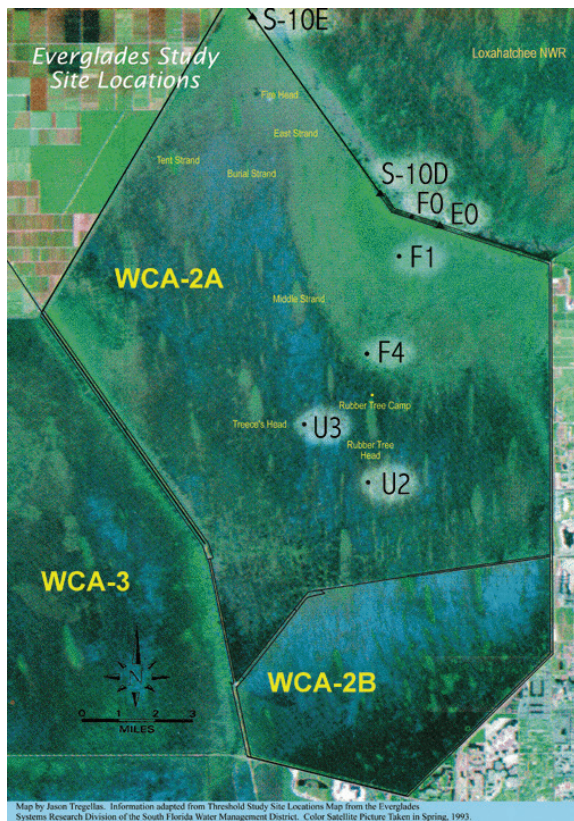




Summary of Data from Onsite and Laboratory Analyses of Surface Water and Marsh Porewater from South Florida Water Management District Water Conservation Areas, the Everglades, South Florida, March 1995

By Michael M. Reddy and Charmaine D. Gunther



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Contents

Abstract	1
Introduction	1
Data File	2
Summary	2
References Cited	2

Tables

1. Variable names and codes for sample description and identification	4
2. Variable names for onsite and laboratory measured parameters	5
3. Summary standard reference water samples (SRWS) and distilled-water blank samples (SBL)	6
4. Detection limits for laboratory and onsite analyses	8
5. Analyses of surface water and march porewater from the South Florida Water Management Districts Water Conservation Areas, the Everglades, South Florida, March 1995.	
5.A.....	9
5.B.....	10
5.C	11
5.D	12

Photographs

1. U3 sampling site in the South Florida Water management District Water Conservation Area 2A	13
2. Everglades study site location	14

Summary of Data from Onsite and Laboratory Analyses of Surface Water and Marsh Porewater from South Florida Water Management District Water Conservation Areas, the Everglades, South Florida, March 1995

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Abstract

This report presents results of chemical analysis for samples collected during March 1995 as part of a study to quantify the interaction of aquatic organic material (referred to here as dissolved organic carbon with dissolved metal ions. The work was done in conjunction with the South Florida Water Management District, the U.S. Environmental Protection Agency, the U.S. Geological Survey South Florida Ecosystems Initiative, and the South Florida National Water Quality Assessment Study Unit. Samples were collected from surface canals and from marsh sites. Results are based on onsite and laboratory measurements for 27 samples collected at 10 locations. The data file contains sample description, dissolved organic carbon concentration and specific ultraviolet absorbance, and additional analytical data for samples collected at several sites in the Water Conservation Areas, the Everglades, South Florida.

Introduction

The South Florida Water Management District, the U.S. Environmental Protection Agency (EPA), and the U.S. Geological Survey (USGS) South Florida Ecosystems Initiative have organized an intensive study of surface-water chemistry in southern Florida. In 1994, several locations were selected in the Water Conservation Areas of the South Florida Water Management District in conjunction with this multidisciplinary, multiagency research project. Surface-water and marsh porewater samples were collected and analyzed. Details of the onsite and laboratory procedures used in this investigation are described in other reports: Fishman and Friedman, 1985; Garbarino and Taylor, 1979 and 1980; Reddy and others, 1989; Skougstad and others, 1979; and Wood, 1976. Sample preparation methods, analytical procedures, and laboratory quality-control protocols used by the U.S. Geological Survey laboratory are described by Cotlove and others, 1958; Fishman and Friedman, 1985; Garbarino and Taylor, 1979; and 1980; and Schroder and others, 1980. Field procedures and equipment were adapted from a trace metal protocol developed by the USGS National Research Program (Taylor and others, 1995).

