

Appendix B
Anoka Sand Plain Core Descriptions

Core/Profile: 09AN-01 (1A)
 Location: Anoka Sand Plain physiographic province
 Legal description: NW¼ SE¼ Section 15 Township 31N Range 22W
 County: Anoka
 Parent material: Peat
 Vegetation: Roadside grassy/weedy vegetation
 Slope: Not recorded because of artificial (man-made) slopes
 Elevation: 890 feet (271.2 meters)
 Topographical Map: Centerville
 Remarks: Foth Project #06M058; the parenthetical number and letter behind the Core/Profile Number (shown above) refers to the temporary field notes numbering system and is also found on the following core descriptions.

Depth cm(ft)	Horizon or Zone	Description
0-16 (0-0.5)	Ap	black (10YR2/1) fine sandy loam; moderate, thin, platy structure; friable; strong effervescence; abrupt lower boundary; platy due to compaction.
16-61 (0.5-2.0)	Ap2	very dark grayish brown (10YR3/2) fine loamy sand and fine sandy loam; few coarse prominent light gray (10YR7/2-7/1) mottles; weak, thin platy in fine sandy loam; friable, loose; strong effervescence, abrupt lower boundary, silty mottles are reworked clods.
61-82 (2.0-2.6)	Ap3(?)	dark grayish brown (10YR4/2) fine loamy sand with pebbles; few coarse prominent light gray (10YR7/2-7/1) mottles; single grain; loose; weak effervescence; gradual lower boundary.
82-104 (2.6-3.4)	Ap(?)	very dark gray to dark gray (10YR3/1 - 4/1) fine loamy sand with pebbles; single grain; loose to very friable; weak effervescence; unknown lower boundary.
122-155 (4.0-5.0)	Ap(?);	alternating dark gray and black (10YR4/1 and 10YR2/1) fine loamy sand and loam with pebbles; strong effervescence; abrupt lower boundary; common, medium, black organic peat inclusions near bottom
155-180 (5.0-5.9)	Oe	black (10YR2/1) peat; matted structure, fibrous; non-effervescent; unknown lower boundary.
244-254 (8.0-8.3)	Oe	black (10YR2/1) peat; matted structure, fibrous; non-effervescent; lower boundary.
254-284 (8.3-9.3)	Cg	very dark gray (10YR3/1); fine-medium loamy sand; friable; very weak effervescence; abrupt lower boundary.
284-303 (9.3-9.9)	Oe	same as 244-254 above.
303-316 (9.9-10.3)	Lma	olive gray to light olive gray (5Y5/2-6/2) marl; thin to laminar bedding, friable; violent effervescence; clear lower boundary; many whole mollusks; many micro-roots collected for possible C-14.
316-329 (10.3-10.7)	Cg	dark gray to dark greenish gray (5Y 4/1-5GY4/1) silt loam; massive; friable to firm; strong effervescence; unknown lower boundary; lake sediment.
366-392 (12.0-12.8)	Ab	very dark gray (10YR 3/1) sandy loam to loamy sand with pebbles; single grain; loose; strong effervescence; abrupt lower boundary; few inclusions or clods of peat.
392-410 (12.8-13.4)	Oe	very dark brown (10YR2/2) peat; matted; non-effervescent; abrupt lower boundary; some fibers and wood fragments within peat yielded a modern AMS radiocarbon date ((Beta-258834).
410-415 (13.4-13.6)	Lma	light gray (2.5Y7/2) marl; few coarse prominent black (10YR2/1) peat, and few coarse prominent dark greenish gray (5GY4/1) mottles; bioturbated; firm; strong effervescence; abrupt lower boundary; inclusions from horizons above and below.
415-420 (13.6-13.7)	Cg	dark greenish gray (5GY4/1) fine sandy loam to very coarse silt loam; single grain to massive; very friable; strong effervescence; abrupt lower boundary.
420-454 (13.9-14.8)	Cg	light gray (5Y6/1) very fine sand to loamy sand; thin to laminar bedding; loose; strong effervescence; unknown lower boundary.

488-499 (16.0-16.3)	Cg	as above except irregular abrupt lower boundary
499- 552 (16.3-18.1)	Cg	dark greenish gray to very dark gray (5GY4/1-5Y3/1) sandy clay loam diamicton; massive; firm; slight effervescence; unknown lower boundary; H ₂ S odor lower in column; perhaps a supraglacial till; subangular pebbles up to 4x3x1cm.

EOB

Core/Profile: 09AN-02 (1B)
 Location: Anoka Sand Plain physiographic province
 Legal description: NW¼ SE¼ Section 15 Township 31N Range 22W
 County: Anoka
 Parent material: Peat
 Vegetation: Roadside grassy/weedy vegetation
 Slope: Not recorded because of artificial (man-made) slopes
 Elevation: 886 feet (269.9 meters)
 Topographical Map: Centerville
 Remarks: 06M058; Glacial (?) lake deposits above glacial till

Depth cm(ft)	Horizon or Zone	Description
0-80 (0-2.6)	Ap	Fill; abrupt lower boundary
80-111 (2.6-3.6)	Oe	very dark brown (10YR2/2) peat; matted structure; friable; non-effervescent; unknown lower boundary.
122-145 (4.0-4.7)	Oe	same as above except abrupt lower boundary.
145-164 (4.7-5.3)	Lma	grayish brown to light brownish gray (2.5Y5/2-6/2) marl; few, fine, distinct very dark brown and light gray (10YR2/2 and 10YR6/1) mottles at 160-164 cm; massive; very friable; violent effervescence; clear lower boundary; many rootlets from peat above; many whole mollusks of varying sizes; mottles are stains from peat above; collected 146-169.
164-180 (5.3-5.9)	Cg	dark gray (2.5Y4/0) very fine loamy sand; common, thin to laminar, distinct, very dark brown (10YR2/2) mottles; thin to laminar bedding; loose; strong effervescence; unknown lower boundary.
244-266 (8.0-8.7)	Cg	same as above except abrupt lower boundary
266-286 (8.7-9.4)	Cg	gray (5Y5/1) very fine loamy sand; loose; strong effervescence; unknown lower boundary.
366-435 (12.0-14.2)	Cg	very dark gray to gray (5Y3/1-5/1) silty clay loam; few, medium, distinct, brown (7.5Y5/4) mottles around joints; laminar bedding; very firm; slight effervescence; unknown lower boundary; lake (glaciolacustrine) deposit contains microscopic to macroscopic rip-up(?) clasts of silty clay loam clods; bedding became apparent after drying out; fine to medium sand at lower part of core.
488-575 (16.0-18.8)	Cg	grayish brown (2.5Y5/2) silty clay loam diamicton; massive; extremely firm; slight effervescence; unknown lower boundary; till (basal); rounded pebbles up to 3x3x2.5 cm.
EOB		

Core/Profile: 09AN-03 (1C)
 Location: Anoka Sand Plain physiographic province
 Legal description: NE¼ SW¼ Section 10 Township 31N Range 22W
 County: Anoka
 Parent material: Alluvium/Colluvium
 Vegetation: Roadside grassy/weedy vegetation
 Slope: Not recorded because of artificial (man-made) slopes
 Elevation: 888 feet (270.8 meters)
 Topographical Map: Centerville
 Remarks: 06M058

0-17 (0-0.5)	AC	very dark grayish brown to dark grayish brown (10YR3/2 to 4/2) very fine loamy sand to sandy loam; single grain; loose; non-effervescent; gradual lower boundary; probably truncated top-soil.
17-44 (0.5-1.4)	CA	dark grayish brown (10YR4/2) very fine sandy loam; single grain; loose; non-effervescent; clear lower boundary.
44-86 (1.4-2.8)	C	brown to strong brown (7.5YR5/4 to 5/6) very fine loamy sand texture with few pebbles; single grain; loose; non-effervescent; unknown lower boundary; pebbles are well rounded (3x1.5x1.0 cm)
122-162 (4.0-5.3)	CAb	black (10YR2/1) loam; few, thin, prominent, greenish gray (5GY5/1 to 5G6/1) mottles; massive to faint laminar bedding; firm; non-effervescent; abrupt lower boundary; mottles appear to be coarse silt loams: possible topsoil washed into basin(?).
162-174 (5.3-5.7)	C	grayish brown (10YR5/2) very fine loamy sand; few, fine, faint, yellowish brown (10YR5/6) mottles; very coarse distinct dark gray (10YR4/1) mottles at lower boundary; massive to single grain; friable; non-effervescent; abrupt lower boundary.
174-201 (5.7-6.5)	Oeb	black (10YR2/1) peat; massive; friable; non-effervescent; unknown lower boundary; common rootlets.
244- 254 (8.0-8.3)	Oeb	same as above; abrupt lower boundary.
254-257 (8.3-8.4)	C	strong brown (7.5YR5/6) very fine sand; single grain; loose; non-effervescent; abrupt lower boundary.
257-273 (8.4-8.9)	CAb	same as 122-162 horizon above.
273 - 281 (8.9-9.2)	C	grayish brown (2.5Y-10YR5/2) very fine loamy sand; common, coarse, faint, dark gray (2.5Y-10YR 4/1) mottles at lower boundary; faint bedding; loose; non-effervescent; abrupt lower boundary.
281-319 (9.2-10.4)	Oeb	black (10YR 2/1) peat; faint bedding; friable; non-effervescent; abrupt lower boundary.
319-322 (10.4-10.5)	Lma	grayish brown to olive gray (2.5Y-5Y5/2) marl; massive; friable; strong effervescence; unknown lower boundary; common mollusk fragments.
366-371 (12.0-12.1)	Lma	same as above except abrupt lower boundary and very thin peat lens at lower boundary; marl yielded a conventional AMS radiocarbon date of 9,170 ± 40 BP (Beta-258835).
371-411 (12.1-13.4)	Cg	dark gray (5Y4/1) very fine loamy sand to sandy loam; common, thin, faint, very slight color changes; laminar bedding; loose; slight to strong effervescence; unknown lower boundary; thin silty clay loam lens at 377-381 cm.
488-505 (16.0-16.5)	Cg	same as above except clear lower boundary.
505-521 (16.5-17.0)	Cg	dark gray (5Y4/1) pebbly very fine sandy loam; loose; slight effervescence; abrupt lower boundary.
521-570 (17.0-18.7)	Cg	dark gray (5Y4/1) silty clay loam; few coarse prominent yellowish red (5YR5/6) mottles at lowermost core sample; faint laminar bedding; very firm; slight effervescence; unknown lower boundary; single fine sand lamina at 557.5 cm; charred wood sample collected at 525-567 cm. yielded an infinite (>45,000 B.P.)

radiocarbon age (Beta-258836).

