

Effluent Quality Assessment

Miller Street Wastewater Treatment Facility

Clay County

NPDES #FL0025151

Sampled October 7, 9, and 11, 2013

December 2013

Biology Section
Bureau of Laboratories
Division of Environmental Assessment and Restoration
2013 FDEP Bureau of Labs Quality Manual
NELAC Certification No. E31780

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Miller Street Wastewater Treatment Facility (WWTF), 1601 Bartlett Avenue, Orange Park, Clay County, Florida, 32073. NPDES #FL0025151.

Facility Overview

Miller Street WWTF is a domestic wastewater treatment plant which treats wastewater for reuse and discharge to surface waters. See Appendix A for a description of the facility, summary of permit limits, Administrative Order (AO) and Discharge Monitoring Report (DMR) information.

Methods

Effluent composite samples for toxicity testing were collected on October 7, 9, and 11, 2013. Effluent grab and composite samples for biological and chemical analyses for this facility were collected on October 7, 2013. All samples were collected from the EFD-1 NPDES sampling point for Outfall D-001 by Sharon Piltz, Jann Gruentzel, and Jeremy Parrish (FDEP Northeast District) following DEP-SOP-001/01 FS 2400 Wastewater Sampling (see Appendix B).

The 7-day chronic definitive toxicity tests were performed following internal DEP SOPs TA07_05 and TA07_09 (see Appendix B).

Results

Chemistry Results (See Table 1 and Appendix C)

- The total ammonia concentration in the composite sample collected and preserved for chemical analysis was 0.078 mg N/L. Based on the pH, salinity, and temperature of the effluent as collected, the calculated unionized ammonia concentration was <0.02 mg/L.
- The dissolved oxygen concentration (2.33 mg/L) in the first effluent sample collected on October 7, 2013, was not in compliance with Class III Marine Water Quality Criteria (62-302.530, (30), F.A.C.) or the permitted limit.
- Copper, iron, nickel, zinc, carbonaceous biological oxygen demand (CBOD), fluoride, and fecal coliforms were detected in the effluent at levels that comply with Class III Marine Water Quality Criteria (62-302.530, F.A.C.) and/or permit limits. Aluminum, arsenic, and total suspended solids (TSS), were detected between the laboratory method detection limits (MDL) and practical quantitation limits (PQL).

Toxicity Test Results (See Appendix C)

- Tests were performed October 8 - 15, 2013.

Ceriodaphnia dubia 7-day chronic definitive bioassay –	IC25: 94.3% NOEC: 75%
Pimephales promelas 7-day chronic definitive bioassay –	IC25: > 100% NOEC: 100%

- The bioassay samples were chronically toxic to the *Ceriodaphnia dubia* test organisms. The cause of toxicity was not determined. The samples were not chronically toxic to the fish test organisms.
- The samples were aerated for 30 minutes at a rate of approximately 100 bubbles per minute to decrease the dissolved oxygen (DO) from 10.0, 10.3, and 10.5 mg/L to 7.9, 7.9, and 8.4 mg/L, respectively.

Conclusion

The effluent samples collected from the EFD-1 NPDES sampling point for this facility on October 7, 9, and 11, 2013, were chronically toxic to the *Ceriodaphnia dubia* test organisms during the 7-day chronic definitive bioassays, but were not chronically toxic to the *Pimephales promelas* test organisms. The dissolved oxygen concentration (2.33 mg/L) in the first effluent sample collected on October 7, 2013, was not in compliance with Class III Marine Water Quality Criteria (62-302.530, (30), F.A.C.) or the permitted limit.

Additional effluent water quality samples collected on October 7, 2013, 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 Bruce.Alexander@dep.state.fl.us and/or Joseph.Faircloth@dep.state.fl.us.

Literature Cited

None

Table 1. Effluent limits, Class III Criteria for predominantly marine waters, chemical and microbiological data, and qualifiers.

