

MASTER

THE MINERAL INDUSTRIES EXPERIMENT STATION
College of Mineral Industries
THE PENNSYLVANIA STATE UNIVERSITY

Technical Report (NYO-7950)

May 24, 1960

AN INVESTIGATION OF THE MINERALOGY, PETROGRAPHY
AND PALEOBOTANY OF URANIUM-BEARING LIGNITES

U. S. Atomic Energy Commission



University Park, Pennsylvania

610 001

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UNCLASSIFIED

AN INVESTIGATION OF THE MINERALOGY, PETROGRAPHY
AND PALEOBOTANY OF URANIUM-BEARING LIGNITES

Thomas F. Bates and William Spackman, Jr.

Project Directors

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Division of Earth Sciences
College of Mineral Industries
The Pennsylvania State University
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UNCLASSIFIED

ANALYSES OF FLORIDA PEATS

by

Robert L. O'Neil*

C. Philip Dolsen**

* Analyst, Department of Mineralogy, The Pennsylvania State University, University Park, Pennsylvania.

** Petrographer, Organic Sediments Laboratory, The Pennsylvania State University, University Park, Pennsylvania.

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Introduction

The data given in this report are obtained from the analysis of 177 samples of Florida peat. The geographic location of the samples is shown in figure 1.

The peats are of Recent age and were collected by Dr. William S. Spackman, Jr. and co-workers of the Geology Department, The Pennsylvania State University, during the summers of 1957-1959.