EOB

Core/Profile: 09AN-04 (1D)
 Location: Anoka Sand Plain physiographic province
 Legal description: NW¼ SE¼ Section 22 Township 32 Range 22W
 County: Anoka
 Parent material: Peat
 Vegetation: Roadside grassy/weedy vegetation
 Slope: Not recorded because of artificial (man-made) slopes
 Elevation: 905 feet (275.71 meters)
 Topographical Map: Centerville
 Remarks: 06M058

0-54 (0-1.7)	Oi	black (10YR2/1) fibric peat; matted; loose; non-effervescent; abrupt lower boundary; wet.
54-86 (1.7-2.8)	Oe/CO	interbedded black (10YR2/1) and dark grayish brown (10YR4/2) matted peats and thin peaty loams; friable and loose; non-effervescent; unknown lower boundary; common rootlets.
122-141 (4.0-4.6)	Oe	same as peat above; clear lower boundary.
141-184 (4.0-6.0)	C	dark gray to dark grayish brown (10YR4/1-4/2) very fine loamy sand; faint bedding; loose; non-effervescent; clear lower boundary; few coarse faint darker (10YR2/1) stains from the above peat.
184-221 (6.0-7.2)	Cg	gray to greenish gray (5Y-5GY5/1) very fine sandy loam; faint bedding; very friable; non-effervescent; unknown lower boundary.
244-285 (8.0-9.3)	Cg	same as above except slight effervescence and clear lower boundary
285-306 (9.3-10.0)	Cg	gray to greenish gray (5Y-5GY5/1) coarse silt loam; faint laminar bedding; friable; slight effervescence; unknown lower boundary; last 10cm washed out and may have been sand; collected 285-306 cm for screening possible organics.
366-404 (12.0-13.2)	Cg	gray (10YR5/1) very fine sand; single grain; loose; slight to strong effervescence; unknown lower boundary.
488-571 (16.0-18.7)	Cg	same as above except thin to laminar bedding of slightly less value at 530-543 cm.
EOB		

Core/Profile: 09AN-05 (2A)
 Location: Anoka Sand Plain physiographic province
 Legal description: NE¼ SE¼ Section 5 Township 32 Range 22W
 County: Anoka
 Parent material: Peat
 Vegetation: Roadside grassy/weedy vegetation
 Slope: Not recorded because of artificial (man-made) slopes
 Elevation: 908 feet (276.9 meters)
 Topographical Map: Linwood
 Remarks: 06M058

0-47 (0-1.5)	Ap/Oe	alternating fills and peat beds; abrupt lower boundary; moist.
47-54 (1.5-1.7)	Oe	black (10YR2/1) sandy peat; matted structure; friable; non-effervescent; abrupt lower boundary; moist.
54-81 (1.7-2.6)	Cg	gray (5Y5/1) very fine loamy sand; few, fine, distinct, strong brown (7.5YR5/6) mottles; laminar bedding; loose; non-effervescent; unknown lower boundary; wet; common roots from peat above.
122-229 (4.0-7.5)	Cg	gray to dark gray (5Y5/1-4/1) very fine loamy sand; few mottles are the same as above near 122-135 cm; massive; loose; non-effervescent; unknown lower boundary.
244-319 (8.0-10.4)	Cg	dark gray (5Y4/1) very fine loamy sand to sandy loam; very faint laminar bedding; loose to very friable; non-effervescent; abrupt lower boundary.
319-325 (10.4-10.6)	Cg	gray to dark greenish gray (5Y5/1-5GY4/1) very fine sandy loam; faint laminar bedding; very friable; non-effervescent; abrupt lower boundary.
325-327 (10.6-10.7)	Cg	same as 244-319 above except unknown lower boundary.
366-378 (12.0-12.4)	Cg	same as above, except few silty lenses scattered throughout of slightly darker value; clear lower boundary.
378-432 (12.4-14.1)	Cg	same as above except slight effervescence.
488-577 (16.0-18.9)	Cg	same as above except gray to dark gray (5Y5/1-4/1) thin to medium coarse silt loam beds; collected silt loam bed at 547-566 cm.
EOB		

Core/Profile: 09AN-06 (2B)
 Location: Anoka Sand Plain physiographic province
 Legal description: NW¼ NE¼ Section 18 Township 32 Range 22W
 County: Anoka
 Parent material: Alluvium/Colluvium and Peat
 Vegetation: Roadside grassy/weedy vegetation
 Slope: Not recorded because of artificial (man-made) slopes
 Elevation: 905 feet (275.9 meters)
 Topographical Map: Coon Lake Beach
 Remarks: 06M058

0-90 (0-2.9)	Ap	assorted fills; loosely compacted; abrupt lower boundary.
90-114 (2.9-3.7)	C(?)	dark grayish brown (10YR4/2) very fine loamy sand; common, medium, faint, very dark grayish brown (10YR3/2) mottles; single grain; loose; non-effervescent; unknown lower boundary.
122-160 (4.0-5.2)	C	as above except very dark grayish brown (10YR3/2) with few peaty lenses near lower boundary; clear lower boundary.
160-208 (5.2-6.8)	Oi	very dark brown (10YR2/2) fibric peat; matted structure; friable; non-effervescent; unknown lower boundary.
244-254 (8.0-8.3)	Oe	same as above except less fiber; collected for possible C-14 date; some laminar beds in lower 2/3's of core sample; abrupt lower boundary.
254-292 (8.3-9.5)	C	dark grayish brown to grayish brown (2.5Y4/2-5/2) very fine loamy sand to sandy loam; massive; very friable; non-effervescent; unknown lower boundary.
366-449 (12.0-14.7)	C	dark gray (10YR4/1) alternating very fine loamy sands and coarse silt loams; common thin black (10YR2/1) laminar mottles; laminar bedding; friable; non-effervescent; unknown lower boundary; few rootlets; collected 400-440 for possible C-14.
488-564 (16.0-18.5)	C	same as above except sample from 490-530 cm depth yielded a conventional AMS radiocarbon age of 32,360 ± 340 B.P. (Beta-258837); wet
610-713 (20.0-23.3)	C	same as above except slightly coarser very fine sand
EOB		

Core/Profile: 09AN-07 (2C)
 Location: Anoka Sand Plain physiographic province
 Legal description: SE¼ SE¼ Section 18 Township 32 Range 22W
 County: Anoka
 Parent material: Alluvium/Colluvium and Peat
 Vegetation: Roadside grassy/weedy vegetation
 Slope: Not recorded because of artificial (man-made) slopes
 Elevation: 905 feet (275.9 meters)
 Topographical Map: Coon Lake Beach
 Remarks: 06M058

0-115 (0-3.7)	Ap	dark gray (2.5Y4/1) very fine sandy loam; non-effervescent; unknown lower boundary; assorted fill; wood log at bottom; plastic shotgun wad found at 108 cm depth.
122-131 (4.0-4.2)	Ap	wood log; abrupt lower boundary.
131-144 (4.2-4.7)	C	brown (10YR4/3) very fine loamy sand; faint laminar bedding; loose; non-effervescent; abrupt, irregular, lower boundary.
144-184 (4.7-6.0)	Oi	black (10YR2/2-2/1) fibric peat; matted structure; no consistency; non-effervescent; abrupt lower boundary.
184-196 (6.0-6.4)	C	dark grayish brown (2.5Y4/2) very fine loamy sand; faint laminar bedding; loose; non-effervescent; unknown lower boundary.
244-299 (8.0-9.8)	C	same as above except few very coarse silt loam lenses with a color between dark gray and dark grayish brown (2.5Y4/0 and 4/2); one modern rootlet (vertical) at 264-269 cm depth.
366-426 (12.0-13.9)	C	same as above except dark gray (10YR4/1); collected coarse silt loam lens at 366-373 cm depth.
488-591 (16.0-19.3)	C	same as above.
610-664 (20.0-21.7)	C	same as above except clear lower boundary.
664-711 (21.7-23.3)	C	same as above except more pronounced laminar bedding; many laminae are concentrated with both mica and well-rounded black rock very fine sand grains; laminae with micas is similar in appearance to beach wash on either modern-day lake or river shorelines.
EOB		

Core/Profile: 09AN-08 (2D)
 Location: Anoka Sand Plain physiographic province
 Legal description: NE¼ SW¼ Section 29 Township 33N Range 22W
 County: Anoka
 Parent material: Alluvium/Colluvium and Peat
 Vegetation: Roadside grassy/weedy vegetation
 Slope: Not recorded because of artificial (man-made) slopes
 Elevation: 905 feet (275.71 meters)
 Topographical Map: Linwood
 Remarks: 06M058

0-104 (0-3.4)	Ap	fill; abrupt lower boundary.
104-115 (3.4 - 3.7)	CA	alternating very dark gray and yellowish brown (10YR3/1 and 10YR5/6) very fine sandy loam; few, fine, distinct, yellowish red (5YR5/8) mottles; laminar bedding; loose; non-effervescent; unknown lower boundary.
122-142 (4.0-4.6)	AC	very dark gray (10YR3/1) very fine sandy loam; laminar bedding; very friable; non-effervescent; clear lower boundary.
142-154 (4.6-5.0)	C	yellowish brown to light olive brown (10YR5/3-2.5Y5/4) very fine loamy sand to sandy loam; massive; very friable; non-effervescent; abrupt lower boundary.
154-167 (5.0-5.4)	Oe	very dark brown to black (10YR2/2-2/1) peat; massive; friable; non-effervescent; unknown lower boundary.
244-259 (8.0-8.4)	Oe	same as above except becomes laminar with interbedded mineral laminae near lower boundary; clear lower boundary; collected 250-259 cm depth for possible C-14.
259-304 (8.4-9.9)	C	dark gray (2.5Y4/0-10YR4/1) very fine sand; few medium black (10YR2/1) peat lenses; faint laminar bedding; loose; non-effervescent; unknown lower boundary; common rootlets from peat horizon above.
366-411 (12.0-13.4)	C	same as above except no peat lenses and rootlets; clear lower boundary.
411-428 (13.4-14.0)	C	same as above except slight effervescence.
488-567 (16.0-18.6)	C	same as above; unknown lower boundary; more pronounced laminar bedding starting at 528 to 547 cm depth.
610-674 (20.0-22.1)	C	same as above with faint laminar bedding.
EOB		

Core/Profile: 09AN-09 (2E)
 Location: Anoka Sand Plain physiographic province
 Legal description: NE¼ NE¼ Section 29 Township 33N Range 22W
 County: Anoka
 Parent material: Peat and Alluvium/Colluvium
 Vegetation: Roadside grassy/weedy vegetation
 Slope: Not recorded because of artificial (man-made) slopes
 Elevation: 904 feet (275.5 meters)
 Topographical Map: Linwood
 Remarks: 06M058

