

Effluent Quality Assessment

City of Plant City Water Reclamation Facility

Hillsborough County

NPDES #FL0026557

Sampled July 28, 2014

October 2014

Biology Section
Bureau of Laboratories
Division of Environmental Assessment and Restoration
2014 FDEP Bureau of Labs Quality Manual
NELAC Certification No. E31780

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City of Plant City Water Reclamation Facility (WRF), 1500 West Victoria Street, Plant City, Hillsborough County, Florida, 33563. NPDES #FL0026557.

Facility Overview

City of Plant City WRF is a Type I activated sludge domestic wastewater treatment facility. See Appendix A for a description of the facility, summary of permit limits, Administrative Order (AO) and Discharge Monitoring Report (DMR) information.

Methods

Effluent grab samples for toxicity testing were collected on July 28, 2014. Effluent grab and composite samples for biological and chemical analyses for this facility were collected on July 28, 2014. All samples were collected from the EFD-01 NPDES sampling point for Outfall D-002 by Ramandeep Kaur, Adam Wood and Pete Wenner (FDEP Southwest District) following DEP-SOP-001/01 FS 2400 Wastewater Sampling (see Appendix B).

The 96-hour acute definitive toxicity tests and algal growth potential test were performed following internal DEP SOPs TA07_01, TA07_02, and TA08_01 through TA08_09 (see Appendix B).

Results

Chemistry Results (See Table 1, Table 2, Table 3 and Appendix C)

- The total ammonia concentration in the grab sample collected and preserved for chemical analysis was 0.029 mg N/L. Based on the pH, salinity, and temperature of the effluent as collected, the calculated unionized ammonia concentration was less than 0.02 mg/L.
- Total phosphorus, total nitrogen, turbidity, alkalinity, fluoride, fecal coliforms, copper, iron, nickel, selenium and zinc were detected in the effluent at levels that comply with Class III Freshwater Quality Criteria (62-302.530, F.A.C.) and/or permit limits. Carbonaceous biochemical oxygen demand (CBOD), arsenic, and chromium were detected between the laboratory method detection limits (MDL) and practical quantitation limits (PQL).

Algal Growth Potential (See Table 4 and Appendix C)

- The effluent Algal Growth Potential (AGP) was 16.9 mg dry wt/L of the unicellular green alga, *Pseudokirchneriella subcapitata*, formerly known as *Selenastrum capricornutum*. Raschke and Schultz (1987) determined that AGP values above 5.0 mg dry weight/L, which represent a "problem" threshold for fresh receiving waters, imply nutrient enrichment. The analytical chemistry suggests that the effluent is phosphorus limited (Miller et al. 1978).

Toxicity Test Results (See Appendix C)

- Tests were performed July 29 – August 2, 2014.

Ceriodaphnia dubia 96-hour acute definitive bioassay –	LC_{50} > 100%, 10%* mortality in 100% sample at 96 hours
Pimephales promelas 96-hour acute definitive bioassay –	LC_{50} > 100%, 0%* mortality in 100% sample at 96 hours

*NOTE: In a 96-hour acute definitive test of 100% effluent, mortality of <20% provides confidence that the effluent meets the acute toxicity criterion of Florida's Surface Water Quality Standards (Rule 62-302.500 (1) (a) 4, F.A.C.). Mortality between 20-50% indicates low to moderate levels of toxicity,

and further action may be required. Mortality of >50% indicates that the effluent fails to meet the minimum requirement to discharge to waters of the state (Rule 62-4.244(3) (a), F.A.C.).

- The bioassay samples were not acutely toxic to the test organisms.

Conclusion

The effluent sample collected from the EFD-01 NPDES sampling point for this facility on July 28, 2014 was not acutely toxic to either test species during the 96-hour acute definitive bioassays. The effluent AGP result was greater than the "problem" threshold for fresh receiving waters suggesting that nutrient enrichment may be an issue. Effluent water quality samples collected on July 28, 2014 did not exceed any applicable water quality standards or violate any permit conditions.

For additional information concerning this sampling event, including bioassay bench sheets and SRT data, please contact Diane.Power@dep.state.fl.us and/or Joseph.Faircloth@dep.state.fl.us.

Literature Cited

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

Stevenson, R. J. and L. L. Bahls. 1999. Periphyton protocols. Pp. 6.1-6.22 in: Rapid bioassessment protocols for use in wadeable streams and rivers. 2nd edition. By: M. T. Barbour, J. Gerritsen, B. D. Snyder and J. B. Stribling. EPA 841-B-99-002. U. S. Environmental Protection Agency, Office of Water, Washington, D. C.

USEPA. 2002. Methods for measuring the acute toxicity of effluents to freshwater and marine organisms. 5th edition. EPA-821-R-02-012.

USEPA. 2000. Nutrient Criteria Technical Guidance Manual – River and Streams. EPA-822-B-00-002.

Table 1. Effluent limits, Class III Freshwater Criteria and field parameters

City of Plant City WRF	Units	Class III Criteria	Effluent Permit Limits	EFF Grab 7/28/14	EFF Comp 7/28/2014
Temperature	°C	-	-	29.78	-
pH	SU	6.0 - 8.5	6.0 - 8.5	7.88	-
Specific Conductance	umhos/cm	≤ 1,275	≤ 1,275	707	-
Salinity	ppth	-	-	0.34	-
Salinity	ppth	-	-	0.3 c	0 c
Dissolved Oxygen	% saturation	≥ 38	-	105.7	-
Dissolved Oxygen	mg/L	≥5	≥5	8.01	-
Flow	MGD	-	≤ 2.68 a	2.6 a	-

A dash (-) indicates sample/measurement was not collected or criterion/limit does not exist.

e-Value exceeds the Class III Water Quality Criteria or permit limits

a - Annual average

c - Value is calculated

Table 2. Effluent limits, Class III Freshwater Criteria and analytical water chemistry data

City of Plant City WRF	Units	Class III Criteria	Effluent Permit Limits	EFF Grab 7/28/14	EFF Comp 7/28/2014
Ortho-phosphate	mg P/L	-	-	0.028	-
Total Phosphorus	mg P/L	-	≤ 2.0 s	0.051	0.051
Total Ammonia	mg N/L	-	-	0.029	-
Un-ionized Ammonia (calculated salinity)	mg NH3/L	≤ 0.02 s	-	< 0.02 c	-
Nitrate and Nitrite	mg N/L	-	-	0.99	0.81
Total Kjeldahl Nitrogen	mg N/L	-	-	0.63	0.55
Organic Nitrogen	mg N/L	-	-	0.6 c	-
Total Nitrogen	mg N/L	-	≤ 6.0 s	1.62 c	1.36 c
Total Organic Carbon	mg C/L	-	-	6.2	-
Chlorophyll *a* - Corrected	ug/L	-	-	0.56 I	-
Phaeophytin	ug/L	-	-	0.40 U	-
CBOD, 5 day, N - inhibited	mg/L	-	≤ 10.0 s	-	0.98 IJ
Hardness	mg CaCO3/L	-	-	169 £	181 c
Total Residual Chlorine	mg Cl2/L	≤ 0.01	≤ 0.01	< 0.03 £	-
Total Suspended Solids	mg/L	-	≤ 10.0 s	-	2 U
Turbidity	NTU	< 29 t	-	0.8	-
Color (true)	PCU	-	-	8.3	-
Alkalinity	mg CaCO3/L	≥ 20	-	152	-
Chloride	mg Cl/L	-	-	76	-
Fluoride	mg F/L	≤ 10.0	-	0.58	-
Sulfate	mg SO4/L	-	-	67	-
Microbiology					
Fecal Coliforms ¥	cfu/100 mL	≤ 400 s #	≤ 86 s	1 U	-
Toxicity (Acute Definitive, LC50)					
Bioassay - Water flea *(Ceriodaphnia dubia)*	%	≥ 100	≥ 100	> 100 L	-
Bioassay - Fish *(Pimephales promelas)*	%	≥ 100	≥ 100	> 100 L	-

A dash (-) indicates sample/measurement was not collected or criterion/limit does not exist.

e-Value exceeds the Class III Water Quality Criteria or permit limits

c - Value is calculated

s - Single sample

t - Shall not exceed 29 NTUs above background

I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit

J - Estimated value

L - Actual value is known to be greater than value given

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

¥ - Fecal coliform analysis performed by Advanced Environmental Laboratories, Inc., Tampa, FL

- If 10 or fewer samples are taken within a month, the single sample limit is 400 CFU (62-302.530(6), F.A.C.)