This work has been done as part of the USGS South Florida Ecosystems Initiative and was funded in part by the EPA (through Grant IAG #DW14936802-01-0). The purpose of this report is to make the results of our investigation of dissolved organic carbon (DOC) concentration, nature, and distribution available to the South Florida Ecosystem Research Community in a prompt and widely available manner. Further additions will be made to the data file as sample collection continues, and as laboratory analyses are completed.

The data file contains sample description, DOC concentration, and specific ultraviolet absorbance. Additional analytical data for samples collected at several sites in the Water Conservation Areas, the Everglades, and south Florida are included – these data are intended to be used by this project for chemical species modeling.

Data File

Data are available for samples collected in March 1995 and analyzed shortly thereafter. Surface-water samples were collected at a single depth from seven locations and at two depths at three locations. Photograph 1 illustrates a representative water sample collection at site U3 in Water Conservation Area 2A, Everglades Florida. Marsh porewater samples were collected at several depths below the sediment water interface at four locations. Surface-water samples were collected at each pore-water sampling location. Photograph 2 illustrates selected Everglades Study Site Locations superimposed on a composite map based on the Threshold Study Site Locations map of the South Florida Water Management District and a color satellite photograph taken during the spring of 1993. A replicate sample was collected to evaluate onsite-sampling variability. Distilled-water blank samples and standard reference water samples, SRWS (Schroder and others, 1980), were submitted to the laboratory with the onsite samples and were analyzed concomitantly with them. Reference samples were processed using the same procedures as the onsite samples. For further information about the availability, call Michael M. Reddy at (303) 236-5941 or e-mail at mmreddy@usgs.gov.

The data file consists of 34 variables. Variable names and codes established for sample description and identification are listed in table 1. Variable names for parameters measured onsite and in the laboratory are listed in table 2. Summary statistics for SRWS and distilled-water blank samples are given in table 3.

Samples that had analytical results less than the detection limits of the selected methods are indicated in the data set by the “less than” symbol (<). The detection limits of quantification are listed in table 4. The full data set is given in table 5.

Summary

A total of 27 samples, from 10 locations within South Florida Water Management District Water Conservation Areas, have been analyzed using a protocol designed to minimize errors associated with sample-handling procedures, laboratory analyses, and data-entry operations.

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Table 1. Variable names and codes for sample description and identification.

[SRWS, standard reference water samples]

Variable name	Code	Definition
Collection date (mm/dd/yy)	date	date sample collected (month/day/year)
Collection time (HH:MM)	time	time sample collected (hour:minute)
KPH	alphanumeric	potassium acid phthalate reference sample
Lab ID	4-digit integer	lab identification number
Latitude (DDMMSS)	6-digit integer	latitude (degrees minutes seconds)
Longitude (DDMMSS)	6-digit integer	longitude (degrees minutes seconds)
M102	alphanumeric	major ion SRWS
M104	alphanumeric	major ion SRWS
M110	alphanumeric	major ion SRWS
M112	alphanumeric	major ion SRWS
M96	alphanumeric	major ion SRWS
Method	M	manual collection
	R	replicate sample type
Missing data	-99	data not available
MPV	alphanumeric	most probable value
N	alphanumeric	number of samples
P11	alphanumeric	precipitation ion SRWS
Sample type	F	pore-water sample type
	J	surface water sample type
Sampling depth (m)	floating point	depth that sample was collected (meters)
SBL	alphanumeric	laboratory blank sample
Site description	alphanumeric	long site description and notes
Site ID	alphanumeric	alphanumeric code for site identification
Site name	alphanumeric	short description of site
SRWS	alphanumeric	standard reference water sample
Subsample type	C	canal subsample type
	Q	marsh subsample type
T107	alphanumeric	trace ion SRWS

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Table 2. Variable names for onsite and laboratory measured parameters.