0-22 (0-0.7)	OC	very dark grayish brown (10YR3/2) sandy peat; faint bedding; friable; non-effervescent; clear lower boundary.
22-59 (0.7-1.9)	C	dark gray (10YR4/1) very fine sand; few medium faint brown (7.5YR4/4) mottles; faint bedding; loose; non-effervescent; abrupt lower boundary.
59-89 (1.9-2.9)	C	dark gray (10YR4/1) very fine loamy sand; many thin faint very dark brown (10YR2/2) mottles; thin bedding; loose; non-effervescent; unknown lower boundary; mottles are a slightly finer and more carbon-rich in thin beds.
122-149 (4.0-4.8)	Cg	dark gray (5Y4/1) very fine loamy sand; few medium faint black (10YR 2/1) mottles; faint bedding; loose; non-effervescent; abrupt lower boundary.
149-188 (4.8-6.1)	Oi	very dark brown (10YR2/2) fibric peat; matted structure; non-effervescent; abrupt lower boundary.
188-191 (6.1-6.2)	Cg	black (5Y2.5/1) very fine loamy sand to sandy loam; thin bedding; very friable; non-effervescent; unknown lower boundary.
244-259 (8.0-8.4)	Oe	very dark brown (10YR2/2) peat; matted structure; non-effervescent; abrupt lower boundary.
259-299. (8.4-9.8)	Cg	gray to greenish gray (5Y-5GY5/1) very coarse silt loam to loam; few thick faint dark gray (5Y4/1) mottles; faint laminar bedding; friable; spotty to slight effervescence; unknown lower boundary; few rootlets from peat collected at 266-296 cm depth.
366-381 (12.0-12.5)	Cg	dark gray (5Y4/1) very coarse silt loam; few thin to laminar faint black (10YR2/1) mottles; mottles indicate angular bedding; friable; non-effervescent; abrupt lower boundary; collected.
381-440 (12.6-14.4)	C	gray (10YR5/1) fine loamy sand to sand; faint bedding; loose; non-effervescent; unknown lower boundary.
488-529 (16.0-17.3)	C	same as above except clear lower boundary
539-603 (17.6-19.7)	C	same as above except slight effervescence.
609-725 (19.9-23.7)	C	same as above except alternating with slightly darker prominent thin to laminar bedding at 667-702 cm depth.
EOB		

Core/Profile: 09AN-10 (2F)
 Location: Anoka Sand Plain physiographic province
 Legal description: NW¼ NE¼ Section 28 Township 33N Range 22W
 County: Anoka
 Parent material: Peat and Alluvium/Colluvium
 Vegetation: Roadside grassy/weedy vegetation
 Slope: Not recorded because of artificial (man-made) slopes
 Elevation: 902 feet (274.9 meters)
 Topographical Map: Linwood
 Remarks: 06M058

0-50 (0-1.6)	OC	dark grayish brown (10YR4/2) peaty fine sand; crude or disturbed bedding; loose; non-effervescent; gradual lower boundary; (possible Ap?)
50-72 (1.6-2.3)	C	brown to dark brown (10YR4/3) very fine loamy sand; many fine distinct 5YR4/6 mottles; faint laminar bedding; loose; non-effervescent; clear lower boundary; mottles are along old decayed root positions.
72-80 (2.3-2.6)	C	dark grayish brown (2.5Y4/2) very fine loamy sand; many thin, very faint, slightly darker, discolorations; laminar bedding; loose; non-effervescent; clear lower boundary.
80-92 (2.6-3.0)	CA	black (10YR2/1) very fine loamy sand to sandy loam; common thin distinct dark grayish brown (10YR4/2) mottles; laminar bedding; loose; non-effervescent; unknown lower boundary.
122-143 (4.0-4.6)	C/CAb	alternating dark grayish brown and black (10YR4/2 and 10YR2/1) very fine loamy sands; thin bedding; loose; non-effervescent; abrupt lower boundary; probable alternating depths of water or influx of topsoil to discolor sediment.
143-188 (4.6 - 6.1)	Oe	black (10YR2/1) peat; very dark gray (10YR3/1) mottles increasing downward; matted to thinly bedded structure; friable; non-effervescent; unknown lower boundary.
188-206 (6.1-6.7)	Cg	olive gray (5Y5/2) very fine loamy sand; faint bedding; loose to massive; non-effervescent; unknown lower boundary.
244-264 (8.0-8.6)	Cg	same as above; poor recovery.
366-377 (12.0-12.3)	Cg	same as above except more prominent laminar bedding.
377-411 (13.4 - 13.4)	Cg	dark gray (5Y4/1) silt loam; many laminar distinct black (10YR2/1) mottles; laminar to massive; friable; spotty to strong effervescence at bottom; abrupt lower boundary; mottles are finer grained clays; collected.
411-445 (13.4-14.5)	Cg	dark gray (5Y4/1) very fine loamy sand; faint laminar bedding; loose; slight to strong effervescence; unknown lower boundary.
488-590 (16.0-19.3)	Cg	same as above except laminar bedding is not apparent.
610-677 (20.0-22.2)	Cg	same as above except faint laminar bedding in places; collected 640-675 cm.
EOB		

Core/Profile: 09AN-11 (2G)
 Location: Anoka Sand Plain physiographic province
 Legal description: SW¼ SE¼ Section 21 Township 33N Range 22W
 County: Anoka
 Parent material: Alluvium/Colluvium and Peat
 Vegetation: Roadside grassy/weedy vegetation
 Slope: Not recorded because of artificial (man-made) slopes
 Elevation: 900 feet (274.2 meters)
 Topographical Map: Linwood
 Remarks: 06M058

0-99 (0-3.2)	Ap	abrupt lower boundary; assorted fills.
99-115 (3.2-3.7)	C	grayish brown (2.5Y5/2) very fine loamy sand; common medium prominent very dark grayish brown (10YR3/2) mottles; faint bedding; loose; non-effervescent; unknown lower boundary; fine rootlets from fill above.
122-167 (4.0-5.4)	C	very dark grayish brown (10YR3/2) very fine loamy sand; common coarse prominent grayish brown (2.5Y5/2) mottles; laminar bedding; loose; non-effervescent; abrupt lower boundary.
167-201 (5.4-6.5)	Oeb	black (10YR2/1) peat; matted and blocky structure; friable; non-effervescent; unknown lower boundary.
244-278 (8.0-9.1)	Oeb	same as above except clear lower boundary where thin peats are interbedded with very fine loamy sand; interbedded units of peat at 261-278 cm depth yielded conventional AMS radiocarbon age of 3,940 ± 50 B.P. (Beta- 258838).
278-309 (9.1-10.1)	C	gray to grayish brown (10YR5/1-2.5Y5/2) very fine loamy sand; faint laminar bedding; loose; slight effervescence; unknown lower boundary; common rootlets from peat horizon above.
366-471 (12.0-15.4)	C	dark grayish brown (10YR4/2-2.5Y4/2) very fine loamy sand; faint laminar bedding; loose; slight to strong effervescence; unknown lower boundary; microlaminae composed of very fine well rounded black mineral/rock sand grains and flakes of mica.
488-597 (16.0-19.5)	C	same as above except slight effervescence.
610-693 (20.0-22.7)	C	same as above except dark gray to dark grayish brown (10YR4/1-2.5Y4/2).
EOB		

Core/Profile: 09AN-12 (2H)
 Location: Anoka Sand Plain physiographic province
 Legal description: NE¼ NW¼ Section 14 Township 33N Range 22W
 County: Anoka
 Parent material: Peat and Alluvium/Colluvium
 Vegetation: Roadside grassy/weedy vegetation
 Slope: Not recorded because of artificial (man-made) slopes
 Elevation: 898 feet (273.9 meters)
 Topographical Map: Linwood
 Remarks: 06M058; 8-12 ft. (244-366) interval was destroyed during drilling process.

0-87 (0-2.8)	Ap	Assorted fills; abrupt angular lower boundary.
87-116 (2.8-3.8)	Ap	black (10YR2/1) peat; massive; very loose; non-effervescent; unknown lower boundary; disturbed peat bed.
122-138 (4.0-4.5)	Ap	same as above except abrupt lower boundary.
138-153 (4.5-5.0)	Oe	black (10YR2/1) peat; matted structure; friable; non-effervescent; abrupt lower boundary.
153-161 (5.0-5.2)	C	brown (10YR4/) very fine sand; single grain; loose; non-effervescent; abrupt, irregular lower boundary; possible fill above truncated soil.
161-163 (5.2-5.3)	AC (?)	black (10YR2/1) silt loam; massive; friable; non-effervescent; abrupt, irregular lower boundary.
163-225 (5.3-7.3)	Cg	gray (5GY5/1) very fine loamy sand to sandy loam; few medium distinct yellowish red (5YR5/6) mottles; massive; loose; non-effervescent; unknown lower boundary; mottles related to old decayed or decaying rootlets; wet, no recovery between 8-12 ft.
366-439 (12.0-14.4)	Cg	gray (5Y5/1) very fine loamy sand to sandy loam; faint laminar bedding; loose to friable; slight effervescence; abrupt lower boundary.
439-459 (14.4-15.0)	Cg	gray (5Y5/1) silt loam; many laminar distinct black (10YR2/1) mottles; laminar bedding; friable; slight effervescence; unknown lower boundary; looks like sand poured out from end of core; collected 439-457 cm. depth.
488-542 (16.0-17.7)	Cg	gray (5Y5/1) fine sand; single grain; loose; strong effervescence; abrupt lower boundary.
542-594 (17.7-19.4)	Cg	gray (5Y5/1) coarse silt loam; massive to very faint laminar bedding; friable; strong effervescence; unknown lower boundary; collected 550-590 cm depth.
EOB		

Core/Profile: 09BN-01 (7A)
 Location: Anoka Sand Plain physiographic province
 Legal description: NE¼ SW¼ Section 34 Township 36N Range 29W
 County: Benton
 Parent material: Peat and Alluvium/Colluvium
 Vegetation: Roadside grassy/weedy vegetation
 Slope: Not recorded because of artificial (man-made) slopes
 Elevation: 1021 feet (311.1 meters)
 Topographical Map: Duelm
 Remarks: 06M058

0-18 (0-0.5)	Oi	black (10YR2/1) fibric peat; matted structure; loose; non-effervescent; abrupt lower boundary.
18-60 (0-1.9)	Ap	dark brown (10YR3/3) sandy clay loam diamicton; common fine and medium distinct brownish yellow and black (10YR6/8 and 10YR2/1) mottles; massive; friable; non-effervescent; abrupt irregular lower boundary; fill material.
60-75 (1.9-2.4)	Ap(?)	black (10YR2/1) loam; many coarse distinct dark brown and brownish yellow (10YR3/3 & 6/8) mottles; massive; friable; non-effervescent; unknown lower boundary; fill material or greatly disturbed native soil.
122-131 (4.0-4.2)	C(Ap?)	dark brown (10YR3/3) loam to sandy clay loam; common coarse faint black (10YR2/1) and many medium prominent brownish yellow (10YR6/8) mottles; very weak medium subangular blocky structure; friable to firm; non-effervescent; abrupt irregular lower boundary; reworked till?
131-149 (4.2-4.8)	Cg	very dark gray (2.5Y3/0) fine sandy clay loam to fine sandy loam diamicton; few coarse distinct black (10YR2/1) mottles; massive; friable to firm; strong effervescence; abrupt lower boundary; mottles appear to be ripped up from next lower horizon.
149-170 (4.8-5.5)	Oab	black (10YR2/1) peat; massive; friable; non-effervescent; unknown lower boundary; rare vegetative fibers.
244-247 (8.0-8.1)	Cg	very dark gray (2.5Y3/0) fine sandy loam diamicton; massive; very friable; non-effervescent; abrupt lower boundary.
247-264 (8.1-8.6)	Oeb	very dark brown (10YR2/2) peat; massive; friable; non effervescence; abrupt lower boundary.
264-286 (8.6-9.3)	Oab	black (10YR2/1) peat; massive; friable; non-effervescent; clear lower boundary.
286-290 (9.3-9.5)	Cg	dark gray (5Y4/1) marl; faint thin bedding; friable; violent effervescence; unknown lower boundary; many shell fragments; marl yielded a conventional AMS radiocarbon age of 7,340±40 B.P. (Beta-258844)..
EOB		

