

ANALYSIS OF WATER AND BED SEDIMENTS IN WETLANDS NEAR US HIGHWAY 169, MILLE LACS LAKE AREA

MISCELLANEOUS STATION ANALYSES

Date	Time	Sample type	Baro-metric pressure, mm Hg (00025)	Dis-solved oxygen, mg/L (00300)	Dis-solved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unf 25 degC (00095)	Temper-ature, air, deg C (00020)	Temper-ature, water, deg C (00010)	Calcium bed sed <62.5um wet svd fld, percent (34830)	Magnes-ium, bed sed <62.5um wet svd fld,tot percent (34900)	Potas-sium, bed sed <62.5um wet svd fld,tot percent (34940)
461546093493601 WETLAND 16 WEST OF ST. ALBANS BAY NEAR GARRISON,MN (LAT 46 15 46N LONG 093 49 36W)												
OCT 2003 09... 09...	1550 1555	Bed material Environmental	-- --	2.2 2.2	-- --	6.2 6.2	50 50	-- --	13.6 13.6	1.4 --	.260 --	.520 --
SEP 2004 09... 09...	1400 1405	Environmental Composite (time)	734 734	4.2 4.2	41 41	4.8 4.8	64 64	23.0 23.0	15.0 15.0	-- --	-- --	-- --
461814093500401 WETLAND 9 SOUTHEAST OF BORDEN LK OTFLW NR GARRISON (LAT 46 18 14N LONG 093 50 04W)												
OCT 2003 10... 10...	1215 1220	Bed material Environmental	-- --	.6 .6	-- --	5.7 5.7	64 64	-- --	10.5 10.5	.830 --	.190 --	.330 --
SEP 2004 10... 10...	0930 0935	Environmental Composite (time)	729 729	1.7 1.7	16 16	5.2 5.2	63 63	21.0 21.0	14.5 14.5	-- --	-- --	-- --
461715093494201 WETLAND 15 SOUTH OF GARRISON, MN (LAT 46 17 15N LONG 093 49 42W)												
OCT 2003 10... 10...	0915 0920	Bed material Environmental	-- --	2.2 2.2	-- --	6.8 6.8	91 91	-- --	12.7 12.7	1.4 --	.740 --	1.1 --
SEP 2004 09... 09...	1540 1545	Environmental Composite (time)	734 734	7.0 7.0	72 72	6.7 6.7	84 84	23.0 23.0	17.4 17.4	-- --	-- --	-- --
461546093493601 WETLAND 16 WEST OF ST. ALBANS BAY NEAR GARRISON,MN (LAT 46 15 46N LONG 093 49 36W)												
Sodium, bed sed <62.5um wet svd field, total, percent (34960)	Ammonia + org-N, water, unfltrd mg/L as N (00625)	Ammonia Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Ortho-phosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, fltrd, mg/L (00665)	Phosphorus, bed sed <62.5um wet svd fld,tot percent (34935)	Alum-inum, bed sed <62.5um wet svd fld,tot percent (34790)	Antimony, bed sed <62.5um wet svd fld,tot ug/g (34795)	Arsenic bed sed <62.5um wet svd field, total, ug/g (34800)	Barium, bed sed <62.5um wet svd field, total, ug/g (34805)
OCT 2003 09... 09...	.330 --	-- 4.9	<.04 <.06	-- E.005	-- E.01	-- .06	-- .80	.170 --	1.7 --	.2 --	2.4 --	210 --
SEP 2004 09... 09...	-- --	5.6 --	<.04 --	<.06 --	<.008 --	<.02 --	.05 --	.45 --	-- --	-- --	-- --	-- --
461814093500401 WETLAND 9 SOUTHEAST OF BORDEN LK OTFLW NR GARRISON (LAT 46 18 14N LONG 093 50 04W)												
OCT 2003 10... 10...	.190 --	-- 38	<.04 <.06	-- .012	-- <.02	-- .13	-- 6.43	.170 --	1.2 --	.6 --	6.2 --	150 --
SEP 2004 10... 10...	-- --	6.1 --	.08 --	<.06 --	E.007 --	.02 --	.11 --	.48 --	-- --	-- --	-- --	-- --
461715093494201 WETLAND 15 SOUTH OF GARRISON, MN (LAT 46 17 15N LONG 093 49 42W)												
OCT 2003 10... 10...	.960 --	-- 1.3	<.04 <.06	-- <.008	-- <.02	-- E.04	-- .11	.140 --	4.6 --	.6 --	8.2 --	370 --
SEP 2004 09... 09...	-- --	1.8 --	<.04 --	<.06 --	<.008 --	<.02 --	.05 --	.19 --	-- --	-- --	-- --	-- --