[mg/L, milligrams per liter; µeq/L, microequivalents per liter; µmol/L, micromoles per liter; °C, degrees Celsius; µS/cm, microsiemens per centimeter]

Variable name	Definition	Units
B (mg/L)	dissolved boron as B	milligrams per liter
Ba (mg/L)	dissolved barium as Ba	milligrams per liter
Ca (µeq/L)	dissolved calcium as Ca	microequivalents per liter
Cl (µeq/L)	dissolved chloride as Cl	microequivalents per liter
DOC (mg/L)	dissolved organic carbon as C	milligrams per liter
Fe (mg/L)	dissolved iron as Fe	milligrams per liter
Field pH (std units)	pH measured onsite	standard pH units
Field specific conductivity (µS/cm)	specific conductivity measured onsite	microsiemens per centimeter at 25°C
H ₄ SiO ₄ (µmol/L)	dissolved silica as H ₄ SiO ₄	micromoles per liter
Ion balance (%)	100% X (Cations - Anions) / (Cations + Anions)	(+/-)percent
K (µeq/L)	dissolved potassium as K	microequivalents per liter
Lab alkalinity (µeq/L)	alkalinity measured in laboratory	microequivalents per liter
Lab pH (std units)	pH measured in laboratory	standard pH units
Li (mg/L)	dissolved lithium as Li	milligrams per liter
Mg (µeq/L)	dissolved magnesium as Mg	microequivalents per liter
Mn (mg/L)	dissolved manganese as Mn	milligrams per liter
Na (µeq/L)	dissolved sodium as Na	microequivalents per liter
SO ₄ (µeq/L)	dissolved sulfate as SO ₄	microequivalents per liter
Specific UV (Absorb/mg C/L)	specific UV absorbance	absorbance per milligram carbon per liter
Sr (mg/L)	dissolved strontium as Sr	milligrams per liter
Water temp (°C)	water temperature measured onsite	degrees Celsius
Zn (mg/L)	dissolved zinc as Zn	milligrams per liter

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Table 3. Summary statistics for standard reference water samples (SRWS) and distilled-water blank samples (SBL).

[mg/L, milligrams per liter; µeq/L, microequivalents per liter; µmol/L, micromoles per liter; %, percent; MPV, most probable value; N, Number of samples; N/A, Not available; <, less than; >, greater than]

Constituent	Sample	Units	Mean ¹ of reported values	Standard ¹ deviation	Range		Number of samples		Expected value		
					Minimum ¹	Maximum ¹	Less than detection	N	95% confidence MPV	Standard deviation	N
Alkalinity	M102	µeq/L	3490	4	3490	3490	0	3	3520±20	80	64
	SBL	µeq/L	-44	13	-52	-29	0	3			
B	M102	mg/L	0.313	0.017	0.287	0.338	0	9	0.310±0.014	0.038	29
	M96	mg/L	0.083	0.008	0.072	0.094	0	7	0.115±0.021	0.054	26
	SBL	mg/L	<0.007	N/A	<0.007	<0.007	10	10			
	T107	mg/L	0.128	0.012	0.119	0.146	0	8	0.130±0.007	0.021	37
Ba	SBL	mg/L	0.002	N/A	0.002	0.002	9	10			
	T107	mg/L	0.215	0.014	0.199	0.238	0	8	0.192±0.003	0.011	53
Ca	M102	µeq/L	4020	140	3830	4270	0	9	4100±50	200	65
	M96	µeq/L	2190	70	2090	2290	0	7	2160±20	100	63
	SBL	µeq/L	0.9	0.1	0.7	1.1	1	10			
	T107	µeq/L	580	30	550	630	0	8	584±10	30	60
Cl	M104	µeq/L	2000	9	1990	2020	0	5	1950±20	79	64
	M110	µeq/L	7520	40	7460	7560	0	5	7500±80	310	77
DOC	KPH	mg/L	0.27	0.08	0.18	0.33	0	7	0.2	N/A	N/A
	KPH	mg/L	10	0.4	9.5	10.5	0	7	10.2	N/A	N/A
	KPH	mg/L	29.9	1.7	26.5	31.8	0	7	30.2	N/A	N/A
Fe	SBL	mg/L	<0.006	N/A	<0.006	<0.006	10	10			
	T107	mg/L	0.052	0.007	0.045	0.061	0	8	0.052±0.002	0.007	68
H ₄ SiO ₄	M102	µmol/L	108	5	100	114	0	9	110±2	8	45
	M96	µmol/L	234	12	214	249	0	7	226±7	22	46
	SBL	µmol/L	7	N/A	7	7	9	10			