Core/Profile: 09IA-01 (3A)
 Location: Anoka Sand Plain physiographic province
 Legal description: SW¼ SW¼ Section 29 Township 35N Range 22W
 County: Isanti
 Parent material: Alluvium/Colluvium
 Vegetation: Roadside grassy/weedy vegetation
 Slope: Not recorded because of artificial (man-made) slopes
 Elevation: 933 feet (284.4 meters)
 Topographical Map: Typo Lake
 Remarks: 06M058

0-14 (0-0.4)	Ap	strong brown (7.5YR3/5) pebbly loamy sand; single grain; loose; non-effervescent; abrupt lower boundary.
14-114 (0.4-3.7)	C/CAb	alternating yellowish brown (10YR5/4) very fine sands and brown (10YR4/3) very fine loamy sands; laminar bedding in very fine sands (10YR5/4); loose; non-effervescent; unknown lower boundary; includes 4 CAb-horizons (10YR4/3) up to 6-cm thick with very weak fine subangular blocky structures.
122-135 (4.0-4.4)	C	same as above except no apparent CAb-horizons, clear lower boundary.
135-207 (4.4-6.7)	C	brown (7.5YR5/4); very fine sand to very fine loamy sand; many coarse prominent yellowish red (5YR4/6) mottles; laminar bedding; loose; non-effervescent; abrupt lower boundary; mottles are very thick color-banding.
207-216 (6.7-7.0)	C	brown (7.5YR5/4) fine to medium sand; few medium, prominent yellowish red (5YR4/6) mottles; laminar to thin bedding; loose; non-effervescent; unknown lower boundary; alluvial.
244-279 (8.0-9.0)	C	same as 135-207 cm horizon above.
279-329 (9.0-10.7)	C	same as 207-216 cm horizon above except yellowish brown (10YR5/4) and at 289 -292 cm depth there is a coarser sand and pebble horizon with one angular pebble (3.0x2.5x1.0 cm).
366-443 (12.0-14.5)	C	same as above except one finer-grained strong brown(7.5YR4/6) sandy loam at 378-390 cm depth and very thin laminar MnOx staining parallel to and interbedded with FeOx laminar staining.
488-549 (12.0-18.0)	C	same as above except no mottling and no sandy loam unit and clear lower boundary.
549-608 (18.0-19.9)	C	same as above except slight effervescence; unknown lower boundary.
610-660 (20.0-21.6)	C	same as above except fining-up from medium sand to fine sand; one black basalt angular pebble at 647 cm depth (3.0x3.0x1.5 cm dimensions)
EOB		

Core/Profile: 09IA-02 (3B)
 Location: Anoka Sand Plain physiographic province
 Legal description: SE¼ SW¼ Section 29 Township 35N Range 22W
 County: Isanti
 Parent material: Alluvium/Colluvium
 Vegetation: Roadside grassy/weedy vegetation
 Slope: Not recorded because of artificial (man-made) slopes
 Elevation: 929 feet (283.1 meters)
 Topographical Map: Typo Lake
 Remarks: 06M058

0-12 (0-0.3)	Ap	dark brown (7.5YR3/2) pebbly loamy sand; single grain; loose; non-effervescent; abrupt lower boundary; common rootlets, fill.
12-45 (0.3-1.4)	CA	very dark grayish brown to dark grayish brown (10YR3/2 to 4/2) fine sand; single grain; loose; non-effervescent; gradual lower boundary; laminar bedding more apparent near lower boundary.
45-86 (1.4-2.8)	C/CAb	dark yellowish brown to brown (10YR-7.5YR4/4) very fine sand; many coarse prominent reddish brown (5YR4/4) mottles; single grain laminar bedding; loose; non-effervescent; abrupt lower boundary; CAb-horizon at 77-83 cm depth is a sandy loam bedded with rootlets.
86-94 (2.8-3.0)	C	brown (7.5YR4/4) very fine sand; many coarse prominent reddish brown (5YR4/4) mottles; laminar bedding single grain; loose; non-effervescent; unknown lower boundary.
122-165 (4.0-5.4)	C	same as above except clear lower boundary.
165-207 (5.4-6.7)	C	same as above except fine sand and few medium sand lenses; cross-bedding.
244-300 (8.0-9.8)	C	yellowish brown (10YR5/4) fine sand with thin sandy loam and one silt loam lenses; few, coarse, prominent, strong brown (7.5YR4/6) mottles; thin bedding; loose; non-effervescent; abrupt lower boundary; one silt loam lens is yellowish red (5YR4/6) with gray (5Y6/1) mottles at 295-298 cm depth; silt loam lens had horizontally bedded plant root or stem.
300-337 (9.8-11.0)	C	yellowish brown (10YR5/4) fine sand; few very thin faint yellowish brown (10YR5/8) mottles; laminar bedding; loose; spotty effervescence; abrupt lower boundary; rounded pebble at 331 cm depth is 2.0x2.5x1.0 cm dimensions.
366-423 (12.0-13.8)	C	pale brown (10YR6/3;wet) fine sand; rare bedding; loose; non-effervescent; abrupt lower boundary.
423-445 (13.8-14.5)	C	same as above except slight effervescence; unknown lower boundary.
488-564 (16.0-18.5)	C	same as above except abrupt lower boundary.
564-585 (18.5-19.1)	C	same as above except medium sand with few thin pebbly lenses; unknown lower boundary.
610-690 (20.0-22.6)	C	as above except dark grayish brown (2.5Y4/2); strong effervescence; and more apparent thin bedding.
EOB		

Core/Profile: 09IA-03 (3C)
 Location: Anoka Sand Plain physiographic province
 Legal description: SW¼ SW¼ Section 32 Township 35N Range 22W
 County: Isanti
 Parent material: Peat and Alluvium/Colluvium
 Vegetation: Roadside grassy/weedy vegetation
 Slope: Not recorded because of artificial (man-made) slopes
 Elevation: 941 feet (286.9 meters)
 Topographical Map: Typo Lake
 Remarks: 06M058

0-2 (0-0.1)	Oi	very dark brown (10YR2/2) fibric peat; matted structure; non-effervescent; abrupt lower boundary.
2-53 (0.1-1.7)	AC	very dark gray to dark brown (10YR3/1-7.5YR3/2) very fine loamy sand; faint laminar bedding; loose; non-effervescent; gradual lower boundary.
53-91 (1.7-2.9)	C	strong brown (7.5YR4/6) very fine loamy sand to sandy loam; common coarse faint yellowish red (5YR4/6) mottles; massive; very friable; non-effervescent; unknown lower boundary.
122-225 (4.0-7.3)	C	strong brown (7.5YR4/6) very fine sand; common coarse distinct pale brown (10YR6/3) mottles; faint laminar bedding; loose; non-effervescent; unknown lower boundary.
244-252 (8.0-8.2)	C	same as above except non-effervescent; abrupt lower boundary.
252-254 (8.2-8.3)	ACb	very dark grayish brown (10YR3/2) very fine loamy sand; common, coarse distinct strong brown (7.5YR4/6) mottles; weak fine subangular blocky structure; friable; non-effervescent; abrupt lower boundary; collected for possible C-14 (probably too low in carbon)
254-296 (8.3-9.7)	C	yellowish brown (10YR5/4) very fine sand; few thin (~1cm) prominent strong brown (7.5YR4/6) mottles; faint laminar bedding; loose; non-effervescent; clear lower boundary; mottles may represent slightly more fines that moved with groundwater fronts.
296-314 (9.7-10.3)	C	light yellowish brown (10YR6/4) fine sand; single grain; loose; non-effervescent; abrupt lower boundary.
314-318 (10.3-10.4)	C	brown (10YR5/3) very fine loamy sand to sandy loam; loose; non-effervescent; abrupt lower boundary.
318-321 (10.4-10.5)	C	same as 296-314 above.
366-400 (12.0-13.1)	CAb	brown and dark brown (7.5YR4/4 and 7.5YR3/2) very fine loamy sand to sandy loam; thin faint dark brown (7.5YR3/2) lens at lower boundary; very weak fine subangular blocky; friable; non-effervescent; abrupt lower boundary.
400-411 (13.1 - 13.4)	C	pale brown (10YR6/3) very fine sand; microlaminar bedding; loose; non-effervescent; abrupt lower boundary; dark mineral laminar bed at lower boundary.
411-428 (13.4-14.0)	C	light yellowish brown (10YR6/4) fine sand; laminar bedding; loose; non-effervescent; unknown lower boundary.
488-532 (16.0-17.4)	C	dark grayish brown to brown (10YR4/2 to 4/3) very fine loamy sand; common thin faint laminar bedding; loose; non-effervescent; gradual lower boundary; wet one fine well-rounded basalt pebble at 529.
532-555 (17.4-18.2)	C	same as above except fine sand; no pebble; abrupt lower boundary.
555-578 (18.2-18.9)	C	dark brown to brown (10YR-7.5YR4/3) very fine sand to fine loamy sand; common thin very faint very dark grayish brown (10YR3/2) mottles; laminar bedding; loose; non-effervescent; unknown lower boundary; mottles are carbon stains, but too light for AMS C-14 assay; alternating very fine and fine sand beds.
610-647 (20.0-21.2)	C	grayish brown to light olive brown (2.5Y5/2-5/4) coarse silt loam; few very thin distinct strong brown (7.5YR5/6-5/8) mottles; faint laminar bedding; friable;

		strong effervescence; abrupt lower boundary; common very fine black flecks that are probably carbon.
647-668 (21.2-21.9)	C	yellowish brown (10YR5/4-5/6) fine sand; few coarse prominent reddish brown (5YR4/4) mottles at upper boundary; single grain; thin bedding; loose; strong effervescence; unknown lower boundary; rare well-rounded pebbles (1.5 x 1.0 x 0.5 cm dimensions)
<hr/> EOB <hr/>		

