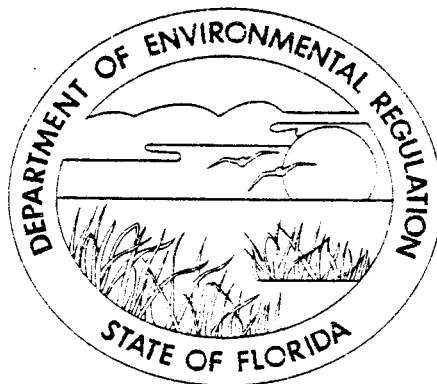




BIOASSAYS OF PLANT CITY WASTEWATER TREATMENT PLANT
HILLSBOROUGH COUNTY, FLORIDA

NPDES #FL0026557

SAMPLED 12/2/80

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Biological Section
Bureau of Water Analysis
February 5, 1981

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INTRODUCTION

The Plant City Wastewater Treatment Plant is located at 705 N. Alexander Street in Plant City, Hillsborough County, Florida (Fig. 1). According to the most recent NPDES permit application (January 1980) this facility has a design capacity of 8.0 MGD although effluent flow has been averaging only 2.22 MGD. The plant is an activated sludge design (Fig. 2) that serves a residential population of 18100 as well as nine industrial dischargers listed below:

<u>Industry</u>	<u>Product</u>	<u>Discharge (MGD)</u>
Fearn Int., Inc.	tea, sugar products	0.118
Sugar Rose Canning Co.	fruit, tomatoes	0.026
Wadco Foods	chicken packing	0.151
Paradise Fruit Co.	jellies and preserves	0.303
Southland Frozen Foods, Inc.	vegetables	0.444
Superbrand Dairy Products, Inc.	ice cream	0.019
Alumax Extrusions, Inc.	aluminum extrusions	0.392
Lykes Bros.	meat packing	0.648
Wheeler Street Laundry	laundry	0.015
Total Industrial Flow	--	2.116

The effluent from this facility is discharged, through several tributaries (Mill Creek, Pemberton Creek, Baker Creek), to Lake Thonotosassa which discharges intermittently to the Hillsborough River. As part of a scheduled Compliance Sampling Inspection of this facility, the Biological Section performed bioassays on grab samples from the Plant City Wastewater Treatment Plant to determine the existence and extent of toxicity to the biota of the receiving waters.