	T107	μmol/L	134	9	125	149	0	8	130±3	8	43
Li	SBL	mg/L	0.01	N/A	0.01	0.01	9	10			
	T107	mg/L	0.195	0.019	0.174	0.228	0	8	0.193±0.007	0.014	21
Mg	M102	μeq/L	4790	230	4340	5150	0	9	4800±0	200	66
	M96	μeq/L	1770	90	1610	1870	0	7	1790±20	91	61
	SBL	μeq/L	2.1	2.3	0.9	5.5	6	10			
	T107	μeq/L	174	17	151	208	0	8	173±2	11	61
Mn	SBL	mg/L	0.0007	N/A	0.0007	0.0007	9	10			
	T107	mg/L	0.046	0.003	0.043	0.05	1	8	0.045±0.002	0.006	68
Na	M102	μeq/L	4800	400	4200	5200	0	9	4698±52	200	66
	M96	μeq/L	2600	300	2300	2900	0	7	2540±0	110	58
	SBL	μeq/L	3.5	1.7	1.3	7.2	0	10			
	T107	μeq/L	940	100	820	1110	0	8	900±10	48	65
pH	M102		8.56	0.04	8.53	8.6	0	3	8.4+/-0	0.1	69
	SBL		5.4	0.5	4.9	6	0	3			
SO ₄	M112	μeq/L	540	12	521	555	0	7	521±6	31	95
	M96	μeq/L	2830	0.7	2830	2840	0	6	2890±0	160	55
	P11	μeq/L	15.9	0.2	15.6	16.1	0	3	22.1±4	7.7	15
	SBL	μeq/L	>8.3	N/A	>8.3	>8.3	45	47			
Sr	M102	mg/L	1.37	0.06	1.29	1.46	0	9	1.340±0.037	0.093	24
	M96	mg/L	0.57	0.03	0.54	0.61	0	7	0.538±0.012	0.029	21
	SBL	mg/L	0.0006	N/A	0.0006	0.0006	9	10			
	T107	mg/L	0.065	0.006	0.058	0.075	0	8	0.061±0.001	0.004	29
Zn	SBL	mg/L	0.01	N/A	0.01	0.01	9	10			
	T107	mg/L	0.09	0.01	0.08	0.11	0	8	0.0758±0.0025	0.0099	68

¹ These statistics were calculated using only those values measured above the limit of detection. If all values were below the detection limit, then the detection limit was reported.

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Table 4. Detection limits for laboratory and onsite analyses.

[mg/L, milligrams per liter; µeq/L, microequivalents per liter; µmols/L, micromoles per liter]

Parameter	Units	Detection limit	Method of analysis
Alkalinity	(µeq/L)	none	Fishman and Friedman, 1985
B	(mg/L)	0.007	Garbarino and Taylor, 1979, 1980
Ba	(mg/L)	0.002	Garbarino and Taylor, 1979, 1980
Ca	(µeq/L)	0.3	Garbarino and Taylor, 1979, 1980
Cl	(µeq/L)	1400	Cotlove and others, 1958
DOC	(mg/L)	0.1	Aiken, 1992
Fe	(mg/L)	0.006	Garbarino and Taylor, 1979, 1980
H ₄ SiO ₄	(µmol/L)	5	Garbarino and Taylor, 1979, 1980
K	(µeq/L)	3	Skougstad and others, 1979
Li	(mg/L)	0.007	Garbarino and Taylor, 1979, 1980
Mg	(µeq/L)	0.6	Garbarino and Taylor, 1979, 1980
Mn	(mg/L)	0.0005	Garbarino and Taylor, 1979, 1980
Na	(µeq/L)	0.4	Garbarino and Taylor, 1979, 1980
SO ₄	(µeq/L)	8.3 or 240	Fishman and Friedman, 1985
Sr	(mg/L)	0.0006	Garbarino and Taylor, 1979, 1980
Zn	(mg/L)	0.01	Garbarino and Taylor, 1979, 1980

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Table 5 A. Analyses of surface water and marsh porewater from the South Florida Water Management District Water Conservation Areas, the Everglades, South Florida, March 1995.

[DD, Degrees; MM, Minutes; SS, Seconds; m, meters]

