

Biological Assessment of

Florida Cities South Gate WWTP

Sarasota County

NPDES #FL0032816 32808

Sampled July 1991

February 1992

Biology Section
Division of Technical Services

Department of Environmental Regulation
Results of Fifth Year Inspections

Discharger: Florida Cities Southgate WWTP
County: Sarasota
NPDES Number: FL0032816 32808
State Permit Expiration Date:

Toxics Sampling Inspection (XSI)	
Date Sampled:	23 July 1991
Results:	No organic or metal priority pollutants were detected in the grab sample of effluent, except zinc (13 µg/L), which does not approach problem levels.

Results:

Compliance Biomonitoring Inspection (CBI)	
Date Sampled:	23 July 1991
Results:	The effluent was not acutely toxic to the fish, *Notropis leedsi*, nor to the cladoceran, *Ceriodaphnia dubia*, in 48 hour static bioassays.

Impact Bioassessment Inspection (IBI)	
Date Sampled:	23 July 1991
Results:	Benthic macroinvertebrate communities were not adversely affected by the WWTP outfall, although they were depressed at both sampling locations. Measurements of community health were much lower than expected at both sampling locations, possibly due to the overall degradation of Phillippi Creek. No periphyton were collected due to vandalism of samplers.

Water Quality Inspection (WQI)	
Date Sampled:	23 July 1991
Results:	Nutrient enrichment and elevated AGP was observed at both sampling locations. Fecal and total coliform bacteria standards were violated at both the control and the test sites, appearing to be caused by contamination upstream of the WWTP. While the Florida Cities Southgate WWTP did not appear to have negative effects on Phillippi Creek, the evidence suggests that other inputs are a problem, which should be addressed by an appropriate abatement program.

These fifth year inspections provide the necessary information to evaluate the facility's impact on its receiving waters and to provide the basis for specific condition recommendations for permit renewal.

Introduction

The Florida Cities Southgate WWTP is a private, 1.36 MGD capacity, advanced domestic wastewater treatment facility. It is located on Pine Valley Drive in Sarasota County. The plant has an average flow of 1.05 MGD, and discharges into Phillippi Creek, which ultimately flows to Roberts Bay. The treatment train consists of preliminary treatment and flow equalization, activated sludge processing, nitrification and denitrification, final clarification and filtering, and chlorination and dechlorination before discharge.

Permit limits are consistent with Grizzle-Figg legislation and are as follows: BOD and TSS (5 mg/L annual average, 6.25 mg/L monthly average, 7.25 mg/L weekly average, and 10 mg/L maximum), fecal coliform bacteria (200 organisms/ 100 ml annual average and 800 organisms/ 100 ml monthly average), total nitrogen (3 mg/L), TKN (2.5 mg/L), total phosphorus (1.0 mg/L), dissolved oxygen (5.0 mg/L minimum), flow (1.36 MGD maximum), and pH (6.0 to 8.5). The operation of the plant appears to have been satisfactory, having consistently met AWT permit limits for the past year (Appendix).

Methods

The focus of this investigation was to determine the discharger's effects on the receiving waters. A comparison of biological community health was made between a reference site (located in Phillippi Creek upstream from the WWTP discharge) and a test site (the area down gradient of the discharge) (see map in Appendix). A habitat assessment was performed *in situ* to establish comparability between sites. Supplemental physical/chemical data were also collected on water at the effluent and study sites. Acute screening toxicity bioassays, using *Ceriodaphnia dubia* and *Notropis leedsi* as test organisms, were performed on an effluent sample (Weber 1991). The effluent was analyzed for organic constituents (base neutrals, acid extractables, and pesticide extractables) and metals. Additionally, nutrient analyses were performed on reference and test sites. Methods used for all chemical analyses are on file at the Tallahassee DER Chemistry Laboratory.

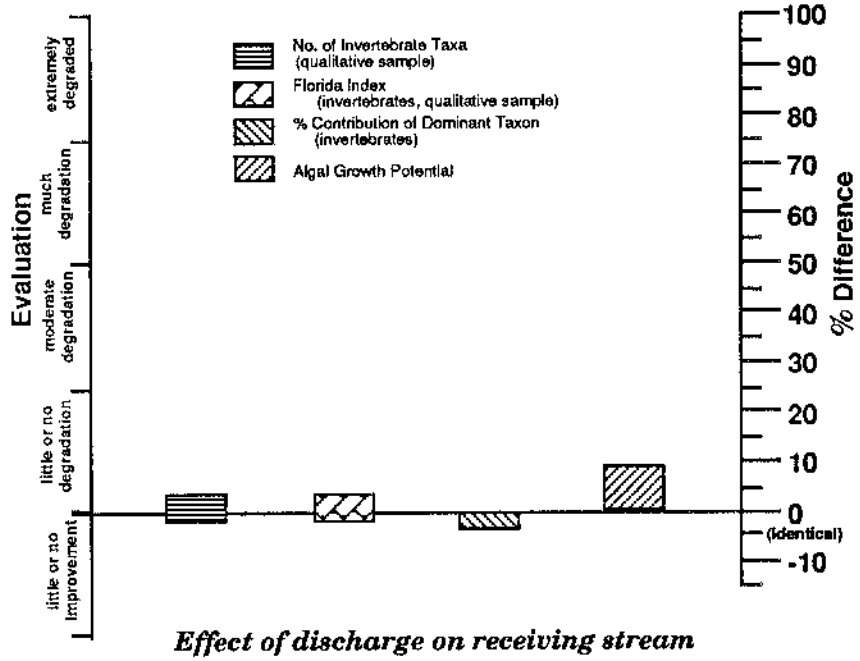
Benthic macroinvertebrate communities were evaluated at reference and test sites. Collection methods consisted of a timed (one hour per site) multi-substrate (e.g., snags, vegetation, sediment) semi-quantitative effort. Bacterial populations were analyzed for total and fecal coliforms following the methods of APHA (1989). Algal Growth Potential tests, using *Selenastrum capricornutum* as the test organism, followed Miller et al. (1978).