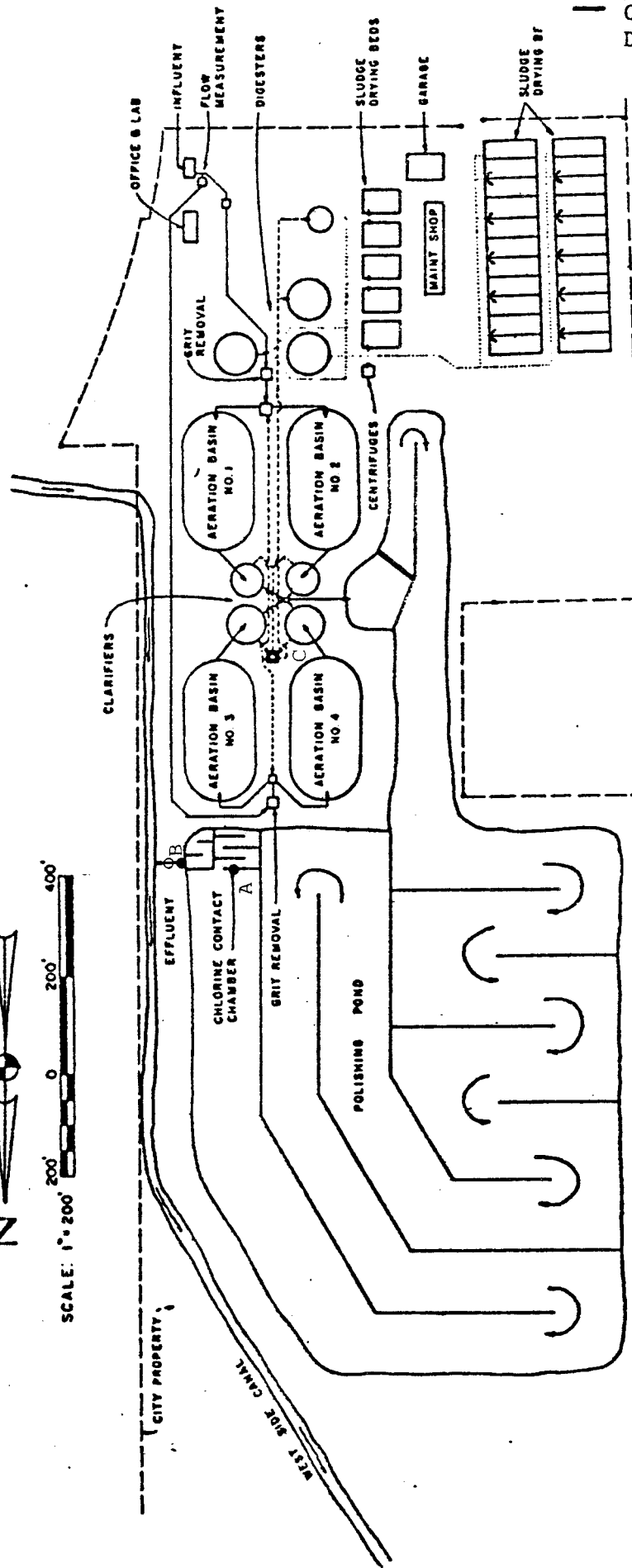


FIGURE 2.
LAYOUT DIAGRAM
PLANT CITY WASTEWATER TREATMENT PLANT
PLANT CITY 201 FACILITY PLAN
EPA NO. C12050A010.

- LEGEND**
- Bioassay sampling sites
 - A Prechlorinated grab sample
 - B Chlorinated grab sample
 - CSI-Toxics sampling sites
 - B Chlorinated composite sample
 - C Prechlorinated composite sample
- SEWAGE
 SLUDGE
 - - - - - DIGESTED SLUDGE
 - - - - - PROPERTY LINE

PLANT CITY	PLANT CITY 201	PLANT CITY 201
DATE 9-76	DATE 9-76	DATE 9-76
SMITH AND GILLESPIE ENGINEERS, INC.	SMITH AND GILLESPIE ENGINEERS, INC.	SMITH AND GILLESPIE ENGINEERS, INC.
7208-27	7208-27	7208-27

METHODS AND MATERIALS

Test methods used to conduct these static bioassays are extensively described by Peltier (1978). The organisms selected for this study include species recommended by Peltier (1978) and the U.S. EPA (1978). Additionally, the Biological Section maintains cultures of several species of organisms indigenous to the State of Florida. Life histories of these test organisms and maintenance procedures used to culture them are detailed below.

History and Maintenance of Bioassay Organisms

Daphnia pulex (water flea) - A breeding culture of Daphnia pulex was obtained from the EPA laboratory in Athens, Georgia in March 1979. This culture has been maintained since its arrival, in 2½ gallon all glass aquaria filled with unchlorinated DER well water, using a 16:8 hour light-dark cycle. Organisms are fed a liquified blend of Purina Trout Chow® and Cerophyl® twice daily, and are kept at a constant temperature of $22^{\circ} \pm 1^{\circ}\text{C}$. The aquaria are cleaned weekly by siphoning off half the water along with the detritus and excess daphnids. They are then refilled with fresh aerated well water. Additional measures are taken and/or new cultures started in the event of abnormal circumstances such as: declining populations, ehippia formation, or excessive fungal or bacterial growth.

Heterandria formosa (least killifish) - Approximately 100 adult killifish were obtained from a wild population in the St. Marks Wildlife Refuge (Wakulla County, Florida) during August, 1980. The fish have been maintained in 2½ to 5 gallon all glass aquaria equipped with a flow-through water exchange system. Water for this system is unchlorinated and is pumped from a deep well near the DER laboratory. The fish have been reared at $22^{\circ} \pm 2^{\circ}\text{C}$ under a 16:8 hour light-dark cycle and are fed freshly hatched Artemia (brine shrimp) twice daily. New born fish are initially maintained in the adult tanks, but are removed at weekly intervals, thereby segregating fish into even age groups. The fish used in this test were one week old.