Peats Sampled

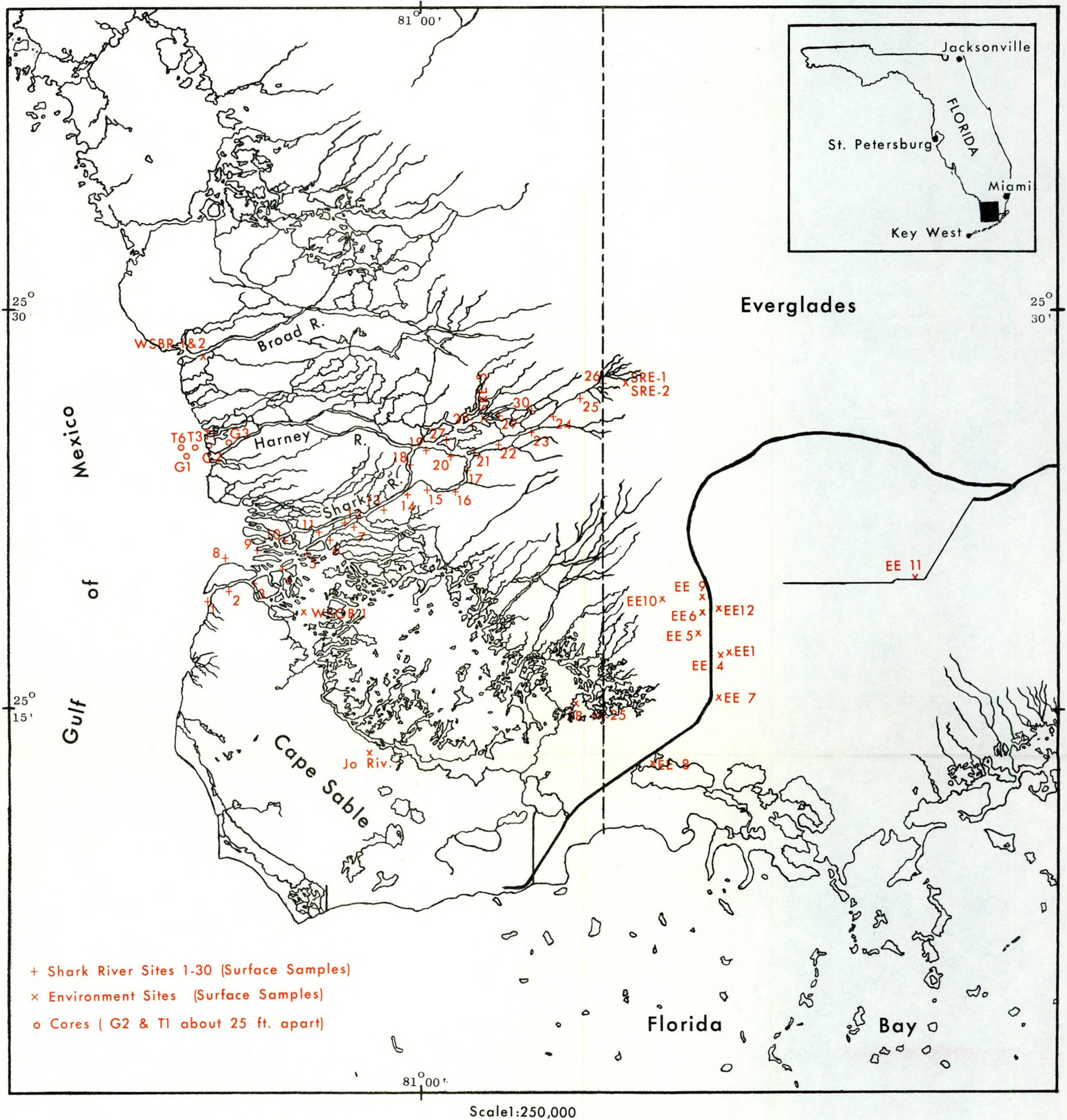
Geologic Age: Recent

Location: Cores 59-T1 and 59-G2 were sampled along the shore line on the western coast of Florida. They were covered by water at high tide. Core 59-T3 was sampled one-half mile off-shore. The cores were quartered and split into 3-inch intervals for the chemical determinations. The geographical location is given in figure 1.

The samples numbered Site #1-30 were taken along the right bank of the Shark River facing upstream. They are from the top six inches of the peat at a distance apart of approximately one mile.

The samples listed as EE-1 to EE-12 are Everglades environmental samples and represent the top four to six inches of peat. They are listed individually below:

- EE-1: Taken in Paurotis palm hammock.
- EE-4: Surface of open sedge marsh under one foot of water.
- EE-5: Taken in a Paurotis palm hammock.
- EE-6: Open sawgrass marsh.
- EE-7: Small hammock with a few Paurotis palms and small mangrove and other woody shrubs and sawgrass.
- EE-8: Semi-open marsh with grass and seedling trees.
- EE-9: Small hammock of mixed hardwood and palms.



LOCATIONS OF SAMPLING SITES IN SOUTHWEST FLORIDA

Figure 1

EE-10: Large hammock characterized by many mahogany trees.

EE-11: Cypress covered hammock.

EE-12: Hammock chiefly covered with bay trees.

Miscellaneous environmental samples are listed below.

SRE-1(0" - 4") and SRE-2(4" - 8"): At the head of a small tributary of Shark River, overgrown with cattails.

UIA-58: On the coast of the Gulf of Mexico in an area dominated by black mangrove trees, near location of core 59-T1 and 59-G2.

58M-25: From the bottom of a small pond on the East River off Whitewater Bay.

SRE-3: From the surface of a small island (Tussock Key) covered with cattails, in the Shark River.

OK-1: From the Okeefenokee swamp.

OK peat: In a stand of tall sawgrass, 5 miles south of Lake Okeechobee.

Joe River Sawgrass: Surface peat from sawgrass marsh about 200 yards in from Joe River on Cape Sable.

Five samples listed as WSSR-1, WSSR-2, WSBR-1, WSBR-2, and WSOB-1 are the residue from water collected in the Shark and Broad Rivers, and in Oyster Bay.

WSSR-1: Taken upstream from the mouth of Shark River during incoming tide.

WSSR-2: Taken upstream from the mouth of Shark River during outgoing tide.

WSBR-1: Taken upstream from the mouth of Broad River during incoming tide.

WSBR-2: Taken upstream from the mouth of Broad River during outgoing tide.

WSOB-1: Taken in Oyster Bay.

The sampling of the water was as follows: A 50-gallon drum was filled with water, one-third of which was collected one foot off the bottom, one-third midway between the bottom and the surface of the river, and one-third one foot below the surface. The contents of the drum were mixed and centrifuged, the residue collected and analyzed.

Analytical Procedures

The analytical procedures used to obtain the data in this report include the fluorimetric determination of uranium, chemical determinations of carbon, H_2O , ash, and total sulfur (O'Neil, 1959), and the spectrographic determination of iron, aluminum, calcium, magnesium, silicon, titanium, and manganese. Sodium and potassium were determined on three samples that were low in silicon and calcium.

The spectrographic method used is one developed by Mr. Norman Suhr, Spectroscopist in the Mineral Constitution Laboratory of the College of Mineral Industries of The Pennsylvania State University. The precision is better than $\pm 5\%$ for all of the elements determined.

Cobalt oxide in anhydrous lithium metaborate is used as the internal standard. It is prepared by fusing a mixture of anhydrous $LiBO_2$ and 7% by weight of Co_3O_4 at $800^\circ C$. The melt is ground to -200 mesh and mixed. After mixing, random samples are analyzed for their cobalt content in order to insure that the mixture is homogeneous before it is used. The analytical samples are mixed 1:1:5 (1 part sample, 1 part internal standard mixture, and 5 parts anhydrous sodium metaborate). This mixture is fused at $850^\circ C$ for one-half hour in a graphite crucible then ground and mixed with 2 parts by weight of SP#2 graphite. The samples are packed into preformed graphite electrodes (United Carbon Products Co.) and arced in a controlled stream of CO_2 gas with the d-c arc. The working curves are prepared from chemically analyzed standards obtained from the National Bureau of Standards, Washington, D. C. and the Minnesota Rock Analysis Laboratory. All calculations are made on an Aristo-Respectra Calculating Board.