Explanation of Measurements of Community Health

Several different measurements of macroinvertebrate and algal community health have been employed. Some of these, such as the number of taxa, are well known. Others are briefly explained here. The Florida Index assigns points to stream-dwelling macroinvertebrates based on their sensitivity to pollution (see Ross 1990). A site with a high Florida Index score is considered healthy (*i.e.*,

Major characteristics of community structure of control and test sites.

	Control Site	Test Site
Macroinvertebrate Qualitative		
Number of Taxa	15	15
Florida Index	1.0	1.0
% Contribution of Dominant Taxon	19.2	18.4
% Coleoptera	30.8	34.7
% Gastropoda	7.7	18.4
% Hemiptera	15.4	37.4
% Ephemeroptera	11.5	0
% Malacostraca	19.2	2.0
% Diptera	3.8	2.0
% Other	11.6	8.2
% Predators	28.2	49.7
% Collector-Gatherers	26.3	6.8
% Collector-Filterers	0	2.0
% Scrapers	13.5	18.4
% Shredders	14.7	15.0
% Parasites	0	0
Algal Growth Potential (mg dry wt/l)	6.3	6.9



Effect of discharge on receiving stream
(measured as difference between control and test sites).

many clean-water organisms are present). Excessive numerical dominance of a single type of organism (a high % contribution of dominant taxon) is usually associated with disturbance. The determination of the Quantitative Stability Index (for taxonomic % composition) is a two step process. First, the relative proportions of major taxonomic groups are calculated for each site. Then, the lesser of the two percentages for each discrete taxonomic group is totaled. A QSI (% composition) of 100% means that the two sites being compared are identical. This same type of procedure is used for calculating the QSI (functional feeding groups).

For graphical purposes, the percent differences between the control and test sites involving the number of taxa and Florida Index are measured as the control site minus test site divided by the control site. The percent differences between sites involving the percent contribution of dominant taxon, and algal growth potential are measured as the test site minus control site divided by the control site.

The following personnel were involved in this investigation: Pat Fricano (DER Southwest District) and Lyn Burton, Russel Frydenborg, Kathleen Lurding, and Sandy McClure (Tallahassee Biology Laboratory).

Results and Discussion

Phillippi Creek is a sluggish (velocity < 0.05 m/sec.).blackwater stream which receives runoff from predominantly residential areas. Disturbances from dredging and seawall construction were evident along the shorelines, which were dominated by the exotic Brazilian pepper tree. Other plants noted along the creek banks include elephant ear, bog hemp, giant reed, torpedo grass, laurel oak, alligator weed, red ludwigia, and marsh fleabane. Signs of erosion were observed at both sites.

Habitat quality was better at the test site (with 49 points) than it was at the control site (habitat score = 40 pts) (Appendix). Both sites were adequately oxygenated (above 5.3 mg/L), with neutral pH (7.0) and slightly elevated conductivity (approximately 510 µmhos/cm).

The effluent was not acutely toxic to the fish, Notropis l*eedsi*, nor to the cladoceran, *Ceriodaphnia dubia*, in 48 hour static bioassays.

No organic priority pollutants were detected in the grab sample of effluent. Zinc was found at 13 µg/L, which does not approach problem levels.

Total and fecal coliform bacteria violations occurred at both stream sites (17-302.560(5) FAC). Fecal coliform levels were similar at both sites (2600 organisms/100 ml upstream and 2900 organisms/100 ml downstream). Total coliforms were much higher upstream (8450 organisms/100 ml) than downstream (3750 organisms/100 ml). These data suggest a source of coliform contamination upstream of the WWTP.

Nutrient levels were similar at the two sites, and indicative of enrichment (Appendix). STORET data from 1600 stream stations, for the period of 1980 to 1989, have been compiled into a percentile distribution (Joe Hand, personal communication). Data from this present in-

vestigation were evaluated against these (see table in Appendix). Orthophosphorus concentrations (0.34 mg/L at both sites) were higher than 82% of all other Florida streams. Similarly, total phosphorus at the control site (0.81 mg/L) was greater than 72% of the State's streams, but close to median values at the test site (0.46 mg/L). Nitrate-nitrite values at both stations were higher than 75% of the stations sampled throughout the state. Finally, while ammonia concentrations were near the median value, TKN (1.9 mg/L at both sites) was about 90% greater than other streams.

