APPENDIX A

PERTINENT CORRESPONDENCE

Jimenez, Esteban SAJ

From: Ray, Suzanne E. [Suzanne.E.Ray@dep.state.fl.us]
Sent: Tuesday, October 21, 2003 11:39 AM
To: Jimenez, Esteban
Cc: Mann, Sally
Subject: FEIS Fellsmere

Hello Jimenez.

It was nice talking with you yesterday. As per your initial email, I contacted staff in our Central District Office regarding FL200307083007C. The District performed the technical review of this project and did not have additional concerns. Here are their comments : "I do not have further comments regarding this project. The plan includes the statement in Section 4.9 that "If toxic substances are found they will be remediated." The document also contains the DEP's January 3, 2003 letter expressing our concern regarding pesticide sampling." (John White, Hazardous Waste, DEP Central District, Orlando, 407/893-3323, john.white@dep.state.fl.us).

Let me know if you need anything else.

Suzanne E. Ray

Department of Environmental Protection

Jeb Bush
Governor

Marjory Stoneman Douglas Building
3900 Commonwealth Boulevard
Tallahassee, Florida 32399-3000

David B. Struhs
Secretary

September 3, 2003

Mr. James C. Duck, Chief
Planning Division, Jacksonville District
U. S. Army Corps of Engineers
Post Office Box 4970
Jacksonville, Florida 32232-0019

RE: Department of the Army – Jacksonville District Corps of Engineers – Final Environmental Impact Statement (FEIS) – Proposed Modifications to Project Features North of the Fellsmere Grade (CC#5H) Central and Southern Florida Flood Control Project – Upper St. Johns River Basin and Related Areas – Brevard County, Florida
SAI: FL200307083007C

Dear Mr. Duck:

The Florida State Clearinghouse, pursuant to Executive Order 12372, Gubernatorial Executive Order 95-359, the Coastal Zone Management Act, 16 U.S.C. §§ 1451-1464, as amended, and the National Environmental Policy Act, 42 U.S.C. §§ 4321, 4331-4335, 4341-4347, as amended, has coordinated a review of the above-referenced Final Environmental Impact Statement (FEIS).

The St. Johns River Water Management District (SJRWMD) states that though the proposed flood control modification project is a SJRWMD project, the activities might involve modification of permits issued by the Department of Environmental Protection.

The Department of State (DOS) states that two previously recorded archeological sites (8BR244 & 8BR245) are located within the project area and will be affected by all of the proposed alternatives. Please refer to the enclosed DOS comments for further information.

Based on the information contained in the above referenced FEIS and the enclosed comments provided by our reviewing agencies, the state has determined that the proposed project is consistent with the Florida Coastal Management Program.

Thank you for the opportunity to review this project. If you have any questions regarding this letter, please contact Ms. Suzanne Ray at 850/245-2172.

Yours sincerely,

Sally B. Mann

Sally B. Mann, Director
Office of Intergovernmental Programs

SBM/ser

Enclosures

cc: Barbara Bess, DEP, Central District
Geoffrey Sample, SJRWMD

St. Johns River
Water Management District

Kirby B. Green III, Executive Director • John R. Wehle, Assistant Executive Director

Post Office Box 1429 • Palatka, FL 32178-1429 • (386) 329-4500

September 6, 2002

Esteban Jimenez
U.S. Army Corps of Engineers
P.O. Box 4970
Jacksonville, FL
32232-0019

RE: Three Forks Marsh Conservation Area Sampling Report

Dear Mr. Jimenez,

Enclosed please find two (2) copies of the above-mentioned report. Please contact Mary Ann Lee at (386) 329- 4393 if you have any questions.

Sincerely,

Hector Herrera, P.E.
Senior Project Manager
Division of Project Management
Water Resources Department

c Steven Robinson
Mary Ann Lee

MEMORANDUM

DATE: September 3, 2002

TO: Tom Bartol, P.E., Director
Division of RM Support & Environmental Management

FROM: Carol Brown, Engineer II
Division of RM Support & Environmental Management

SUBJECT: Three Forks Marsh Conservation Area Sampling
Brevard County, LA 83-10

ATTACHMENTS:

(1) Sampling location map and GPS coordinates
(2) Table of Parameters Detected
(3) Laboratory Data

BACKGROUND:

The Three Forks Marsh Conservation Area (TFMCA) consists of three different parcels. The northern parcel was purchased by SJRWMD in 1988 and 1989 is referred to as Cross Triangle. This approximately 9,000-acres was historically improved and unimproved pasture. The middle 2,500 acres is the former Satori East Property. The southern 2,500 acres is part of the former Fellsmere Joint Venture and referred to as the Mary A. property. These two parcels were purchased in 1985 and were historically pasture and row crops for the few years preceding purchase by SJRWMD.

The TFMCA project will create a connection between these three parcels. The entire area will be flooded to create a lake in the northern portion and wetlands in the southern portion. A Supplementary Environmental Impact Statement is being prepared by the Army Corps of Engineers.

The purpose of this sampling effort is to determine the concentrations of potential chemicals of concern (COC) at the 14,000-acre Three Forks Marsh Conservation Area (TFMCA) resulting from past activities at the property.

SAMPLING METHODOLOGY:

On July 30, 2002 samples were taken from twenty locations. Carey Maxwell and Donna Gates-Rickett performed the sampling. The soil samples were collected from 0-1 ft below land surface (bls) and the sediment samples were taken 0-8 inches bls. All samples were collected in accordance with SJRWMD's approved FDEP CompQAPP (# 870413) and applicable FDEP standard operating procedures. EnChem Laboratory, Inc. of Madison, Wisconsin analyzed all the samples for organochlorine pesticides by the EPA Method 8081 and RCRA metals plus copper. Five of the twenty sample locations were also analyzed for organophosphorus compounds by EPA Method 8141 and chlorinated herbicides by EPA Method 8151. DB Environmental Laboratories, Inc. of Rockledge, Florida analyzed all of the samples for Total Organic Carbon (TOC).

Soil samples were collected with a stainless steel 3-1/4 inch diameter hand auger. The top three inches of soil were removed prior to collection in order to remove any organic material. The sample was mixed thoroughly in a stainless steel bowl prior to being placed in the sample jar. Excess sample was returned to the site and the equipment was rinsed and returned to the SJRWMD lab for decontamination.

LABORATORY ANALYTICAL RESULTS AND EVALUATION:

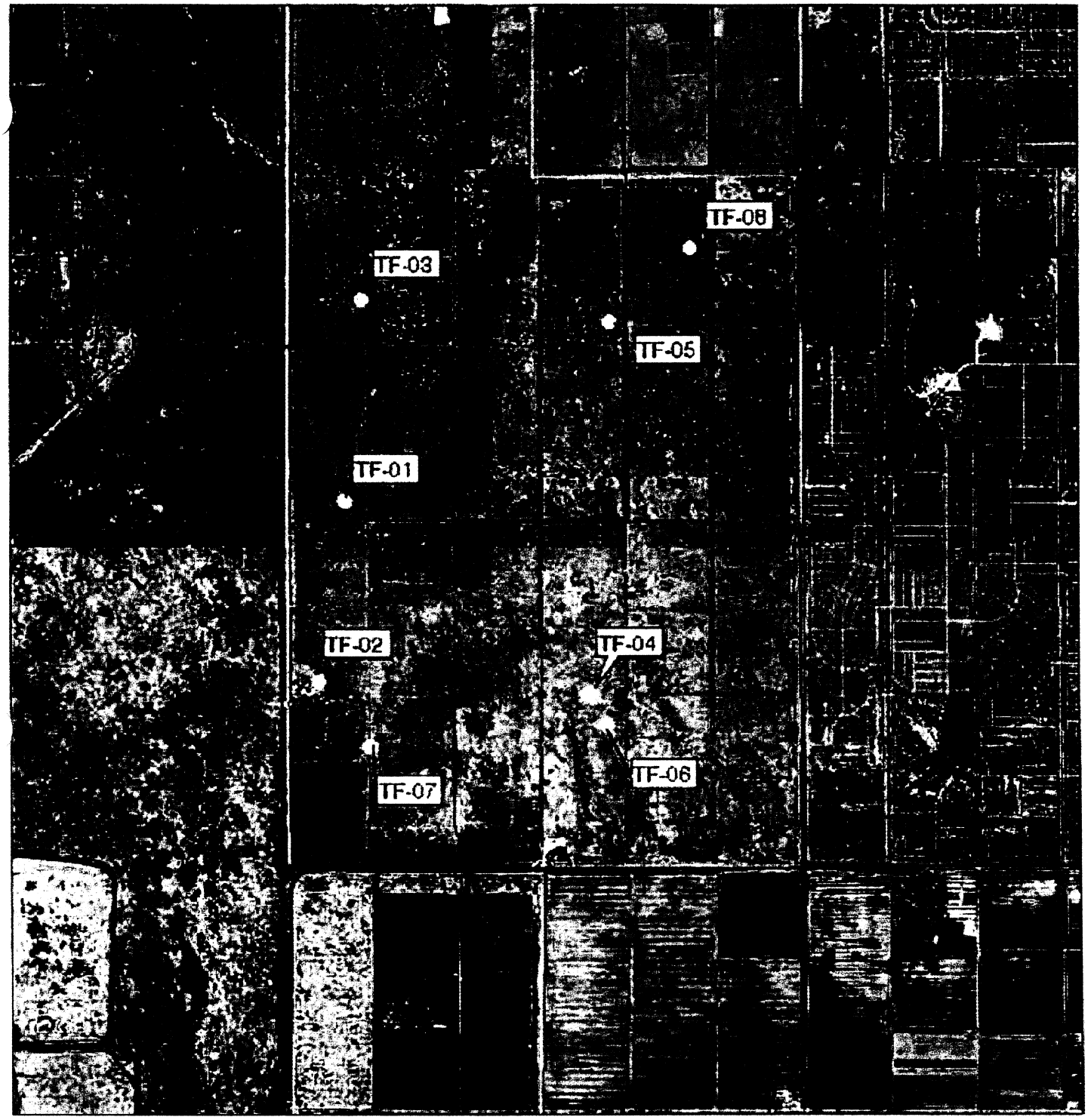
Barium, Chromium and Copper were detected in all the samples. Arsenic was detected in 4 of the 20 locations. None of these detections were above the FDEP Sediment Quality Assessment Guideline (SQAG) Probable Effect Level (PEL) or the USEPA Consensus Based Probable Effect Concentration (PEC). All of the arsenic and chromium detections were also below the FDEP SQAG Threshold Effect Level (TEL). There are no sediment guidelines for Barium, however the concentrations detected fall within the reported ranges of background concentrations (Shacklette and Boerngen, 1984, naturally occurring concentrations in Eastern United States from 10 to 1,500 mg/kg).

One soil sample (TF-17) detected DDT at 0.0051 mg/kg, which is less than the USEPA Consensus based PEC (0.0629 mg/kg), but greater than the FDEP SQAG TEL (0.00477 mg/kg). This result was flagged with a 'J' code indicating that the concentration detected is greater than method detection limit, but less than reporting limit. The USEPA guidelines are more appropriate for this analysis since this is fresh water sediment and not coastal water sediment. No other COCs were detected above the USEPA Consensus Based PEC.

RECOMMENDATIONS:

The purpose of this sampling event was to determine the presence or absence of potential COCs in the soil resulting from past agricultural practices. Only one sample contained detectable levels of pesticides. The estimated level of DDT in the sample was approximately one-tenth of the USEPA Consensus Based Probable Effect Concentration. Given the very low frequency of detection of pesticides, along with the low concentration of the detected pesticide, additional sampling does not appear warranted at this time.

cc: Hal Wilkening - (w/o Laboratory Data)
Mary Ann Lee



TFMCA - North

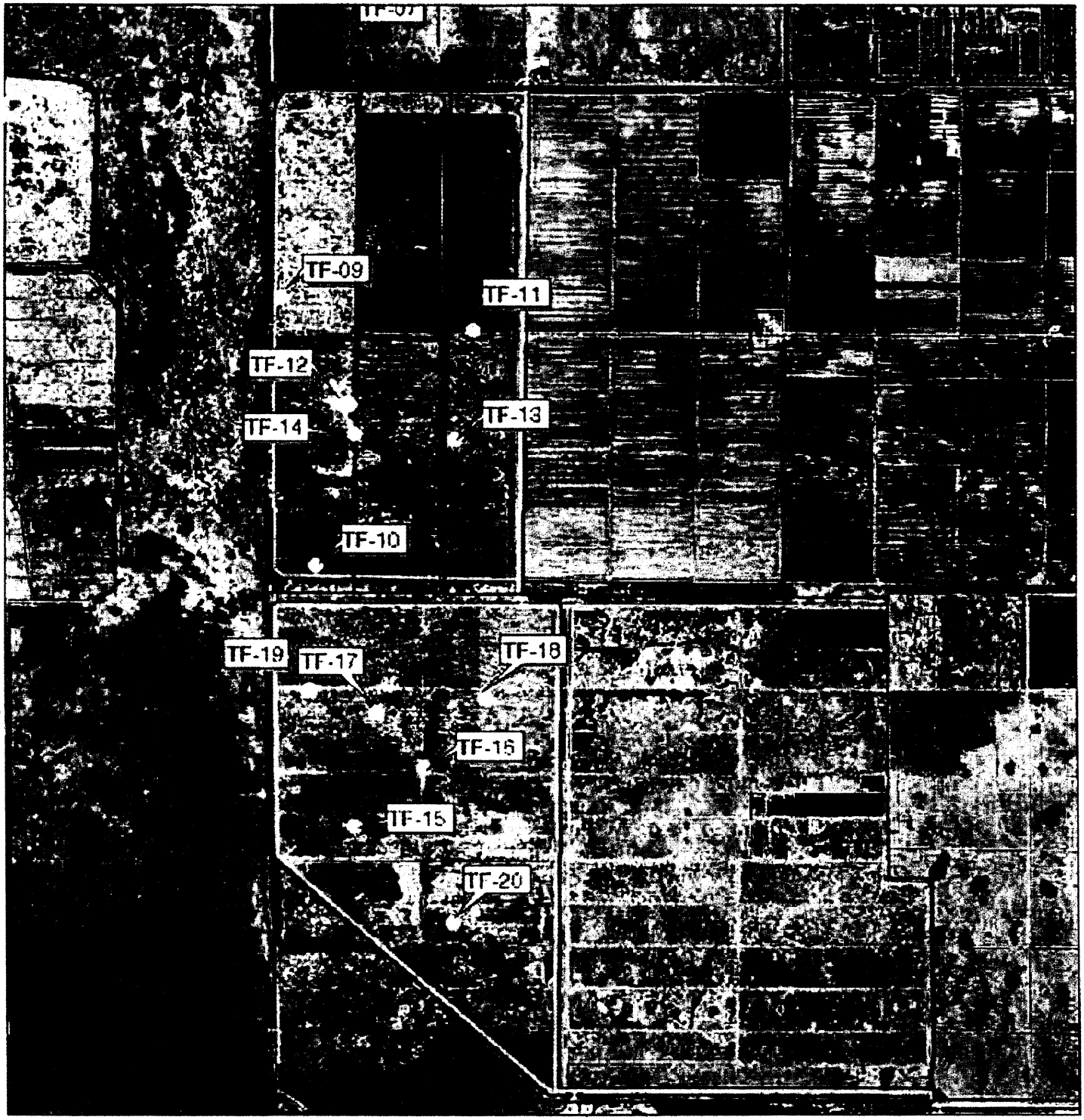
Sampling Locations

0 0.4 0.8 Miles

1:51000

Area of Interest

The St. Johns River Water Management District prepares and uses this information for its own purposes and this information may not be suitable for other purposes. This information is provided "as is". Further documentation of this data can be obtained by contacting: St. Johns River Water Management District, Geographic Information Systems, Program Management, P.O. Box 1429, Palatka, Florida 32178-1429, (904) 329-4176.



TFMCA - South

Sample Locations

0 0.4 0.8 Miles

1:51000

Area of Interest

The St. Johns River Water Management District prepares and uses this information for its own purposes and this information may not be suitable for other purposes. This information is provided "as is". Further documentation of this data can be obtained by contacting: St. Johns River Water Management District, Geographic Information Systems, Program Management, P.O. Box 1429, Palatka, Florida 32178-1429. (904) 329-4576

Sampling Points for TFMCA

POINT ID	DUP ID	NORTHING	EASTING
TF-01		3090720	523168
TF-02	TF-21	3089011	522955
TF-03		3092626	523345
TF-04		3088903	525441
TF-05		3092415	525695
TF-06		3088630	525645
TF-07		3088433	523433
TF-08		3093081	526444
TF-09		3085325	522737
TF-10		3082837	523061
TF-11		3085037	524509
TF-12	TF-22	3084341	523406
TF-13		3084030	524350
TF-14		3084059	523430
TF-15		3080372	523418
TF-16		3080946	524031
TF-17		3081457	523618
TF-18		3081587	524638
TF-19		3081645	523022
TF-20		3079466	524323

Three Forks Marsh Conservation Area
Table of Parameters Detected
Units are mg/kg

	4,4'-DDT	Arsenic	Barium	Chromium	Copper
SQAG TEL	0.00119	7.24	NA	52.3	18.7
SQAG PEL	0.00477	41.6	NA	160	108
Consensus based PEC	0.0629	33	NA	111	149
TF -01	U	U	56	4.7	4.9
TF -02	U	U	17	1.9	1.1J
TF -21*	U	U	18	1.9	1.1J
TF -03	U	2.4J	39	9.0	6.6
TF -04	U	U	10	4.1	0.33J
TF -05	U	U	9.5	2.7	1.1
TF -06	U	U	11	2.7	0.45J
TF -07	U	U	13	2.1	0.74J
TF -08	U	U	58	10	2.2
TF -09	U	U	29	2.7	2.7J
TF -10	U	U	24	2.0	17
TF -11	U	1.7J	42	6.9	19
TF -12	U	U	42	3.1	2.7J
TF -22*	U	U	47	3.3	3.2J
TF -13	U	U	27	2.7	19
TF -14	U	3.2	58	32	7.8
TF -15	U	U	16	4.0	4.0
TF -16	U	U	53	3.0	23
TF -17	0.0051J	U	28	2.4	37
TF -18	U	U	36	3.1	32
TF -19	U	U	36	4.0	5.7
TF -20	U	1.8J	34	4.0	3.9

* Duplicate of Preceding Sample
SQAG: Sediment Quality Assessment Guideline (FDEP)
TEL: Threshold Effect Level
PEL: Probable Effect Level
PEC: Probable Effect Concentration (USEPA)
U : Under Laboratory Detection Limits
J: Concentration detected is greater than method detection limit, but less than reporting limit.

- Analytical Report -

Project Name : THREE FORKS
Project Number : WO # 14
Lab Sample Number : 922623-001
Sample ID : TF-01
WI DNR LAB ID : 113172950

to Carol Brown 8/30/02

Submitter # : 1987.01
Submitter : ST JOHNS RIVER WATER MGMT DIS
Report Date : 8/14/02
Collection Date : 7/29/02
Matrix : SOIL

Organic Results

SPECIAL PESTICIDE LIST **Prep Method:** SW846 3550B **Prep Date:** 8/6/02

Analyte	Result	MDL	EQL	Dilution	Units	Code	Analysis Date	Analysis Method
4,4'-DDD	3.6 U	3.6	23	1	ug/kg		8/13/02	SW846 8081A
4,4'-DDE	3.5 U	3.5	23	1	ug/kg		8/13/02	SW846 8081A
4,4'-DDT	4.2 U	4.2	23	1	ug/kg		8/13/02	SW846 8081A
Aldrin	1.8 U	1.8	12	1	ug/kg		8/13/02	SW846 8081A
alpha-BHC	1.5 U	1.5	12	1	ug/kg		8/13/02	SW846 8081A
alpha-Chlordane	2.0 U	2.0	12	1	ug/kg		8/13/02	SW846 8081A
beta-BHC	5.7 U	5.7	12	1	ug/kg		8/13/02	SW846 8081A
Cis-nonachlor	3.0 U	3.0	23	1	ug/kg		8/13/02	SW846 8081A
delta-BHC	1.8 U	1.8	12	1	ug/kg		8/13/02	SW846 8081A
Dieldrin	3.2 U	3.2	23	1	ug/kg		8/13/02	SW846 8081A
Endosulfan I	1.5 U	1.5	12	1	ug/kg		8/13/02	SW846 8081A
Endosulfan II	3.5 U	3.5	23	1	ug/kg		8/13/02	SW846 8081A
Endosulfan sulfate	3.8 U	3.8	23	1	ug/kg		8/13/02	SW846 8081A
Endrin	2.9 U	2.9	23	1	ug/kg		8/13/02	SW846 8081A
Endrin aldehyde	4.2 U	4.2	23	1	ug/kg		8/13/02	SW846 8081A
Endrin ketone	4.1 U	4.1	23	1	ug/kg		8/13/02	SW846 8081A
gamma-BHC (Lindane)	2.2 U	2.2	12	1	ug/kg		8/13/02	SW846 8081A
gamma-Chlordane	1.7 U	1.7	12	1	ug/kg		8/13/02	SW846 8081A
Heptachlor	1.4 U	1.4	12	1	ug/kg		8/13/02	SW846 8081A
Heptachlor epoxide	2.6 U	2.6	12	1	ug/kg		8/13/02	SW846 8081A
Methoxychlor	22 U	22	120	1	ug/kg		8/13/02	SW846 8081A
Oxychlordane	3.3 U	3.3	23	1	ug/kg		8/13/02	SW846 8081A
Toxaphene	150 U	150	1200	1	ug/kg		8/13/02	SW846 8081A
Trans-nonachlor	3.3 U	3.3	23	1	ug/kg		8/13/02	SW846 8081A

SPECIAL PESTICIDE LIST

Prep Method: SW846 3550B **Prep Date:** 8/6/02

Analyte	Result	MDL	EQL	Dilution	Units	Code	Analysis Date	Analysis Method
4,4'-DDD	1.8 U	1.8	12	1	ug/kg		8/13/02	SW846 8081A
4,4'-DDE	1.8 U	1.8	12	1	ug/kg		8/13/02	SW846 8081A
4,4'-DDT	2.1 U	2.1	12	1	ug/kg		8/13/02	SW846 8081A
Aldrin	0.92 U	0.92	5.9	1	ug/kg		8/13/02	SW846 8081A
alpha-BHC	0.78 U	0.78	5.9	1	ug/kg		8/13/02	SW846 8081A
alpha-Chlordane	1.0 U	1.0	5.9	1	ug/kg		8/13/02	SW846 8081A
beta-BHC	2.9 U	2.9	5.9	1	ug/kg		8/13/02	SW846 8081A
Cis-nonachlor	1.5 U	1.5	12	1	ug/kg		8/13/02	SW846 8081A
delta-BHC	0.89 U	0.89	5.9	1	ug/kg		8/13/02	SW846 8081A
Dieldrin	1.6 U	1.6	12	1	ug/kg		8/13/02	SW846 8081A
Endosulfan I	0.76 U	0.76	5.9	1	ug/kg		8/13/02	SW846 8081A
Endosulfan II	1.8 U	1.8	12	1	ug/kg		8/13/02	SW846 8081A
Endosulfan sulfate	2.0 U	2.0	12	1	ug/kg		8/13/02	SW846 8081A
Endrin	1.5 U	1.5	12	1	ug/kg		8/13/02	SW846 8081A
Endrin aldehyde	2.2 U	2.2	12	1	ug/kg		8/13/02	SW846 8081A
Endrin ketone	2.1 U	2.1	12	1	ug/kg		8/13/02	SW846 8081A
gamma-BHC (Lindane)	1.1 U	1.1	5.9	1	ug/kg		8/13/02	SW846 8081A
gamma-Chlordane	0.86 U	0.86	5.9	1	ug/kg		8/13/02	SW846 8081A
Heptachlor	0.71 U	0.71	5.9	1	ug/kg		8/13/02	SW846 8081A
Heptachlor epoxide	1.3 U	1.3	5.9	1	ug/kg		8/13/02	SW846 8081A
Methoxychlor	11 U	11	59	1	ug/kg		8/13/02	SW846 8081A
Oxychlordane	1.7 U	1.7	12	1	ug/kg		8/13/02	SW846 8081A
Toxaphene	77 U	77	590	1	ug/kg		8/13/02	SW846 8081A
Trans-nonachlor	1.7 U	1.7	12	1	ug/kg		8/13/02	SW846 8081A

All soil results are reported on a dry weight basis unless otherwise noted.
Units of %Recov(ery) denote spike recovery. All recoveries pass in-house control limits unless otherwise noted.

- Analytical Report -

Project Name : THREE FORKS
Project Number : WO # 14
Lab Sample Number : 922623-003
Sample ID : TF-21
WI DNR LAB ID : 113172950

Submitter # : 1987.01
Submitter : ST JOHNS RIVER WATER MGMT DIS
Report Date : 8/14/02
Collection Date : 7/29/02
Matrix : SOIL

Organic Results

SPECIAL PESTICIDE LIST **Prep Method:** SW846 3550B **Prep Date:** 8/6/02

Analyte	Result	MDL	EQL	Dilution	Units	Code	Analysis Date	Analysis Method
4,4'-DDD	1.8 U	1.8	12	1	ug/kg		8/13/02	SW846 8081A
4,4'-DDE	1.7 U	1.7	12	1	ug/kg		8/13/02	SW846 8081A
4,4'-DDT	2.1 U	2.1	12	1	ug/kg		8/13/02	SW846 8081A
Aldrin	0.90 U	0.90	5.8	1	ug/kg		8/13/02	SW846 8081A
alpha-BHC	0.76 U	0.76	5.8	1	ug/kg		8/13/02	SW846 8081A
alpha-Chlordane	0.99 U	0.99	5.8	1	ug/kg		8/13/02	SW846 8081A
beta-BHC	2.8 U	2.8	5.8	1	ug/kg		8/13/02	SW846 8081A
Cis-nonachlor	1.5 U	1.5	12	1	ug/kg		8/13/02	SW846 8081A
delta-BHC	0.88 U	0.88	5.8	1	ug/kg		8/13/02	SW846 8081A
Dieldrin	1.6 U	1.6	12	1	ug/kg		8/13/02	SW846 8081A
Endosulfan I	0.75 U	0.75	5.8	1	ug/kg		8/13/02	SW846 8081A
Endosulfan II	1.7 U	1.7	12	1	ug/kg		8/13/02	SW846 8081A
Endosulfan sulfate	1.9 U	1.9	12	1	ug/kg		8/13/02	SW846 8081A
Endrin	1.5 U	1.5	12	1	ug/kg		8/13/02	SW846 8081A
Endrin aldehyde	2.1 U	2.1	12	1	ug/kg		8/13/02	SW846 8081A
Endrin ketone	2.1 U	2.1	12	1	ug/kg		8/13/02	SW846 8081A
gamma-BHC (Lindane)	1.1 U	1.1	5.8	1	ug/kg		8/13/02	SW846 8081A
gamma-Chlordane	0.84 U	0.84	5.8	1	ug/kg		8/13/02	SW846 8081A
Heptachlor	0.69 U	0.69	5.8	1	ug/kg		8/13/02	SW846 8081A
Heptachlor epoxide	1.3 U	1.3	5.8	1	ug/kg		8/13/02	SW846 8081A
Methoxychlor	11 U	11	58	1	ug/kg		8/13/02	SW846 8081A
Oxychlordane	1.6 U	1.6	12	1	ug/kg		8/13/02	SW846 8081A
Toxaphene	75 U	75	580	1	ug/kg		8/13/02	SW846 8081A
Trans-nonachlor	1.7 U	1.7	12	1	ug/kg		8/13/02	SW846 8081A

APPENDIX 9 LIST - HERBICIDES **Prep Method:** SW846 8151A **Prep Date:** 8/6/02

Analyte	Result	MDL	EQL	Dilution	Units	Code	Analysis Date	Analysis Method
2,4,5-T	7.6 U	7.6	35	1	ug/kg		8/13/02	SW846 8151A
2,4,5-TP (Silvex)	7.0 U	7.0	35	1	ug/kg		8/13/02	SW846 8151A
2,4-D	46 U	46	180	1	ug/kg		8/13/02	SW846 8151A
4,4'-DDD	1.7 U	1.7	11	1	ug/kg		8/13/02	SW846 8081A
4,4'-DDE	1.6 U	1.6	11	1	ug/kg		8/13/02	SW846 8081A
4,4'-DDT	1.9 U	1.9	11	1	ug/kg		8/13/02	SW846 8081A
Aldrin	0.83 U	0.83	5.3	1	ug/kg		8/13/02	SW846 8081A
alpha-BHC	0.70 U	0.70	5.3	1	ug/kg		8/13/02	SW846 8081A
alpha-Chlordane	0.91 U	0.91	5.3	1	ug/kg		8/13/02	SW846 8081A
beta-BHC	2.6 U	2.6	5.3	1	ug/kg		8/13/02	SW846 8081A
Cis-nonachlor	1.4 U	1.4	11	1	ug/kg		8/13/02	SW846 8081A
delta-BHC	0.81 U	0.81	5.3	1	ug/kg		8/13/02	SW846 8081A
Dieldrin	1.5 U	1.5	11	1	ug/kg		8/13/02	SW846 8081A
Endosulfan I	0.69 U	0.69	5.3	1	ug/kg		8/13/02	SW846 8081A
Endosulfan II	1.6 U	1.6	11	1	ug/kg		8/13/02	SW846 8081A
Endosulfan sulfate	1.8 U	1.8	11	1	ug/kg		8/13/02	SW846 8081A
Endrin	1.3 U	1.3	11	1	ug/kg		8/13/02	SW846 8081A
Endrin aldehyde	1.9 U	1.9	11	1	ug/kg		8/13/02	SW846 8081A
Endrin ketone	1.9 U	1.9	11	1	ug/kg		8/13/02	SW846 8081A
gamma-BHC (Lindane)	1.0 U	1.0	5.3	1	ug/kg		8/13/02	SW846 8081A
gamma-Chlordane	0.77 U	0.77	5.3	1	ug/kg		8/13/02	SW846 8081A
Heptachlor	0.64 U	0.64	5.3	1	ug/kg		8/13/02	SW846 8081A
Heptachlor epoxide	1.2 U	1.2	5.3	1	ug/kg		8/13/02	SW846 8081A
Methoxychlor	10 U	10	53	1	ug/kg		8/13/02	SW846 8081A
Oxychlordane	1.5 U	1.5	11	1	ug/kg		8/13/02	SW846 8081A
Toxaphene	69 U	69	530	1	ug/kg		8/13/02	SW846 8081A
Trans-nonachlor	1.5 U	1.5	11	1	ug/kg		8/13/02	SW846 8081A

All soil results are reported on a dry weight basis unless otherwise noted.
Units of %Recov(ery) denote spike recovery. All recoveries pass in-house control limits unless otherwise noted.

- Analytical Report -

Project Name : THREE FORKS
Project Number : WO # 14
Lab Sample Number : 922623-005
Sample ID : TF-04
WI DNR LAB ID : 113172950

Submitter # : 1987.01
Submitter : ST JOHNS RIVER WATER MGMT DIS
Report Date : 8/14/02
Collection Date : 7/29/02
Matrix : SOIL

Organic Results

SPECIAL PESTICIDE LIST **Prep Method:** SW846 3550B **Prep Date:** 8/6/02

Analyte	Result	MDL	EQL	Dilution	Units	Code	Analysis Date	Analysis Method
4,4'-DDD	0.96 U	0.96	6.1	1	ug/kg		8/13/02	SW846 8081A
4,4'-DDE	0.93 U	0.93	6.1	1	ug/kg		8/13/02	SW846 8081A
4,4'-DDT	1.1 U	1.1	6.1	1	ug/kg		8/13/02	SW846 8081A
Aldrin	0.48 U	0.48	3.1	1	ug/kg		8/13/02	SW846 8081A
alpha-BHC	0.40 U	0.40	3.1	1	ug/kg		8/13/02	SW846 8081A
alpha-Chlordane	0.53 U	0.53	3.1	1	ug/kg		8/13/02	SW846 8081A
beta-BHC	1.5 U	1.5	3.1	1	ug/kg		8/13/02	SW846 8081A
Cis-nonachlor	0.79 U	0.79	6.1	1	ug/kg		8/13/02	SW846 8081A
delta-BHC	0.47 U	0.47	3.1	1	ug/kg		8/13/02	SW846 8081A
Dieldrin	0.85 U	0.85	6.1	1	ug/kg		8/13/02	SW846 8081A
Endosulfan I	0.40 U	0.40	3.1	1	ug/kg		8/13/02	SW846 8081A
Endosulfan II	0.93 U	0.93	6.1	1	ug/kg		8/13/02	SW846 8081A
Endosulfan sulfate	1.0 U	1.0	6.1	1	ug/kg		8/13/02	SW846 8081A
Endrin	0.77 U	0.77	6.1	1	ug/kg		8/13/02	SW846 8081A
Endrin aldehyde	1.1 U	1.1	6.1	1	ug/kg		8/13/02	SW846 8081A
Endrin ketone	1.1 U	1.1	6.1	1	ug/kg		8/13/02	SW846 8081A
gamma-BHC (Lindane)	0.58 U	0.58	3.1	1	ug/kg		8/13/02	SW846 8081A
gamma-Chlordane	0.45 U	0.45	3.1	1	ug/kg		8/13/02	SW846 8081A
Heptachlor	0.37 U	0.37	3.1	1	ug/kg		8/13/02	SW846 8081A
Heptachlor epoxide	0.68 U	0.68	3.1	1	ug/kg		8/13/02	SW846 8081A
Methoxychlor	5.9 U	5.9	31	1	ug/kg		8/13/02	SW846 8081A
Oxychlordane	0.87 U	0.87	6.1	1	ug/kg		8/13/02	SW846 8081A
Toxaphene	40 U	40	310	1	ug/kg		8/13/02	SW846 8081A
Trans-nonachlor	0.88 U	0.88	6.1	1	ug/kg		8/13/02	SW846 8081A

SPECIAL PESTICIDE LIST

Prep Method: SW846 3550B **Prep Date:** 8/6/02

Analyte	Result	MDL	EQL	Dilution	Units	Code	Analysis Date	Analysis Method
4,4'-DDD	0.96 U	0.96	6.1	1	ug/kg		8/13/02	SW846 8081A
4,4'-DDE	0.92 U	0.92	6.1	1	ug/kg		8/13/02	SW846 8081A
4,4'-DDT	1.1 U	1.1	6.1	1	ug/kg		8/13/02	SW846 8081A
Aldrin	0.48 U	0.48	3.0	1	ug/kg		8/13/02	SW846 8081A
alpha-BHC	0.40 U	0.40	3.0	1	ug/kg		8/13/02	SW846 8081A
alpha-Chlordane	0.52 U	0.52	3.0	1	ug/kg		8/13/02	SW846 8081A
beta-BHC	1.5 U	1.5	3.0	1	ug/kg		8/13/02	SW846 8081A
Cis-nonachlor	0.79 U	0.79	6.1	1	ug/kg		8/13/02	SW846 8081A
delta-BHC	0.46 U	0.46	3.0	1	ug/kg		8/13/02	SW846 8081A
Dieldrin	0.85 U	0.85	6.1	1	ug/kg		8/13/02	SW846 8081A
Endosulfan I	0.40 U	0.40	3.0	1	ug/kg		8/13/02	SW846 8081A
Endosulfan II	0.92 U	0.92	6.1	1	ug/kg		8/13/02	SW846 8081A
Endosulfan sulfate	1.0 U	1.0	6.1	1	ug/kg		8/13/02	SW846 8081A
Endrin	0.77 U	0.77	6.1	1	ug/kg		8/13/02	SW846 8081A
Endrin aldehyde	1.1 U	1.1	6.1	1	ug/kg		8/13/02	SW846 8081A
Endrin ketone	1.1 U	1.1	6.1	1	ug/kg		8/13/02	SW846 8081A
gamma-BHC (Lindane)	0.58 U	0.58	3.0	1	ug/kg		8/13/02	SW846 8081A
gamma-Chlordane	0.44 U	0.44	3.0	1	ug/kg		8/13/02	SW846 8081A
Heptachlor	0.37 U	0.37	3.0	1	ug/kg		8/13/02	SW846 8081A
Heptachlor epoxide	0.68 U	0.68	3.0	1	ug/kg		8/13/02	SW846 8081A
Methoxychlor	5.9 U	5.9	30	1	ug/kg		8/13/02	SW846 8081A
Oxychlordane	0.86 U	0.86	6.1	1	ug/kg		8/13/02	SW846 8081A
Toxaphene	40 U	40	300	1	ug/kg		8/13/02	SW846 8081A
Trans-nonachlor	0.88 U	0.88	6.1	1	ug/kg		8/13/02	SW846 8081A

All soil results are reported on a dry weight basis unless otherwise noted.
Units of %Recov(ery) denote spike recovery. All recoveries pass in-house control limits unless otherwise noted.

- Analytical Report -

Project Name : THREE FORKS
Project Number : WO # 14
Lab Sample Number : 922623-007
Sample ID : TF-06
WI DNR LAB ID : 113172950

Submitter # : 1987.01
Submitter : ST JOHNS RIVER WATER MGMT DIS
Report Date : 8/14/02
Collection Date : 7/29/02
Matrix : SOIL

Organic Results

SPECIAL PESTICIDE LIST **Prep Method:** SW846 3550B **Prep Date:** 8/6/02

Analyte	Result	MDL	EQL	Dilution	Units	Code	Analysis Date	Analysis Method
4,4'-DDD	1.0 U	1.0	6.5	1	ug/kg		8/13/02	SW846 8081A
4,4'-DDE	0.99 U	0.99	6.5	1	ug/kg		8/13/02	SW846 8081A
4,4'-DDT	1.2 U	1.2	6.5	1	ug/kg		8/13/02	SW846 8081A
Aldrin	0.51 U	0.51	3.3	1	ug/kg		8/13/02	SW846 8081A
alpha-BHC	0.43 U	0.43	3.3	1	ug/kg		8/13/02	SW846 8081A
alpha-Chlordane	0.56 U	0.56	3.3	1	ug/kg		8/13/02	SW846 8081A
beta-BHC	1.6 U	1.6	3.3	1	ug/kg		8/13/02	SW846 8081A
Cis-nonachlor	0.84 U	0.84	6.5	1	ug/kg		8/13/02	SW846 8081A
delta-BHC	0.50 U	0.50	3.3	1	ug/kg		8/13/02	SW846 8081A
Dieldrin	0.91 U	0.91	6.5	1	ug/kg		8/13/02	SW846 8081A
Endosulfan I	0.43 U	0.43	3.3	1	ug/kg		8/13/02	SW846 8081A
Endosulfan II	0.99 U	0.99	6.5	1	ug/kg		8/13/02	SW846 8081A
Endosulfan sulfate	1.1 U	1.1	6.5	1	ug/kg		8/13/02	SW846 8081A
Endrin	0.82 U	0.82	6.5	1	ug/kg		8/13/02	SW846 8081A
Endrin aldehyde	1.2 U	1.2	6.5	1	ug/kg		8/13/02	SW846 8081A
Endrin ketone	1.2 U	1.2	6.5	1	ug/kg		8/13/02	SW846 8081A
gamma-BHC (Lindane)	0.62 U	0.62	3.3	1	ug/kg		8/13/02	SW846 8081A
gamma-Chlordane	0.48 U	0.48	3.3	1	ug/kg		8/13/02	SW846 8081A
Heptachlor	0.39 U	0.39	3.3	1	ug/kg		8/13/02	SW846 8081A
Heptachlor epoxide	0.73 U	0.73	3.3	1	ug/kg		8/13/02	SW846 8081A
Methoxychlor	6.3 U	6.3	33	1	ug/kg		8/13/02	SW846 8081A
Oxychlordane	0.93 U	0.93	6.5	1	ug/kg		8/13/02	SW846 8081A
Toxaphene	43 U	43	330	1	ug/kg		8/13/02	SW846 8081A
Trans-nonachlor	0.94 U	0.94	6.5	1	ug/kg		8/13/02	SW846 8081A

APPENDIX 9 LIST - HERBICIDES

Prep Method: SW846 8151A

Prep Date: 8/6/02

Analyte	Result	MDL	EQL	Dilution	Units	Code	Analysis Date	Analysis Method
2,4,5-T	7.1 U	7.1	33	1	ug/kg		8/13/02	SW846 8151A
2,4,5-TP (Silvex)	6.5 U	6.5	33	1	ug/kg		8/13/02	SW846 8151A
2,4-D	43 U	43	170	1	ug/kg		8/13/02	SW846 8151A
4,4'-DDD	1.6 U	1.6	9.9	1	ug/kg		8/13/02	SW846 8081A
4,4'-DDE	1.5 U	1.5	9.9	1	ug/kg		8/13/02	SW846 8081A
4,4'-DDT	1.8 U	1.8	9.9	1	ug/kg		8/13/02	SW846 8081A
Aldrin	0.77 U	0.77	5.0	1	ug/kg		8/13/02	SW846 8081A
alpha-BHC	0.65 U	0.65	5.0	1	ug/kg		8/13/02	SW846 8081A
alpha-Chlordane	0.85 U	0.85	5.0	1	ug/kg		8/13/02	SW846 8081A
beta-BHC	2.4 U	2.4	5.0	1	ug/kg		8/13/02	SW846 8081A
Cis-nonachlor	1.3 U	1.3	9.9	1	ug/kg		8/13/02	SW846 8081A
delta-BHC	0.75 U	0.75	5.0	1	ug/kg		8/13/02	SW846 8081A
Dieldrin	1.4 U	1.4	9.9	1	ug/kg		8/13/02	SW846 8081A
Endosulfan I	0.64 U	0.64	5.0	1	ug/kg		8/13/02	SW846 8081A
Endosulfan II	1.5 U	1.5	9.9	1	ug/kg		8/13/02	SW846 8081A
Endosulfan sulfate	1.6 U	1.6	9.9	1	ug/kg		8/13/02	SW846 8081A
Endrin	1.2 U	1.2	9.9	1	ug/kg		8/13/02	SW846 8081A
Endrin aldehyde	1.8 U	1.8	9.9	1	ug/kg		8/13/02	SW846 8081A
Endrin ketone	1.8 U	1.8	9.9	1	ug/kg		8/13/02	SW846 8081A
gamma-BHC (Lindane)	0.94 U	0.94	5.0	1	ug/kg		8/13/02	SW846 8081A
gamma-Chlordane	0.72 U	0.72	5.0	1	ug/kg		8/13/02	SW846 8081A
Heptachlor	0.59 U	0.59	5.0	1	ug/kg		8/13/02	SW846 8081A
Heptachlor epoxide	1.1 U	1.1	5.0	1	ug/kg		8/13/02	SW846 8081A
Methoxychlor	9.6 U	9.6	50	1	ug/kg		8/13/02	SW846 8081A
Oxychlordane	1.4 U	1.4	9.9	1	ug/kg		8/13/02	SW846 8081A
Toxaphene	65 U	65	500	1	ug/kg		8/13/02	SW846 8081A
Trans-nonachlor	1.4 U	1.4	9.9	1	ug/kg		8/13/02	SW846 8081A

All soil results are reported on a dry weight basis unless otherwise noted.
Units of %Recov(ery) denote spike recovery. All recoveries pass in-house control limits unless otherwise noted.