References Cited

O'Neil, R. L., 1959, Analytical Procedures Applicable to Fine-Grained Sedimentary Rocks, Jour. Sed. Pet., vol. 29, No. 2, pp. 267-280.

Florida Peat - Site 1 - 30

No.	Moist.	C	Tot. S	H	Ash	Fe	Ca	Si	Al	Mg	Ti	Mn	U
1	4.27	12.68	2.57	2.05	68.90	3.6	0.69	16.9	7.8	1.8	0.43	0.0050	0.0021
2	6.73	8.49	1.85	2.13	56.63	1.8	6.1	12.2	2.9	1.4	0.21	0.0028	0.0029
3	6.49	38.03	3.13	3.58	28.17	0.93	1.6	2.4	1.2	1.8	0.06	0.0014	0.0028
4	9.86	34.17	3.17	3.33	34.64	1.4	1.9	5.0	2.0	1.4	0.14	0.0024	0.0030
5	4.06	16.93	0.94	1.04	56.06	0.62	27.0	4.0	0.95	1.3	0.07	0.0026	0.0005
6	12.00	25.40	3.34	2.10	50.91	1.7	6.8	7.7	2.7	1.9	0.18	0.0092	0.0009
7	8.96	36.22	3.05	3.24	32.91	0.86	2.8	6.4	2.3	1.5	0.15	0.0025	0.0012
8	0.52	11.15	0.40	0.33	60.52	0.40	37.3	3.4	0.91	0.28	0.05	0.0014	0.0004
9	8.12	21.00	2.44	1.87	56.51	2.1	3.0	11.8	4.5	1.8	0.26	0.0036	0.0044
10	5.16	30.94	2.93	3.18	40.26	2.1	1.5	5.9	2.4	0.34	0.14	0.0048	0.0023
11	4.98	26.92	2.42	2.85	43.40	1.3	9.4	6.7	0.03	1.4	0.16	0.0037	0.0014
12	4.67	27.84	2.26	2.45	45.85	1.7	6.4	8.6	2.1	1.4	0.16	0.0060	0.0011
13	7.77	38.88	4.29	3.50	29.09	1.1	1.5	4.5	2.4	1.2	0.13	0.0044	0.0009
14	6.02	40.16	3.40	3.79	27.23	1.2	0.92	4.1	1.6	1.2	0.08	0.0033	0.0008
15	5.78	34.61	1.63	3.97	33.05	0.83	3.5	6.3	1.9	1.0	0.09	0.0059	0.0004
16	6.46	44.20	2.39	4.32	18.09	0.42	2.1	2.7	0.90	1.0	0.05	0.0018	0.0010
17	7.68	48.88	2.51	4.76	13.82	0.25	2.4	1.1	0.52	0.94	0.03	0.0050	0.0006
18	4.92	32.86	2.66	5.05	36.03	0.72	4.1	6.8	1.8	1.2	0.12	0.0043	0.0005
19	6.88	45.14	3.23	4.27	17.14	0.41	2.0	1.9	1.1	1.2	0.06	0.0031	0.0006
20	8.62	47.47	1.84	4.26	14.12	0.31	2.4	0.90	0.38	1.4	0.02	0.0037	0.0009
21	6.76	36.06	4.42	3.43	35.82	2.8	8.3	1.5	0.86	1.4	0.06	0.0201	0.0002
22	3.99	23.54	3.08	1.89	54.02	1.8	23.8	2.3	0.24	0.59	0.01	0.0167	0.0003
23	5.35	33.99	4.28	3.00	40.02	3.0	9.9	3.9	0.52	0.80	0.04	0.0204	0.0003
24	5.46	42.56	3.58	4.57	23.14	2.2	6.3	0.65	0.28	0.62	0.01	0.0155	0.0002
25	6.04	48.40	2.50	4.53	17.60	1.8	3.8	0.98	0.30	0.86	0.02	0.0150	0.0003
26	4.48	25.03	4.17	2.26	50.21	2.6	13.0	6.2	3.2	0.75	0.22	0.0171	0.0004
27	6.90	45.33	2.01	4.31	16.24	0.19	3.8	0.39	0.21	1.8	0.01	0.0029	0.0002
28	9.62	49.05	1.99	3.76	20.18	0.44	2.8	0.89	0.20	1.2	0.01	0.0022	0.0001
29	4.47	21.84	2.20	1.74	62.66	1.1	4.5	21.2	0.53	0.69	0.02	0.0075	0.0005
30	7.24	49.94	2.76	4.39	12.64	1.4	2.3	0.87	0.25	0.50	0.02	0.0034	0.0002