£ - measurement taken in the FDEP laboratory

Table 3. Effluent limits, Class III Freshwater Criteria and analytical metals data

City of Plant City WRF	Units	Class III Criteria	Effluent Permit Limits	EFF Comp 7/28/2014
Aluminum	ug/L	-	-	9.0 I
Arsenic	ug/L	≤ 50	-	0.25 I
Cadmium	ug/L	≤ 0.421 b	-	0.050 U
Calcium	mg/L	-	-	57.6
Chromium, Total [2]	ug/L	≤ 140 b	-	0.66 I
Copper	ug/L	≤ 15.5 b	-	1.66
Iron	ug/L	≤ 1,000	-	220
Lead	ug/L	≤ 6.79 b	-	0.20 U
Magnesium	mg/L	-	-	9.12
Nickel	ug/L	≤ 86.3 b	-	1.04
Potassium	mg/L	-	-	18.6
Selenium	ug/L	≤ 5.0	-	0.81
Silver	ug/L	≤ 0.07	-	0.025 U
Sodium	mg/L	-	-	67.7
Zinc	ug/L	≤ 198 b	-	20

A dash (-) indicates sample/measurement was not collected or criterion/limit does not exist.

e -Value exceeds the Class III Water Quality Criteria or permit limits

2 - Class III Freshwater Quality Criterion (62-302.530(19)(a), F.A.C.) is for chromium-III

b - Value is calculated based on hardness, (62-302.530(3))

I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit

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

Table 4. Measured and predicted algal growth potential (AGP; mg dry weight/L) for total soluble inorganic nitrogen (TSIN), ortho-phosphate (OP), total nitrogen (TN) and total phosphorus (TP) limitation and ratios of nitrogen to phosphorus

City of Plant City WRF								
Location	**Test Species**	**AGP (measured)**	**Predicted AGP (TSIN) ± 20%**	**Predicted AGP (OP) ± 20%**	**Predicted AGP (TN) ± 20%**	**Predicted AGP (TP) ± 20%**	**Inorganic N:P ratio**	**Total N:P ratio**
EFF Grab 7/28/14	*Pseudokirchneriella subcapitata*	16.9 A	38.7 ± 7.7	12 ± 2.4	61.6 ± 12.3	21.9 ± 4.4	36.4	31.8

Fresh - freshwater species *Pseudokirchneriella subcapitata*
A - Value reported is the mean of two or more determinations

Appendix A
Facility Summary

State of Florida
Department of Environmental Protection
Facility Introduction & Summary

PART I: Information gathered prior to sampling event	
Prepared By: Adam Wood	Contact Number: (813) 470-5876
Facility Name (as it appears on permit): City of Plant City WRF	Former Names:
NPDES Permit Number: FL0026557	Permit Expiration Date: April28, 2015
Physical Address: 1500 West Victoria Street, Plant City, FL 33563	
District: SWD	County: Hillsborough
Function of Facility: Domestic Wastewater Treatment Facility	
Facility Type: Domestic Wastewater	Permitted Capacity (MGD): 10 MGD (2.68 MGD AADF for Surface water discharge)
Mean Flow for previous 12 months for all EXTERNAL outfalls listed in permit (list date range including months): 2.6 MGD (May 2013-April 2014)	
If applicable, Mean Flow for previous 12 months for REUSE outfall(s) (list date range including months): R-001 (PAR) - 0.3255 MGD (May 2013-April 2014) R-002 (industrial) – 1.478 MGD (May 2013 – April 2014)	
Description of type of Discharge: ☒ Continuous ☐ Intermittent ☐ Seasonal ☐ Rainfall Dependent ☐ Other, please specify	

Description of Sampling Location(s) - actual permit designation of permitted sampling point(s):

Monitoring Location Site Number	Description of Monitoring Location
EFA-01	After disinfection and prior to discharge to reuse system or dechlorination system.
EFB-01	After filtration and prior to disinfection.
EFD-01	After dechlorination and prior to discharge to outfall D-002 and the East Canal.
FLW-01	Flow meter, recorder and totalizer immediately prior to dechlorination.
FLW-02	Combined flow to Reuse R-001, R-002 and D-002 measured by flow meter after the Ground Storage Tanks.
FLW-03	Flow to Reuse System R-001, [FLW-02 – (FLW-01 + FLW-04)]
FLW-04	Flow to Industrial Reuse System R-002.

Description of Permitted Outfall(s):

Surface Water Discharge:

An existing 2.68 MGD annual average daily flow (AADF) permitted discharge to East Canal to Hillsborough River (Class III fresh waters, WDIB # 1518) at Discharge Location (D-002). The point of discharge is located approximately at latitude 28 º 04' 42" N, longitude 82 º 07' 19" W.

Description of Treatment Process (if multiple discharge points, include a detailed map or diagram of facility):

An existing 10.0 mgd annual average daily flow (AADF) Type I activated sludge domestic wastewater treatment plant consisting of: a headworks structure including a mechanically cleaned fine bar screen, a backup manual bar screen, a Pista grit removal system, and a Parshall flume flow measurement system, with an associated odor control system; a master pumping station with six pumps; an anoxic tank subdivided into three parallel trains with a total volume of 376,000 gallons, three oxidation ditches with a combined volume of approximately 12.5 million gallons (with an ultimate treatment capacity of 12.0 mgd); one splitter box for flow distribution from the oxidation ditches to the final clarifiers; three final clarifiers providing a combined volume of approximately 5.25 million gallons and a combined surface area of approximately 39,825 ft2; one reject storage system including three concrete basins of 2.5 million gallons and one 15-acre pond with a total capacity of 29 million gallons, for a combined working capacity of 12.5 million gallons; one pond transfer pumping station on standby; thirteen Parkson continuous backwash upflow filter cells with a combined surface area of 3,250 ft2, one four-channel chlorine contact chamber with a total volume of 332,000 gallons; three reclaimed water ground storage tanks with a combined capacity of 12.0 million gallons; and one high service pumping station. All disinfection is accomplished using liquid chlorination. The permitted capacity of the water reclamation facility will remain at 8.0 mgd until such time as the City establishes the actual reuse capacity of the master reuse service area to assimilate the reclaimed water throughout the area.

The solids treatment consists of four aerobic sludge digesters with a combined capacity of 2.8 million gallons, and two belt filter presses with a capacity of 2,000 pounds of dry residuals per hour. The stabilized residuals are land applied.

A dechlorination/reaeration facility is located at the Loyd Nursery south of Knights Griffin Road for additional treatment prior to discharge. Dechlorination is accomplished by the addition of sulfur dioxide.

Filter backwash will be drained to the treatment facility headworks. Ferric sulfate is injected into the plant process stream at the effluent end of splitter box with optional injection at the clarifier stilling wells to aid in phosphorous removal. Polymer chemical feed is available on a standby status for solids control. Effluent quality is continuously monitored 24 hours per day through the plant SCADA system for turbidity as a measure of TSS and chlorine residual as a measure of disinfection effectiveness. Effluent failing to meet Part III public access quality standards is directed to the reject storage system, the polishing/storage pond noted above, or to either the industrial user R002 or the surface water discharge D002 described below.

Effluent which does meet Part III quality standards is transferred to the Plant City public access Master Reuse System R001 described below. The storage, discharge, and reject functions are controlled, sequenced and operated according to procedures set forth in the plant Operating Protocol in order to assure maximum reliability and safeguards on the quality of the reclaimed water. Plant alarm systems are monitored by plant operational personnel 24 hours per day through the plant SCADA system. Standby emergency power is provided by four generators, three auto start and one manual with a total capacity of 5686 KW.