Miller Street WWTF	Class III Criteria	Effluent Limits	Effluent Grab	
Metals (µg/L unless otherwise noted)				
Aluminum	≤ 1500		8.6	I
Arsenic	≤ 50		0.28	I
Cadmium	≤ 8.8		0.050	U
Calcium (mg/L)			36.5	
Chromium, total	≤ 50 ψ		0.30	U
Copper	≤ 3.7		1.86	
Iron	≤ 300		240	
Lead	≤ 8.5		0.20	U
Magnesium (mg/L)			15.7	
Nickel	≤ 8.3		2.31	
Potassium (mg/L)			13.3	
Selenium	≤ 71		0.20	U
Silver	≤ 2.3		0.025	U
Sodium			115	
Zinc	≤ 86		71	
Nutrients (mg/L)				
Ortho-phosphate		Report	1.2	
Total Phosphorus		Report	2.8	
Total Ammonia		Report	0.078	
Un-ionized Ammonia			< 0.02	c
Nitrate and Nitrite		Report	0.45	
Total Kjeldahl Nitrogen		Report	0.91	
Organic Nitrogen		Report	0.832	c
Total Nitrogen		Report	1.36	c
Total Organic Carbon			6.2	A
General Physical and Chemical Parameters				
Dissolved Oxygen (mg/L)	≥ 3.38**	≥ 4.0	2.33	-
pH (SU)	6.5 - 8.5	6.5 - 8.5	6.40	
Specific Conductance (µmhos/cm)			913	
Temperature (°C)			26.33	
Salinity			≤ 0.44	c
Total Residual Chlorine (mg/L)	≤ 0.01	≤ 0.01	0.01	
Total Suspended Solids (mg/L)		≤ 60.0 p	2	I
Color (true, PCU)			3.4	I
Alkalinity (mg CaCO3/L)			21	A
CBOD, 5 day (mg/L), N - inhibited		≤ 34.0 p	1.9	IQ
Chloride (mg/L)			110	A
Fluoride (mg/L)	≤ 5.0		0.46	
Sulfate (mg/L)			230	A
Flow (MGD)		4.99 a	2	a*
Hardness (mg $CaCO_3$)			155.8	c
Microbiology (Number of colony forming units/100ml)				
Fecal Coliforms ¥	≤ 400s #	≤ 800 s	31	B

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

Value exceeds the Class III Water Quality Criteria or permit limits

a - Annual average

c - Value is calculated

p - 24 hour flow proportioned composite

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

B - Results based on colony counts outside the acceptance range

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

Q - Sample held beyond normal holding time

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

¥ - Fecal coliform analysis performed by Columbia Analytical Services

- 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

* - Measured from 10/12 - 9/13

** - Criterion based on saturation ≥ 42%

ψ - Class III Marine Water Quality Criterion (62-302.530(19)(b), F.A.C.) for chromium-VI

Appendix A
Facility Summary

MILLER STREET WWTP –FACILITY SUMMARY – FL0025151 –AUGUST - 2013

State of Florida
Department of Environmental Protection
Facility Introduction & Summary

PART I: Information gathered prior to sampling event	
Prepared By: Ed Jamro	Contact Number: (904) 256-1617
Facility Name (as it appears on permit): Miller Street Wastewater Treatment Facility	Former Names:
NPDES Permit Number: FL0025151	Permit Expiration Date: 6/8/2014
Physical Address: 1601 Bartlett Avenue Orange Park, Florida 32073	
District: NED	County: Clay
Function of Facility: Treat wastewater for reuse in Clay County or discharge treated effluent to St John's River.	
Facility Type: Domestic Wastewater	Permitted Capacity (MGD): 4.99
Mean Flow for previous 12 months for all EXTERNAL outfalls listed in permit (list date range including months): 1.21 MGD from 06/2012 – 05/2013.	
If applicable, Mean Flow for previous 12 months for REUSE outfall(s) (list date range including months): 0.58 MGD from 06/2012 – 05/2013.	
Description of type of Discharge: Continuous operation, effluent mostly reused ☒Continuous ☐ Intermittent ☐ Seasonal ☐ Rainfall Dependent ☐ Other, please specify	

MILLER STREET WWTP –FACILITY SUMMARY – FL0025151 –AUGUST - 2013

Description of Sampling Location(s) - actual permit designation of permitted sampling point(s):
EFA-1 - Effluent sample point immediately after disinfection and prior to dechlorination
EFD-1 - Effluent Sample point immediately after dechlorination and prior to discharge from Outfall D-001

Description of Permitted Outfall(s):
Surface Water Discharge: An existing 5.0 MGD annual average daily flow (AADF) permitted discharge to the St. Johns River (Class III marine waters – WBID 2213G) at Discharge Location (D-001). The outfall is approximately 1000 feet in length and discharges at a depth of approximately 8 feet. The point of discharge is located approximately at latitude 30° 10' 32" N, longitude 81° 41' 39" W.

