BOREHOLE LOG

PROJET: Iqaluit Airport
SITE: Runway - Ice Wedge
BOREHOLE NO.: IQA_AERO_DDH_13_09
COORDINATES: X:522481.0006 Y:7069419.2408
ELEVATION: 24
START DATE: 11-05-2013
END DATE: 12-05-2013

Instrumentation
- Temperature sensor (Decagon ECT)
- Temperature sensor (YSI 44033)
- Volumetric water content, temperature and bulk electrical conductivity (Decagon 5ET)
- Volumetric water content (Decagon EC-5)
- Pressure sensor

Instrumentation
- PVC casing

Sampling method
- Excavation
- Diamond core
- Slit spoon
- Destructive

Recovery
- Recovered
- No recovery

Sample state
- Ud-F Undisturbed and frozen
- Ud-Uf Undisturbed and unfrozen
- D-F Disturbed and frozen
- D-Uf Disturbed and unfrozen

C/H/N
- w Water content (%)
- ρ Bulk density (g/cm-3)
- C Carbon (%)
- H Hydrogen (%)
- N Nitrogen (%)

Stratigraphic information | **Sampling characteristic** | **Laboratory analysis**

Depth (m)	Stratigraphy	Soil description	Sampling method	Recovery	Sample state	Sample name	Water content (%)	Salinity (ppm)	Grain size G	Grain size S	Grain size M-C	Consistency wl	Consistency wp	Consistency Ip	Consistency IL	USCS	Consol. kPa 25	Consol. kPa 50	Consol. kPa 100	C/H/N w	C/H/N ρ	C/H/N C	C/H/N H	C/H/N N	Radiocarbon dates 14C (BP)	±	Material
0.00		Asphalt (0,23 m).																									
		Brown gravel and sand (embankment).			D-Uf	13_09_23-40	5.8		44.2	45.4	10.4	17.3	13.6	3.8	-2.1	SW-SM											
		Asphalt (0,14 m).																									
		Brown gravel and sand (embankment).																									
-1.00					D-Uf	13_09_113-134																					
					D-Uf	13_09_134-162																					
					D-Uf	13_09_162-211	3.1		5.1	87.0	7.9	21.4	17.9	3.6	-4.1	SW-SM											
-2.00		Dark brown ice-rich peat that represent the former natural surface terrain before construction.			Ud-F	13_09_220-232	137.4		9.0	68.4	24.6	198.9	185.0	13.9	-3.4	SM											
		Brown fine gravel and coarse sand. Laminated gray silt at 2,92 m. Pore ice.				13_09_232-238	12.8																				
						13_09_238-256	19.9																				
						13_09_256-267	21.7																				
						13_09_270-275	23.1		1.9	97.3	0.8					SP											

Version 1.4 E. L'Hérault and A-S. Carbonneau (2015-06)

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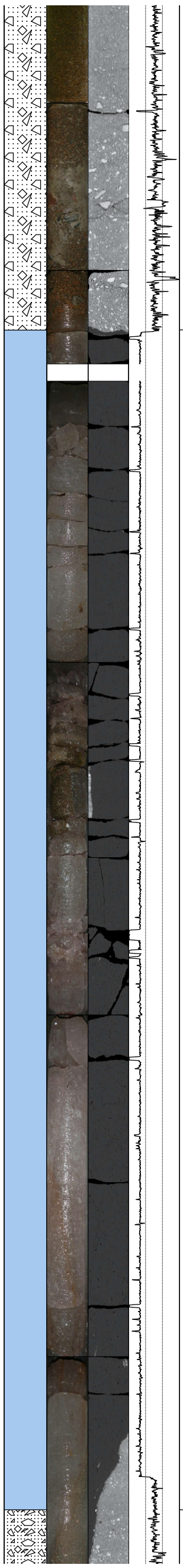

Bubbly ice with occasional oxydized sediments veins. Vertical air bubble. The sediment transition happends at a vertical angle of approximately15°.

Fine gravel and coarse sand interbedded with coarse sand. Horizontal beddings. Pore ice.

