

Supplementary Table 1

Sample and field site characteristics of the studied topsoil and ice complex deposit samples.

Sample ID	Current vegetation	Watershed	Reference area description	Site/sample info	Location description	Lat °N	Lon °E
<i>Topsoil (modern vegetation and O-horizon samples)</i>							
KU EXP 1-1, 0-16 cm	Tundra	Lena	Siewert et al., 2016	Surface O-horizon; 0-16 cm	Holocene soil on top of yedoma exposure in Kurughnak Island, Lena River Delta	72.34	126.29
CH YED2, 0-4 cm	Tundra	Kolyma	Palmtag et al., 2015	Surface O-A horizon; 0-4 cm	Holocene soil on top of yedoma exposure in tundra along edge of thermokarst lake, near the Kolyma river	69.46	161.79
SP T3-3B,	Alas grassland	Lena	Siewert et al., 2015	Alas soil (Mollisol), mix of O and A horizon	Alas developed in Northern taiga, Lena drainage basin	62.32	129.5
SP T2-7,	Larch taiga	Lena	Siewert et al., 2015	Taiga soil (turbel), mix of O and A horizon	Larch forest in Northern taiga, Lena drainage basin	62.25	129.62
KY T2-3,	Tussock tundra	Indigirka	Siewert et al., 2015	Tundra soil (turbel), O-horizon	Open tundra near Kytalyk, Indigirka River.	70.83	147.48
CH T2-1,	Tussock tundra	Kolyma	Palmtag et al., 2015	Tundra soil (turbel), mix of O, O _{jj} and A _{jj} horizons	Open tundra near Shalaurova, Kolyma River	69.44	161.77
CH YED3, 0-10 cm	Larch taiga	Kolyma	Palmtag et al., 2015	Surface O-hor; 0-10 cm	Holocene soil on top of Yedoma exposure in taiga along edge of thermokarst lake, several km from the Kolyma river	68.77	161.41
CH Medv grass ^a	Grass tundra	Kolyma		Vegetation		69.64	162.54
CH Y4 grass ^a	Larch taiga	Kolyma		Vegetation		68.74	161.41
<i>Ice complex deposits</i>							
KU EXP 1-3, 212-216 cm	Tundra	Lena	Siewert et al., 2016	Very deep undisturbed yedoma ca. 10 m below surface	Yedoma exposure Kurughnak Island, Lena River Delta	72.34	126.29
CH YED1, 300-305 cm	Tussock tundra	Kolyma	Palmtag et al., 2015	Deep undisturbed yedoma ca. 3 m below surface	Yedoma exposure in tundra along the Kolyma river	69.47	161.77
CH YED2, 300-305 cm	Tussock tundra	Kolyma	Palmtag et al., 2015	Deep undisturbed yedoma ca. 3 m below surface	Yedoma exposure in tundra along edge of thermokarst lake, near the Kolyma river	69.46	161.79

CH YED3, 520-525 cm	Larch taiga	Kolyma	Palmtag et al., 2015	Deep undisturbed yedoma ca. 5 m below surface	Yedoma exposure in taiga along edge of theromkarst lake, several km from the Kolyma river	68.77	161.41
KY EXP1, 0-5 cm	Tussock tundra	Indigirka	Siewert et al., 2015	Undisturbed yedoma ca. 2 m below surface	Yedoma exposure in tundra close to the Berelekh river, which drains into the Indigirka River	70.83	147.44
KY EXP2, 110- 115 cm	Tussock tundra	Indigirka	Siewert et al., 2015	Deep undisturbed yedoma ca. 4.5 m below surface	Yedoma exposure in tundra close to the Berelekh river, which drains into the Indigirka River	70.83	147.44
KY EXP3, 185- 190 cm	Tussock tundra	Indigirka	Siewert et al., 2015	Undisturbed yedoma ca. 2 m below surface	Yedoma exposure in tundra close to the Berelekh river, which drains into the Indigirka River	70.83	147.49
CH DY-3A	Larch taiga	Kolyma	Vonk et al., 2013	Particulate matter from thaw streams		68.63	159.15
CH DY-4A	Larch taiga	Kolyma	Vonk et al., 2013	Particulate matter from thaw streams		68.63	159.15

References

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