WATER QUALITY DATA

ANALYSIS OF WATER AND BED SEDIMENTS IN WETLANDS NEAR US HIGHWAY 169, MILLE LACS LAKE AREA—

MISCELLANEOUS STATION ANALYSES—CONTINUED

	Beryllium, bed sed <62.5um wet svd	Bismuth bed sed <17um	Cadmium bed sed <62.5um wet svd	Cerium, bed sed <62.5um wet svd	Chrom- ium, bed sed <62.5um wet svd	Cobalt, bed sed <62.5um wet svd	Copper, bed sed <62.5um wet svd	Europ- ium, bed sed <62.5um wet svd	Gallium bed sed <62.5um wet svd	Gold, bed sed <62.5um wet svd	Holmium bed sed <62.5um wet svd	Iron, bed sed <62.5um wet svd	Lanthanum, bed sed <62.5um wet svd
Date	field, fld,tot ug/g (34810)	field, fld,tot ug/g (34816)	field, fld,tot ug/g (34825)	field, fld,tot ug/g (34835)	field, fld,tot ug/g (34840)	field, fld,tot ug/g (34845)	field, fld,tot ug/g (34850)	field, fld,tot ug/g (34855)	field, fld,tot ug/g (34860)	field, fld,tot ug/g (34870)	field, fld,tot ug/g (34875)	field, fld,tot ug/g (34880)	field, fld,tot percent (34885)

461546093493601 WETLAND 16 WEST OF ST. ALBANS BAY NEAR GARRISON,MN (LAT 46 15 46N LONG 093 49 36W)

461814093500401 WETLAND 9 SOUTHEAST OF BORDEN LK OTFLW NR GARRISON (LAT 46 18 14N LONG 093 50 04W)

461715093494201 WETLAND 15 SOUTH OF GARRISON, MN (LAT 46 17 15N LONG 093 49 42W)

	Lead, bed sed	Lithium bed sed	Mangan- ese,	Molyb- denum,	Neodym- ium,	Nickel, bed sed	Niobium bed sed	Scand- ium,	Silver, bed sed	Stront- ium,	Tant- alum,	Thall- ium,	Thorium bed sed
Date	<62.5um wet svd	<62.5um wet svd	<62.5um field,	<62.5um wet svd	<62.5um wet svd	<62.5um field,	<62.5um wet svd	<62.5um field,	<62.5um wet svd	<62.5um wet svd	<62.5um dry svd	<62.5um field,	<62.5um wet svd
	total, ug/g	total, ug/g	total, ug/g	total, ug/g	total, ug/g	total, ug/g	total, ug/g	total, ug/g	total, ug/g	total, ug/g	total, ug/g	total, ug/g	total, ug/g
	(34890)	(34895)	(34905)	(34915)	(34920)	(34925)	(34930)	(34945)	(34955)	(34965)	(34975)	(04064)	(34980)

461546093493601 WETLAND 16 WEST OF ST. ALBANS BAY NEAR GARRISON,MN (LAT 46 15 46N LONG 093 49 36W)

OCT 2003													
09...	23	7	210	.6			4	3	<.1	68	<1	<1	2
09...	--	--	--	--			--	--	--	--	--	--	--
SEP 2004													
09...	--	--	--	--			--	--	--	--	--	--	--
09...	--	--	--	--			--	--	--	--	--	--	--