Lab ID	Site ID	Site name	Latitude (DDMMSS)	Longitude (DDMMSS)	Sampling depth (m)	Sample type	Subsample type	Method
2103	F1-0CM	F1 @ 0 cm	262135	802214	0	J	Q	M
2104	F1-10CM	F1 @ 10 cm	262135	802214	0.1	F	Q	M
2105	F1-20CM	F1 @ 20 cm	262135	802214	0.2	F	Q	M
2106	F1-30CM	F1 @ 30 cm	262135	802214	0.3	F	Q	M
2107	F1-74CM	F1 @ 74 cm	262135	802214	0.74	F	Q	M
2108	F4-0CM	F4 @ surface	261900	802307	0	J	Q	M
2109	F4-5CM	F4 @ 5cm	261900	802307	0.05	F	Q	M
2110	F4-10CM	F4 @ 10cm	261900	802307	0.1	F	Q	M
2111	F4-20CM	F4 @ 20cm	261900	802307	0.2	F	Q	M
2112	F4-30CM	F4 @ 30 cm	261900	802307	0.3	F	Q	M
2113	F4-40CM	F4 @ 40cm	261900	802307	0.4	F	Q	M
2114	U2	U2 @ surface	261545	802303	0	J	Q	M
2115	U3-0CM	U3 @ 0cm	261715	802441	0	J	Q	M
2116	U3-5CM	U3 @ 5cm	261715	802441	0.05	F	Q	M
2117	U3-10CM	U3 @ 10cm	261715	802441	0.1	F	Q	M
2118	U3-20CM	U3 @ 20cm	261715	802441	0.2	F	Q	M
2119	U3-30CM	U3 @ 30cm	261715	802441	0.3	F	Q	M
2120	U3-40CM	U3 @ 40cm	261715	802441	0.4	F	Q	M
2121	F0-1M	F0 @ 1m	262231	802152	1	J	C	M
2122	F0-2.5M	F0 @ 2.5m	262231	802152	2.5	J	C	M
2123	E0-1M	E0 @ 1m	262217	802105	1	J	C	M
2124	E0-3M	E0 @ 3m	262217	802105	3	J	C	M
2125	S10D-1M	S10D @ 1m	262310	802232	1	J	C	M
2126	S10D-1MD	S10D @ 1m-dup	262310	802232	1	J	C	R
2127	S10D-2M	S10D @ 2m	262310	802232	2	J	C	M
2128	S10E-1M	S10E @ 1m	262732	802654	1	J	C	M
2129	L67-S333	L67 @ S333	254607	804023	0	J	C	M
2130	L67-S151	L67 @ S151	260054	803027	0	J	C	M

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Table 5 B. Analyses of surface water and marsh porewater from the South Florida Water Management District Water Conservation Areas, the Everglades, South Florida, March 1995.

[MM, Month; DD, Day; YY, Year; HH, Hour; MM, Minute; $\mu\text{S}/\text{cm}$, microsiemens per centimeter; $^{\circ}\text{C}$, degrees Celsius; -99, missing data]

Lab ID	Site ID	Collection date (MM/DD/YY)	Collection time (HH:MM)	Field pH (std units)	Field specific conductivity ($\mu\text{S}/\text{cm}$)	Water temp ($^{\circ}\text{C}$)
2103	F1-0CM	3/29/1995	11:00	-99	-99	-99
2104	F1-10CM	3/29/1995	15:00	-99	-99	-99
2105	F1-20CM	3/29/1995	14:02	-99	-99	-99
2106	F1-30CM	3/29/1995	12:00	-99	-99	-99
2107	F1-74CM	3/29/1995	13:14	-99	-99	-99
2108	F4-0CM	3/29/1995	12:45	-99	-99	-99
2109	F4-5CM	3/29/1995	13:00	-99	-99	-99
2110	F4-10CM	3/29/1995	13:15	-99	-99	-99
2111	F4-20CM	3/29/1995	13:30	-99	-99	-99
2112	F4-30CM	3/29/1995	13:45	-99	-99	-99
2113	F4-40CM	3/29/1995	14:00	-99	-99	-99
2114	U2	3/29/1995	12:00	-99	-99	-99
2115	U3-0CM	3/29/1995	10:05	-99	-99	-99
2116	U3-5CM	3/29/1995	10:30	-99	-99	-99
2117	U3-10CM	3/28/1995	10:45	-99	-99	-99
2118	U3-20CM	3/28/1995	11:00	-99	-99	-99
2119	U3-30CM	3/29/1995	11:15	-99	-99	-99
2120	U3-40CM	3/29/1995	11:00	-99	-99	-99
2121	F0-1M	3/28/1995	14:10	7.4	-99	25.8
2122	F0-2.5M	3/28/1995	15:00	7.3	-99	23.4
2123	E0-1M	3/28/1995	12:05	7.4	1170	24.3
2124	E0-3M	3/28/1995	12:30	7.2	1170	23.5
2125	S10D-1M	3/27/1995	16:00	7.2	1230	25
2126	S10D-1MD	3/27/1995	16:10	7.2	1230	25
2127	S10D-2M	3/27/1995	16:20	7.1	1240	23.7
2128	S10E-1M	3/27/1995	12:53	7.24	1100	24.5
2129	L67-S333	3/29/1995	12:00	-99	-99	-99
2130	L67-S151	3/29/1995	13:00	-99	-99	-99

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Table 5 C. Analyses of surface water and marsh porewater from the South Florida Water Management District Water Conservation Areas, the Everglades, South Florida, March 1995.

