSt	⊕ ⊙	HAMILTON ASH? VS 93/ 20 kPa
							0.8		CL	CLAY: non plastic to low plasticity, pale orange-brown, minor rootlets.			⊕ ⊙	WHITE TEPHRA VS 131/ 24 kPa
							1.0						⊕ ⊙	VS 176/ 18 kPa
							1.5						⊕ ⊙	VS 170/ 18 kPa
							1.6		ML	Sandy SILT: non plastic to low liquid limit, pale orange-brown, sand is fine grained, trace rootlets, friable. 1.6 m: becoming lighter pale orange-brown			⊕ ⊙	VS 156/ 29 kPa
							2.0		ML	Clayey SILT: non plastic to low liquid limit, dark brown, trace fine grained sand, fine rootlets.	M		⊕ ⊙	VS 215/ 40 kPa
							2.1		CL	Silty CLAY: low plasticity, dark brown, minor fine rootlets, trace limonite inclusions. 2.1 m: becoming brown mottle orange-brown, with some limonite staining 2.2 m: becoming brown, no limonite staining 2.4 m: becoming slightly more plastic			⊕ ⊙	VS 101/ 23 kPa
							2.5						⊕ ⊙	VS 137/ 29 kPa
							3.0						⊕ ⊙	PALEOSOL VS 156/ 40 kPa
							3.5						⊕ ⊙	VS 215 kPa
							3.8		CL	Silty CLAY: low plasticity, orange-brown, streaked pale grey, minor fine rootlets.			⊕ ⊙	VS 215/ 50 kPa
							4.0						⊕ ⊙	VS 176/ 87 kPa
							4.2		CI	3.8 m: becoming orange-brown streaked pale purple-brown mottled dark brown		St	⊕ ⊙	VS 176/ 66 kPa
							4.4		CH	Silty CLAY: medium plasticity, orange-brown mottled dark brown.			⊕ ⊙	VS 128/ 46 kPa
							4.5			CLAY: high plasticity, pale grey mottled orange, with some limonite inclusions.			⊕ ⊙	VS 131/ 46 kPa
							4.6			Hand Auger HA02 terminated at 4.2 m Obstruction in the hole			⊕ ⊙	VS 215/ 53 kPa
							5.0						⊕ ⊙	PURPLE CLAY LAYER VS 209/ 46 kPa
													⊕ ⊙	VS 213/ 46 kPa
													⊕ ⊙	VS 73/ 36 kPa
													⊕ ⊙	VS 62/ 31 kPa

method AD auger drilling* AS auger screwing* HA hand auger W washbore	support M mud C casing N nil	samples & field tests B bulk disturbed sample D disturbed sample E environmental sample SS split spoon sample U## undisturbed sample ##mm diameter HP hand penetrometer (kPa) N standard penetration test (SPT) N* SPT - sample recovered Nc SPT with solid cone VS vane shear; peak/remoulded (kPa) R refusal HB hammer bouncing	classification symbol & soil description based on Unified Classification System	consistency / relative density VS very soft S soft F firm St stiff VSt very stiff H hard Fb friable VL very loose L loose MD medium dense D dense VD very dense
penetration no resistance ranging to refusal	water 10-Oct-12 water level on date shown water inflow water outflow	moisture D dry M moist W wet Wp plastic limit Wl liquid limit		

Engineering Log - Hand Auger

Borehole ID: **HA03**

sheet: 1 of 1

project no.

client:

date started: **11 Feb 2015**

principal:

date completed: **11 Feb 2015**

project:

logged by: **PM**

location: **Katikati**

checked by:

position: Not Specified surface elevation: Not Specified angle from horizontal: 90°
 drill model: hole diameter: vane id.: DR4523

drilling information				material substance										
method & support	1 penetration	2 penetration	3 penetration	water	samples & field tests	RL (m)	depth (m)	graphic log	classification symbol	material description	moisture condition	consistency / relative density	vane shear (kPa)	structure and additional observations
									ML	SILT : non plastic, dark brown, trace fine grained sand, minor rootlets, friable.	D to M	VSt		TOPSOIL/FILL
							0.5		ML	0.3 m: becoming pale orange-brown Clayey SILT : non plastic to low liquid limit, pale orange-brown, trace fine grained sand, trace fine rootlets.	M			HAMILTON ASH? VS 198/ 40 kPa
							1.0		ML	Sandy SILT : non plastic, pale orange-brown, sand is fine to medium grained, trace rootlets.				WHITE TEPHRA VS 187/ 23 kPa
							1.2		SM	Silty SAND : fine grained, pale orange-brown.				VS 137/ 37 kPa
							1.5		CL	1.2 m: becoming brown Silty CLAY : low plasticity, brown, minor fine to medium grained sand, trace rootlets.				PALEOSOL VS 156/ 20 kPa
							1.6		CI	1.4 m: becoming medium plasticity, with trace fine gravel sized organic/charcoal fragments				VS 119/ 33 kPa
							2.0		ML	CLAY : medium plasticity, brown, trace fine grained sand. 1.5 m: with trace limonite inclusions 1.6 m: with minor staining				VS 122/ 37 kPa
							2.6			Clayey SILT : non plastic to low liquid limit, orange flecked black, minor fine grained sand.				VS 160/ 50 kPa
							3.0			2.6 m: becoming brown mottled pale brown/orange				VS 119/ 33 kPa
							3.5		CL	3.0 m: becoming orange mottled pale brown/grey Silty CLAY : low plasticity, grey mottled orange/pale purple-brown.				PURPLE CLAY LAYER VS 119/ 33 kPa
							4.0		CH	3.5 m: becoming medium plasticity				VS 180/ 46 kPa
							4.5		CH	CLAY : high plasticity, brown.		St		LIMONITE WEATHERED VS 73/ 20 kPa
							4.5		CH	Silty CLAY : high plasticity, grey mottled orange/pale purple-brown.				PURPLE CLAY LAYER VS 76/ 41 kPa
							5.0		CH	CLAY : high plasticity, orange, limonite stained clay.				LIMONITE 2 PURPLE CLAY LAYER VS 76/ 25 kPa
							5.0		CH	CLAY : high plasticity, grey mottled orange/pale purple-brown.				VS 73/ 24 kPa
							5.0			Hand Auger HA03 terminated at 5.0 m Target depth				

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method AD auger drilling* AS auger screwing* HA hand auger W washbore	support M mud C casing N nil	samples & field tests B bulk disturbed sample D disturbed sample E environmental sample SS split spoon sample U## undisturbed sample ##mm diameter HP hand penetrometer (kPa) N standard penetration test (SPT) N* SPT - sample recovered Nc SPT with solid cone VS vane shear: peak/remoulded (kPa) R refusal HB hammer bouncing	classification symbol & soil description based on Unified Classification System	consistency / relative density VS very soft S soft F firm St stiff VSt very stiff H hard Fb friable VL very loose L loose MD medium dense D dense VD very dense
penetration no resistance ranging to refusal	water 10-12 water level on date shown water inflow water outflow	moisture D dry M moist W wet Wp plastic limit WL liquid limit		

* bit shown by suffix
 e.g. AD/T
 B blank bit
 T TC bit
 V V bit