Algal growth potential was slightly elevated at both stations (6.9 at the test site and 6.3 at the control site). Values above 5 mg/L are generally associated with nutrient enrichment, which often leads to algal blooms, low dissolved oxygen, and fish kills (Raschke and Schultz 1987).

Macroinvertebrate communities did not appear affected by the Florida Cities Southgate discharge. The figure on p. 2 indicates the degree of difference between the control and test sites. Larger differences (that is, higher percentages) correspond with greater degrees of degradation. Negative values mean that the test site is better than the control. The figure on this page summarizes similarities between the sites. Smaller similarities (lower percentages) generally correspond with greater degradation.

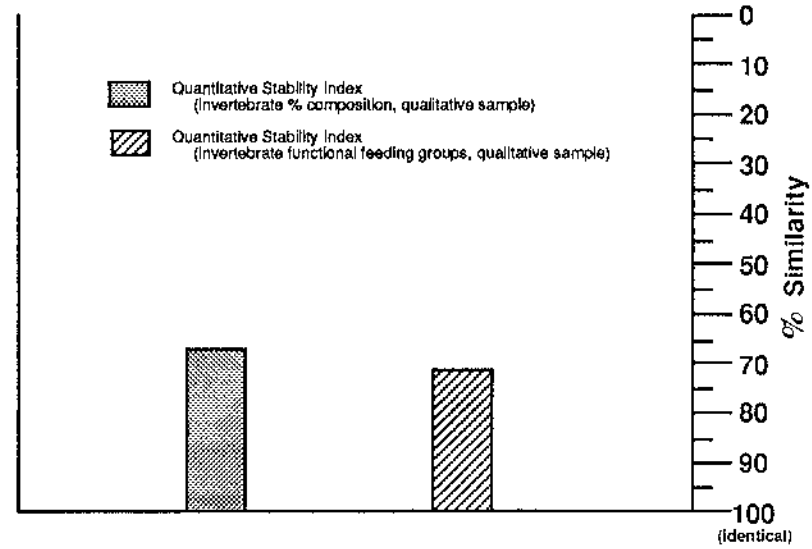
Taxa richness (15) and the Florida Index (1.0) were identical at both the upstream and downstream sites. These metrics were much lower than expected at both sampling locations, possibly due to the overall degradation of Phillippi Creek. The percent contribution of the dominant taxon did not indicate that faunal imbalances were occurring below the discharge, when compared to the upstream site. Periphyton samplers were vandalized, and no direct evaluation of algal community health could be made.

Conclusions

The Florida Cities, Southgate Wastewater Treatment Plant was not acutely toxic to the water flea, Ceriodaphnia dubia, nor to the fish, Notropis leedsi. No organic priority pollutants were detected in the outfall. Zinc was the only metal detected in the effluent and its concentration did not approach problem levels. Nutrient enrichment and slightly elevated AGP was observed at both sampling locations. Fecal and total coliform bacteria standards were violated at both the control and the test sites, appearing to be caused by contamination upstream of the WWTP.

Benthic macroinvertebrate communities were not adversely affected by the WWTP outfall, although they were depressed at both sampling locations. No periphyton was collected due to vandalism of samplers.

While the Florida Cites Southgate WWTP did not appear to have negative effects on Phillippi Creek, the evidence suggests that other inputs are a problem, which should be addressed by an appropriate abatement program.



Effect of discharge on receiving stream
(measured as similarity between control and test sites).

Literature Cited

American Public Health Assoc., American Water Works Assoc., and Water Pollution Control Federation. 1989. Standard Methods for the Examination of Water and Wastewater, 17th ed. New York, N.Y. 1268 p.

Miller, W. E., T. E. Maloney, and J. C. Greene. 1978. The *Selenastrum capricornutum* Printz algal assay bottle test. U. S. Environ. Prot. Agency, EPA-600/9-78-018. 126 p.

Raschke, R. L. and D. A. Schultz. 1987. The use of the algal growth potential test for data assessment. J. Wat. Poll. Cont. Fed. 59(4): 222-227.

Ross, L. T. 1990. Methods for aquatic biology. Fla. Dept. Environ. Reg. Tech. Ser. 10(1): 1-47.

Weber, C. I. 1991. Methods for measuring the acute toxicity of effluents to freshwater and marine organisms. 4th edition. EPA/600/4-90/027. U. S. EPA, Cincinnati, Ohio. 216 pp.

Chemistry summary table for Florida Cities SouthGate WWTP.

	Effluent	Control Site	Test Site
Organic Constituents (ug/L)			
	NONE DETECTED		
Metals (ug/L)			
Aluminum	31T		
Arsenic	20U		
Cadmium	0.2U		
Copper	5U		
Chromium	10U		
Iron	28		
Lead	15U		
Mercury	0.2U		
Nickel	5U		
Silver	0.2U		
Zinc	13		
Nutrients (mg/L)			
Ortho-phosphorus		0.34A	0.34A
Total phosphorus		0.81	0.46
Ammonia		0.073A	0.10A
Nitrate+Nitrite		0.25A	0.29A
TKN	1.9	1.9	1.9
Other Parameters			
Habitat Assessment		40	49
D.O. (mg/L)		5.5	5.3
pH		7.0	7.0
Conductivity (umhos/cm)		506	517
Temperature (° C)		28.6	28.4
Bioassay Fish-Dechlorinated	not toxic		
Bioassay Invertebrate-Dechlorinated	not toxic		
Total coliform (org/100 ml)		8450	3750
Fecal coliform (org/100 ml)		2600	2900