PART I: Continued

List <u>current</u> Effluent Limits of Outfall(s) to be Sampled: This should include any AO or CO limits the facility may be under
(Leave cell blank if not applicable)

1. During the period beginning on the issuance date and lasting through the expiration date of this permit, the permittee is authorized to discharge effluent to Outfall D-002. Such discharge shall be limited and monitored by the permittee as specified below and reported in accordance with Condition I.C.8:

			Reclaimed Water Limitations				Monitoring Requirements			
Parameter	**Units**	**Max/Min**	**Annual Average**	**Monthly Average**	**Weekly Average**	**Single Sample**	**Monitoring Frequency**	**Sample Type**	**Monitoring Location Site Number**	**Notes**
Flow, To D-002	MGD	Maximum	2.68	Report	-	-	Continuous	Recording flow meters and totalizers	FLW-01	See Cond.I.A.4.
BOD, Carbonaceous 5 day, 20C	MG/L	Maximum	5.0	6.25	7.5	10.0	5 Days/Week	24-hr FPC	EFD-01	
Solids, Total Suspended	MG/L	Maximum	5.0	6.25	7.5	10.0	5 Days/Week	24-hr FPC	EFD-01	
Nitrogen, Total (as N)	MG/L	Maximum	3.0	3.75	4.5	6.0	5 Days/Week	24-hr FPC	EFD-01	
Phosphorus, Total (as P)	MG/L	Maximum	1.0	1.25	1.5	2.0	5 Days/Week	24-hr FPC	EFD-01	
pH	SU	Range	-	-	-	6.0 to 8.5	Continuous	Meter	EFA-01	See Cond.I.A.3.
Coliform, Fecal	#/100ML	Maximum	14	14 (Median)	-	86	5 Days/Week	Grab	EFA-01	See Cond. I.A.5.
Total Residual Chlorine (For Disinfection)	MG/L	Minimum	-	-	-	1.0	Continuous	Meter	EFA-01	See Cond.I.A. 3. & 6.
Total Residual Chlorine (For Dechlorination)	MG/L	Maximum	-	-	-	0.01	7 Days/Week	Grab	EFD-01	
Oxygen, Dissolved (DO)	MG/L	Minimum	-	-	-	5.0	7 Days/Week	Grab	EFD-01	
Specific Conductance	UMHO/CM	Maximum	-	-	-	1275	7 Days/Week	Grab	EFD-01	
Nitrogen, Total (as N)	Tons/Year	Maximum	21.0 (Ann. Total)	Report (Mo Total)	-	-	Monthly	Calculation	EFD-01	See Cond.I.A.8.
Nitrogen, Total (as N)	Tons/Year	Maximum	10.5 (5Yr Avg.)	-	-	-	Monthly	Calculation	EFD-01	See Cond.I.A.8.
Chronic Whole Effluent Toxicity	%	Min	-	-	-	100	Every Three Months	24-hr FPC	EFD-1	See Cond.I.A.10.

Chronic Toxicity Test Requirements:

The permittee shall comply with the following requirements to evaluate chronic whole effluent toxicity of the discharge from outfall D-002.

a. Effluent Limitation
   (1) Whole effluent chronic toxicity shall not exceed a 25 percent inhibition concentration (IC25) of less than 100% effluent in any test. [Rules 62-302.530(61) and 62-4.241(1)(b), F.A.C.]
   (2) Whole effluent acute toxicity shall not exceed a 96 hour LC50 of less than 100% effluent in any test. [Rule 62-302.500(1)(a)4. and 62-4.241(1)(a), F.A.C.]

b. Monitoring Frequency
   (1) Routine toxicity tests shall be conducted every three months, the first starting within 90 days of the most current test and lasting for the duration of this permit.

c. Sampling Requirements
   (1) For each routine test or additional follow-up test conducted, a total of three flow proportional 24-hour composite samples of final effluent shall be collected and used in accordance with the sampling protocol discussed in EPA-821-R-02-013, Section 8.
   (2) The first sample shall be used to initiate the test. The remaining two samples shall be collected according to the protocol and used as renewal solutions on Day 3 (48 hours) and Day 5 (96 hours) of the test.
   (3) Samples for routine and additional follow-up tests shall not be collected on the same day.

d. Test Requirements
   (1) Routine Tests: All routine tests shall be conducted using a control (0% effluent) and a minimum of five test dilutions: 100%, 50%, 25%, 12.5%, and 6.25% final effluent.
   (2) The permittee shall conduct a daphnid, Ceriodaphnia dubia, Survival and Reproduction Test and a fathead minnow, Pimephales promelas, Larval Survival and Growth Test, concurrently.
   (3) All test species, procedures and quality assurance criteria used shall be in accordance with Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, 4th ed., EPA-821-R-02-013. Any deviation of the bioassay procedures outlined herein shall be submitted in writing to the Department for review and approval prior to use. In the event the above method is revised, the permittee shall conduct chronic toxicity testing in accordance with the revised method.
   (4) The control water and dilution water shall be moderately hard water as described in EPA-821-R-02-013, Section 7.

e. Quality Assurance Requirements
   (1) A standard reference toxicant (SRT) quality assurance (QA) chronic toxicity test shall be conducted with each species used in the required toxicity tests either concurrently or initiated no more than 30 days before the date of each routine or additional follow-up test conducted. Additionally, the SRT test must be conducted concurrently if the test organisms are obtained from outside the test laboratory unless the test organism supplier provides control chart data from at least the last five monthly chronic toxicity tests using the same reference toxicant and test conditions. If the organism supplier provides the required SRT data, the organism supplier's SRT data and the test laboratory's monthly SRT-QA data shall be included in the reports for each companion routine or additional follow-up test required.
   (2) If the mortality in the control (0% effluent) exceeds 20% for either species in any test or does not meet "test acceptability criteria", the test for that species (including the control) shall be invalidated and the test repeated. Test acceptability criteria for each species are defined in EPA-821-R-02-013, Section 13.12 (Ceriodaphnia dubia) and Section 11.11 (Pimephales promelas). The repeat test shall begin within 21 days after the last day of the invalid test.
   (3) If 100% mortality occurs in all effluent concentrations prior to the end of any test and the control mortality is less than 20% at that time, the test (including the control) shall be terminated with the conclusion that the test fails and constitutes non-compliance.
   (4) Additional follow-up tests shall be evaluated for acceptability based on the observed dose-response relationship as required by EPA-821-R-02-013, Section 10.2.6., and the evaluation shall be included with the bioassay laboratory reports.

f. Reporting Requirements

(1) Results from all required tests shall be reported on the Discharge Monitoring Report (DMR) as follows:

(a) Routine and Additional Follow-up Test Results: The calculated IC25 for each test species shall be entered on the DMR.

(2) A bioassay laboratory report for each routine test shall be prepared according to EPA-821-R-02-013, Section 10, Report Preparation and Test Review, and mailed to the Department at the address below within 30 days after the last day of the test.

(3) For additional follow-up tests, a single bioassay laboratory report shall be prepared according to EPA-821-R-02-013, Section 10, and mailed within 30 days after the last day of the second valid additional follow-up test.

(4) Data for invalid tests shall be included in the bioassay laboratory report for the repeat test.

(5)The same bioassay data shall not be reported as the results of more than one test.

g. Test Failures

(1) A test fails when the test results do not meet the limits in 9.a.(1).

(2) Additional Follow-up Tests:

(a) If a routine test does not meet the chronic toxicity limitation in 9.a.(1) above, the permittee shall notify the Department at the address above within 21 days after the last day of the failed routine test and conduct two additional follow-up tests on each species that failed the test in accordance with 9.d.

(b) The first test shall be initiated within 28 days after the last day of the failed routine test. The remaining additional follow-up tests shall be conducted weekly thereafter until a total of two valid additional follow-up tests are completed.

(c) The first additional follow-up test shall be conducted using a control (0% effluent) and a minimum of five dilutions: 100%, 50%, 25%, 12.5%, and 6.25% effluent. The permittee may modify the dilution series in the second additional follow-up test to more accurately bracket the toxicity such that at least two dilutions above and two dilutions below the target concentration and a control (0% effluent) are run. All test results shall be statistically analyzed according to the Appendices in EPA-821-R-02-013.

(3) In the event of three valid test failures (whether routine or additional follow-up tests) within a 12-month period, the permittee shall notify the Department within 21 days after the last day of the third test failure.

(a) The permittee shall submit a plan for correction of the effluent toxicity within 60 days after the last day of the third test failure.

(b) The Department shall review and approve the plan before initiation.

(c) The plan shall be initiated within 30 days following the Department's written approval of the plan.