- Analytical Report -

Project Name : THREE FORKS
Project Number : WO # 14
Lab Sample Number : 922623-009
Sample ID : TF-08
WI DNR LAB ID : 113172950

Submitter # : 1987.01
Submitter : ST JOHNS RIVER WATER MGMT DIS
Report Date : 8/14/02
Collection Date : 7/29/02
Matrix : SOIL

Organic Results

SPECIAL PESTICIDE LIST **Prep Method:** SW846 3550B **Prep Date:** 8/6/02

Analyte	Result	MDL	EQL	Dilution	Units	Code	Analysis Date	Analysis Method
4,4'-DDD	1.0 U	1.0	6.5	1	ug/kg		8/13/02	SW846 8081A
4,4'-DDE	0.98 U	0.98	6.5	1	ug/kg		8/13/02	SW846 8081A
4,4'-DDT	1.2 U	1.2	6.5	1	ug/kg		8/13/02	SW846 8081A
Aldrin	0.50 U	0.50	3.2	1	ug/kg		8/13/02	SW846 8081A
alpha-BHC	0.43 U	0.43	3.2	1	ug/kg		8/13/02	SW846 8081A
alpha-Chlordane	0.56 U	0.56	3.2	1	ug/kg		8/13/02	SW846 8081A
beta-BHC	1.6 U	1.6	3.2	1	ug/kg		8/13/02	SW846 8081A
Cis-nonachlor	0.83 U	0.83	6.5	1	ug/kg		8/13/02	SW846 8081A
delta-BHC	0.49 U	0.49	3.2	1	ug/kg		8/13/02	SW846 8081A
Dieldrin	0.90 U	0.90	6.5	1	ug/kg		8/13/02	SW846 8081A
Endosulfan I	0.42 U	0.42	3.2	1	ug/kg		8/13/02	SW846 8081A
Endosulfan II	0.98 U	0.98	6.5	1	ug/kg		8/13/02	SW846 8081A
Endosulfan sulfate	1.1 U	1.1	6.5	1	ug/kg		8/13/02	SW846 8081A
Endrin	0.81 U	0.81	6.5	1	ug/kg		8/13/02	SW846 8081A
Endrin aldehyde	1.2 U	1.2	6.5	1	ug/kg		8/13/02	SW846 8081A
Endrin ketone	1.1 U	1.1	6.5	1	ug/kg		8/13/02	SW846 8081A
gamma-BHC (Lindane)	0.61 U	0.61	3.2	1	ug/kg		8/13/02	SW846 8081A
gamma-Chlordane	0.47 U	0.47	3.2	1	ug/kg		8/13/02	SW846 8081A
Heptachlor	0.39 U	0.39	3.2	1	ug/kg		8/13/02	SW846 8081A
Heptachlor epoxide	0.72 U	0.72	3.2	1	ug/kg		8/13/02	SW846 8081A
Methoxychlor	6.2 U	6.2	32	1	ug/kg		8/13/02	SW846 8081A
Oxychlordane	0.92 U	0.92	6.5	1	ug/kg		8/13/02	SW846 8081A
Toxaphene	42 U	42	320	1	ug/kg		8/13/02	SW846 8081A
Trans-nonachlor	0.93 U	0.93	6.5	1	ug/kg		8/13/02	SW846 8081A

Organic Results

SPECIAL PESTICIDE LIST **Prep Method:** SW846 3550B **Prep Date:** 8/6/02

Analyte	Result	MDL	EQL	Dilution	Units	Code	Analysis Date	Analysis Method
4,4'-DDD	5.0 U	5.0	32	1	ug/kg		8/13/02	SW846 8081A
4,4'-DDE	4.8 U	4.8	32	1	ug/kg		8/13/02	SW846 8081A
4,4'-DDT	5.7 U	5.7	32	1	ug/kg		8/13/02	SW846 8081A
Aldrin	2.5 U	2.5	16	1	ug/kg		8/13/02	SW846 8081A
alpha-BHC	2.1 U	2.1	16	1	ug/kg		8/13/02	SW846 8081A
alpha-Chlordane	2.7 U	2.7	16	1	ug/kg		8/13/02	SW846 8081A
beta-BHC	7.8 U	7.8	16	1	ug/kg		8/13/02	SW846 8081A
Cis-nonachlor	4.1 U	4.1	32	1	ug/kg		8/13/02	SW846 8081A
delta-BHC	2.4 U	2.4	16	1	ug/kg		8/13/02	SW846 8081A
Dieldrin	4.4 U	4.4	32	1	ug/kg		8/13/02	SW846 8081A
Endosulfan I	2.1 U	2.1	16	1	ug/kg		8/13/02	SW846 8081A
Endosulfan II	4.8 U	4.8	32	1	ug/kg		8/13/02	SW846 8081A
Endosulfan sulfate	5.3 U	5.3	32	1	ug/kg		8/13/02	SW846 8081A
Endrin	4.0 U	4.0	32	1	ug/kg		8/13/02	SW846 8081A
Endrin aldehyde	5.8 U	5.8	32	1	ug/kg		8/13/02	SW846 8081A
Endrin ketone	5.7 U	5.7	32	1	ug/kg		8/13/02	SW846 8081A
gamma-BHC (Lindane)	3.0 U	3.0	16	1	ug/kg		8/13/02	SW846 8081A
gamma-Chlordane	2.3 U	2.3	16	1	ug/kg		8/13/02	SW846 8081A
Heptachlor	1.9 U	1.9	16	1	ug/kg		8/13/02	SW846 8081A
Heptachlor epoxide	3.5 U	3.5	16	1	ug/kg		8/13/02	SW846 8081A
Methoxychlor	31 U	31	160	1	ug/kg		8/13/02	SW846 8081A
Oxychlordane	4.5 U	4.5	32	1	ug/kg		8/13/02	SW846 8081A
Toxaphene	210 U	210	1600	1	ug/kg		8/13/02	SW846 8081A
Trans-nonachlor	4.6 U	4.6	32	1	ug/kg		8/13/02	SW846 8081A

All soil results are reported on a dry weight basis unless otherwise noted.
Units of %Recov(ery) denote spike recovery. All recoveries pass in-house control limits unless otherwise noted.

- Analytical Report -

Project Name : THREE FORKS
Project Number : WO # 14
Lab Sample Number : 922623-011
Sample ID : TF-10
WI DNR LAB ID : 113172950

Submitter # : 1987.01
Submitter : ST JOHNS RIVER WATER MGMT DIS
Report Date : 8/14/02
Collection Date : 7/30/02
Matrix : SOIL

Organic Results

APPENDIX 9 LIST - HERBICIDES **Prep Method:** SW846 8151A **Prep Date:** 8/6/02

Analyte	Result	MDL	EQL	Dilution	Units	Code	Analysis Date	Analysis Method
2,4,5-T	16 U	16	74	1	ug/kg		8/13/02	SW846 8151A
2,4,5-TP (Silvex)	15 U	15	74	1	ug/kg		8/13/02	SW846 8151A
2,4-D	97 U	97	370	1	ug/kg		8/13/02	SW846 8151A
4,4'-DDD	3.5 U	3.5	22	1	ug/kg		8/13/02	SW846 8081A
4,4'-DDE	3.4 U	3.4	22	1	ug/kg		8/13/02	SW846 8081A
4,4'-DDT	4.0 U	4.0	22	1	ug/kg		8/13/02	SW846 8081A
Aldrin	1.7 U	1.7	11	1	ug/kg		8/13/02	SW846 8081A
alpha-BHC	1.5 U	1.5	11	1	ug/kg		8/13/02	SW846 8081A
alpha-Chlordane	1.9 U	1.9	11	1	ug/kg		8/13/02	SW846 8081A
beta-BHC	5.5 U	5.5	11	1	ug/kg		8/13/02	SW846 8081A
Cis-nonachlor	2.9 U	2.9	22	1	ug/kg		8/13/02	SW846 8081A
delta-BHC	1.7 U	1.7	11	1	ug/kg		8/13/02	SW846 8081A
Dieldrin	3.1 U	3.1	22	1	ug/kg		8/13/02	SW846 8081A
Endosulfan I	1.5 U	1.5	11	1	ug/kg		8/13/02	SW846 8081A
Endosulfan II	3.4 U	3.4	22	1	ug/kg		8/13/02	SW846 8081A
Endosulfan sulfate	3.7 U	3.7	22	1	ug/kg		8/13/02	SW846 8081A
Endrin	2.8 U	2.8	22	1	ug/kg		8/13/02	SW846 8081A
Endrin aldehyde	4.1 U	4.1	22	1	ug/kg		8/13/02	SW846 8081A
Endrin ketone	4.0 U	4.0	22	1	ug/kg		8/13/02	SW846 8081A
gamma-BHC (Lindane)	2.1 U	2.1	11	1	ug/kg		8/13/02	SW846 8081A
gamma-Chlordane	1.6 U	1.6	11	1	ug/kg		8/13/02	SW846 8081A
Heptachlor	1.3 U	1.3	11	1	ug/kg		8/13/02	SW846 8081A
Heptachlor epoxide	2.5 U	2.5	11	1	ug/kg		8/13/02	SW846 8081A
Methoxychlor	22 U	22	110	1	ug/kg		8/13/02	SW846 8081A
Oxychlordane	3.2 U	3.2	22	1	ug/kg		8/13/02	SW846 8081A
Toxaphene	150 U	150	1100	1	ug/kg		8/13/02	SW846 8081A

Organic Results

SPECIAL PESTICIDE LIST **Prep Method:** SW846 3550B **Prep Date:** 8/6/02

Analyte	Result	MDL	EQL	Dilution	Units	Code	Analysis Date	Analysis Method
4,4'-DDD	2.9 U	2.9	19	1	ug/kg		8/13/02	SW846 8081A
4,4'-DDE	2.8 U	2.8	19	1	ug/kg		8/13/02	SW846 8081A
4,4'-DDT	3.3 U	3.3	19	1	ug/kg		8/13/02	SW846 8081A
Aldrin	1.4 U	1.4	9.3	1	ug/kg		8/13/02	SW846 8081A
alpha-BHC	1.2 U	1.2	9.3	1	ug/kg		8/13/02	SW846 8081A
alpha-Chlordane	1.6 U	1.6	9.3	1	ug/kg		8/13/02	SW846 8081A
beta-BHC	4.6 U	4.6	9.3	1	ug/kg		8/13/02	SW846 8081A
Cis-nonachlor	2.4 U	2.4	19	1	ug/kg		8/13/02	SW846 8081A
delta-BHC	1.4 U	1.4	9.3	1	ug/kg		8/13/02	SW846 8081A
Dieldrin	2.6 U	2.6	19	1	ug/kg		8/13/02	SW846 8081A
Endosulfan I	1.2 U	1.2	9.3	1	ug/kg		8/13/02	SW846 8081A
Endosulfan II	2.8 U	2.8	19	1	ug/kg		8/13/02	SW846 8081A
Endosulfan sulfate	3.1 U	3.1	19	1	ug/kg		8/13/02	SW846 8081A
Endrin	2.3 U	2.3	19	1	ug/kg		8/13/02	SW846 8081A
Endrin aldehyde	3.4 U	3.4	19	1	ug/kg		8/13/02	SW846 8081A
Endrin ketone	3.3 U	3.3	19	1	ug/kg		8/13/02	SW846 8081A
gamma-BHC (Lindane)	1.8 U	1.8	9.3	1	ug/kg		8/13/02	SW846 8081A
gamma-Chlordane	1.4 U	1.4	9.3	1	ug/kg		8/13/02	SW846 8081A
Heptachlor	1.1 U	1.1	9.3	1	ug/kg		8/13/02	SW846 8081A
Heptachlor epoxide	2.1 U	2.1	9.3	1	ug/kg		8/13/02	SW846 8081A
Methoxychlor	18 U	18	93	1	ug/kg		8/13/02	SW846 8081A
Oxychlordane	2.6 U	2.6	19	1	ug/kg		8/13/02	SW846 8081A
Toxaphene	120 U	120	930	1	ug/kg		8/13/02	SW846 8081A
Trans-nonachlor	2.7 U	2.7	19	1	ug/kg		8/13/02	SW846 8081A

All soil results are reported on a dry weight basis unless otherwise noted.
Units of %Recov(ery) denote spike recovery. All recoveries pass in-house control limits unless otherwise noted.

- Analytical Report -

Project Name : THREE FORKS
Project Number : WO # 14
Lab Sample Number : 922623-013
Sample ID : TF-12
WI DNR LAB ID : 113172950

Submitter # : 1987.01
Submitter : ST JOHNS RIVER WATER MGMT DIS
Report Date : 8/14/02
Collection Date : 7/30/02
Matrix : SOIL

Organic Results

SPECIAL PESTICIDE LIST **Prep Method:** SW846 3550B **Prep Date:** 8/6/02

Analyte	Result	MDL	EQL	Dilution	Units	Code	Analysis Date	Analysis Method
4,4'-DDD	4.6 U	4.6	29	1	ug/kg		8/14/02	SW846 8081A
4,4'-DDE	4.4 U	4.4	29	1	ug/kg		8/14/02	SW846 8081A
4,4'-DDT	5.3 U	5.3	29	1	ug/kg		8/14/02	SW846 8081A
Aldrin	2.3 U	2.3	15	1	ug/kg		8/14/02	SW846 8081A
alpha-BHC	1.9 U	1.9	15	1	ug/kg		8/14/02	SW846 8081A
alpha-Chlordane	2.5 U	2.5	15	1	ug/kg		8/14/02	SW846 8081A
beta-BHC	7.2 U	7.2	15	1	ug/kg		8/14/02	SW846 8081A
Cis-nonachlor	3.8 U	3.8	29	1	ug/kg		8/14/02	SW846 8081A
delta-BHC	2.2 U	2.2	15	1	ug/kg		8/14/02	SW846 8081A
Dieldrin	4.1 U	4.1	29	1	ug/kg		8/14/02	SW846 8081A
Endosulfan I	1.9 U	1.9	15	1	ug/kg		8/14/02	SW846 8081A
Endosulfan II	4.4 U	4.4	29	1	ug/kg		8/14/02	SW846 8081A
Endosulfan sulfate	4.9 U	4.9	29	1	ug/kg		8/14/02	SW846 8081A
Endrin	3.7 U	3.7	29	1	ug/kg		8/14/02	SW846 8081A
Endrin aldehyde	5.4 U	5.4	29	1	ug/kg		8/14/02	SW846 8081A
Endrin ketone	5.2 U	5.2	29	1	ug/kg		8/14/02	SW846 8081A
gamma-BHC (Lindane)	2.8 U	2.8	15	1	ug/kg		8/14/02	SW846 8081A
gamma-Chlordane	2.1 U	2.1	15	1	ug/kg		8/14/02	SW846 8081A
Heptachlor	1.8 U	1.8	15	1	ug/kg		8/14/02	SW846 8081A
Heptachlor epoxide	3.3 U	3.3	15	1	ug/kg		8/14/02	SW846 8081A
Methoxychlor	28 U	28	150	1	ug/kg		8/14/02	SW846 8081A
Oxychlordane	4.2 U	4.2	29	1	ug/kg		8/14/02	SW846 8081A
Toxaphene	190 U	190	1500	1	ug/kg		8/14/02	SW846 8081A
Trans-nonachlor	4.2 U	4.2	29	1	ug/kg		8/14/02	SW846 8081A

Organic Results

SPECIAL PESTICIDE LIST **Prep Method:** SW846 3550B **Prep Date:** 8/6/02

Analyte	Result	MDL	EQL	Dilution	Units	Code	Analysis Date	Analysis Method
4,4'-DDD	5.1 U	5.1	32	1	ug/kg		8/14/02	SW846 8081A
4,4'-DDE	4.9 U	4.9	32	1	ug/kg		8/14/02	SW846 8081A
4,4'-DDT	5.8 U	5.8	32	1	ug/kg		8/14/02	SW846 8081A
Aldrin	2.5 U	2.5	16	1	ug/kg		8/14/02	SW846 8081A
alpha-BHC	2.1 U	2.1	16	1	ug/kg		8/14/02	SW846 8081A
alpha-Chlordane	2.8 U	2.8	16	1	ug/kg		8/14/02	SW846 8081A
beta-BHC	7.9 U	7.9	16	1	ug/kg		8/14/02	SW846 8081A
Cis-nonachlor	4.2 U	4.2	32	1	ug/kg		8/14/02	SW846 8081A
delta-BHC	2.5 U	2.5	16	1	ug/kg		8/14/02	SW846 8081A
Dieldrin	4.5 U	4.5	32	1	ug/kg		8/14/02	SW846 8081A
Endosulfan I	2.1 U	2.1	16	1	ug/kg		8/14/02	SW846 8081A
Endosulfan II	4.9 U	4.9	32	1	ug/kg		8/14/02	SW846 8081A
Endosulfan sulfate	5.4 U	5.4	32	1	ug/kg		8/14/02	SW846 8081A
Endrin	4.1 U	4.1	32	1	ug/kg		8/14/02	SW846 8081A
Endrin aldehyde	5.9 U	5.9	32	1	ug/kg		8/14/02	SW846 8081A
Endrin ketone	5.7 U	5.7	32	1	ug/kg		8/14/02	SW846 8081A
gamma-BHC (Lindane)	3.1 U	3.1	16	1	ug/kg		8/14/02	SW846 8081A
gamma-Chlordane	2.4 U	2.4	16	1	ug/kg		8/14/02	SW846 8081A
Heptachlor	1.9 U	1.9	16	1	ug/kg		8/14/02	SW846 8081A
Heptachlor epoxide	3.6 U	3.6	16	1	ug/kg		8/14/02	SW846 8081A
Methoxychlor	31 U	31	160	1	ug/kg		8/14/02	SW846 8081A
Oxychlordane	4.6 U	4.6	32	1	ug/kg		8/14/02	SW846 8081A
Toxaphene	210 U	210	1600	1	ug/kg		8/14/02	SW846 8081A
Trans-nonachlor	4.6 U	4.6	32	1	ug/kg		8/14/02	SW846 8081A

All soil results are reported on a dry weight basis unless otherwise noted.
Units of %Recov(ery) denote spike recovery. All recoveries pass in-house control limits unless otherwise noted.

- Analytical Report -

Project Name : THREE FORKS
Project Number : WO # 14
Lab Sample Number : 922623-015
Sample ID : TF-13
WI DNR LAB ID : 113172950

Submitter # : 1987.01
Submitter : ST JOHNS RIVER WATER MGMT DIS
Report Date : 8/14/02
Collection Date : 7/30/02
Matrix : SOIL

Organic Results

SPECIAL PESTICIDE LIST **Prep Method:** SW846 3550B **Prep Date:** 8/6/02

Analyte	Result	MDL	EQL	Dilution	Units	Code	Analysis Date	Analysis Method
4,4'-DDD	4.2 U	4.2	27	1	ug/kg		8/14/02	SW846 8081A
4,4'-DDE	4.1 U	4.1	27	1	ug/kg		8/14/02	SW846 8081A
4,4'-DDT	4.9 U	4.9	27	1	ug/kg		8/14/02	SW846 8081A
Aldrin	2.1 U	2.1	14	1	ug/kg		8/14/02	SW846 8081A
alpha-BHC	1.8 U	1.8	14	1	ug/kg		8/14/02	SW846 8081A
alpha-Chlordane	2.3 U	2.3	14	1	ug/kg		8/14/02	SW846 8081A
beta-BHC	6.6 U	6.6	14	1	ug/kg		8/14/02	SW846 8081A
Cis-nonachlor	3.5 U	3.5	27	1	ug/kg		8/14/02	SW846 8081A
delta-BHC	2.1 U	2.1	14	1	ug/kg		8/14/02	SW846 8081A
Dieldrin	3.8 U	3.8	27	1	ug/kg		8/14/02	SW846 8081A
Endosulfan I	1.8 U	1.8	14	1	ug/kg		8/14/02	SW846 8081A
Endosulfan II	4.1 U	4.1	27	1	ug/kg		8/14/02	SW846 8081A
Endosulfan sulfate	4.5 U	4.5	27	1	ug/kg		8/14/02	SW846 8081A
Endrin	3.4 U	3.4	27	1	ug/kg		8/14/02	SW846 8081A
Endrin aldehyde	4.9 U	4.9	27	1	ug/kg		8/14/02	SW846 8081A
Endrin ketone	4.8 U	4.8	27	1	ug/kg		8/14/02	SW846 8081A
gamma-BHC (Lindane)	2.6 U	2.6	14	1	ug/kg		8/14/02	SW846 8081A
gamma-Chlordane	2.0 U	2.0	14	1	ug/kg		8/14/02	SW846 8081A
Heptachlor	1.6 U	1.6	14	1	ug/kg		8/14/02	SW846 8081A
Heptachlor epoxide	3.0 U	3.0	14	1	ug/kg		8/14/02	SW846 8081A
Methoxychlor	26 U	26	140	1	ug/kg		8/14/02	SW846 8081A
Oxychlordane	3.8 U	3.8	27	1	ug/kg		8/14/02	SW846 8081A
Toxaphene	180 U	180	1400	1	ug/kg		8/14/02	SW846 8081A
Trans-nonachlor	3.9 U	3.9	27	1	ug/kg		8/14/02	SW846 8081A

Organic Results

SPECIAL PESTICIDE LIST **Prep Method:** SW846 3550B **Prep Date:** 8/6/02

Analyte	Result	MDL	EQL	Dilution	Units	Code	Analysis Date	Analysis Method
4,4'-DDD	1.4 U	1.4	8.8	1	ug/kg		8/14/02	SW846 8081A
4,4'-DDE	1.3 U	1.3	8.8	1	ug/kg		8/14/02	SW846 8081A
4,4'-DDT	1.6 U	1.6	8.8	1	ug/kg		8/14/02	SW846 8081A
Aldrin	0.69 U	0.69	4.4	1	ug/kg		8/14/02	SW846 8081A
alpha-BHC	0.58 U	0.58	4.4	1	ug/kg		8/14/02	SW846 8081A
alpha-Chlordane	0.76 U	0.76	4.4	1	ug/kg		8/14/02	SW846 8081A
beta-BHC	2.2 U	2.2	4.4	1	ug/kg		8/14/02	SW846 8081A
Cis-nonachlor	1.1 U	1.1	8.8	1	ug/kg		8/14/02	SW846 8081A
delta-BHC	0.67 U	0.67	4.4	1	ug/kg		8/14/02	SW846 8081A
Dieldrin	1.2 U	1.2	8.8	1	ug/kg		8/14/02	SW846 8081A
Endosulfan I	0.57 U	0.57	4.4	1	ug/kg		8/14/02	SW846 8081A
Endosulfan II	1.3 U	1.3	8.8	1	ug/kg		8/14/02	SW846 8081A
Endosulfan sulfate	1.5 U	1.5	8.8	1	ug/kg		8/14/02	SW846 8081A
Endrin	1.1 U	1.1	8.8	1	ug/kg		8/14/02	SW846 8081A
Endrin aldehyde	1.6 U	1.6	8.8	1	ug/kg		8/14/02	SW846 8081A
Endrin ketone	1.6 U	1.6	8.8	1	ug/kg		8/14/02	SW846 8081A
gamma-BHC (Lindane)	0.84 U	0.84	4.4	1	ug/kg		8/14/02	SW846 8081A
gamma-Chlordane	0.64 U	0.64	4.4	1	ug/kg		8/14/02	SW846 8081A
Heptachlor	0.53 U	0.53	4.4	1	ug/kg		8/14/02	SW846 8081A
Heptachlor epoxide	0.98 U	0.98	4.4	1	ug/kg		8/14/02	SW846 8081A
Methoxychlor	8.5 U	8.5	44	1	ug/kg		8/14/02	SW846 8081A
Oxychlordane	1.3 U	1.3	8.8	1	ug/kg		8/14/02	SW846 8081A
Toxaphene	58 U	58	440	1	ug/kg		8/14/02	SW846 8081A
Trans-nonachlor	1.3 U	1.3	8.8	1	ug/kg		8/14/02	SW846 8081A

All soil results are reported on a dry weight basis unless otherwise noted.
Units of %Recov(ery) denote spike recovery. All recoveries pass in-house control limits unless otherwise noted.

- Analytical Report -

Project Name : THREE FORKS
Project Number : WO # 14
Lab Sample Number : 922623-017
Sample ID : TF-15
WI DNR LAB ID : 113172950

Submitter # : 1987.01
Submitter : ST JOHNS RIVER WATER MGMT DIS
Report Date : 8/14/02
Collection Date : 7/30/02
Matrix : SOIL

Organic Results

SPECIAL PESTICIDE LIST **Prep Method:** SW846 3550B **Prep Date:** 8/6/02

Analyte	Result	MDL	EQL	Dilution	Units	Code	Analysis Date	Analysis Method
4,4'-DDD	1.4 U	1.4	9.0	1	ug/kg		8/14/02	SW846 8081A
4,4'-DDE	1.4 U	1.4	9.0	1	ug/kg		8/14/02	SW846 8081A
4,4'-DDT	1.6 U	1.6	9.0	1	ug/kg		8/14/02	SW846 8081A
Aldrin	0.70 U	0.70	4.5	1	ug/kg		8/14/02	SW846 8081A
alpha-BHC	0.60 U	0.60	4.5	1	ug/kg		8/14/02	SW846 8081A
alpha-Chlordane	0.78 U	0.78	4.5	1	ug/kg		8/14/02	SW846 8081A
beta-BHC	2.2 U	2.2	4.5	1	ug/kg		8/14/02	SW846 8081A
Cis-nonachlor	1.2 U	1.2	9.0	1	ug/kg		8/14/02	SW846 8081A
delta-BHC	0.69 U	0.69	4.5	1	ug/kg		8/14/02	SW846 8081A
Dieldrin	1.3 U	1.3	9.0	1	ug/kg		8/14/02	SW846 8081A
Endosulfan I	0.59 U	0.59	4.5	1	ug/kg		8/14/02	SW846 8081A
Endosulfan II	3.5 J	1.4	9.0	1	ug/kg	P	8/14/02	SW846 8081A
Endosulfan sulfate	1.5 U	1.5	9.0	1	ug/kg		8/14/02	SW846 8081A
Endrin	1.1 U	1.1	9.0	1	ug/kg		8/14/02	SW846 8081A
Endrin aldehyde	1.7 U	1.7	9.0	1	ug/kg		8/14/02	SW846 8081A
Endrin ketone	1.6 U	1.6	9.0	1	ug/kg		8/14/02	SW846 8081A
gamma-BHC (Lindane)	0.86 U	0.86	4.5	1	ug/kg		8/14/02	SW846 8081A
gamma-Chlordane	0.66 U	0.66	4.5	1	ug/kg		8/14/02	SW846 8081A
Heptachlor	0.54 U	0.54	4.5	1	ug/kg		8/14/02	SW846 8081A
Heptachlor epoxide	1.0 U	1.0	4.5	1	ug/kg		8/14/02	SW846 8081A
Methoxychlor	8.7 U	8.7	45	1	ug/kg		8/14/02	SW846 8081A
Oxychlordane	1.3 U	1.3	9.0	1	ug/kg		8/14/02	SW846 8081A
Toxaphene	59 U	59	450	1	ug/kg		8/14/02	SW846 8081A
Trans-nonachlor	1.3 U	1.3	9.0	1	ug/kg		8/14/02	SW846 8081A

SPECIAL PESTICIDE LIST **Prep Method:** SW846 3550B **Prep Date:** 8/6/02

Analyte	Result	MDL	EQL	Dilution	Units	Code	Analysis Date	Analysis Method
4,4'-DDD	4.2 U	4.2	27	1	ug/kg		8/14/02	SW846 8081A
4,4'-DDE	4.0 U	4.0	27	1	ug/kg		8/14/02	SW846 8081A
4,4'-DDT	4.8 U	4.8	27	1	ug/kg		8/14/02	SW846 8081A
Aldrin	2.1 U	2.1	13	1	ug/kg		8/14/02	SW846 8081A
alpha-BHC	1.8 U	1.8	13	1	ug/kg		8/14/02	SW846 8081A
alpha-Chlordane	2.3 U	2.3	13	1	ug/kg		8/14/02	SW846 8081A
beta-BHC	6.5 U	6.5	13	1	ug/kg		8/14/02	SW846 8081A
Cis-nonachlor	3.4 U	3.4	27	1	ug/kg		8/14/02	SW846 8081A
delta-BHC	2.0 U	2.0	13	1	ug/kg		8/14/02	SW846 8081A
Dieldrin	3.7 U	3.7	27	1	ug/kg		8/14/02	SW846 8081A
Endosulfan I	1.7 U	1.7	13	1	ug/kg		8/14/02	SW846 8081A
Endosulfan II	4.0 U	4.0	27	1	ug/kg		8/14/02	SW846 8081A
Endosulfan sulfate	4.4 U	4.4	27	1	ug/kg		8/14/02	SW846 8081A
Endrin	3.4 U	3.4	27	1	ug/kg		8/14/02	SW846 8081A
Endrin aldehyde	4.9 U	4.9	27	1	ug/kg		8/14/02	SW846 8081A
Endrin ketone	4.7 U	4.7	27	1	ug/kg		8/14/02	SW846 8081A
gamma-BHC (Lindane)	2.5 U	2.5	13	1	ug/kg		8/14/02	SW846 8081A
gamma-Chlordane	1.9 U	1.9	13	1	ug/kg		8/14/02	SW846 8081A
Heptachlor	1.6 U	1.6	13	1	ug/kg		8/14/02	SW846 8081A
Heptachlor epoxide	3.0 U	3.0	13	1	ug/kg		8/14/02	SW846 8081A
Methoxychlor	26 U	26	130	1	ug/kg		8/14/02	SW846 8081A
Oxychlordane	3.8 U	3.8	27	1	ug/kg		8/14/02	SW846 8081A
Toxaphene	170 U	170	1300	1	ug/kg		8/14/02	SW846 8081A
Trans-nonachlor	3.8 U	3.8	27	1	ug/kg		8/14/02	SW846 8081A

All soil results are reported on a dry weight basis unless otherwise noted.
Units of %Recov(ery) denote spike recovery. All recoveries pass in-house control limits unless otherwise noted.

- Analytical Report -

Project Name : THREE FORKS
Project Number : WO # 14
Lab Sample Number : 922623-019
Sample ID : TF-17
WI DNR LAB ID : 113172950

Submitter # : 1987.01
Submitter : ST JOHNS RIVER WATER MGMT DIS
Report Date : 8/14/02
Collection Date : 7/30/02
Matrix : SOIL

Organic Results

APPENDIX 9 LIST - HERBICIDES **Prep Method:** SW846 8151A **Prep Date:** 8/6/02

Analyte	Result	MDL	EQL	Dilution	Units	Code	Analysis Date	Analysis Method
2,4,5-T	20 U	20	94	1	ug/kg		8/13/02	SW846 8151A
2,4,5-TP (Silvex)	19 U	19	94	1	ug/kg		8/13/02	SW846 8151A
2,4-D	120 U	120	470	1	ug/kg		8/13/02	SW846 8151A
4,4'-DDD	4.4 U	4.4	28	1	ug/kg		8/14/02	SW846 8081A
4,4'-DDE	4.3 U	4.3	28	1	ug/kg		8/14/02	SW846 8081A
4,4'-DDT	5.1 J	5.1	28	1	ug/kg		8/14/02	SW846 8081A
Aldrin	2.2 U	2.2	14	1	ug/kg		8/14/02	SW846 8081A
alpha-BHC	1.9 U	1.9	14	1	ug/kg		8/14/02	SW846 8081A
alpha-Chlordane	2.4 U	2.4	14	1	ug/kg		8/14/02	SW846 8081A
beta-BHC	6.9 U	6.9	14	1	ug/kg		8/14/02	SW846 8081A
Cis-nonachlor	3.6 U	3.6	28	1	ug/kg		8/14/02	SW846 8081A
delta-BHC	2.1 U	2.1	14	1	ug/kg		8/14/02	SW846 8081A
Dieldrin	3.9 U	3.9	28	1	ug/kg		8/14/02	SW846 8081A
Endosulfan I	1.8 U	1.8	14	1	ug/kg		8/14/02	SW846 8081A
Endosulfan II	4.3 U	4.3	28	1	ug/kg		8/14/02	SW846 8081A
Endosulfan sulfate	4.7 U	4.7	28	1	ug/kg		8/14/02	SW846 8081A
Endrin	3.6 U	3.6	28	1	ug/kg		8/14/02	SW846 8081A
Endrin aldehyde	5.2 U	5.2	28	1	ug/kg		8/14/02	SW846 8081A
Endrin ketone	6.1 J	5.0	28	1	ug/kg	P	8/14/02	SW846 8081A
gamma-BHC (Lindane)	2.7 U	2.7	14	1	ug/kg		8/14/02	SW846 8081A
gamma-Chlordane	2.1 U	2.1	14	1	ug/kg		8/14/02	SW846 8081A
Heptachlor	1.7 U	1.7	14	1	ug/kg		8/14/02	SW846 8081A
Heptachlor epoxide	3.1 U	3.1	14	1	ug/kg		8/14/02	SW846 8081A
Methoxychlor	27 U	27	140	1	ug/kg		8/14/02	SW846 8081A
Oxychlordane	4.0 U	4.0	28	1	ug/kg		8/14/02	SW846 8081A
Toxaphene	180 U	180	1400	1	ug/kg		8/14/02	SW846 8081A

Organic Results

SPECIAL PESTICIDE LIST **Prep Method:** SW846 3550B **Prep Date:** 8/6/02

Analyte	Result	MDL	EQL	Dilution	Units	Code	Analysis Date	Analysis Method
4,4'-DDD	4.6 U	4.6	29	1	ug/kg		8/14/02	SW846 8081A
4,4'-DDE	4.4 U	4.4	29	1	ug/kg		8/14/02	SW846 8081A
4,4'-DDT	5.3 U	5.3	29	1	ug/kg		8/14/02	SW846 8081A
Aldrin	2.3 U	2.3	15	1	ug/kg		8/14/02	SW846 8081A
alpha-BHC	1.9 U	1.9	15	1	ug/kg		8/14/02	SW846 8081A
alpha-Chlordane	2.5 U	2.5	15	1	ug/kg		8/14/02	SW846 8081A
beta-BHC	7.2 U	7.2	15	1	ug/kg		8/14/02	SW846 8081A
Cis-nonachlor	3.8 U	3.8	29	1	ug/kg		8/14/02	SW846 8081A
delta-BHC	2.2 U	2.2	15	1	ug/kg		8/14/02	SW846 8081A
Dieldrin	4.1 U	4.1	29	1	ug/kg		8/14/02	SW846 8081A
Endosulfan I	1.9 U	1.9	15	1	ug/kg		8/14/02	SW846 8081A
Endosulfan II	4.4 U	4.4	29	1	ug/kg		8/14/02	SW846 8081A
Endosulfan sulfate	4.9 U	4.9	29	1	ug/kg		8/14/02	SW846 8081A
Endrin	3.7 U	3.7	29	1	ug/kg		8/14/02	SW846 8081A
Endrin aldehyde	5.4 U	5.4	29	1	ug/kg		8/14/02	SW846 8081A
Endrin ketone	5.2 U	5.2	29	1	ug/kg		8/14/02	SW846 8081A
gamma-BHC (Lindane)	2.8 U	2.8	15	1	ug/kg		8/14/02	SW846 8081A
gamma-Chlordane	2.1 U	2.1	15	1	ug/kg		8/14/02	SW846 8081A
Heptachlor	1.8 U	1.8	15	1	ug/kg		8/14/02	SW846 8081A
Heptachlor epoxide	3.3 U	3.3	15	1	ug/kg		8/14/02	SW846 8081A
Methoxychlor	28 U	28	150	1	ug/kg		8/14/02	SW846 8081A
Oxychlordane	4.2 U	4.2	29	1	ug/kg		8/14/02	SW846 8081A
Toxaphene	190 U	190	1500	1	ug/kg		8/14/02	SW846 8081A
Trans-nonachlor	4.2 U	4.2	29	1	ug/kg		8/14/02	SW846 8081A

All soil results are reported on a dry weight basis unless otherwise noted.
Units of %Recov(ery) denote spike recovery. All recoveries pass in-house control limits unless otherwise noted.

- Analytical Report -

Project Name : THREE FORKS
Project Number : WO # 14
Lab Sample Number : 922623-021
Sample ID : TF-19
WI DNR LAB ID : 113172950

Submitter # : 1987.01
Submitter : ST JOHNS RIVER WATER MGMT DIS
Report Date : 8/14/02
Collection Date : 7/30/02
Matrix : SOIL

Organic Results

APPENDIX 9 LIST - HERBICIDES **Prep Method:** SW846 8151A **Prep Date:** 8/6/02

Analyte	Result	MDL	EQL	Dilution	Units	Code	Analysis Date	Analysis Method
2,4,5-T	22 U	22	100	1	ug/kg		8/13/02	SW846 8151A
2,4,5-TP (Silvex)	20 U	20	100	1	ug/kg		8/13/02	SW846 8151A
2,4-D	130 U	130	510	1	ug/kg		8/13/02	SW846 8151A
4,4'-DDD	4.8 U	4.8	31	1	ug/kg		8/14/02	SW846 8081A
4,4'-DDE	4.6 U	4.6	31	1	ug/kg		8/14/02	SW846 8081A
4,4'-DDT	5.5 U	5.5	31	1	ug/kg		8/14/02	SW846 8081A
Aldrin	2.4 U	2.4	15	1	ug/kg		8/14/02	SW846 8081A
alpha-BHC	2.0 U	2.0	15	1	ug/kg		8/14/02	SW846 8081A
alpha-Chlordane	2.6 U	2.6	15	1	ug/kg		8/14/02	SW846 8081A
beta-BHC	7.5 U	7.5	15	1	ug/kg		8/14/02	SW846 8081A
Cis-nonachlor	4.0 U	4.0	31	1	ug/kg		8/14/02	SW846 8081A
delta-BHC	2.3 U	2.3	15	1	ug/kg		8/14/02	SW846 8081A
Dieldrin	4.3 U	4.3	31	1	ug/kg		8/14/02	SW846 8081A
Endosulfan I	2.0 U	2.0	15	1	ug/kg		8/14/02	SW846 8081A
Endosulfan II	4.6 U	4.6	31	1	ug/kg		8/14/02	SW846 8081A
Endosulfan sulfate	5.1 U	5.1	31	1	ug/kg		8/14/02	SW846 8081A
Endrin	3.9 U	3.9	31	1	ug/kg		8/14/02	SW846 8081A
Endrin aldehyde	5.6 U	5.6	31	1	ug/kg		8/14/02	SW846 8081A
Endrin ketone	5.5 U	5.5	31	1	ug/kg		8/14/02	SW846 8081A
gamma-BHC (Lindane)	2.9 U	2.9	15	1	ug/kg		8/14/02	SW846 8081A
gamma-Chlordane	2.2 U	2.2	15	1	ug/kg		8/14/02	SW846 8081A
Heptachlor	1.8 U	1.8	15	1	ug/kg		8/14/02	SW846 8081A
Heptachlor epoxide	3.4 U	3.4	15	1	ug/kg		8/14/02	SW846 8081A
Methoxychlor	30 U	30	150	1	ug/kg		8/14/02	SW846 8081A
Oxychlordane	4.4 U	4.4	31	1	ug/kg		8/14/02	SW846 8081A
Toxaphene	200 U	200	1500	1	ug/kg		8/14/02	SW846 8081A

Organic Results

SPECIAL PESTICIDE LIST **Prep Method:** SW846 3550B **Prep Date:** 8/7/02

Analyte	Result	MDL	EQL	Dilution	Units	Code	Analysis Date	Analysis Method
4,4'-DDD	2.9 U	2.9	18	1	ug/kg		8/14/02	SW846 8081A
4,4'-DDE	2.8 U	2.8	18	1	ug/kg		8/14/02	SW846 8081A
4,4'-DDT	3.3 U	3.3	18	1	ug/kg		8/14/02	SW846 8081A
Aldrin	1.4 U	1.4	9.1	1	ug/kg		8/14/02	SW846 8081A
alpha-BHC	1.2 U	1.2	9.1	1	ug/kg		8/14/02	SW846 8081A
alpha-Chlordane	1.6 U	1.6	9.1	1	ug/kg		8/14/02	SW846 8081A
beta-BHC	4.5 U	4.5	9.1	1	ug/kg		8/14/02	SW846 8081A
Cis-nonachlor	2.4 U	2.4	18	1	ug/kg		8/14/02	SW846 8081A
delta-BHC	1.4 U	1.4	9.1	1	ug/kg		8/14/02	SW846 8081A
Dieldrin	2.5 U	2.5	18	1	ug/kg		8/14/02	SW846 8081A
Endosulfan I	1.2 U	1.2	9.1	1	ug/kg		8/14/02	SW846 8081A
Endosulfan II	2.8 U	2.8	18	1	ug/kg		8/14/02	SW846 8081A
Endosulfan sulfate	3.0 U	3.0	18	1	ug/kg		8/14/02	SW846 8081A
Endrin	2.3 U	2.3	18	1	ug/kg		8/14/02	SW846 8081A
Endrin aldehyde	3.3 U	3.3	18	1	ug/kg		8/14/02	SW846 8081A
Endrin ketone	3.2 U	3.2	18	1	ug/kg		8/14/02	SW846 8081A
gamma-BHC (Lindane)	1.7 U	1.7	9.1	1	ug/kg		8/14/02	SW846 8081A
gamma-Chlordane	1.3 U	1.3	9.1	1	ug/kg		8/14/02	SW846 8081A
Heptachlor	1.1 U	1.1	9.1	1	ug/kg		8/14/02	SW846 8081A
Heptachlor epoxide	2.0 U	2.0	9.1	1	ug/kg		8/14/02	SW846 8081A
Methoxychlor	18 U	18	91	1	ug/kg		8/14/02	SW846 8081A
Oxychlordane	2.6 U	2.6	18	1	ug/kg		8/14/02	SW846 8081A
Toxaphene	120 U	120	910	1	ug/kg		8/14/02	SW846 8081A
Trans-nonachlor	2.6 U	2.6	18	1	ug/kg		8/14/02	SW846 8081A

All soil results are reported on a dry weight basis unless otherwise noted.
Units of %Recov(ery) denote spike recovery. All recoveries pass in-house control limits unless otherwise noted.

- Analytical Report -

Project Name : THREE FORKS
Project Number : WO # 14
Lab Sample Number : 922623-023
Sample ID : P_RM_0207290900
WI DNR LAB ID : 113172950

Submitter # : 1987.01
Submitter : ST JOHNS RIVER WATER MGMT DIS
Report Date : 8/14/02
Collection Date : 7/29/02
Matrix : WATER

Organic Results

SPECIAL PESTICIDE LIST

Prep Method: SW846 3510C **Prep Date:** 8/5/02

Analyte	Result	MDL	EQL	Dilution	Units	Code	Analysis Date	Analysis Method
4,4'-DDD	0.013 U	0.013	0.097	1	ug/L		8/13/02	SW846 8081A
4,4'-DDE	0.012 U	0.012	0.097	1	ug/L		8/13/02	SW846 8081A
4,4'-DDT	0.013 U	0.013	0.097	1	ug/L		8/13/02	SW846 8081A
Aldrin	0.0069 U	0.0069	0.049	1	ug/L		8/13/02	SW846 8081A
alpha-BHC	0.0050 U	0.0050	0.049	1	ug/L		8/13/02	SW846 8081A
alpha-Chlordane	0.0059 U	0.0059	0.049	1	ug/L		8/13/02	SW846 8081A
beta-BHC	0.0052 U	0.0052	0.049	1	ug/L		8/13/02	SW846 8081A
Cis-nonachlor	0.013 U	0.013	0.097	1	ug/L		8/13/02	SW846 8081A
delta-BHC	0.0054 U	0.0054	0.049	1	ug/L		8/13/02	SW846 8081A
Dieldrin	0.012 U	0.012	0.097	1	ug/L		8/13/02	SW846 8081A
Endosulfan I	0.0054 U	0.0054	0.049	1	ug/L		8/13/02	SW846 8081A
Endosulfan II	0.0091 U	0.0091	0.097	1	ug/L		8/13/02	SW846 8081A
Endosulfan sulfate	0.012 U	0.012	0.097	1	ug/L		8/13/02	SW846 8081A
Endrin	0.0087 U	0.0087	0.097	1	ug/L		8/13/02	SW846 8081A
Endrin aldehyde	0.010 U	0.010	0.097	1	ug/L		8/13/02	SW846 8081A
Endrin ketone	0.0092 U	0.0092	0.097	1	ug/L		8/13/02	SW846 8081A
gamma-BHC (Lindane)	0.0053 U	0.0053	0.049	1	ug/L		8/13/02	SW846 8081A
gamma-Chlordane	0.0052 U	0.0052	0.049	1	ug/L		8/13/02	SW846 8081A
Heptachlor	0.0064 U	0.0064	0.049	1	ug/L		8/13/02	SW846 8081A
Heptachlor epoxide	0.0058 U	0.0058	0.049	1	ug/L		8/13/02	SW846 8081A
Methoxychlor	0.065 U	0.065	0.49	1	ug/L		8/13/02	SW846 8081A
Oxychlordane	0.011 U	0.011	0.097	1	ug/L		8/13/02	SW846 8081A
Trans-nonachlor	0.011 U	0.011	0.097	1	ug/L		8/13/02	SW846 8081A

Inorganic Results

Analyte	Result	MDL	EQL	Dilution	Units	Code	Analysis Date	Prep Method	Analysis Method
Arsenic	1.9 U	1.9	6.7	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Barium	56	0.093	0.89	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Cadmium	0.45 J	0.19	1.3	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Chromium	4.7	0.39	1.3	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Copper	4.9	0.32	4.5	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Lead	4.2 J	1.0	4.5	1	mg/Kg	V	8/13/02	SW846 3051	SW846 6010B
Mercury	0.066 J	0.019	0.15	1	mg/Kg		8/13/02	SW846 7471A	SW846 7471A
Selenium	4.6 J	2.0	6.7	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Silver	0.28 U	0.28	2.1	1	mg/Kg		8/13/02	SW846 3050B	SW846 6010B
Solids, percent	21.6	—	—	1	%		8/3/02	EPA 160.3(M)	EPA 160.3(M)

All soil results are reported on a dry weight basis unless otherwise noted.
Units of %Recov(ery) denote spike recovery. All recoveries pass in-house control limits unless otherwise noted.