Florida Peat - Column EE 1 - 12

No.	Moist.	C	Tot. S	H	Ash	Fe	Ca	Si	Al	Mg	Ti	Mn	U
1	8.44	50.60	0.30	4.12	4.40	0.05	1.6	0.44	0.01	0.27	N.D.	0.0037	N.D.
4a	1.35	16.46	0.19	1.07	49.87	0.11	35.2	0.37	0.17	0.42	0.01	0.0140	0.0002
5	8.60	49.77	1.27	4.54	8.63	0.25	2.9	0.28	0.11	0.43	0.01	0.0014	0.0003
6	1.87	17.68	0.18	1.15	48.60	0.21	25.8	0.38	0.38	0.18	0.01	0.0131	0.0001
7	9.46	48.82	1.42	4.24	9.93	0.18	2.2	0.83	0.35	0.55	0.02	0.0045	0.0001
8	8.08	43.80	2.21	3.92	17.81	0.21	3.1	0.57	0.30	2.0	0.02	0.0030	0.0002
9	6.98	48.48	1.35	4.94	10.84	0.75	2.9	0.69	0.56	0.42	0.04	0.0043	0.0003
10	8.38	47.54	0.96	3.86	11.32	0.49	6.3	0.19	0.06	0.61	N.D.	0.0020	0.0001
11	7.18	51.45	0.53	4.48	9.37	0.55	4.1	0.24	0.14	0.10	0.01	0.0009	0.0006
12	7.68	46.37	0.45	3.84	12.87	0.19	6.7	0.53	0.17	0.32	0.04	0.0037	0.0001

Florida Peat - Core 59-T1

No.	Moist.	C	Tot. S	H	Ash	Fe	Ca	Si	Al	Mg	Ti	Mn	U
0-3"	2.23	9.87	0.38	1.06	76.55	1.2	8.3	28.0	2.1	1.0	0.21	0.0057	0.0006
3-6"	1.78	6.22	0.24	0.79	81.52	1.7	5.8	27.9	2.9	1.5	0.26	0.0055	0.0006
6-9"	2.36	6.41	0.29	0.82	80.22	1.8	6.6	28.8	3.2	1.5	0.30	0.0046	0.0006
9-12"	2.37	6.31	0.35	1.37	75.93	1.7	9.4	23.2	3.7	1.6	0.30	0.0047	0.0004
12-15"	3.61	11.71	1.23	1.32	73.18	1.9	4.9	22.8	4.0	1.8	0.28	0.0049	0.0010
15-18"	3.62	12.37	2.27	0.84	73.38	2.5	3.4	23.5	3.7	1.5	0.26	0.0056	0.0015
18-21"	3.57	8.87	1.13	1.29	76.97	2.2	3.3	24.0	5.2	1.6	0.33	0.0059	0.0010
21-24"	3.56	10.10	1.17	1.94	74.41	2.0	2.7	23.8	5.4	1.3	0.36	0.0052	0.0010
24-27"	4.20	11.98	1.76	1.01	71.77	2.2	3.5	19.0	5.3	1.6	0.27	0.0047	0.0014
27-30"	4.20	13.81	2.34	1.17	71.21	2.8	2.6	21.3	4.8	1.3	0.21	0.0060	0.0017
30-33"	3.98	14.33	2.46	2.11	67.38	3.0	2.0	18.3	5.5	1.3	0.36	0.0057	0.0005
33-36"	3.78	14.18	2.20	2.16	65.83	2.8	0.86	20.1	6.2	1.4	0.38	0.0056	0.0026
36-39"	4.02	12.11	1.55	1.77	69.37	2.5	0.69	18.9	7.8	1.4	0.44	0.0111	0.0018
39-42"	4.23	13.57	1.54	1.92	66.16	2.1	0.79	17.6	7.3	1.6	0.40	0.0062	0.0024
42-45"	4.99	17.24	2.34	1.60	60.69	2.1	0.73	17.4	5.9	1.7	0.28	0.0052	0.0032
45-48"	4.67	18.63	3.62	2.21	56.44	2.3	0.62	15.4	6.0	1.4	0.37	0.0043	0.0044
48-51"	4.82	17.89	2.82	2.03	62.25	3.0	0.75	16.9	6.6	1.4	0.34	0.0062	0.0035
51-54"	4.46	18.69	2.87	2.32	58.86	2.5	0.76	16.4	5.9	1.6	0.32	0.0045	0.0048
54-57"	4.70	16.81	2.38	1.88	62.83	3.4	0.82	15.9	5.6	1.6	0.35	0.0048	0.0033

Florida Peat - Core 59-T1 (Cont'd.)