A - Value reported is the mean of two or more determinations

K - Actual value is known to be less than value given

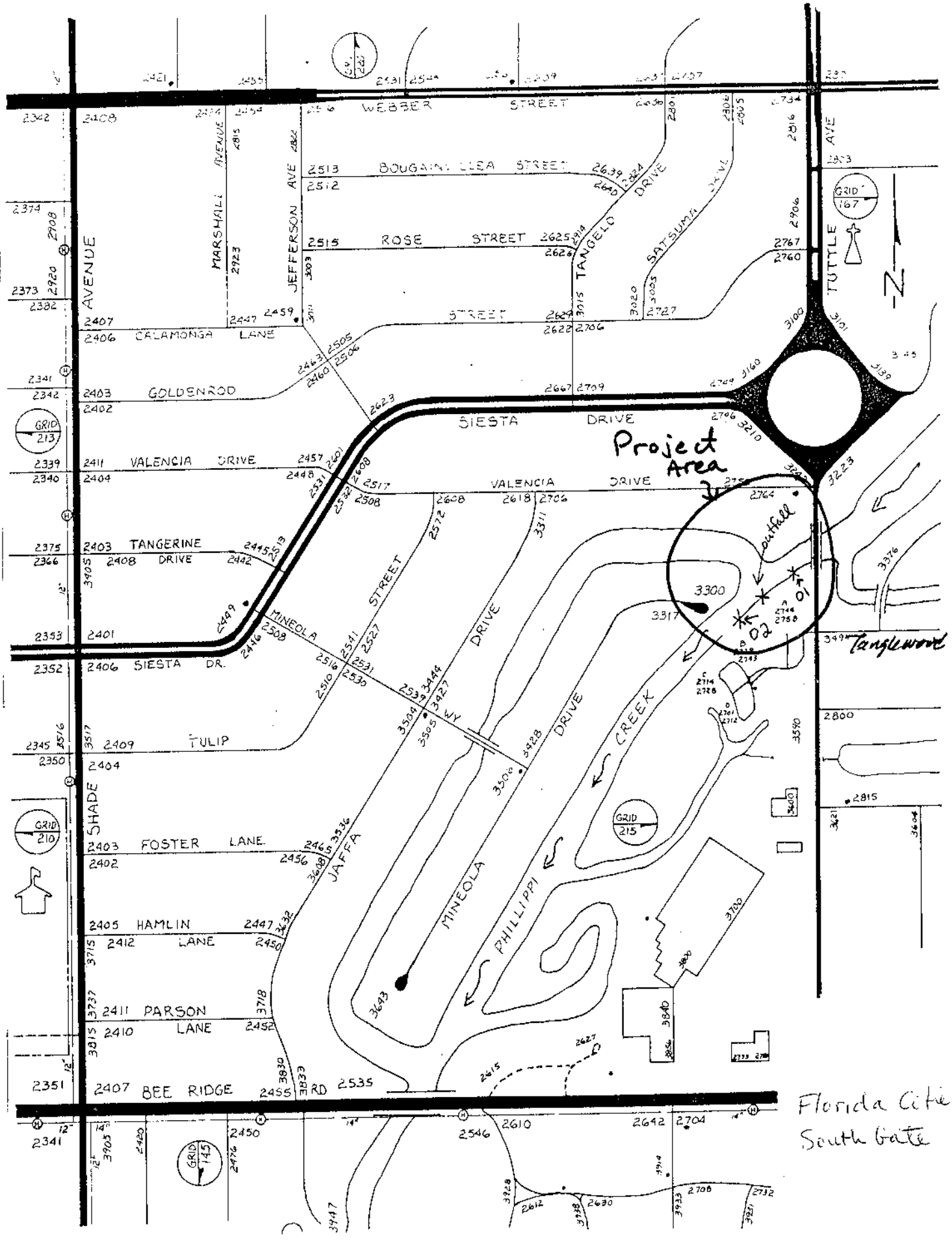
T - Value reported is less than the practical quantitation limit

U - Material analyzed for but not detected; value reported is the minimum detection limit



Florida Cities STP

South Gate


WEBBER STREET
BOUGAINVILLEA STREET
ROSE STREET
CALAMONGA LANE
GOLDENROD
SIESTA DRIVE
VALENCIA DRIVE
TANGERINE DRIVE
MINEOLA STREET
SIESTA DR.
TULIP
FOSTER LANE.
HAMLIN LANE
PARSON LANE
BEE RIDGE RD
MARSHALL AVENUE
JEFFERSON AVE
TANGELO DRIVE
SATSUMA
TUTTLE AVE
SHADE AVENUE
JAFFA WY
MINEOLA DRIVE
PHILLIPPI CREEK
Project Area
outfall
01
02
3300
3317
Tanglewood
GRID 213
GRID 210
GRID 215
GRID 145
GRID 167
N
Florida Cities
South Gate