- Analytical Report -

Project Name : THREE FORKS
Project Number : WO # 14
Lab Sample Number : 922623-002
Sample ID : TF-02
WI DNR LAB ID : 113172950

Submitter # : 1987.01
Submitter : ST JOHNS RIVER WATER MGMT DIS
Report Date : 8/14/02
Collection Date : 7/29/02
Matrix : SOIL

Inorganic Results

Analyte	Result	MDL	EQL	Dilution	Units	Code	Analysis Date	Prep Method	Analysis Method
Arsenic	0.97 U	0.97	3.4	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Barium	17	0.048	0.45	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Cadmium	0.097 U	0.097	0.68	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Chromium	1.9	0.20	0.68	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Copper	1.1 J	0.16	2.3	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Lead	2.2 J	0.52	2.3	1	mg/Kg	V	8/13/02	SW846 3051	SW846 6010B
Mercury	0.021 J	0.0094	0.078	1	mg/Kg		8/13/02	SW846 7471A	SW846 7471A
Selenium	1.1 J	1.00	3.4	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Silver	0.16 U	0.16	1.2	1	mg/Kg		8/13/02	SW846 3050B	SW846 6010B
Solids, percent	42.5	---	---	1	%		8/2/02	EPA 160.3 (M	EPA 160.3 (M

Inorganic Results

Analyte	Result		MDL	EQL	Dilution	Units	Code	Analysis Date	Prep Method	Analysis Method
Arsenic	0.90	U	0.90	3.1	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Barium	18		0.044	0.42	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Cadmium	0.090	U	0.090	0.63	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Chromium	1.9		0.18	0.63	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Copper	1.1	J	0.15	2.1	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Lead	1.7	J	0.48	2.1	1	mg/Kg	V	8/13/02	SW846 3051	SW846 6010B
Mercury	0.038	J	0.0092	0.077	1	mg/Kg		8/13/02	SW846 7471A	SW846 7471A
Selenium	1.2	J	0.92	3.1	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Silver	0.15	U	0.15	1.1	1	mg/Kg		8/13/02	SW846 3050B	SW846 6010B
Solids, percent	43.4		—	—	1	%		8/2/02	EPA 160.3 (M	EPA 160.3 (M

All soil results are reported on a dry weight basis unless otherwise noted.
Units of %Recov(ery) denote spike recovery. All recoveries pass in-house control limits unless otherwise noted.

- Analytical Report -

Project Name : THREE FORKS
Project Number : WO # 14
Lab Sample Number : 922623-004
Sample ID : TF-03
WI DNR LAB ID : 113172950

Submitter # : 1987.01
Submitter : ST JOHNS RIVER WATER MGMT DIS
Report Date : 8/14/02
Collection Date : 7/29/02
Matrix : SOIL

Inorganic Results

Analyte	Result	MDL	EQL	Dilution	Units	Code	Analysis Date	Prep Method	Analysis Method
Arsenic	2.4 J	0.79	2.7	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Barium	39	0.038	0.37	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Cadmium	0.13 J	0.079	0.55	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Chromium	9.0	0.16	0.55	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Copper	6.6	0.13	1.8	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Lead	6.3	0.42	1.8	1	mg/Kg	V	8/13/02	SW846 3051	SW846 6010B
Mercury	0.061 J	0.0085	0.071	1	mg/Kg		8/13/02	SW846 7471A	SW846 7471A
Selenium	1.1 J	0.81	2.7	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Silver	0.13 U	0.13	0.97	1	mg/Kg		8/13/02	SW846 3050B	SW846 6010B
Solids, percent	47.1	—	—	1	%		8/2/02	EPA 160.3 (M	EPA 160.3 (M

Inorganic Results

Analyte	Result	MDL	EQL	Dilution	Units	Code	Analysis Date	Prep Method	Analysis Method
Arsenic	0.48 U	0.48	1.7	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Barium	10	0.023	0.22	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Cadmium	0.048 U	0.048	0.33	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Chromium	4.1	0.098	0.33	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Copper	0.33 J	0.079	1.1	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Lead	2.5	0.26	1.1	1	mg/Kg	V	8/13/02	SW846 3051	SW846 6010B
Mercury	0.012 J	0.0049	0.041	1	mg/Kg		8/13/02	SW846 7471A	SW846 7471A
Selenium	0.49 U	0.49	1.7	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Silver	0.077 U	0.077	0.57	1	mg/Kg		8/13/02	SW846 3050B	SW846 6010B
Solids, percent	81.6	—	—	1	%		8/2/02	EPA 160.3 (M	EPA 160.3 (M

All soil results are reported on a dry weight basis unless otherwise noted.
Units of %Recov(ery) denote spike recovery. All recoveries pass in-house control limits unless otherwise noted.

- Analytical Report -

Project Name : THREE FORKS
Project Number : WO # 14
Lab Sample Number : 922623-006
Sample ID : TF-05
WI DNR LAB ID : 113172950

Submitter # : 1987.01
Submitter : ST JOHNS RIVER WATER MGMT DIS
Report Date : 8/14/02
Collection Date : 7/29/02
Matrix : SOIL

Inorganic Results

Analyte	Result	MDL	EQL	Dilution	Units	Code	Analysis Date	Prep Method	Analysis Method
Arsenic	0.49 U	0.49	1.7	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Barium	9.5	0.024	0.23	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Cadmium	0.062 J	0.049	0.34	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Chromium	2.7	0.10	0.34	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Copper	1.1	0.082	1.1	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Lead	2.3	0.26	1.1	1	mg/Kg	V	8/13/02	SW846 3051	SW846 6010B
Mercury	0.0064 J	0.0049	0.041	1	mg/Kg		8/13/02	SW846 7471A	SW846 7471A
Selenium	0.51 U	0.51	1.7	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Silver	0.082 U	0.082	0.60	1	mg/Kg		8/13/02	SW846 3050B	SW846 6010B
Solids, percent	82.1	—	—	1	%		8/2/02	EPA 160.3 (M	EPA 160.3 (M

Inorganic Results

Analyte	Result		MDL	EQL	Dilution	Units	Code	Analysis Date	Prep Method	Analysis Method
Arsenic	0.50	U	0.50	1.8	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Barium	11		0.025	0.23	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Cadmium	0.067	J	0.050	0.35	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Chromium	2.7		0.10	0.35	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Copper	0.45	J	0.083	1.2	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Lead	2.3		0.27	1.2	1	mg/Kg	V	8/13/02	SW846 3051	SW846 6010B
Mercury	0.015	J	0.0052	0.044	1	mg/Kg		8/13/02	SW846 7471A	SW846 7471A
Selenium	0.54	J	0.51	1.8	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Silver	0.085	U	0.085	0.62	1	mg/Kg		8/13/02	SW846 3050B	SW846 6010B
Solids, percent	76.4		—	—	1	%		8/2/02	EPA 160.3 (M	EPA 160.3 (M

All soil results are reported on a dry weight basis unless otherwise noted.
Units of %Recov(ery) denote spike recovery. All recoveries pass in-house control limits unless otherwise noted.

- Analytical Report -

Project Name : THREE FORKS
Project Number : WO # 14
Lab Sample Number : 922623-008
Sample ID : TF-07
WI DNR LAB ID : 113172950

Submitter # : 1987.01
Submitter : ST JOHNS RIVER WATER MGMT DIS
Report Date : 8/14/02
Collection Date : 7/29/02
Matrix : SOIL

Inorganic Results

Analyte	Result	MDL	EQL	Dilution	Units	Code	Analysis Date	Prep Method	Analysis Method
Arsenic	0.87 U	0.87	3.0	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Barium	13	0.042	0.40	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Cadmium	0.087 U	0.087	0.61	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Chromium	2.1	0.18	0.61	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Copper	0.74 J	0.14	2.0	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Lead	2.3	0.46	2.0	1	mg/Kg	V	8/13/02	SW846 3051	SW846 6010B
Mercury	0.024 J	0.0079	0.066	1	mg/Kg		8/13/02	SW846 7471A	SW846 7471A
Selenium	1.2 J	0.89	3.0	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Silver	0.11 U	0.11	0.83	1	mg/Kg		8/13/02	SW846 3050B	SW846 6010B
Solids, percent	50.5	—	—	1	%		8/2/02	EPA 160.3 (M	EPA 160.3 (M

Inorganic Results

Analyte	Result		MDL	EQL	Dilution	Units	Code	Analysis Date	Prep Method	Analysis Method
Arsenic	0.51	U	0.51	1.8	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Barium	58		0.025	0.23	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Cadmium	0.059	J	0.051	0.35	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Chromium	10		0.10	0.35	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Copper	2.2		0.083	1.2	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Lead	8.5		0.27	1.2	1	mg/Kg	V	8/13/02	SW846 3051	SW846 6010B
Mercury	0.035	J	0.0052	0.043	1	mg/Kg		8/13/02	SW846 7471A	SW846 7471A
Selenium	0.52	U	0.52	1.8	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Silver	0.088	U	0.088	0.65	1	mg/Kg		8/13/02	SW846 3050B	SW846 6010B
Solids, percent	77.4		---	---	1	%		8/2/02	EPA 160.3 (M	EPA 160.3 (M

All soil results are reported on a dry weight basis unless otherwise noted.
Units of %Recov(ery) denote spike recovery. All recoveries pass in-house control limits unless otherwise noted.

- Analytical Report -

Project Name : THREE FORKS
Project Number : WO # 14
Lab Sample Number : 922623-010
Sample ID : TF-09
WI DNR LAB ID : 113172950

Submitter # : 1987.01
Submitter : ST JOHNS RIVER WATER MGMT DIS
Report Date : 8/14/02
Collection Date : 7/30/02
Matrix : SOIL

Inorganic Results

Analyte	Result	MDL	EQL	Dilution	Units	Code	Analysis Date	Prep Method	Analysis Method
Arsenic	2.5 U	2.5	8.8	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Barium	29	0.12	1.2	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Cadmium	0.25 U	0.25	1.8	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Chromium	2.7	0.52	1.8	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Copper	2.7 J	0.42	5.9	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Lead	4.5 J	1.4	5.9	1	mg/Kg	V	8/13/02	SW846 3051	SW846 6010B
Mercury	0.062 J	0.025	0.21	1	mg/Kg		8/13/02	SW846 7471A	SW846 7471A
Selenium	2.6 U	2.6	8.8	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Silver	0.37 U	0.37	2.7	1	mg/Kg		8/13/02	SW846 3050B	SW846 6010B
Solids, percent	15.7	—	—	1	%		8/2/02	EPA 160.3 (M	EPA 160.3 (M

Inorganic Results

Analyte	Result	MDL	EQL	Dilution	Units	Code	Analysis Date	Prep Method	Analysis Method
Arsenic	1.7 U	1.7	6.1	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Barium	24	0.085	0.81	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Cadmium	0.17 U	0.17	1.2	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Chromium	2.0	0.36	1.2	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Copper	17	0.29	4.1	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Lead	6.0	0.93	4.1	1	mg/Kg	V	8/13/02	SW846 3051	SW846 6010B
Mercury	0.11 J	0.018	0.15	1	mg/Kg		8/13/02	SW846 7471A	SW846 7471A
Selenium	1.8 U	1.8	6.1	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Silver	0.29 U	0.29	2.2	1	mg/Kg		8/13/02	SW846 3050B	SW846 6010B
Solids, percent	22.4	—	—	1	%		8/2/02	EPA 160.3 (M	EPA 160.3 (M

All soil results are reported on a dry weight basis unless otherwise noted.
Units of %Recov(ery) denote spike recovery. All recoveries pass in-house control limits unless otherwise noted.

- Analytical Report -

Project Name : THREE FORKS
Project Number : WO # 14
Lab Sample Number : 922623-012
Sample ID : TF-11
WI DNR LAB ID : 113172950

Submitter # : 1987.01
Submitter : ST JOHNS RIVER WATER MGMT DIS
Report Date : 8/14/02
Collection Date : 7/30/02
Matrix : SOIL

Inorganic Results

Analyte	Result	MDL	EQL	Dilution	Units	Code	Analysis Date	Prep Method	Analysis Method
Arsenic	1.7 J	1.5	5.2	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Barium	42	0.073	0.70	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Cadmium	0.16 J	0.15	1.0	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Chromium	6.9	0.31	1.0	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Copper	19	0.25	3.5	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Lead	8.3	0.80	3.5	1	mg/Kg	V	8/13/02	SW846 3051	SW846 6010B
Mercury	0.071 J	0.015	0.12	1	mg/Kg		8/13/02	SW846 7471A	SW846 7471A
Selenium	1.5 U	1.5	5.2	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Silver	0.24 U	0.24	1.8	1	mg/Kg		8/13/02	SW846 3050B	SW846 6010B
Solids, percent	27.1	—	—	1	%		8/2/02	EPA 160.3 (M	EPA 160.3 (M

Inorganic Results

Analyte	Result	MDL	EQL	Dilution	Units	Code	Analysis Date	Prep Method	Analysis Method
Arsenic	2.6 U	2.6	9.0	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Barium	42	0.13	1.2	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Cadmium	0.28 J	0.26	1.8	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Chromium	3.1	0.53	1.8	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Copper	2.7 J	0.43	6.0	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Lead	2.8 J	1.4	6.0	1	mg/Kg	V	8/13/02	SW846 3051	SW846 6010B
Mercury	0.093 J	0.024	0.20	1	mg/Kg		8/13/02	SW846 7471A	SW846 7471A
Selenium	3.0 J	2.6	9.0	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Silver	0.38 U	0.38	2.8	1	mg/Kg		8/13/02	SW846 3050B	SW846 6010B
Solids, percent	17.0	—	—	1	%		8/2/02	EPA 160.3 (M	EPA 160.3 (M

All soil results are reported on a dry weight basis unless otherwise noted.
Units of %Recov(ery) denote spike recovery. All recoveries pass in-house control limits unless otherwise noted.

- Analytical Report -

Project Name : THREE FORKS
Project Number : WO # 14
Lab Sample Number : 922623-014
Sample ID : TF-22
WI DNR LAB ID : 113172950

Submitter # : 1987.01
Submitter : ST JOHNS RIVER WATER MGMT DIS
Report Date : 8/14/02
Collection Date : 7/30/02
Matrix : SOIL

Inorganic Results

Analyte	Result	MDL	EQL	Dilution	Units	Code	Analysis Date	Prep Method	Analysis Method
Arsenic	2.4 U	2.4	8.5	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Barium	47	0.12	1.1	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Cadmium	0.24 U	0.24	1.7	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Chromium	3.3	0.50	1.7	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Copper	3.2 J	0.40	5.7	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Lead	2.3 J	1.3	5.7	1	mg/Kg	V	8/13/02	SW846 3051	SW846 6010B
Mercury	0.11 J	0.026	0.22	1	mg/Kg		8/13/02	SW846 7471A	SW846 7471A
Selenium	2.7 J	2.5	8.5	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Silver	0.40 U	0.40	2.9	1	mg/Kg		8/13/02	SW846 3050B	SW846 6010B
Solids, percent	15.5	—	—	1	%		8/2/02	EPA 160.3 (M	EPA 160.3 (M

Inorganic Results

Analyte	Result		MDL	EQL	Dilution	Units	Code	Analysis Date	Prep Method	Analysis Method
Arsenic	2.3	U	2.3	7.9	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Barium	27		0.11	1.1	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Cadmium	0.32	J	0.23	1.6	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Chromium	2.7		0.47	1.6	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Copper	19		0.38	5.3	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Lead	4.8	J	1.2	5.3	1	mg/Kg	V	8/13/02	SW846 3051	SW846 6010B
Mercury	0.062	J	0.022	0.18	1	mg/Kg		8/13/02	SW846 7471A	SW846 7471A
Selenium	2.9	J	2.3	7.9	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Silver	0.35	U	0.35	2.6	1	mg/Kg		8/13/02	SW846 3050B	SW846 6010B
Solids, percent	18.5		—	—	1	%		8/2/02	EPA 160.3 (M	EPA 160.3 (M

All soil results are reported on a dry weight basis unless otherwise noted.
Units of %Recov(ery) denote spike recovery. All recoveries pass in-house control limits unless otherwise noted.

- Analytical Report -

Project Name : THREE FORKS
Project Number : WO # 14
Lab Sample Number : 922623-016
Sample ID : TF-14
WI DNR LAB ID : 113172950

Submitter # : 1987.01
Submitter : ST JOHNS RIVER WATER MGMT DIS
Report Date : 8/14/02
Collection Date : 7/30/02
Matrix : SOIL

Inorganic Results

Analyte	Result		MDL	EQL	Dilution	Units	Code	Analysis Date	Prep Method	Analysis Method
Arsenic	3.2		0.73	2.5	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Barium	58		0.036	0.34	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Cadmium	0.098	J	0.073	0.51	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Chromium	32		0.15	0.51	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Copper	7.8		0.12	1.7	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Lead	11		0.39	1.7	1	mg/Kg	V	8/13/02	SW846 3051	SW846 6010B
Mercury	0.012	J	0.0071	0.059	1	mg/Kg		8/13/02	SW846 7471A	SW846 7471A
Selenium	0.75	U	0.75	2.5	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Silver	0.11	U	0.11	0.83	1	mg/Kg		8/13/02	SW846 3050B	SW846 6010B
Solids, percent	56.6		—	—	1	%		8/2/02	EPA 160.3 (M	EPA 160.3 (M

Inorganic Results

Analyte	Result	MDL	EQL	Dilution	Units	Code	Analysis Date	Prep Method	Analysis Method
Arsenic	0.65 U	0.65	2.3	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Barium	16	0.032	0.30	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Cadmium	0.065 U	0.065	0.45	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Chromium	4.0	0.13	0.45	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Copper	4.0	0.11	1.5	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Lead	2.0	0.35	1.5	1	mg/Kg	V	8/13/02	SW846 3051	SW846 6010B
Mercury	0.025 J	0.0072	0.060	1	mg/Kg		8/13/02	SW846 7471A	SW846 7471A
Selenium	1.0 J	0.66	2.3	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Silver	0.12 U	0.12	0.90	1	mg/Kg		8/13/02	SW846 3050B	SW846 6010B
Solids, percent	55.4	—	—	1	%		8/2/02	EPA 160.3 (M	EPA 160.3 (M

All soil results are reported on a dry weight basis unless otherwise noted.
Units of %Recov(ery) denote spike recovery. All recoveries pass in-house control limits unless otherwise noted.

- Analytical Report -

Project Name : THREE FORKS
Project Number : WO # 14
Lab Sample Number : 922623-018
Sample ID : TF-16
WI DNR LAB ID : 113172950

Submitter # : 1987.01
Submitter : ST JOHNS RIVER WATER MGMT DIS
Report Date : 8/14/02
Collection Date : 7/30/02
Matrix : SOIL

Inorganic Results

Analyte	Result	MDL	EQL	Dilution	Units	Code	Analysis Date	Prep Method	Analysis Method
Arsenic	2.0 U	2.0	7.1	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Barium	53	0.100	0.95	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Cadmium	0.32 J	0.20	1.4	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Chromium	3.0	0.42	1.4	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Copper	23	0.34	4.7	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Lead	5.2	1.1	4.7	1	mg/Kg	V	8/13/02	SW846 3051	SW846 6010B
Mercury	0.071 J	0.021	0.18	1	mg/Kg		8/13/02	SW846 7471A	SW846 7471A
Selenium	2.1 U	2.1	7.1	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Silver	0.32 U	0.32	2.4	1	mg/Kg		8/13/02	SW846 3050B	SW846 6010B
Solids, percent	18.8	---	---	1	%		8/2/02	EPA 160.3 (M	EPA 160.3 (M

Inorganic Results

Analyte	Result	MDL	EQL	Dilution	Units	Code	Analysis Date	Prep Method	Analysis Method
Arsenic	2.1 U	2.1	7.3	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Barium	28	0.10	0.97	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Cadmium	0.21 U	0.21	1.5	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Chromium	2.4	0.43	1.5	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Copper	37	0.35	4.9	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Lead	7.0	1.1	4.9	1	mg/Kg	V	8/13/02	SW846 3051	SW846 6010B
Mercury	0.12 J	0.023	0.19	1	mg/Kg		8/13/02	SW846 7471A	SW846 7471A
Selenium	2.2 J	2.1	7.3	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Silver	0.34 U	0.34	2.5	1	mg/Kg		8/13/02	SW846 3050B	SW846 6010B
Solids, percent	17.7	—	—	1	%		8/2/02	EPA 160.3 (M	EPA 160.3 (M

All soil results are reported on a dry weight basis unless otherwise noted.
Units of %Recov(ery) denote spike recovery. All recoveries pass in-house control limits unless otherwise noted.

- Analytical Report -

Project Name : THREE FORKS
Project Number : WO # 14
Lab Sample Number : 922623-020
Sample ID : TF-18
WI DNR LAB ID : 113172950

Submitter # : 1987.01
Submitter : ST JOHNS RIVER WATER MGMT DIS
Report Date : 8/14/02
Collection Date : 7/30/02
Matrix : SOIL

Inorganic Results

Analyte	Result	MDL	EQL	Dilution	Units	Code	Analysis Date	Prep Method	Analysis Method
Arsenic	2.3 U	2.3	8.2	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Barium	36	0.11	1.1	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Cadmium	0.25 J	0.23	1.6	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Chromium	3.1	0.48	1.6	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Copper	32	0.39	5.4	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Lead	9.8	1.3	5.4	1	mg/Kg	V	8/13/02	SW846 3051	SW846 6010B
Mercury	0.10 J	0.024	0.20	1	mg/Kg		8/13/02	SW846 7471A	SW846 7471A
Selenium	3.0 J	2.4	8.2	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Silver	0.36 U	0.36	2.7	1	mg/Kg		8/13/02	SW846 3050B	SW846 6010B
Solids, percent	17.0	—	—	1	%		8/2/02	EPA 160.3 (M	EPA 160.3 (M

Inorganic Results

Analyte	Result	MDL	EQL	Dilution	Units	Code	Analysis Date	Prep Method	Analysis Method
Arsenic	2.3 U	2.3	7.9	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Barium	36	0.11	1.1	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Cadmium	0.26 J	0.23	1.6	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Chromium	4.0	0.47	1.6	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Copper	5.7	0.38	5.3	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Lead	3.0 J	1.2	5.3	1	mg/Kg	V	8/13/02	SW846 3051	SW846 6010B
Mercury	0.045 J	0.025	0.20	1	mg/Kg		8/13/02	SW846 7471A	SW846 7471A
Selenium	2.9 J	2.3	7.9	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Silver	0.38 U	0.38	2.8	1	mg/Kg		8/13/02	SW846 3050B	SW846 6010B
Solids, percent	16.3	---	---	1	%		8/2/02	EPA 160.3 (M	EPA 160.3 (M

All soil results are reported on a dry weight basis unless otherwise noted.
Units of %Recov(ery) denote spike recovery. All recoveries pass in-house control limits unless otherwise noted.

- Analytical Report -

Project Name : THREE FORKS
Project Number : WO # 14
Lab Sample Number : 922623-022
Sample ID : TF-20
WI DNR LAB ID : 113172950

Submitter # : 1987.01
Submitter : ST JOHNS RIVER WATER MGMT DIS
Report Date : 8/14/02
Collection Date : 7/30/02
Matrix : SOIL

Inorganic Results

Analyte	Result	MDL	EQL	Dilution	Units	Code	Analysis Date	Prep Method	Analysis Method
Arsenic	1.8 J	1.4	4.8	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Barium	34	0.067	0.64	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Cadmium	0.14 U	0.14	0.96	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Chromium	4.0	0.28	0.96	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Copper	3.9	0.23	3.2	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Lead	3.4	0.74	3.2	1	mg/Kg	V	8/13/02	SW846 3051	SW846 6010B
Mercury	0.073 J	0.015	0.12	1	mg/Kg		8/13/02	SW846 7471A	SW846 7471A
Selenium	2.3 J	1.4	4.8	1	mg/Kg		8/13/02	SW846 3051	SW846 6010B
Silver	0.22 U	0.22	1.6	1	mg/Kg		8/13/02	SW846 3050B	SW846 6010B
Solids, percent	27.4	—	—	1	%		8/2/02	EPA 160.3 (M	EPA 160.3 (M

Total Coliforms: 20 - 80 colonies
Fecal Coliforms: 20 - 80 colonies

F When reporting species: F indicates female sex.

H Value based on field kit determination; results may not be accurate. This code shall be used if a field screening test (i.e. field gas chromatograph data, immunoassay, vendor-supplied field kit, etc.) was used to generate the value and the field kit or method has not been recognized by the Department as equivalent to laboratory methods.

J Estimated value; value not accurate. This code shall be used in the following instances:
1. surrogate recovery limits have been exceeded;
2. no known quality control criteria exists for the component;
3. the reported value failed to meet the established quality control criteria for either precision or accuracy;
4. the sample matrix interfered with the ability to make any accurate determination; or
5. the data is questionable because of improper laboratory or field protocols (e.g. composite sample was collected instead of a grab sample).

Note: 1. A "J" value shall be accompanied by justification for its use.
2. A "J" value shall not be used if another code applies (ex. K, L, M, T, V, Y, PQL)

JN The concentration calculated for this compound met all QC identification criteria as defined in the method. However, due to poor pattern matching or suspected co-elution with other unidentified peaks, this value should be considered estimated and the reviewer should use professional judgment to determine the applicable usage of this result.

K Off-scale low. Actual value is known to be less than the value given. This code shall be used if:
1. The value is less that the lowest calibration standard AND the calibration curve is known to be non-linear; or
2. The value is known to be less than the reported value based on sample size, dilution or some other variable.
This code SHALL NOT be used to report values that are less than the laboratory practical quantitation limit or laboratory method detection limit.

L Off-scale high. Actual value is known to be greater than value given. To be used when the concentration of the analyte is above the acceptable level for quantitation (exceeds the linear range or highest calibration standard) AND the calibration curve is known to exhibit a negative deflection.

M When reporting chemical analyses: presence of material is verified but not quantified. The reported value shall be the laboratory practical quantitation limit. This code shall be used if the level is too low to permit accurate quantification, but the estimated concentration is GREATER THAN the laboratory method detection limit. If the value is less the method detection limit, use "T", below.
When reporting Oxygen Reduction Potential or Temperature: indicates a negative value
When reporting Species: indicates male sex.

N Presumptive evidence of presence of material. This qualifier shall be used if:
1. the component has been tentatively identified based on mass spectral library search;
2. if the presence of the analyte is indicated but there is evidence of possible interferences; or
3. there is an indication that the analyte is present, but quality control requirements for confirmation were not met (i.e. presence of analyte was not confirmed by alternate procedures).

O Sampled, but analysis lost or not performed. Note: if reporting data to STORET, a numerical value must be entered. Such values are not meaningful and shall not be used.

P The relative percent difference between the two columns for detected concentrations was greater than 40%.

Q Sample held beyond the accepted holding time. This code shall be used if the value is derived from a sample that was prepared and/or analyzed AFTER the approved holding time restrictions for sample preparation and analysis.

T Value reported is less than the laboratory method detection limit. The value is reported for informational purposes only and SHALL NOT be used in statistical analysis.

U Indicates that the compound was analyzed for but not detected. This shall be used to indicate that the specified component WAS NOT detected. The value associated with the qualifier shall be the laboratory method detection limit. Unless requested by the client, less than the method detection limit values shall not be reported (see "T" above).

V Indicates that the analyte was detected in both the sample and the associated method blank. Note: the value in the blank shall not be subtracted from associated samples.

Y The laboratory analysis was from an unpreserved or improperly preserved sample. The data may not be accurate.

Z Too many colonies were present (TNTC), the numeric value represents the filtration volume.

PQL The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.

REJ Data is rejected and should not be used. Some or all of the quality control data for the analyte were outside criteria, and the presence or absence of the analyte cannot be determined from the data.

NAI Not analyzed due to interference.

If more than one code applies, and the data is to be entered into STORET, only one code shall be reported. The code shall be selected based on the following hierarchy:

REJ
NAI, O
Y
V
H
J
B, K, L, M, PQL, T, Z
A

The following codes deal with certain aspects of field activities. The codes shall be used IF the laboratory has knowledge of the specific sampling event. The codes shall be added by the organization collecting the sample, if they apply:

D Measurement was made in the field (i.e. in situ). This applies to any value (ex. pH, specific conductance, etc.) that was obtained under field conditions using approved analytical methods. Note: when data is to be entered into STORET, and the parameter code specifies a field measurement (e.g. "Field pH"), this code is not required.

E Indicates that extra samples were taken at composite stations.

R Significant rain in the past 48 hours. This code shall be used when the rainfall might contribute to a lower than normal value.

HIS Data deviates from historically established concentration ranges.

Semivolatile Organic Results

8141 PESTICIDE LIST **Prep Method:** SW846 3550 **Extraction Date:**

Analyte	Result	Dilution	MDL	EQL	Units	Code	Analysis Date	Analysis Method
Acetochlor	18 U	1	18	18	ug/kg	SUB1	8/14/02	SW846 8141
Alachlor	17 U	1	17	17	ug/kg	SUB1	8/14/02	SW846 8141
Ametryn	8.0 U	1	8.0	8.0	ug/kg	SUB1	8/14/02	SW846 8141
Atrazine	16 U	1	16	16	ug/kg	SUB1	8/14/02	SW846 8141
Benfluralin	70 U	1	70	70	ug/kg	SUB1	8/14/02	SW846 8141
Bromacil	27 U	1	27	27	ug/kg	SUB1	8/14/02	SW846 8141
Butylate	9.0 U	1	9.0	9.0	ug/kg	SUB1	8/14/02	SW846 8141
Chlorothanlonil	8.5 U	1	8.5	8.5	ug/kg	SUB1	8/14/02	SW846 8141
Chlorpyrifos	3.7 U	1	3.7	3.7	ug/kg	SUB1	8/14/02	SW846 8141
Command	24 U	1	24	24	ug/kg	SUB1	8/14/02	SW846 8141
Cyanazine	3.0 U	1	3.0	3.0	ug/kg	SUB1	8/14/02	SW846 8141
De-isopropyl Atrazine	9.5 U	1	9.5	9.5	ug/kg	SUB1	8/14/02	SW846 8141
Desethyl atrazine	7.0 U	1	7.0	7.0	ug/kg	SUB1	8/14/02	SW846 8141
Diazinon	5.0 U	1	5.0	5.0	ug/kg	SUB1	8/14/02	SW846 8141
Dichlorvos	26 U	1	26	26	ug/kg	SUB1	8/14/02	SW846 8141
Dimethenamid	22 U	1	22	22	ug/kg	SUB1	8/14/02	SW846 8141
Dimethoate	8.5 U	1	8.5	8.5	ug/kg	SUB1	8/14/02	SW846 8141
Disulfoton	5.5 U	1	5.5	5.5	ug/kg	SUB1	8/14/02	SW846 8141
EPTC	9.5 U	1	9.5	9.5	ug/kg	SUB1	8/14/02	SW846 8141
Ethafluralin	75 U	1	75	75	ug/kg	SUB1	8/14/02	SW846 8141
Ethion	2.3 U	1	2.3	2.3	ug/kg	SUB1	8/14/02	SW846 8141
Ethoprop	4.0 U	1	4.0	4.0	ug/kg	SUB1	8/14/02	SW846 8141
Fonofos	7.0 U	1	7.0	7.0	ug/kg	SUB1	8/14/02	SW846 8141
Hexanzinone	28 U	1	28	28	ug/kg	SUB1	8/14/02	SW846 8141
Isofenofos	3.6 U	1	3.6	3.6	ug/kg	SUB1	8/14/02	SW846 8141
Malathion	5.5 U	1	5.5	5.5	ug/kg	SUB1	8/14/02	SW846 8141
Metolachlor	16 U	1	16	16	ug/kg	SUB1	8/14/02	SW846 8141
Metribuzin	10 U	1	10	10	ug/kg	SUB1	8/14/02	SW846 8141
Napropamide	12 U	1	12	12	ug/kg	SUB1	8/14/02	SW846 8141
Parathion	2.2 U	1	2.2	2.2	ug/kg	SUB1	8/14/02	SW846 8141
Parathion, Methyl	2.6 U	1	2.6	2.6	ug/kg	SUB1	8/14/02	SW846 8141

All soil results are reported on a dry weight basis unless otherwise noted.
Units of %Recov(ery) denote spike recovery. All recoveries pass in-house control limits unless otherwise noted.

- Analytical Report -

Project Name THREE FORKS
Project Number WO # 14
Lab Sample Number 922623-004
Field ID : **TF-03**

WI DNR LAB ID : 113172950

Submitter # : 1987.01
Submitter : ST JOHNS RIVER WATER MGMT DIS
Report Date : 8/22/02
Collection Date : 7/29/02
Collection Date : 1:00 PM
Matrix Type : SOIL

Pendimethalin	10 U	1	10	10	ug/kg	SUB1	8/14/02	SW846 8141
Phorate	12 U	1	12	12	ug/kg	SUB1	8/14/02	SW846 8141
Phosmet	9.5 U	1	9.5	9.5	ug/kg	SUB1	8/14/02	SW846 8141
Profenfos	32 U	1	32	32	ug/kg	SUB1	8/14/02	SW846 8141
Prometon	12 U	1	12	12	ug/kg	SUB1	8/14/02	SW846 8141
Prometryn	4.0 U	1	4.0	4.0	ug/kg	SUB1	8/14/02	SW846 8141
Propachlor	80 U	1	80	80	ug/kg	SUB1	8/14/02	SW846 8141
Propazine	2.6 U	1	2.6	2.6	ug/kg	SUB1	8/14/02	SW846 8141
Simazine	3.8 U	1	3.8	3.8	ug/kg	SUB1	8/14/02	SW846 8141
Terbacil	120 U	1	120	120	ug/kg	SUB1	8/14/02	SW846 8141
Terbufos	13 U	1	13	13	ug/kg	SUB1	8/14/02	SW846 8141
Triallate	55 U	1	55	55	ug/kg	SUB1	8/14/02	SW846 8141
Trifluralin	11 U	1	11	11	ug/kg	SUB1	8/14/02	SW846 8141

Semivolatile Organic Results

8141 PESTICIDE LIST **Prep Method:** SW846 3550 **Extraction Date:**

Analyte	Result	Dilution	MDL	EQL	Units	Code	Analysis Date	Analysis Method
Acetochlor	18 U	1	18	18	ug/kg	SUB1	8/14/02	SW846 8141
Alachlor	17 U	1	17	17	ug/kg	SUB1	8/14/02	SW846 8141
Ametryn	8.0 U	1	8.0	8.0	ug/kg	SUB1	8/14/02	SW846 8141
Atrazine	16 U	1	16	16	ug/kg	SUB1	8/14/02	SW846 8141
Benfluralin	70 U	1	70	70	ug/kg	SUB1	8/14/02	SW846 8141
Bromacil	27 U	1	27	27	ug/kg	SUB1	8/14/02	SW846 8141
Butylate	9.0 U	1	9.0	9.0	ug/kg	SUB1	8/14/02	SW846 8141
Chlorothanlonil	8.5 U	1	8.5	8.5	ug/kg	SUB1	8/14/02	SW846 8141
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Diazinon	5.0 U	1	5.0	5.0	ug/kg	SUB1	8/14/02	SW846 8141
Dichlorvos	26 U	1	26	26	ug/kg	SUB1	8/14/02	SW846 8141
Dimethenamid	22 U	1	22	22	ug/kg	SUB1	8/14/02	SW846 8141
Dimethoate	8.5 U	1	8.5	8.5	ug/kg	SUB1	8/14/02	SW846 8141
Disulfoton	5.5 U	1	5.5	5.5	ug/kg	SUB1	8/14/02	SW846 8141
EPTC	9.5 U	1	9.5	9.5	ug/kg	SUB1	8/14/02	SW846 8141
Ethafluralin	75 U	1	75	75	ug/kg	SUB1	8/14/02	SW846 8141
Ethion	2.3 U	1	2.3	2.3	ug/kg	SUB1	8/14/02	SW846 8141
Ethoprop	4.0 U	1	4.0	4.0	ug/kg	SUB1	8/14/02	SW846 8141
Fonofos	7.0 U	1	7.0	7.0	ug/kg	SUB1	8/14/02	SW846 8141
Hexanzinone	28 U	1	28	28	ug/kg	SUB1	8/14/02	SW846 8141
Isofenofos	3.6 U	1	3.6	3.6	ug/kg	SUB1	8/14/02	SW846 8141
Malathion	5.5 U	1	5.5	5.5	ug/kg	SUB1	8/14/02	SW846 8141
Metolachlor	16 U	1	16	16	ug/kg	SUB1	8/14/02	SW846 8141
Metribuzin	10 U	1	10	10	ug/kg	SUB1	8/14/02	SW846 8141
Napropamide	12 U	1	12	12	ug/kg	SUB1	8/14/02	SW846 8141
Parathion	2.2 U	1	2.2	2.2	ug/kg	SUB1	8/14/02	SW846 8141
Parathion, Methyl	2.6 U	1	2.6	2.6	ug/kg	SUB1	8/14/02	SW846 8141

All soil results are reported on a dry weight basis unless otherwise noted.
Units of %Recov(ery) denote spike recovery. All recoveries pass in-house control limits unless otherwise noted.

- Analytical Report -

Project Name THREE FORKS
Project Number WO # 14
Lab Sample Number 922623-011
Field ID : **TF-10**
WI DNR LAB ID : 113172950

Submitter # : 1987.01
Submitter : ST JOHNS RIVER WATER MGMT DIS
Report Date : 8/22/02
Collection Date : 7/30/02
Collection Date : 11:30 AM
Matrix Type : SOIL

Pendimethalin	10	U	1	10	10	ug/kg	SUB1	8/14/02	SW846 8141
Phorate	12	U	1	12	12	ug/kg	SUB1	8/14/02	SW846 8141
Phosmet	9.5	U	1	9.5	9.5	ug/kg	SUB1	8/14/02	SW846 8141
Profenfos	32	U	1	32	32	ug/kg	SUB1	8/14/02	SW846 8141
Prometon	12	U	1	12	12	ug/kg	SUB1	8/14/02	SW846 8141
Prometryn	4.0	U	1	4.0	4.0	ug/kg	SUB1	8/14/02	SW846 8141
Propachlor	80	U	1	80	80	ug/kg	SUB1	8/14/02	SW846 8141
Propazine	2.6	U	1	2.6	2.6	ug/kg	SUB1	8/14/02	SW846 8141
Simazine	3.8	U	1	3.8	3.8	ug/kg	SUB1	8/14/02	SW846 8141
Terbacil	120	U	1	120	120	ug/kg	SUB1	8/14/02	SW846 8141
Terbufos	13	U	1	13	13	ug/kg	SUB1	8/14/02	SW846 8141
Triallate	55	U	1	55	55	ug/kg	SUB1	8/14/02	SW846 8141
Trifluralin	11	U	1	11	11	ug/kg	SUB1	8/14/02	SW846 8141

Semivolatile Organic Results

8141 PESTICIDE LIST **Prep Method:** SW846 3550 **Extraction Date:**

Analyte	Result	Dilution	MDL	EQL	Units	Code	Analysis Date	Analysis Method
Acetochlor	18 U	1	18	18	ug/kg	SUB1	8/14/02	SW846 8141
Alachlor	17 U	1	17	17	ug/kg	SUB1	8/14/02	SW846 8141
Ametryn	8.0 U	1	8.0	8.0	ug/kg	SUB1	8/14/02	SW846 8141
Atrazine	16 U	1	16	16	ug/kg	SUB1	8/14/02	SW846 8141
Benfluralin	70 U	1	70	70	ug/kg	SUB1	8/14/02	SW846 8141
Bromacil	27 U	1	27	27	ug/kg	SUB1	8/14/02	SW846 8141
Butylate	9.0 U	1	9.0	9.0	ug/kg	SUB1	8/14/02	SW846 8141
Chlorothanlonil	8.5 U	1	8.5	8.5	ug/kg	SUB1	8/14/02	SW846 8141
Chlorpyrifos	3.7 U	1	3.7	3.7	ug/kg	SUB1	8/14/02	SW846 8141
Command	24 U	1	24	24	ug/kg	SUB1	8/14/02	SW846 8141
Cyanazine	3.0 U	1	3.0	3.0	ug/kg	SUB1	8/14/02	SW846 8141
De-isopropyl Atrazine	9.5 U	1	9.5	9.5	ug/kg	SUB1	8/14/02	SW846 8141
Desethyl atrazine	7.0 U	1	7.0	7.0	ug/kg	SUB1	8/14/02	SW846 8141
Diazinon	5.0 U	1	5.0	5.0	ug/kg	SUB1	8/14/02	SW846 8141
Dichlorvos	26 U	1	26	26	ug/kg	SUB1	8/14/02	SW846 8141
Dimethenamid	22 U	1	22	22	ug/kg	SUB1	8/14/02	SW846 8141
Dimethoate	8.5 U	1	8.5	8.5	ug/kg	SUB1	8/14/02	SW846 8141
Disulfoton	5.5 U	1	5.5	5.5	ug/kg	SUB1	8/14/02	SW846 8141
EPTC	9.5 U	1	9.5	9.5	ug/kg	SUB1	8/14/02	SW846 8141
Ethafluralin	75 U	1	75	75	ug/kg	SUB1	8/14/02	SW846 8141
Ethion	2.3 U	1	2.3	2.3	ug/kg	SUB1	8/14/02	SW846 8141
Ethoprop	4.0 U	1	4.0	4.0	ug/kg	SUB1	8/14/02	SW846 8141
Fonofos	7.0 U	1	7.0	7.0	ug/kg	SUB1	8/14/02	SW846 8141
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Malathion	5.5 U	1	5.5	5.5	ug/kg	SUB1	8/14/02	SW846 8141
Metolachlor	16 U	1	16	16	ug/kg	SUB1	8/14/02	SW846 8141
Metribuzin	10 U	1	10	10	ug/kg	SUB1	8/14/02	SW846 8141
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Parathion	2.2 U	1	2.2	2.2	ug/kg	SUB1	8/14/02	SW846 8141
Parathion, Methyl	2.6 U	1	2.6	2.6	ug/kg	SUB1	8/14/02	SW846 8141

All soil results are reported on a dry weight basis unless otherwise noted.
Units of %Recov(ery) denote spike recovery. All recoveries pass in-house control limits unless otherwise noted.

- Analytical Report -

Project Name THREE FORKS
Project Number WO # 14
Lab Sample Number 922623-021
Field ID : **TF-19**

WI DNR LAB ID : 113172950

Submitter # : 1987.01
Submitter : ST JOHNS RIVER WATER MGMT DIS
Report Date : 8/22/02
Collection Date : 7/30/02
Collection Date : 12:50 PM
Matrix Type : SOIL

Pendimethalin	10 U	1	10	10	ug/kg	SUB1	8/14/02	SW846 8141
Phorate	12 U	1	12	12	ug/kg	SUB1	8/14/02	SW846 8141
Phosmet	9.5 U	1	9.5	9.5	ug/kg	SUB1	8/14/02	SW846 8141
Profenfos	32 U	1	32	32	ug/kg	SUB1	8/14/02	SW846 8141
Prometon	12 U	1	12	12	ug/kg	SUB1	8/14/02	SW846 8141
Prometryn	4.0 U	1	4.0	4.0	ug/kg	SUB1	8/14/02	SW846 8141
Propachlor	80 U	1	80	80	ug/kg	SUB1	8/14/02	SW846 8141
Propazine	2.6 U	1	2.6	2.6	ug/kg	SUB1	8/14/02	SW846 8141
Simazine	3.8 U	1	3.8	3.8	ug/kg	SUB1	8/14/02	SW846 8141
Terbacil	120 U	1	120	120	ug/kg	SUB1	8/14/02	SW846 8141
Terbufos	13 U	1	13	13	ug/kg	SUB1	8/14/02	SW846 8141
Triallate	55 U	1	55	55	ug/kg	SUB1	8/14/02	SW846 8141
Trifluralin	11 U	1	11	11	ug/kg	SUB1	8/14/02	SW846 8141

DB Environmental Laboratories, Inc., 414 Richard Rd., Suite 1, Rockledge, FL 32955 - (321) 63
FDOH# E 83330
DEP CompQAP #910048

Date: August 30, 2002

REPORT OF ANALYSIS

Client: St. Johns River Water Management District
Attn: Carol Brown
PO Box 1429
Palatka, FL 32178-1429

Date and Time Received: 08/01/02 @ 1000

MATRIX: Soil
SAMPLED BY: C. Maxwell
PROJECT # : Three Forks Conservation Area

SAMPLE ID	LAB LOG NUMBER	DATE SAMPLED	SAMPLE TIME	PARAMETER	METHOD NUMBER	RESULTS	UNITS	METHOD DETECTION LIMIT
TF-01	163270	07/29/02	1223	Total Organic Carbon	MVP COE 3-73	381000	mg/kg	13000
TF-02	163271	07/29/02	1330	Total Organic Carbon	MVP COE 3-73	90400	mg/kg	13000
TF-03	163273	07/29/02	1300	Total Organic Carbon	MVP COE 3-73	142000	mg/kg	13000
TF-04	163274	07/29/02	1130	Total Organic Carbon	MVP COE 3-73	23500	mg/kg	13000
TF-05	163275	07/29/02	1015	Total Organic Carbon	MVP COE 3-73	13000	mg/kg	13000
TF-06	163276	07/29/02	1146	Total Organic Carbon	MVP COE 3-73	14800	mg/kg	13000
TF-07	163277	07/29/02	1401	Total Organic Carbon	MVP COE 3-73	130000	mg/kg	13000
TF-08	163278	07/29/02	1050	Total Organic Carbon	MVP COE 3-73	13000	mg/kg	13000
TF-09	163279	07/30/02	1015	Total Organic Carbon	MVP COE 3-73	526000	mg/kg	13000
TF-10	163280	07/30/02	1130	Total Organic Carbon	MVP COE 3-73	533000	mg/kg	13000
TF-11	163281	07/30/02	0950	Total Organic Carbon	MVP COE 3-73	366000	mg/kg	13000
TF-12	163282	07/30/02	1040	Total Organic Carbon	MVP COE 3-73	554000	mg/kg	13000
TF-13	163284	07/30/02	0936	Total Organic Carbon	MVP COE 3-73	534000	mg/kg	13000
TF-14	163285	07/30/02	1055	Total Organic Carbon	MVP COE 3-73	12300	mg/kg	13000
TF-15	163286	07/30/02	1240	Total Organic Carbon	MVP COE 3-73	110000	mg/kg	13000
TF-16	163287	07/30/02	1220	Total Organic Carbon	MVP COE 3-73	493000	mg/kg	13000
TF-17	163288	07/30/02	1205	Total Organic Carbon	MVP COE 3-73	514000	mg/kg	13000
TF-18	163289	07/30/02	1320	Total Organic Carbon	MVP COE 3-73	508000	mg/kg	13000
TF-19	163290	07/30/02	1250	Total Organic Carbon	MVP COE 3-73	521000	mg/kg	13000

SAMPLE ID	LAB LOG NUMBER	DATE SAMPLED	SAMPLE TIME	PARAMETER	METHOD NUMBER	RESULTS	UNITS	METHOD DETECTION LIMIT
TF-20	163291	07/30/02	1300	Total Organic Carbon	MVP COE 3-73	291000	mg/kg	13000

Key to Method Qualifier Code

A Result based on the mean of two determinations.