(d) Progress reports shall be submitted quarterly to the Department at the address above.

(e) During the implementation of the plan, the permittee shall conduct quarterly routine whole effluent toxicity tests in accordance with 9.d. Additional follow-up tests are not required while the plan is in progress. Following completion or termination of the plan, the frequency of monitoring for routine and additional follow-up tests shall return to the schedule established in 9.b.(1). If a routine test is invalid according to the acceptance criteria in EPA-821-R-02-013, a repeat test shall be initiated within 21 days after the last day of the invalid routine test.

(f) Upon completion of four consecutive, valid routine tests that demonstrate compliance with the effluent limitation in 9.a.(1) above, the permittee may submit a written request to the Department to terminate the plan. The plan shall be terminated upon written verification by the Department that the facility has passed at least four consecutive valid routine whole effluent toxicity tests.

If a test within the sequence of the four is deemed invalid, but is replaced by a repeat valid test initiated within 21 days after the last day of the invalid test, the invalid test will not be counted against the requirement for four consecutive valid tests for the purpose of terminating the plan.

(4) If chronic toxicity test results indicate greater than 50% mortality within 96 hours in an effluent concentration equal to or less than the effluent concentration specified as the acute toxicity limit in 9.(1)(b), the Department may revise this permit to require acute definitive whole effluent toxicity testing.

(5) The additional follow-up testing and the plan do not preclude the Department taking enforcement action for acute or chronic whole effluent toxicity permit limit violations.

[62-4.241, 62-620.620(3)]

PART I: Continued

Receiving Waters:East Canal to Hillsborough River	**Classification (indicate whether fresh or marine): Class III freshwater**

Administrative or Consent Orders (date executed, specific requirements, interim limit dates-if applicable, etc.): N/A

Facility Mixing Zone Details (if applicable): N/A

List Permit Violations (DMR data) and plant upsets that occurred at the plant within the last year:

Date	Parameter and Units	Limit	Result
11/30/2013	Solids, Total Suspended MG/L	10.0	32
1/31/2014	IC25 Statre 7 day Chr Ceriodaphnia	100.0	98.6

Describe previous FYI and WQBEL study:
2008 FYI report submitted as separate email attachment

Describe previous or current Enforcement Actions (including WLs): N/A

Describe any violations or problems noted in previous inspection: N/A

Discuss whether DMR trends within previous five years are improving or declining: N/A

Additional Comments (this should include a trend of the Effluent, i.e. if the facility is now Reuse):

Appendix B
Explanation of measurements

(1) Quality Assurance and Quality Control

FDEP's quality assurance requirements for analytical laboratories and field activities are codified in Chapter 62-160, F.A.C., Quality Assurance (QA Rule) and in internal Standard Operating Procedures (FDEP SOPs). Methods for all analyses are on file at the FDEP Central Laboratory in Tallahassee and may be viewed on the web at http://www.dep.state.fl.us/labs/library/lab_sops.htm and/or http://www.dep.state.fl.us/water/sas/sop/sops.htm.

(2) Chemical Analyses of the Effluent

The effluent was analyzed for nutrients, metals, organic constituents (base, neutral, and acid extractables) and pesticides following FDEP SOPs. The results from these analyses were compared with Water Quality Criteria (62-302, F.A.C.) and facility permit limits.

(3) Toxicity Bioassays

Greater than 50% mortality in an acute toxicity test may constitute an exceedance of 62-302.500(1)a and/or facility permit limits. A 25% inhibition concentration (IC25) is the effluent concentration causing a 25% reduction in a biological response such as biomass or reproduction when compared to a control population. An IC25 of less than 100% in a chronic test may constitute exceedances of 62-302.530(20), 62-302.530(61) and/or facility permit limits. A no observed effect concentration (NOEC) less than 100% effluent in a chronic test may constitute an exceedance of 62-302.530(61) and/or facility permit limits. Standard reference toxicant (SRT) tests are conducted monthly to ensure quality in toxicity testing.

(4) Bacteriological Testing

High levels of fecal coliform bacteria may constitute an exceedance of 62-302.530(6) and/or facility permit limits. Fecal coliform and enterococci results often are based on colony counts outside the acceptable range (B-qualifier). The dilutions performed on the sample did not yield results within the method acceptable range of 20- 60 colony forming units per plate. The B-qualifier does not affect data quality.

(5) Chlorophyll *a* Content

Chlorophyll *a* content is an estimate algal biomass. High algal biomass implies nutrient stress (Stevenson and Bahls 1999) and may constitute exceedances of 62-302.530(46), F.A.C., 62-302.530(47)(a), F.A.C., and/or 62-302.530(47)(b), F.A.C..

(6) Algal Growth Potential (AGP)

The algal growth potential (AGP) value is the peak growth of the alga within that 14-day period, recorded as mg dry weight/L. Raschke and Shultz (1987) found that an AGP above 10.0 mg dry weight/L represents a “problem” threshold for marine receiving waters, implying nutrient enrichment. High AGP values may constitute exceedances of 62-302.530(46), F.A.C., 62-302.530(47)(a), F.A.C. and/or 62-302.530(47)(b), F.A.C..

The concentration of nutrients in a water sample may be used to calculate the expected yield of AGP in a low salinity sample under the assumption that other required nutrients (e.g. silicon, micronutrients) are present in excess (Miller *et al*. 1978). The expected amount of production is calculated as 38 times the total soluble inorganic nitrogen (nitrate and nitrite plus ammonia) under nitrogen limitation or 430 times the ortho-phosphate (OP) concentration under phosphorus limitation with an error of $\pm$ 20%. When the ratio of nitrogen to phosphorus (N:P) is less than 10:1, nitrogen limitation of algal production is likely. When the N:P ratio is 20:1 or greater, phosphorus limitation is likely (EPA-822-B-00-002). For ratios in-between, co-limitation may occur. Production of lower biomass than expected may be evidence of growth inhibition related to toxic compounds

present in the water sample tested and may constitute an exceedance of 62-302.530(61) F.A.C. Expected AGP is not calculated for marine samples incubated with *Dunaliella*.

(7) Definition of Qualifiers

A - Value reported is the mean of two or more determinations
B - Results based on colony counts outside the acceptable range.
I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
J - Estimated value
K - Actual value is known to be less than value given
L - Actual value is known to be greater than value given
N - Presumptive evidence of presence of material.
O - Sampled, but analysis lost or not performed.
Q - Sample held beyond normal holding time.
T - Value reported is less than the criterion of detection.
U - Material was analyzed for but not detected. The reported value is the method detection limit for the sample analyzed.
V - Analyte was detected in both sample and method blank.
X - Too few individuals to calculate SCI value.
Y - The laboratory analysis was from an unpreserved or improperly preserved sample. The data may not be accurate
Z - Colonies were too numerous to count (TNTC)