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

PHYSICAL/CHEMICAL CHARACTERIZATION FIELD DATA SHEET

SUBMITTING AGENCY CODE: / SUBMITTING AGENCY NAME:	STORET STATION NUMBER:	DATE (M/DAY): 11/20/91	RECEIVING BODY OF WATER:
REMARKS:	LOCATION:		FIELD ID NAME:

RIPARIAN ZONE/INSTREAM FEATURES

Predominant Surrounding Land-Use (specify relative percent in each category):

Forest	Field/Pasture	Agricultural	Residential	Commercial	Industrial	Other
15			35			

Local Watershed Erosion (check box): None ☐ Moderate ☐ Heavy ☐

Local Watershed NPS Pollution (check box): No evidence ☐ Some potential sources ☐ Obvious sources ☐

Point Source Pollution (list location and describe):

Estimated Stream Width (range, m): 25 m	Estimated Stream Depth (range, m): 1-3 m		yes
High Water Mark (m above bed): 1 m	Velocity (range, m/s):	Impounded ☐	Channelized ☐

Canopy Cover % (check box): Open: ☐ Lightly Shaded: ☐ Moderately Shaded: ☐ Heavily Shaded: ☐

SEDIMENT/SUBSTRATE

Sediment Odors: Normal: ☑ Sewage: ☐ Petroleum: ☐ Chemical: ☐ Anaerobic: ☐ Other: ☐

Sediment Oils: Absent: ☐ Slight: ☑ Moderate: ☐ Profuse: ☐

Sediment Deposits: Sludge: ☐ Paper Fiber: ☐ Mud: ☐ Sand: ☑ Shell: ☐ Other: ☐

Substrate Types (estimated % surface coverage)

Limestone:		Sand/Silt/Clay Mix:	
Consolidated Clay:		Clay/Silt (inorganic):	
Gravel/Shell		Coarse Organic Debris:	
Sand:		Mud/Muck (organic):	

WATER QUALITY

	Temp. (°C):	D.O. (mg/l):	Secchi Depth (m):
Top	23.1	5.5	pH (SU):
Mid-depth	23.1	5.5	Conductivity (umhos/cm):
Bottom	23.1	5.3	Other Parameters:

Stream Type (check box): Blackwater: ☑ Deep Aquifer Fed: ☐ Surficial Aquifer Fed: ☐ Alluvial: ☐ Other: ☐

Water Odors (check box): Normal: ☑ Sewage: ☐ Petroleum: ☐ Chemical: ☐ Other: ☐

Water Surface Oils (check box): Slick: ☐ Sheen: ☑ Globs: ☐ None: ☐

Clarity (check box): Clear: ☐ Slightly turbid: ☑ Turbid: ☐ Opaque: ☐

Color (check box): Tannic: ☑ Green (algae): ☐ Clear: ☐ Other: ☐

Weather Conditions:

Abundance:	Absent	Rare	Common	Abundant
Periphyton	☑	☐	☐	☐
Fish	☐	☐	☐	☐
Aquatic Macrophytes	☐	☑	☐	☐
Iron/sulfur Bacteria	☐	☐	☐	☐

ANALYSIS DATE: 12/23/91	ANALYST: M. Friano	SIGNATURE:

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

PHYSICAL/CHEMICAL CHARACTERIZATION FIELD DATA SHEET

SUBMITTING AGENCY CODE: / SUBMITTING AGENCY NAME:	STORET STATION NUMBER:	DATE (M-DAY):	RECEIVING BODY OF WATER:

REMARKS:	LOCATION:	FIELD ID NAME:
		2

RIPARIAN ZONE/INSTREAM FEATURES

Predominant Surrounding Land-Use (specify relative percent in each category):

Forest	Field/Pasture	Agricultural	Residential	Commercial	Industrial	Other
			100%			

Local Watershed Erosion (check box): None ☐ Moderate ☐ Heavy ☐

Local Watershed NPS Pollution (check box): No evidence ☐ Some potential sources ☐ Obvious sources ☐

Point Source Pollution (list location and describe):

Estimated Stream Width (range, m): 3.5 m	Estimated Stream Depth (range, m):	yes
High Water Mark (m above bed): 1 m	Velocity (range, m/s):	Impounded ☐ Channelized ☐

Canopy Cover % (check box): Open: ☐ Lightly Shaded: ☐ Moderately Shaded: ☐ Heavily Shaded: ☐

SEDIMENT/SUBSTRATE

Sediment Odors: Normal: ☐ Sewage: ☐ Petroleum: ☐ Chemical: ☐ Anaerobic: ☐ Other: ☐

Sediment Oils: Absent: ☐ Slight: ☐ Moderate: ☐ Profuse: ☐

Sediment Deposits: Sludge: ☐ Paper Fiber: ☐ Mud: ☐ Sand: ☐ Shell: ☐ Other: ☐

Substrate Types (estimated % surface coverage)

Limestone:		Sand/Silt/Clay Mix:	
Consolidated Clay:		Clay/Silt (inorganic):	
Gravel/Shell		Coarse Organic Debris:	
Sand:	100%	Mud/Muck (organic):	