I Result is between method detection limit and practical quantitation limit.

U Result is below the method detection limit.

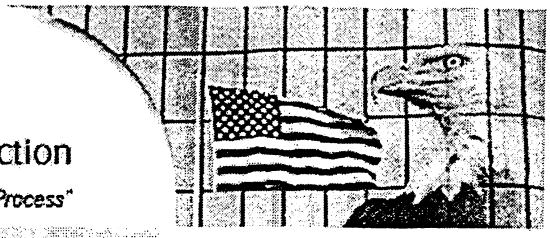
Project Manager: 

Nancy Chan

QC SUMMARY
USGS
SJRWMD (163270-163291)

PARAMETER	DUPLICATES	% RSD	SPIKES	% RECOVERY	BLANKS
TOC	163279	0.3	163279	108	
	163291	5.2	163291	87	

Florida
Department of Environmental Protection
"More Protection, Less Process"



Project Information	
Project:	FL200307083007C
Comments Due:	August 07, 2003
Letter Due:	September 06, 2003
Description:	DEPARTMENT OF THE ARMY - JACKSONVILLE DISTRICT CORPS OF ENGINEERS - FINAL SUPPLEMENTARY ENVIRONMENTAL IMPACT STATEMENT - PROPOSED MODIFICATIONS TO PROJECT FEATURES NORTH OF THE FELLSMERE GRADE (CC#5H) CENTRAL AND SOUTHERN FLORIDA FLOOD CONTROL PROJECT - UPPER ST. JOHNS RIVER BASIN AND RELATED AREAS - BREVARD COUNTY, FLORIDA.
Keywords:	ACOE-FSEIS-MODS TO C&SF PROJECT NORTH OF FELLSMERE GRADE-BREVARD CO.
CFDA #:	99.997

Agency Comments:
FISH and WILDLIFE COMMISSION - FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION
No Final Comments Received
STATE - FLORIDA DEPARTMENT OF STATE
We reviewed the portions of the referenced document that pertain to cultural resources, specifically Sections 2.7, 4.16 and 4.22.4. Two previously recorded archaeological sites(8BR244,8BR245) are located within the project area, and will be affected by all of the proposed alternatives. See hard copy.
ENVIRONMENTAL PROTECTION - FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
No additional comments. The plan includes the statement in Section 4.9 that "If toxic substances are found they will be remediated." The document also contains the DEP's January 3, 2003 letter expressing our concern regarding pesticide sampling. John White/Central Dist. Hazardous Wst
ST. JOHNS RIVER WMD - ST. JOHNS RIVER WATER MANAGEMENT DISTRICT
This is a USACOE/SJRWMD project. The proposed changes might involve modification of permits issued by the FDEP.

For more information please contact the Clearinghouse Office at:

AGENCY CONTACT AND COORDINATOR (SCH)
3900 COMMONWEALTH BOULEVARD MS-47
TALLAHASSEE, FLORIDA 32399-3000
TELEPHONE: (850) 245-2161
FAX: (850) 245-2190

Visit the Clearinghouse Home Page to query other projects.

FLORIDA DEPARTMENT OF STATE
Glenda E. Hood
Secretary of State
DIVISION OF HISTORICAL RESOURCES

Ms. Lauren Milligan
Director, Florida State Clearinghouse
Florida Department of Environmental Protection
3900 Commonwealth Boulevard, Mail Station 47
Tallahassee, Florida 32399-3000

July 24, 2003

RE: DHR Project File Number: 2003-6151 / Received by DHR July 10, 2003 LAK 7/24/03
SAI #: FL200307083007C
Department of the Army – Jacksonville District Corps of Engineers
Final Supplementary Environmental Impact Statement:
Proposed Modifications to Project Features North of the Fellsmere Grade Central and Southern Florida Flood Control Project, Upper St. Johns River Basin and Related Areas, Brevard County, Florida

Dear Ms. Milligan:

Our office received and reviewed the above referenced project in accordance with Section 106 of the *National Historic Preservation Act of 1966* (Public Law 89-665), as amended in 1992, and *36 C.F.R., Part 800: Protection of Historic Properties*, Chapter 267, *Florida Statutes*, Florida's Coastal Management Program, and implementing state regulations, for possible impact to historic properties listed, or eligible for listing, in the *National Register of Historic Places*, or otherwise of historical, architectural or archaeological value. The State Historic Preservation Officer is to advise and assist state and federal agencies when identifying historic properties, assessing effects upon them, and considering alternatives to avoid or minimize adverse effects.

We reviewed the portions of the referenced document that pertain to cultural resources, specifically Sections 2.7, 4.16 and 4.22.4. Two previously recorded archaeological sites (8BR244, 8BR245) are located within the project area, and will be affected by all of the proposed alternatives. Information contained in Florida Master Site File Survey No. 1152 indicates these sites are potentially eligible for listing in the *National Register of Historic Places* under criterion D. According to Section 4.22.4, the expected effect to sites 8BR244 and 8BR245 "will be created by deeply pooled water that will cover the sites at all times except for extreme drawdowns or low water events," and it is the opinion of the Corps of Engineers that this effect will not be adverse. We do not concur with this determination of effect. Sites 8BR244 and 8BR245 are potentially eligible for listing in the *National Register* because they are likely to yield information important to our understanding of prehistory. The research value of these sites is correlated with their integrity. Flooding has the potential to adversely affect the preservation of faunal remains and intact cultural features, thereby adversely affecting the integrity and research potential of these resources. Therefore, it is the opinion of this office that the proposed undertaking will have an adverse effect on sites 8BR244 and 8BR245. Unless the No Action alternative is chosen, this office should be consulted to determine appropriate mitigation measures.

RECEIVED
JUL 30 2003
CP/OLGA

500 S. Bronough Street • Tallahassee, FL 32399-0250 • http://www.flheritage.com

☐ Director's Office (850) 245-6300 • FAX: 245-6435
☐ Archaeological Research (850) 245-6444 • FAX: 245-6436
☑ Historic Preservation (850) 245-6333 • FAX: 245-6437
☐ Historical Museums (850) 245-6400 • FAX: 245-6433
☐ Palm Beach Regional Office (561) 279-1475 • FAX: 279-1476
☐ St. Augustine Regional Office (904) 825-5045 • FAX: 825-5044
☐ Tampa Regional Office (813) 272-3843 • FAX: 272-2340

It is also the opinion of this office that the possibility for additional archaeological sites occurring in the area of potential effect for this project is sufficiently high to necessitate a cultural resource assessment survey of the project area. According to the authors of the reconnaissance survey that identified sites 8BR244 and 8BR245 (FMSF No. 1152), the project area has the potential "to produce not only evidence of sites, but also evidence of potentially very significant sites" (p. 94). They recommend that unexamined portions of the project area be subjected to additional survey investigations. This office concurs with this recommendation. The purpose of this survey will be to locate and assess the significance of historic properties present. The resultant survey report shall conform to the specifications set forth in Chapter 1A-46, *Florida Administrative Code*, and will need to be forwarded to this office in order to complete the process of reviewing the impact of this proposed project on historic properties.

The results of the investigations will determine if significant historic properties, in addition to sites 8BR244 and 8BR245, would be affected by this project. If significant remains are located, the data described in the report and the consultant's conclusions will assist this office in determining measures that must be taken to avoid, minimize, or mitigate adverse impacts to historic properties eligible for listing in the *National Register of Historic Places*.

Because this letter and its contents are a matter of public record, consultants who have knowledge of our recommendations may contact you. This should in no way be interpreted as an endorsement by this agency. The *Registry of Professional Archaeologist* (RPA) is the national certifying organization for archaeologists. A listing of archaeologists who are RPA members living or working in Florida can be accessed at http://dhr.dos.state.fl.us/bhp/compliance. In addition, the complete RPA Directory of Certified Professional Archaeologists is available at www.rpanet.org. Otherwise, upon request, we will forward a copy of our RPA list.

If you have any questions concerning our comments, please contact Samantha Earnest, Historic Sites Specialist, at searnest@dos.state.fl.us or (850) 245-6333. Your interest in protecting Florida's historic properties is appreciated.

Sincerely,

Frederick P. Gaske, Deputy SHPO

for Janet Snyder Matthews, Ph.D., Director, and
State Historic Preservation Officer

It is also the opinion of this office that the possibility for additional archaeological sites occurring in the area of potential effect for this project is sufficiently high to necessitate a cultural resource assessment survey of the project area. According to the authors of the reconnaissance survey that identified sites 8BR244 and 8BR245 (FMSF No. 1152), the project area has the potential "to produce not only evidence of sites, but also evidence of potentially very significant sites" (p. 94). They recommend that unexamined portions of the project area be subjected to additional survey investigations. This office concurs with this recommendation. The purpose of this survey will be to locate and assess the significance of historic properties present. The resultant survey report shall conform to the specifications set forth in Chapter 1A-46, *Florida Administrative Code*, and will need to be forwarded to this office in order to complete the process of reviewing the impact of this proposed project on historic properties.

The results of the investigations will determine if significant historic properties, in addition to sites 8BR244 and 8BR245, would be affected by this project. If significant remains are located, the data described in the report and the consultant's conclusions will assist this office in determining measures that must be taken to avoid, minimize, or mitigate adverse impacts to historic properties eligible for listing in the *National Register of Historic Places*.

Because this letter and its contents are a matter of public record, consultants who have knowledge of our recommendations may contact you. This should in no way be interpreted as an endorsement by this agency. The *Registry of Professional Archaeologist* (RPA) is the national certifying organization for archaeologists. A listing of archaeologists who are RPA members living or working in Florida can be accessed at http://dhr.dos.state.fl.us/bhp/compliance. In addition, the complete RPA Directory of Certified Professional Archaeologists is available at www.rpanet.org. Otherwise, upon request, we will forward a copy of our RPA list.

If you have any questions concerning our comments, please contact Samantha Earnest, Historic Sites Specialist, at searnest@dos.state.fl.us or (850) 245-6333. Your interest in protecting Florida's historic properties is appreciated.

Sincerely,

Frederick P. Gaske, Deputy SHPO

for Janet Snyder Matthews, Ph.D., Director, and
State Historic Preservation Officer

Department of Environmental Protection

Jeb Bush
Governor

Marjory Stoneman Douglas Building
3900 Commonwealth Boulevard
Tallahassee, Florida 32399-3000

David B. Struhs
Secretary

January 3, 2003

Mr. James C. Duck, Chief
Planning Division, Jacksonville District
U. S. Army Corps of Engineers
PO Box 4970
Jacksonville, Florida 32232-0019

RE: U.S. ACOE - Jacksonville District – Draft Supplementary EIS - November 2002 - Modifications to Project Features North of the Fellsmere Grade Central and Southern Florida Flood Control Project - Upper St. John[illegible] River Basin and Related Areas - Brevard County, Florida.
SA[illegible]200211123077C

Dear Mr. Duck:

The Florida State Clearinghouse, pursuant to Executive Order 12372, Gubernatorial Executive Order 95-359, the Coastal Zone Management Act, 16 U.S.C. §§ 1451-1464, as amended, and the National Environmental Policy Act, 42 U.S.C. §§ 4321, 4331-4335, 4341-4347, as amended, has coordinated the review of the above Draft Supplementary Environmental Impact Statement (EIS).

Although the proposed project appears to be consistent with our authorities in the Florida Coastal Management Program, please be advised that the potential environmental benefits and impacts of the project will be addressed in the application for an Environmental Resource Permit (ERP), sovereign submerged lands authorization, and state water quality certification, to be reviewed by the Department's Central District Office in Orlando (Chapters 253, 258, and 373, Florida Statutes). Additional information is required concerning the details of anticipated project design, impacts, construction, pre- vs. post-diversion hydrology, and habitat restoration. Final action on the permit application will constitute the State of Florida's final consistency determination. Future consistency will be based in part on adequate consideration of comments offered in this and subsequent reviews.

The DEP is concerned that a portion of the land to be flooded is former cropland. It appears that limited soil sampling was performed (20 samples from 14,000 acres of land). The document does not identify the areas sampled, nor are the sample results provided for review. It is important that sampling be performed in former pesticide mixing or loading areas and on crop duster runways. Samples should also be obtained from the fields and adjacent canals or water bodies to determine if there has been a buildup of contaminants.

Subsection 303(d) of the Clean Water Act and Section 403.067, F.S., require the state to prepare a list of surface waters that do not meet applicable water quality standards (impaired waters) and to establish Total Maximum Daily Loads (TMDLs) for these waters on a prioritized schedule. During the five-year watershed management planning cycle, TMDLS for surface waters not meeting water quality standards will be developed, and a management plan implemented. The Upper St. Johns River is a Year 3 basin. The Bureau of Watershed Management will complete its status report shortly after the first of the year. Using the Impaired Waters Rule (Ch 62-303, F.A.C.) several segments of this basin have been identified as potentially impaired for dissolved oxygen, iron, lead, TSI, nutrients, and mercury. According to the Draft Supplementary EIS for this project (pg 32), "The Upper St. Johns River Basin Project is designed to reduce nutrient loading by segregating and retaining agricultural discharges in water management areas. However, even with significant reductions in loading rates, nutrient levels may not reach acceptable levels for several years due to the nutrient buildup in the system that has already occurred." It is not

apparent how this project fits into the Department's efforts to develop TMDLs for the parameters listed. For further information, please contact Ms. Barbara Bess in the DEP Central District Office in Orlando, at 407/893-3984.

The Department of State (DOS) has reviewed the portions of the referenced document that pertain to cultural resources, specifically Sections 2.7 and 4.22.4. They have determined that two previously recorded archeological sites (8BR244 & 8BR245) are located within the project area, and will be adversely affected by all of the proposed alternatives. Unless the No Action alternative is chosen, the DOS should be consulted to determine appropriate mitigation measures. The DOS also states that the possibility for additional archeological sites occurring in the area of potential effect for this project is sufficiently high to necessitate a cultural resource assessment survey of the project area. Please refer to the enclosed DOS comments.

The St. Johns River Water Management District supports the project, but notes that the project may need to modify permits previously issued by the DEP and the USACOE, Regulatory Division.

Based on the information contained in the draft Supplementary EIS and the enclosed state agency comments, the state has determined that the above referenced project is consistent with the Florida Coastal Management Program. We recommend that the Corps of Engineers and the St. Johns River Water Management District staff continue to coordinate with the DEP Central District and the DOS staff to address the concerns identified above. The state's continued concurrence with the project will be based, in part, on the adequate resolution of issues identified during this and subsequent permitting reviews.

Thank you for the opportunity to review the proposed project. If you have any questions regarding this letter, please contact Suzanne E. Ray at 850/245-2172.

Yours sincerely,

Sally B. Mann

Sally B. Mann, Director
Office of Intergovernmental Programs

SBM/ser

Enclosures

cc: Barbara Bess, DEP, Central District
Janet Snyder Matthews, DOS
Geoffrey Sample, SJRWMD

TO: Florida State Clearinghouse

FROM: Suzanne Ray, Environmental Specialist
Office of Intergovernmental Programs

DATE: January 6, 2002

PROJECT: USACOE Jacksonville District – Draft Supplementary EIS – November 2002 – Modifications to Project Features North of the Fellsmere Grade Central and Southern Florida Flood Control Project – Upper St. Johns River Basin and Related Areas –Brevard County

SAI: FL 200211123077C

The Department has reviewed the above-referenced project and offers the following comments.

Although the proposed project appears to be consistent with our authorities in the Florida Coastal Management Program, please be advised that the potential environmental benefits and impacts of the project will be addressed in the application for an Environmental Resource Permit (ERP), sovereign submerged lands authorization, and state water quality certification, to be reviewed by the Department's Central District Office in Orlando.[Chapters 253, 258, and 373, Florida Statutes (F.S.)] Additional information is required concerning the details of anticipated project design, impacts, construction, pre- vs. post-diversion hydrology, and habitat restoration. Final action on the permit application will constitute the State of Florida's final consistency determination. Future consistency will be based in part on adequate consideration of comments offered in this and subsequent reviews.

The DEP is concerned that a portion of the land to be flooded is former cropland. It appears that limited soil sampling was performed (20 samples from 14,000 acres of land). The document does not identify the areas sampled, nor are the sample results provided for review. It is important that sampling be performed in former pesticide mixing or loading areas and on crop duster runways. Samples should also be obtained from the fields and adjacent canals or water bodies to determine if there has been a buildup of contaminants.

Subsection 303(d) of the Clean Water Act and Section 403.067, F.S., require the state to prepare a list of surface waters that do not meet applicable water quality standards (impaired waters) and to establish Total Maximum Daily Loads (TMDLs) for these waters on a prioritized schedule. During the five-year watershed management planning cycle, TMDLS for surface waters not meeting water quality standards will be developed, and a management plan implemented. The Upper St. Johns River is a Year 3 basin. The Bureau of Watershed Management will complete its status report shortly after the first of the year. Using the Impaired Waters Rule (Ch 62-303, F.A.C.) several segments of this basin have been identified as

potentially impaired for dissolved oxygen, iron, lead, TSI, nutrients, and mercury. According to the Draft Supplementary EIS for this project (pg 32), "The Upper St. Johns River Basin Project is designed to reduce nutrient loading by segregating and retaining agricultural discharges in water management areas. However, even with significant reductions in loading rates, nutrient levels may not reach acceptable levels for several years due to the nutrient buildup in the system that has already occurred." It is not apparent how this project fits into the Department's efforts to develop TMDLs for the parameters listed. For further information, please contact Ms. Barbara Bess in the DEP Central District Office in Orlando, at 407/893-3984.

User: Suzanne E. Ray, Environmental Specialist III, ENVIRONMENTAL PROTECTION

Project Information

Project:	FL200211123077C
Description:	U.S. Army Corps of Engineers - Jacksonville District - Draft Supplementary Environmental Impact Statement - November 2002 - Proposed Modifications to Project Features North of the Fellsmere Grade Central and Southern Florida Flood Control Project - Upper St. Johns River Basin and Related Areas - Brevard County, Florida.
Keywords:	ACOE - DSEIS - Mods to Fellsmere Grade - Brevard
Program:	

Review Comments **Page:** Page **7/9**

Reviewer:	ST. JOHNS RIVER WMD
Date:	11/25/2002
Description:	SJRWMD supports the project. The report already includes detailed comments and recommendations of other District staff. Although there is a copy of a "No Objection" letter from the FDEP included in the proposal, the project may need application to modify permits issued by the FDEP and the USACE.
Comment Type:	○ Draft ◉ Final

STATE CLEARINGHOUSE

User: Suzanne E. Ray, Environmental Specialist III, ENVIRONMENTAL PROTECTION

Project Information

Project:	FL200211123077C
Description:	U.S. Army Corps of Engineers - Jacksonville District - Draft Supplementary Environmental Impact Statement - November 2002 - Proposed Modifications to Project Features North of the Fellsmere Grade Central and Southern Florida Flood Control Project - Upper St. Johns River Basin and Related Areas - Brevard County, Florida.
Keywords:	ACOE - DSEIS - Mods to Fellsmere Grade - Brevard
Program:	

Review Comments

Reviewer:	FISH and WILDLIFE COMMISSION
Date:	01/06/2003
Description:	NO Comment by Steve Lau.
Comment Type:	(•) Draft ( ) Final

User: Suzanne E. Ray, Environmental Specialist III, ENVIRONMENTAL PROTECTION

Project Information

Project:	FL200211123077C
Description:	U.S. Army Corps of Engineers - Jacksonville District - Draft Supplementary Environmental Impact Statement - November 2002 - Proposed Modifications to Project Features North of the Fellsmere Grade Central and Southern Florida Flood Control Project - Upper St. Johns River Basin and Related Areas - Brevard County, Florida.
Keywords:	ACOE - DSEIS - Mods to Fellsmere Grade - Brevard
Program:	

Review Comments

Reviewer:	AGRICULTURE
Date:	12/17/2002
Description:	No Comment
Comment Type:	○ Draft ◉ Final

User: Suzanne E. Ray, Environmental Specialist III, ENVIRONMENTAL PROTECTION

Project Information

Project:	FL200211123077C
Description:	U.S. Army Corps of Engineers - Jacksonville District - Draft Supplementary Environmental Impact Statement - November 2002 - Proposed Modifications to Project Features North of the Fellsmere Grade Central and Southern Florida Flood Control Project - Upper St. Johns River Basin and Related Areas - Brevard County, Florida.
Keywords:	ACOE - DSEIS - Mods to Fellsmere Grade - Brevard
Program:	

Review Comments **Page:** Page **9/9**

Reviewer:	E. CENTRAL FL RPC
Date:	12/04/2002
Description:	no comment
Comment Type:	○ Draft ◉ Final

INTY: BREVARD

sage:

DATE: 11/8/02
COMMENTS DUE DATE: 12/12/02
CLEARANCE DUE DATE: 1/7/03
SAI#: FL200211123077C

STATE AGENCIES	WATER MNGMNT. DISTRICTS	OPB POLICY UNITS
AGRICULTURE COMMUNITY AFFAIRS FISH and WILDLIFE COMMISSION STATE TRANSPORTATION ENVIRONMENTAL PROTECTION	ST. JOHNS RIVER WMD	ENVIRONMENTAL POLICY UNIT

RECEIVED
1 3 2002
DEPT. OF COMM. AFFAIRS/DCP

RECEIVED
NOV 2 0 2002
OIP/OLGA

ttached document requires a Coastal Zone Management Act/Florida
al Management Program consistency evalutation and is categorized
e of the following:

deral Assistance to State or Local Government (15 CFR 930, Subpart F). gencies are required to evaluate the consistency of the activity.

Direct Federal Activity (15 CFR 930, Subpart C). Federal Agencies are required to furnish a consistency determination for the State's concurrence or objection.

Outer Continental Shelf Exploration, Development or Production Activities (15 CFR 930, Subpart E). Operators are required to provide a consistency certification for state concurrence/objection.

Federal Licensing or Permitting Activity (15 CFR 930, Subpart D). Such projects will only be evaluated for consistency when there is not an analogous state license or permit.

Project Description:

U.S. Army Corps of Engineers - Jacksonville District - Draft Supplementary Environmental Impact Statement - November 2002 - Proposed Modifications to Project Features North of the Fellsmere Grade Central and Southern Florida Flood Control Project - Upper St. Johns River Basin and Related Areas - Brevard County, Florida.

): **Florida State Clearinghouse**
AGENCY CONTACT AND COORDINATOR (SCH)
2555 SHUMARD OAK BLVD
TALLAHASSEE, FLORIDA 32399-2100
(850) 414-6580 (SC 994-6580)
(850) 414-0479

EO. 12372/NEPA
- [x] No Comment
- [ ] Comment Attached
- [ ] Not Applicable

Federal Consistency
- [ ] No Comment/Consistent
- [ ] Consistent/Comments Attached
- [ ] Inconsistent/Comments Attached
- [ ] Not Applicable

Division/Bureau: DCP/DCA
Reviewer:
Date: 11/19/02

User: Suzanne E. Ray, Environmental Specialist III, ENVIRONMENTAL PROTECTION

Project Information

Project:	FL200211123077C
Description:	U.S. Army Corps of Engineers - Jacksonville District - Draft Supplementary Environmental Impact Statement - November 2002 - Proposed Modifications to Project Features North of the Fellsmere Grade Central and Southern Florida Flood Control Project - Upper St. Johns River Basin and Related Areas - Brevard County, Florida.
Keywords:	ACOE - DSEIS - Mods to Fellsmere Grade - Brevard
Program:	

Review Comments

Page: Page 6/9

Reviewer:	TRANSPORTATION
Date:	12/12/2002
Description:	NC
Comment Type:	○ Draft ◉ Final

Florida Department of Transportation

JEB BUSH
GOVERNOR

THOMAS F. BARRY, JR.
SECRETARY

To: ***Florida State Clearinghouse***
Agency Contract & Coordinator (SCH)
2555 Shumard Oak Blvd.
Tallahassee, FL 32399-2100
Phone: 850-414-6580/Suncom: 994-6580
Fax: 850-414-0479

From: ***District 5- Planning & Public Transportation***
Technical Applications Section
Betty McKee
Phone: 407-482-7856/Suncom: 335-7856
Fax: 407-275-4188
E-Mail: betty.mckee@dot.state.fl.us

cc: ***FDOT Central Office ICAR Coordinator***
Sandra Whitmire
Mail Station # 28
Phone: 850-414-4812/Suncom: 994-4812
Fax: 850-413-7640/Suncom: 293-7640

December 17, 2002

Subject: **ICAR/SAI # FL200211123077C**
Financial Project Identifier:
(if applicable)

APPLICATION DESCRIPTION-GENERAL:	REVIEW COMMENTS DUE DATE:	GENERAL COMMENTS:	
Upper St. Johns Basin	12/12/02	NEPA: [x] No Comment [ ] Comments Attached [ ] n/a	FEDERAL CONSISTENCY: [x] No Comment/Consistent [ ] Consistent/Comments Attached [ ] Inconsistent/Comments Attached [ ] n/a

SPECIFIC COMMENTS:

File: C:\WINDOWS\Temporary Internet Files\OLKC114\ICAR_200211123077C.doc

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

AUG 05 2003

James C. Duck, Chief, Planning Division
Jacksonville District - Corps of Engineers
P.O. Box 4970
Jacksonville, Florida 32232
Attention: Mr. Esteban Jimenez

Subject: **Final Supplementary Environmental Impact Statement (DSEIS) for the Modifications to Project Features North of the Fellsmere Grade, Upper St. Johns River Basin (Basin), Central and Southern Florida Flood Control Project, CEQ # 03024, ERP # COE-E-36154-FL (June, 2003), Florida**

Dear Mr. Duck

Pursuant to Section 309 of the Clean Air Act and Section 102(2)(C) of the National Environmental Policy Act (NEPA), EPA (Region 4) has reviewed the subject document, an evaluation of the consequences of a proposal to redirect water currently being discharged downstream through Structures S-96B and S-96C. These modifications are designed to enhance downstream floodplain and aquatic habitats, decrease the probability (and impacts) of significant freshwater discharges to the Indian River Lagoon, as well as improve overall water quality in the Basin. A number of relatively complex structural and operational measures have been formulated to meet these objectives. As we noted initially, there are always uncertainties involved in extrapolating from modeling projections to the physical environment; therefore, some adaptive management is likely. Nonetheless, on the basis of our current understanding, the major structural/operational elements of the proposal appear competent to achieve the above objectives. Hence, we have nothing to add to our original comments.

Thank you for the opportunity to comment on this proposal. If you have any questions, please contact Mr. Eric Hughes (904- 232-2464).

Sincerely,

Heinz J. Mueller, Chief
Office of Environmental Assessment

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

JAN 0 3 2003

James C. Duck, Chief, Planning Division
Jacksonville District - Corps of Engineers
P.O. Box 4970
Jacksonville, Florida 32232

Attention: Mr. Esteban Jimenez
Planning Division

Subject: **Draft Supplementary Environmental Impact Statement (DSEIS) for the Modifications to Project Features North of the Fellsmere Grade, Upper St. Johns River Basin (Basin), Central and Southern Florida Flood Control Project, CEQ # 020472, ERP # COE-E36154-FL (November, 2002), Florida**

Dear Mr. Duck

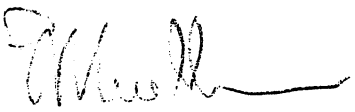
Pursuant to Section 309 of the Clean Air Act and Section 102(2)(C) of the National Environmental Policy Act (NEPA), EPA (Region 4) has reviewed the subject document, an evaluation of the consequences of a proposal to redirect water currently being discharged downstream through Structures S-96B and S-96C. While there are some environmental trade-offs involved and a significant amount of "re-plumbing" necessary, this modification should enhance downstream floodplain and aquatic habitats, decrease the probability (and impacts) of significant freshwater discharges to the Indian River Lagoon, as well as improve overall water quality in the Basin. To meet these environmental and water control objectives simultaneously, a number of relatively complex structural and operational measures have been formulated. If these measures function as designed, primary water quality will be maintained in the Three Forks and St. Johns Marsh Conservation Areas and the project's conveyance objectives will be met.

Project water quality goals have and will be guided via results obtained from two different perspectives, viz., whether flows from TFMCA are discharged predominantly into wetlands or deep-water habitats. Because there are always uncertainties involved in extrapolating from modeling projections to the physical environment, it is anticipated that a degree of adaptive management will be necessary to *fine tune* the subject system. On the basis of our current understanding, the major structural/operational elements of the proposal appear competent to achieve the above objectives.

The Region is on record as supporting the environmental restoration of this system. Hence, we agree with the overall action in principle and intend to work with the Jacksonville District to verify that the proposed separation of discharges from S-96B and C actually improve the aquatics habitat(s) in TFMCA and SJMCA to the degree projected (and at an acceptable environmental cost). We will provide further comment after assessing the results obtained from the noted models and the associated monitoring plan. With these stipulations, a rating of LO has been assigned. That is, we have no significant objections to the goals and/or the means of reaching these objectives.

Thank you for the opportunity to comment on this proposal. If you have any questions, please contact Mr. Eric Hughes (904- 232-2464).

Sincerely,



Heinz J. Mueller, Chief
Office of Environmental Assessment

DIVISIONS OF FLORIDA DEPARTMENT OF STATE
Office of the Secretary
Office of International Relations
Division of Elections
Division of Corporations
Division of Cultural Affairs
Division of Historical Resources
Division of Library and Information Services
Division of Licensing
Division of Administrative Services

MEMBER OF THE FLORIDA CABINET
State Board of Education
Trustees of the Internal Improvement Trust Fund
Administration Commission
Florida Land and Water Adjudicatory Commission
Siting Board
Division of Bond Finance
Department of Revenue
Department of Law Enforcement
Department of Highway Safety and Motor Vehicles
Department of Veterans' Affairs

FLORIDA DEPARTMENT OF STATE
Jim Smith
Secretary of State
DIVISION OF HISTORICAL RESOURCES

Mr. James C. Duck
Chief, Planning Division
Jacksonville District U.S. Army Corps of Engineers
P.O. Box 4970
Jacksonville, Florida 32232-0019

December 12, 2002

Re: DHR No. 2002-10660 / Date Received by DHR: November 8, 2002
Draft Supplementary Environmental Impact Statement:
Proposed Modifications to Project Features North of the Fellsmere Grade Central and Southern Florida Flood Control Project, Upper St. Johns River Basin and Related Areas, Brevard County, Florida (Jacksonville District U.S. Army Corps of Engineers, November 2002)

Dear Mr. Duck:

Our office has received and reviewed the above referenced project in accordance with Section 106 of the *National Historic Preservation Act of 1966* (Public Law 89-665), as amended in 1992, and the *National Environmental Policy Act of 1969* (Public Law 91-190), as amended. The State Historic Preservation Officer is to advise and assist federal agencies when identifying historic properties listed, or eligible for listing, in the *National Register of Historic Places*, assessing effects upon them, and considering alternatives to avoid or minimize adverse effects.

We have reviewed the portions of the referenced document that pertain to cultural resources, specifically Sections 2.7 and 4.22.4. Two previously recorded archaeological sites (8BR244, 8BR245) are located within the project area, and will be affected by all of the proposed alternatives. Information contained in Florida Master Site File Survey No. 1152 indicates these sites are potentially eligible for listing in the *National Register of Historic Places* under criterion D. According to Section 4.22.4, the expected effect to sites 8BR244 and 8BR245 "will be created by deeply pooled water that will cover the sites at all times except for extreme drawdowns or low water events," and it is the opinion of the Corps of Engineers that this effect will not be adverse. We do not concur with this determination of effect. Sites 8BR244 and 8BR245 are potentially eligible for listing in the *National Register* because they are likely to yield information important to our understanding of prehistory. The research value of these sites is correlated with their integrity. As stated in Section 2.7, flooding has the potential to adversely affect the preservation of faunal remains and intact cultural features, thereby adversely affecting the integrity and research potential of these resources. Therefore, it is the opinion of this office that the proposed undertaking will have an adverse effect on sites 8BR244 and 8BR245. Unless the No Action alternative is chosen, this office should be consulted to determine appropriate mitigation measures.

It is also the opinion of this office that the possibility for additional archaeological sites occurring in the area of potential effect for this project is sufficiently high to necessitate a cultural resource assessment survey of the project area. According to the authors of the reconnaissance survey that identified sites 8BR244 and 8BR245 (FMSF No. 1152), the project area has the potential "to produce not only evidence of sites, but also evidence of potentially very significant sites" (p. 94). They recommend that unexamined

portions of the project area be subjected to additional survey investigations. This office concurs with this recommendation. The purpose of this survey will be to locate and assess the significance of historic properties present. The resultant survey report shall conform to the specifications set forth in Chapter 1A-46, *Florida Administrative Code*, and will need to be forwarded to this office in order to complete the process of reviewing the impact of this proposed project on historic properties.

The results of the investigations will determine if significant historic properties, in addition to sites 8BR244 and 8BR245, would be affected by this project. If significant remains are located, the data described in the report and the consultant's conclusions will assist this office in determining measures that must be taken to avoid, minimize, or mitigate adverse impacts to historic properties eligible for listing in the *National Register of Historic Places*.

Because this letter and its contents are a matter of public record, consultants who have knowledge of our recommendations may contact you. This should in no way be interpreted as an endorsement by this agency. The *Registry of Professional Archaeologist* (RPA) is the national certifying organization for archaeologists. A listing of archaeologists who are RPA members living or working in Florida can be accessed at http://dhr.dos.state.fl.us/bhp/compliance. In addition, the complete RPA Directory of Certified Professional Archaeologists is available at www.rpanet.org. Otherwise, upon request, we will forward a copy of our RPA list.

If you have any questions concerning our comments, please contact Mary Beth Fitts, Historic Sites Specialist, at mbfitts@mail.dos.state.fl.us or (850) 245-6333. Your interest in protecting Florida's historic properties is appreciated.

Sincerely,

Frederick P. Gaske, Deputy SHPO

for Janet Snyder Matthews, Ph.D., Director, and
State Historic Preservation Officer

Jimenez, Esteban SAJ

From: Robinson, Steven E SAJ
Sent: Wednesday, January 29, 2003 8:58 AM
To: Jimenez, Esteban SAJ
Subject: FW: Dept. of the Interior's concerns: Three Forks

pic04955.jpg

Esteban,

Hector has been trying to get this to you.

Steven

-----Original Message-----
From: HHerrera@sjrwmd.com [mailto:HHerrera@sjrwmd.com]
Sent: Wednesday, January 29, 2003 7:55 AM
To: Robinson, Steven E
Cc: J.P.Milam@saj02.usace.army.mil; Lucas, Susan S
Subject: Re: Dept. of the Interior's concerns: Three Forks

Steven,

I can't seem to get this response to Esteban. I keep getting delivery errors to his email address. Can you please make sure he gets it?

Hector
----- Forwarded by Hector Herrera/SJRWMD on 01/29/2003 07:53 AM -----

Hector Herrera
01/27/2003 03:26 PM

To: Esteban.Jimenez@saj02.usace.army.mil
cc:
Subject: Re: Dept. of the Interior's concerns: Three Forks

I received a delivery error last time I tried to send this to you so I'm trying is again.

Hector
----- Forwarded by Hector Herrera/SJRWMD on 01/27/2003 03:15 PM -----

Hector Herrera
01/27/2003 02:01 PM

To: Esteban..Jimenez@saj02.usace.army.mil
cc: steven.e.robinson@saj02.usace.army.mil, susan.s.lucas@saj02.usace.army.mil
Subject: Re: Dept. of the Interior's concerns: Three Forks

Steve,

Here is the response from Steve Miller addressing the Dept. of Interior's concern. Let me know if you need more.

Hector

----- Forwarded by Hector Herrera/SJRWMD on 01/27/2003 02:00 PM -----

Steven J. Miller
01/23/2003 03:28 PM

To: Hector Herrera/SJRWMD@SJRWMD
cc: Ed Lowe/SJRWMD@SJRWMD, Jeff Elledge/SJRWMD@SJRWMD, Mary Ann Lee/SJRWMD@SJRWMD, Jeff Elledge/SJRWMD@SJRWMD
Subject: Re: Dept. of the Interior's concerns: Three Forks

(Document link: Hector Herrera)

Hector--

A major environmental goal of the Upper St. Johns River Basin Project has been to reduce freshwater discharges from the basin to the Indian River Lagoon via the C-54 Canal. According to the original General Design Memorandum the project will eliminate these discharges during the 1 in 10 year storm and reduce pre-project discharges for the 1 in 25, 1 in 50, and 1 in 100 storms by 85%, 71%, and 68% respectively. Proposed modifications to project presented in the Draft EIS will ensure that, at a minimum, these discharge targets are met. Reductions in freshwater flows to the lagoon will benefit seagrass restoration efforts and protect the commercial clam fisheries in the lagoon. According to staff with the Department of Agriculture and Consumer Services and Florida Marine Research Institute there are no known commercial oyster fisheries in the area of the lagoon affected by these discharges.

Surface salinities in the Indian River Lagoon adjacent the Sebastian River typically range between 20 and 35 ppt (parts per thousand) The minimal salinity needed for supporting seagrasses and the clam fisheries is considered to be 20 ppt (parts per thousand). Adverse impacts such as a loss of species diversity and abundance occur when salinities drop below this threshold for prolonged periods due to high freshwater inflows. There are no concerns about hypersalinity in the lagoon with a reduction of freshwater inflows. In fact a major goal of the 2002 Indian River Lagoon Surface Water Improvement and Management (SWIM) Plan Update continues to be to manage excessive freshwater inflows to minimize their impacts on salinity. Thus we do not believe there are any negative impacts to the lagoon to be considered by reducing freshwater discharges to the lagoon as a result of this project.

I hope this information answers the question posed by the Interior Department on the TFMCA EIS. If further information on salinities within the lagoon is needed please feel free to contact me or Joel Steward (Technical Program Manager of the Indian River Lagoon Program). Joel can be reached at 386-329-4363 or jsteward@sjrwmd.com.

Steven J. Miller

(Embedded image moved to file: pic04955.jpg)

Supervising Environmental Scientist

Environmental Sciences, Water Resources
St. Johns River Water Management District
4049 Reid Street / Hwy. 100 West
P.O. Box 1429, Palatka, FL 32178-1429
n:(386) 329-4387, FAX:(386) 329-4329
mail: sjmiller@sjrwmd.com

Hector Herrera

01/08/2003 04:34 PM

To: Steven J. Miller/SJRWMD@SJRWMD
cc: Jimenez@saj02.usace.army.mil
Subject: Dept. of the Interior's concerns. Three Forks

Stevee,

Can you shed some light on this issue for Esteban? Thanx

Hector
----- Forwarded by Hector Herrera/SJRWMD on 01/08/2003 04:12 PM -----

Esteban..Jimenez@saj02.usace.army.mil

01/07/2003 09:10 AM

To: hherrera@sjrwmd.com
cc:
Subject: Dept. of the Interior's concerns. Three Forks

Hi, Hector. Hope the Christmas/New Year holidays were fine for you. Received the new and much clearer illustrations for the final EIS those had not been made available before, in the materials i "inherited" from Liz. The US Dept. of the Interior sent a letter where they state the possible adverse impacts to Indian River Lagoon ("increasing salinity and altering salinity regimes which may result in adverse impacts to oyster beds, sea grasses, and clam flats in the lagoon")need to be addressed.

I only found a skimming comparison in Table 12, Page 41. Wondering if there were any other comparisons. However, it was my beklief that an increase in the salinity of IRL when less freshwater (considered a pollutant) makes it therein is a BENEFICIAL expected effect of these projects, and if Oyster beds, etc... are impacted by a return to normal salinity coinditions, then that effect is desirable, too.

Give me a call when you can at (904)232-2115.
Regards, -ej

January 23, 2003

MEMORANDUM

Subj: Comments Regarding Draft EIS for Proposed Modifications to Project Features North of the Fellsmere Grade, Central and Southern Florida Flood Control Project, Upper St. Johns River Basin and Related Areas, Brevard County, Florida

1. This memorandum is in response to the January 22, 2003 e-mail and January 23, 2003 fax from your office.

   a) My office would ask that the paragraph in question, Page 12 Subsection 1.8.2.4, be written with a more clarity to the reader if at all possible to avoid any future confusion.

   b) We do concur that the work will not adversely alter the salinity regimes or adverse impacts to oyster beds, sea grasses, and clam flats based upon conversations with your office. This concurrence is in response to the request of the U.S. Army Corps of Engineers in the above correspondence.

Christopher S. Katzenmiller

Christopher S. Katzenmiller

Jimenez, Esteban SAJ

From: Jimenez, Esteban SAJ
Sent: Wednesday, January 22, 2003 10:16 AM
To: 'exchange'
Subject: FW: RE Fellesmere

-----Original Message-----
From: Jimenez, Esteban SAJ
Sent: Wednesday, January 22, 2003 10:14 AM
To: 'katzenmillers@msn.com'
Cc: Jimenez, Esteban SAJ
Subject: RE Fellesmere

Regarding your letter of December 20, 2002, RE: Draft Supplemental Environmental Impact Statement for Proposed Modifications to Project Features North of the Fellesmere Grade, Central and Southern Florida Flood Control Project.

Addressing specifically the second paragraph as follows:
"Page 12 Sunsection 1.8.2.4 Impacts to the Indian River Lagoon. This section discusses discharge goals but mentions problems with large discharges into Indian River Lagoon that include increasing salinity and altering salinity regimes which may result in adverse impacts to oyster beds, sea grasses, and clam flats in the lagoon. These possible adverse effects of large discharges into the lagoon need to be addressed."

The adverse effects of dilution will not be caused by the proposed work, but are actually an ongoing situation. The proposed work will prevent further large discharges and will preserve/restore naturally occurring salinity levels in Indian River Lagoon.

Therefore, the U.S. Army Corps of Engineers requests the concurrance of your agency (U.S. Department of the Interior, Office of the Secretary, Office of Environmental Policy and Compliance) as far as the work not advewrsely altering salinity regimes or resulting in adverse impacts to oyster beds, sea grasses, and clam flats. This request only involves the above paragraph and issue, not the cultural/archeological issues mentioned further down in the letter.

Thank you in advance,
e. jimenez (904)232-2115

United States Department of the Interior

OFFICE OF THE SECRETARY

OFFICE OF ENVIRONMENTAL POLICY AND COMPLIANCE

Richard B. Russell Federal Building
75 Spring Street, S.W.
Atlanta, Georgia 30303

ER 02/1040

December 20, 2002

Mr. James C. Duck
Planning Division, Environmental Studies Branch
US Army Corps of Engineers
P.O. Box 4970
Jacksonville, FL 32232

RE: Draft Supplemental Environmental Impact Statement for Proposed Modifications to Project Features North of the Fellsmere Grade, Central and Southern Florida Flood Control Project

Dear Mr. Duck:

The Department of the Interior has reviewed the referenced document and we provide the following comments for your consideration.

Page 12 Subsection 1.8.2.4 Impacts to the Indian River Lagoon. This section discusses discharge goals but mentions problems with large discharges into Indian River Lagoon that include increasing salinity and altering salinity regimes which may result in adverse impacts to oyster beds, sea grasses, and clam flats in the lagoon. These possible adverse effects of large discharges into the lagoon need to be addressed.

Page 36 Subsection 2.8 Native Americans. The phrase "See Cultural and Historic Properties" should be replaced with a brief explanation of the concerns that exist for this subsection.