Description of Treatment Process (if multiple discharge points, include a detailed map or diagram of facility): Original Description:
To operate an existing 5.0 MGD (AADF) oxidation ditch type activated sludge design capacity of the domestic wastewater treatment facility consisting of:

- **An Influent headwork which utilizes four rotary wedgewire screens (one Hycor and three IPEC), grit removal having a settling area of 475 ft^2, and an odor control system;**
- **Two 60-ft diameter and 14.5-ft side water depth flow equalization basins each of which is equipped with floating aerators (One of the tanks has two 7.5-hp floating aerators, and the other has one 15-hp floating aerator.);**
- **Two 2.0-million gallon (MG) oxidation ditches each equipped with two brush aerators (One of the brush aerators is 75 hp, and the other brush aerator is 50 hp.);**
- **Four peripheral feed type clarifiers each is 65 ft diameter with a side water depth of 14 ft resulting in a volume of 0.347 MG and provides an overflow rate of 502 gpd/ft^2;**
- **Two chlorine contact chambers (0.049 MG each) using liquid sodium hypochlorite as a disinfecting agent;**
- **A dechlorination system is composed of a liquid sodium bisulfite dechlorination system (bulk storage, chemical feed pump);**
- **One effluent pumping station consists of a concrete wetwell with three Gorman-Rupp T8A3B pumps and three Peerless vertical turbine 12-MB-1 pumps. Each pump is equipped with a 30-hp motor and each has a rate capacity of 1,400 gpm;**
- **One 65-ft diameter and 15-ft maximum side water depth aerobic digester which is held in reserve for emergencies and is not online;**
- **One sludge gravity belt thickener, two sludge belt filter presses and one lime stabilization system.**

Modifications of the Facility (Permitted under the PA: FLA591297-001-DW2S, Issued on April 8, 2008):

- **Construction of a new chlorine contact chamber with a volume of approximately 0.132 million gallon (Phase I improvements);**
- **Installation of a traveling bridge tertiary filtration system with a 1600 square feet of filter area;**
- **Construction of new dual chlorine contact chambers (total 5 chambers) with an overall length of 77 feet, an overall width of 82 feet, and a sidewater depth of 10 feet;**
- **Construction of dual purpose effluent transfer pumping station;**
- **Installation of a 24-inch pantone purple 522C reclaimed water transmission pipe to transfer reclaimed water from Miller Street RRWT to reclaimed water ground storage facilities;**
- **Installation of reuse water ground storage reservoir(s) for onsite storage of reuse.**

And construction of a BioChem Neutralizer System consisting of two 160-gallon per minute rotary disk thickeners, two polymer feed systems, two 10,000-gallon process tanks, and one Huber screw presses (two 1/2 horsepower thickeners and one 2 horsepower press).

MILLER STREET WWTP –FACILITY SUMMARY – FL0025151 –AUGUST - 2013

PART I: Continued

List current Effluent Limits of Outfall(s) to be Sampled: This should include any AO or CO limits the facility may be under

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 from Outfall D-001 to St. Johns River (WBID 2213G). Such discharge shall be limited and monitored by the permittee as specified below and reported in accordance with condition I.C.11:

			Effluent 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, Surface Water Discharge from Outfall D-001	MGD	Maximum	4.99	Report	-	-	Continuous	Recording flow meters and totalizers	EFD-1	See Cond. I.A.4
BOD, Carbonaceous 5-day, 20°C	mg/L	Maximum	17.0	21.25	25.5	34.0	Weekly	24-hour flow proportioned composite	EFD-1	
Solids, Total Suspended	mg/L	Maximum	20.0	30.0	45.0	60.0	Weekly	24-hour flow proportioned composite	EFD-1	
Solids, Suspended, % Removal	percent	Minimum	-	85.0	-	-	Monthly	Calculated	CAL-1	See Cond. I.A.7
pH	s.u.	Range	-	-	-	6.5 to 8.5	Continuous	Meter	EFD-1	See Cond. I.A.3
Coliform, Fecal	#/100ml	Maximum	See Permit Condition I.A.5.				Weekly	Grab	EFD-1	
Total Residual Chlorine (For Disinfection)	mg/L	Minimum	-	-	-	0.5	Continuous	Meter	EFA-1	See Cond. I.A.3, 6
Total Residual Chlorine (For Dechlorination)	mg/L	Maximum	-	-	-	0.01	Daily 7/wk	Grab	EFD-1	See Cond. I.A.11