To ensure the uniform sensitivity of these test organisms to toxic substances, the Biological Section conducts monthly Standard Reference Toxicant Bioassays using sodium lauryl sulfate as the reference toxicant.

Test Methods

Four separate 48-hour static bioassays were conducted from 0900 hours 3 December to 0900 hours 5 December 1980 on a grab sample of chlorinated effluent from outfall #001 and a grab sample of effluent from the polishing pond prior to chlorination (Fig. 2). The chemical samples were 24 hour composites taken from outfall #001 and prior to chlorination at the clarifier outfall (Fig. 2). Samples for metal analysis were preserved with HNO_3 . Samples for organic chemical analysis and the bioassays were unpreserved. The samples were iced and transported to the DER laboratory in Tallahassee within 24 hours of collection. Both bioassay and chemical samples were collected by Charles Biedermann of DER's Biological Section at 0900 hours on 2 December 1980, using standard wastewater sampling procedures.

Freshwater for dilution of the effluent samples was obtained from DER's deep well (located near the laboratory). The concentration series selected for this study is that recommended by APHA (1976) (Table 1).

Two replicates, each with six concentrations and a control, were used to test with Daphnia pulex. Flint glass jars of 250 ml capacity were used as test chambers, and 200 ml of the appropriate test concentration was placed in each chamber. Daphnia were transferred individually by glass pipette and were loaded 10 per chamber, resulting in 20 per test concentration.

Two replicates, each with six concentrations of effluent and a control, were used to test with Heterandria formosa. Individual fish were netted, carefully examined for injury, and randomly transferred to wide mouth quart jars, each containing 500 ml of the appropriate concentration. Five organisms were loaded per test chamber, giving 10 per concentration.

Dissolved oxygen, pH, and the number of live organisms were recorded for each test chamber at 0, 24, and 48 hours. Total alkalinity, total hardness, and conductivity were recorded at the beginning of the test for the controls and 100% effluent concentrations. These values are presented in Tables 2, 3, 4 and 5.

Bioassays using Daphnia as test organisms were conducted on a chlorinated sample (Table 2), a subsample dechlorinated with 0.025 N sodium thiosulfate (Table 3), and a pre-chlorinated sample (Table 4). Heterandria were used to test only a de-chlorinated sample (Table 5).

An additional test organism, a freshwater invertebrate (Simocephalus serrulatus), was also used in bioassays of effluent from the Plant City facility. However, due to excessive mortality of control organisms (>20%) in these bioassays, both tests were invalidated and thus the results are not presented in this report.

Table 1. Concentration Series and Volumes Used for These Static Bioassays

Water flea (Daphnia pulex)

<u>Concentration</u>	<u>Dilution Water</u>	<u>Effluent</u>	<u>Total Vol.</u>
Control	200 ml	---	200 ml
5.6%	188.8 ml	11.2 ml	200 ml
10.0%	180 ml	20 ml	200 ml
18.0%	164 ml	36 ml	200 ml
32.0%	136 ml	64 ml	200 ml
56.0%	88 ml	112 ml	200 ml
100%	----	200 ml	200 ml

Least killifish (Heterandria formosa)

<u>Concentration</u>	<u>Dilution Water</u>	<u>Effluent</u>	<u>Total Vol.</u>
Control	500 ml	---	500 ml
5.6%	472 ml	28 ml	500 ml
10.0%	450 ml	50 ml	500 ml
18.0%	410 ml	90 ml	500 ml
32.0%	340 ml	160 ml	500 ml
56.0%	220 ml	280 ml	500 ml
100%	---	500 ml	500 ml

Table 2 . Data recorded during 48 hour, *Daphnia pulex*, static acute toxicity bioassay of the Plant City Wastewater Treatment Plant, Hillsborough County, Florida. NPDES #H0026557. 0900 hours 3 December to 0900 hours 5 December 1980. Chlorinated Sample