No.	Moist.	C	Tot. S	H	Ash	Fe	Ca	Si	Al	Mg	Ti	Mn	U
57-60"	4.96	19.62	2.57	1.92	56.36	2.1	0.90	15.0	6.0	1.5	0.33	0.0048	0.0046
60-63"	5.28	21.03	3.44	2.67	53.55	2.7	0.86	12.6	5.0	1.4	0.31	0.0041	0.0047
63-66"	5.17	25.22	4.52	2.40	47.95	3.2	0.91	10.6	3.7	1.3	0.25	0.0041	0.0062
66-69"	3.92	19.45	4.07	2.49	55.39	3.2	0.78	13.2	4.8	1.4	0.30	0.0042	0.0052
69-72"	4.02	18.22	3.06	2.39	59.05	2.6	0.77	15.4	6.1	1.5	0.39	0.0055	0.0045
72-75"	4.17	14.25	1.67	1.79	66.58	2.0	0.66	19.4	7.7	1.6	0.44	0.0056	0.0030
75-78"	4.22	16.93	2.29	2.21	61.15	2.4	0.73	16.0	6.2	1.3	0.26	0.0052	0.0034
78-81"	4.35	15.16	2.55	1.99	63.25	2.5	0.76	16.7	6.5	1.4	0.46	0.0054	0.0032
81-84"	3.90	15.41	3.14	2.01	62.41	2.9	0.69	17.0	6.5	1.4	0.45	0.0047	0.0031
84-87"	3.78	18.53	4.58	2.47	54.51	4.0	0.71	12.6	5.7	1.4	0.36	0.0046	0.0061
87-90"	5.18	21.77	4.87	2.29	50.60	3.8	0.81	10.5	4.8	1.4	0.27	0.0056	0.0064
90-93"	4.24	24.09	4.65	2.76	47.70	3.5	0.86	9.4	4.2	1.2	0.26	0.0044	0.0072
93-96"	4.67	26.64	4.89	3.22	43.31	2.7	0.95	7.8	3.5	1.2	0.21	0.0031	0.0080
96-99"	5.60	27.37	5.49	2.52	42.71	3.9	0.94	6.9	3.5	1.4	0.19	0.0043	0.0084
99-102"	4.38	31.33	5.22	3.31	37.54	3.1	1.01	4.4	2.3	1.5	0.14	0.0027	0.0116
102-105"	4.94	32.74	5.01	3.37	35.10	2.7	1.09	3.8	1.8	1.6	0.10	0.0022	0.0107
105-108"	5.88	34.51	4.21	3.42	33.02	1.5	1.09	3.8	1.9	0.79	0.12	0.0021	0.0085
108-111"	5.39	30.67	5.03	3.07	38.45	2.7	0.96	5.1	2.9	1.5	0.16	0.0027	0.0074
111-114"	4.25	23.10	3.74	2.78	49.34	2.4	0.74	10.2	5.4	1.5	0.30	0.0042	0.0047
114-117"	4.00	23.19	5.17	2.77	48.04	3.7	0.67	9.0	4.9	1.4	0.26	0.0048	0.0061
117-120"	4.12	28.26	5.21	3.12	41.43	3.2	0.91	6.0	3.5	1.6	0.19	0.0046	0.0070
120-123"	4.55	34.10	5.59	3.27	34.30	2.7	0.96	3.2	1.9	1.4	0.10	0.0044	0.0080
123-126"	5.86	38.68	4.82	3.78	25.94	1.6	1.01	2.1	1.3	1.5	0.08	0.0060	0.0106
126-129"	5.34	39.45	4.76	3.74	24.37	1.3	0.93	1.8	1.1	1.5	0.07	0.0061	0.0066
129-132"	5.40	41.57	5.17	3.76	25.05	1.9	0.98	1.6	1.0	1.4	0.06	0.0055	0.0061
132-134"	5.08	33.16	4.38	3.21	31.52	1.8	2.2	4.0	0.76	1.5	0.05	0.0047	0.0039