Sample name	Sampling method	Sample state	Volume (%) Soil / Ice / Air	Water content (%)	Salinity (ppm)	Grain size G	Grain size S	Grain size M-C	Consistency wl	Consistency wp	Consistency Ip	Consistency IL	USCS	Consol. kPa 25	Consol. kPa 50	Consol. kPa 100	C/H/N w	C/H/N p	C/H/N C	C/H/N H	C/H/N N	Radiocarbon dates 14C (BP)	±	Material
13_09_275-285	Recovery	Ud-F		24.4		0.5	98.0	1.6					SP											
13_09_285-292				24.2		2.4	96.9	0.7					SP											
13_09_293-307				25.5		9.5	90.1	0.3					SP		0.19	0.83								
13_09_309-320				19.4																				
13_09_320-328				18.6																				
13_09_328-338				91.5																				
13_09_341-400																								
13_09_400-440																								
13_09_440-469																								
13_09_467-497																								
13_09_497-529																								
13_09_526-570																								

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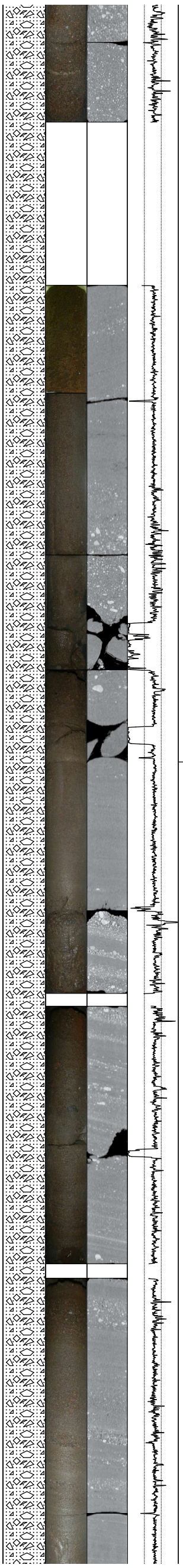

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		Fine to medium sand interbedded with really fine to medium gravel and coarse sand. Sub-horizontal bedding. Occasional layer of heavy minerals. Pore ice.			Ud-F	13_09_570-584	21.5		2.7	97.1	0.3					SP											
-6.00					Ud-F	13_09_599-613	24.6																				
						13_09_613-621	26.9																				
						13_09_621-631	27.6		0.0	99.4	0.6					SP											
						13_09_631-638	24.7																				
						13_09_638-647	20.5																				
					Ud-F	13_09_647-655	19.7																				
						13_09_655-667	23.8																				
					Ud-F	13_09_667-676	24.2																				
						13_09_676-681	25.9																				
						13_09_681-693	22.7		0.1	98.9	1.1					SP											
						13_09_693-701	25.0																				
-7.00						13_09_701-710	29.4																				
					Ud-F	13_09_710-723	21.4		4.3	82.9	12.7	23.2				SM											
					Ud-F	13_09_726-738	21.0																				
						13_09_738-746	21.2																				
						13_09_746-754	23.2																				
						13_09_754-763	22.6																				
						13_09_763-772	23.3		2.7	96.9	0.4					SP											
-8.00					Ud-F	13_09_774-815																					
						13_09_815-828	25.2			79.4	20.5					SM											

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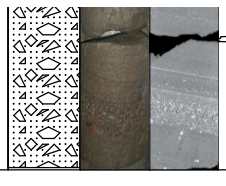
Depth (m)	Instrumentation	Stratigraphy	Image	CT (HU) 3071 / -1024	TI profile (HU) -1024 / 1024 / 3071	Soil description	Sampling method	Recovery	Sample state	Sample name	Volume (%) Soil / Ice / Air (0 – 100)	Water content (%)	Salinity (ppm)	Grain size G	Grain size S	Grain size M-C	Consistency wl	Consistency wp	Consistency Ip	Consistency IL	USCS	Consol. kPa 25	Consol. kPa 50	Consol. kPa 100	C/H/N w	C/H/N p	C/H/N C	C/H/N H	C/H/N N	Radiocarbon dates 14C (BP)	±	Material
						End of borehole at 8,41 m.			Ud-F	13_09_828-841		21.8																				

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