Conc. or #	Test Container Number	Number of Live Organisms			Dissolved Oxygen (mg/l)			pH			Total Alkalinity (mg/l as CaCO ₃)			Total Hardness (mg/l as CaCO ₃)			Conductivity (µmhos/cm)		
		0	24	48	0	24	48	0	24	48	0	24	48	0	24	48	0	24	48
Control	A	10	10	9	8.1	8.8	8.1	7.6	7.8	7.7	112		120				200		
Control	B	10	10	8	8.0	8.8	8.2	7.6	7.8	7.8									
5.6%	A	10	10	10	8.0	8.8	8.3	7.6	7.8	7.8							235		
5.6%	B	10	10	9	8.1	8.8	8.3	7.5	7.9	7.9									
10.0%	A	10	10	10	7.9	8.7	8.2	7.5	7.9	7.8							265		
10.0%	B	10	10	10	8.0	8.9	8.2	7.5	7.9	7.9									
18.0%	A	10	10	10	8.0	8.8	8.3	7.5	7.9	7.9							310		
18.0%	B	10	10	9	7.9	8.8	8.2	7.5	7.9	7.9									
32.0%	A	10	10	10	7.8	8.6	8.3	7.4	7.9	8.1							390		
32.0%	B	10	10	10	7.9	8.6	8.4	7.4	7.9	8.1									
56.0%	A	10	10	10	7.6	8.6	8.5	7.4	7.9	8.0							550		
56.0%	B	10	10	10	7.7	8.6	8.3	7.4	7.9	8.0									
100%	A	10	10	9	7.1	8.6	8.3	7.2	7.9	8.1							800		
100%	B	10	9	9	7.2	8.6	8.4	7.2	7.9	8.1	192		158						

Remarks:
a. Test temperature range 18.8° to 20.4 °C
b. Total Chlorine residual = 0.50 mg/l (bach DPD).
c. Free Chlorine residual = 0.10 mg/l (bach DPD).

Table 3 Data recorded during 48 hour, *Daphnia pulex*, static acute toxicity bioassay of the Plant City Wastewater Treatment Plant, Hillsborough County, Florida. NPDES # FLD026557. 0900 hours 3 December to 0900 hours 5 December 1980. De-chlorinated sample

Conc. of a	Test Control Number	Number of Live Organisms			Dissolved Oxygen (mg/l)			pH			Total Alkalinity (mg/l as CaCO ₃)			Total Hardness (mg/l as CaCO ₃)			Conductivity (micro/cm)		
		0	24	48	0	24	48	0	24	48	0	24	48	0	24	48	0	24	48
Control	A	10	8	8	8.1	8.4	8.3	7.6	7.8	7.8	112		120			200			
Control	B	10	10	9	8.1	8.5	8.3	7.6	7.8	7.8									
5.6%	A	10	10	9	8.1	8.4	8.3	7.6	7.8	7.8						235			
5.6%	B	10	10	10	8.1	8.4	8.3	7.6	7.8	7.8									
10.0%	A	10	10	10	8.0	8.4	8.3	7.6	7.8	7.8						265			
10.0%	B	10	10	10	8.0	8.5	8.3	7.6	7.8	7.8									
18.0%	A	10	10	10	8.0	8.4	8.3	7.5	7.8	7.9						310			
18.0%	B	10	10	10	8.1	8.5	8.3	7.5	7.8	7.9									
32.0%	A	10	10	10	8.0	8.5	8.3	7.5	7.8	7.9						390			
32.0%	B	10	9	9	8.0	8.5	8.4	7.5	7.8	7.9									
56.0%	A	10	10	10	7.8	8.4	8.4	7.4	7.8	8.0						550			
56.0%	B	10	10	10	7.8	8.4	8.4	7.4	7.8	8.0									
100%	A	10	9	9	7.4	8.4	8.4	7.3	7.9	8.0						800			
100%	B	10	9	9	7.4	8.4	8.3	7.3	7.9	8.0	192			158					

Remarks a. Test temperature range 19.5° to 20.6°C

Table 4 Data recorded during 48 hour, *Daphnia pulex*, static acute toxicity bioassay of the Plant City Wastewater Treatment Plant Hillsborough County, Florida. NPDES #FD0026557. 0900 hours 3 December to 0900 hours 5 December, 1980. Pre-Chlorinated Sample