Various sections of the documents address the issue of minor destruction of the Elder Mound by bioturbation and dredging. Flooding is a major threat to the Historic site. Mitigation for this site is ongoing between the State of Florida SHPO and the tribal THPO. The Bureau of Indian Affairs (BIA) Eastern Regional Office needs to be kept informed of the progress of the mitigation. The burial ground and the mitigation is important to the BIA.

We oppose the taking of any land from Indian tribes and have serious concerns for the preservation of Indian burial mounds that may be eligible for the National Register of Historic places. Prior to the removal of any artifacts and/or human remains at any site that may be eligible for inclusion on the Register appropriate documentation and government-to-government consultation with the tribes must be completed. Furthermore, please be aware that Indian lands cannot be condemned or claimed without an Act of Congress per the Indian Non-Intercourse Act.

If you should have any questions concerning these comments please contact Chris Katzenmiller of the BIA, at 615-467-1667.

Sincerely,

Gregory Hogue
Regional Environmental Officer

cc:
FWS, R4
BIA, ERO
OEPC, WASO

under either section 112(c)(6) or 112(k). As a result, two area source categories: Asphalt Processing and Asphalt Roof Manufacturing, and Carbon Black Production were added to the section 112(k) list above to ensure that 90 percent of the emissions of the HAP, polycyclic organic matter, are addressed.

III. Administrative Requirements

Today's notice is not a rule; it is essentially an information-sharing activity which does not impose regulatory requirements or costs. Therefore, the requirements of Executive Order 13045 (Protection of Children from Environmental Health Risks and Safety Risks), Executive Order 13175 (Consultation and Coordination with Indian Tribal Governments), Executive Order 13132 (Federalism), Executive Order 13211 (Actions Concerning Regulations that Significantly Affect Energy Supply, Distribution, or Use), the Regulatory Flexibility Act, the National Technology Transfer and Advancement Act, and the Unfunded Mandates Reform Act do not apply to today's notice. Also, this notice does not contain any information collection requirements and, therefore, is not subject to the Paperwork Reduction Act, 44 U.S.C. 3501 *et seq.*

Under Executive Order 12866 (58 FR 51735, October 4, 1993), a regulatory action determined to be "significant" is subject to the Office of Management and Budget (OMB) review and the requirements of the Executive Order. The Executive Order defines "significant" regulatory action as one that is likely to lead to a rule that may either: (1) Have an annual effect on the economy of $100 million or more, or adversely affect a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local or tribal governments or communities; (2) create a serious inconsistency or otherwise interfere with an action take or planned by another agency; (3) materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients thereof; or (4) raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in the Executive Order. The OMB has determined that this action is not significant under the terms of Executive Order 12866.

Dated: November 13, 2002.

Robert Brenner,

Acting Assistant Administrator for Air and Radiation.

[FR Doc. 02-29774 Filed 11-21-02; 8:45 am]

BILLING CODE 6560-50-M

ENVIRONMENTAL PROTECTION AGENCY

[ER-FRL-6635-2]

Environmental Impact Statements; Notice of Availability

Responsible Agency: Office of Federal Activities, General Information (202) 564-7167 or *http://www.epa.gov/compliance/nepa.*

Weekly receipt of Environmental Impact Statements

Filed November 11, 2002, through November 15, 2002,

Pursuant to 40 CFR 1506.9.

EIS No. 020466, Draft Supplement, FHW, MI, US-31 Freeway Connection from Napier Road to I-94 Project, transportation improvement, updated information, Berrien County, MI, comment period ends: January 3, 2003, contact: James Kirschensteiner (517) 702-1835.

EIS No. 020472, Draft Supplement, COE, FL, Upper ST. Johns River Basin and Related Areas, Central and Southern Florida Flood Control Project, proposed modifications to project features north of the Fellsmere Grade, to preserve and enhance floodplain and aquatic habitats, Brevard County, FL, comment period ends: January 3, 2003, contact: Esteban Jimerez (904) 232-2115.

EIS No. 020473, Draft EIS, BLM, NV, Ivanpah Energy Center Project, proposes to construct and operate a 500 Megawatt (MW) gas-fired electric power generating station in southern Clark County, NV, comment period ends: January 3, 2003, contact: Jerrold E. Crockford (505) 599-6333.

EIS No. 020474, Draft EIS, FHW, AK, South Extension of the Coastal Trail Project, to extend the existing Tony Knowles Coastal Trail from Kincaid Park through the project area to the Potter Weigh Station, COE section 10 and 404 permit, municipality of Anchorage, Anchorage, Alaska, comment period ends: January 8, 2003, contact: Tim A. Haugh (907) 586-7418. This document is available on the Internet at: *http://home.gci.net/~southtrail.*

EIS No. 020475, Draft EIS, USN, CA, China Lake Naval Air Weapons Station, proposed military operational increases and implementation of associated comprehensive land use and integrated natural resources management plans, located in the North and South Range, Inyo, Kern and San Bernardino Counties, CA, comment period ends: February 18, 2003, contact: John O'Gara (076) 093-9321.

EIS No. 020476, Final EIS, COE, FL, Miami River Dredged Material Management Plan, river sediments dredging and disposal maintenance dredging, Biscayne Bay, city of Miami, Miami-Dade County, FL, wait period ends: December 23, 2002, contact: Daniel Small (404) 562-5224.

Amended Notices

EIS No. 020405, Draft EIS, FHW, NH, Interstate 93 Improvements, from Salem to Manchester, IM-IR-93-1(174)0, 10418-C, funding, NPDES and COE section 404 permits, Hillsborough and Rockingham Counties, NH, comment period ends: December 16, 2002, contact: William F. O'Donnell (603) 228-3057. Revision of **Federal Register** notice published on 10/4/2002: CEQ comment period ending 11/18/2002 has been extended to 12/16/2002.

EIS No. 020445, Draft EIS, COE, Lake Sidney Lanier Project, to continue the ongoing operation and maintenance activities necessary of flood control, hydropower generation, water supply, recreation, natural resources management, and shoreline management, section 10 and 404 permits, Dawson, Forsyth, Lumpkin, Hill and Gwinnett Counties, GA, comment period ends: December 23, 2002, contact: Glen Coffee (251) 690-2727.

Revision of **Federal Register** notice published on 11/8/2002: correction to contact name and telephone number. Also Draft EIS is available on Internet at: *http://www.usacelakelaniereis.net/.*

Dated: November 19, 2002.

B. Katherine Biggs,

Associate Director, NEPA Compliance, Office of Federal Activities.

[FR Doc. 02-29781 Filed 11-21-02; 8:45 am]

BILLING CODE 6560-50-P

ENVIRONMENTAL PROTECTION AGENCY

[ER-FRL-6635-3]

Environmental Impact Statements and Regulations; Availability of EPA Comments

Availability of EPA comments prepared pursuant to the Environmental Review Process (ERP), under section

STATE OF FLORIDA

DEPARTMENT OF COMMUNITY AFFAIRS

"Helping Floridians create safe, vibrant, sustainable communities"

JEB BUSH
Governor

STEVEN M. SEIBERT
Secretary

April 30, 1999

Ms. Therese J. Fretwell
Department of the Army
Jacksonville District Corps of Engineers
Post Office Box 4970
Jacksonville, Florida 32232-0019

RE: Department of the Army - Scoping Letter for the Evaluation of Alternatives for the Implementation of the Three Forks Rediversion Plan - Brevard County, Florida
SAI: FL9902230124C

Dear Ms. Fretwell:

The Florida State Clearinghouse, pursuant to Presidential Executive Order 12372, Gubernatorial Executive Order 95-359, the Coastal Zone Management Act, 16 U.S.C. §§ 1451-1464, as amended, and the National Environmental Policy Act, 42 U.S.C. §§ 4321, 4331-4335, 4341-4347, as amended, has coordinated a review of the above-referenced project.

Based on the information contained in the scoping letter and the enclosed comments provided by our reviewing agencies, the state has determined that, at this stage, the above-referenced project is consistent with the Florida Coastal Management Program (FCMP). All subsequent environmental documents prepared for this project must be reviewed to determine the project's continued consistency with the FCMP. The state's continued concurrence with the project will be based, in part, on the adequate resolution of issues identified during this and subsequent reviews.

Enclosed are all comments received to date from the reviewing agencies. Comments subsequently received by the State Clearinghouse will be forwarded for your review.

2555 SHUMARD OAK BOULEVARD • TALLAHASSEE, FLORIDA 32399-2100
Phone: (850) 488-8466/Suncom 278-8466 FAX: (850) 921-0781/Suncom 291-0781
Internet address: http://www.state.fl.us/comaff/

FLORIDA KEYS
Area of Critical State Concern Field Office
2796 Overseas Highway, Suite 212
Marathon, Florida 33050-2227

GREEN SWAMP
Area of Critical State Concern Field Office
205 East Main Street, Suite 104
Bartow, Florida 33830-4641

Thank you for the opportunity to review the scoping document. If you have any questions regarding this letter, please contact Ms. Cherie Trainor, Clearinghouse Coordinator, at (850) 922-5438.

Sincerely,

Ralph Cantral, Executive Director
Florida Coastal Management Program

RC/cc

Enclosures

COUNTY: Brevard

Message:

DATE: 03/01/1999
COMMENTS DUE-2 WKS: 03/16/1999
CLEARANCE DUE DATE: 04/09/1999
SAI#: FL99022301

STATE AGENCIES	WATER MANAGEMENT DISTRICTS	OPB POLICY UNITS
X Agriculture Community Affairs Environmental Protection Game and Fresh Water Fish Comm Marine Fisheries Commission OTTED State Transportation	St. Johns River WMD	Environmental Policy/C & ED

RECEIVED
MAR 10 1999
State of Florida Clearinghouse

The attached document requires a Coastal Zone Management Act/Florida Coastal Management Program consistency evalutation and is categorized as one of the following:

___ Federal Assistance to State or Local Government (15 CFR 930, Subpart F). Agencies are required to evaluate the consistency of the activity.

_X_ Direct Federal Activity (15 CFR 930, Subpart C). Federal Agencies are required to furnish a consistency determination for the State's concurrence or objection.

___ Outer Continental Shelf Exploration, Development or Production Activities (15 CFR 930, Subpart E). Operators are required to provide a consistency certification for state concurrence/objection.

___ Federal Licensing or Permitting Activity (15 CFR 930, Subpart D). Such projects will only be evaluated for consistency when there is not an analogous state license or permit.

Project Description:

Department of the Army - Scoping Letter for the Evaluation of Alternatives for the Implementation of the Three Forks Rediversion Plan - Brevard County, Florida.

To: Florida State Clearinghouse
Department of Community Affairs
2555 Shumard Oak Boulevard
Tallahassee, FL 32399-2100
(850) 922-5438 (SC 292-5438)
(850) 414-0479 (FAX)

EO. 12372/NEPA

☑ No Comment
☐ Comments Attached
☐ Not Applicable

Federal Consistency

☑ No Comment/Consistent
☐ Consistent/Comments Attached
☐ Inconsistent/Comments Attached
☐ Not Applicable

From:
Florida Division of Forestry
Forest Resource Planning
& Support Services Bureau
3125 Conner Boulevard
Tallahassee, Florida 32399-1650

Division/Bureau: _____

Reviewer: _____

Date: 3-8-99

of the particular DLA PLFA involved. Official mailing addresses are published as an appendix to DLA's compilation of systems of records notices.

CONTESTING RECORD PROCEDURES:

The DLA rules for accessing records, for contesting contents and appealing initial agency determinations are contained in DLA Regulation 5400.21, 32 CFR part 323, or may be obtained from the Privacy Act Officer, Headquarters, Defense Logistics Agency, ATTN: CAAR, 8725 John J. Kingman Road, Suite 2533, Fort Belvoir, VA 22060–6221.

RECORD SOURCE CATEGORIES:

Supervisors or other appointed officials designated for this purpose.

EXEMPTIONS CLAIMED FOR THE SYSTEM:

None.

[FR Doc. 99–27071 Filed 10–15–99; 8:45 am]

BILLING CODE 5001–10–F

DEPARTMENT OF DEFENSE

Corps of Engineers, Department of the Army

›tent To Prepare a Draft Supplemental ıvironmental Impact Statement ‚JSEIS) for the Upper St. Johns River Basin Restoration, Three Forks Marsh Conservation Area Project, Brevard County, Florida

AGENCY: U.S. Army Corps of Engineers, DOD.

ACTION: Notice of intent.

SUMMARY: The Jacksonville District, U.S. Army Corps of Engineers (Corps), and the St. Johns River Water Management District intend to prepare a Draft Supplemental Environmental Impact Statement (DSEIS) on the feasibility of implementing a plan for the Upper St. Johns River Basin, Three Forks Marsh Conservation Area (TFMCA) Project in Brevard County, Florida.

ADDRESSES: Questions about the proposed action and DSEIS should be addressed to Ms. Lizabeth R. Manners, U.S. Army Engineer District, P.O. Box 4970, Jacksonville, Florida 32232–0019; Telephone 904–232–3923.

SUPPLEMENTARY INFORMATION:

a. The Final Environmental Impact Statement for the Upper St. Johns River Basin (USJRB) Project was published in 1985. The entire project area is located in Brevard, Indian River, Okeechobee, and Osceola counties and is ıroximately 1,659 square miles in .a. The Three Forks Marsh Conservation Area (TFMCA) Project is one component of the USJRB Project. TFMCA is approximately 14,000 aces in size and located entirely within Brevard County.

The largest portions of the TFMCA include the following: approximately 2,000 acres of mixed herbaceous marsh; approximately 1,900 acres of sawgrass; approximately 1,900 acres of pastureland; approximately 1,800 acres of mixed sawgrass/sedge marsh; and approximately 1,500 acres of primrose willow. Other vegetative communities are present in smaller portions.

Under the original General Design Memorandum and EIS, the plan called for the TFMCA to be hydrologically connected via levee gaps to the St. Johns Marsh Conservation Area (SJMCA). However, recent survey data has revealed significant subsidence in the TFMCA. If the origin plan is implemented, then overdrainage of the SJMCA would occur. In addition, a design modification is needed at two structures (S–96–B and S–96–C) currently discharging into the SJMCA. The TFMCA project would address these two concerns while providing for the main project purpose of flood control and secondary purposes of environmental protection, water quality, and water supply.

Alternatives which will be evaluated in the SEIS include the proposed TFMCA Diversion plan. Under the proposed alternative water deliveries through S–96–B and S–96–C which are currently discharged into the SJMCA would be divided. Water leaving the St. Johns Water Management Area would be discharged through S–96–B directly into the southern portion of TFMCA. Water from the Blue Cypress Marsh Conservation Area would be discharged through S–96–C directly into the southern portion of SJMCA. A discharge canal, extending from S–96–B to the northern deepwater portion of TFMCA, would have a low berm constructed along its eastern edge to prevent water from directly entering the emergent marsh portions of TFMCA. Because of subsidence and the amount of water that would be delivered into TFMCA, the lower reaches of the TFMCA would be impounded. Water would flow from TFMCA into SJMCA through a proposed weir and structure S–257. Additional plans may be identified and evaluated during the SEIS process.

Potential environmental resources and issues to be evaluated in the SEIS include project impacts on:

Fish and wildlife resources
Wetlands and habitat values
Conversion of habitat types
Water quality
Endangered or threatened species
Historical or archaeological resources
Aesthetics
Nuisance and exotic plant species

Because of the magnitude and duration of this project the U.S. Army Corps of Engineers and St. Johns River Water Management District have determined that a SEIS should be prepared for the Project pursuant to the National Environmental Policy Act (NEPA).

b. Scoping: The scoping process as outlined by the Council on Environmental Quality will be utilized to involve Federal, State, and local agencies; and other interested persons and organizations. Earlier this year a letter was sent to "interested Federal, State, local agencies and interested parties requesting comments and concerns regarding issues to consider during the study. Responses to this letter helped identify the potential environmental impacts listed in paragraph a. above. Additional comments are welcome and may be provided to the above address. Public meetings may be held in the future. Exact dates, times and locations will be published in local papers.

c. It is estimated that the DSEIS will be available to the public by the spring of 2000.

Dated: October 1, 1999.

James C. Duck,

Chief, Planning Division.

[FR Doc. 99–27058 Filed 10–15–99; 8:45 am]

BILLING CODE 3710–AJ–M

DEPARTMENT OF ENERGY

Environmental Management Site-Specific Advisory Board, Oak Ridge Reservation

AGENCY: Department of Energy.

ACTION: Notice of open meeting.

SUMMARY: This notice announces a meeting of the Environmental Management Site-Specific Advisory Board (EM SSAB), Oak Ridge. The Federal Advisory Committee Act (Pub. L. No. 92–463, 86 Stat. 770) requires that public notice of these meetings be announced in the Federal Register.

DATE: Wednesday, November 3, 1999; 6:00–9:30 p.m.

ADDRESSES: Garden Plaza Hotel, 215 South Illinois Street, Oak Ridge, TN.

FOR FURTHER INFORMATION CONTACT: Carol Davis, Federal Coordinator/Ex-Officio Officer, Department of Energy Oak Ridge Operations Office, P.O. Box 2001, EM–90, Oak Ridge, TN 37831, (423) 576–0418.

SUPPLEMENTARY INFORMATION:

Department of Environmental Protection

Jeb Bush
Governor

David B. Struhs
Secretary

April 1, 1999

RECEIVED
APR 06 1999
State of Florida Clearinghouse

Cherie Trainor
State Clearinghouse
Department of Community Affairs
2555 Shumard Oak Boulevard
Tallahassee, Florida 32399-2100

RE: Implementation of Three Forks Rediversion Plan, Brevard County
SAI: 99-0124C

Dear Ms. Trainor:

The Florida Department of Environmental Protection (DEP) has completed its review of the above-referenced project. The Department has no objections to the project as proposed at this time.

Thank you for the opportunity to comment on this project. If I can be of further assistance, please contact me at (850) 487-2231.

Sincerely,

Marlane Castellanos

Marlane Castellanos
Office of Intergovernmental Programs

MC/

COUNTY: Brevard

DATE: 03/01/1999
COMMENTS DUE-2 WKS: 03/16/1999
CLEARANCE DUE DATE: 04/09/1999
SAI#: FL9902230124

Message:

STATE AGENCIES	WATER MANAGEMENT DISTRICTS	OPB POLICY UNITS
Agriculture Community Affairs Environmental Protection Game and Fresh Water Fish Comm X Marine Fisheries Commission OTTED State Transportation	St. Johns River WMD RECEIVED MAR 08 1999 State of Florida Clearinghouse	Environmental Policy/C & ED RECEIVED MAR 04 1999 MARINE FISHERIES COMMISSION

The attached document requires a Coastal Zone Management Act/Florida Coastal Management Program consistency evalutation and is categorized as one of the following:

- Federal Assistance to State or Local Government (15 CFR 930, Subpart F). Agencies are required to evaluate the consistency of the activity.
- X Direct Federal Activity (15 CFR 930, Subpart C). Federal Agencies are required to furnish a consistency determination for the State's concurrence or objection.
- Outer Continental Shelf Exploration, Development or Production Activities (15 CFR 930, Subpart E). Operators are required to provide a consistency certification for state concurrence/objection.
- Federal Licensing or Permitting Activity (15 CFR 930, Subpart D). Such projects will only be evaluated for consistency when there is not an analogous state license or permit.

Project Description:

Department of the Army - Scoping Letter for the Evaluation of Alternatives for the Implementation of the Three Forks Rediversion Plan - Brevard County, Florida.

To: Florida State Clearinghouse
Department of Community Affairs
2555 Shumard Oak Boulevard
Tallahassee, FL 32399-2100
(850) 922-5438 (SC 292-5438)
(850) 414-0479 (FAX)

EO. 12372/NEPA
- ☐ No Comment
- ☐ Comments Attached
- ☐ Not Applicable

Federal Consistency
- ☐ No Comment/Consistent
- ☐ Consistent/Comments Attached
- ☐ Inconsistent/Comments Attached
- ☒ Not Applicable

MARINE FISHERIES COMMISSION
2540 EXECUTIVE CENTER CIRCLE WEST
SUITE 106
TALLAHASSEE, FL 32301

From:
Division/Bureau:
Reviewer: Lucy Schneider
Date: 3/4/99

COUNTY: Brevard

DATE: 03/01/1999
COMMENTS DUE-2 WKS: 03/16/1999
CLEARANCE DUE DATE: 04/09/19
SAI#: FL99022

Message:

STATE AGENCIES	WATER MANAGEMENT DISTRICTS	OPB POLICY UNITS
Agriculture Community Affairs Environmental Protection Game and Fresh Water Fish Comm Marine Fisheries Commission X OTTED State Transportation	St. Johns River WMD	Environmental Policy/C & ED

RECEIVED
MAR 10 1999
State of Florida Clearinghouse

The attached document requires a Coastal Zone Management Act/Florida Coastal Management Program consistency evalutation and is categorized as one of the following:

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Project Description:

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EO. 12372/NEPA

☒ No Comment
☐ Comments Attached
☐ Not Applicable

Federal Consistency

☒ No Comment/~~Consistent~~
☐ Consistent/Comments Attached
☐ Inconsistent/Comments Attached
☐ Not Applicable

From:

Division/Bureau: OTTED

Reviewer: M Blakeslee

Date: 3/7/99

COUNTY: Brevard

Message:

DATE: 03/01/1999
COMMENTS DUE-2 WKS: 03/15/1999
CLEARANCE DUE DATE: 04/09/1999
SAI#: FL990223012

STATE AGENCIES

Agriculture
Community Affairs
Environmental Protection
Game and Fresh Water Fish Comm
Marine Fisheries Commission
OTTED
State
X Transportation

WATER MANAGEMENT DISTRICTS

St. Johns River WMD

OPB POLICY UNITS

Environmental Policy/C & ED

RECEIVED
MAR 08 1999
State of Florida Clearinghouse

The attached document requires a Coastal Zone Management Act/Florida Coastal Management Program consistency evalutation and is categorized as one of the following:

_ Federal Assistance to State or Local Government (15 CFR 930, Subpart F). Agencies are required to evaluate the consistency of the activity.

_X_ Direct Federal Activity (15 CFR 930, Subpart C). Federal Agencies are required to furnish a consistency determination for the State's concurrence or objection.

___ Outer Continental Shelf Exploration, Development or Production Activities (15 CFR 930, Subpart E). Operators are required to provide a consistency certification for state concurrence/objection.

___ Federal Licensing or Permitting Activity (15 CFR 930, Subpart D). Such projects will only be evaluated for consistency when there is not an analogous state license or permit.

Project Description:

Department of the Army - Scoping Letter for the Evaluation of Alternatives for the Implementation of the Three Forks Rediversion Plan - Brevard County, Florida.

To: Florida State Clearinghouse
Department of Community Affairs
2555 Shumard Oak Boulevard
Tallahassee, FL 32399-2100
(850) 922-5438 (SC 292-5438)
(850) 414-0479 (FAX)

EO. 12372/NEPA

☑ No Comment
☐ Comments Attached
☐ Not Applicable

Federal Consistency

☑ No Comment/Consistent
☐ Consistent/Comments Attached
☐ Inconsistent/Comments Attached
☐ Not Applicable

From:
Division/Bureau: FDOT
Reviewer: Lynda Pilcher
Date: 3/4/99

COUNTY: Brevard Rec'd 3/4/99.

Message: #1342 ✓ 3/10

DATE: 03/01/1999
COMMENTS DUE-2 WKS: 03/16/1999
CLEARANCE DUE DATE: 04/09/199
SAI#: FL990223

STATE AGENCIES	WATER MANAGEMENT DISTRICTS	OPB POLICY UNITS
Agriculture Community Affairs Environmental Protection Game and Fresh Water Fish Comm Marine Fisheries Commission OTTED State Transportation	X St. Johns River WMD	Environmental Policy/C & ED

RECEIVED
MAR 15 1999
State of Florida Clearinghouse

The attached document requires a Coastal Zone Management Act/Florida Coastal Management Program consistency evalutation and is categorized as one of the following:

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☐ Comments Attached
☐ Not Applicable

Federal Consistency

☒ No Comment/Consistent
☐ Consistent/Comments Attached
☐ Inconsistent/Comments Attached
☐ Not Applicable

From:

Division/Bureau: SJRWMD/OPP

Reviewer: MSpontak 3/9/99

Date:

COUNTY: Brevard

DATE: 03/01/1999
COMMENTS DUE-2 WKS: 03/16/1999
CLEARANCE DUE DATE: 04/09/1999
SAI#: FL9902230124C

Message:

STATE AGENCIES	WATER MANAGEMENT DISTRICTS	OPB POLICY UNITS
Agriculture Community Affairs Environmental Protection Game and Fresh Water Fish Comm Marine Fisheries Commission OTTED State Transportation	St Johns River WMD	X Environmental Policy/C & ED

RECEIVED
MAR 5 1999
OFFICE OF PLANNING & BUDGETING
ENVIRONMENTAL POLICY UNIT

The attached document requires a Coastal Zone Management Act/Florida Coastal Management Program consistency evaluation and is categorized as one of the following:

- Federal Assistance to State or Local Government (15 CFR 930, Subpart F). Agencies are required to evaluate the consistency of the activity.
- X Direct Federal Activity (15 CFR 930, Subpart C). Federal Agencies are required to furnish a consistency determination for the State's concurrence or objection.
- Outer Continental Shelf Exploration, Development or Production Activities (15 CFR 930, Subpart E). Operators are required to provide a consistency certification for state concurrence/objection.
- Federal Licensing or Permitting Activity (15 CFR 930, Subpart D). Such projects will only be evaluated for consistency when there is not an analogous state license or permit.

Project Description:

Department of the Army - Scoping Letter for the Evaluation of Alternatives for the implementation of the Three Forks Rediversion Plan - Brevard County, Florida.

To: Florida State Clearinghouse
Department of Community Affairs
2555 Shumard Oak Boulevard
Tallahassee, FL 32399-2100
(850) 922-5438 (SC 292-5438)
(850) 414-0479 (FAX)

EO. 12372/NEPA

- [X] No Comment
- [ ] Comments Attached
- [ ] Not Applicable

Federal Consistency

- [ ] No Comment/Consistent
- [ ] Consistent/Comments Attached
- [ ] Inconsistent/Comments Attached
- [ ] Not Applicable

From:
Division/Bureau: OPB/Env.
Reviewer: Carla Mitchell
Date: 3-31-99

FLC IDA STATE CLEARINGE USE
RPC INTERGOVERNMENTAL COORDINATION AND RESPONSE SHEET

#1/89

SAI #: FL9902230124C

DATE: 03/01/1999

COMMENTS DUE TO CLEARINGHOUSE: 03/31/1999

AREA OF PROPOSED ACTIVITY: COUNTY: Brevard County

☐ FEDERAL ASSISTANCE ☒ DIRECT FEDERAL ACTIVITY ☐ FEDERAL LICENSE OR PERMIT ☐ OCS

PROJECT DESCRIPTION

Department of the Army - Scoping Letter for the Evaluation of Alternatives for the Implementation of the Three Forks Rediversion Plan - Brevard County, Florida.

ROUTING:

RPC

X E. Central FL RPC

PLEASE CHECK ALL THE LOCAL GOVERNMENTS BELOW FROM WHICH COMMENTS HAVE BEEN RECEIVED; ALL COMMENTS RECEIVED SHOULD BE INCLUDED IN THE RPC'S CLEARINGHOUSE RESPONSE PACKAGE. IF NO COMMENTS WERE RECEIVED, PLEASE CHECK "NO COMMENT" BOX AND RETURN TO CLEARINGHOUSE.

COMMENTS DUE TO RPC: 03/22/1999

NO COMMENTS: ✓

(IF THE RPC DOES NOT RECEIVE COMMENTS BY THE DEADLINE DATE, THE RPC SHOULD CONTACT THE LOCAL GOVERNMENT TO DETERMINE THE STATUS OF THE PROJECT REVIEW PRIOR TO FORWARDING THE RESPONSE PACKAGE TO THE CLEARINGHOUSE.)

NOTES:

ALL CONCERNS OR COMMENTS REGARDING THE ATTACHED PROJECT (INCLUDING ANY RPC COMMENTS) SHOULD BE SENT IN WRITING BY THE DUE DATE TO THE CLEARINGHOUSE. PLEASE ATTACH THIS RESPONSE FORM AND REFER TO THE SAI # IN ALL CORESPONDENCE.

IF YOU HAVE ANY QUESTIONS REGARDING THE ATTACHED PROJECT, PLEASE CONTACT THE STATE CLEARINGHOUSE AT (904) 922-5438 OR SUNCOM 272-5438.

Paul Stevenson
Environmental Scientist
USACOE
PO Box 4970
Jacksonville, Florida 32232-0019

9-12-00

Dear Mr. Stevenson,

Enclosed are the charts and graphs depicting utilization and expenditure estimate projections for Three Forks Marsh Conservation Area (TFMCA) in the Upper St Johns River Basin Project. Background information and my analysis of the estimates and projections as follows:

1. Angler utilization is based on analysis of creel survey data from St Johns Water Management Area (SJWMA), which is located in Upper St Johns Basin Project. This reservoir is similar in size to the projected "fishable" area of TFMCA. The SJWMA has produced a world famous largemouth bass fishery since 1992, which attracts a significant number of out of state anglers.

2. Angler expenditure estimates and projections are based on a Florida Fish and Wildlife Conservation Commission (FWC) adaptation of the 1996 U.S. Fish and Wildlife- Associated Recreation Survey.

3. FWC staff provided the economic impact multiplier of 2.

4. The minimum water depth necessary to maintain a sport fishery in this system was defined as 3 feet. This professional opinion was provided by FWC Melbourne fisheries staff, which has cumulative experience of over 65 years in this basin.

5. The projected angler utilization and expenditures are directly related to the area of the lake with the minimum water depth. The larger the area >3 feet, the more public utilization and greater economic impact to the surrounding businesses.

I hope this proves helpful. Please do not hesitate to contact me if you have any further questions or need additional assistance.

Sincerely,

Dale Jones
Biological Administrator II

THREE FORKS MARSH CONSERVATION AREA
RECREATION ASSESSMENT
ENVIRONMENTAL IMPACT STATEMENT
BREVARD COUNTY, FLORIDA
OCTOBER 2001

RECREATION CONSIDERATIONS

Authority to consider Federal development of project-related recreation resources is contained in the Land and Water Conservation Fund Act (Public Law 88-578), the Federal Water Project Recreation Act (Public Law 89-72), and the Water Resources Development Act of 1986 (Public Law 99-662). The Corps' objective in terms of recreational development is to "fully consider the recreation potential that may be applied at Corps Civil Works Projects"(ER 1165-2-400). Consideration of recreation resources within the project study area is required by the National Environmental Policy Act of 1969 (NEPA) PL 91-190, as amended. The purpose of the following write-up is to identify project construction activities and their potential impacts to recreational resources within the proposed project area.

ENVIRONMENTAL SETTING WITHOUT THE PROJECT

The 13,976 acre Three Forks Marsh Conservation Area (TFMCA) spans a length of almost 12 miles and ranges from approximately 1.25 to 3 miles wide. The US Army Corps of Engineers and St. Johns River Water Management District TFMRA comprises approximately 52,000 acres. The 14,000-acre marsh conservation project area on the eastern side of the tract will be the focus of this assessment (see Figure 1 – Project Area Map). The TFMRA provides restrooms, a picnic shelter with grill, hiking, birdwatching opportunities and seasonal hunting. A boatramp facility will be completed as water deliveries increase water elevations within the project area. Ample paved parking is available within the TFMRA for vehicles with trailers and others. The park is ADA accessible. Outside of the project area, along Canal 40, airboating, canoeing and fishing activities are currently available.

At the south end of the proposed project are the T.M. Goodwin Waterfowl Management Area and the Fellsmere Grade Park within Indian River County. The management area provides trails for hiking, equestrian use and birdwatching. The Fellesmere Grade Park provides two boatramps, restrooms, a picnic pavilion with tables, a T-shaped fishing pier and paved parking. Access to Stick Lake via two Canal 54 boatramps is also available. The facilities are ADA accessible.

The project area is surrounded by levees approximately 12 feet tall which provide an elevated vantage point for birdwatching, sightseeing and provide flood protection

ENVIRONMENTAL SETTING WITH THE PROJECT

The proposed project elements should not adversely affect recreation resources within the 52,000-acre TFMRA, T. M. Goodwin Waterfowl Management Area, Blue Cypress Conservation Area or Stick Marsh. The potential for increased water depths, increased fish habitat, and increased fish and wildlife food is very great.

The Florida Fish and Wildlife Conservation Commission (FWC) has provided angler utilization projections that are based on the St Johns River Water Management Area (SJRWMA) reservoir of similar size of fishable area at the TFMRA for the proposed water levels (Enclosure 2 & 3). The projections are based on a minimum 3-foot water depth, water area and an economic multiplier of 2. Increased project water depth provides greater acreage of fishable area, which means more manhours per acre of fishing that means a greater economic benefit to the immediate area. The proposed project will provide many locations that are ideal habitat for fish, fry, birdlife and wildlife. Many channel turns, bends, nooks, and feeder streams will provide an interesting, unfolding setting for recreational boaters, hunters, hikers and birdwatchers.

NO ACTION ALTERNATIVE (STATUS QUO)

With the No Action Alternative there would be no federal project and the proposed project area would not benefit from the additional water elevations and seasonal fluctuations. The project area would not be boat accessible and the abundance of waterfowl and other wildlife would be diminished.

505/50 SPLIT ALTERNATIVE

With the construction of the 50/50 Split Alternative a 500-foot weir near River Mile 280 with a crest of 20.0 foot NGVD and a 1,500-foot outflow weir at elevation 19.0 foot NGVD near River Mile 273 could maintain increased water elevations within the project area. This alternative could greatly improve fish habitat and increase fish numbers. An increase in wildlife food sources and wildlife in general is projected. This alternative could greatly increase angler utilization (see Figure 2) of the project area as projected by FWC and increase angler expenditures (see Figure 3). An increase in hunting, birdwatching, boating and hiking could also be realized. Water discharges would be split 50/50 to Three Forks Marsh Conservation Area and St. Johns Marsh Conservation Area.

PREFERRED ALTERNATIVE (RECOMMENDED PLAN)

With the construction of the Preferred Alternative the1,500-foot outflow weir at River Mile 273 would be at 21.0 foot NGVD providing two feet of additional water depth for the project area. This alternative could provide more fish habitat and wildlife benefits than the 50/50 split alternative. The FWC has projected greater angler utilization of the project area (see Figure 2) and an increase in angler expenditures (see Figure 3). An increase in hunting, birdwatching, boating and hiking within the project area could also be realized.

REFERENCES:

Federal Water Project Recreation Act (Public Law 89-72).

Florida Fish & Wildlife Conservation Commission, 2000, Creel Information and Projections, Palatka, FL.

Fogg, George E. (1981), Park Planning Guidelines Revised, National Recreation and Park Association, NY, NY.

Land and Water Conservation Fund Act (Public Law 88-578).

Marth, D. & Marth M. J., (1997), Florida Almanac, 1997-1998, Pelican Publishing Co., Gretna, Louisiana.

National Environmental Policy Act of 1969 (NEPA) PL 91-190, as amended.

Rutledge, Albert J. (1971), Anatomy Of A Park, The Essentials of Recreation Area Planning And Design, McGraw-Hill Book Co., NY, NY.

Simonds, John O. (1961), Landscape Architecture, F.W. Dodge, NY, NY.

SJRWMD, (1997), Recreation Guide to District Lands, 2nd Edition, Palatka, FL.

State of Florida, Department of Environmental Protection, (2000), Draft Florida Statewide Comprehensive Outdoor Recreation Plan (SCORP), Tallahassee, FL.

TM 5-803-12, (3 Sept 1986), Planning Outdoor Recreation Areas, Department of the Army, Headquarters, Washington, D.C.

USACE- CECW-PA, "Policy Guidance Letter No. 33, Protection of Recreational Uses at Civil Works Projects", Mar 1992.

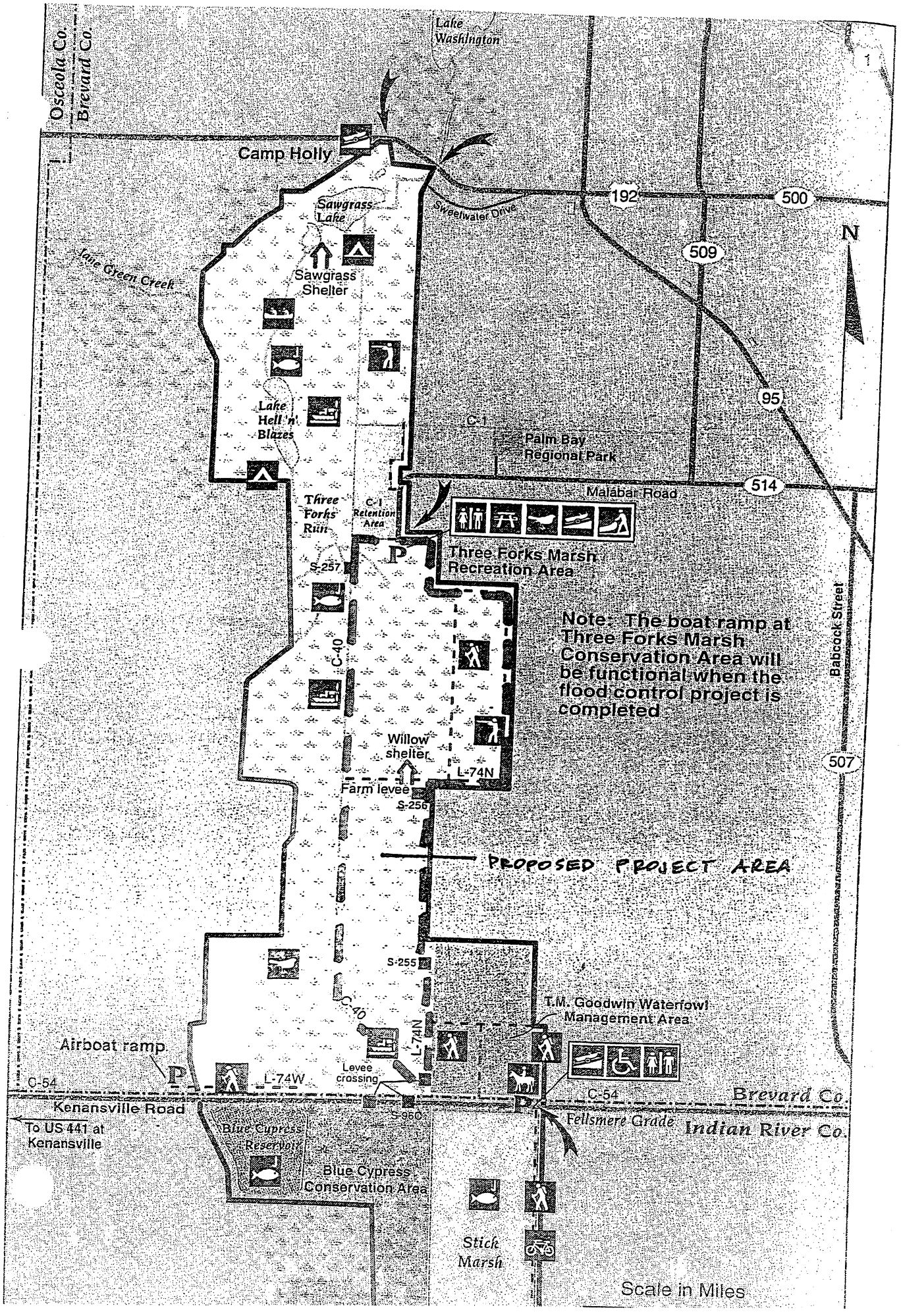
USACE- CECW-PA, "Policy Guidance Letter No. 59, Recreation Development at Ecosystem Restoration Projects, Jun 1998.

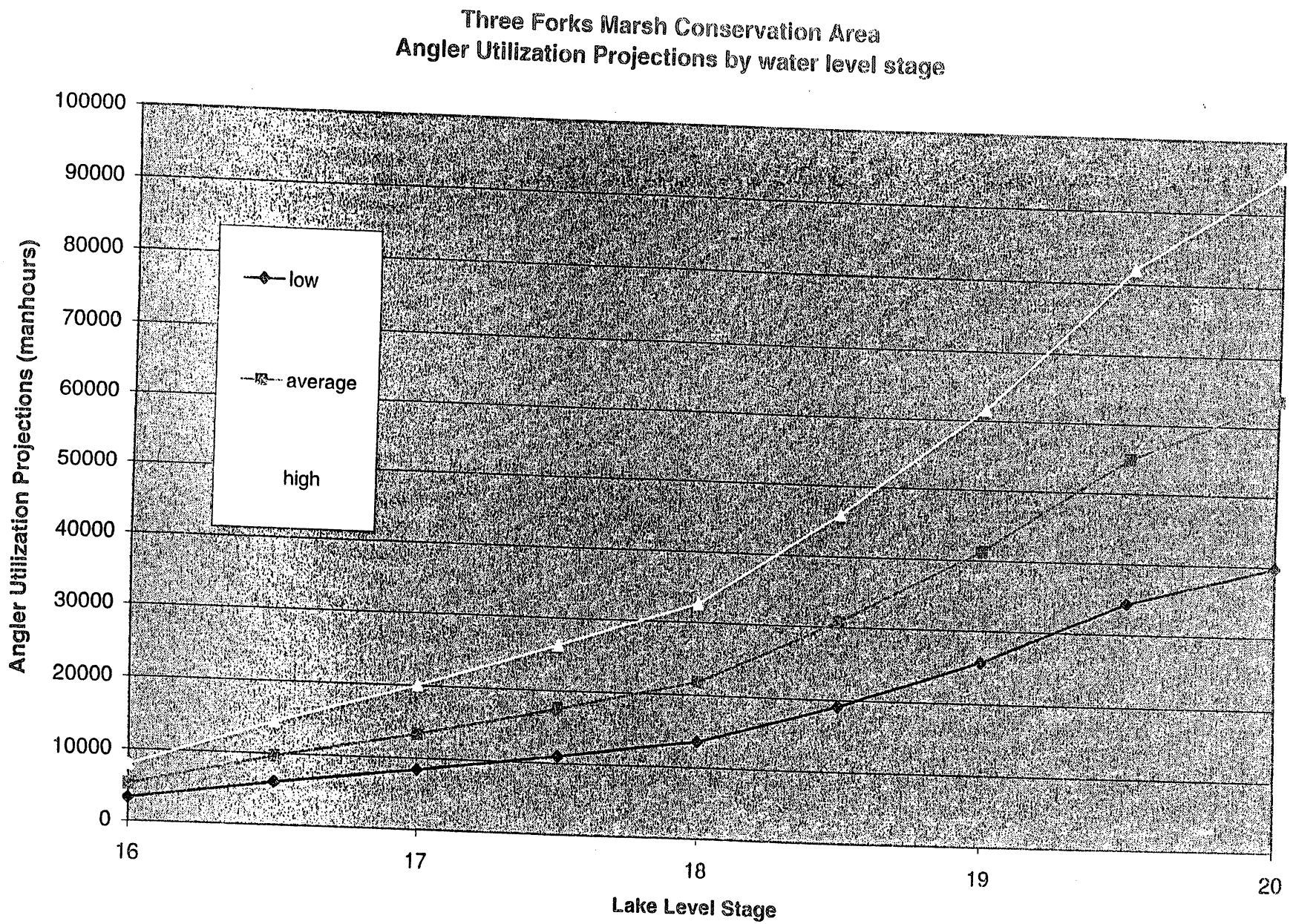
USACE (Dec 1990), "Policy and Planning Guidance for Conducting Civil Works Planning Studies, ER 1105-2-100, Department of the Army, Washington, D.C.

USFWS, Three Forks Marsh Coordination Act Report, Jacksonville, FL, May 2000.