MILLER STREET WWTP –FACILITY SUMMARY – FL0025151 –AUGUST - 2013

PART I: Continued

List current Effluent Limits of Outfall(s) to be Sampled: This should include any AO or CO limits the facility may be under

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			Effluent Limitations				Monitoring Requirements			
Parameter	Units	Max/Min	Annual Average	Monthly Average	Weekly Average	Single Sample	Monitoring Frequency	Sample Type	Monitoring Location Site Number	Notes
Oxygen, Dissolved (DO)	mg/L	Minimum	-	-	-	4.0	Daily 7/wk	Grab	EFD-1	See Cond. I.A.8
Total Nitrogen, as N	mg/L	Maximum	Report	Report	-	Report	Weekly	24-hour flow proportioned composite	EFD-1	See Cond. I.A.9
TMDL – Mass Load, Total Nitrogen, as N	-	Maximum	Report (Total Ann. Mass Load) (Lbs/Yr)	Report (Total Monthly Mass Load) (Lbs/mo)	-	-	Monthly	Calculated	CAL-2	See Cond. I.A.9
Nitrate plus Nitrite, Nitrogen, as N	mg/L	Maximum	Report	-	-	Report	Quarterly	24-hour flow proportioned composite	EFD-1	See Cond. I.A.12 & 13
Total Kjeldahl Nitrogen (TKN), as N	mg/L	Maximum	Report	-	-	Report	Quarterly	24-hour flow proportioned composite	EFD-1	See Cond. I.A.12 & 13
Total Ammonia, as N	mg/L	Maximum	Report	-	-	Report	Quarterly	24-hour flow proportioned composite	EFD-1	See Cond. I.A.12

MILLER STREET WWTP –FACILITY SUMMARY – FL0025151 –AUGUST - 2013

PART I: Continued

List current Effluent Limits of Outfall(s) to be Sampled: This should include any AO or CO limits the facility may be under

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 from Outfall D-001 to St. Johns River (WBID 2213G). Such discharge shall be limited and monitored by the permittee as specified below and reported in accordance with condition I.C.11:

			Effluent Limitations				Monitoring Requirements			
Parameter	Units	Max/Min	Annual Average	Monthly Average	Weekly Average	Single Sample	Monitoring Frequency	Sample Type	Monitoring Location Site Number	Notes
Total Organic Nitrogen, as N	mg/L	Maximum	Report	-	-	Report	Quarterly	24-hour flow proportioned composite	EFD-1	See Cond. I.A.12 & 13
Ortho-phosphorous, as P	mg/L	Maximum	Report	-	-	Report	Quarterly	Grab and filtered	EFD-1	See Cond. I.A.12
Total Phosphorous, as P	mg/L	Maximum	Report	-	-	Report	Quarterly	24-hour flow proportioned composite	EFD-1	See Cond. I.A.12 & 13
Benthic Monitoring	See Permit Condition I.A.12									
Chronic Whole Effluent Toxicity	See Permit Condition I.A.11								EFD-1	

I.A.