Conc. of Test Container Number	Number of Live Organisms			Dissolved Oxygen (mg/l)			pH			Total Alkalinity (mg/l as CaCO ₃)			Total Hardness (mg/l as CaCO ₃)			Conductivity (µmhos/cm)		
	0	24	48	0	24	48	0	24	48	0	24	48	0	24	48	0	24	48
Control A		10	10	10	8.0	8.7	8.3	7.6	7.8	7.8	112		120		200			
Control B		10	10	10	8.0	8.7	8.4	7.6	7.8	7.8								
5.6A	A	10	10	10	8.1	8.8	8.4	7.6	7.8	7.8					235			
5.6B	B	10	10	10	8.1	8.8	8.4	7.6	7.8	7.8								
10.0A	A	10	10	10	8.1	8.8	8.4	7.6	7.9	7.9					265			
10.0B	B	10	10	10	8.1	8.8	8.4	7.6	7.9	7.9								
18.0A	A	10	10	10	7.9	8.7	8.3	7.5	7.9	7.9					310			
18.0B	B	10	10	10	7.9	8.8	8.3	7.5	7.9	7.9								
32.0A	A	10	10	10	7.7	8.8	8.3	7.5	7.9	7.9					390			
32.0B	B	10	10	10	7.8	8.8	8.2	7.5	7.9	7.9								
56.0A	A	10	10	10	7.4	8.8	8.3	7.4	7.9	8.0					550			
56.0B	B	10	10	10	7.4	8.9	8.2	7.4	7.9	8.0								
100A	A	10	10	10	6.6	8.6	8.2	7.3	7.9	8.0					800			
100B	B	10	10	10	6.7	8.6	8.3	7.3	7.9	8.0	193		155					

Remarks: a. Test temperature range 19.7° to 21.2 °C

TABLE 5 Data recorded during 48-hour *Heterandria formosa* static acute toxicity bioassay of the Plant City Wastewater Treatment Plant Hillsborough County, Florida. NPIHS #F10026557 0900 hours 3 December to 0900 hours 5 December, 1980. De-Chlorinated Sample

Conc. of Test Container	Number of Live Organisms	Dissolved Oxygen (mg/l)			pH			Total Alkalinity (mg/l as CaCO ₃)			Total Hardness (mg/l as CaCO ₃)			Conductivity (µmhos/cm)		
		0	24	48	0	24	48	0	24	48	0	24	48	0	24	48
Control	A	5	5	5	8.0	8.3	7.7	7.7	7.7	7.6	112	120		200		
Control	B	5	5	5	8.0	8.5	7.9	7.6	7.7	7.7						
5.6%	A	5	5	5	8.1	8.5	7.8	7.6	7.7	7.7				235		
5.6%	B	5	5	5	8.1	8.4	7.8	7.6	7.7	7.7						
10.0%	A	5	5	5	8.1	8.4	7.7	7.6	7.7	7.7				265		
10.0%	B	5	5	5	8.1	8.4	7.7	7.6	7.7	7.7						
18.0%	A	5	5	5	8.1	8.4	7.8	7.5	7.7	7.8				310		
18.0%	B	5	5	5	8.1	8.3	7.9	7.5	7.7	7.8						
32.0%	A	5	5	5	8.0	8.3	7.6	7.5	7.7	7.8				390		
32.0%	B	5	5	5	8.0	8.3	7.8	7.5	7.7	7.8						
56.0%	A	5	5	5	7.9	8.3	7.8	7.4	7.7	7.8				550		
56.0%	B	5	5	5	7.9	8.3	7.7	7.4	7.7	7.8						
100%	A	5	5	5	7.6	8.3	7.8	7.3	7.7	7.9				800		
100%	B	5	5	5	7.7	8.3	7.8	7.3	7.7	7.9						

Remarks: a. Test temperature range 19.00° to 20.8 °C

RESULTS AND DISCUSSION

Results of the bioassays conducted on these particular samples of effluent from the Plant City Wastewater Treatment Plant indicated that the effluent was not toxic to either Daphnia pulex or Heterandria formosa. The chlorinated effluent evidently had no effects on Daphnia since no toxicity was observed in this bioassay (Table 2).