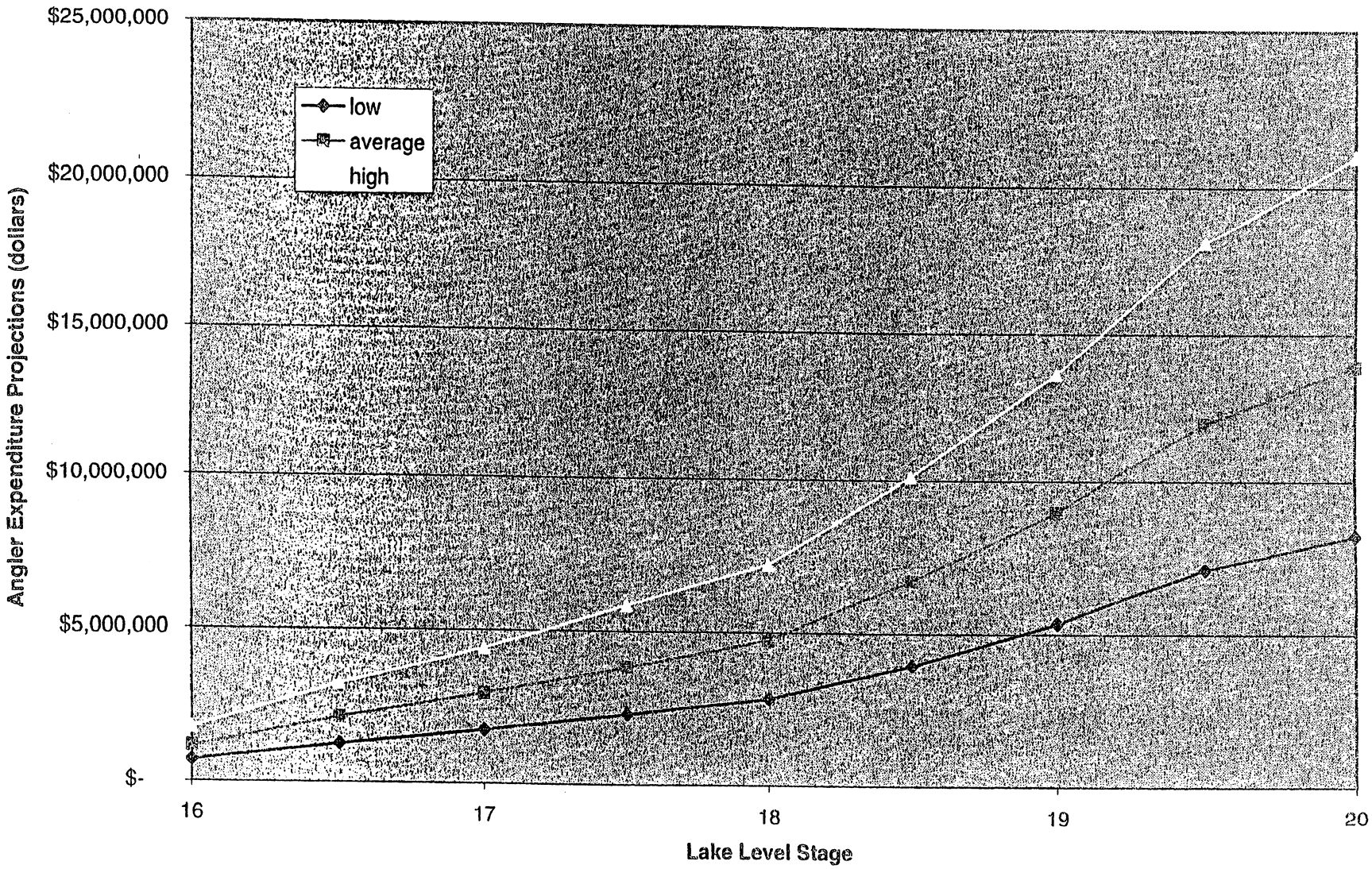
Water Resources Development Act of 1986 (Public Law 99-662).

Personal Communication, Dale Jones, Biological Administrator II, August 30, 2000 and September 7, 2000.

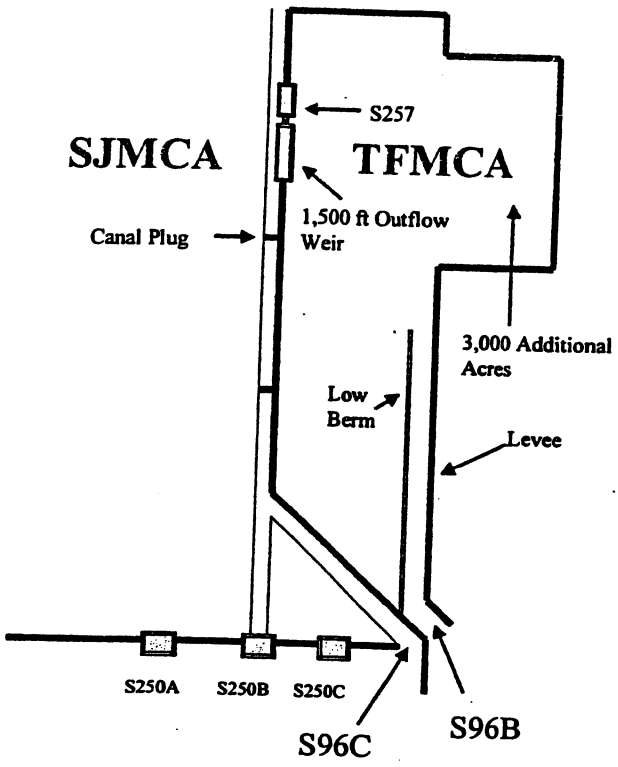

Osceola Co.
Brevard Co.
Lake Washington
Camp Holly
Sawgrass Lake
Sawgrass Shelter
Sweetwater Drive
192
500
509
95
514
N
Jane Green Creek
Lake Hell 'n' Blazes
C-1
Palm Bay Regional Park
Malabar Road
Three Forks Run
C-1 Retention Area
Three Forks Marsh Recreation Area
S-257
C-40
Note: The boat ramp at Three Forks Marsh Conservation Area will be functional when the flood control project is completed.
Babcock Street
507
Willow shelter
L-74N
Farm levee
S-256
PROPOSED PROJECT AREA
S-255
C-40
T.M. Goodwin Waterfowl Management Area
L-74N
Airboat ramp
C-54
L-74W
Levee crossing
C-54
Brevard Co.
Kenansville Road
To US 441 at Kenansville
S-96C
Fellsmere Grade
Indian River Co.
Blue Cypress Reservoir
Blue Cypress Conservation Area
Stick Marsh
Scale in Miles


Three Forks Marsh Conservation Area
Angler Utilization Projections by water level stage
Angler Utilization Projections (manhours)
100000
90000
80000
70000
60000
50000
40000
30000
20000
10000
0
low
average
high
16
17
18
19
20
Lake Level Stage

Three Forks Marsh Conservation Area
Angler Expenditure Projections by lake level stage



Preferred Alternative



THREE FORKS MARSH CONSERVATION AREA PROJECT
ENVIRONMENTAL IMPACT ASSESSMENT
AESTHETIC RESOURCES ASSESSMENT
BREVARD COUNTY, FLORIDA
OCTOBER 2001

AESTHETIC CONSIDERATIONS

Consideration of aesthetic resources within the project study area is required by the National Environmental Policy Act of 1969 (NEPA) PL 91-190, as amended. Aesthetic resources are defined in ER 1105-2-100 as "those natural and cultural features of the environment which elicit...a pleasurable response" in the observer, most notably from the predominant visual sense. Consequently, aesthetic resources are (commonly referred to as) visual resources, features which can potentially be seen.

EXISTING CONDITIONS

Three Forks Marsh Conservation Area (TFMCA) is an oblong marshland that possesses panoramic scenic views that were window surveyed from van accessible locations. Water control structures within the TFMCA were not visible from the levee of Three Forks Marsh Recreation Area near the C-1 Retention Area, Brevard County. The Stick Marsh area off of Feldsmere Grade in Indian River County was also viewed. Water control structures were more visible in the lower project areas as the roadways to project viewsheds are structure maintenance access roads and structures are much larger

The St Johns River Water Management District Three Forks Marsh Recreation Area is located at the west end of Malabar Road, near Palm Bay in Brevard County, Florida. The nearly 14,000-acre marsh conservation area is relatively undisturbed flatlands with panoramic marshgrass views bordered by tree islands for as far as the eye can see. The trees have grown on mounds sidecast from canal construction throughout the project. Foreground views from the recreation area are of golden cordgrass with a fine texture that sways with the breeze. Midground views are nearly the same except more expansive. Background views are of wide-open, impressive panorama that is expansive and tranquil. Birdlife (egrets, anhingas, hawks, vultures, osprey, etc.,) is the dominant visible wildlife that makes for interesting viewing from the Three Forks Marsh Recreation Area. Elevated views of the Three Forks Marsh Conservation Area are serene, panoramic and of good aesthetic value.

The Three Forks Marsh Conservation project area was also viewed from a southern point on C-54, Feldsmere Grade Park, adjacent to Stick Lake and the T.M. Goodwin Waterfowl Management Area. Levees adjacent to C-54 provided an elevated view of wet woody shrub type vegetation. This vegetation type did not provide the panoramic views of the shallow marsh habitat, but revealed some blooming foreground shrubby vegetation that was not as appealing as the views from Three Forks Marsh Recreation Area. Views of Stick Lake are expansive with good fore, mid and background aesthetics of open water, which is edged by palm tree hammocks.

To: Steve Miller fax: 404-329-4329
From: Liz Mennes x 404-232-3923
-3442-fax

Planning Division
Environmental Branch

AUG 26 1999

Dr. Edgar Lowe
Director, Environmental Sciences Division
St. Johns River Water Management District
Post Office Box 1429
Palatka, Florida 32178-1429

Dear Dr. Lowe:

This letter provides an update on activities involving the Upper St. Johns River Basin Three Forks Marsh Conservation Area Diversion Project (enclosure 1). A scoping letter describing three alternatives was coordinated with the public on February 22, 1999. The three alternatives described in the letter were no action, 50-50 split, and a Three Forks Marsh Conservation Area Diversion alternative. Several responses, summarized below, were received that stated concerns about potential impacts of the Three Forks Diversion alternative on natural resources and water quality. During subsequent meetings and coordination efforts between our respective staffs it has been agreed to pursue an additional alternative that would respond to environmental concerns (listed below) about the Diversion alternative. We appreciate your commitment and efforts to resolve these environmental and water quality issues. We are currently in the process of completing the National Environmental Policy Act documentation for this project.

Currently identified environmental concerns include the following:

- Potential degradation of habitat quality for native wildlife communities
- Potential conversion of habitat types: sawgrass/marsh habitats converted to open water areas
- Potential degradation of water quality conditions in wetlands, the St. Johns River, and a water supply lake, Lake Washington
- Use of a marsh conservation area, Three Forks Marsh Conservation Area, for water quality treatment
- Potential for nuisance and exotic plant species to adversely impact existing plant and animal communities

The following is a summary of letters (enclosure 2) and comments received thus far to the scoping letter:

Florida Department of Community Affairs, provided a letter dated April 30, 1999, which serves as a cover letter for other reviewing State agencies. They state that the project is consistent with the Florida Coastal Management Program (FCMP) based on letters received to date, but they will continue to re-evaluate for continued consistency as additional letters are received. Letters indicating no comment or no objection at this time were received from the following State agencies: Agriculture, Department of Environmental Protection, Marine Fisheries Commission, State Transportation, St. Johns River Water Management District and Environmental Policy. Florida Fish and Wildlife Conservation Commission comments are provided below.

Florida Fish and Wildlife Conservation Commission, formerly known as the Florida Game and Fresh Water Fish Commission, in a letter dated April 15, 1999 stated concern about: a) channeling nutrient-rich water into a deepwater impoundment in the northern portion of Three Forks Marsh Conservation Area; b) nutrient-rich water from the Three Forks Marsh Conservation Area flowing into the main channel of the St. Johns River via S-257; and c) potential adverse impacts from diverting all of the S-96B water to Three Forks Marsh Conservation Area that may result in drier conditions than predicted and therefore potentially encourage the establishment of woody vegetation and spread of exotic and nuisance vegetation in the St. Johns Marsh Conservation Area. They recommend developing an alternative that will discharge water into the St. Johns Marsh Conservation Area and Three Forks Marsh Conservation Area as far upstream as possible through S-96 Band S-96C. Finally, the Commission recommends that leveed properties adjacent to the St. Johns Marsh Conservation Area (Six mile Creek Restoration Area) be reconnected to St. Johns Marsh Conservation Area.

The Brevard Board of County Commissioners, in a March 15,1999 letter, identify several concerns regarding the impact of the preferred alternative on the water quality of Lake Washington. They state that water flowing into the St. Johns River from the St. Johns Marsh Conservation Area may be degraded (parameters of concern include dissolved oxygen, phosphorus, nitrogen, total dissolved solids, and chlorides) which may ultimately effect the water quality of Lake Washington. Lake Washington provides water for 100,000 residents in South Brevard County. The letter also raises concerns for endangered species habitat, particularly the Florida panther, and recommends that the water be treated near its source of origin. The letter states that the no action alternative is undesirable due to its potential to result in harmful discharges to the Indian River Lagoon resources, particularly shellfish, the rare Johnson seagrass, and reef systems south of Sebastian Inlet.

Your staff has been extremely helpful in providing their results from hydrologic modeling and environmental evaluations. The information will be used to complete the existing and future conditions and environmental impacts for the National Environmental Policy Act document under preparation. We will continue to work with your staff to

identify and evaluate an alternative that will protect existing sawgrass and herbaceous wetlands present in the northern reach of the Three Forks Marsh Conservation Area and evaluate existing and potential fish and wildlife communities (including endangered species) responses to the alternatives. We will also evaluate water quality modeling results and determine if enough information is available to address water quality issues. Information on existing and future projected flooding problems and damages associated with the Upper St. Johns River Basin project (including Indian River Lagoon) will be useful, if available. We will continue to work with Steve Miller and other members of your staff who has been very responsive to our requests for information.

Thank you for your assistance in responding to these letters and completing the National Environmental Policy Act document. If you have any questions, please contact Ms. Liz Manners, Biologist, at 904-232-3923.

Sincerely,

James C. Duck
Chief, Planning Division

Enclosures

bcc:
CESAJ-DP (Robinson)

LPM
Manners/CESAJ-PD-ES/3923/als 3/5/99
Kurzbach/CESAJ-PD-ES 3/5/99
Smith/CESAJ-PD-E
Raasch/CESAJ-PD-D
Brain/CESAJ-PD-P
Robinson/CESAJ-DP-I
Bonner/CESAJ-DP
Duck/CESAJ-PD

L: group/pdes/manners/3fksltrWMD

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
P. O. BOX 4970
JACKSONVILLE, FLORIDA 32232-0019

FEB 2 2 1999

REPLY TO
ATTENTION OF

Planning Division
Environmental Branch

TO WHOM IT MAY CONCERN:

The Jacksonville District, U.S. Army Corps of Engineers (Corps), is beginning to gather information to help define issues and concerns that will be addressed in a National Environmental Policy Act (NEPA) document for the Three Forks Rediversion Plan. The location for the proposed plan is within Brevard County, Florida and is part of the Upper St. Johns River Basin Project (USJRBP, see enclosure 1).

The scope of this study is to evaluate alternatives for the implementation of the Three Forks Rediversion Plan. The Corps has determined that a NEPA document is necessary due to changes in the size, plan features, existing environment, and projected conditions outlined in the 1985 Environmental Impact Statement for the USJRBP. The purpose of this study is to evaluate alternatives for construction and hydrologic management of the Three Forks Marsh Conservation Area (TFMCA), one of four Marsh Conservation Areas located within the USJRBP. The main purpose of the overall project is flood control, and secondary purposes are marsh conservation and restoration, water supply, and improved water quality.

Three alternatives are being evaluated. These alternatives include No Action, 50/50 Split, and the proposed TFMCA Diversion. The No Action alternative would result in the construction of the plan as outlined in the original General Design Memorandum for the USJRBP (enclosure 2). Under this design alternative design flood control discharges from project areas south of the Fellsmere Grade could not be achieved. This potential inability to handle maximum flood discharges could result in an increased potential for stormwater discharges to the Indian River Lagoon. The TFMCA has also undergone significant soil subsidence; thus this design alternative would result in the overdrainage of the St. Johns Marsh Conservation Area (SJMCA) to the east. The 50/50 Split calls for the construction of an internal levee separating TFMCA and the SJMCA, with a connection occurring at River Mile (RM) 280 via a 500 ft weir with a crest elevation of 20.0 ft. This alternative is designed to evenly split flows downstream of L-74W between the TFMCA and

the SJMCA. A 1,500-ft overflow weir with a crest elevation of 19.0 ft would occur at RM273 and structure S-257 would be designed to discharge up to 200 cfs. This plan would not resolve the flood control capacity issue, but it would resolve overdrainage of the SJMCA.

After extensive environmental and hydrologic studies of the three alternatives, the Corps and the SJRWMD have chosen the Three Fork Diversion as the preferred alternative (enclosure 3). The preferred alternative will direct all discharges from S-96B directly into TFMCA and the flows from S-96C into SJMCA. Discharges from S-96B will flow into a canal that will connect to the northern portion of TFMCA. Water in the canal will be separated from the emergent marsh communities of southern TFMCA by a low berm. Thus, relatively high nutrient laden water from SJWMA will be channeled into a deepwater impoundment in the north portion of TFMCA and will be allowed to back-flow into the emergent marsh areas. Designed discharge capacities for S-96B and S-96C would be realized. Environmental hydrologic criteria for SJMCA could be met. Although some wetland communities will be converted to open water systems, the implementation of this plan is expected to achieve water quality benefits within the remaining wetland communities and within downstream systems.

Environmental considerations will include effects on wetlands and other critical habitats, water quality, water supply, endangered or threatened species, wildlife habitats and values, potential presence of historical or archeological resources, aesthetics, and recreation demand.

We welcome your views, comments, and information about resources, study objectives, and important features within the described study area, as well as any suggested improvements. If you know any person who may wish to comment, please notify them of this opportunity. Letters of comments or inquiry should be addressed to the letterhead address to the attention of Planning Division, Environmental Studies Section and received by this

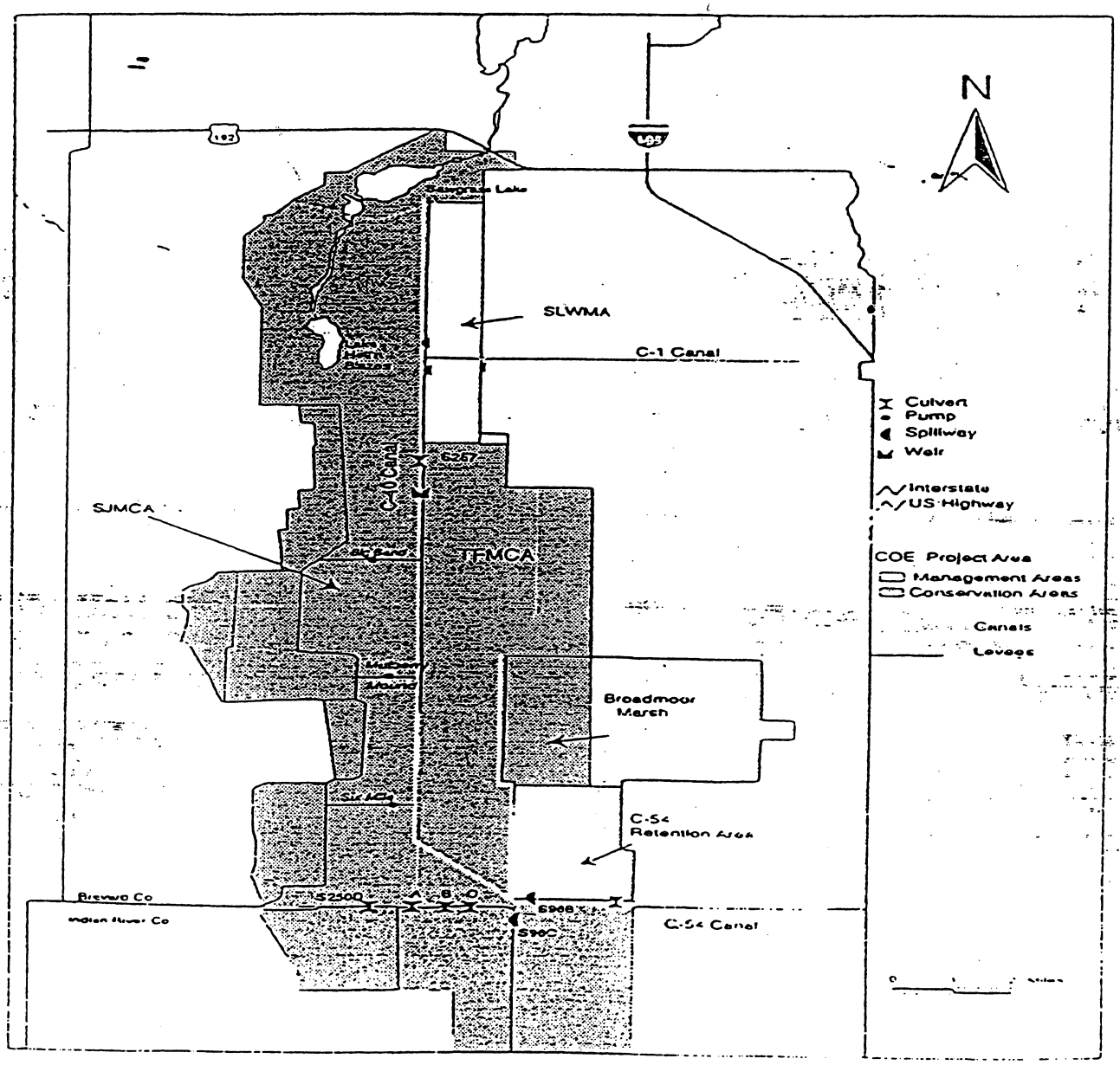
office within 30 days of the date of this letter. Questions may be addressed to Ms. Therese J. Fretwell at 904-232-1701.

Sincerely,

E P Rosack, for

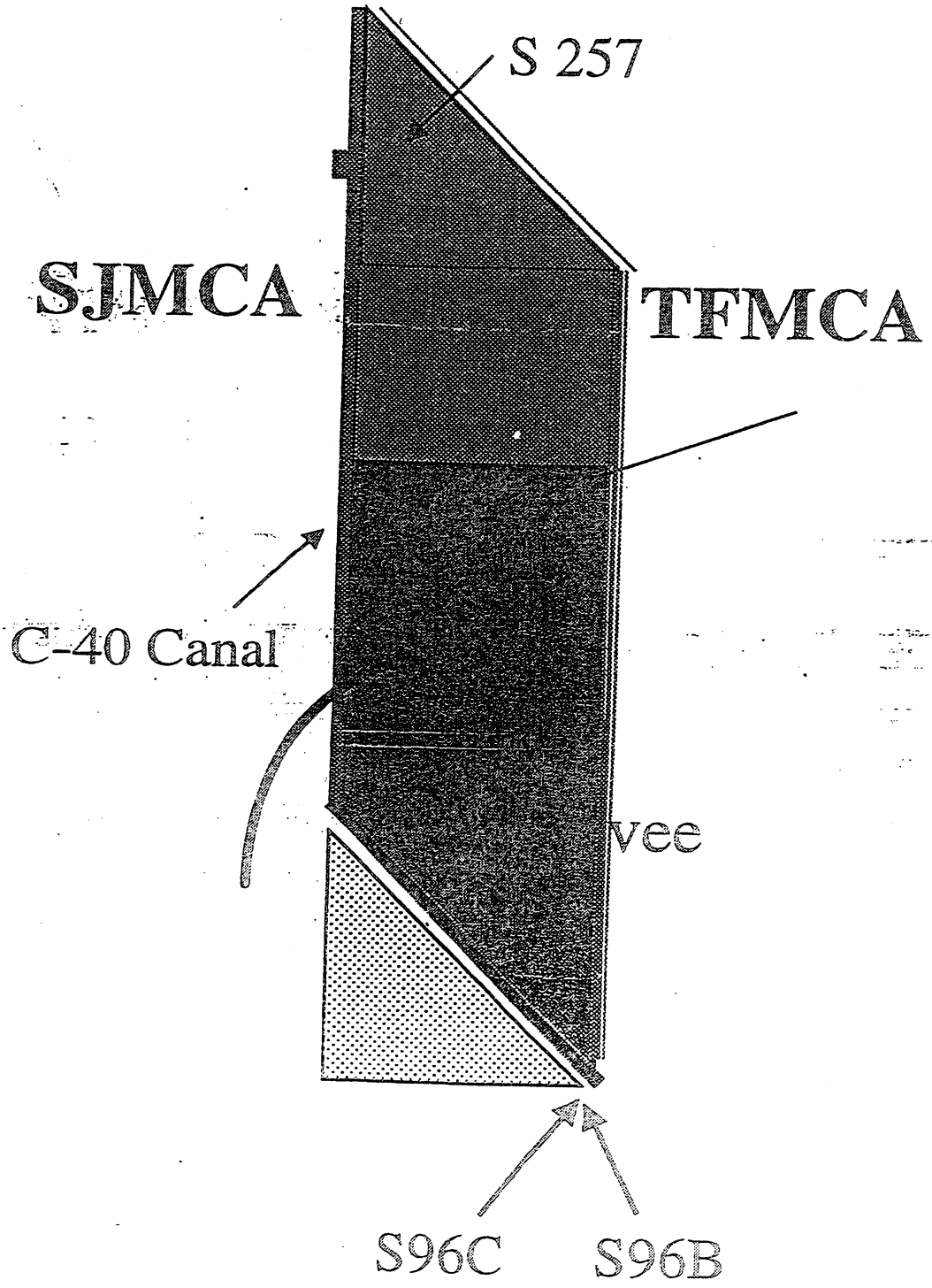
James C. Duck
Chief, Planning Division

Enclosure

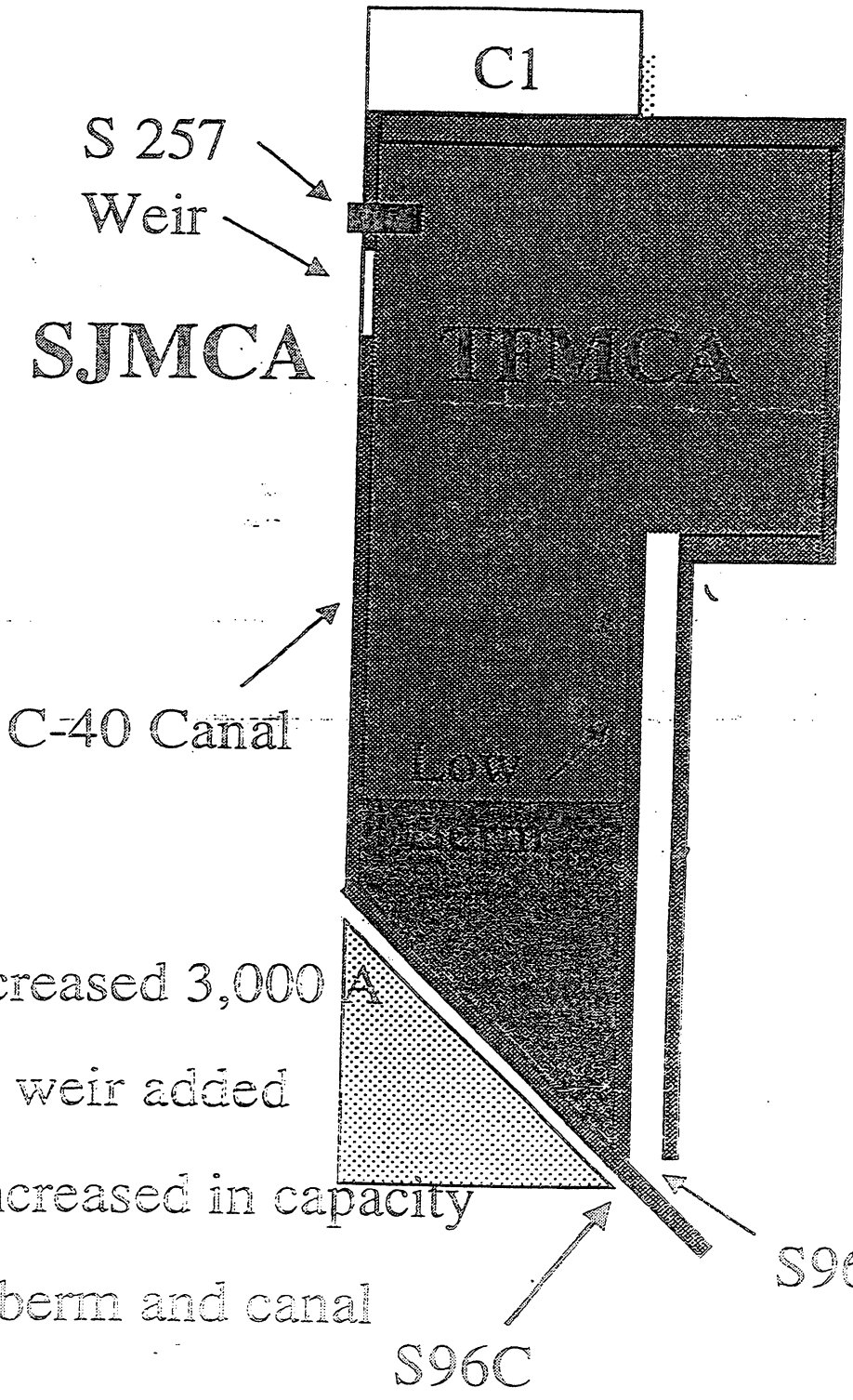


1. Location and project features of the TFMCA and the SJMCA.

Original EIS Design



Current Plan



Changes:

1) Area Increased 3,000 A
2) Outflow weir added
3) S-257 Increased in capacity
4) Internal berm and canal

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April 15, 1999

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Mr. James C. Duck
Planning Division, Environmental Studies Section
U.S. Army Corps of Engineers
P.O. Box 4970
Jacksonville, FL 32232-0019

RE: Scoping Letter for Evaluation of Alternatives for the Implementation of the Three Forks Rediversion Plan, Brevard County

Dear Mr. Duck:

The Office of Environmental Services of the Florida Game and Fresh Water Fish Commission, with input from staff at the T. M. Goodwin Waterfowl Management Office and East Coast Freshwater Fisheries Management Office, has reviewed the document referenced above, and offers the following comments and recommendations.

The Jacksonville District, U.S. Army Corps of Engineers is currently evaluating alternatives for implementation of the proposed Three Forks Rediversion Plan for hydrologic management of the Three Forks Marsh Conservation Area (TFMCA) located in the Upper St. Johns River Basin Project (USJRBP), Brevard County. The main purpose of the project is flood control, and secondary purposes are marsh conservation and restoration, water supply, and improved water quality.

Three alternatives are being evaluated: No Action, 50/50 Split, and the TFMCA Diversion (preferred alternative). The No-Action alternative would result in the construction of the plan as outlined in the original general design memorandum for the USJRBP. The 50/50 split calls for the construction of an internal levee separating TFMCA and the St. Johns Marsh Conservation Area (SJMCA), with a connection occurring at River Mile (RM) 280 via a 500-foot-long weir with a crest elevation of 20.0 Feet. A 1,500-foot weir with a crest elevation of 10.0 feet would occur at RM 273 and structure S-257 would be designed to discharge up to 200 cfs. The preferred alternative (TFMCA Diversion) would direct all discharges from S-96B directly into TFMCA and the flows from S-96C into SJMCA. Discharges from S-96B would flow into a canal that would connect to the northern portion of TFMCA. Water in the canal would be separated from the emergent marsh communities of the southern TFMCA by a low

berm. Consequently, nutrient-rich water from the St. Johns Water Management Area (SJWMA) would be channeled into what will be a deepwater impoundment in the north portion of TFMCA, and allowed to back-flow into the emergent marsh areas to the south.

We have several concerns about the preferred plan. This alternative calls for channeling nutrient-rich water into a deepwater impoundment in the north portion of the TFMCA. We surmise that water delivered by this canal would likely shortcut across this open water area and flow directly over the proposed weir and/or through the S-257 structure. Consequently, nutrient-rich water would be delivered into the main channel of St. John's River with little treatment.

The preferred alternative would also have negative impacts on the hydroperiod of the SJMCA. We believe that diversion of all S-96B water to the TFMCA will result in drier conditions in the SJMCA than predicted, potentially encouraging the establishment of woody vegetation and the spread of exotic and nuisance vegetation in the area.

We believe that the discharge of nutrient-rich water to the marshes of TFMCA and SJMCA should occur as far upstream as possible. Such an approach would allow natural marsh systems to work in conjunction with established Water Management Areas in the treatment of poor quality water. One possible scenario would be a modified version of the 50/50 split plan (see Fig. 1). The S-96B get-away canal could be excavated parallel to the S-96C get-away, with the existing dike separating the two canals. Both canals would empty into the SJMCA. The S-96E spillway could be located well downstream of these canal outfalls, but still allow water to flow from the SJMCA into the southern portion of TFMCA.

In addition, we believe it would be beneficial to reconnect flow to the leveed properties adjacent to the SJWMA (indicated by cross-hatching on Fig. 1). This would increase the available flood storage in the SJMCA and, in turn, reduce the discharge rate through the area.

We believe such an approach would provide maximum treatment for low-quality water flowing into the basin, protect water quality in the TFMCA, and still provide for adequate flood control. If you have any questions, please contact Mr. Bob Eisenhauer at our Melbourne Fisheries office at (407)753-3115.

Sincerely,

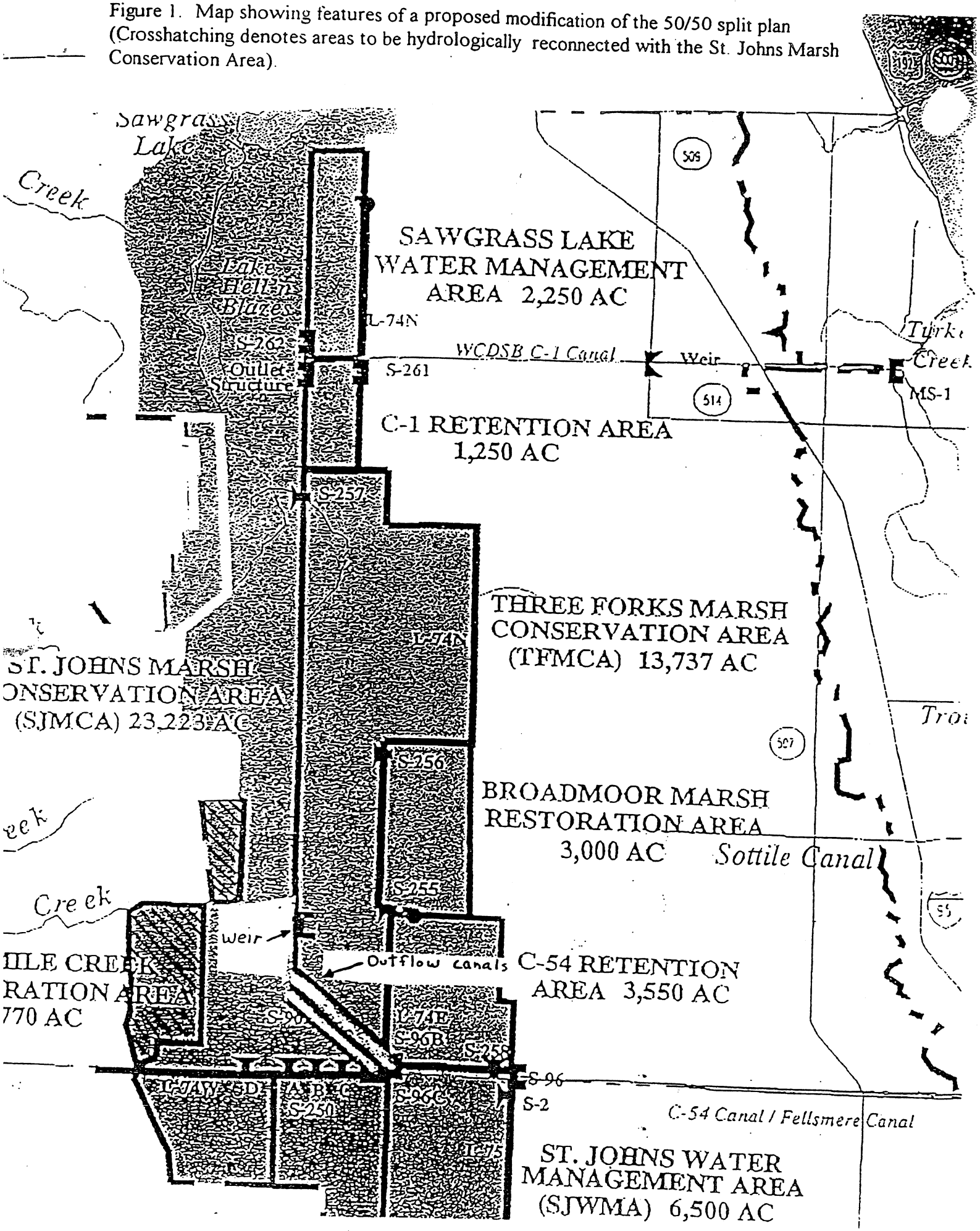
Bradley J. Hartman

Bradley J. Hartman, Director
Office of Environmental Services

BJH/JMW

ENV 1-5-2
tfdiver.wpd
Enclosure
CC: Mr. Bob Eisenhauer, GFC
Mr. Steve Rockwood, GFC

Figure 1. Map showing features of a proposed modification of the 50/50 split plan (Crosshatching denotes areas to be hydrologically reconnected with the St. Johns Marsh Conservation Area).



BREVARD County
BOARD OF COUNTY COMMISSIONERS

FLORIDA'S SPACE COAST

HELEN VOLTZ, Commissioner, District 5
1515 Sarno Road, Building B, Melbourne, FL 32935

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March 15, 1999

Department of the Army
Jacksonville District Corps of Engineers
P.O. Box 4970
Jacksonville, FL 32232-0019

Dear Sir:

I am writing this letter as the District 5 Brevard County Commissioner. This district includes the upper basin project in Brevard County, and specifically the St. Johns Water Conservation Area (SJWCA) and Three Forks Marsh Conservation Area (TFMCA).

The purpose of this letter is to set out the issues and concerns that should be addressed in a national Environmental Policy (NEPA) document for the Three Forks Rediversion Plan.

The Corps, and the SJRWMD, has chosen the Three Forks diversion as the preferred alternative for the Upper Basin. Under this alternative, high nutrient laden water from the St. Johns Water Management Area (SJWMA) in Indian River County will be transported approximately ten miles into the Three Forks Marsh Conservation Area (TFMCA) in Brevard County. It will then back flow into the marsh area, and be discharged into the St. Johns River system. The primary purpose of this diversion is to achieve flood control objectives for agricultural lands in Indian River County.

Water, which drains into the St. Johns River system from the St. Johns River Water Management District (SJRWMD) Upper Basin project, comes to Lake Washington. Lake Washington is the source of public water supply for over 100,000 residents in South Brevard. This water supply is designated as Class I water by the State of Florida, which is the highest protection afforded to a public water body.

A public water supply such as Lake Washington must be given a high level of protection, because not only does the general public drink the water, but so do the young and infirm who may be afflicted with diabetes, high blood pressure and other diseases which can be complicated by high chlorides and other contaminates in the water.

Lake Washington, as a public water source, has traditionally varied in its quality and quantity. The City of Melbourne is undertaking substantial facility improvements to comply with the new federal standards for surface public water suppliers.

The impoundment areas of the St. Johns River Water Management District have generally had the poorest water quality in the upper basin, particularly, those receiving water from surrounding agricultural lands. The impoundment areas often have lower dissolved oxygen (D.O.) and higher phosphorus, nitrogen, total dissolved solids, and chloride readings, than the river system. The lower the dissolved oxygen is in the water, the more likely a fish kill will occur in the river system. Phosphorus and nitrogen are control elements governing growth in the water column.

Under the Three Forks rediversion plan, the impounded water from the St. Johns River Water Management Area (SJRWMA) is routed to the TFMCA. The discharge water from the TFMCA will flow to Lake Hell'n Blazes, Lake Sawgrass, and, finally Lake Washington.

Lake Hell'n Blazes and Lake Sawgrass have often experienced low to medium dissolved oxygen concentrations. Lake Sawgrass has periodically not met the 5.0 mg/1 state water quality criteria for a Class I water. Lake Sawgrass has also suffered high concentrations of nitrogen. The nitrogen concentration has often been 40% to 70% greater than other lakes in Florida.

Any water, which is discharged from the TFMCA with low dissolved oxygen levels, will endanger the fisheries in the river and downstream lakes. High levels of phosphorus, nitrogen, total dissolved solids, and chlorides, drained into the St. Johns system, will injure the health of the river. Heavy loads of phosphorus and nitrogen will encourage the propagation of vegetative matter in Lake Washington, which will increase the treatment costs of the public water from Lake Washington.

The land in the Upper Basin impoundment area in Indian River County and some in Brevard County were in agricultural production. These areas may have pesticide residue. The Lake Apopka experience demonstrates to everyone that there must be adequate testing and analysis prior to the discharge of waters from areas where there has been a history of pesticide use. The water managers, particularly where public drinking water is concerned, must insure that there is complete and adequate testing and analysis to afford the public the highest level of protection from any exposure to pesticides.

The Three Forks Marsh Conservation Area has also served as a habitat for a number of endangered and listed species. I have been told that endangered and listed species occupy the Three Forks Conservation Area including the Florida panther.

The transfer of the high nutrient laden water from the SJRWMA to the TFMCA does not appear to be a prudent alternative. The water managers should consider developing an alternative that treats this water near its source of origin, instead of transporting it ten miles to another area. This is particularly true where the alternative area selected, the TFMCA, is environmentally sensitive. This alternative also represents long term, and potentially an irreversible, commitment of a natural resource.

The do nothing alternative, which would result in storm water discharges to the Indian River Lagoon, is undesirable. The Indian River Lagoon is a recognized shellfish habitat where shellfish are harvested commercially. Fresh water discharges from the project would upset the salinity content of the Lagoon, and harm the shellfish population.

Any discharges of the project through C-54, would flow to the Sebastian Inlet and into the Atlantic Ocean. The rare Johnson seagrasses exist adjacent to the Sebastian Inlet channel inside the Lagoon, and a reef system is immediately south of the Sebastian Inlet, where both environmentally sensitive worm reefs and coral have been found. The environmental impact on the ecological systems should be evaluated.

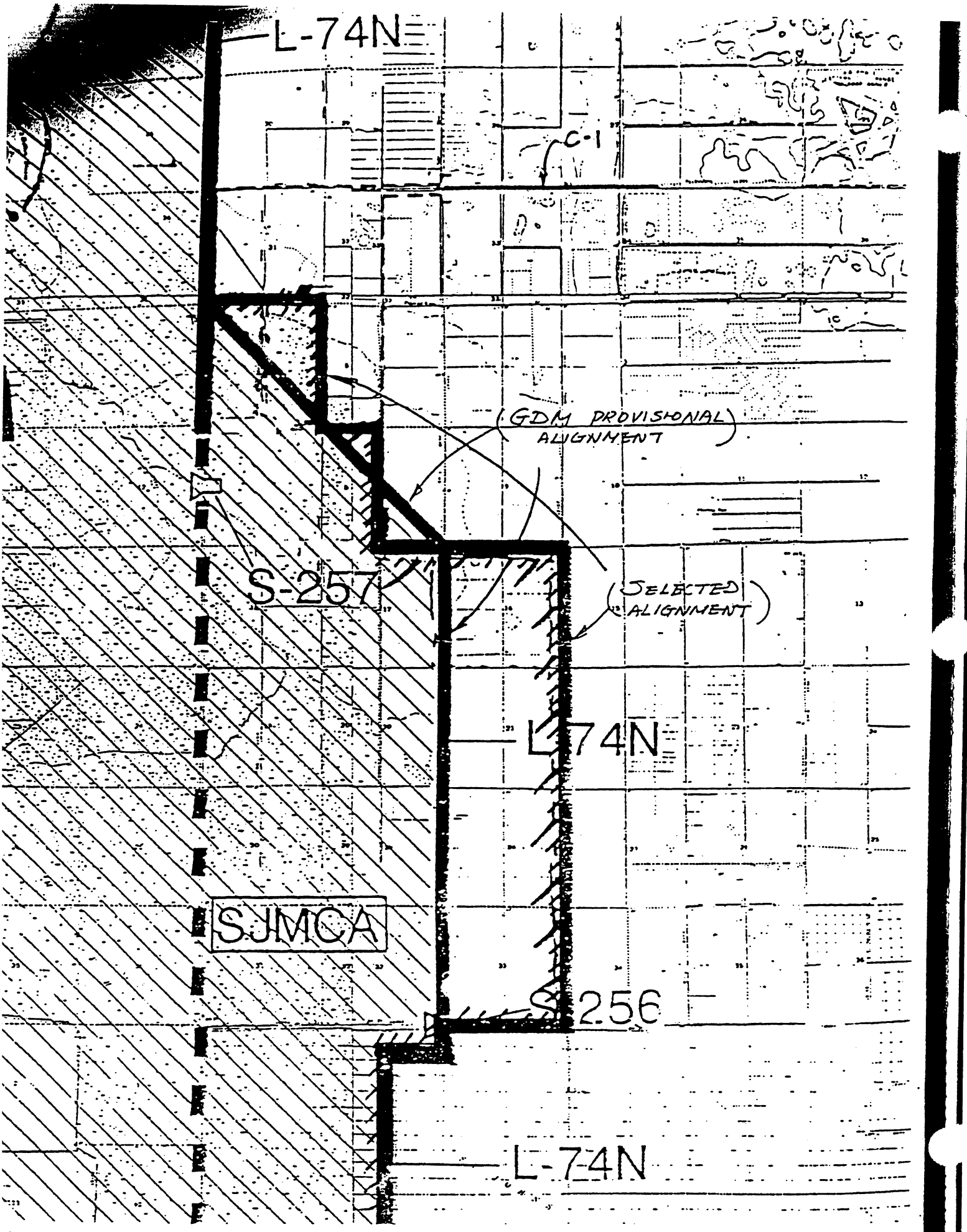
I hope that the U.S. Army Corps of Engineers will perform a full analysis in its NEPA Policy Act document for the Three Forks Rediversion Plan, and elect to treat the SJRWMA water near its source.