461814093500401 WETLAND 9 SOUTHEAST OF BORDEN LK OTFLW NR GARRISON (LAT 46 18 14N LONG 093 50 04W)

461715093494201 WETLAND 15 SOUTH OF GARRISON, MN (LAT 46 17 15N LONG 093 49 42W)

ANALYSIS OF WATER AND BED SEDIMENTS IN WETLANDS NEAR US HIGHWAY 169, MILLE LACS LAKE AREA—

MISCELLANEOUS STATION ANALYSES—CONTINUED

461546093493601 WETLAND 16 WEST OF ST. ALBANS BAY NEAR GARRISON,MN (LAT 46 15 46N LONG 093 49 36W)

461814093500401 WETLAND 9 SOUTHEAST OF BORDEN LK OTFLW NR GARRISON (LAT 46 18 14N LONG 093 50 04W)

461715093494201 WETLAND 15 SOUTH OF GARRISON, MN (LAT 46 17 15N LONG 093 49 42W)

461546093493601 WETLAND 16 WEST OF ST. ALBANS BAY NEAR GARRISON,MN (LAT 46 15 46N LONG 093 49 36W)

461814093500401 WETLAND 9 SOUTHEAST OF BORDEN LK OTFLW NR GARRISON (LAT 46 18 14N LONG 093 50 04W)

461715093494201 WETLAND 15 SOUTH OF GARRISON MN (LAT 46 17 15N LONG 093 49 42W)

ANALYSIS OF WATER AND BED SEDIMENTS IN WETLANDS NEAR US HIGHWAY 169, MILLE LACS LAKE AREA—

MISCELLANEOUS STATION ANALYSES—CONTINUED

4Bromo-phenyl phenyl ether, bed sed <2 mm, ug/kg (49454)	4Chloro- 3methyl phenol, phenyl ether, bed sed <2 mm, bed sed <2 mm, wsv nat ug/kg (49422)	4Chloro- phenyl phenyl phenan- threne, bed sed <2 mm, bed sed <2 mm, wsv nat ug/kg (49455)	Cyclo- penta- quinone anthra- ene, bed sed <2 mm, wsv nat ug/kg (49411)	9,10- Anthra- ene, bed sed <2 mm, wsv nat ug/kg (49437)	9H- Flour- ene, bed sed <2 mm, wsv nat ug/kg (49399)	Ace- naphth- ene, bed sed <2 mm, wsv nat ug/kg (49429)	Ace- naphth- ylene, bed sed <2 mm, wsv nat ug/kg (49428)	Acri- dine, bed sed <2 mm, wsv nat field, ug/kg (49430)	Anthra- cene, bed sed <2 mm, wsv nat field, ug/kg (49434)	Azo- benzene [a]- anthra- cene, bed sed <2 mm, wsv nat bed sed ug/kg (49443)	Benzo- [a]- pyrene, bed sed <2 mm, wsv nat ug/kg (49389)
--	---	---	--	--	---	---	---	--	--	--	---

461546093493601 WETLAND 16 WEST OF ST. ALBANS BAY NEAR GARRISON,MN (LAT 46 15 46N LONG 093 49 36W)

461814093500401 WETLAND 9 SOUTHEAST OF BORDEN LK OTFLW NR GARRISON (LAT 46 18 14N LONG 093 50 04W)

461715093494201 WETLAND 15 SOUTH OF GARRISON, MN (LAT 46 17 15N LONG 093 49 42W)

461546093493601 WETLAND 16 WEST OF ST. ALBANS BAY NEAR GARRISON,MN (LAT 46 15 46N LONG 093 49 36W)

461814093500401 WETLAND 9 SOUTHEAST OF BORDEN LK OTFLW NR GARRISON (LAT 46 18 14N LONG 093 50 04W)

461715093494201 WETLAND 15 SOUTH OF GARRISON, MN (LAT 46 17 15N LONG 093 49 42W)

ANALYSIS OF WATER AND BED SEDIMENTS IN WETLANDS NEAR US HIGHWAY 169, MILLE LACS LAKE AREA—

MISCELLANEOUS STATION ANALYSES—CONTINUED

461546093493601 WETLAND 16 WEST OF ST. ALBANS BAY NEAR GARRISON.MN (LAT 46 15 46N LONG 093 49 36W)

461814093500401 WETLAND 9 SOUTHEAST OF BORDEN LK OTFLW NR GARRISON (LAT 46 18 14N LONG 093 50 04W)

461715093494201 WETLAND 15 SOUTH OF GARRISON, MN (LAT 46 17 15N LONG 093 49 42W)

461546093493601 WETLAND 16 WEST OF ST. ALBANS BAY NEAR GARRISON,MN (LAT 46 15 46N LONG 093 49 36W)

461814093500401 WETLAND 9 SOUTHEAST OF BORDEN LK OTFLW NR GARRISON (LAT 46 18 14N LONG 093 50 04W)

461715093494201 WETLAND 15 SOUTH OF GARRISON, MN (LAT 46 17 15N LONG 093 49 42W)

WATER QUALITY DATA

ANALYSIS OF WATER AND BED SEDIMENTS IN WETLANDS NEAR US HIGHWAY 169, MILLE LACS LAKE AREA—

MISCELLANEOUS STATION ANALYSES—CONTINUED

	Suspnd. sediment, fallidia dst wat	Suspnd. sediment, fallidia dst wat	Bed dry svd sve dia	Bed ment, dst wat					
Date	<.016mm (70340)	<.031 mm (70341)	<1 mm (80168)	<.063mm (80158)	<.125mm (80159)	<.25mm (80160)	<.5 mm (80161)	<1 mm (80162)	<2 mm (80163)

461546093493601 WETLAND 16 WEST OF ST. ALBANS BAY NEAR GARRISON,MN (LAT 46 15 46N
LONG 093 49 36W)

461814093500401 WETLAND 9 SOUTHEAST OF BORDEN LK OTFLW NR GARRISON (LAT 46 18 14N
LONG 093 50 04W)

461715093494201 WETLAND 15 SOUTH OF GARRISON, MN (LAT 46 17 15N LONG 093 49 42W)