Extensive chemical characterization of pre-chlorination and chlorinated composite effluent samples from the Plant City Wastewater Treatment Plant are included in the appendix. Of the 96 chemical parameters analyzed, only zinc (20 µg/l) and diethylphthalate(1.88 µg/l) were found in quantities above the minimum detection limits. These values fall well below the toxic limits suggested to EPA (U.S. EPA 1976 and U.S.EPA 1977) for freshwater fish and invertebrates.

LITERATURE CITED

- American Public Health Association. 1976. Standard Methods for the Examination of Water and Wastewater. 14th ed. pp. 1193.
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- U.S. Environmental Protection Agency. 1976. Quality Criteria for Water. U.S. EPA, Washington, D.C. pp. 256.
- U.S. Environmental Protection Agency. 1977. Bioassay for toxic and hazardous material. EPA-430/1-74-014.
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APPENDIX

WATER QUALITY REPORT FORM

TIME 4 - GRAB SAMPLE		DEPTH surf
TIME 5 COMPOSITE SAMPLE		
COMP	BEGIN 0900 1 Dec 86 END 0900 2 Dec 86	

AGENCY 40	STATION	DATE 2 Dec 80
--------------	---------	------------------

Sample ID #

FC - 10

ADRES # FLCC01557

1201

11818

REMARKS				LOCATION			
Biology/Bioassay PNS: METALS AND NUTRIENTS <u>DO SPECIFY TESTS TO BE RUN.</u>				Plant City STP Hillsborough Co. - clarifier metals - preserved HNO ₃			
PARAMETER	UNIT	CODE	VALUE	PARAMETER	UNIT	CODE	VALUE
AGENCY ANALYZING		28	8066	P TOT	MG/L	00665	
CD 1/22/81	UG/L	1027	10 K	N KJEL TOT	MG/L	00625	
PB 1/22/81	UG/L	1051	30 K	N NO ₂ TOT	MG/L	00615	
CU 12/15/80	UG/L	1042	15 K	N NO ₃ TOT	MG/L	00620	
FE	UG/L	1045					
EN 12/9/80	UG/L	1092	20				
CA	MG/L	916					
MG	MG/L	927					
K	MG/L	937					
NA	MG/L	929					
C ORG	MG/L	680					
As 2/9/80 ug/l			50 K	K-actual value is known to be less than value given.			
Se 12/11/80 ug/l			20 K				
Sb 2/15/80 ug/l			50 K				
Ag 12/17/80 ug/l			5 K				
Hg 12/10/80 ug/l			0.2 K				
Cu 1/22/81			50 K				
[SI] - TOXICS							
SAMPLE TAKEN BY C. Biedermann				REPORT VERIFIED BY:			
REPORT PREPARED BY:				() CHANGE DATE SUBMITTED			

DEPARTMENT OF ENVIRONMENTAL REGULATION

CHEMICAL ANALYSIS REPORT FORM

SPAN LAB ID 11819

SAMPLE TYPE: WATER - BASE NEUTRAL EXTRACTABLES

AGENCY CODE 40	STORET STATION NUMBER	DATE 2 Dec 80	TIME A - GRAB SAMPLE	DEPTH, FEET 0
		TIME B COMPOSITE SAMPLE		
		COMP BEGIN 0900 1 Dec 80 END 1900 2 Dec 80		