3. Hourly measurement of pH and total residual chlorine for disinfection during the period of required operator attendance may be substituted for continuous measurement. *[Chapter 62-601, Figure 2]*

4. Recording flow meters and totalizers shall be utilized to measure flow and calibrated at least annually. *[62-601.200(17) and .500(6)]*

5. **The arithmetic mean of the monthly fecal coliform values collected during an annual period shall not exceed 200 per 100 mL of effluent sample. The geometric mean of the fecal coliform values for a minimum of 10 samples of effluent each collected on a separate day during a period of 30 consecutive days (monthly) shall not exceed 200 per 100 mL of sample. No more than 10 percent of the samples collected (the 90th percentile value) during a period of 30 consecutive days shall exceed 400 fecal coliform values per 100 mL of sample. Any one sample shall not exceed 800 fecal coliform values per 100 mL of sample. Note: To report the 90th percentile value, list the fecal coliform values obtained during the month in ascending order. Report the value of the sample that corresponds to the 90th percentile (multiply the number of samples by 0.9). For example, for 30 samples, report the corresponding fecal coliform number for the 27th value of ascending order.** ***[62-600.440(4)(c)]***

6. **A minimum of 0.5 mg/L total residual chlorine must be maintained for a minimum contact time of 15 minutes based on peak hourly flow.** ***[62-600.440(5)(b) and 62-610.568(3)]***

7. **The monthly average effluent total suspended solids concentrations shall not exceed 15% of the respective influent values (85% removal).** ***[62-620.620(1)(o) and (3)]***

8. **The average of DO level shall not be less than 5.0 mg/L in a 24-hour period and shall never be less than 4.0 mg/L. Normal daily and seasonal fluctuations above these levels shall be maintained. The lower St. Johns River has an SSAC for DO in accordance with the Lower St. Johns River Basin Management Action Plan (BMAP) adopted on October 10, 2008.** ***[62-302.530(30)]***

9. **The permittee, Clay County Utility Authority, shall meet the aggregate cap through collectively managing the total nitrogen loads from each individual Clay County Utility Authority's facilities (Miller Street WWTF - FL0025151, Fleming Island WWTF-FL0043834, and Fleming Oaks WWTF -FL0032875), which are listed in the Clay County Utility Authority - Aggregated Total Nitrogen permit (Permit ID: FL0629006). The monthly mass load and annual mass load of total nitrogen shall be calculated as follows:**

- Monthly Mass Load (WL)

$$\text{ML (Lbs/month)} = \text{(Flow (MG/Month) x TN } \left(\frac{mg}{L}\right) \text{ x 8.34 } \left(\frac{L}{MG}\right)\left(\frac{Lbs}{mg}\right)$$

Where:

ML = Monthly mass load of total nitrogen; (Lbs/month)

Flow = Total volume of effluent discharged from D-001/D-SUM in a given month (million gallons (MG))

TN = Monthly average concentration of TN collected at EFD-1, (mg/L)

- Annual Mass Load

The annual mass load is computed using a rolling twelve (12) – month period. The calculation shall be the sum of the twelve most recent monthly mass loadings of total nitrogen starting from the second month following permit issuance.

10. **The Florida water quality criteria and standards shall not be violated as a result of the discharge.** ***[62-620.320(9)] & [62-302.530]***

11. The permittee shall comply with the following requirements to evaluate chronic whole effluent toxicity of the discharge from outfall D-001.

    a. **Effluent Limitation**

        (1) **Whole effluent chronic toxicity shall not result in an Inhibition Concentration 25% (IC_{25}) less than 100% effluent in any test. [Rule 62-302.530(61), as defined in 62-302.200(14) FAC.]**

        (2) **Whole effluent acute toxicity shall not result in a 96-hour LC_{50} less than 100% effluent in any test. [Rule 62-302.500(1)(a)4., F.A.C.]**

    b. **Monitoring Frequency**

        (1) **Routine toxicity tests shall be conducted once every six months, starting within 6 months of the most recent test, and lasting for the duration of the 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%, 75%, 50%, 25%, and 12.5% 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.**

12. **The permittee shall initiate regular monitoring of the segment of the St. Johns River near the outfall for maintaining data on the impact of the discharge to the river sediments and associated benthic communities near the outfall in the surface water body. Monitoring shall be on a yearly basis and shall coincide with the 2nd quarterly nutrient and stream monitoring events for the facility effluent discharge.**

The test sites in the Fifth Year Inspection bracketed the outfall approximately 100 meters north and south and were parallel with the end of the pipe, approximately 900 to 1000 feet from the western shoreline of the St. Johns River. The reference site chosen during the Fifth Year Inspection is located across the river off Mandarin Point, between the Northwest point of Mandarin Point and Marker number "11", approximately 900 to 1000 feet from the shoreline.