Core/Profile: 09IA-04 (3D)
 Location: Anoka Sand Plain physiographic province
 Legal description: NW¼ NW¼ Section 12 Township 34N Range 23W
 County: Isanti
 Parent material: Alluvium/Colluvium
 Vegetation: Roadside grassy/weedy vegetation
 Slope: Not recorded because of artificial (man-made) slopes
 Elevation: 930 feet (283.4 meters)
 Topographical Map: Isanti
 Remarks: 06M058

0-28 (0-0.9)	AC	dark yellowish brown (10YR3/4) very fine loamy sand; single grain; loose; non-effervescent; gradual lower boundary; truncated soil.
28-75 (0.9-2.4)	C	brown (7.5YR4/4) very fine sand; common coarse faint dark brown (7.5YR3/4) mottles; thin bedding; loose; non-effervescent; clear lower boundary; mottles are slightly more carbon-rich horizons.
75-102 (2.4-3.3)	C	brown (7.5YR4/4-5/4) very fine loamy sand; weak thin platy structure; very friable; non-effervescent; unknown lower boundary; platy structure is bedding.
122-158 (4.0-5.1)	C	brown (7.5YR4/4) very fine sandy loam; common medium distinct pale brown and yellowish red (10YR6/3 and 5YR4/6) mottles; massive; friable; non-effervescent; abrupt lower boundary; MnOx mineralization at lower boundary.
158-214 (5.1-7.0)	C	brown and pale brown (7.5YR5/4 and 10YR6/3) alternating beds of very fine sandy loam and fine sand; yellowish red (5YR4/6) banding at textural boundaries; thin to medium bedding; loose; non-effervescent; unknown lower boundary.
244-315 (8.0-10.3)	C	alternating pale brown (10YR6/3) fine sands and very fine to fine sands; many lamina with very dark grayish brown and strong brown (10YR3/2 and 7.5YR5/6)s mottles; laminar bedding; loose; non-effervescent; unknown lower boundary.
366-402 (12.0-13.1)	C	same as above except wet.
402-468 (13.1-15.3)	C	same as above except slight effervescence and concentrated darker lamina at 456-465 (collected).
488-563 (16.0-18.4)	C	brown (10YR5/3) very fine to fine loamy sand; many medium distinct greenish gray (5Y-5GY5/1) and yellowish red (5YR4/6) mottles; faint bedding; loose; strong effervescence; abrupt lower boundary.
563-589 (18.4-19.2)	C	brown (10YR5/3) medium loamy sand; thin bedding; loose; slight effervescence; unknown lower boundary.
610-646 (20.0-21.1)	C	brown (10YR4/3) fine loamy sand; faint bedding; loose; strong effervescence; abrupt lower boundary; few fine pebbles.
646-648 (21.1-21.2)	CA	alternating black and brown (10YR2/1 and 4/3) very fine sand; laminar bedding; loose; non-effervescent; abrupt lower boundary; small wood sample yielded an AMS radiocarbon age of >45,000 B.P (Beta-258839).
648-669 (21.2-21.9)	C	brown (10YR5/3) very fine sand; faint laminar bedding; loose; strong effervescence; abrupt lower boundary.
669-689 (21.9-22.6)	C	dark yellowish brown (10YR4/4) fining-up gravel to fine sand; single grain; loose; slight effervescence; unknown lower boundary.
EOB		

Core/Profile: 09IA-05 (3E)
 Location: Anoka Sand Plain physiographic province
 Legal description: SW¼ SW¼ Section 3 Township 34N Range 23W
 County: Isanti
 Parent material: Peat, Alluvium/Colluvium, and Lake Marl
 Vegetation: Roadside grassy/weedy vegetation
 Slope: Not recorded because of artificial (man-made) slopes
 Elevation: 925 feet (282.1 meters)
 Topographical Map: Isanti
 Remarks: 06M058; Historic debris at 75 cm.

0-101 (0-3.3)	Ap	alternating and unconsolidated wet fills and disturbed peats; non-effervescent; abrupt lower boundary..
101-117 (3.3-3.8)	Oi	very dark brown (10YR2/2) fibric peat; matted vegetation; non-effervescent; unknown lower boundary.
122-136 (4.0-4.4)	C	alternating grayish brown (10YR5/2) beds of fine and medium sand; one thin black (10YR 2/1) organic lens; laminar and thin bedding; loose; non-effervescent; abrupt lower boundary.
136-179 (4.4-5.8)	Oeb	black to very dark brown (10YR2/1-2/2) peat; few coarse faint very dark gray (2.5Y3/0) mottles; medium bedding; non-effervescent; unknown lower boundary.
244-285 (8.0-9.3)	Oab	as above except less fiber and a dark grayish brown (10YR4/2) laminar bedded sand lens at 255-260 cm depth; collected 260-284.
366-423 (12.0-13.8)	Oab	same as above except sand lens is at 383-396 cm depth; abrupt lower boundary.
423-439 (13.8-14.4)	Oab	multi-colored black, very dark brown, and dark gray (10YR2/1, 10YR2/2, & 10YR4/1) mucky silty clay loam; dark yellowish brown (10YR4/6) mottles at lower boundary; laminar to thin bedding; friable; non-effervescent; abrupt lower boundary; transition horizon between underlying marl and overlying wetlands; collected for potential C-14 assay.
439-451 (14.4-14.7)	Lma	gray to greenish gray (5Y-5GY5/1) marl; yellowish red (5YR5/8) mottles at lower boundary; massive; friable; violent effervescence; abrupt lower boundary; lake sediment; marl yielded a conventional AMS radiocarbon age of 10,980 ± 60 B.P. (Beta-258840).
451-466 (14.7-15.2)	C	dark gray (10YR4/1) fine sand; few coarse faint dark yellowish brown (10YR3/6) mottles at lower boundary; single grain; loose; slight effervescence; abrupt lower boundary.
466-477 (15.2-15.6)	C	dark gray to dark grayish brown (10YR4/1-4/2) fine sand; few coarse faint dark yellowish brown (10YR3/6) mottles at lower boundary; single grain; loose; non-effervescent ;unknown lower boundary.
488-541 (16.0-17.7)	C	same as above except dark gray (5Y4/1), no mottles, and abrupt lower boundary.
541-554 (17.7-18.1)	C	same as above except dark gray to very dark gray (10YR 4/1-3/1) fine to coarse sand; organic sediment yielded a conventional AMS radiocarbon age of 9,960 ± 40 B.P. (Beta-258841).
554-567 (18.1-18.6)	C	dark grayish brown to olive brown (2.5Y4/2 to 4/4) sandy gravel texture; single grain; loose; non-effervescent; unknown lower boundary.; pebbles up to 4x3x2 cm dimensions.
610-614 (20.0-20.1)	C	same as above except abrupt lower boundary.
614-718 (20.1-23.5)	C	reddish brown (5YR4/3) reddish brown color; sandy coarse loam; massive; very firm; non-effervescent; unknown lower boundary; some sandier lenses with less consistency; glacial till.
EOB		

Core/Profile: 09IA-06 (3F)
 Location: Anoka Sand Plain physiographic province
 Legal description: NW¼ NE¼ Section 35 Township 35N Range 23W
 County: Isanti
 Parent material: Peats and Marls
 Vegetation: Roadside grassy/weedy vegetation
 Slope: Not recorded because of artificial (man-made) slopes
 Elevation: 929 feet (283.2 meters)
 Topographical Map: Isanti
 Remarks: 06M058

0-76 (0-2.4)	Oe/Ap?	alternating very dark brown and dark gray (10YR2/2 & 10YR4/1) peat and pebbly sandy loam; common coarse distinct reddish brown (5YR4/4) mottles; thin to medium bedding; friable; peat is non-effervescent and sandy loam has strong effervescence; common shells; unknown lower boundary.
122-177 (4.0-5.8)	Oi	very dark brown (10YR2/2) fibric peat; matted structure; non-effervescent; unknown lower boundary; silty clay loam lens at 149-153 cm depth.
244-273 (8.0-8.9)	Oi	same as above except clear lower boundary.
273-287 (8.9-9.4)	Oa	black (10YR2/1) peat; massive; friable; slight effervescence; abrupt lower boundary; common broken shell at lower boundary.
287-299 (9.4 - 9.8)	Lma	grayish brown (2.5Y5/2) marl; many fine distinct very dark brown (10YR2/2) mottles near upper boundary; massive; friable; strong effervescence; unknown lower boundary; mottles are translocated carbon/humic stains from horizon above; samples collected at 294-299 cm depth yielded a conventional AMS radiocarbon age of 5,930 ± 40 B.P. (Beta-258842).
366-374 (12.0-12.2)	Oe	black (10YR2/1) peat; massive to thin bedding; friable; non-effervescent; abrupt planar lower boundary; in situ peat because of thin bedding at lower boundary and horizontal humic acid stain in uppermost 1 cm of underlying horizon.
374-427 (12.2-14.0)	Lma	grayish brown (2.5Y5/2) marl; few, very coarse faint grayish brown to dark grayish brown (10YR5/2-4/2) mottles; massive; friable; strong effervescence; unknown lower boundary; common snails; mottles are slightly more carbon-rich; collected 380-400 for potential AMS assay.
488-572 (16.0-18.7)	Lma	same as above except mottles are sometimes black (10YR 2/1) peat lenses (up to 2 cm thick)
610-679 (20.0-22.2)	Lma/Oe/Lco	alternating grayish brown, very dark brown, and black (2.5Y5/2, 10YR2/2, & black) marl, peat, and coprogenous earth; massive marl; laminar-bedded coprogenous earth; friable; marl and peat have strong efferevescence; coprogenous earth is non-effervescent; unknown lower boundary; peats and marl have whole mollusks and rootlets; coprogenous earth has rare seed and beetle scarabs; collected 635-639 (Lco), 628-639 (Lco), and 650-678 (Oe) cm depths; plant materials from the 650-678 cm peaty sample yield a conventional AMS radiocarbon age of 9,840±40 B.P. (Beta-258843).

EOB

Core/Profile: 09IA-07 (3G)
 Location: Anoka Sand Plain physiographic province
 Legal description: SE¼ SE¼ Section 5 Township 34N Range 23W
 County: Isanti
 Parent material: Peat and Alluvium/Colluvium
 Vegetation: Roadside grassy/weedy vegetation
 Slope: Not recorded because of artificial (man-made) slopes
 Elevation: 933 feet (284.5 meters)
 Topographical Map: Isanti
 Remarks: 06M058; top 4 ft were supersaturated.