REMARKS	LOCATION PLANT CITY STA CLARIFIER
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PARAMETER	UNIT	CODE	VALUE	PARAMETER	UNIT	CODE	VALUE
1. Acenaphthene	ug/l	34205	.5 U	32. Fluorene	ug/l	34381	.38 U
2. Acenaphthylene	ug/l	34200	.38 U	33. Hexachlorobenzene	ug/l	39700	10 U
3. Anthracene	ug/l	34220	.38 U	34. Hexachlorobutadiene	ug/l	34391	1.13 U
4. Benzofluoranthracene	ug/l	34526	10 U	35. Hexachloroethane	ug/l	34396	1.0 U
5. Benzobifluoranthene	ug/l	34230	10 U	36. Hexachlorocyclopentadiene	ug/l	34386	.25 U
6. Benzo(k)fluoranthene	ug/l	34242	10 U	37. Indeno(1,2,3-cd)pyrene	ug/l	34403	
7. Benzo(a)pyrene	ug/l	34247	.5 U	38. Isophorone	ug/l	34408	10 U
8. Benzo(g,h,i)perylene	ug/l	34521		39. Naphthalene	ug/l	39250	.38 U
9. Benzidine	ug/l	39120	10 U	40. Nitrobenzene	ug/l	34447	.88 U
10. Bis(2-chloroethyl)ether	ug/l	34273	10 U	41. N-Nitrosodimethylamine	ug/l	34438	
11. Bis(2-chloroethoxy)methane	ug/l	34278	10 U	42. N-Nitrosodi-n-propylamine	ug/l	34428	10 U
12. Bis(2-ethoxyethyl)phthalate	ug/l	39100	10 U	43. N-Nitrosodiphenylamine	ug/l	34433	10 U
13. Bis(2-chloroisopropyl)ether	ug/l	34283	10 U	44. Phenanthrene	ug/l	34461	.25 U
14. 4-Bromophenyl phenyl ether	ug/l	34636	10 U	45. Pyrene	ug/l	34469	.25 U
15. Butyl benzyl phthalate	ug/l	34292	.38 U	46. 2,3,7,8-Tetrachlorodibenzo-p-dioxin	ug/l	34675	
16. 2-Chloronaphthalene	ug/l	34581	.38 U	47. 1,2,4-Trichlorobenzene	ug/l	34551	.75 U
17. 4-Chlorophenyl phenyl ether	ug/l	34641	10 U				
18. Chrysene	ug/l	34320	10 U				
19. Dibenzofluoranthracene	ug/l	34556	.25 U	AGENCY COLLECTING		27	8040
20. Di-n-butylphthalate	ug/l	39110	.12 U				
21. 1,3-Dichlorobenzene	ug/l	34566	.5 U	AGENCY ANALYZING		28	8066
22. 1,4-Dichlorobenzene	ug/l	34571	10 U				
23. 1,2-Dichlorobenzene	ug/l	34536	10 U	SAMPLE #		29	
24. 3,3'-Dichlorobenzidine	ug/l	34631	10 U				
25. Diethylphthalate	ug/l	34336	1.88				
26. Dimethylphthalate	ug/l	34341	.38 U				
27. 2,4-Dinitrotoluene	ug/l	34611	.75 U				
28. 2,6-Dinitrotoluene	ug/l	34626	10 U				
29. Dioctylphthalate	ug/l	34596	.25 U				
30. 1,2-Diphenylhydrazine	ug/l	34346	.62 U				
31. Fluoranthene	ug/l	34376	.25 U				

- A - Not analyzed
 - Estimated Value
 - Actual value is known to be less than value given.
 - Actual value is known to be greater than value given.
 U - Material was analyzed for but not detected. The number is the Minimum Detection Limit.

ANALYST	QA VERIFIED BY	REPORT VERIFIED BY	DATE

ANALYST	QA VERIFIED BY	REPORT VERIFIED BY	DATE

22

DER Form PERM 2-10 (1A)(JAN 77)

DEPARTMENT OF ENVIRONMENTAL REGULATION

CHEMICAL ANALYSIS REPORT FORM

SPAN LAB ID 11816

SAMPLE TYPE: **WATER** - BASE NEUTRAL EXTRACTABLES

AGENCY CODE <u>40</u>	STORET STATION NUMBER	DATE <u>2 Dec 86</u>	TIME A - GRAB SAMPLE	DEPTH, FEET <u>0</u>
			TIME B COMPOSITE SAMPLE	
			COMP BEGIN <u>CCCC 1 Dec 86</u> END <u>CCCC 2 Dec 86</u>	