Sincerely,

Commissioner Helen Voltz
District 5

HV/kc

Cc: Brevard County Commissioners
Tom Jenkins, County Manager
Congressman Dave Weldon
Bob Wille, Mayor of Melbourne Beach
Commissioner Fran Adams, Indian River County
Florida Today Editorial Board Sebastian Office
Mike Thomas, Orlando Sentinel
Henry Dean, St. Johns River Water Management
Leroy Wright, Save the St. Johns River
Tom Lawton


L-74N
C-1
(GDM PROVISIONAL ALIGNMENT)
S-257
(SELECTED ALIGNMENT)
L-74N
SJMCA
S-256
L-74N

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT, CORPS OF ENGINEERS
P. O. BOX 4970
JACKSONVILLE, FLORIDA 32232-0019

REPLY TO
ATTENTION OF

May 23, 1989

Engineering Division
Design Branch

Mr. Henry Dean
Executive Director
St. Johns River Water
Management District
Post Office Box 1429
Palatka, Florida 32078-1429

Dear Mr. Dean:

Reference is made to St. Johns River Water Management District's letter dated January 20, 1989 concerning realignment of seven miles of Levee 74N (REM) located north of Structure 256. We agree with the proposed revised alignment. This new alignment would allow restoration of additional areas of the historic flood plain along the St. Johns River and increase the capacity of the flood plain in that area. The acquisition of this property would also provide a borrow area for construction of the Levee 74N (REM). We will continue to coordinate with the St. Johns River Water Management District during the preparation of the Detail Design Memorandum Report to finalize the alignment.

Sincerely,

for James L. Garland
Chief, Engineering Division

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
P. O. BOX 4970
JACKSONVILLE, FLORIDA 32232-0019

REPLY TO
ATTENTION OF

May 15, 1991

Programs and Project Management Division
Project Management Branch

Mr. Henry Dean
Executive Director, St. Johns River
Water Management District
Post Office Box 1429
Palatka, Florida 32178-1429

Dear Mr. Dean:

This is a follow-up to our March 25, 1991, letter concerning the South Indian Field (site 8BR23) and possible impacts by the Upper St. Johns River Basin project in Brevard County. This Indian site at the west end of Malabar Road was visited by Jacksonville District and SJRWMD staff on April 5, 1991.

The present landowner, Mr. Doug Engle, was most helpful in touring the site and explaining past archeological activity by the prior landowner, Mr. A. T. Anderson. Mr. Engle also made available numerous historical newspapers and articles concerning the activities and findings at the site during the 1930's and 1940's. Several leading academic institutions and the Smithsonian Institute conducted studies at this site during this period.

Our Cultural Resources staff has reviewed the material provided by Mr. Engle and other records relevant to the site. A determination has been made that this is a very significant cultural resource and should be avoided. Levee L-74N will be rerouted to avoid this site. Therefore, land acquisition by SJRWMD of this site will not be required. Other acquisition may be required to support the revised alignment.

Mr. David McCullough, Archaeologist, from the Jacksonville District, will conduct archaeological investigations outside Mr. Engle's property during the week of May 13, 1991. The purpose of this analysis will be to determine the extent, if any, of the Indian site beyond Mr. Engle's property. After study of the findings, a revised levee alignment will be developed to avoid the entire cultural resource site.

Please express the Corps' appreciation to Mr. Engle for his cooperation and understanding of the issues surrounding this important matter. I would also like to thank you and your staff for assisting the Corps in this action.

Additional questions may be directed to the Upper St. Johns River Basin Project Manager, Mr. Robert Bridgers, at 904-791-1600.

Sincerely,

Richard E. Bonner, P.E.
Deputy District Engineer
for Project Management

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT

Henry Dean, Executive Director
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November 1, 1991

Ed Middleton, P.E. , Ph.D.
Chief, Engineering Division
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Jacksonville District
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Jacksonville, Fl. 32232-0019

RE: Conceptual design for the Three Forks Marsh Conservation Area

Dear Dr. Middleton:

The St. Johns River Water Management District staff has completed a conceptual design and plan for construction and management of the Three Forks Marsh Conservation Area (TFMCA). Environmental objectives, design concepts and hydrologic evaluations are summarized and attached for your consideration. We had a preliminary meeting in this regard with Mr. Choate and Mr. Sylvester of your office on Friday, October 25, 1991.

In order to form this marsh conservation area, the following structures need to be constructed or modified (Please see Fig.1).

1. A weir of 500 ft (S-259) should be built at about River Mile 280 with a crest elevation of 20.00 ft. NGVD.

2. A weir of 1500 ft (S-260) should be built at about R. M. 273 with a crest elevation of 19.00 ft. NGVD.

3. A levee (L-74NA) should be built separating TFMCA and Sawgrass Lake Water Management Area. The levee would serve as an access road to S-257 and S-260.

4. The levee or berm separating TFMCA and the St. Johns Marsh should be maintained (strengthened, if necessary) at elevations ranging from 25.00 ft NGVD in the south to 22.00 ft NGVD in the north.

5. S-257 should be redesigned to increase the capacity to 200 cfs.

The lengths and crest elevations of S-259 and S-260 have been determined based on hydrologic simulations of environmental criteria. However, Mr. Choate expressed that he would perform additional hydraulic/hydrologic calculations for the adequacy of these structures for flood control. Please call me if you have any questions regarding this matter.

Sincerely,

C. Charles Tai, P.E., Ph.D.
Director, Division of Engineering
Department of Surface Water Programs

CCT/DR/cb

Encl.

c: Charles A. Padera
Michael Choate
Mike Ornella

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT

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May 23, 1996

Mr. Michael A. Ornella, Project Manager
Programs and Project Management Branch
Jacksonville District
U.S. Army Corps of Engineers
P.O. Box 4970
Jacksonville, FL 32232-0019

RE: Request to Modify the Upper St. Johns River Basin Project Design to Include C-1 Western Diversion Plan

Dear Mr. ~~Ornella~~ Mike,

On May 15, 1996, to enhance project performance and increase the potential to achieve important environmental objectives, the SJRWMD Governing Board formally approved certain design modifications to the USJRBP (Upper St. Johns River Basin Project). As part of this action, the Board approved a BDC (Basic Design Concept) for the C-1 western diversion project. The design modifications approved by the Board are necessary to meet both USJRBP objectives and to support the proposed C-1 western diversion project--an effort aimed at further reducing stormwater discharges to Turkey Creek and the Indian River Lagoon. The BDC approved for the C-1 western diversion project is one we believe to be fully compatible with the USJRBP plan.

As discussed between our staffs over the past several months, observed performance of operational elements of the USJRBP during recent flood events and new information relative to project impacts within the MTWCD (Melbourne-Tillman Water Control District) has resulted in a comprehensive reevaluation of design options relative to the TFMCA project component. Hydraulic and hydrologic simulations indicate that loss of key storage areas within the MTWCD due to construction of the TFMCA will cause slightly higher peak flood elevations within the western portion of the MTWCD.

Additional low-lying lands located just east of the TFMCA are proposed for acquisition by SJRWMD to provide adequate flood storage to the western portion of the MTWCD. Additionally, the construction of project levee L-74 (Remainder) offers a timely opportunity to address critical stormwater issues within the MTWCD which adversly affect Turkey Creek and the Indian River

Lagoon. The C-1 western diversion project conceptual plan is proposed to divert drainage from within the western portion of the MTWCD to its historic receiving basin--the upper St. Johns River.

Recent SJRWMD Governing Board action is detailed as follows:

USJRBP Design Modifications
Based on current project requirements, the following design modifications to the USJRBP have been approved:

- To help lower nutrient loadings to the marsh, discharge from the SJWMA (St. Johns Water Management Area) at S-96B will be diverted into the TFMCA (Three Forks Marsh Conservation Area). Because lakes and river ecosystems have a higher capacity than marshes to assimilate phosphorus without adverse ecological impacts, this rediversion will include a new conveyance channel or flow-way to be designed and constructed by the Corps from S-96B north into the deeper water "lake" to be created within in northern portion of the 13,810 acre TFMCA. Such a channel would be designed to prevent excessive nutrient loadings to restored marsh areas in the southern portion of the TFMCA. As a result, the rediversion should provide for much improved flood flow conveyance from S-96B, significant protection to the SJMCA (St. Johns Marsh Conservation Area), while still meeting environmental goals within the TFMCA. Under this plan, a new Corps spur levee will separate S-96B discharge from the SJMCA.

- North of the TFMCA, a separate 1,280 acre water management system, to be named the C-1 Retention Area, will be constructed by the SJRWMD to consist of non-federal levees and conveyance structures to provide adequate flood storage and some in-system treatment of stormwater from the C-1 western diversion project. The C-1 Retention Area and the SLWMA will be designed to accommodate any future connection of the proposed C-1 western diversion project.

- A new project element to be named the SLWMA (Sawgrass Lake Water Management Area) will be located north of the C-1 Retention Area. This 2,240 acre area will provide additional flood storage and stormwater treatment benefits for water from within the MTWCD. The L-74N (Rem) tieback location has been proposed a few miles south of US 192. The precise location of the tieback levee will be determined by future Corps surveys.

- On the west side of the marsh, project levee L-82--formerly proposed to protect certain Deseret lands located east of the TFMCA--has been formally deleted from the project plan. The Jacksonville District has previously indicated that L-82 is no longer required for flood control purposes.

C-1 Western Diversion Project Basic Design Concept

In addition to the proposed modifications to the USJRBP design, a basic design concept for the C-1 western diversion project was also approved. A summary of the C-1 BDC is as follows:

- An approximate 3,200 acre retention/detention area located east of the TFMCA and SLWMA will be acquired to provide storage and primary treatment of stormwater from the western portion of the MTWCD. Lands generally below 18 ft., NGVD, including additional buffer areas as shown on the enclosed map, will be inundated during major flood events.

- A water control structure, to be located at the western end of C-1, will provide for gravity drainage from the C-1 project area into the proposed 1,280 acre C-1 Retention Area. The C-1 Retention Area will provide additional storage and secondary stormwater treatment prior to eventual discharge to the SLWMA and the St. Johns Marsh.

- A pumping station may be located near the northeast portion of the SLWMA to provide adequate replacement drainage to MTWCD and private lands located east of the SLWMA. This structure will be located to allow for gravity flow over the SLWMA wetland treatment areas. Waters from the SLWMA may then be gravity discharged into the SJMCA (St. Johns Marsh Conservation Area) via a gated spillway or culvert structure.

- A water control structure, to be located on C-1 some five miles east of the C-1 Retention Area and the SLWMA, will restrict flow from C-1 to Turkey Creek and is necessary to reduce peak flows and flow volumes to meet water quality objectives of the C-1 western diversion project.

The SJRWMD Governing Board action also authorized acquisition of those lands and rights-of-ways impacted by implementation of the USJRBP and needed to implement the C-1 western diversion project.

These several design modifications are together depicted on the enclosed map.

In summary, we believe that these modifications to the USJRBP, with the inclusion of the C-1 western diversion plan, will result in substantial improvements to the overall operation of the USJRBP and increased water quality protection to both the upper St. Johns marshes and the coastal estuary system. Therefore, we request that the Jacksonville District approve the several design modifications outlined in this letter, and incorporate the design changes in future DDM's and Plans & Specifications for the Upper St. Johns River Basin Project.

As always, our staff stands ready to provide whatever technical assistance or additional information you may need, and we look forward to working with you as we finalize the many details of these project modifications in the months ahead.

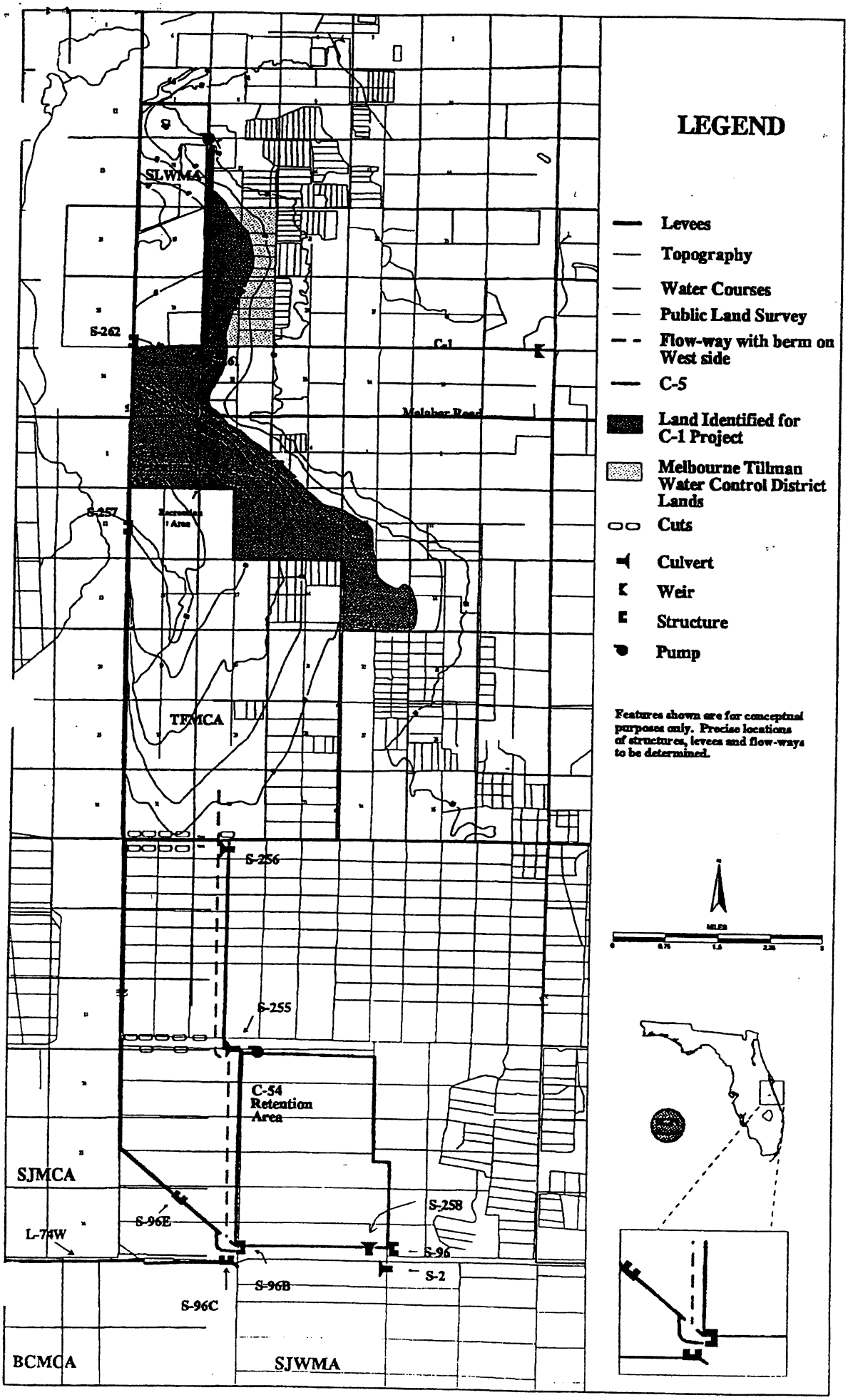
Sincerely,

Maurice Sterling, Director
Division of Project Management
Department of Water Resources

/ms

Enclosure

c: Eric Bush, DEP
Charles T. Myers, III
Charles A. Padera
Robert A. Christianson
C. Charles Tai
Edgar F. Lowe
Harold A. Wilkening, III


SLWMA
S-262
C-1
Melaleuca Road
S-257
Everglades Agricultural Area
TEMCA
S-256
S-255
C-54 Retention Area
SJMCA
S-96E
L-74W
S-258
S-96
S-2
S-96B
S-96C
BCMCA
SJWMA
LEGEND
Levees
Topography
Water Courses
Public Land Survey
Flow-way with berm on West side
C-5
Land Identified for C-1 Project
Melbourne Tillman Water Control District Lands
Cuts
Culvert
Weir
Structure
Pump
Features shown are for conceptual purposes only. Precise locations of structures, levees and flow-ways to be determined.

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
P. O. BOX 4970
JACKSONVILLE, FLORIDA 32232-0019

REPLY TO
ATTENTION OF

January 6, 1997

Programs and Project Management Division
Project Management Branch

Mr. Maurice Sterling, Project Manager,
Upper St. Johns River Basin Project
St. Johns River Water Management District
Post Office Box 1429
Palatka, Florida 32178-1429

Dear Mr. Sterling:

This letter is a follow-up to your letter of May 23, 1996, concerning the modification of the Three Forks Marsh Conservation Area portion of the Upper St. Johns River Basin project.

The Corps of Engineers concurs with the conceptual plan for the modification of the Federal project contained in your letter. As discussed at our interagency meeting, the details for the plan will be addressed in the feature design memorandum that is being prepared for remaining portion of levee 74 north (contract 5D).

I hope this information is sufficient for your current needs. If you have any questions concerning this subject, please contact me or the Upper St. Johns River Basin Project Manager, Mike Ornella, 904-791-1600.

Sincerely,

Richard E. Bonner, P.E.
Deputy District Engineer
for Project Management

ST. JOHNS RIVER
WATER MANAGEMENT DISTRICT

Henry Dean, Executive Director
John R. Wehle, Assistant Executive Director

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August 6, 1997

Mr. Steven E. Robinson, Project Manager
Project Management Branch
Jacksonville District
U.S. Army Corps of Engineers
P.O. Box 4970
Jacksonville, FL 32232-0019

RE: Deletion of S-96E; Upper St. Johns River Basin Project

Dear Mr. ~~Robinson:~~ Steve,

You recently advised me that Mr. Eric Holland of your staff had suggested that proposed project structure S-96E be deleted from the USJRBP plan. We understand that S-96E was a feature previously considered necessary to convey flows into the TFMCA (Three Forks Marsh Conservation Area) and ensure optimal discharge capacity at S-96B and S-96C.

Because of the design modifications approved by the Jacksonville District relative to the TFMCA--namely involving the segregation of flows from S-96B from S-96C and the diversion of discharge from S-96B into the TFMCA--we concur with Mr. Holland's assessment that S-96E is no longer needed and may be deleted from the project plan.

As an alternative to the deletion of S-96E, we request that the Jacksonville District give consideration to the design and construction of an operable project culvert structure and related earthwork modifications resulting in the reinforcement of canal plug E-4--the first canal plug north of the Mary A diagonal levee in the C-40 canal. As you know, the function of plug E-4 is critical to ensure favorable tailwater conditions at S-96C during flood flow conditions. We believe that an operable project structure at this location would ensure that E-4 could function and be operated to achieve project design criterion.

I suggest that we agenda a more detailed discussion of this proposal at our next project coordination meeting on September 3, 1997.

If you have any questions or need more information, please call me at 904-329-4320.

Sincerely,

Maurice Sterling, Director
Division of Project Management
Department of Water Resources

/ms

c: Charles A. Padera
C. Charles Tai
Mary Ann Lee
Eric Holland

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT

Henry Dean, Executive Director
John R. Wehle, Assistant Executive Director

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September 11, 1998

Mr. Steven E. Robinson, Project Manager
Project Management Branch
Jacksonville District
U. S. Army Corps of Engineers
P.O. 4970
Jacksonville, FL 32232-0019

Sujbject: TFMCA Design Modifications and Hydrologic Management Plan; Upper St. Johns River Basin Project

Dear Mr. Robinson:

In a letter to you dated August 5, 1997, Maurice Sterling provided for your informal review a recommended hydrologic management plan for the Three Forks Marsh Conservation Area (TFMCA). That letter provided an initial environmental assessment of simulated hydrologic conditions in the TFMCA but lacked a corresponding assessment of projected conditions in the adjacent St. Johns Marsh Conservation Area (SJMCA). Modeling of hydrologic conditions in the SJMCA had been delayed while we obtained new ground survey data.

Technical staff are now completing our hydrologic modeling for the TFMCA diversion plan. While the overall project design modifications approved by the SJRWMD Governing Board, and conceptually approved by the Corps, have not changed, we have slightly modified our recommended hydrologic management plan for the S-257 Structure. This modification addressed concerns we received regarding minimum water levels needed to protect the sport fishery in the TFMCA and to provide for potential water supply.

To initiate work on the upcoming Environmental Assessment of the TFMCA diversion plan I have enclosed copies of SJRWMD internal memoranda which summarize the results of our technical evaluations to date. These plans are preliminary because they do not provide a final hydrologic management plan for the SJMCA. Environmental hydrologic criteria established for the SJMCA will have to be met by operating gated structures in the C-40 plugs. We expect to have these operation schedules finalized within the next month, at which time we will send a final plan for formal interagency review. In the interim , we would appreciate your informal review of the recommended plan.

To further assist with the development of the Environmental Assessment of the diversion project, I have also enclosed a short description of the need to modify the original GDM for the TFMCA along with a description of the alternatives we have considered. If you or your staff have any questions or need more information please do not hesitate to contact us. Our points of contact are either myself , Dr. Mary Lee at 904-329-4393 , or Steve Miller at 904-329-4387.

Sincerely,

Douglas Dycus, P.E.
Division of Engineering

TFMCA GDM DESIGN MODIFICATIONS

Need for Action

Under the original GDM for the Upper Basin Project the TFMCA and the SJMCA were hydrologically connected by levee gaps located adjacent to each of the plugs in Canal C-40. Canal plugs in the C-40 were needed to allow sheet flow over the SJMCA and to prevent overdrainage. Under the GDM, Structures S-96B and S-96C discharged directly into Canal C-40. Operation of the project to date reveals that, with canal plugs in place, S-96B and S-96C can only operate at 50% of their design discharge capacity when both structures are discharging simultaneously. This lack of discharge capacity compromises the ability of the USJRBP to provide designed flood control benefits. In addition, because of lowered elevations in the TFMCA due to soil subsidence, modeling indicates complete hydrologic reconnection as proposed in the GDM would cause a drastic reduction in water levels in the SJMCA. This reduction in water level would a significant negative impact on the native marsh found in the SJMCA.

Alternatives Considered

1). NO ACTION No action would result in construction of the project as outlined in the GDM. Reduced flood control conveyance would result in an increase of freshwater discharges to the Indian River Lagoon and overdrainage of the SJMCA.

2). 50/50 SPLIT OPTION Under this plan the SJMCA and the TFMCA would be separated by an internal levee. The two areas would be connected at River Mile 280 by a 500 ft weir with a crest elevation of 20.0 ft. This option is designed to evenly split flows downstream of L-74W between the TFMCA and the SJMCA. A 1,500 ft overflow weir with a crest elevation of 19.0 ft would occur at RM 273 and Structure S-257 is designed to be able to discharge up to 200 cfs. Under this plan, discharge capacity of the S-96B and S-96C structures would still be constrained by the canal plugs. Environmental hydrologic goals for the SJMCA could be met.

3). TFMCA DIVERSION (THE PROPOSED ALTERNATIVE) Flows downstream of the Grade would be split so that Structure S96-B would discharge directly into the TFMCA and S96-C would discharge directly into the SJMCA. S-96B would discharge into a canal that connects to deeper water area of the TFMCA and discharges from S-96B would be segregated from the restored marsh areas by an internal berm. There are several advantages to this plan. Designed discharge capacity of S-96B and S-96C would be realized. Environmental hydrologic criteria established for the SJMCA could be met. In addition, native wetland communities in both the SJMCA and TFMCA would be protected from potential negative water quality impacts.

WATER MANAGEMENT DISTRICT

Henry Dean, Executive Director
John R. Wehle, Assistant Executive Director

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September 23, 1998

Mr. Steven E. Robinson, Project Manager
Project Management Branch
Jacksonville District
U. S. Army Corps of Engineers
P.O. 4970
Jacksonville, FL 32232-0019

Subject: TFMCA Design Modifications and Hydrologic Management Plan;
Upper St. Johns River Basin Project

Dear Mr. Robinson:

In a letter to you dated September 11, 1998 I sent to you a preliminary hydrologic management plan for the Three Forks Marsh Conservation Area (TFMCA). Shortly after this letter was sent, we received new survey data which indicates that ground elevations in the southern half of the TFMCA are significantly lower than what we modeled in this plan. The TFMCA analysis in the letter was based on 1983 survey. Survey data collected this past summer indicates that in the Mary A and Sartori tracts, ground elevations have subsided approximately one to two feet since 1983.

Environmental Sciences staff are currently reviewing what impact this new information will have on the TFMCA plan. These new results may cause us to revise the environmental hydrologic criteria for the TFMCA area as well as the S-257 discharge schedule. No impacts to the design features outlined in the letter are anticipated.

We are still hoping to have the finalized TFMCA diversion plan to you within a month. Due to this new information, however, there may be some delay. If you have any questions, please feel free to call me at (904)329-4492.

Sincerely,

Douglas Dycus P.E.
Division of Engineering

c: Charles A. Padera Ed Lowe Steven J. Miller Mary Ann Lee
Charles Tai

MEMORANDUM F. O. R. 86-480

Date: February 16, 1999

To: Edgar F. Lowe, Ph.D., Director
Division of Environmental Sciences

David Watt, Acting Director
Division of Engineering

Through: Mary Ann Lee, Ph.D., TPM
Division of Environmental Sciences

Price Robison, Supervising Professional Engineer
Division of Engineering

From: Steven J. Miller, Environmental Specialist
Division of Environmental Sciences

Apurba Borah, Ph.D., P.E.,
Division of Engineering

Re: Final Design and Hydrologic Management Plan for the Three Forks (TFMCA) and St. Johns (SJMCA) Marsh Conservation Areas.

The purpose of this memo is to provide the final environmental analysis of hydrologic conditions in the TFMCA and the SJMCA resulting from the Three Forks diversion project and to provide a detailed plan for project structure operation. An interim plan for the TFMCA was sent for preliminary review to the U.S. Army Corps of Engineers on 11 September 1998. The only difference between this final plan and the interim plan is that stage-area curves in the TFMCA have been adjusted to reflect new ground survey information. In addition, this plan includes design and operation schedules for the gated culverts to be installed in the C-40 Canal at current earthen plug locations E-4 and E-7. Operable structures are needed to ensure environmental hydrologic criteria are met within the SJMCA.

Environmental Goals

TFMCA

The TFMCA will be managed as an impounded project area separate from the SJMCA (Figure 1). The two areas must be kept separate because ground elevations are lower in the TFMCA than in the SJMCA, and complete hydrologic connection between the two would cause overdrainage of the marshes in the SJMCA. Ground elevations in the TFMCA vary between 13.0 and 20.0 ft NGVD(Figure 2). Because of this gradient in

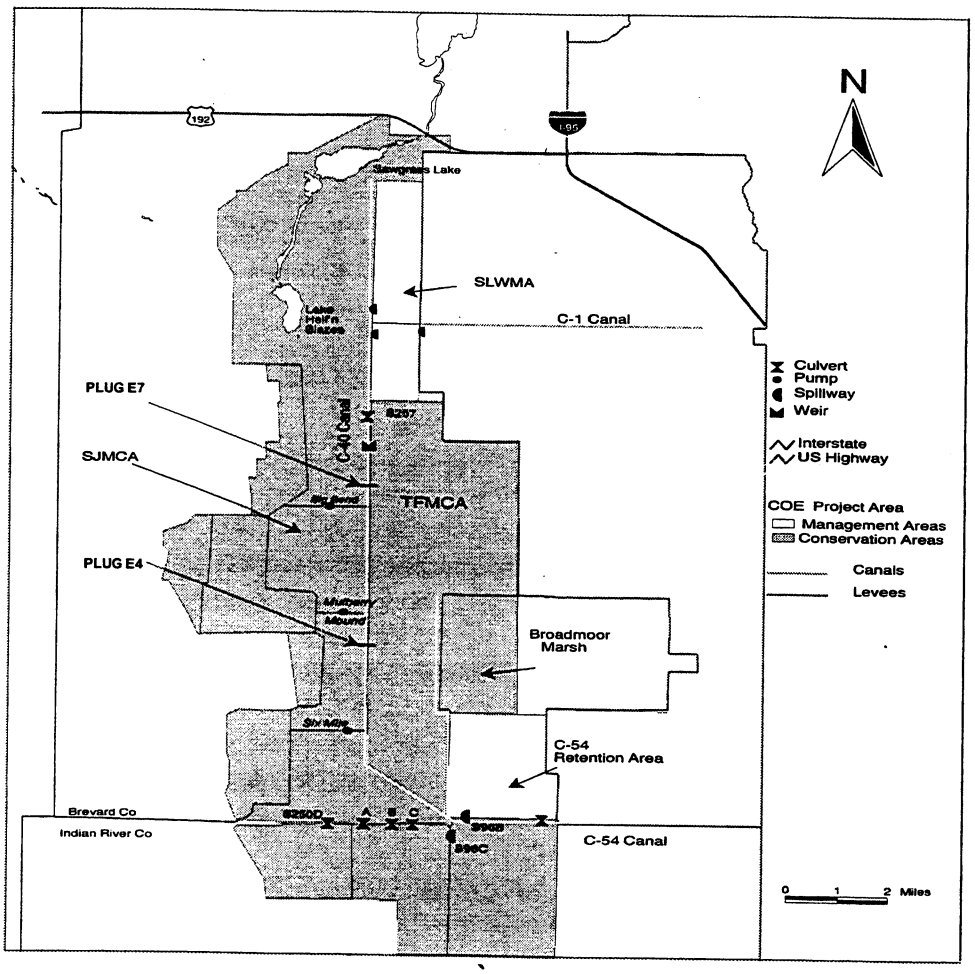

Figure 1. Location and project features of the TFMCA and the SJMCA.

ground elevations, the entire TFMCA cannot be restored to shallow marsh. Instead, with impoundment, lake habitat (average depths exceeding 5 feet), will be created in the northern half of the TFMCA and marsh habitat will be created toward the southern end. The environmental hydrologic criteria that have been developed for the TFMCA are designed to protect the biological integrity of both habitats. The criteria provide for minimizing short-term fluctuations in depth of the lake while allowing drydowns of the marsh at appropriate frequencies. In combination with restored wetland plant communities, the naturally fluctuating hydrologic regime will also create excellent habitats for wading birds, waterfowl and other wildlife.

SJMCA

The environmental goal for the SJMCA is to restore, protect, and enhance shallow marsh habitats. These goals will be accomplished by restoring the temporal and spatial

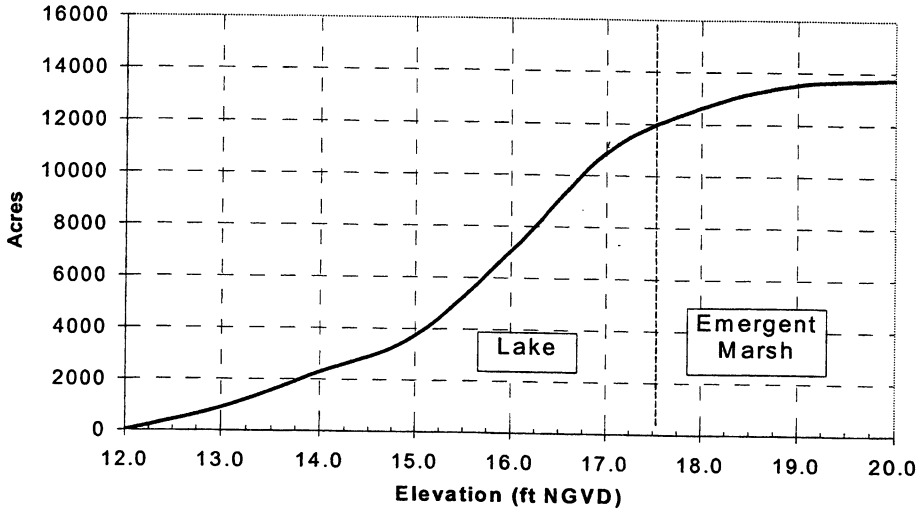

Figure 2. Stage-area curve for the TFMCA showing the approximate boundary between lake and emergent marsh habitats.

Table 1. Hydrologic Criteria for the TFMCA.

1. **MEAN STAGE - the long-term (30 yr.) average water elevation should be no less than 18.0 ft NGVD**. (This is corresponds to the mean ground elevation of those areas of the TFMCA to be restored to wetlands.)

2. **INUNDATION FREQUENCY– The inundation frequency of the 18.0 ft elevation should be at least 60%.** (This will prevent soil subsidence in wetland areas and ensure that the mean water level of 18.0 ft NGVD is not attained from a strongly skewed inundation frequency curve.)

3. **MINIMUM RANGE OF YEARLY FLUCTUATION - The 17.0 ft NGVD elevation should be exposed for at least 60 continuous days every 5 to 10 years. The 17.5 ft elevation should be exposed for at least 30 continuous days every 2 to 5 years**. (This allows for wetland plant community establishment and for the other ecological benefits of marsh drydown.)

4. **TIMING OF FLUCTUATION - Timing of fluctuation should be such that minimum water levels occur between April 1 and June 30 in more than 50% of the years and maximum water levels occur between September 1 and November 31 in more than 50% of the years.** (This restores the natural seasonal variability of water level fluctuations.)

5. **STAGE RECESSION RATES – Stage recession rates should not exceed 1.2 ft during any 30 day period or exceed 0.5 ft during any 7 day period when stages are less than 19.0 ft.** (Establishes natural rates of water level recession. The 19.5 ft elevation corresponds to the level at which the entire TFMCA is flooded.)

6. **MINIMUM WATER LEVELS -The 16.5 ft NGVD elevation should be inundated at least 95% of the time. Water levels should not fall below 16.0 ft more frequently than once every 4.0 years.** (This criterion is needed to protect the integrity of the sport fishery in the TFMCA. Florida Game and Fresh Water Fish Commission biologists have recommended

that minimum average water depth not fall below 3.0 ft. At an elevation of 16.5 ft approximately 1,650 acres will have depths exceeding 3.0 ft.)

aspects of the natural hydrologic regime (Table 2) and by reducing nutrient loading to the marsh.

Because there is a significant downstream drop in the elevational gradient of the SJMCA, we were unable to use a single stage-area curve for conducting environmental assessments of simulated hydrologic conditions under the diversion scenario. Instead, we evaluated hydrologic conditions along three east-west cross-sections in the SJMCA for which the hydrologic model predicted average daily surface water levels. Cross-sections used passed near the Six-Mile, Mulberry Mound, and Big Bend water level gauging stations (Figure 1). These cross-sections were chosen because they had been recently surveyed and, because the water level recorders will allow us to evaluate how well hydrologic criteria are met after project completion.

Critical marsh elevations for each transect are presented in Table 3. A more complete description of the environmental hydrologic criteria and how they relate to the critical

Table 2. Hydrologic Criteria for the SJMCA.

1. **MEAN STAGE - the long term (30 yr.) average water depth should be no less than the central critical marsh elevation.** (This corresponds to the mean ground elevation of each transect).

2. **INUNDATION FREQUENCY - The inundation frequency of the central critical marsh elevation should be at least 60%.** (This will prevent soil subsidence and ensure that the mean water level is not attained from a strongly skewed inundation frequency curve.)

3. **MAXIMUM 14, 30 AND 60 DAY WATER ELEVATIONS - The water elevation should not exceed 4 ft , 3.5 ft, or 3.0 ft above the minimum critical elevation for more than 14, 30 or 60 continuous days respectively, more frequently than once every 10 years.** (These criteria will prevent flooding from damaging established marsh plant communities).

3. **MINIMUM RANGE OF YEARLY FLUCTUATION - The maximum critical elevation should be flooded for at 30 continuous days in at least 25% of the years and the minimum critical elevation should be exposed for at least 30 continuous days in at least 20% of the years.** (This re-establishes natural water level fluctuation patterns).

4. **TIMING OF FLUCTUATION - Timing of fluctuation should be such that minimum water levels occur between April 1 and June 30 in more than 50% of the years and maximum water levels occur between September 1 and November 31 in more than 50% of the years. Minimum water levels should not occur between Sept. 1 and Oct. 31 nor should maximum water levels occur between April 1 and May 31 more frequently than once every 30 years.** (This restores the natural seasonal variability of water level fluctuations.)

5. **STAGE RECESSION RATES - Stage recession rates should not exceed 1.2 ft during any 30 day period or exceed 0.5 ft during any 7 day period when stages are less than or equal to one ft above the maximum critical marsh elevation.** (Restores natural rates of water level recession.)

Table 3. Critical marsh elevations along the Six-Mile, Mulberry Mound and Big Bend transects in the SJMCA determined from weighted perimeter curves.

Project Area	*Critical Elevations (ft NGVD)*		
	Central	*Maximum*	*Minimum*
Six-Mile	21.0	21.5	20.5
Mulberry Mound	18.1	18.6	17.5
Big Bend	17.0	17.8	16.2

marsh elevations can be found in the Environmental Water Management Plan for the Upper St. Johns River Basin Project .

TFMCA Design and Discharge Assumptions

1. The TFMCA will operate as a single unit.
2. Structure S-96B will discharge directly into the TFMCA. A levee will be constructed to separate S-96B from the SJMCA and a getaway channel will be maintained downstream of the structure to minimize tailwater effects. This channel will be separated from the marsh by a low berm.
3. Sub-basin 27 and Campbell Farms will contribute their runoff through two culverts (S-255 and S-256) located on L- 74N.
3. Structure S-96C will discharge directly into the SJMCA.
4. The Six-Mile Creek Restoration Area will be hydrologically re-connected to the SJMCA.
5. Unregulated outflows from the TFMCA to the SJMCA will occur over a 600-ft weir with a crest elevation at 21 ft NGVD located near River Mile 273.
6. Structure S-257 will consist of two 60-inch culverts capable of discharging up to 250 cfs each.
7. Two canal plugs with operable gated structures capable of discharging up to 100 cfs will be constructed in the C-40 Canal at current canal plug sites E-4 and E-7.

Discharges over the overflow weir and through S-257

Environmental hydrologic criteria for the TFMCA were best met by the following discharge conditions:

When $H_{TFMCA} > 21.0$ ft, unregulated discharges occurred over the overflow weir. S-257 remained fully open when $H_{TFMCA} > 18.5$ ft. Estimated discharges through S-257 followed the COE rating curve. Discharges through S-257 occurred down to a reservoir stage of 18.5 ft; each day afterward discharges were reduced at 20% per day for 5 days until the structure was closed.

To provide low flow augmentation for Lake Washington, when stages in the TFMCA were less than 18.5 ft but exceeded 14.0 ft, and discharge from River Reach #4 (SJMCA) was less than 30 cfs, then a supplemental 30 cfs was released through S-257.

Discharges through the C-40 Canal plugs

Environmental hydrologic criteria for the SJMCA were best met by the following discharge conditions through the canal plugs:

Culverts in both canal plugs were fully opened annually during the dry season months of April, May, and June. Discharges through the plugs during these months based on estimated headwater and tailwater conditions ranged from 40 to 60 cfs. Culverts remained closed from July through March.

Environmental Hydrologic Analysis

TFMCA

All the environmental hydrologic criteria for the TFMCA were met (Table 4). Hydrologic modeling indicates the average water elevation would be 19.1 ft and the 18.0 ft elevation would be inundated 76.8% of the time (Figure 3). Drydowns to the 17.0 ft elevation would occur for 60 continuous days once every 7.4 years. Drydowns to the 17.5 ft elevation for 30 continuous days would occur every 2.6 years. The 16.5 ft elevation would be flooded approximately 96% of the time and water levels would only fall below 16.0 ft for at least one day only about once every 4.3 years. Additional hydrologic summary tables are attached (Tables 5 - 7). Under this plan we estimate approximately 2,000 to 3,000 acres of the TFMCA will be emergent marsh and 11,000 to 12,000 acres will be deeper, more open water habitat.

SJMCA

Hydrologic criteria for the SJMCA were mostly met (Tables 8, 10 and 12). Return periods of drying events along each transect are presented in Tables 9, 11, and 13.
At Six-Mile, the inundation frequency criteria for the 21.0 ft elevation of 49% was less than the criterion value of 60% (Table 8). The predicted inundation criteria for the 20.9 ft elevation however, was 66%. At both the Six-mile and Mulberry Mound sites, the 30-day continuous drying criteria were not met, although values were close (Tables 10 and 12). Recession rates were somewhat rapid at the Big Bend site.

The results of these analyses indicate that the environmental criteria for the SJMCA can be met by operating canal plug structures. However, given the constraints of the model, further hydrologic modeling to fine tune a discharge schedule may be unwarranted. We recommend operating the plugs under the schedule proposed in this plan and then adjusting the operation schedules in the future if the criteria are not met.

c: Charles Padera, Hal Wilkening, Doug Dycus, Maurice Sterling, Jeff Elledge, USJ-TFMCA, Robert Christianson, Hector Herrera

Table 4. Environmental hydrologic criteria-related performance summary for the TFMCA. Hydrologic data were simulated for the period 1942 - 1994.

Criteria	Constraint Level	Simulated From 1942-1994 Data	Criteria Met?
Mean Water Level	18.0 ft	19.06	**Yes**
Freq. Of Inundation	18.0 ft = 60%	76.8%	**Yes**
Minimum Drying Interval	Continuous 60 Day Level; Low = 17.0 every 5 to 10 years	Occurred: Every 7.4 years	**Yes**
	Continuous 30 day Levels; Low = 17.5 every 2 to 5 years	Every 2.6 Years	**Yes**
Timing of Fluctuation			
Minimum Levels	Occurs > 50% of Years	Occurred in:	
	Apr 1 - Jun 30	60% of Years	**Yes**
Maximum Levels	Sep 1 - Nov 31	60% of Years	**Yes**
Recession Rates		Met	
7 Day	<0.5 ft	99% of time	**Yes**
30 Day	<1.2 ft	99% of time	**Yes**
Minimum Water Levels	16.5 ft >95% of time	99.1%	**Yes**
	Should not all to < 16.0 more frequently than once every 4 years	Occurred once every 4.3 years	**Yes**

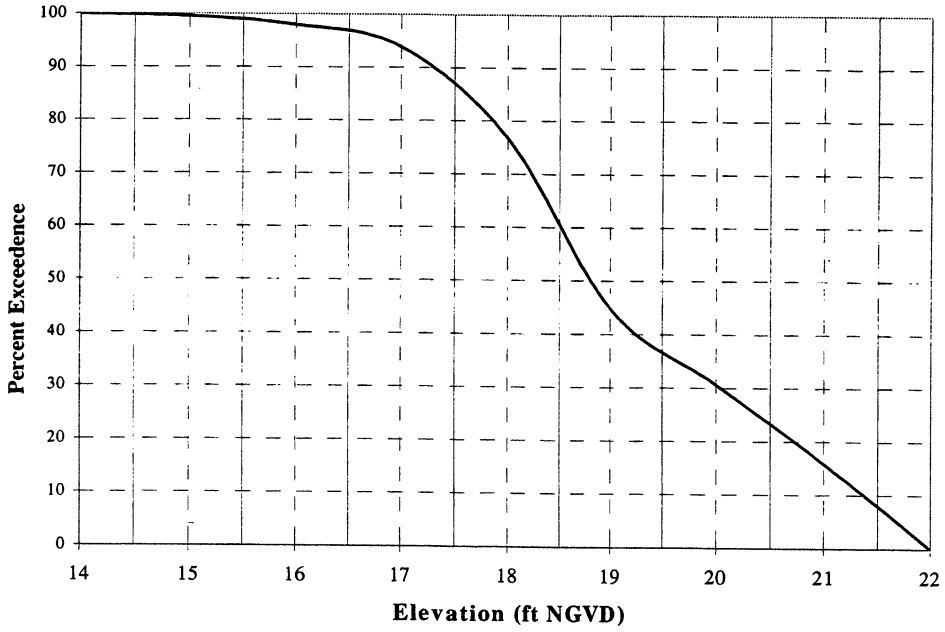

Figure 3. Simulated stage duration curve for the TFMCA .

Table 5. Simulated yearly stage data for the TFMCA. Maximum and minimum water levels for the year and the total annual range of water level fluctuation are also presented.