Appendix C
Chemical Analyses of Effluent

Date Sampled	Field ID	Analysis Group	Component	Result	Units	MDL	PQL
7/28/2014 9:40	Effluent Grab	AGP/LN	Algal Growth Potential	16.9 A	mg DryWt/L	0.3	0.9
7/28/2014 9:40	Effluent Grab	Chlorophyll/Grain Size/BOD	Phaeophytin-a	0.40 U	ug/L	0.4	1.2
7/28/2014 9:40	Effluent Grab	Chlorophyll/Grain Size/BOD	Chlorophyll-a, Corrected	0.56 I	ug/L	0.55	1.7
7/28/2014 9:40	Effluent Grab	Overflow	Fecal Coliforms-Membrane Filter	1 U	cfu/100 mL	1	1
7/28/2014 9:40	Effluent Grab	Toxicology	Bioassay-Acute-Def-FW-Fish, LC50	100 L	LC50		
7/28/2014 9:40	Effluent Grab	Toxicology	Bioassay-Acute-Def-FW-C.dubia, LC50	100 L	LC50		
7/28/2014 9:40	Effluent Grab	Nutrients	Alkalinity	152	mg CaCO3/L	0.65	2.5
7/28/2014 9:40	Effluent Grab	Nutrients	Total-P	0.051	mg P/L	0.002	0.005
7/28/2014 9:40	Effluent Grab	Nutrients	Kjeldahl Nitrogen	0.63	mg N/L	0.08	0.2
7/28/2014 9:40	Effluent Grab	Nutrients	Ammonia-N	0.029	mg N/L	0.002	0.005
7/28/2014 9:40	Effluent Grab	Nutrients	Color (true)	8.3	PCU	2.5	6
7/28/2014 9:40	Effluent Grab	Nutrients	NO2NO3-N	0.99	mg N/L	0.008	0.02
7/28/2014 9:40	Effluent Grab	Nutrients	Turbidity	0.8	NTU	0.1	0.1
7/28/2014 9:40	Effluent Grab	Nutrients	Fluoride	0.58	mg F/L	0.035	0.1
7/28/2014 9:40	Effluent Grab	Nutrients	Organic Carbon	6.2	mg C/L	0.5	1
7/28/2014 9:40	Effluent Grab	Nutrients	Sulfate	67	mg SO4/L	0.4	1
7/28/2014 9:40	Effluent Grab	Nutrients	O-Phosphate-P	0.028	mg P/L	0.008	0.02
7/28/2014 9:40	Effluent Grab	Nutrients	Chloride	76	mg Cl/L	0.4	1
7/28/2014 9:40	Effluent Grab	Pesticides	Alachlor	0.064 U	ug/L	0.064	0.26
7/28/2014 9:40	Effluent Grab	Pesticides	Chlorpyrifos Methyl	0.011 U	ug/L	0.011	0.043
7/28/2014 9:40	Effluent Grab	Pesticides	Naled	0.043 U	ug/L	0.043	0.17
7/28/2014 9:40	Effluent Grab	Pesticides	Parathion Ethyl	0.021 U	ug/L	0.021	0.085
7/28/2014 9:40	Effluent Grab	Pesticides	Atrazine Desethyl	0.018 U	ug/L	0.018	0.07
7/28/2014 9:40	Effluent Grab	Pesticides	Atrazine Desisopropyl	0.011 U	ug/L	0.011	0.043
7/28/2014 9:40	Effluent Grab	Pesticides	Azinphos Methyl	0.021 U	ug/L	0.021	0.085
7/28/2014 9:40	Effluent Grab	Pesticides	Chlorpyrifos Ethyl	0.011 U	ug/L	0.011	0.043
7/28/2014 9:40	Effluent Grab	Pesticides	Ethoprop	0.0053 U	ug/L	0.0053	0.021
7/28/2014 9:40	Effluent Grab	Pesticides	Fenamiphos	0.032 U	ug/L	0.032	0.13
7/28/2014 9:40	Effluent Grab	Pesticides	Malathion	0.011 U	ug/L	0.011	0.043
7/28/2014 9:40	Effluent Grab	Pesticides	Prometon	0.021 U	ug/L	0.021	0.085

Date Sampled	Field ID	Analysis Group	Component	Result	Units	MDL	PQL
7/28/2014 9:40	Effluent Grab	Pesticides	Butylate	0.021 U	ug/L	0.021	0.085
7/28/2014 9:40	Effluent Grab	Pesticides	Diazinon	0.011 U	ug/L	0.011	0.043
7/28/2014 9:40	Effluent Grab	Pesticides	Disulfoton	0.0053 U	ug/L	0.0053	0.021
7/28/2014 9:40	Effluent Grab	Pesticides	Parathion Methyl	0.011 U	ug/L	0.011	0.043
7/28/2014 9:40	Effluent Grab	Pesticides	Phorate	0.0053 U	ug/L	0.0053	0.021
7/28/2014 9:40	Effluent Grab	Pesticides	Sucralose	11	ug/L	0.1	0.5
7/28/2014 9:40	Effluent Grab	Pesticides	Ametryn	0.011 U	ug/L	0.011	0.043
7/28/2014 9:40	Effluent Grab	Pesticides	Prometryn	0.021 U	ug/L	0.021	0.085
7/28/2014 9:40	Effluent Grab	Pesticides	Simazine	0.011 U	ug/L	0.011	0.043
7/28/2014 9:40	Effluent Grab	Pesticides	Carbamazepine	0.062	ug/L	0.0005	0.0025
7/28/2014 9:40	Effluent Grab	Pesticides	Atrazine	0.011 U	ug/L	0.011	0.043
7/28/2014 9:40	Effluent Grab	Pesticides	Metalaxyl	0.043 UJ	ug/L	0.043	0.17
7/28/2014 9:40	Effluent Grab	Pesticides	Metolachlor	0.064 U	ug/L	0.064	0.26
7/28/2014 9:40	Effluent Grab	Pesticides	Bromacil	0.043 U	ug/L	0.043	0.17
7/28/2014 9:40	Effluent Grab	Pesticides	Metribuzin	0.021 U	ug/L	0.021	0.085
7/28/2014 9:40	Effluent Grab	Pesticides	Mevinphos	0.011 U	ug/L	0.011	0.043
7/28/2014 9:40	Effluent Grab	Pesticides	Norflurazon	0.032 UJ	ug/L	0.032	0.13
7/28/2014 9:40	Effluent Grab	Pesticides	Acetaminophen	0.0013 I	ug/L	0.0005	0.0025
7/28/2014 9:40	Effluent Grab	Pesticides	Demeton	0.026 UJ	ug/L	0.026	0.1
7/28/2014 9:40	Effluent Grab	Pesticides	Ethion	0.011 U	ug/L	0.011	0.043
7/28/2014 9:40	Effluent Grab	Pesticides	Fonofos	0.011 U	ug/L	0.011	0.043
7/28/2014 9:40	Effluent Grab	Pesticides	Hexazinone	0.032 UJ	ug/L	0.032	0.13
7/28/2014 9:40	Effluent Grab	Priority Organic Pollutants	2,4-Dichlorophenol	1.1 U	ug/L	1.1	4.2
7/28/2014 9:40	Effluent Grab	Priority Organic Pollutants	Nitrobenzene	2.1 U	ug/L	2.1	8.4
7/28/2014 9:40	Effluent Grab	Priority Organic Pollutants	2-Methyl-4,6-dinitrophenol	3.2 UJ	ug/L	3.2	13
7/28/2014 9:40	Effluent Grab	Priority Organic Pollutants	Acenaphthylene	0.21 U	ug/L	0.21	0.84
7/28/2014 9:40	Effluent Grab	Priority Organic Pollutants	Bis(2-chloroisopropyl)ether	3.2 UJ	ug/L	3.2	13
7/28/2014 9:40	Effluent Grab	Priority Organic Pollutants	Dibenzo(a,h)anthracene	0.21 U	ug/L	0.21	0.84
7/28/2014 9:40	Effluent Grab	Priority Organic Pollutants	Fluoranthene	0.21 U	ug/L	0.21	0.84
7/28/2014 9:40	Effluent Grab	Priority Organic Pollutants	Hexachlorobutadiene	3.2 U	ug/L	3.2	13
7/28/2014 9:40	Effluent Grab	Priority Organic Pollutants	Pentachlorophenol	3.2 U	ug/L	3.2	13
7/28/2014 9:40	Effluent Grab	Priority Organic Pollutants	Phenol	1.1 U	ug/L	1.1	4.2