0-28 (0-0.9)	Oi	very dark brown (10YR2/2) peat; massive; loose; non-effervescent; abrupt lower boundary; supersaturated.
28-74 (0.9-2.4)	C	yellowish brown (10YR5/6) sandy loam; single grain; loose; non-effervescent; abrupt lower boundary; supersaturated.
74-97 (2.4-3.1)	Oe	very dark brown (10YR2/2) peat; massive; loose; non-effervescent; abrupt lower boundary; supersaturated; 90-97 cm depth collected for potential C-14.
97-115 (3.1-3.7)	C	dark brown (10YR3/3) sandy loam; laminar bedding; loose; non-effervescent; unknown lower boundary; supersaturated.
122-132 (4.0-4.3)	C	same as above except gradual lower boundary.
132-214 (4.3-7.0)	C	light olive brown (2.5Y5/4) fine sand; common coarse yellowish red (5YR4/6) mottles; single grain; loose; non-effervescent; unknown lower boundary; mottles are color bands.
244-333 (8.0-10.9)	C	grayish brown (10YR5/2) very fine sand; many coarse, prominent strong brown (7.5YR5/6) mottles; single grain; loose; non-effervescent; abrupt lower boundary; few "coarse sand lenses; mottles are color bands.
333-347 (10.9-11.3)	C	grayish brown to dark grayish brown (10YR5/2 to 4/2) fine sand; single grain; loose; non-effervescent.
366-408 (12.0-13.3)	C	brown (10YR4/3) coarse to very coarse sand; single grain; loose; non-effervescent; unknown lower boundary.
488-579 (16.0-18.9)	C	brown (10YR4/3) pebbles; single grain; loose; non-effervescent; unknown lower boundary.
610-675 (20.0-22.1)		brown (10YR4/3) pebbles; single grain; loose; strong effervescence; unknown lower boundary.
EOB		

Core/Profile: 09ML-01 (9A)
 Location: Anoka Sand Plain physiographic province
 Legal description: SW¼ NE¼ Section 26 Township 36N Range 27W
 County: Mille Lacs
 Parent material: Peat and Alluvium/Colluvium
 Vegetation: Roadside grassy/weedy vegetation
 Slope: Not recorded because of artificial (man-made) slopes
 Elevation: 989 feet (301.5 meters)
 Topographical Map: Princeton SW
 Remarks: 06M058

0-43 (0-1.4)	OC	black (10YR2/1) pebbly peat; few coarse dark gray (10YR4/1) faint mottles; laminar bedding; loose; non-effervescent; abrupt lower boundary.
43-50 (1.4-1.6)	C	dark brown (10YR4/3) fine loamy sand; common fine faint very dark grayish brown (10YR3/2) mottles; faint laminar bedding; loose; non-effervescent; clear lower boundary.
50-60 (1.6 -1.9)	ACb	very dark grayish brown (10YR3/2) fine sandy loam to sandy clay loam; common thin faint dark brown (10YR4/3) mottles; irregular laminar bedding; firm; non-effervescent; clear lower boundary; common rootlets.
60-74 (1.9-2.4)	C	same as 43-50 above.
74-100 (2.4-3.2)	ACb	very dark grayish brown to very dark brown (10YR3/2-2/2) pebbly sandy loam; few thin beds of very dark grayish brown (10YR3/2) mottles; crude irregular bedding; firm; non-effervescent; unknown lower boundary.
122-130 (4.0-4.2)	ACb	as above except thin peat lens at abrupt lower boundary
130-189 (4.2-6.2)	C	strong brown (7.5YR5/6) fine sand; many coarse prominent grayish brown (2.5Y5/2) mottles; faint thin to laminar bedding; loose; non-effervescent; abrupt lower boundary.
189-191 (6.2-6.2)	Oab	black (10YR2/1) peat; matted; firm; non-effervescent; abrupt lower boundary; collected organic sediment yielded a conventional AMS radiocarbon age of 3,100 ± 40 B.P. (Beta-258845).
191-208 (6.2-6.8)	Cg	alternating dark grayish brown (2.5Y4/2) coarse loamy sands and fine loamy sands; few medium prominent strong brown (7.5YR4/6) mottles; thin bedding; loose; non-effervescent; unknown lower boundary.
244-257 (8.0-8.4)	C	dark grayish brown (10YR4/2) pebbly medium sand; single grain; loose; non-effervescent; clear lower boundary.
257-304 (8.4-9.9)	Cg	very dark grayish brown (10YR-2.5Y3/2) gravel; single grain; loose; non-effervescent; unknown lower boundary; fining-up sequence; subangular clasts at lower boundary up to 4x4x3 cm dimensions.
EOB		

Core/Profile: 09RA-01 (10A)
 Location: Anoka Sand Plain physiographic province
 Legal description: SW¼ SE¼ Section 32 Township 30N Range 22W
 County: Ramsey
 Parent material: Alluvium/Colluvium
 Vegetation: Roadside grassy/weedy vegetation
 Slope: Not recorded because of artificial (man-made) slopes
 Elevation: 907 feet (276.4 meters)
 Topographical Map: White Bear Lake West
 Remarks: 06M058

0-69 (0-2.2)	Ap	abrupt lower boundary; assorted fills.
69-81 (2.2-2.6)	A	black (10YR2/1) silt loam; very weak fine subangular blocky structure; friable; non-effervescent; gradual lower boundary.
81-115 (2.6-3.7)	C	very dark grayish brown to dark grayish brown (10YR3/2-4/2) silty clay loam; many very fine faint yellowish red (10YR5/6) mottles; massive; firm; non-effervescent; unknown lower boundary; many fine rootlets.
122-205 (4.0-6.7)	C	yellowish brown (10YR5/4) silty clay to silty clay loam; many fine faint grayish brown (10YR5/2) and common fine prominent white (10YR8/2) mottles; massive; firm; slight to strong effervescence; unknown lower boundary; less than 10% sand; white mottles and CaCO ₃ along joints.
244-316 (8.0-10.3)	C	grayish brown (2.5Y5/2) silty clay loam; many coarse distinct yellowish red (5YR4/6) and few fine distinct white (10YR8/2) mottles; massive; very firm; slight effervescence; unknown lower boundary; charcoal flecks collected at 311cm; collected 273-316 cm depth for possible C-14.
366-482 (12.0-15.8)	C	same as above except reddish mottles often include soft iron concretions; and CaCO ₃ deposits are more rare and faint laminar beddings; unknown lower boundary.
487-514 (15.9-16.8)	C	brown (10YR5/3) silty clay loam; few medium distinct gray (10YR6/1) and few coarse distinct yellowish brown (10YR5/8) mottles; faint laminar bedding; very firm; slight effervescence; unknown lower boundary; many MnOx dendritic patterns.
610-649 (20.0-21.2)	Cg	dark gray to dark grayish brown (10YR4/1-4/2) silty clay loam; faint laminar bedding; very firm; slight effervescence; abrupt lower boundary; collected charred material flecks yielded a conventional AMS radiocarbon age that is >45,000 B.P. (Beta-258846).
649-664 (21.2-21.7)	Cg	dark grayish brown (10YR4/2) very fine loamy sand to sandy loam; faint laminar bedding; very friable; strong effervescence; unknown lower boundary; few thin laminae consisting of very fine well-rounded black rock or mineral sand grains.
EOB		

Core/Profile: 09SH-01 (4A)
 Location: Anoka Sand Plain physiographic province
 Legal description: NE¼ NE¼ Section 27 Township 35N Range 26W
 County: Sherburne
 Parent material: Alluvium/Colluvium
 Vegetation: Roadside grassy/weedy vegetation
 Slope: Not recorded because of artificial (man-made) slopes
 Elevation: 968 feet (295.0 meters)
 Topographical Map: Princeton
 Remarks: 06M058

0-20 (0-0.6)	Ap	unconsolidated fill; abrupt lower boundary.
20-86 (0.6-2.8)	C	dark yellowish brown (10YR4/4 to 4/6) very fine sand; single grain and lenses of laminar bedding; loose to friable; non-effervescent; unknown lower boundary; possible fill?
122-134 (4.0-4.3)	C	same as above except clear lower boundary; brown to dark brown (7.5Y4/4) mottles (FeOx and MnOx stains) at lower boundary.
134-203 (4.3-6.6)	C	brown (10YR4/3) silt loam; common medium faint yellowish brown (10YR5/6) mottles; thin platy lenses; downward increasing CaCO ₃ coatings on platy faces; friable; slight to strong effervescence; clear lower boundary; some platy structures have angular bedding.
203-237 (6.6-7.7)	Cg	gray to greenish gray (5Y-5GY5/1) silt loam; few, fine distinct reddish brown (5YR4/4) mottles; very weak fine subangular blocky in top 10cm structure; friable; non-effervescent; unknown lower boundary; common rootlets; slightly darker near upper boundary.
244-248 (8.0-8.1)	Cg	gray to greenish gray (5Y-5GY5/1) silt loam; few coarse distinct yellowish red (5YR5/6) and dark yellowish brown (10YR4/7) mottles; laminar angular bedding; friable; non-effervescent; clear lower boundary; dark reddish brown (5YR3/4) medium hard Fe concretions.
248-291 (8.1-9.5)	Cg	same as above except slight to strong effervescence and unknown lower boundary.
366-374 (12.0-12.2)	CA	very dark gray (10YR3/1) fine sandy loam; few sandier thin lenses; loose; non-effervescent; abrupt lower boundary.
374-395 (12.2-12.9)	ACb	very dark gray (10YR3/1) silt loam; massive; friable; non-effervescent; gradual lower boundary.
395-421 (12.9-13.8)	Ab	black (10YR2/1) silt loam; very weak fine subangular blocky parting to medium moderate subangular blocky; friable; non-effervescent; gradual lower boundary; collected few traces of thin laminar very fine sandier lenses.
421-455 (13.8-14.9)	Cg	greenish gray (5G5/1) silty clay loam; many thin distinct dark gray (5Y4/1) mottles; faint laminar bedding; very firm; non-effervescent; unknown lower boundary; lake sediment.
EOB		

Core/Profile: 09SH-02 (4B)
 Location: Anoka Sand Plain physiographic province
 Legal description: SW¼ NE¼ Section 21 Township 35N Range 26W
 County: Sherburne
 Parent material: Alluvium/Colluvium
 Vegetation: Roadside grassy/weedy vegetation
 Slope: Not recorded because of artificial (man-made) slopes
 Elevation: 968 feet (295.0 meters)
 Topographical Map: Princeton
 Remarks: 06M058

0-22 (0-0.7)	Oe	black (10YR2/1) peat; thin bedding; friable; non-effervescent; abrupt lower boundary.
22-81 (0.7-2.6)	Cg	dark grayish brown (2.5Y4/2) very fine loamy sand; faint thin bedding; loose; non-effervescent; unknown lower boundary; common rootlets near upper boundary (from peat-forming plants above)
122-176 (4.0-5.7)	C	dark grayish brown (10YR-2.5Y4/2) very fine loamy sand; single grain; loose; non-effervescent; unknown lower boundary; wet.
EOB		

Core/Profile: 09SH-03 (5A)
 Location: Anoka Sand Plain physiographic province
 Legal description: SE¼ SW¼ Section 32 Township 35N Range 26W
 County: Sherburne
 Parent material: Peat and Alluvium/Colluvium
 Vegetation: Roadside grassy/weedy vegetation
 Slope: Not recorded because of artificial (man-made) slopes
 Elevation: 967 feet (294.6 meters)
 Topographical Map: Lake Fremont
 Remarks: 06M058