The monitoring sites are described as follows:

SAMPLE SITE	STORET SITE	LOCATION
Site No. 1	20030566	North (100 m, downstream) of POD
Site No. 2	20030567	South (100 m, upstream) of POD
Reference Site	20030504	Mandarin Point, St. Johns River

Three replicate sediment samples will be collected at each site noted above using a Ponar dredge and combined to form one composite sample. The sample shall be screened using a U.S. Standard No. 30 sieve and benthic macroinvertebrates shall be identified. The composite sample shall be analyzed for total solids, volatile solids and particle size distribution.

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An annual report of the analyses shall be submitted to the Department along with the 1st quarter nutrient and stream monitoring results. The laboratory analyses shall also include field notes describing the color, texture, or any other qualitative description of the sediments, and other pertinent information. The results of the benthic monitoring shall be submitted to the Northeast District Office. *[62-302.530(11)]*

13. The Permittee shall conduct regular monitoring of the segments of the tributaries of St. Johns River near the outfall, D-001, for maintaining data on the impact of the discharge to the water quality of the surface water body. The monitoring locations and schedule are specified in the Clay County Utility Authority – Aggregate TMDL TN permit (Permit ID; FL0629006). The information provided is part of the on-going TMDL – BMAP study for the St. Johns River. Monitoring shall coincide with the nutrient monitoring of the facility's effluent discharge as described in I.A.1 above

MILLER STREET WWTP –FACILITY SUMMARY – FL0025151 –AUGUST - 2013

PART I: Continued

Receiving Waters:	Classification (indicate whether fresh or marine):
St. John's River	Class III marine waters (WBID 2213G)

Toxicity Test Requirements (routine and/or additional test language, test species, salinity adjustment, etc.):

IC25 CHRONIC & ACUTE 96-HR LC-50 Whole Effluent Toxicity (WET) .:
See I.A.11. on page 7 of this report.

Ceriodaphnia dubia (Routine)
Pimephales promelas (Routine)

Ceriodaphnia dubia (Additional)
Pimephales promelas (Additional)

Facility is operating under an approved WET correction plan.

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

No Consent Orders for effluent parameters or operations. Two SFCO's for Sanitary Sewer Overflows (SSO's) outside the WWTP property.

No AO's.

Facility Mixing Zone Details (if applicable): None currently.

Permittee is actively working with NED permitting staff on a mixing zone for toxicity. Permittee is doing a mixing zone study.

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

Date	Parameter and Units	Limit	Result
Feb.-2013	**IC25 Statre 7-day CHR Ceriodaphnia**	**100% (MIN) ****	**70.44%**
Nov.-2012	**IC25 Statre 7-day CHR Ceriodaphnia**	**100% (MIN) ****	**79.77%**

Facility had elevated TSS in its reclaimed water sample but Turbidity levels were low – August-2012.

**** Facility is operating under an approved WET Correction Plan and submits status reports on a quarterly basis.**

MILLER STREET WWTP –FACILITY SUMMARY – FL0025151 –AUGUST - 2013

Describe previous FYI and WQBEL study:

i) The Third-Year inspection was conducted on November 13, 2006 for the effluent discharge through Outfall D-001; the result is summarized following:

(1) Results of the Water Chemistry:

- Total residual chlorine and total ammonia were not detected in the bioassay sample in the laboratory. The total ammonia concentration in the sample collected and preserved for chemical analysis was 0.033 mg/L. Based on the pH, salinity, and temperature of the effluent as collected, the calculated unionized ammonia concentration was < 0.02 mg/L.
- Aluminum, copper, iron, and zinc were detected in the effluent at levels that comply with Class III criteria (62-302.530, F.A.C). Atrazine, nickel, and silver were detected between the laboratory method detection limits (MDL) and practical quantitation limits (PQL).

(2) Toxicity Test Result:

The effluent sample collected from D-001 on November 13, 2006 was not acutely toxic to either test species during the acute screen 48-hour bioassays.