Date Sampled	Field ID	Analysis Group	Component	Result	Units	MDL	PQL
7/28/2014 9:40	Effluent Grab	Priority Organic Pollutants	1,2,4-Trichlorobenzene	1.1 U	ug/L	1.1	4.2
7/28/2014 9:40	Effluent Grab	Priority Organic Pollutants	Anthracene	0.21 U	ug/L	0.21	0.84
7/28/2014 9:40	Effluent Grab	Priority Organic Pollutants	Benzo(k)fluoranthene	0.21 U	ug/L	0.21	0.84
7/28/2014 9:40	Effluent Grab	Priority Organic Pollutants	Pyrene	0.21 U	ug/L	0.21	0.84
7/28/2014 9:40	Effluent Grab	Priority Organic Pollutants	2-Chlorophenol	1.1 U	ug/L	1.1	4.2
7/28/2014 9:40	Effluent Grab	Priority Organic Pollutants	Fluorene	0.21 U	ug/L	0.21	0.84
7/28/2014 9:40	Effluent Grab	Priority Organic Pollutants	Di-n-octyl phthalate	1.1 U	ug/L	1.1	4.2
7/28/2014 9:40	Effluent Grab	Priority Organic Pollutants	Di-n-butyl phthalate	1.1 U	ug/L	1.1	4.2
7/28/2014 9:40	Effluent Grab	Priority Organic Pollutants	Butyl benzyl phthalate	1.1 U	ug/L	1.1	4.2
7/28/2014 9:40	Effluent Grab	Priority Organic Pollutants	2,6-Dinitrotoluene	1.1 U	ug/L	1.1	4.2
7/28/2014 9:40	Effluent Grab	Priority Organic Pollutants	2,4-Dinitrophenol	16 UJ	ug/L	16	63
7/28/2014 9:40	Effluent Grab	Priority Organic Pollutants	2,4,6-Trichlorophenol	0.42 U	ug/L	0.42	0.84
7/28/2014 9:40	Effluent Grab	Priority Organic Pollutants	2,4-Dimethylphenol	11 U	ug/L	11	42
7/28/2014 9:40	Effluent Grab	Priority Organic Pollutants	4-Bromophenyl phenyl ether	1.1 U	ug/L	1.1	4.2
7/28/2014 9:40	Effluent Grab	Priority Organic Pollutants	Acenaphthene	0.21 U	ug/L	0.21	0.84
7/28/2014 9:40	Effluent Grab	Priority Organic Pollutants	Bis(2-chloroethoxy)methane	1.1 U	ug/L	1.1	4.2
7/28/2014 9:40	Effluent Grab	Priority Organic Pollutants	Benzidine	110 U	ug/L	110	420
7/28/2014 9:40	Effluent Grab	Priority Organic Pollutants	Benzo(g,h,i)perylene	0.21 U	ug/L	0.21	0.84
7/28/2014 9:40	Effluent Grab	Priority Organic Pollutants	Hexachlorobenzene	1.1 U	ug/L	1.1	4.2
7/28/2014 9:40	Effluent Grab	Priority Organic Pollutants	Isophorone	1.1 U	ug/L	1.1	4.2
7/28/2014 9:40	Effluent Grab	Priority Organic Pollutants	Naphthalene	0.21 U	ug/L	0.21	0.84
7/28/2014 9:40	Effluent Grab	Priority Organic Pollutants	Phenanthrene	0.21 U	ug/L	0.21	0.84
7/28/2014 9:40	Effluent Grab	Priority Organic Pollutants	3,3'-Dichlorobenzidine	42 U	ug/L	42	170
7/28/2014 9:40	Effluent Grab	Priority Organic Pollutants	4-Chloro-3-methylphenol	1.1 U	ug/L	1.1	4.2
7/28/2014 9:40	Effluent Grab	Priority Organic Pollutants	Chrysene	0.21 U	ug/L	0.21	0.84
7/28/2014 9:40	Effluent Grab	Priority Organic Pollutants	Hexachlorocyclopentadiene	3.2 U	ug/L	3.2	13
7/28/2014 9:40	Effluent Grab	Priority Organic Pollutants	N-Nitrosodi-n-propylamine	2.1 U	ug/L	2.1	8.4
7/28/2014 9:40	Effluent Grab	Priority Organic Pollutants	4-Chlorophenyl phenyl ether	2.1 U	ug/L	2.1	8.4
7/28/2014 9:40	Effluent Grab	Priority Organic Pollutants	Benzo(a)anthracene	0.21 U	ug/L	0.21	0.84
7/28/2014 9:40	Effluent Grab	Priority Organic Pollutants	Benzo(a)pyrene	0.21 U	ug/L	0.21	0.84
7/28/2014 9:40	Effluent Grab	Priority Organic Pollutants	Benzo(b)fluoranthene	0.21 U	ug/L	0.21	0.84
7/28/2014 9:40	Effluent Grab	Priority Organic Pollutants	Hexachloroethane	3.2 U	ug/L	3.2	13

Date Sampled	Field ID	Analysis Group	Component	Result	Units	MDL	PQL
7/28/2014 9:40	Effluent Grab	Priority Organic Pollutants	Indeno(1,2,3-cd)pyrene	0.21 U	ug/L	0.21	0.84
7/28/2014 9:40	Effluent Grab	Priority Organic Pollutants	N-Nitrosodiphenylamine/ Diphenylamine	3.2 U	ug/L	3.2	13
7/28/2014 9:40	Effluent Grab	Priority Organic Pollutants	2,4-Dinitrotoluene	1.1 U	ug/L	1.1	4.2
7/28/2014 9:40	Effluent Grab	Priority Organic Pollutants	2-Chloronaphthalene	1.1 U	ug/L	1.1	4.2
7/28/2014 9:40	Effluent Grab	Priority Organic Pollutants	2-Nitrophenol	1.1 U	ug/L	1.1	4.2
7/28/2014 9:40	Effluent Grab	Priority Organic Pollutants	4-Nitrophenol	16 UJ	ug/L	16	63
7/28/2014 9:40	Effluent Grab	Priority Organic Pollutants	Bis(2-chloroethyl)ether	1.1 U	ug/L	1.1	4.2
7/28/2014 9:40	Effluent Grab	Priority Organic Pollutants	Bis(2-ethylhexyl)phthalate	2.1 U	ug/L	2.1	8.4
7/28/2014 9:40	Effluent Grab	Priority Organic Pollutants	Diethyl phthalate	1.1 U	ug/L	1.1	4.2
7/28/2014 9:40	Effluent Grab	Priority Organic Pollutants	Dimethyl phthalate	1.1 U	ug/L	1.1	4.2
7/28/2014 9:40	Effluent Grab	Priority Organic Pollutants	N-Nitrosodimethylamine	2.1 U	ug/L	2.1	8.4
7/28/2014 9:40	Effluent Grab	Nutrients	pH	7.88			
7/28/2014 9:40	Effluent Grab	Nutrients	Specific Conductance	707	umhos/cm		
7/28/2014 9:40	Effluent Grab	Nutrients	Temperature	29.78	C		
7/28/2014 9:40	Effluent Grab	Nutrients	Dissolved Oxygen	8.01	mg/L		
7/28/2014 10:00	Effluent Comp	Chlorophyll/Grain Size/BOD	Biochemical Oxygen Demand-5 Day,N-Inhib	0.98 IJ	mg/L	0.2	2
7/28/2014 10:00	Effluent Comp	Metals	Aluminum	9.0 I	ug/L	5	20
7/28/2014 10:00	Effluent Comp	Metals	Potassium	18.6	mg/L	0.3	1.2
7/28/2014 10:00	Effluent Comp	Metals	Magnesium	9.12	mg/L	0.04	0.16
7/28/2014 10:00	Effluent Comp	Metals	Chromium	0.66 I	ug/L	0.3	1.2
7/28/2014 10:00	Effluent Comp	Metals	Arsenic	0.25 I	ug/L	0.25	1
7/28/2014 10:00	Effluent Comp	Metals	Selenium	0.81	ug/L	0.2	0.8
7/28/2014 10:00	Effluent Comp	Metals	Sodium	67.7	mg/L	0.5	2
7/28/2014 10:00	Effluent Comp	Metals	Cadmium	0.050 U	ug/L	0.05	0.2
7/28/2014 10:00	Effluent Comp	Metals	Lead	0.20 U	ug/L	0.2	0.8
7/28/2014 10:00	Effluent Comp	Metals	Zinc	20	ug/L	5	20
7/28/2014 10:00	Effluent Comp	Metals	Nickel	1.04	ug/L	0.25	1
7/28/2014 10:00	Effluent Comp	Metals	Iron	220	ug/L	30	120
7/28/2014 10:00	Effluent Comp	Metals	Copper	1.66	ug/L	0.5	1
7/28/2014 10:00	Effluent Comp	Metals	Calcium	57.6	mg/L	0.075	0.3
7/28/2014 10:00	Effluent Comp	Metals	Silver	0.025 U	ug/L	0.025	0.1
7/28/2014 10:00	Effluent Comp	Nutrients	TSS	2 U	mg/L	2	10