WATER QUALITY

	Temp. (°C):	D.O. (mg/l):	Secchi Depth (m):
Top	25.75	5.24	pH (SU):
Mid-depth	25.50	5.25	Conductivity (umho/cm):
Bottom	25.3	5.3	Other Parameters:

Stream Type (check box): Blackwater: ☐ Deep Aquifer Fed: ☐ Surficial Aquifer Fed: ☐ Alluvial: ☐ Other: ☐

Water Odors (check box): Normal: ☐ Sewage: ☐ Petroleum: ☐ Chemical: ☐ Other: ☐

Water Surface Oils (check box): Slick: ☐ Sheen: ☐ Globs: ☐ None: ☐

Clarity (check box): Clear: ☐ Slightly turbid: ☐ Turbid: ☐ Opaque: ☐

Color (check box): Tannic: ☐ Green (algae): ☐ Clear: ☐ Other: ☐

Weather Conditions:

Abundance:	Absent	Rare	Common	Abundant
Periphyton	☐	☐	☐	☐
Fish	☐	☐	☐	☐
Aquatic Macrophytes	☐	☐	☐	☐
Iron/sulfur Bacteria	☐	☐	☐	☐

ANALYSIS DATE:	ANALYST:	SIGNATURE:

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION
FRESHWATER BENTHIC HABITAT ASSESSMENT FIELD DATA SHEET

SUBMITTING AGENCY CODE: / SUBMITTING AGENCY NAME:	STORET STATION NUMBER:	DATE (M/D/Y):	RECEIVING BODY OF WATER:

REMARKS:	LOCATION:	FIELD ID/NAME:

Habitat Parameter — score	Excellent	Good	Fair	Poor
Bottom Substrate/ Available Cover — [illegible]	Greater than 40% snags, logs, tree roots, emergent vegetation, leaf packs, undercut banks, rubble, or other stable habitat. **23-30 points**	20% to 40% snags, logs, tree roots, emergent vegetation, leaf packs, etc. Adequate habitat. **16-22 points**	5% to 20% snags, logs, tree roots, emergent vegetation, leaf packs, etc. Less than desirable habitat. **8-15 points**	Less than 5% snags, logs, tree roots, emergent vegetation, leaf packs, etc. Lack of habitat is obvious. **0-7 points**
Water Velocity — 6	Max. observed; >0.3 m/sec. **23-30 points**	Max. observed; 0.1 to 0.3 m/sec **16-22 points**	Max. observed; 0.05 to 0.1 m/sec **8-15 points**	Max. observed; <0.05 m/sec **0-7 points**
Artificial Channel/ Flow Alteration — 2	No artificial channelization. Little activity (impervious surface) in watershed which would cause scouring during spates. **12-15 points**	—	—	Artificially channelized, or scouring present during spates because of excess impervious surface in watershed. **0-3 points**
Bank Stability — [illegible]	Stable. No evidence of erosion or bank failure. Little potential for future problems. **9-10 points**	Moderately stable. Infrequent or small areas of erosion, mostly healed over. **6-8 points**	Moderately unstable. Moderate areas of erosion, high erosion potential during floods. **3-5 points**	Unstable. Many raw, eroded areas. Obvious bank sloughing. **0-2 points**
Riparian Zone Vegetation Quality — 4	Over 80% of streambank surfaces consist of native plants, classified as: bottomland hardwoods, understory shrubs, or non-woody macrophytes. **9-10 points**	50% to 80% of riparian zone is vegetated, but one class of plants is not represented. **6-8 points**	25% to 50% of riparian zone is vegetated, but one or two classes of plants are not represented. **3-5 points**	Less than 25% of streambank surfaces are vegetated. Poor plant community (e.g. grass monoculture) present. **0-2 points**

Adjustments — 5	Add **5 points** if cross-sectional area of flow is estimated to be greater than one square meter during periods of normal flow.	TOTAL SCORE — [illegible]

COMMENTS: [illegible]

ANALYSIS DATE:	ANALYST:	SIGNATURE:

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION
FRESHWATER BENTHIC HABITAT ASSESSMENT FIELD DATA SHEET

SUBMITTING AGENCY CODE: _____ SUBMITTING AGENCY NAME: _____	STORET STATION NUMBER:	DATE (M/D/Y):	RECEIVING BODY OF WATER:

REMARKS:	LOCATION:	FIELD ID/NAME:

Habitat Parameter score	Excellent	Good	Fair	Poor
Bottom Substrate/ Available Cover	Greater than 40% snags, logs, tree roots, emergent vegetation, leaf packs, undercut banks, rubble, or other stable habitat. **23-30 points**	20% to 40% snags, logs, tree roots, emergent vegetation, leaf packs, etc. Adequate habitat. **16-22 points**	5% to 20% snags, logs, tree roots, emergent vegetation, leaf packs, etc. Less than desirable habitat. **8-15 points**	Less than 5% snags, logs, tree roots, emergent vegetation, leaf packs, etc. Lack of habitat is obvious. **0-7 points**
Water Velocity	Max. observed; >0.3 m/sec. **23-30 points**	Max. observed; 0.1 to 0.3 m/sec **16-22 points**	Max. observed; 0.05 to 0.1 m/sec **8-15 points**	Max. observed; <0.05 m/sec **0-7 points**
Artificial Channel/ Flow Alteration	No artificial channelization. Little activity (impervious surface) in watershed which would cause scouring during spates. **12-15 points**	—	—	Artificially channelized, or scouring present during spates because of excess impervious surface in watershed. **0-3 points**
Bank Stability	Stable. No evidence of erosion or bank failure. Little potential for future problems. **9-10 points**	Moderately stable. Infrequent or small areas of erosion, mostly healed over. **6-8 points**	Moderately unstable. Moderate areas of erosion, high erosion potential during floods. **3-5 points**	Unstable. Many raw, eroded areas. Obvious bank sloughing. **0-2 points**
Riparian Zone Vegetation Quality	Over 80% of streambank surfaces consist of native plants, classified as: bottomland hardwoods, understory shrubs, or non-woody macrophytes. **9-10 points**	50% to 80% of riparian zone is vegetated, but one class of plants is not represented. **6-8 points**	25% to 50% of riparian zone is vegetated, but one or two classes of plants are not represented. **3-5 points**	Less than 25% of streambank surfaces are vegetated. Poor plant community (e.g. grass monoculture) present. **0-2 points**

Adjustments		TOTAL SCORE
	Add **5 points** if cross-sectional area of flow is estimated to be greater than one square meter during periods of normal flow.	

COMMENTS:

ANALYSIS DATE:	ANALYST:	SIGNATURE:

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

FACILITY SUMMARY

Facility Name:	Prepared by: Date:	
Location (attach detailed map):	County	District
Federal Permit #	State GMS #	Facility Type: Industrial Municipal Federal Agricultural Other (list):
Function of facility:		
Description of treatment process:		
Receiving waters:	Classification:	
Design Flow:	Actual Mean Flow:	

Discharge is: Continuous Intermittant Seasonal Rainfall dependant
Other (describe)

therefore, the best time to sample is:

If facility has a mixing zone, give details (size, parameters affected, etc.):

List effluent limits, special permit conditions, and permit modifications:

Parameter	Unit	Min-imum	Maximum	Type Sample	Frequency
BOD & Suspended Solids	mg/l	0	5 annual avg. 6.25 monthly avg. 7.25 weekly avg. 10 any one sample	16 hr Composite	Weekly
Fecal coliform	#/100	0	200 annual avg. 800 monthly avg.	grab	Weekly
Total N	mg/L	0	3	16 hr Composite	Weekly
Total Kjeldahl Nitrogen		0	2.5	Grab	Weekly
Total P	mg/L	0	1	16 hr. Composite	Weekly
Dissolved Oxygen		5.0	N/A	Grab	Weekly
Flow	mgd	.0000	1.36	Continuous Recording Metered flowmeter and totalizer	
pH	STD UN	6.00	8.50	Metered Continous	

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION
FACILITY SUMMARY

Description of permitted outfall(s):

List permit violations (from MOR data or other source) and plant upsets that occurred within past year:

Describe previous impact bioassessments, WQBEL's, and previous or current enforcement actions:

Discuss comparability of MOR results to past DER results and whether there are trends (improving, declining) in the data set:

Additional information:

Sample Source: FLORIDA CITIES/SOUTH GATE
Address/City:
County: SARASOTA
Contact/District: PAT FRICANO/SCW
NPDES Permit #: Outfall #:

Sample Collection: Date 7/23/91 Time 1100
Test Beginning: Date 7/24/91 Time 1130
Test Ending: Date 7/26/91 Time 1130
Test Organism: C. dubia.
Life Stage/Age: < 24 HRS

Test Number: 1 of 2 Test Type: (Screening) Definitive
(Static) | Static Renewal | Flow-through

Remarks:

20947

Instrument Calibrations:

	pH	DO	Cond	Temp
0 hr	~~7~~@7.9@9	9.2 @20	1323@22.3	19.2@21.9
24 hr	~~7~~@7.9@9	9.1@20	1326@22.9	20.0@22.5
48 hr	7.7.9@7	8.9@21°C	1354@23°C@1536	20.3@22.7°C

Conc.	Chamber #	Number Live 0	24	48	DO (mg/l) 0	24	48	pH 0	24	48	Temp. (°C) 0	24	48	Cond. (µmhos/cm) 0	24	48
control	A	5	5	5	8.4		8.4	8.1		8.2	19.5		20.5	162		181
control	B	5	5	5			8.5			8.2						
control	C	5	5	5			8.5			8.2						
control	D	5	5	5			8.5			8.2						
100%	A	5	5	5	8.0		8.4	7.3		8.3	20.0		20.5	733		~~760~~
100%	B	5	5	5			8.5			8.3						794
100%	C	5	5	5			8.5			8.3						
100%	D	5	5	5			8.6			8.3						
Measured/Loaded by:		MF	AJ	MF	AJ		KP	AJ		KP	AJ		KP	AJ		KP
Recorded by:		KP	AJ	MF	AJ		KP	AJ		KP	AJ		KP	AJ		KP

WRONG PAGE KWP 7/26/91 1025

Investigators' Signatures

Kim Pearce
Nancy Tanabe

Reviewer

Water-quality Parameters

	Well Water	Cond. Water	Sample	Method	Measured by
Field Tot. Resid. Cl2:			0.0	Hach	PF
Lab Tot. Resid. Cl2:			0.0	Hach	MF
Alkalinity:	120	70	95	Hach	AJ
Hardness:	120	85	240	Hach	AJ
Total Ammonia:	0.0	0.0	0.42	Hach	KP