REMARKS	LOCATION <u>RAINS CITY STP</u>
---------	-----------------------------------

PARAMETER	UNIT	CODE	VALUE	PARAMETER	UNIT	CODE	VALUE
1. Acenaphthene	ug/l	34205	.5 U	32. Fluorene	ug/l	34381	.38 U
2. Acenaphthylene	ug/l	34200	.5 U	33. Hexachlorobenzene	ug/l	39700	10 U
3. Anthracene	ug/l	34220	.5 U	34. Hexachlorobutadiene	ug/l	34391	1.25 U
4. Benzo(a)anthracene	ug/l	34526	10 U	35. Hexachloroethane	ug/l	34396	1.12 U
5. Benzo(b)fluoranthene	ug/l	34230	10 U	36. Hexachlorocyclopentadiene	ug/l	34386	.25 U
6. Benzo(k)fluoranthene	ug/l	34242	10 U	37. Indeno(1,2,3-cd)pyrene	ug/l	34403	
7. Benzo(a)pyrene	ug/l	34247	.5 U	38. Isophorone	ug/l	34408	10 U
8. Benzo(g,h,i)perylene	ug/l	34521		39. Naphthalene	ug/l	39250	.38 U
9. Benzidine	ug/l	39120	10 U	40. Nitrobenzene	ug/l	34447	1.0 U
10. Bis(2-chloroethyl)ether	ug/l	34273	10 U	41. N-Nitrosodimethylamine	ug/l	34438	
11. Bis(2-chloroethoxy)methane	ug/l	34278	10 U	42. N-Nitrosodi-n-propylamine	ug/l	34428	10 U
12. Bis(2-ethylhexyl)phthalate	ug/l	39100	10 U	43. N-Nitrosodiphenylamine	ug/l	34433	10 U
13. Bis(2-chloroisopropyl)ether	ug/l	34283	10 U	44. Phenanthrene	ug/l	34461	.25 U
14. 4-Bromophenyl phenyl ether	ug/l	34636	10 U	45. Pyrene	ug/l	34469	.25 U
15. Butyl benzyl phthalate	ug/l	34292	.38 U	46. 2,3,7,8-Tetrachlorodibenzo-p-dioxin	ug/l	34675	
16. 2-Chloronaphthalene	ug/l	34581	.38 U	47. 1,2,4-Trichlorobenzene	ug/l	34551	.88 U
17. 4-Chlorophenyl phenyl ether	ug/l	34641	10 U				
18. Chrysene	ug/l	34320	10 U				
19. Dibenz(a,h)anthracene	ug/l	34556	.25 U	AGENCY COLLECTING		27	
20. Di-n-butylphthalate	ug/l	39110	.12 U				
21. 1,3-Dichlorobenzene	ug/l	34566	.5 U	AGENCY ANALYZING		28	3066
22. 1,4-Dichlorobenzene	ug/l	34571	10 U				
23. 1,2-Dichlorobenzene	ug/l	34536	10 U	SAMPLE #		29	
24. 3,3'-Dichlorobenzidine	ug/l	34631	10 U				
25. Diethylphthalate	ug/l	34336	.38 U				
26. Dimethylphthalate	ug/l	34341	.5 U				
27. 2,4-Dinitrotoluene	ug/l	34611	.75 U				
28. 2,6-Dinitrotoluene	ug/l	34626	10 U				
29. Dioctylphthalate	ug/l	34596	.25 U				
30. 1,2-Diphenylhydrazine	ug/l	34346	.62 U				
31. Fluoranthene	ug/l	34376	.25 U				

- A - Not analyzed
- Estimated Value
- Actual value is known to be less than value given.
- Actual value is known to be greater than value given.
- U - Material was analyzed for but not detected. The number is the Minimum Detection Limit.

ANALYST	QA VERIFIED BY	REPORT VERIFIED BY	DATE
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CHEMICAL ANALYSIS REPORT FORM

SPAN LAB ID _____ 11811,

SAMPLE TYPE: **WATER** - PESTICIDE EXTRACTABLES

AGENCY CODE	STORET STATION NUMBER	DATE	TIME A - GRAB SAMPLE	DEPTH, FEET
40		2 Dec 80	TIME B COMPOSITE SAMPLE	
			COMP	
			BEGIN	6:00 1 Dec 80
			END	6:00 2 Dec 80

REMARKS	LOCATION
	PLANT CITY STP

[illegible]

- Not analyzed
- Estimated Value
- Actual value is known to be less than value given.
- Actual value is known to be greater than value given.
- Material was analyzed for but not detected. The number is the Minimum Detection Limit.

ALYST	QA VERIFIED BY	REPORT VERIFIED BY	DATE
S	21		

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