Date Sampled	Field ID	Analysis Group	Component	Result	Units	MDL	PQL
7/28/2014 10:00	Effluent Comp	Nutrients	Total-P	0.051	mg P/L	0.002	0.005
7/28/2014 10:00	Effluent Comp	Nutrients	NO2NO3-N	0.81	mg N/L	0.008	0.02
7/28/2014 10:00	Effluent Comp	Nutrients	Kjeldahl Nitrogen	0.55	mg N/L	0.08	0.2
7/28/2014 9:20	Field Blank	Metals	Arsenic	0.25 U	ug/L	0.25	1
7/28/2014 9:20	Field Blank	Metals	Selenium	0.20 U	ug/L	0.2	0.8
7/28/2014 9:20	Field Blank	Metals	Zinc	5.0 U	ug/L	5	20
7/28/2014 9:20	Field Blank	Metals	Copper	0.50 U	ug/L	0.5	1
7/28/2014 9:20	Field Blank	Metals	Calcium	0.075 U	mg/L	0.075	0.3
7/28/2014 9:20	Field Blank	Metals	Silver	0.025 U	ug/L	0.025	0.1
7/28/2014 9:20	Field Blank	Metals	Nickel	0.25 U	ug/L	0.25	1
7/28/2014 9:20	Field Blank	Metals	Lead	0.20 U	ug/L	0.2	0.8
7/28/2014 9:20	Field Blank	Metals	Chromium	0.30 U	ug/L	0.3	1.2
7/28/2014 9:20	Field Blank	Metals	Sodium	0.50 U	mg/L	0.5	2
7/28/2014 9:20	Field Blank	Metals	Iron	30 U	ug/L	30	120
7/28/2014 9:20	Field Blank	Metals	Aluminum	5.0 U	ug/L	5	20
7/28/2014 9:20	Field Blank	Metals	Cadmium	0.050 U	ug/L	0.05	0.2
7/28/2014 9:20	Field Blank	Metals	Magnesium	0.040 U	mg/L	0.04	0.16
7/28/2014 9:20	Field Blank	Metals	Potassium	0.30 U	mg/L	0.3	1.2
7/28/2014 9:20	Field Blank	Nutrients	O-Phosphate-P	0.004 U	mg P/L	0.004	0.01
7/28/2014 9:20	Field Blank	Nutrients	Ammonia-N	0.002 U	mg N/L	0.002	0.005
7/28/2014 9:20	Field Blank	Nutrients	Chloride	0.20 U	mg Cl/L	0.2	0.5
7/28/2014 9:20	Field Blank	Nutrients	Color (true)	2.5 U	PCU	2.5	6
7/28/2014 9:20	Field Blank	Nutrients	Turbidity	0.10 U	NTU	0.1	0.1
7/28/2014 9:20	Field Blank	Nutrients	Alkalinity	0.65 U	mg CaCO3/L	0.65	2.5
7/28/2014 9:20	Field Blank	Nutrients	Kjeldahl Nitrogen	0.080 U	mg N/L	0.08	0.2
7/28/2014 9:20	Field Blank	Nutrients	Organic Carbon	0.62 I	mg C/L	0.5	1
7/28/2014 9:20	Field Blank	Nutrients	Fluoride	0.035 U	mg F/L	0.035	0.1
7/28/2014 9:20	Field Blank	Nutrients	Total-P	0.002 U	mg P/L	0.002	0.005
7/28/2014 9:20	Field Blank	Nutrients	NO2NO3-N	0.004 U	mg N/L	0.004	0.01
7/28/2014 9:20	Field Blank	Nutrients	Sulfate	0.20 U	mg SO4/L	0.2	0.5
7/28/2014 9:20	Field Blank	Pesticides	Phorate	0.0050 U	ug/L	0.005	0.02
7/28/2014 9:20	Field Blank	Pesticides	Acetaminophen	5.0E-04 U	ug/L	0.0005	0.0025

Date Sampled	Field ID	Analysis Group	Component	Result	Units	MDL	PQL
7/28/2014 9:20	Field Blank	Pesticides	Ametryn	0.010 U	ug/L	0.01	0.04
7/28/2014 9:20	Field Blank	Pesticides	Demeton	0.024 UJ	ug/L	0.024	0.096
7/28/2014 9:20	Field Blank	Pesticides	Atrazine Desethyl	0.010 U	ug/L	0.01	0.04
7/28/2014 9:20	Field Blank	Pesticides	Disulfoton	0.0050 U	ug/L	0.005	0.02
7/28/2014 9:20	Field Blank	Pesticides	Ethion	0.010 U	ug/L	0.01	0.04
7/28/2014 9:20	Field Blank	Pesticides	Malathion	0.010 U	ug/L	0.01	0.04
7/28/2014 9:20	Field Blank	Pesticides	Metolachlor	0.060 U	ug/L	0.06	0.24
7/28/2014 9:20	Field Blank	Pesticides	Norflurazon	0.030 UJ	ug/L	0.03	0.12
7/28/2014 9:20	Field Blank	Pesticides	Parathion Ethyl	0.020 U	ug/L	0.02	0.08
7/28/2014 9:20	Field Blank	Pesticides	Butylate	0.020 U	ug/L	0.02	0.08
7/28/2014 9:20	Field Blank	Pesticides	Prometon	0.020 U	ug/L	0.02	0.08
7/28/2014 9:20	Field Blank	Pesticides	Fenamiphos	0.030 U	ug/L	0.03	0.12
7/28/2014 9:20	Field Blank	Pesticides	Metalaxyl	0.040 UJ	ug/L	0.04	0.16
7/28/2014 9:20	Field Blank	Pesticides	Naled	0.040 U	ug/L	0.04	0.16
7/28/2014 9:20	Field Blank	Pesticides	Prometryn	0.020 U	ug/L	0.02	0.08
7/28/2014 9:20	Field Blank	Pesticides	Sucralose	0.010 U	ug/L	0.01	0.05
7/28/2014 9:20	Field Blank	Pesticides	Metribuzin	0.020 U	ug/L	0.02	0.08
7/28/2014 9:20	Field Blank	Pesticides	Hexazinone	0.030 UJ	ug/L	0.03	0.12
7/28/2014 9:20	Field Blank	Pesticides	Mevinphos	0.010 U	ug/L	0.01	0.04
7/28/2014 9:20	Field Blank	Pesticides	Azinphos Methyl	0.020 U	ug/L	0.02	0.08
7/28/2014 9:20	Field Blank	Pesticides	Diazinon	0.010 U	ug/L	0.01	0.04
7/28/2014 9:20	Field Blank	Pesticides	Fonofos	0.010 U	ug/L	0.01	0.04
7/28/2014 9:20	Field Blank	Pesticides	Simazine	0.010 U	ug/L	0.01	0.04
7/28/2014 9:20	Field Blank	Pesticides	Ethoprop	0.0050 U	ug/L	0.005	0.02
7/28/2014 9:20	Field Blank	Pesticides	Chlorpyrifos Methyl	0.010 U	ug/L	0.01	0.04
7/28/2014 9:20	Field Blank	Pesticides	Bromacil	0.040 U	ug/L	0.04	0.16
7/28/2014 9:20	Field Blank	Pesticides	Chlorpyrifos Ethyl	0.010 U	ug/L	0.01	0.04
7/28/2014 9:20	Field Blank	Pesticides	Atrazine Desisopropyl	0.010 U	ug/L	0.01	0.04
7/28/2014 9:20	Field Blank	Pesticides	Atrazine	0.010 U	ug/L	0.01	0.04
7/28/2014 9:20	Field Blank	Pesticides	Alachlor	0.060 U	ug/L	0.06	0.24
7/28/2014 9:20	Field Blank	Pesticides	Parathion Methyl	0.010 U	ug/L	0.01	0.04
7/28/2014 9:20	Field Blank	Pesticides	Carbamazepine	5.0E-04 U	ug/L	0.0005	0.0025