Florida Peat - Core 59-T3

No.	Moist.	C	Tot. S	H	Ash	Fe	Ca	Si	Al	Mg	Ti	Mn	U
0-3"	0.77	10.30	0.41	0.47	62.30	0.39	33.0	8.4	0.59	0.81	0.06	0.0032	0.0004
3-6"	0.70	10.16	0.35	0.36	71.36	0.40	30.4	7.3	0.56	0.71	0.07	0.0026	0.0006
6-9"	1.20	10.14	0.39	0.72	63.02	0.39	29.4	8.1	0.60	0.76	0.07	0.0033	0.0004
9-12"	0.72	10.50	0.44	0.71	63.02	0.48	27.3	7.8	0.69	0.82	0.08	0.0036	N.D.
12-15"	1.30	10.37	0.44	0.57	62.44	0.94	32.3	8.0	0.75	0.81	0.07	0.0036	0.0007
15-18"	0.69	10.37	0.36	0.34	76.79	0.40	32.3	6.5	0.61	0.77	0.05	0.0024	0.0003
18-21"	0.68	10.67	0.39	0.80	62.08	0.87	32.2	7.4	0.62	0.81	0.06	0.0034	0.0006
21-24"	0.82	10.54	0.43	0.71	61.28	0.44	28.4	6.8	0.74	1.2	0.06	0.0031	N.D.
24-27"	0.94	10.63	0.50	0.77	62.12	0.56	29.1	7.4	0.81	1.1	0.07	0.0042	N.D.
27-30"	0.90	10.33	0.42	0.46	69.35	0.47	29.1	8.1	0.76	0.97	0.08	0.0025	0.0004
30-33"	1.54	10.48	0.45	1.32	61.97	1.2	31.0	7.1	0.99	0.99	0.07	0.0038	0.0005
33-36"	1.12	10.56	0.46	1.09	62.98	0.53	30.0	8.4	0.76	0.88	0.09	0.0046	N.D.
36-39"	0.80	10.14	0.46	0.67	63.48	0.46	30.0	8.8	0.63	0.89	0.06	0.0032	0.0005
39-42"	0.85	10.21	0.42	0.40	66.27	0.52	29.8	8.7	0.80	1.1	0.07	0.0033	N.D.
42-45"	0.98	10.56	0.50	0.66	63.38	0.60	30.0	8.6	0.82	0.95	0.09	0.0047	0.0005
45-48"	0.90	10.51	0.54	1.14	63.05	0.59	30.4	8.5	0.82	0.88	0.08	0.0054	0.0004
48-51"	0.80	10.05	0.50	0.81	63.14	0.43	30.1	9.0	0.60	0.69	0.08	0.0037	0.0004
51-54"	0.79	10.28	0.46	0.49	71.30	0.43	27.1	10.4	0.64	0.64	0.06	0.0031	0.0001
54-57"	1.36	11.42	0.85	0.96	62.49	0.87	29.3	8.4	1.1	1.0	0.09	0.0058	0.0009
57-60"	3.40	18.76	1.90	1.94	51.90	1.2	18.1	6.3	1.4	1.0	0.11	0.0052	0.0050
60-63"	5.26	23.28	2.70	2.11	48.98	1.3	12.1	6.3	1.7	1.3	0.13	0.0042	0.0062
63-66"	6.87	30.92	4.43	3.08	40.35	2.1	1.1	5.0	2.7	1.5	0.16	0.0017	0.0094
66-69"	5.52	29.19	5.09	3.12	39.55	2.7	9.2	5.4	3.0	1.5	0.17	0.0047	0.0095
69-72"	6.18	31.82	5.08	3.43	36.75	2.6	11.3	4.3	2.3	1.5	0.15	0.0055	0.0080
72-75"	6.94	30.95	4.34	3.88	37.03	1.8	1.6	4.9	3.0	1.6	0.17	0.0044	0.0054
75-78"	5.61	33.21	4.64	3.98	36.64	2.0	0.92	4.9	2.6	1.4	0.17	0.0040	0.0048
78-81"	11.24	32.58	4.72	2.59	38.59	2.2	0.89	5.8	3.0	1.3	0.16	0.0042	0.0052
81-84"	7.48	29.25	4.84	3.14	40.83	2.6	0.98	7.1	3.8	1.3	0.21	0.0082	0.0053
84-87"	11.32	28.91	4.85	2.69	40.75	2.6	0.90	7.3	3.6	1.3	0.22	0.0114	0.0050
87-90"	5.77	28.89	4.84	3.40	42.53	2.5	0.81	7.6	4.1	1.4	0.21	0.0132	0.0042
90-93"	10.24	28.56	4.59	2.83	43.53	2.5	0.96	8.4	4.1	1.4	0.23	0.0135	0.0040
93-96"	6.02	28.90	5.04	3.03	41.38	2.5	0.87	7.6	3.2	1.3	0.19	0.0116	0.0049
96-99"	7.08	27.46	4.95	2.91	47.40	2.0	1.6	11.6	1.8	1.5	0.09	0.0100	0.0034
99-102"	8.17	38.81	5.49	3.70	26.35	2.3	2.8	1.4	0.40	1.8	0.02	0.0105	0.0046
102-105"	5.29	19.15	3.18	2.35	60.67	1.9	0.79	21.9	2.6	0.85	0.14	0.0036	0.0021
105-108"	2.60	11.54	2.18	1.84	74.44	1.6	5.7	23.8	2.5	0.62	0.15	0.0055	0.0011