0-55 (0-1.8)	Oi	black (10YR2/1) fibric peat; massive; friable; non-effervescent; unknown lower boundary; wet.
122-209 (4.0-6.8)	COa	black (10YR2/1) peaty very fine sand; few sandier lenses; friable; non-effervescent; gradual lower boundary; common rootlets; collected 177-206.
209-219 (6.8-7.1)	C	gray (10YR5/1) very fine loamy sand; few coarse bedded faint very dark gray (10YR3/1) mottles; faint thin to laminar bedding; loose; non-effervescent; unknown lower boundary; wet.
244-250 (8.0-8.2)	Oe	black (10YR2/1) peat; massive; friable; non-effervescent; unknown lower boundary; poor recovery; small sample may be sluff.
366-390 (12.0-10.1)	Oe/Cg	alternating black and gray (10YR2/1 & 5/1) peats and fine loamy sands; thin bedding; friable and loose; non-effervescent; clear lower boundary; peat sample yielded a conventional AMS radiocarbon date of 10,270 ± 40 B.P. (Beta-258843).
390-461 (10.1-15.1)	Cg	gray to dark gray (5Y5/1-4/1) very fine loamy sand; common coarse-bedded faint very dark gray (5Y3/1) mottles; faint bedding; loose; non-effervescent; unknown lower boundary; mottles are carbon-rich horizons.
488-512 (16.0-16.7)	Cg	very fine loamy sand to sand; single grain; loose; non-effervescent; clear lower boundary.
512-549 (16.7-18.0)	Cg	same as above except slight to strong effervescence; unknown lower boundary.
610-676 (20.0-22.1)	Cg	greenish gray (5GY5/1) very fine loamy sand to sandy loam; faint bedding; loose; slight to strong effervescence; unknown lower boundary; few angular coarser sand lenses.

EOB

Core/Profile: 09SH-04 (5B)
 Location: Anoka Sand Plain physiographic province
 Legal description: SE¼ SW¼ Section 32 Township 35N Range 26W
 County: Sherburne
 Parent material: Peat and Alluvium/Colluvium
 Vegetation: Roadside grassy/weedy vegetation
 Slope: Not recorded because of artificial (man-made) slopes
 Elevation: 969 feet (295.4 meters)
 Topographical Map: Lake Fremont
 Remarks: 06M058

0-41 (0-1.3)	COa	very dark gray (10YR3/1) peaty very fine sandy loam; few medium faint reddish brown (5YR4/4) mottles; massive; friable; non-effervescent; clear lower boundary.
41-66 (1.3-2.1)	C	very dark grayish brown (10YR3/2) very fine loamy sand; few medium faint very dark brown (10YR2/2) mottles; faint bedding; loose; non-effervescent; clear lower boundary; mottles are slightly more carbon-rich.
66-90 (2.1-2.9)	C	dark grayish brown to grayish brown (10YR4/2-5/2) very fine loamy sand; faint bedding; loose; non-effervescent; unknown lower boundary; moist.
122-201 (4.0-6.5)	Cg	gray to dark gray (5Y5/1-4/1) very fine loamy sand; faint bedding; loose; non-effervescent; gradual lower boundary; wet.
201-209 (6.5-6.8)	Cg	greenish gray (5Y-5GY5/1) very fine loamy sand; faint bedding; loose; non-effervescent; unknown lower boundary; wet.
244-321 (8.0-10.5)	Cg	same as above except unknown lower boundary.
366-405 (12.0-13.2)	Cg	same as above except gradual lower boundary.
405-436 (13.2-14.3)	Cg	same as above except slight to strong effervescence; and unknown lower boundary.
488-565 (16.0-18.5)	Cg	same as above except strong effervescence; one cross-bed of slightly coarser sand.
610-691 (20.0-22.6)	Cg	same as above except irregular and sometimes angular bedding consisting of very fine sand and silt loam, respectively; collected. silt loam at 664-675 cm depth and 641-644 cm depth.
EOB		

Core/Profile: 09SH-05 (6B)
 Location: Anoka Sand Plain physiographic province
 Legal description: NE¼ SW¼ Section 30 Township 34N Range 26W
 County: Sherburne
 Parent material: Alluvium/Colluvium
 Vegetation: Roadside grassy/weedy vegetation
 Slope: Not recorded because of artificial (man-made) slopes
 Elevation: 941 feet (286.9 meters)
 Topographical Map: Lake Fremont
 Remarks: 06M058

0-108 (0-3.5)	Ap	assorted fills; unknown lower boundary.
122-201 (4.0-6.5)	C	dark yellowish brown (10YR4/4) very fine loamy sand to sandy loam; common medium faint yellowish brown (10YR5/6) mottles; faint laminar bedding; loose; non-effervescent; unknown lower boundary; few thin lenses of dark brown (10YR3/3) colors that may represent AC or CA horizons.
244-264 (8.0-8.6)	C	same as above except clear lower boundary.
264-275 (8.6-9.0)	C	dark brown (7.5YR3/2-3/4) very fine sandy loam; common coarse faint strong brown (7.5YR5/6) mottles; faint laminar bedding; loose; spotty effervescence; abrupt lower boundary.
275-291 (9.0-9.5)	Cg	dark gray (5Y4/1) sandy clay loam diamicton; few fine distinct grayish brown (2.5Y5/2) mottles; massive; very firm; slight effervescence; unknown lower boundary; glacial till.
366-437 (12.0-14.3)	Cg	same as above; collected charred organics and sediment at 396 cm that yielded a conventional AMS radiocarbon date of 26,570 ± 180 B.P. (Beta-258848)
EOB		

Core/Profile: 09SH-06 (6C)
 Location: Anoka Sand Plain physiographic province
 Legal description: NE¼ SW¼ Section 5 Township 33N Range 26W
 County: Sherburne
 Parent material: Alluvium/Colluvium and Peat
 Vegetation: Roadside grassy/weedy vegetation
 Slope: Not recorded because of artificial (man-made) slopes
 Elevation: 941feet (286.9 meters)
 Topographical Map: Lake Fremont
 Remarks: 06M058

0-42 (0-1.3)	Ap	black (10YR2/1) very loosely consolidated peat; appears to have been plowed or brought in as fill; abrupt.
42-86 (1.3-2.8)	C	alternating yellowish brown and brown (10YR5/6 & 4/3) very fine loamy sand; common thin faint strong brown (7.5YR5/8) mottles; faint laminar bedding; loose; non-effervescent; unknown lower boundary.
122-181 (4.0-5.9)	C	same as above except slightly more common brown (10YR4/3) subhorizons and more moist.
244-311 (8.0-10.2)	C	very dark gray (10YR3/1) very fine loamy sand; many medium faint brown and yellowish brown (10YR4/3 & 5/6) mottles; massive and faint laminar bedding; loose; non-effervescent; abrupt lower boundary.
311-331 (10.2-10.8)	Oe	black (10YR2/1) peat; crude bedding; massive; non-effervescent; unknown lower boundary; common thin dark gray (10YR4/1) sandy lenses.
366-441 (12.0-14.4)	Cg	dark gray to dark greenish gray (5Y-5GY4/1) silty clay loam; massive to faint laminar bedding; very firm; slight effervescence; clear lower boundary; thin peat lenses near 373 And 381 cm depths; collected peat and clays.
441-452 (14.4-14.8)	Cg	dark gray to dark greenish gray (5Y-5GY4/1) very fine loamy sand; faint laminar bedding; loose; strong effervescence; unknown lower boundary.
488-544 (16.0-17.8)	Cg	dark gray (5Y4/1) fine to medium loamy sand with pebbles; thin to laminar 25° cross-bedding; loose; slight to strong effervescence; abrupt lower boundary; collected thin dark gray (5Y4/1) sandy loam to loam bed at 531-534 cm (collected).
544-563 (17.8-18.4)	Cg	dark gray (5Y4/1) sandy clay loam diamicton; massive; very firm; slight effervescence; unknown lower boundary; contains thin sandier lenses; till or reworked till.
EOB		

Core/Profile: 09SH-07 (8A)
 Location: Anoka Sand Plain physiographic province
 Legal description: SE¼ SE¼ Section 7 Township 35N Range 27W
 County: Sherburne
 Parent material: Alluvium/Colluvium and Peat
 Vegetation: Roadside grassy/weedy vegetation
 Slope: Not recorded because of artificial (man-made) slopes
 Elevation: 992 feet (302.5 meters)
 Topographical Map: Princeton SW
 Remarks: 06M058

0-67 (0-2.1)	Ap(?)	dark yellowish brown (10YR3/6) pebbly loamy sand; few fine prominent red (10R4/8) mottles; single grain; loose; non-effervescent; abrupt lower boundary; fill.
67-72 (2.1-2.3)	C(Ap?)	pale brown (10YR6/3) very fine sand; few fine prominent yellowish red (5YR5/8) mottles; single grain; loose; non-effervescent; abrupt lower boundary.
72-88 (2.3-2.8)	C	alternating black to very dark gray and reddish yellow (10YR 2/1-3/1 & 7.5YR6/8) fine sandy loams and fine sands; thin to medium beds 3- 5 cm thick; very friable and loose; non-effervescent; abrupt lower boundary.
88-111 (2.8-3.6)	C	strong brown (7.5YR3/6) fine loamy sand; many thin prominent very dark gray (10YR3/1) and strong brown (7.5YR5/8) mottles; laminar bedding; loose; non-effervescent; abrupt lower boundary; rip-up clasts at bottom from lower horizon.
111-116 (3.6-3.8)	CA(?)	black (10YR2/1) fine loamy sand; single grain; loose; non-effervescent; unknown lower boundary.
122-138 (4.0-4.5)	C	brown (10YR4/3) fine loamy sand w/pebbles and very coarse sand; few fine mottles; single grain; loose; non-effervescent; abrupt lower boundary.
138-179 (4.5-5.8)	C	alternating yellowish brown and dark grayish brown (10YR5/4 & 4/2) and gray (10YR5/1) fine sand; common fine distinct strong brown (7.5YR5/6) mottles; medium bedding up to 10 cm thick; loose; non-effervescent; abrupt lower boundary; gray (10YR5/1) bed at bottom above next horizon.
179-216 (5.8-7.0)	Oab	black (10YR2/1) peat; laminar bedding; firm; non-effervescent; unknown lower boundary; thin very fine sand beds throughout; thin very dark gray (10YR3/1) loamy sand bed at 186-190 cm; thin black (10YR2/1) pebbly bed at 209-212 cm.
244-271 (8.0-8.8)	ACb	black (10YR2/1) silty clay loam with thin pebble-rich beds; massive except for the thin pebbly beds; firm; non-effervescent; abrupt.
271-309 (8.8-10.1)	Cg	dark gray to dark grayish brown (2.5Y4/1-4/2) fining-up fine to very fine sand; common thin prominent black (10YR2/1) laminar beds; laminar bedding; loose; non-effervescent; gradual lower boundary; darker value at bottom.
309-332 (10.1-10.8)	Cg	very dark gray to dark gray (2.5Y3/0 to 4/0) fining up medium to fine sand; laminar to thin beds; loose; non-effervescent; unknown lower boundary; few peat lenses at 320-330 cm depth yielded a conventional AMS radiocarbon date of 6,910±60 B.P. (Beta-258849); darker color values at bottom; few 2x3x1 cm pebbles.
EOB		