[µeq/L, microequivalents per liter; % percent]

Lab ID	Site ID	Lab pH (std units)	Lab alkalinity (µeq/L)	Cl (µeq/L)	SO ₄ (µeq/L)	Ca (µeq/L)	Mg (µeq/L)	Na (µeq/L)	K (µeq/L)	Ion balance (%)
2103	F1-0CM	7.8	5290	3800	1390	3890	2170	4130	227	-1
2104	F1-10CM	7.9	12600	6700	270	7100	4100	7980	357	0
2105	F1-20CM	7.99	17000	10400	240	9070	5480	11400	213	-3
2106	F1-30CM	8.08	21700	14300	110	11500	7280	16000	141	-2
2107	F1-74CM	8.23	22500	16700	100	12400	7850	18700	112	0
2108	F4-0CM	8.33	5390	3400	1340	3900	2450	4810	204	5
2109	F4-5CM	8.28	8910	5800	270	5520	3220	6750	279	2
2110	F4-10CM	8.29	9560	5900	230	5910	3490	6630	297	2
2111	F4-20CM	8.4	11000	6800	190	6840	3950	7790	291	2
2112	F4-30CM	8.4	12500	8100	130	7630	4180	8740	300	0
2113	F4-40CM	8.5	12700	8200	150	7440	4240	8510	239	-2
2114	U2	7.98	5230	4300	1210	3700	2360	4940	243	2
2115	U3-0CM	8.15	4880	3700	880	3320	2250	4540	192	4
2116	U3-5CM	7.98	8220	4600	170	4920	2960	5110	260	1
2117	U3-10CM	7.9	8200	4600	200	4880	2990	5130	269	1
2118	U3-20CM	8.14	9010	5400	130	5160	3170	6160	262	0
2119	U3-30CM	8.01	9490	7000	50	5510	2800	7190	248	-3
2120	U3-40CM	8.21	9520	7000	<8.3	6220	2570	7560	258	0
2121	F0-1M	8.01	6230	4100	1720	4600	2710	4630	222	0
2122	F0-2.5M	7.96	6250	4100	1680	4630	2690	4750	217	1
2123	E0-1M	8.03	5950	4000	1770	4260	2470	4070	237	-4
2124	E0-3M	7.92	6030	4000	1690	4390	2540	4250	251	-2
2125	S10D-1M	8.13	5940	4200	2360	4610	2780	4320	261	-3
2126	S10D-1MD	8.1	5930	4100	2340	4550	2760	4180	262	-3
2127	S10D-2M	8.09	5980	4100	2340	4620	2790	4400	230	-2
2128	S10E-1M	8.2	4410	3300	1900	3430	2100	3360	215	-3
2129	L67-S333	8.22	3430	2000	430	2570	1300	2230	115	2
2130	L67-S151	8.22	3800	2100	630	2950	1490	2350	163	2

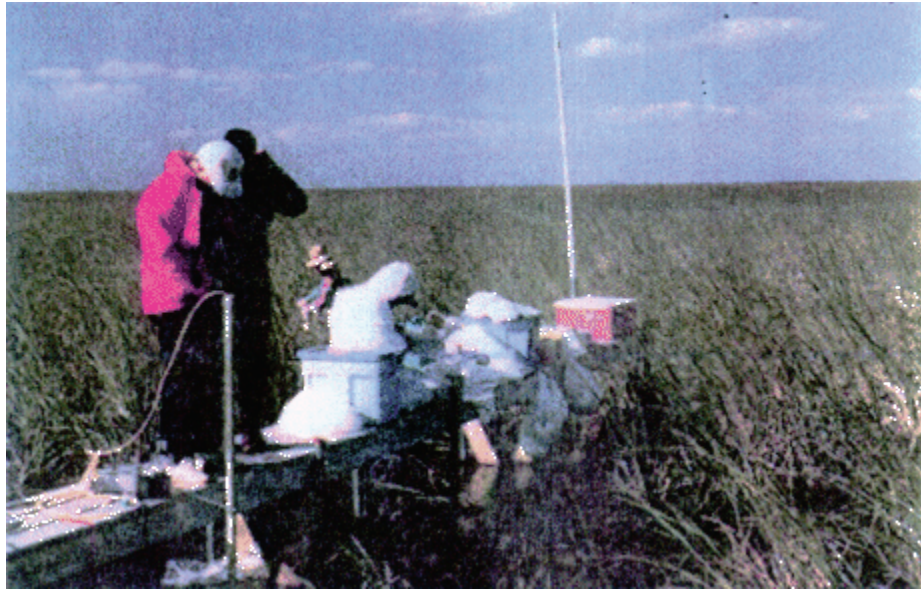
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Table 5 D. Analyses of surface water and marsh porewater from the South Florida Water Management District Water Conservation Areas, the Everglades, South Florida, March 1995.