+ *Ceriodaphnia dubia* 48-hr acute screening bioassay – LC50 > 100%, 0% mortality in 100% sample at 48 hours

+ *Cyprinella leedsi* 48-hr acute screening bioassay – LC50 > 100%, 0% mortality* in 100% sample at 48 hours

(3) Algal Growth Potential:

- The effluent Algal Growth Potential (AGP) was 408 mg dry wt/L of the unicellular green alga, *Pseudokirchneriella subcapitata*, formerly known as *Selenastrum capricornutum*. Raschke and Shultz (1987) found that AGP values above 5.0 mg dry wt/L represent a "problem" threshold for fresh receiving waters.

- The effluent Algal Growth Potential (AGP) was 810 mg dry wt/L of the saltwater species *Dunaliella tertiolecta*. Raschke and Shultz found that AGP values above 10.0 mg dry wt/L represent a "problem" threshold for marine receiving waters.

Technology-based Effluent Limitations (TBEL's) & Water Quality Based Effluent Limitation (WQBEL)

See excerpt from the permit fact sheet at the end the end of this report – Pages 11 & 12.

Describe previous or current Enforcement Actions (including WLs):

None in last two years directly associated with this WWTP's effluent or operation. There were SFCO's regarding the sewer collection system serving the Miller street WWTP.

Describe any violations or problems noted in previous inspection:

Inspection conducted on 05/16/2012. Facility rated as being in-compliance. Several sampling issues were noted and the operator fixed them.

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

From graphs on PCS from 01/2008 to 05/2013 the following comments can be made: Effluent flow is down around 40% since mid-2011 - probably due to increased reuse; effluent dissolved oxygen has increased slightly; effluent total-nitrogen mass is down by over 50%; effluent fecal coliform is lower since mid-2011.

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

Facility has been testing the use of peroxyacetic acid as a substitute for sodium hypochlorite for the disinfection of the effluent. It is hoped that the use of PAA will eliminate any toxicity in the WWTP effluent caused by the use of chlorine.

Technology-based Effluent Limitations (TBEL's) & Water Quality Based Effluent Limitation (WQBEL)

(a) Technology-Based Effluent Limitations (TBELs)

The Miller Street WWTF, a municipal wastewater treatment facility, is a category of discharger for which technology-based effluent limits have been promulgated by federal and state regulations. These regulations are performance standards that constitute all known available and reasonable assurance of prevention, control, and treatment for municipal wastewater.

The limitations and conditions of the CBOD5, TSS, and pH have been developed to comply with the technology-based standards of the Clean Water Act.

(b) Water Quality Based Effluent Limitation (WQBEL – Level I)

(i) Dissolved Oxygen: In according to the data shown in Table 2, there is no evidence to show that the effluent impacts the DO level of the waterbody. Therefore, the facility is not required to increase DO level in the effluent. The DO limit in the permit is established in accordance with Rule 62-302.530(31), FAC.

(ii) Unionized Ammonia: Due to the reclassification of the receiving waterbody (from fresh water to predominated marine waters), limit of unionized ammonia concentration of 0.2 mg/L is deleted. The un-ionized ammonia fraction shall be calculated based on the total ammonia, pH, and temperature and reported on the DMR.

(iii) Total Cyanide: The Expanded Effluent Testing Data shows that the total cyanide was not detectable. Although the analyzed method was used with a MDL (method detection limit) higher the water quality criterion of 1.0 µg/L (Rule 62-302.530(24), the appropriate method and MDL/PQL were based on the water quality criterion for cyanide. In accordance with Florida Administrative Code Rule 62-4.246(7), cyanide is deemed in compliance with the water quality criterion.

(iv) Enterococci: The effluent is discharged from Outfall D-001 which is located more than 20 miles away from the month of the river and coastal recreation waters which are marine coastal waters. Therefore, Enterococci limits and monitor are not recommended.