Core/Profile: 09SH-08 (4C)
 Location: Anoka Sand Plain physiographic province
 Legal description: SW¼ NE¼ Section 21 Township 35N Range 26W
 County: Sherburne
 Parent material: Peat and Alluvium/Colluvium
 Vegetation: Roadside grassy/weedy vegetation
 Slope: Not recorded because of artificial (man-made) slopes
 Elevation: 968 feet (295.0 meters)
 Topographical Map: Princeton
 Remarks: 06M058

0-11 (0-0.3)	OC	black (10YR2/1) peaty fine loamy sand; few medium prominent reddish brown (5YR4/4) mottles; faint thin bedding; loose; non-effervescent; abrupt lower boundary.
11-25 (0.3-0.8)	C	brown to dark brown (10YR4/3-3/3) very fine loamy sand; many fine prominent black (10YR 2/1) mottles; massive; loose; non-effervescent; clear lower boundary; moist; possible fill or disturbed?
25-115 (0.8-3.7)	C	brown (7.5YR4/4) very fine loamy sand; faint thin to laminar bedding; loose; non-effervescent; unknown lower boundary; wet.
122-132 (4.0-4.3)	C	grayish brown (2.5Y5/2) very fine loamy sand; single grain; loose; non-effervescent; unknown lower boundary; poor recovery; wet.
244-309 (8.0-10.1)	C	alternating grayish brown and black (2.5Y5/2 and 10YR 2/1) very fine loamy sand and silt loam; thin to laminar bedding; loose; non-effervescent; clear lower boundary; black horizons are finer grained lenses; collected 244- 305 cm depth.
309-328 (10.1-10.7)	C	grayish brown (2.5Y5/2) very fine sand; faint bedding; loose; non-effervescent; unknown lower boundary.
366-460 (12.0-15.0)	Cg	gray (5Y5/1) very fine sand to loamy sand; faint thin to laminar bedding; loose consistency; non-effervescent; unknown lower boundary; few darker stained lenses; collected 420-460 cm depth.
EOB		

Core/Profile: 09SH-09 (4E)
 Location: Anoka Sand Plain physiographic province
 Legal description: SW¼ NE¼ Section 21 Township 35N Range 26W
 County: Sherburne
 Parent material: Peat and Alluvium/Colluvium
 Vegetation: Roadside grassy/weedy vegetation
 Slope: Not recorded because of artificial (man-made) slopes
 Elevation: 968 feet (295.0 meters)
 Topographical Map: Princeton
 Remarks: 06M058; No recovery between 12 and 14 feet

0-39 (0-1.2)	Oe/C	alternating black and very dark gray (10YR2/1 & 3/1) peats and very fine loamy sands; thinly bedded structure; friable; non-effervescent; clear lower boundary.
39-86 (1.2-2.8)	C	very dark gray (5Y3/1) very fine loamy sand; few fine prominent reddish brown (5YR4/4) mottles; faint bedding; loose; non-effervescent; clear lower boundary; mottles may be oxidized roots.
86-114 (2.8-3.7)	C	very dark gray (10YR3/1) very fine sand to loamy sand; faint bedding; loose; non-effervescent; unknown lower boundary; few roots.
122-166 (4.0-5.4)	C	same as above except gradual lower boundary; wet.
166-238 (5.4-7.8)	Cg	dark gray to gray (5Y4/1-5/1) very fine loamy sand; few coarse prominent reddish yellow (7.5YR6/6) mottles; massive to single grain; loose; non-effervescent; unknown lower boundary; mottles are found along fracture or angular bedding planes; wet.
244-322 (8.0-10.5)	Cg	gray to greenish gray (5Y5/1-5GY5/1) very fine loamy sand to sandy loam; massive to single grain; loose; non-effervescent; unknown lower boundary; wet collected 280-320 cm depth.
427-498 (14.0-16.3)	Cg	gray (5Y5/1) very fine loamy sand; single grain; loose; non-effervescent; abrupt lower boundary; silt loam lens collected at 444-446 cm depth.
498-507 (16.3-16.6)	Cg	gray (5Y5/1) silt loam; many thin faint laminar very dark gray (5Y3/1) mottles; laminar bedding; friable; non-effervescent; unknown lower boundary; collected for possible C-14 assays.
EOB		

Core/Profile: 09SH-10 (4D)
 Location: Anoka Sand Plain physiographic province
 Legal description: SW¼ NE¼ Section 21 Township 35N Range 26W
 County: Sherburne
 Parent material: Peat and Alluvium/Colluvium
 Vegetation: Roadside grassy/weedy vegetation
 Slope: Not recorded because of artificial (man-made) slopes
 Elevation: 968 feet (295.0 meters)
 Topographical Map: Princeton
 Remarks: 06M058

0-89 (0-2.9)	AC/Oe	alternating very dark gray and black (10YR3/1 & 2/1) very fine loamy sands and peats; thin to laminar bedding; very friable; non-effervescent; clear lower boundary; alternating units vary between 5 to 10 cm thickness.
89-105 (2.9-3.4)	CO	very dark gray (10YR3/1) very fine loamy sand; thin to laminar bedding; very friable to loose; non-effervescent; unknown lower boundary; common black (10YR2/1) laminar organic rich mineral lenses.
122-184 (4.0-6.0)	CO	same as above except abrupt lower boundary; collected 150-184 cm depth.
184-203 (6.0-6.6)	Cg	very dark gray (5Y3/1) very fine loamy sand; faint laminar bedding; very friable; non-effervescent; unknown lower boundary.
244-306 (8.0-10.0)	Cg	greenish gray (5Y-5GY5/1) very fine loamy sand to sandy loam; faint laminar bedding; very friable to friable; non-effervescent; unknown lower boundary; common charred or decaying roots.
366-401 (12.0-13.1)	Cg	same as above (including roots)
EOB		

Core/Profile: 09SH-11 (6D)
 Location: Anoka Sand Plain physiographic province
 Legal description: NE¼ SW¼ Section 5 Township 33N Range 26W
 County: Sherburne
 Parent material: Peat and Alluvium/Colluvium
 Vegetation: Roadside grassy/weedy vegetation
 Slope: Not recorded because of artificial (man-made) slopes
 Elevation: 941 feet (286.9 meters)
 Topographical Map: Lake Fremont
 Remarks: 06M058

0-14 (0-0.4)	Oe	black (10YR2/1) peat; matted; friable; non-effervescent; clear lower boundary.
14-28 (0.4-0.9)	COa	very dark gray (10YR3/1) peaty very fine loamy sand; few fine distinct yellowish brown (10YR5/4) mottles; thinly bedded; friable; non-effervescent; gradual lower boundary.
28-42 (0.9-1.3)	C	brown to yellowish brown (10YR4/3-5/4) very fine loamy sand; thinly bedded; very friable; non-effervescent; abrupt angular lower boundary; looks like fill on top of buried soil.
42-65 (1.3-2.1)	Ab	black (10YR2/1) very fine loamy sand; few thin distinct dark yellowish brown (10YR4/4) mottles; very weak medium subangular blocky; very friable; non-effervescent; unknown lower boundary; mottles are thin beds.
122-148 (4.0-4.8)	Cg	dark gray (5Y4/1) very fine sand; common coarse; prominent strong brown (7.5YR4/6) mottles; single grain; loose; non-effervescent; gradual lower boundary; moist to wet; few flecks of peat; common roots.
148-166 (4.8-5.4)	Cg	same as above except wet; no mottles and clear lower boundary.
166-202 (5.4-6.6)	Cg	dark gray to dark greenish gray (5Y-5GY4/1) fine to medium sand; single grain; loose; non-effervescent; unknown lower boundary; wet.
243-290 (7.9-9.5)	Cg	same as above except abrupt lower boundary.
290-319 (9.5-10.4)	Cg	dark gray (5Y4/1) very fine sand; single grain; loose; slight effervescence; unknown lower boundary.
366-440 (12.0-14.4)	Cg	dark gray (5Y4/1) very fine sandy loam; faint bedding; very friable; strong effervescence; unknown lower boundary; collected 410-440 cm depth for possible organics.
488-559 (16.0-18.3)	Cg	very dark gray (5Y3/1) clay loam diamicton texture; massive; very firm; slight effervescence; unknown lower boundary; moist; till.
EOB		

Core/Profile: 09SH-12 (6E)
 Location: Anoka Sand Plain physiographic province
 Legal description: NE¼ SW¼ Section 5 Township 33N Range 26W
 County: Sherburne
 Parent material: Peat and Alluvium/Colluvium
 Vegetation: Roadside grassy/weedy vegetation
 Slope: Not recorded because of artificial (man-made) slopes
 Elevation: 941 feet (286.9 meters)
 Topographical Map: Lake Fremont
 Remarks: 06M058

0-12 (0-0.3)	Oe	dark gray (10YR4/1) very fine sandy peat; thinly bedded; very friable; non-effervescent; clear lower boundary.
12-74 (0.3-2.4)	Apb	multi-colored assorted fills; abrupt irregular lower boundary.
74-84 (2.4-2.7)	C	dark brown to brown (10YR3/3 to 4/3) very fine loamy sand; common medium faint yellowish brown (10YR5/6) mottles; faint bedding; loose; non-effervescent; unknown lower boundary.
122-137 (4.0-4.4)	C	same as above except abrupt lower boundary.
137-154 (4.4-5.0)	CO	dark grayish brown (10YR4/2) very fine sandy loam to loamy sand; common coarse distinct black (10YR2/1) peaty lenses; very friable; non-effervescent; clear lower boundary; thickest peat lens is at 144-146 cm depth.
154-194 (5.0-6.3)	C	dark gray (5Y4/1) fine to medium sand; common coarse distinct strong brown (7.5YR4/6) mottles; single grain; loose; non-effervescent; unknown lower boundary; continuation of fining-upward sequence from underlying unit.
244-269 (8.0-8.8)	C	same as above except wet, abrupt lower boundary and coarsening downward to coarse sand.
269-274 (8.0-8.9)	Cg	dark gray (5Y4/1) coarse silt loam; massive; friable; non-effervescent; abrupt lower boundary; collected for possible C-14.
274-309 (8.9-10.1)	C	light olive brown (2.5Y5/4-5/6) fine and medium to coarse sand; thin to medium beds; loose; non-effervescent; unknown lower boundary; common sorted medium sand lenses.
366-437 (12.0-14.3)	Cg	dark gray (5Y4/1) very fine loamy sand; very faint crude bedding; very friable; non-effervescent; unknown lower boundary.
488-565 (16.0-18.5)	Cg	same as above; poorer recovery because of saturated sands.
EOB		