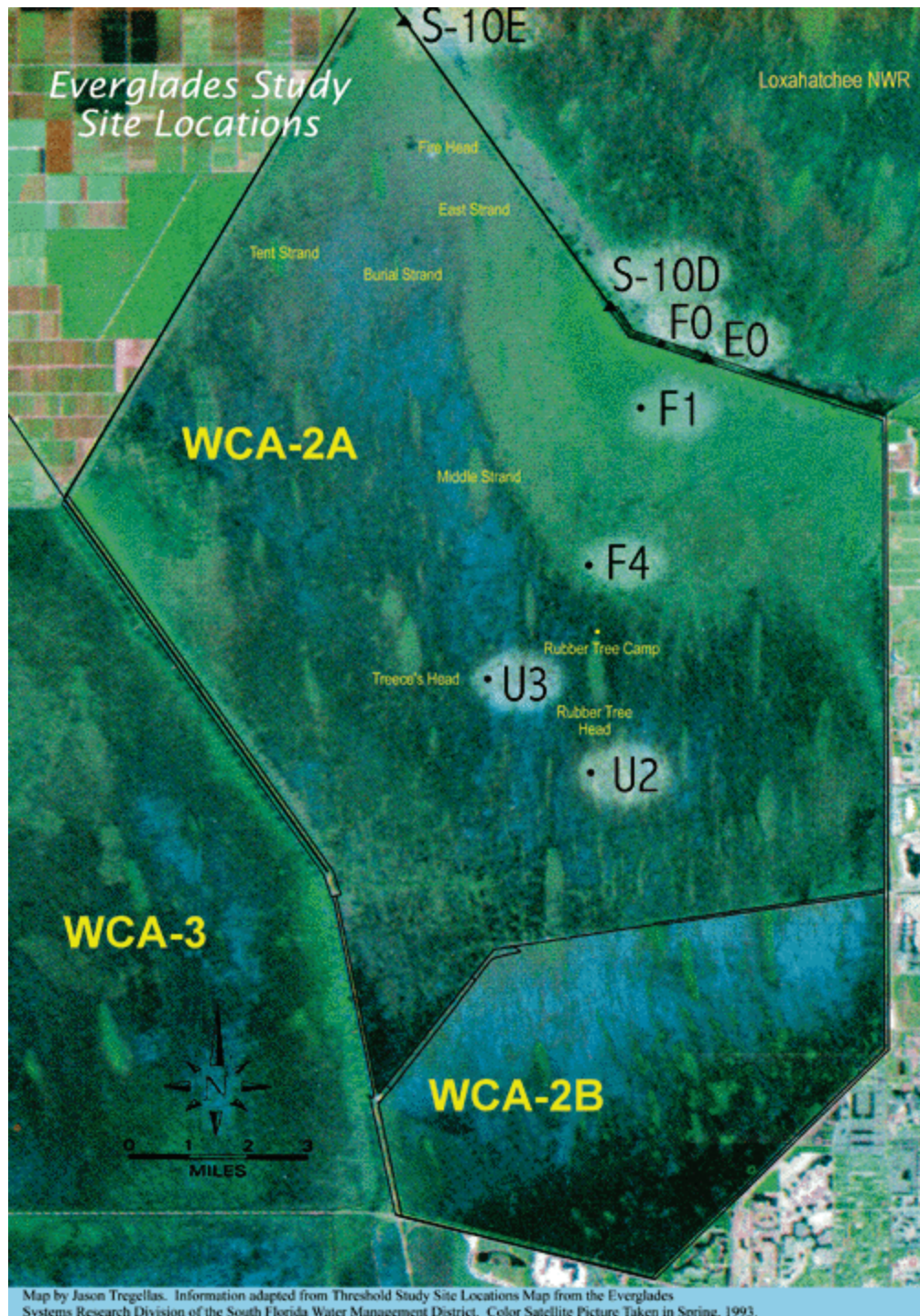
[mg/L, milligrams per liter; Absorb/mg C/L, Absorbance per milligram of carbon per liter; $\mu\text{mol/L}$, micromoles per liter; <, less than]