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Florida Peat - Core 59-G2

No.	Moist.	C	Tot. S.	H	Ash	Fe	Ca	Si	Al	Mg	Ti	Mn	U
0-3"	2.56	11.68	0.74	1.91	74.53	1.0	3.6	25.5	1.7	1.0	0.22	.0044	.0003
3-6"	3.60	17.35	0.91	2.44	63.17	1.3	2.0	20.6	2.3	1.3	0.21	.0073	.0006
6-9"	3.32	10.28	0.56	1.93	75.76	1.2	2.1	25.2	3.3	1.5	0.30	.0064	N.D.
9-12"	3.12	8.79	0.95	1.65	77.68	1.9	2.2	24.3	4.2	1.8	0.32	.0060	N.D.
12-15"	3.24	10.42	2.05	2.26	75.54	2.3	1.5	22.6	3.8	1.4	0.29	.0056	.0009
15-18"	3.62	7.00	1.24	1.38	80.48	2.5	2.2	22.9	5.6	2.1	0.37	.0230	.0007
18-21"	3.68	7.48	1.27	2.67	79.55	2.5	1.7	21.6	6.4	2.1	0.37	.0068	.0009
21-24"	3.88	9.77	2.72	2.18	74.10	3.8	1.1	18.7	5.3	1.6	0.35	.0077	.0010
24-27"	4.12	11.33	1.73	2.16	73.47	2.4	0.68	19.2	5.3	1.2	0.36	.0056	.0013
27-30"	4.08	13.10	2.06	2.06	69.06	2.6	0.76	22.4	5.5	1.2	0.32	.0061	.0023
30-33"	4.33	14.01	2.52	2.16	67.21	3.0	0.87	20.4	5.7	1.2	0.34	.0057	.0029
33-36"	3.66	14.36	3.68	2.24	65.14	4.2	0.72	18.9	5.7	1.2	0.34	.0060	.0046
36-39"	4.48	15.74	4.57	2.22	63.52	5.0	0.95	18.1	5.2	1.3	0.30	.0066	.0047
39-42"	4.80	16.56	3.40	2.32	62.22	3.9	0.81	16.9	6.2	1.3	0.35	.0082	.0043
42-45"	4.63	20.18	3.44	2.66	55.72	3.6	0.72	13.1	5.6	1.3	0.30	.0060	.0039
45-48"	4.58	16.79	2.83	2.39	60.95	3.6	0.67	15.1	6.8	1.4	0.33	.0078	.0041
48-51"	4.66	15.52	3.03	2.40	63.31	3.5	0.82	17.0	6.0	1.3	0.32	.0066	.0049
51-54"	4.14	14.88	3.38	2.26	64.97	3.8	0.84	18.1	6.0	1.3	0.34	.0078	.0051
54-57"	4.49	15.39	1.97	2.28	64.26	2.6	0.71	17.2	7.6	1.5	0.38	.0074	.0036
57-60"	4.00	17.12	2.73	2.57	60.77	3.2	0.79	14.9	6.8	1.4	0.34	.0068	.0046
60-63"	4.25	17.98	2.19	2.74	60.19	2.5	0.84	14.9	7.0	1.4	0.36	.0058	.0052
63-66"	4.00	18.80	3.04	2.55	58.03	3.0	0.81	14.4	5.9	1.3	0.31	.0052	.0071
66-69"	4.02	20.15	2.98	2.57	56.64	2.6	0.85	14.3	5.5	1.2	0.32	.0046	.0067
69-72"	5.69	22.86	3.54	2.76	52.38	2.8	0.89	11.9	5.1	1.3	0.28	.0054	.0064
72-75"	3.98	28.24	8.10	3.15	40.35	6.5	0.60	5.2	3.6	1.0	0.14	.0059	.0067
75-78"	5.29	41.00	6.95	3.99	22.78	4.4	0.41	0.41	0.32	0.80	0.01	.0026	.0065
78-81"	4.82	44.10	3.80	4.51	19.31	1.5	0.58	1.5	0.70	0.71	0.04	.0011	.0042
81-84"	4.46	18.22	2.51	2.83	59.43	2.4	0.77	15.8	6.6	1.2	0.37	.0055	.0032
84-87"	4.39	20.54	4.29	2.85	54.63	3.8	0.82	12.3	6.2	1.4	0.30	.0057	.0060
87-90"	4.66	29.08	5.44	3.20	40.97	4.0	0.86	6.0	3.4	1.4	0.18	.0036	.0117
90-93"	7.06	33.05	4.69	3.36	38.08	2.5	1.2	2.9	2.8	1.6	0.15	.0034	.0114
93-96"	5.66	26.00	4.74	3.16	45.24	3.3	0.90	7.0	4.5	1.4	0.24	.0052	.0068
96-99"	6.84	22.29	3.22	2.75	52.19	2.3	0.78	10.1	6.2	1.5	0.33	.0051	.0046
99-102"	5.46	30.06	5.42	3.73	40.34	3.8	0.89	4.5	3.1	1.7	0.16	.0041	.0082
102-105"	6.36	34.00	5.50	3.77	33.87	3.0	0.98	2.6	1.8	1.7	0.04	.0033	.0090

Florida Peat - Core 59-G2 (Cont'd.)