Ammonia meter slope:

Sample Source: FLORIDA CITIES/SOUTH GATE
Address/City:
County: SARASOTA
Contact/District: PAT FRICANO/SEC
NPDES Permit #: Outfall #:

Sample Collection: Date 7/23/91 Time 1100
Test Beginning: Date 7/24/91 Time 1130
Test Ending: Date 7/26/91 Time 1130
Test Organism: C. dubia.
Life Stage/Age: < 24 HRS

Test Number: 1 of 2 Test Type: (Screening) Definitive
(Static) | Static Renewal | Flow-through

Remarks:

20947

Instrument Calibrations:

	pH	DO	Cond	Temp
0 hr	7@7.9@9	9.2@20	1323@22.3	19.2@21.9
24 hr	7@7.9@9	9.1@20	1326@22.9	20.0@22.5
48 hr	7@7.9@7	9.0@21°C	1354@23°C@1326	20.3@22.7°C

Conc.	Chamber #	Number Live 0	24	48	DO (mg/l) 0	24	48	pH 0	24	48	Temp. (°C) 0	24	48	Cond. (µmhos/cm) 0	24	48
control	A	5	5	5	8.4		8.4	8.1		8.2	19.5		20.5	162		181
control	B	5	5	5			8.5			8.2						
control	C	5	5	5			8.5			8.2						
control	D	5	5	5			8.5			8.2						
100%	A	5	5	5	8.0		8.4	7.3		8.3	20.0		20.5	733		~~760~~
100%	B	5	5	5			8.5			8.3						794
100%	C	5	5	5			8.5			8.3						
100%	D	5	5	5			8.6			8.3						
Measured/Loaded by:		MF	AJ	MF	AJ		KP	AJ		KP	AJ		KP	AJ		KP
Recorded by:		KP	AJ	MF	AJ		KP	AJ		KP	AJ		KP	AJ		KP

WRONG PAGE KWP 7/26/91 1025

Investigators' Signatures

Kim Pearce
Mark Tamblyn

Reviewer

Water-quality Parameters

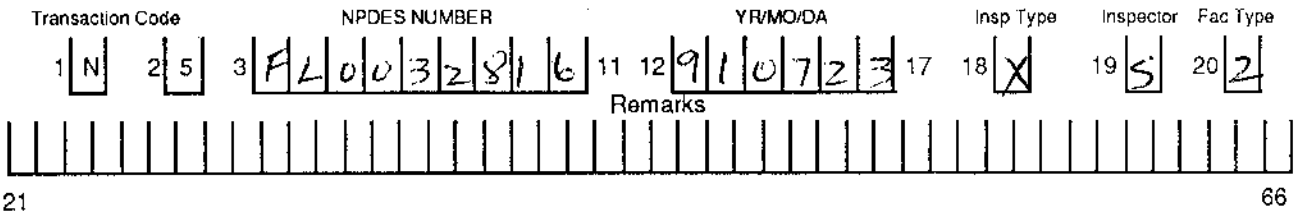
	Well Water	Cond. Water	Sample	Method	Measured by
Field Tot. Resid. Cl2:			0.0	Hach	PF
Lab Tot. Resid. Cl2:			0.0	Hach	MF
Alkalinity:	120	70	95	Hach	AJ
Hardness:	120	85	240	Hach	AJ
Total Ammonia:	0.0	0.0	0.42	Hach	KP

Ammonia meter slope:

Macroinvertebrate taxa list for Florida Cities South Gate STP, Sarasota County, Florida, collected via timed qualitative methods at a control site (upstream) and a test site (downstream) in Phillippi Creek on 20 August, 1991.

	Control Site	Test Site
Coleoptera		
Agasicles hygrophila	1	0
Undetermined Chrysomelidae	0	3
Cybister sp.	0	1
Peltodytes duodecimpunctatus	2	2
Peltodytes muticus	5	6
Suphisellus sp.	0	5
Diptera		
Polypedilum halterale grp.	1	1
Ephemeroptera		
Caenis sp.	3	0
Gastropoda		
Pyrgophorus platyrachis	2	9
Hemiptera		
Belostoma flumineum	1	4
Immature Corixidae	1	0
Hydrometra wileyae?	0	3
Merragata brunnea	0	9
Paravelia brachialis	0	1
Ranatra sp.	1	0
Rheumatobates sp.	1	0
Malacostraca		
Hyalella azteca	2	1
Taphromysis bowmani	3	0
Odonata		
Enallagma cardenium	1	0
Erythemis simplicicollis	1	0
Ischnura hastata	0	1
Ischnura sp.	1	0
Oligochaeta		
Limnodrilus hoffmeisteri	0	2
Pelecypoda		
Corbicula manilensis	0	1

Fill Out This Section For All Surface Water Discharger Inspections (CEI, CSI, CBI, PAI, XSI - RI Optional)



Fill Out This Section For All Surface Water Discharger Inspections (CEI, CSI, CBI, PAI, XSI - RI Optional)