Lab ID	Site ID	DOC (mg/L)	Specific Ultraviolet (Absorb/mg C/L)	B (mg/L)	Ba (mg/L)	Fe (mg/L)	H ₄ SiO ₄ ($\mu\text{mol/L}$)	Li (mg/L)	Mn (mg/L)	Sr (mg/L)	Zn (mg/L)
2103	F1-0CM	32.6	0.033	0.093	0.075	0.011	276	0.014	0.0216	2.2	<0.01
2104	F1-10CM	72.5	0.035	0.198	0.141	<0.006	572	0.021	0.0247	4	<0.01
2105	F1-20CM	111.6	0.035	0.171	0.189	<0.006	948	0.026	0.0388	4.92	<0.01
2106	F1-30CM	135.6	0.032	0.12	0.265	<0.006	1360	0.037	0.0529	6.07	<0.01
2107	F1-74CM	132.5	0.029	0.102	0.289	<0.006	1450	0.041	0.069	6.56	<0.01
2108	F4-0CM	36.5	0.032	0.092	0.064	<0.006	324	0.012	0.0714	2.51	<0.01
2109	F4-5CM	51.8	0.038	0.104	0.109	<0.006	319	0.02	0.0517	3.25	<0.01
2110	F4-10CM	55	0.035	0.11	0.115	<0.006	323	0.021	0.0488	3.43	<0.01
2111	F4-20CM	57	0.036	0.098	0.131	<0.006	302	0.021	0.051	3.79	<0.01
2112	F4-30CM	63.1	0.032	0.066	0.14	<0.006	221	0.021	0.0704	3.85	<0.01
2113	F4-40CM	63.2	0.033	0.073	0.14	<0.006	230	0.021	0.0644	3.88	<0.01
2114	U2	38.4	0.033	0.085	0.066	<0.006	206	0.016	<0.0005	2.34	<0.01
2115	U3-0CM	36.5	0.031	0.111	0.063	<0.006	231	0.014	0.0158	2.28	<0.01
2116	U3-5CM	45.9	0.036	0.122	0.101	<0.006	519	0.02	0.0961	2.99	<0.01
2117	U3-10CM	43.3	0.037	0.117	0.101	<0.006	523	0.02	0.0905	2.96	0.01
2118	U3-20CM	49.2	0.036	0.089	0.106	<0.006	457	0.021	0.0668	2.93	<0.01
2119	U3-30CM	65.6	0.033	0.038	0.111	0.248	237	0.021	0.0904	2.49	<0.01
2120	U3-40CM	58.7	0.034	0.026	0.116	2.49	227	0.021	0.166	2.26	<0.01
2121	F0-1M	37.6	0.034	0.122	0.083	0.018	341	0.015	0.0021	2.7	<0.01
2122	F0-2.5M	36.3	0.035	0.119	0.084	0.018	352	0.012	0.0067	2.7	<0.01
2123	E0-1M	38.4	0.034	0.114	0.079	0.025	324	0.011	0.0026	2.42	<0.01
2124	E0-3M	37.5	0.034	0.116	0.08	0.016	344	0.015	0.0143	2.52	<0.01
2125	S10D-1M	39	0.033	0.13	0.09	0.031	379	0.016	0.0043	2.6	<0.01
2126	S10D-1MD	38.3	0.034	0.132	0.088	0.03	383	0.018	0.0047	2.56	<0.01
2127	S10D-2M	38.7	0.003	0.13	0.089	0.025	385	0.014	0.0044	2.59	<0.01
2128	S10E-1M	27.3	0.03	0.111	0.073	0.018	323	0.012	0.0021	1.97	0.01
2129	L67-S333	23.5	0.027	0.042	0.037	0.017	114	<0.007	<0.0005	1.13	<0.01
2130	L67-S151	23.3	0.03	0.055	0.045	0.025	152	<0.007	0.0032	1.43	<0.01

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Photograph 1. U3 sampling site in the South Florida Water Management District Water Conservation Area 2A. (photo by M.M. Reddy).



Photograph 2. Everglades study site location (photo by J. Tregellas)