No.	Moist.	C	Tot. S.	H	Ash	Fe	Ca	Si	Al	Mg	Ti	Mn	U
105-108"	8.00	35.30	6.01	3.42	31.60	3.1	0.95	2.0	1.4	1.7	0.08	.0028	.0078
108-111"	6.67	34.40	6.62	3.41	31.02	3.6	0.78	1.2	0.84	1.7	0.05	.0030	.0092
111-114"	6.26	33.64	5.80	3.47	32.87	2.7	0.79	2.0	1.4	1.5	0.08	.0041	.0082
114-117"	6.07	32.92	5.01	3.48	32.26	2.2	0.97	2.7	1.8	1.7	0.10	.0064	.0092
117-120"	7.58	36.07	5.05	3.89	29.94	2.1	1.1	2.0	1.3	1.8	0.08	.0068	.0098
120-123"	7.94	37.64	5.21	4.03	26.00	1.9	1.1	0.55	0.42	1.5	0.03	.0043	.0083
123-126"	6.00	36.70	6.19	3.85	29.79	3.0	0.95	0.74	0.60	1.6	0.04	.0041	.0085
126-129"	7.99	39.28	5.48	3.88	23.24	2.3	1.0	0.32	0.28	1.7	0.02	.0059	.0095
129-132"	7.58	40.44	5.54	3.78	26.82	2.9	1.0	0.27	0.24	1.6	0.01	.0058	.0091
132-135"	7.58	40.06	5.71	3.97	27.76	3.2	1.1	0.33	0.20	1.7	0.01	.0064	.0072
135-138"	7.56	39.85	6.13	3.79	31.21	3.8	1.0	0.47	0.28	1.6	0.02	.0222	.0064
138-141"	7.32	38.93	5.34	4.17	27.24	2.9	1.1	5.6	0.44	1.4	0.03	.0028	.0051
141-144"	6.62	34.50	3.88	3.51	34.89	1.8	1.1	7.2	0.80	1.3	0.06	.0035	.0038
144-147"	6.50	38.27	5.50	3.89	29.40	3.2	1.0	1.2	0.50	1.5	0.03	.0086	.0039
147-150"	4.28	13.75	4.72	2.19	55.77	3.3	0.78	15.2	2.3	1.0	0.14	.0190	.0019
150-153"	3.19	16.07	3.51	2.54	66.79	2.8	0.57	21.0	3.4	0.80	0.21	.0140	.0011
153-156"	2.46	9.05	3.36	1.77	77.16	2.9	0.43	27.9	4.4	0.53	0.27	.0221	.0005
156-159"	1.72	4.09	4.90	0.89	82.66	5.0	0.26	30.3	4.0	0.42	0.26	.0160	.0007
159-162"	1.75	5.25	5.78	1.45	79.53	6.1	0.32	27.6	3.9	0.46	0.21	.0801	.0014

Florida Peat - Residue from River Water.

No.	Moist.	C	Tot. S.	H	Ash	Fe	Ca	Si	Al	Mg	Ti	Mn	U
WSSR-2		10.46	1.72	1.86	63.11	1.5	12.9	5.7	1.2	3.3	0.08	.0102	N.D.
WSSR-1		8.43	2.78	1.63	71.84	0.93	13.1	5.0	1.1	4.0	0.08	.0128	N.D.
WSBR-2		12.74	1.45	1.82	60.48	1.1	17.0	7.4	1.8	2.0	0.12	.0178	N.D.
WSBR-1		12.42	0.86	1.76	59.89	0.96	16.9	7.8	1.5	1.5	0.11	.0181	N.D.
WSOB-1		10.37	0.52	2.30	64.30	1.2	11.7	5.3	1.4	2.4	0.09	.0092	N.D.

Florida Peat - Miscellaneous Environmental Samples

No.	Moist.	C	Tot. S	H	Ash	Fe	Ca	Si	Al	Mg	Ti	Mn	U
OK-1	5.64	48.34	0.23	4.35	20.18	0.16	0.19	8.6	0.22	0.03	0.01	.0010	N.D.
LSR-2	2.05	14.82	0.61	1.19	57.49	0.75	21.9	7.8	1.7	1.7	0.12	.0037	.0006
SRE-2													
Cattail	8.54	50.00	2.49	4.45	18.59	1.6	3.0	1.4	0.09	0.80	0.03	.0059	.0003
58-M-25	2.80	19.21	2.06	3.11	54.20	1.4	22.3	4.7	2.2	1.1	0.14	.0108	.0003
58-UI													
Mangrove	3.37	15.23	0.80	1.56	63.94	0.83	8.6	20.6	2.2	1.8	0.22	.0032	.0006
Joe River													
Sawgrass	6.92	49.30	2.09	3.78	15.61	0.19	3.0	0.86	0.37	1.5	0.03	.0006	.0001
SRE-1	7.88	43.04	3.46	4.36	25.84	2.4	2.6	2.9		2.4			N.D.
SRE-3	12.08	45.31	3.02	4.60	22.21	0.85	6.1	0.75		4.5			.0001
OK Peat	14.40	50.40	0.56	4.01	12.71	0.28	5.2	1.6		3.2			