Date Sampled	Field ID	Analysis Group	Component	Result	Units	MDL	PQL
7/28/2014 9:20	Field Blank	Priority Organic Pollutants	2-Nitrophenol	1.0 U	ug/L	1	4
7/28/2014 9:20	Field Blank	Priority Organic Pollutants	3,3'-Dichlorobenzidine	40 U	ug/L	40	160
7/28/2014 9:20	Field Blank	Priority Organic Pollutants	4-Chloro-3-methylphenol	1.0 U	ug/L	1	4
7/28/2014 9:20	Field Blank	Priority Organic Pollutants	Acenaphthene	0.20 U	ug/L	0.2	0.81
7/28/2014 9:20	Field Blank	Priority Organic Pollutants	Di-n-butyl phthalate	1.0 U	ug/L	1	4
7/28/2014 9:20	Field Blank	Priority Organic Pollutants	N-Nitrosodiphenylamine/ Diphenylamine	3.0 U	ug/L	3	12
7/28/2014 9:20	Field Blank	Priority Organic Pollutants	2,4-Dinitrotoluene	1.0 U	ug/L	1	4
7/28/2014 9:20	Field Blank	Priority Organic Pollutants	Anthracene	0.20 U	ug/L	0.2	0.81
7/28/2014 9:20	Field Blank	Priority Organic Pollutants	Benzo(a)pyrene	0.20 U	ug/L	0.2	0.81
7/28/2014 9:20	Field Blank	Priority Organic Pollutants	Di-n-octyl phthalate	1.0 U	ug/L	1	4
7/28/2014 9:20	Field Blank	Priority Organic Pollutants	Hexachloroethane	3.0 U	ug/L	3	12
7/28/2014 9:20	Field Blank	Priority Organic Pollutants	Phenanthrene	0.20 U	ug/L	0.2	0.81
7/28/2014 9:20	Field Blank	Priority Organic Pollutants	Phenol	1.0 U	ug/L	1	4
7/28/2014 9:20	Field Blank	Priority Organic Pollutants	4-Nitrophenol	15 UJ	ug/L	15	61
7/28/2014 9:20	Field Blank	Priority Organic Pollutants	Benzo(a)anthracene	0.20 U	ug/L	0.2	0.81
7/28/2014 9:20	Field Blank	Priority Organic Pollutants	Fluoranthene	0.20 U	ug/L	0.2	0.81
7/28/2014 9:20	Field Blank	Priority Organic Pollutants	Hexachlorobutadiene	3.0 U	ug/L	3	12
7/28/2014 9:20	Field Blank	Priority Organic Pollutants	N-Nitrosodi-n-propylamine	2.0 U	ug/L	2	8.1
7/28/2014 9:20	Field Blank	Priority Organic Pollutants	N-Nitrosodimethylamine	2.0 U	ug/L	2	8.1
7/28/2014 9:20	Field Blank	Priority Organic Pollutants	Naphthalene	0.20 U	ug/L	0.2	0.81
7/28/2014 9:20	Field Blank	Priority Organic Pollutants	Nitrobenzene	2.0 U	ug/L	2	8.1
7/28/2014 9:20	Field Blank	Priority Organic Pollutants	2,4-Dimethylphenol	10 U	ug/L	10	40
7/28/2014 9:20	Field Blank	Priority Organic Pollutants	2-Chlorophenol	1.0 U	ug/L	1	4
7/28/2014 9:20	Field Blank	Priority Organic Pollutants	4-Chlorophenyl phenyl ether	2.0 U	ug/L	2	8.1
7/28/2014 9:20	Field Blank	Priority Organic Pollutants	Bis(2-chloroethoxy)methane	1.0 U	ug/L	1	4
7/28/2014 9:20	Field Blank	Priority Organic Pollutants	Bis(2-chloroisopropyl)ether	3.0 UJ	ug/L	3	12
7/28/2014 9:20	Field Blank	Priority Organic Pollutants	2,4-Dichlorophenol	1.0 U	ug/L	1	4
7/28/2014 9:20	Field Blank	Priority Organic Pollutants	2,4-Dinitrophenol	15 UJ	ug/L	15	61
7/28/2014 9:20	Field Blank	Priority Organic Pollutants	Acenaphthylene	0.20 U	ug/L	0.2	0.81
7/28/2014 9:20	Field Blank	Priority Organic Pollutants	Isophorone	1.0 U	ug/L	1	4
7/28/2014 9:20	Field Blank	Priority Organic Pollutants	Pyrene	0.20 U	ug/L	0.2	0.81
7/28/2014 9:20	Field Blank	Priority Organic Pollutants	2,4,6-Trichlorophenol	0.40 U	ug/L	0.4	0.81

Date Sampled	Field ID	Analysis Group	Component	Result	Units	MDL	PQL
7/28/2014 9:20	Field Blank	Priority Organic Pollutants	2-Methyl-4,6-dinitrophenol	3.0 UJ	ug/L	3	12
7/28/2014 9:20	Field Blank	Priority Organic Pollutants	Benzo(b)fluoranthene	0.20 U	ug/L	0.2	0.81
7/28/2014 9:20	Field Blank	Priority Organic Pollutants	Benzo(g,h,i)perylene	0.20 U	ug/L	0.2	0.81
7/28/2014 9:20	Field Blank	Priority Organic Pollutants	Dibenzo(a,h)anthracene	0.20 U	ug/L	0.2	0.81
7/28/2014 9:20	Field Blank	Priority Organic Pollutants	Hexachlorobenzene	1.0 U	ug/L	1	4
7/28/2014 9:20	Field Blank	Priority Organic Pollutants	Pentachlorophenol	3.0 U	ug/L	3	12
7/28/2014 9:20	Field Blank	Priority Organic Pollutants	1,2,4-Trichlorobenzene	1.0 U	ug/L	1	4
7/28/2014 9:20	Field Blank	Priority Organic Pollutants	2,6-Dinitrotoluene	1.0 U	ug/L	1	4
7/28/2014 9:20	Field Blank	Priority Organic Pollutants	2-Chloronaphthalene	1.0 U	ug/L	1	4
7/28/2014 9:20	Field Blank	Priority Organic Pollutants	4-Bromophenyl phenyl ether	1.0 U	ug/L	1	4
7/28/2014 9:20	Field Blank	Priority Organic Pollutants	Benzo(k)fluoranthene	0.20 U	ug/L	0.2	0.81
7/28/2014 9:20	Field Blank	Priority Organic Pollutants	Bis(2-ethylhexyl)phthalate	2.0 U	ug/L	2	8.1
7/28/2014 9:20	Field Blank	Priority Organic Pollutants	Butyl benzyl phthalate	1.0 U	ug/L	1	4
7/28/2014 9:20	Field Blank	Priority Organic Pollutants	Chrysene	0.20 U	ug/L	0.2	0.81
7/28/2014 9:20	Field Blank	Priority Organic Pollutants	Dimethyl phthalate	1.0 U	ug/L	1	4
7/28/2014 9:20	Field Blank	Priority Organic Pollutants	Fluorene	0.20 U	ug/L	0.2	0.81
7/28/2014 9:20	Field Blank	Priority Organic Pollutants	Hexachlorocyclopentadiene	3.0 U	ug/L	3	12
7/28/2014 9:20	Field Blank	Priority Organic Pollutants	Benzidine	100 U	ug/L	100	400
7/28/2014 9:20	Field Blank	Priority Organic Pollutants	Bis(2-chloroethyl)ether	1.0 U	ug/L	1	4
7/28/2014 9:20	Field Blank	Priority Organic Pollutants	Diethyl phthalate	1.0 U	ug/L	1	4
7/28/2014 9:20	Field Blank	Priority Organic Pollutants	Indeno(1,2,3-cd)pyrene	0.20 U	ug/L	0.2	0.81

EPA End Sheet

The Bioassay of City of Plant City WRF effluent sampled on July 28, 2014. NPDES #FL0026557.

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

Transaction Code		NPDES NUMBER										YR/MO/DA						Insp Type	Inspector	Fac Type
1	N	2 5	3	F	L	0	0	2	6	5	5	7	11	12	1	4	0	7	2	8	18 **B**	19 **S**	20 1

Remarks

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The Priority Pollutants Analysis of City of Plant City effluent sampled on July 28, 2014. NPDES #FL0026557.

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

Transaction Code		NPDES NUMBER										YR/MO/DA						Insp Type	Inspector	Fac Type
1	N	2 5	3	F	L	0	0	2	6	5	5	7	11	12	1	4	0	7	2	8	18 **X**	19 **S**	20 1

Remarks

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Biological Analyses of City of Plant City effluent sampled on July 28, 2014. NPDES #FL0026557.

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

Transaction Code		NPDES NUMBER										YR/MO/DA						Insp Type	Inspector	Fac Type
1	N	2 5	3	F	L	0	0	2	6	5	5	7	11	12	1	4	0	7	2	8	18 **S**	19 **S**	20 1

Remarks

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