Year	Max.	Min.	Range	Mean
1942	21.58	17.04	4.54	19.40
1943	21.56	16.90	4.66	19.08
1944	21.72	17.48	4.24	19.53
1945	22.12	14.99	7.13	19.03
1946	21.77	17.62	4.15	19.49
1947	21.71	18.03	3.68	20.40
1948	21.56	17.92	3.64	19.38
1949	21.65	17.25	4.40	19.20
1950	21.47	17.08	4.39	18.61
1951	21.74	17.72	4.02	19.74
1952	21.69	17.73	3.96	19.48
1953	21.63	17.99	3.64	19.66
1954	21.71	17.64	4.07	19.71
1955	21.60	17.94	3.66	19.11
1956	22.02	15.66	6.36	18.64
1957	21.59	18.14	3.45	19.95
1958	21.51	18.22	3.29	19.60
1959	21.78	18.32	3.46	20.37
1960	21.73	18.32	3.41	20.23
1961	19.63	17.63	2.00	18.39
1962	21.69	14.93	6.76	18.09
1963	21.51	16.61	4.90	18.71
1964	21.60	17.27	4.33	19.24
1965	21.64	15.90	5.74	18.59
1966	21.72	17.89	3.83	19.86
1967	18.75	15.99	2.76	17.80
1968	21.81	15.66	6.15	18.95
1969	21.73	17.85	3.88	19.71
1970	21.51	17.23	4.28	18.81
1971	21.61	15.31	6.30	18.59
1972	21.72	17.73	3.99	19.48
1973	21.52	17.83	3.69	19.61
1974	21.63	15.17	6.46	18.51
1975	21.54	16.68	4.86	19.05
1976	21.79	15.73	6.06	19.01
1977	21.68	16.06	5.62	18.54
1978	21.64	17.80	3.84	19.23
1979	21.62	17.55	4.07	19.67
1980	19.27	17.50	1.77	18.11
1981	20.55	14.36	6.19	17.05
1982	21.64	17.62	4.02	19.37
1983	21.64	18.08	3.56	20.05
1984	20.68	17.37	3.31	18.65
1985	21.74	16.49	5.25	18.60
1986	20.83	15.41	5.42	18.41
1987	20.69	17.59	3.10	18.70
1988	19.66	17.10	2.56	18.21
1989	20.73	16.33	4.40	17.86
1990	21.62	16.35	5.27	18.70
1991	21.62	18.15	3.47	20.20
1992	20.82	15.35	5.47	18.09
1993	21.56	17.10	4.46	18.55
1994	21.53	16.43	5.10	19.17
Mean	21.38	16.98	4.40	19.06

Table 6. Return periods of simulated continuous drying intervals for the TFMCA. For example, the 16.5 ft elevation is exposed for 30 continuous days once every 5.2 years.

Elevation	Continuous Day Intervals								% Area Exposed
	1	7	14	30	60	120	183	274	
14.50	52.0	52.0	52.0						78%
14.75	52.0	52.0	52.0	52.0					
15.00	17.3	52.0	52.0	52.0	52.0				73%
15.25	13.0	17.3	26.0	26.0	52.0				
15.50	7.4	8.7	13.0	26.0	52.0				62%
15.75	5.2	7.4	7.4	26.0	52.0				
16.00	4.3	5.8	6.5	13.0	52.0				49%
16.25	4.0	4.0	4.3	5.8	26.0	52.0			
16.50	3.1	3.5	3.7	5.2	17.3	52.0			32%
16.75	2.7	3.1	3.5	3.7	10.4	52.0			
17.00	2.6	2.7	2.9	3.1	7.4	52.0			21%
17.25	2.2	2.4	2.6	2.6	3.3	26.0			
17.50	1.9	2.1	2.2	2.6	2.7	13.0			15%
17.75	1.4	1.6	1.8	2.1	2.5	5.8	17.3		
18.00	1.2	1.3	1.4	1.6	2.2	4.0	8.7	52.0	8%
18.25	1.0	1.1	1.1	1.3	1.7	2.5	6.5	26.0	

Table 7. Return periods of simulated continuous flooding intervals for the TFMCA. For example, the 18.5 ft elevation is flooded for 120 continuous days once every 1.3 years.

Elevation	Continuous Day Intervals								% Area Flooded
	1	7	14	30	60	120	183	274	
18.00	1.0	1.0	1.0	1.0	1.1	1.1	1.2	2.5	92%
18.25	1.0	1.0	1.0	1.0	1.1	1.2	1.6	8.7	
18.50	1.0	1.0	1.0	1.1	1.2	1.3	3.1	52.0	96%
18.75	1.0	1.0	1.1	1.1	1.2	1.4	4.0	52.0	
19.00	1.0	1.1	1.1	1.1	1.2	1.6	6.5		99%
19.25	1.1	1.1	1.1	1.2	1.2	1.9	13.0		
19.50	1.1	1.1	1.1	1.2	1.3	2.4	17.3		100%
19.75	1.1	1.1	1.2	1.2	1.3	2.5	17.3		
20.00	1.1	1.2	1.2	1.3	1.4	3.3	17.3		100%
20.25	1.2	1.2	1.2	1.3	1.6	5.8			
20.50	1.2	1.2	1.3	1.3	2.1	13.0			100%
20.75	1.2	1.3	1.3	1.4	3.1	52.0			
21.00	1.3	1.3	1.3	1.7	4.3				100%
21.25	1.3	1.3	1.5	2.5	7.4				
21.50	1.3	5.8							100%
21.75	8.7								
22.00	26.0								

Table 8. Environmental hydrologic criteria-related performance summary for the SJMCA Six-Mile transect. Hydrologic data were simulated for the period 1942 - 1994.

Criteria	Criteria	Simulated From 1942-1989 Data	Criteria Met?
Mean Water Level	21.0 ft	21.012	Yes
Freq. of Inundation	21.0 ft = 60%	46%	No
Maximum Water Elevation	More than 1/10 Years Not To Exceed:		
14 Day	24.5 ft	Never Occurred	Yes
30 Day	24.0 ft		
60 Day	23.5 ft		
Minimum Range of Yearly Fluctuation	Continuous 30 Day Levels Hi= 21.5 Low=20.5 Hi in ≥25% of years Low in 20--30% of years	Occurred In :	
High		54% of Years	Yes
Low		17% of Years	**No**
Timing of Fluctuation	During > 50% of Years		
Minimum Levels	Occurrs Between Apr. 1 - June 30	Occurred in: 89% of Years	Yes
Maximum Levels	Sept. 1 - Nov. 31	51% of Years	Yes
One-Day Yearly Min.	More than 1/30 Years should not occur Sep1 - Oct 31	Occurred: Never	Yes
One-Day Yearly Max.	Apr 1 - May 31	1 in 17.6 Years	No
Recession Rates	> Than 95% of Time	Met:	
7 Day	< 0.5 ft	97% of time	Yes
30 Day	<1.2 ft	96% of time	Yes

Table 9. Return periods of simulated continuous drying intervals for the Six Mile transect. For example, the 20.75 ft elevation is dry for 7 continuous days once every 1.9 years.

	Continuous Day Intervals							
Elevation	**1**	**7**	**14**	**30**	**60**	**120**	**183**	**274**
18.75	4.0	5.2	10.4					
19.00	2.6	3.7	4.7	26.0				
19.25	2.2	2.7	3.7	8.7				
19.50	2.2	2.5	3.3	5.8				
19.75	1.9	2.3	2.9	5.8				
20.00	1.9	2.3	2.6	5.8				
20.25	1.9	2.0	2.3	5.8				
20.50	1.9	2.0	2.3	5.8				
20.75	1.9	1.9	2.3	5.2				
21.00	1.0	1.0	1.0	1.0	1.2	1.4	2.3	5.8
21.25	1.0	1.0	1.0	1.0	1.0	1.1	1.3	2.7
21.50	1.0	1.0	1.0	1.0	1.0	1.0	1.1	1.7
21.75	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.3

Table 10. Environmental hydrologic criteria-related performance summary for the Mulberry Mound transect. Hydrologic data were simulated for the period 1942 - 1994.

Criteria	Criteria	Simulated From 1942-1989 Data	Criteria Met?
Mean Water Level	18.1 ft	18.56	Yes
Freq. of Inundation	18.1 ft = 60%	89.7%	Yes
Maximum Water Elevation	More than 1/10 Years Not To Exceed:	Occurred :	
14 Day	21.5 ft	Once Every 17.3 Years	Yes
30 Day	21.0 ft	Once Every 26.0 Years	Yes
60 Day	20.5 ft	Never Occurred	Yes
Minimum Range of Yearly Fluctuation	Continuous 30 Day Levels Hi= 18.6 Low=17.5 Hi in 25% of years	Occurred :	
High	Low in 20--30% of years	86.5% of Years	Yes
Low		19.2% of Years	**No**
Timing of Fluctuation	During > 50% of Years		
Minimum Levels	Occurs Between	Occurred in:	
Maximum Levels	Apr. 1 - June 30	94% of Years	Yes
	Sept. 1 - Nov. 31	57% of Years	Yes
	More than 1/30 Years		
One-Day Yearly Min.	should not occur	Occurred	
One-Day Yearly Max.	Sepl - Oct 31	Never	Yes
	Apr 1 - May 31	1 in 26 Years	Yes
Recession Rates	> Than 95% of Time	Met:	
7 Day	< 0.5 ft	96.5% of time	Yes
30 Day	<1.2 ft	95.5% of time	Yes

Table 11. Return periods of simulated continuous drying intervals for the Mulberry Mound transect. For example, the 17.5 ft elevation is dry for 120 continuous days once every 1.4 years.

	Continuous Day Intervals							
Elevation	**1**	**7**	**14**	**30**	**60**	**120**	**183**	**274**
16.25	3.1	4.0	5.2	52.0				
16.50	2..3	2.7	4.0	8.7				
16.75	2.1	2.3	3.1	5.8				
17.00	2.0	2.2	2.5	5.8				
17.25	1.9	2.1	2.4	5.8				
17.50	1.9	2.0	2.3	5.2	26.0			
17.75	1.6	2.0	2.2	4.0	17.3			
18.00	1.1	1.9	1.9	2.5	7.4			
18.25	1.0	1.2	1.2	1.5	2.3	10.4	26.0	
18.50	1.0	1.0	1.0	1.0	1.2	1.7	2.7	8.7
18.75	1.0	1.0	1.0	1.0	1.0	1.1	1.4	3.3
19.00	1.0	1.0	1.0	1.0	1.0	1.1	1.2	2.6
19.25	1.0	1.0	1.0	1.0	1.0	1.1	1.2	1.9
19.50	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.3

Table 12. Environmental hydrologic criteria-related performance summary for the Big Bend transect. Hydrologic data were simulated for the period 1942 - 1994.

Criteria	Criteria	Simulated From 1942-1989 Data	Criteria Met?
Mean Water Level	17.0 ft	17.3 ft	Yes
Freq. of Inundation	17.0 ft = 60%	66.2%	Yes
Maximum Water Elevation	More than 1/10 Years Not To Exceed:	Occurred :	
14 Day	20.2 ft	Once Every 13.0 Years	Yes
30 Day	19.7 ft	Once Every 17.3 Years	Yes
60 Day	19.2 ft	Once Every 26.0 Years	Yes
Minimum Range of Yearly Fluctuation	Continuous 30 Day Levels Hi= 17.8 Low=16.2		
	Hi in 25% of years	Occurred :	
High	Low in 20--30% of years	59.6% of Years	Yes
Low		25% of Years	Yes
Timing of Fluctuation	During > 50% of Years		
Minimum Levels	Occurs Between	Occurred in:	
	Apr. 1 - June 30	83% of Years	Yes
Maximum Levels	Sept. 1 - Nov. 31	55% of Years	Yes
	More than 1/30 Years		
One-Day Yearly Min.	should not occur	Occurred	
One-Day Yearly Max.	Sepl - Oct 31I	1 in 17.6 years	**No**
	Apr 1 - May 31	1 out of 52 years	Yes
Recession Rates	> Than 95% of Time	Met	
7 Day	< 0.5 ft	92.7% of time	**No**
30 Day	<1.2 ft	91.4% of time	**No**

Table 13. Return periods of simulated continuous drying intervals for the Big Bend transect. For example, the 17.0 ft elevation is dry for 60 continuous days once every 1.9 years.

	Continuous Day Intervals							
Elevation	**1**	**7**	**14**	**30**	**60**	**120**	**183**	**274**
15.00	1.6	2.6	3.7	7.4				
15.25	1.4	2.3	3.7	6.5				
15.50	1.3	1.9	2.9	6.5				
15.75	1.2	1.5	2.7	5.8				
16.00	1.1	1.4	2.1	4.3				
16.25	1.1	1.3	1.7	4.0				
16.50	1.1	1.2	1.6	3.3	52.0			
16.75	1.0	1.1	1.2	1.6	4.7			
17.00	1.0	1.0	1.0	1.2	1.9	7.4		
17.25	1.0	1.0	1.0	1.0	1.2	2.2	6.5	52.0
17.50	1.0	1.0	1.0	1.0	1.0	1.2	1.4	4.0
17.75	1.0	1.0	1.0	1.0	1.0	1.1	1.2	2.4
18.00	1.0	1.0	1.0	1.0	1.0	1.0	1.2	1.7
18.25	1.0	1.0	1.0	1.0	1.0	1.0	1.1	1.4

MEMORANDUM F.O.R. 86-480

Date: 01 November 2001

To: Jeff Elledge, Director
Water Resources Department

Through: Edgar F. Lowe, Ph.D., Director
Environmental Sciences Division

Mike Cullum, Director
Engineering Department

Mary Ann Lee, Ph.D., TPM
Environmental Sciences Division

From: Steven J. Miller, Environmental Scientist Supervisor
Environmental Sciences Division

Re: Final Design and Hydrologic Management Plan for the Three Forks (TFMCA) and St. Johns (SJMCA) Marsh Conservation Areas.

The purpose of this memo is to provide the final environmental analysis of hydrologic conditions in the TFMCA and the SJMCA resulting from the Three Forks diversion project and to provide a detailed plan for project structure operation. An interim plan for the TFMCA was sent for preliminary review to the U.S. Army Corps of Engineers on 11 September 1998. The plan was subsequently modified in 1999 to reflect new ground survey information. In August 2001, the plan was further modified to reflect the loss of 320 acres from the TFMCA that were transferred to the C-1 Retention Area to provide additional flood control benefits to the C-1 project and, to satisfy a request by the ACOE to reduce the TFMCA outflow weir crest from 21.0 ft to 20.0 ft to protect project levees from water depths and durations that exceeded design conditions.

Environmental Goals

TFMCA

The TFMCA will be managed as an impounded project area separate from the SJMCA (Figure 1). The two areas must be kept separate because ground elevations are lower in the TFMCA than in the SJMCA, and complete hydrologic connection between the two would cause overdrainage of the marshes in the SJMCA. Ground elevations in the TFMCA vary between 13.0 and 20.0 ft NGVD (Figure 2). Because of this gradient in ground elevations, the entire TFMCA cannot be restored to shallow marsh. Instead,

with impoundment, lake habitat (average depths exceeding 5 feet) will be created in the northern half of the TFMCA and marsh habitat will be created toward the southern end. The environmental hydrologic criteria that have been developed for the TFMCA are designed to protect the biological integrity of both habitats. The criteria provide for

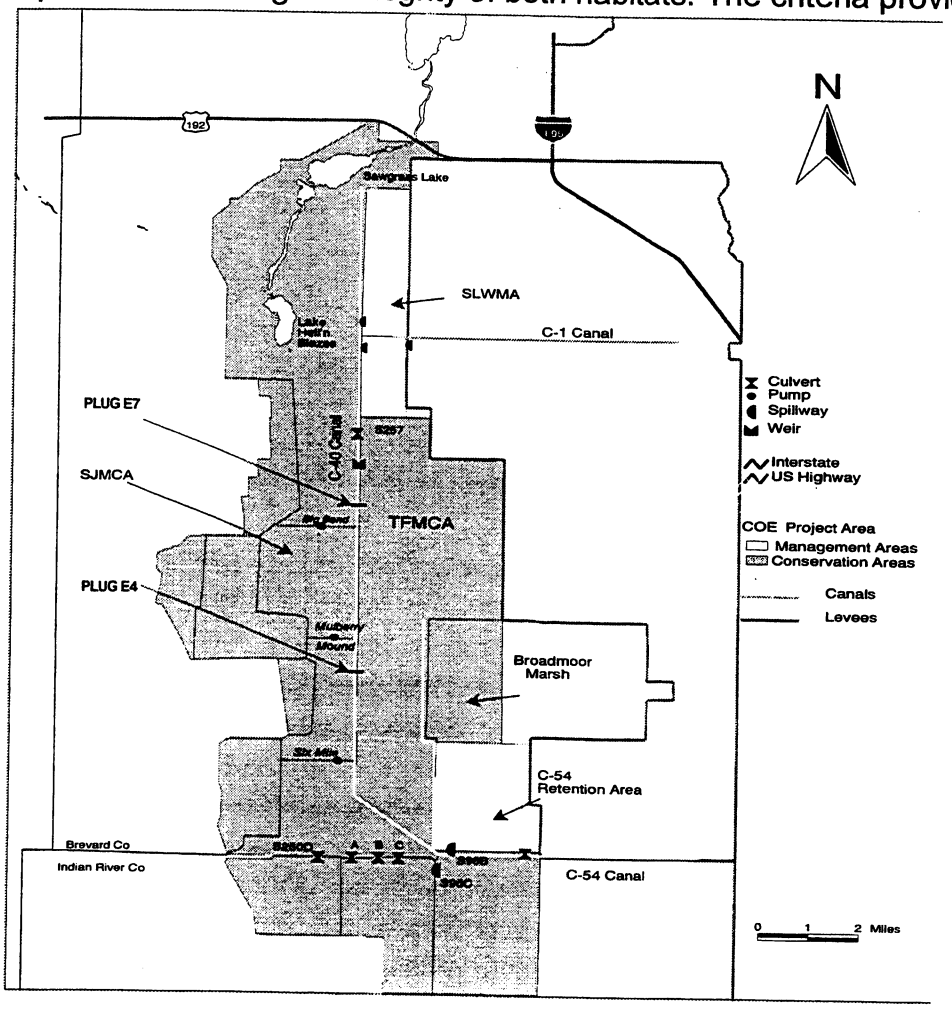

Figure 1. Location and project features of the TFMCA and the SJMCA.

minimizing short-term fluctuations in depth of the lake while allowing drydowns of the marsh at appropriate frequencies. In combination with restored wetland plant communities, the naturally fluctuating hydrologic regime will also create excellent habitats for wading birds, waterfowl and other wildlife.

SJMCA

The environmental goal for the SJMCA is to restore, protect, and enhance shallow marsh habitats. These goals will be accomplished by restoring the temporal and spatial

aspects of the natural hydrologic regime (Table 2) and by reducing nutrient loading to the marsh.

Because there is a significant downstream drop in the elevational gradient of the SJMCA, we were unable to use a single stage-area curve for conducting environmental assessments of simulated hydrologic conditions under the diversion scenario. Instead,

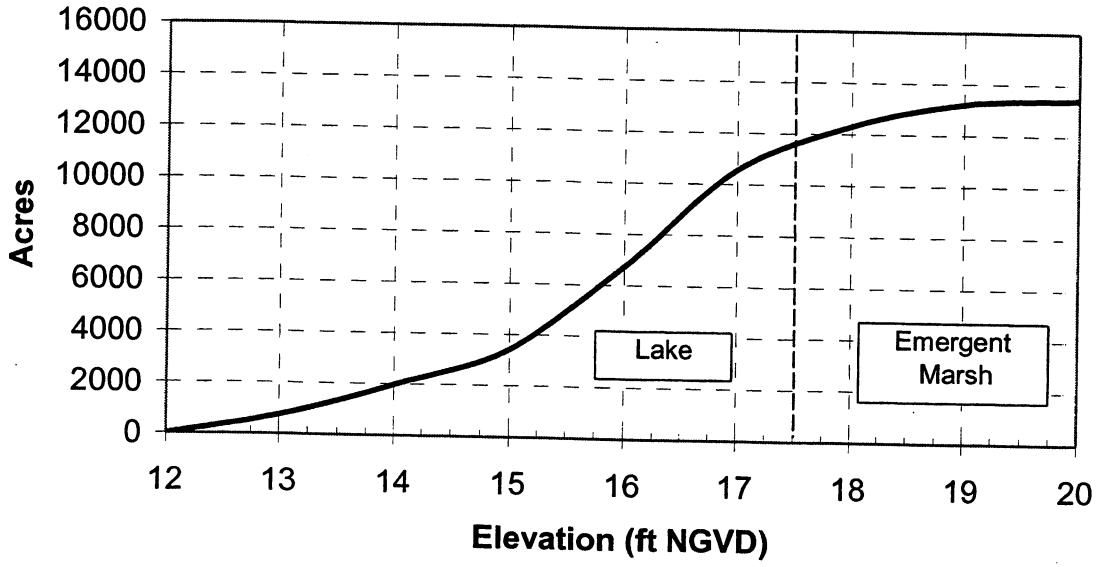

Figure 2. Stage-area curve for the TFMCA showing the approximate boundary between lake and emergent marsh habitats.

Table 1. Hydrologic Criteria for the TFMCA.

2. **MEAN STAGE - the long-term (30 yr.) average water elevation should be no less than 18.0 ft NGVD.** (This is corresponds to the mean ground elevation of those areas of the TFMCA to be restored to wetlands.)

2. **INUNDATION FREQUENCY– The inundation frequency of the 18.0 ft elevation should be at least 60%.** (This will prevent soil subsidence in wetland areas and ensure that the mean water level of 18.0 ft NGVD is not attained from a strongly skewed inundation frequency curve.)

3. **MINIMUM RANGE OF YEARLY FLUCTUATION - The 17.0 ft NGVD elevation should be exposed for at least 60 continuous days every 5 to 10 years. The 17.5 ft elevation should be exposed for at least 30 continuous days every 2 to 5 years.** (This allows for wetland plant community establishment and for the other ecological benefits of marsh drydown.)

4. **TIMING OF FLUCTUATION - Timing of fluctuation should be such that minimum water levels occur between April 1 and June 30 in approximately 50% or more of the years and maximum water levels occur between September 1 and November 31 in approximately 50% or more of the years.** (This restores the natural seasonal variability of water level fluctuations.)

5. **STAGE RECESSION RATES – Stage recession rates should not exceed 1.2 ft during any 30 day period or exceed 0.5 ft during any 7 day period when stages are less than**

19.0 ft. (Establishes natural rates of water level recession. The 19.5 ft elevation corresponds to the level at which the entire TFMCA is flooded.)

6. **MINIMUM WATER LEVELS -The 16.5 ft NGVD elevation should be inundated at least 95% of the time. Water levels should not fall below 16.0 ft more frequently than once every 4.0 years.** (This criterion is needed to protect the integrity of the sport fishery in the TFMCA. Florida Game and Fresh Water Fish Commission biologists have recommended that minimum average water depth not fall below 3.0 ft. At an elevation of 16.5 ft approximately 1,352 acres will have depths exceeding 3.0 ft.)

we evaluated hydrologic conditions along three east-west cross-sections in the SJMCA for which the hydrologic model predicted average daily surface water levels. Cross-sections used passed near the Six-Mile, Mulberry Mound, and Big Bend water level gauging stations (Figure 1). These cross-sections were chosen because they had been recently surveyed and, because the water level recorders will allow us to evaluate how well hydrologic criteria would be met after project completion. Critical marsh elevations for each transect are presented in Table 3. A more complete description of the environmental hydrologic criteria and how they relate to the critical marsh elevations can be found in the Environmental Water Management Plan for the Upper St. Johns River Basin Project .

Table 2. Hydrologic Criteria for the SJMCA.

1. **MEAN STAGE - the long term (30 yr.) average water depth should be no less than the central critical marsh elevation.** (This corresponds to the mean ground elevation of each transect).

2. **INUNDATION FREQUENCY - The inundation frequency of the central critical marsh elevation should be at least 60%.** (This will prevent soil subsidence and ensure that the mean water level is not attained from a strongly skewed inundation frequency curve.)

3. **MAXIMUM 14, 30 AND 60 DAY WATER ELEVATIONS - The water elevation should not exceed 4 ft , 3.5 ft, or 3.0 ft above the minimum critical elevation for more than 14, 30 or 60 continuous days respectively, more frequently than once every 10 years.** (These criteria will prevent flooding from damaging established marsh plant communities).

3. **MINIMUM RANGE OF YEARLY FLUCTUATION - The maximum critical elevation should be flooded for at 30 continuous days in at least 25% of the years and the minimum critical elevation should be exposed for at least 30 continuous days in at least 20% of the years.** (This re-establishes natural water level fluctuation patterns).

4. **TIMING OF FLUCTUATION - Timing of fluctuation should be such that minimum water levels occur between April 1 and June 30 in approximately 50% or more of the years and maximum water levels occur between September 1 and November 31 in approximately 50% or more of the years.** (This restores the natural seasonal variability of water level fluctuations.)

5. **STAGE RECESSION RATES - Stage recession rates should not exceed 1.2 ft during any 30 day period or exceed 0.5 ft during any 7 day period when stages are less than or equal to one ft above the maximum critical marsh elevation.** (Restores natural rates of

water level recession.)

Table 3. Critical marsh elevations along the Six-Mile, Mulberry Mound and Big Bend transects in the SJMCA determined from weighted perimeter curves.

Project Area	*Critical Elevations (ft NGVD)*		
	Central	*Maximum*	*Minimum*
Six-Mile	21.0	21.5	20.5
Mulberry Mound	18.1	18.6	17.5
Big Bend	17.0	17.8	16.2

TFMCA Design and Discharge Assumptions

4. The TFMCA will operate as a single unit.
5. Structure S-96B will discharge directly into the TFMCA. A levee will be constructed to separate S-96B from the SJMCA and a getaway channel will be maintained downstream of the structure to minimize tailwater effects. This channel will be separated from the marsh by a low berm.
6. Sub-basin 27 and Campbell Farms will contribute their runoff through two culverts (S-255 and S-256) located on L- 74N.
7. Structure S-96C will discharge directly into the SJMCA.
8. The Six-Mile Creek Restoration Area will be hydrologically re-connected to the SJMCA.
9. Unregulated outflows from the TFMCA to the SJMCA will occur over a 600-ft weir with a crest elevation at 20 ft NGVD located near River Mile 273.
10. Structure S-257 will consist of two 60-inch culverts capable of discharging up to 250 cfs each.
11. Two canal plugs with operable gated structures capable of discharging up to 100 cfs will be constructed in the C-40 Canal at current canal plug sites E-4 and E-7.

Discharges over the overflow weir and through S-257

Environmental hydrologic criteria for the TFMCA were best met by the following discharge conditions:

When H_{TFMCA} > 20.0 ft, unregulated discharges occurred over the overflow weir. S-257 remained fully open when H_{TFMCA} > 19.0 ft. Estimated discharges through S-257 followed the COE rating curve. Discharges through S-257 occurred down to a reservoir stage of 19.0 ft; after a stage of 19.0 ft was reached, discharges were reduced at 20% per day for 5 days until the structure was closed.

To provide low flow augmentation for Lake Washington, when stages in the TFMCA were less than 19.0 ft but exceeded 14.0 ft, and discharge from River Reach #4 (SJMCA) was less than 30 cfs, then a supplemental 30 cfs was released through S-257.

Discharges through the C-40 Canal plugs

Environmental hydrologic criteria for the SJMCA were best met by the following discharge conditions through the canal plugs:

Culverts in both canal plugs were fully opened annually during the dry season months of April, May, and June. Discharges through the plugs during these months based on estimated headwater and tailwater conditions ranged from 40 to 60 cfs. Culverts remained closed from July through March.

Environmental Hydrologic Analysis

TFMCA

All the environmental hydrologic criteria for the TFMCA except timing of minimum water levels were met (Table 4). Hydrologic modeling indicates the average water elevation would be 19.1 ft and the 18.0 ft elevation would be inundated 84.9% of the time (Figure 3). Drydowns to the 17.0 ft elevation would occur for 60 continuous days once every 8.0 years. Drydowns to the 17.5 ft elevation for 30 continuous days would occur every 3.5 years. The 16.5 ft elevation would be flooded approximately 97% of the time and water levels would only fall below 16.0 ft for at least one day only about once every 9.3 years. Hydrologic summary tables are attached (Tables 5 - 7). Under this plan we estimate approximately 2,500 acres of the TFMCA will be emergent marsh and 11,000 acres will be deeper, more open water and aquatic slough habitat.

SJMCA

Hydrologic criteria for the SJMCA were almost entirely met (Tables 8, 10 and 12). Return periods of drying events along each transect are presented in Tables 9, 11, and 13. At the Mulberry Mound transect desired low water levels were only reached in 11% of the years as compared to the criterion values of 20% to 30% (Table 10). At the Big Bend transect maximum water elevations were exceeded and the range and timing of fluctuation criteria were not entirely met. The results of these analyses suggest that the environmental criteria for the SJMCA can be met by operating canal plug structures. However, given the constraints of the model, further hydrologic modeling to fine tune a discharge schedule for the plug structures may be unwarranted. We recommend operating the plugs under the schedule proposed in this plan and then adjusting the operation schedules in the future if the criteria are not met.

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Table 4. Environmental hydrologic criteria-related performance summary for the TFMCA. Hydrologic data were simulated for the period 1942 - 1998.

Criteria	Constraint Level	Simulated From 1942-1994 Data	Criteria Met?
Mean Water Level	18.0 ft	19.1	**Yes**
Freq. Of Inundation	18.0 ft = 60%	84.9%	**Yes**
Minimum Drying Interval	Continuous 60 Day Level; Low = 17.0 every 5 to 10 years	Occurred: Every 8.0 years	**Yes**
	Continuous 30 day Levels; Low = 17.5 every 2 to 5 years	Every 3.5 Years	**Yes**
Timing of Fluctuation			
Minimum Levels	Occurs > 50% of Years Apr 1 - Jun 30	Occurred in: 47% of Years	**No**
Maximum Levels	Sep 1 - Nov 31	60% of Years	**Yes**
Recession Rates		Met	
7 Day	<0.5 ft	>99% of time	**Yes**
30 Day	<1.2 ft	>99% of time	**Yes**
Minimum Water Levels	16.5 ft >95% of time	96.5%	**Yes**
	Should not all to < 16.0 more frequently than once every 4 years	Occurred once every 9.3 years	**Yes**

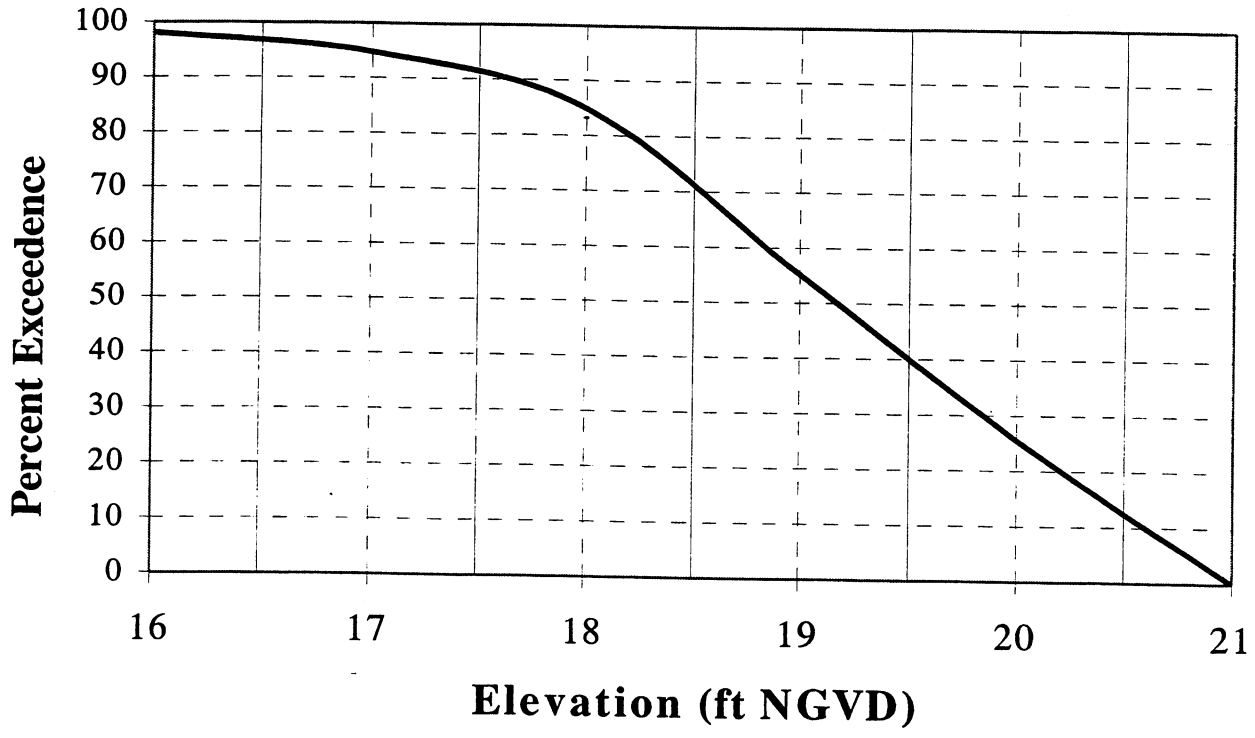

Figure 3. Simulated stage duration curve for the TFMCA .

Table 5. Simulated yearly stage data for the TFMCA. Maximum and minimum water levels for the year and the total annual range of water level fluctuation are also presented.

Year	Max.	Min.	Range	Mean
1942	20.59	17.36	3.23	19.30
1943	20.53	17.46	3.07	19.01
1944	20.70	18.50	2.20	19.62
1945	20.99	17.07	3.92	19.31
1946	20.76	18.33	2.43	19.54
1947	20.70	18.92	1.78	20.09
1948	20.53	18.78	1.75	19.57
1949	20.67	18.19	2.48	19.46
1950	20.57	17.77	2.80	18.86
1951	20.67	18.46	2.21	19.76
1952	20.63	18.82	1.81	19.77
1953	20.68	18.70	1.98	19.64
1954	20.58	18.45	2.13	19.67
1955	20.61	18.74	1.87	19.40
1956	20.89	17.08	3.81	18.96
1957	20.62	18.80	1.82	19.76
1958	20.57	18.85	1.72	19.64
1959	20.68	18.93	1.75	19.99
1960	20.75	19.00	1.75	20.00
1961	19.31	18.14	1.17	18.77
1962	20.71	15.81	4.90	18.23
1963	20.58	17.97	2.61	19.12
1964	20.59	18.39	2.20	19.41
1965	20.60	17.36	3.24	18.75
1966	20.71	18.77	1.94	19.79
1967	18.83	17.06	1.77	17.89
1968	20.64	15.24	5.40	18.44
1969	20.66	18.51	2.15	19.66
1970	20.57	18.20	2.37	19.18
1971	20.65	16.47	4.18	18.50
1972	20.65	18.60	2.05	19.47
1973	20.62	18.57	2.05	19.53
1974	20.70	16.70	4.00	18.76
1975	20.56	17.64	2.92	19.18
1976	20.70	17.07	3.63	19.09
1977	20.52	17.07	3.45	18.52
1978	20.60	18.63	1.97	19.55
1979	20.63	18.52	2.11	19.70
1980	19.15	17.45	1.70	18.42
1981	17.56	13.85	3.71	15.80
1982	20.57	13.96	6.61	17.61
1983	20.67	18.82	1.85	19.87
1984	20.45	18.46	1.99	19.12
1985	20.58	17.69	2.89	18.84
1986	20.07	16.90	3.17	18.67
1987	19.73	18.18	1.55	18.94
1988	19.32	17.86	1.46	18.63
1989	18.43	15.86	2.57	17.21
1990	20.66	16.65	4.01	18.45
1991	20.64	18.66	1.98	19.83
1992	19.96	16.78	3.18	18.53
1993	20.53	17.55	2.98	18.80
1994	20.63	15.82	4.81	18.04
1995	20.72	18.84	1.88	19.83
1996	19.98	18.19	1.79	19.06
1997	20.51	17.06	3.45	18.48
1998	20.61	18.77	1.84	19.75
Mean	20.39	17.72	2.67	19.07

Table 6. Return periods of simulated continuous drying intervals for the TFMCA. For example, the 16.5 ft elevation is exposed for 30 continuous days once every 5.2 years.

Elevation	Continuous Day Intervals								% Area Exposed
	1	7	14	30	60	120	183	274	
14.50	28.0	28.0	28.0	56.0					**80%**
14.75	28.0	28.0	28.0	28.0					
15.00	28.0	28.0	28.0	28.0	28.0				**74%**
15.25	18.7	28.0	28.0	28.0	28.0	56.0			
15.50	18.7	18.7	18.7	28.0	28.0	28.0			**62%**
15.75	18.7	18.7	18.7	18.7	28.0	28.0			
16.00	9.3	11.2	18.7	18.7	28.0	28.0	56.0		**48%**
16.25	9.3	9.3	9.3	11.2	18.7	28.0	56.0		
16.50	8.0	9.3	9.3	9.3	14.0	28.0	56.0		**31%**
16.75	6.2	7.0	8.0	9.3	9.3	18.7	28.0		
17.00	5.1	5.1	5.6	6.2	8.0	14.0	28.0		**19%**
17.25	3.3	3.3	3.5	5.6	7.0	14.0	28.0		
17.50	2.9	3.1	3.3	3.5	5.1	9.3	14.0		**13%**
17.75	2.7	2.8	2.9	2.9	4.3	7.0	11.2	56.0	
18.00	2.3	2.5	2.5	2.7	3.1	5.6	9.3	18.7	**6%**
18.25	1.9	1.9	2.2	2.4	2.8	4.0	5.6	18.7	

Table 7. Return periods of simulated continuous flooding intervals for the TFMCA. For example, the 20.25 ft elevation is flooded for 60 continuous days once every 4.0 years.

Elevation	Continuous Day Intervals								% Area Flooded
	1	7	14	30	60	120	183	274	
18.00	1.0	1.0	1.0	1.0	1.0	1.1	1.1	1.2	**94%**
18.25	1.0	1.0	1.0	1.0	1.1	1.1	1.1	1.4	
18.50	1.1	1.1	1.1	1.1	1.1	1.1	1.2	1.8	**98%**
18.75	1.1	1.1	1.1	1.1	1.1	1.1	1.4	3.1	
19.00	1.1	1.1	1.1	1.2	1.2	1.4	2.3	11.2	**100%**
19.25	1.1	1.2	1.2	1.2	1.2	1.6	4.0	28.0	
19.50	1.2	1.2	1.2	1.2	1.3	2.1	9.3		**100%**
19.75	1.2	1.2	1.2	1.3	1.4	2.8	28.0		
20.00	1.2	1.3	1.3	1.3	1.9	5.1	56.0		**100%**
20.25	1.3	1.3	1.3	1.7	4.0	56.0			
20.50	1.3	2.0	5.6						**100%**
20.75	18.7								

Table 8. Environmental hydrologic criteria-related performance summary for the SJMCA Six-Mile transect. Hydrologic data were simulated for the period 1942 - 1998.

Criteria	Criteria	Simulated From 1942-1989 Data	Criteria Met?
Mean Water Level	21.0 ft	21.19	Yes
Freq. of Inundation	21.0 ft = 60%	72%	Yes
Maximum Water Elevation **14 Day** **30 Day** **60 Day**	More than 1/10 Years Not To Exceed: 24.5 ft 24.0 ft 23.5 ft	Never Occurred	Yes
Minimum Range of Yearly Fluctuation **High** **Low**	Continuous 30 Day Levels Hi= 21.5 Low=20.5 Hi in ≥25% of years Low in 20--30% of years	Occurred In : 71% of Years 63% of Years	 Yes Yes
Timing of Fluctuation **Minimum Levels** **Maximum Levels**	During > 50% of Years Occurrs Between Apr. 1 - June 30 Sept. 1 - Nov. 31	Occurred in: 100% of Years 50% of Years	 Yes Yes
Recession Rates **7 Day** **30 Day**	> Than 95% of Time < 0.5 ft <1.2 ft	Met: 92% of time 94% of time	 No No

Table 9. Return periods of simulated continuous drying intervals for the Six Mile transect. For example, the 19.5 ft elevation is dry for 7 continuous days once every 2.0 years.

	Continuous Day Intervals							
Elevation	**1**	**7**	**14**	**30**	**60**	**120**	**183**	**274**
19.50	1.3	2.0	2.7	8.0				
19.75	1.1	1.2	1.9	3.3	28.0			
20.00	1.1	1.1	1.3	2.3	9.3			
20.25	1.0	1.1	1.2	1.8	8.0			
20.50	1.0	1.1	1.2	1.6	4.3			
20.75	1.0	1.1	1.1	1.5	2.9			
21.00	1.0	1.1	1.1	1.4	2.4	28.0		
21.25	1.0	1.0	1.0	1.1	1.6	4.0	18.7	
21.50	1.0	1.0	1.0	1.0	1.0	1.2	1.9	5.1
21.75	1.0	1.0	1.0	1.0	1.0	1.1	1.4	3.3

Table 10. Environmental hydrologic criteria-related performance summary for the Mulberry Mound transect. Hydrologic data were simulated for the period 1942 - 1998.

Criteria	Criteria	Simulated From 1942-1989 Data	Criteria Met?
Mean Water Level	18.1 ft	19.07	Yes
Freq. of Inundation	18.1 ft = 60%	85.0%	Yes
Maximum Water Elevation	More than 1/10 Years Not To Exceed:	Occurred :	
14 Day	21.5 ft	Once Every 28 Years	Yes
30 Day	21.0 ft	Once Every 56 Years	Yes
60 Day	20.5 ft	Never Occurred	Yes
Minimum Range of Yearly Fluctuation	Continuous 30 Day Levels Hi= 18.6 Low=17.5		
	Hi in 25% of years	Occurred :	
High	Low in 20--30% of years	100% of Years	Yes
Low		11% of Years	No
Timing of Fluctuation	During > 50% of Years		
Minimum Levels	Occurs Between	Occurred in:	
Maximum Levels	Apr. 1 - June 30	91% of Years	Yes
	Sept. 1 - Nov. 31	53% of Years	Yes
Recession Rates	> Than 95% of Time	Met:	
7 Day	< 0.5 ft	97% of time	Yes
30 Day	<1.2 ft	98% of time	Yes

Table 11. Return periods of simulated continuous drying intervals for the Mulberry Mound transect. For example, the 17.5 ft elevation is dry for 14 continuous days once every 5.1 years.

	Continuous Day Intervals							
Elevation	**1**	**7**	**14**	**30**	**60**	**120**	**183**	**274**
17.00	3.3	4.7	6.2	56.0				
17.25	3.3	4.7	6.2	28.0				
17.50	2.7	3.3	5.1	9.3				
17.75	1.4	1.7	1.8	2.2	5.6			
18.00	1.1	1.1	1.2	1.6	2.3	56.0		
18.25	1.1	1.1	1.1	1.4	2.2	56.0		
18.50	1.1	1.1	1.1	1.3	2.1	18.7		
18.75	1.0	1.1	1.1	1.2	1.9	8.0		
19.00	1.0	1.0	1.0	1.2	1.7	4.3	18.7	
19.25	1.0	1.0	1.0	1.0	1.4	2.4	5.6	56.0
19.50	1.0	1.0	1.0	1.0	1.0	1.1	1.4	3.7

Table 12. Environmental hydrologic criteria-related performance summary for the Big Bend transect. Hydrologic data were simulated for the period 1942 - 1994.

Criteria	Criteria	Simulated From 1942-1989 Data	Criteria Met?
Mean Water Level	17.0 ft	17.5 ft	Yes
Freq. of Inundation	17.0 ft = 60%	76.0%	Yes
Maximum Water Elevation	More than 1/10 Years Not To Exceed:	Occurred :	
14 Day	20.2 ft	Once Every 5.6 Years	No
30 Day	19.7 ft	Once Every 8.0 Years	No
60 Day	19.2 ft	Once Every 8.0 Years	No
Minimum Range of Yearly Fluctuation	Continuous 30 Day Levels Hi= 17.8 Low=16.2		
	Hi in 25% of years	Occurred :	
High	Low in 20--30% of years	77% of Years	Yes
Low		48% of Years	No
Timing of Fluctuation	During > 50% of Years		
Minimum Levels	Occurs Between	Occurred in:	
Maximum Levels	Apr. 1 - June 30	39% of Years	No
	Sept. 1 - Nov. 31	58% of Years	Yes
Recession Rates	> Than 95% of Time	Met	
7 Day	< 0.5 ft	96% of time	Yes
30 Day	<1.2 ft	96% of time	Yes

Table 13. Return periods of simulated continuous drying intervals for the Big Bend transect. For example, the 17.0 ft elevation is dry for 60 continuous days once every 2.1 years.

	Continuous Day Intervals							
Elevation	**1**	**7**	**14**	**30**	**60**	**120**	**183**	**274**
15.25	3.7	4.3	6.2					
15.50	2.1	2.2	2.9	4.7	9.3			
15.75	1.8	2.0	2.2	2.7	5.1			
16.00	1.5	1.8	1.9	2.2	3.7			
16.25	1.4	1.6	1.8	2.1	3.1	14.0	56.0	
16.50	1.3	1.4	1.6	1.9	2.3	11.2	56.0	
16.75	1.3	1.3	1.5	1.8	2.2	5.6	14.0	
17.00	1.2	1.3	1.4	1.8	2.1	4.3	11.2	
17.25	1.1	1.1	1.2	1.3	1.9	4.0	5.1	14.0
17.50	1.0	1.0	1.0	1.1	1.5	2.7	2.7	11.2
17.75	1.0	1.0	1.0	1.0	1.0	2.0	2.1	5.6
18.00	1.0	1.0	1.0	1.0	1.0	1.4	1.6	3.7
18.25	1.0	1.0	1.0	1.0	1.0	1.1	1.4	2.7