(v) Monitor requirements to protect waterbody in the 303(d) List:

Impaired 303(d) List

Basin	St. Johns River Above Piney Point *(Downstream/North of Outfall)*	St. Johns River Above Doctors Lake *(Basin Immediate Outfall)*	St. Johns River Above Julington Creek *(Upstream/South of Outfall)*
WBID	2213F	2213G	2213H
Impaired Parameter	Coliforms, Mercury & Nutrients	Iron, Nutrients & Cadmium	-

1. **Cadmium: Cadmium is listed as impaired parameter of the segment (WBID 2213G). However, the results of Expanded Effluent Testing Data show that maximum and average concentrations of cadmium from 3 samples were 0.36 µg/L and 0.046 µg/L, respectively. The both data are below the Florida Water Quality Criterion for Cadmium. Also the Department's 3rd Sampling Inspection reported shows concentration of Cadmium in the effluent sample was not detected at a MDL of 0.05 µg/L. There is no evidence to show that the cadmium concentration in the effluent would impact the cadmium level of the receiving waterbody. Therefore, the permittee is not required to monitor for this parameter.**
2. **Iron: Iron is an impaired parameter of the three segments of the river: WBID 2213C (outfall location), WBID 2213B (upstream of the outfall location), and WBID 2213D (downstream of the outfall location). However, the chemical data included in the third year sampling inspection report showed that the concentration of iron (131µg/L) was at a level that complied with the water quality**

standard (maximum 300 µg/L). In addition, the facility receives 100% domestic wastewater (there are no known industrial wastewater connections to the facility). There is no evidence to show that the iron concentration in the effluent is impacting the iron level of the water body. The facility will not be required to monitor for iron at this time

3. Nutrients: Concern of nutrients enrichment from the discharge is addressed by the Lower St. Johns River Basin Management Action Plan (BMAP) adopted on November 24, 2008.
4. Mercury: The Expanded Effluent Testing Data shows that the mercury level in the effluent samples were in compliance with the water quality criterion for mercury. Therefore, monitor for mercury is not recommended.
5. Coliforms: Results of effluent samples show average, mode and maximum of annual average of the fecal coliform were 11.6 #/100 mL, 5.0 #/100 mL, and 20.1 #/100 mL, respectively. The average, mode, and maximum monthly average (Geo mean) of fecal coliform were 6.0 #/100 mL, 4.0 #/100 mL and 20.3 #/100 mL, respectively. There is no sign of impact of discharge to the fecal coliform level of the receiving water. Therefore, monitoring frequency and limitation for fecal coliform are retained as they were in the previous permit.

(vi) Ambient Sampling: The Permittee shall conduct regular monitoring of the segment of the St. Johns River near the outfall, D-001 for maintaining data on the impact of the discharge to the water quality of the surface water body. The monitoring schedule is specified in the Clay County Utility Authority – Aggregate TMDL TN (Permit ID; FL0629006).

(vii) Whole Effluent Toxicity Requirements: In order to provide reasonable assurance that the discharge will not adversely affect the designated use of the receiving water, chronic whole effluent toxicity testing is required.

(viii) Macroinvertebrate: The permittee continues to monitor for macroinvertebrate communities near the WWTF outfall as defined in the existing permit for maintaining data on the impact of the discharge to the water body.

(c) Total Maximum Daily Load of Total Nitrogen:

FDEP's application of the EPA methodology to develop a SSAC for DO for the marine portion of the river between Julington Creek and the mouth of the river is detailed in the April 2006 report, Site Specific Alternative Dissolved Oxygen Criterion to Protect Aquatic Life in the Marine Portions of the Lower St. Johns River Technical Support Document. The SSAC for DO was adopted by the State and approved by EPA.

After the SSAC was approved by EPA, the Department worked with SJRWMD to remodel the river to determine the allowable nutrient load that would maintain dissolved oxygen levels above the levels established in the SSAC, and a revised TMDL was developed based on the results of that re-assessment. On September 30, 2007, EPA proposed a new TMDL based on the SSAC for DO in the marine portion of the Lower St. Johns River. After public review and comment, this TMDL was finalized.

Discharge from Miller Street WWTF is subject the effluent limitation for annual mass load of the total nitrogen (i.e., the sum of monthly mass loading of total for each month started from the first day of the second month following permit issuance through the last day of the 12th month period (rolling 12 month period)) discharge to Johns River Basin (WBID 2213G). The existing waste load allocation (WLA) or starting mass load for total nitrogen is 31,357 Kg/yr (68.985 Lbs/yr) (*Table 6, page 29 of the LSJR TMDL-BMAP*). The TMDL – BMAP allows total waste allocation of total nitrogen for WWTF is 37,235 kg/year (81,917 Lbs/yr) or 102.0 Kg/day (224.43 Lbs/day) (*Table 24, page 61 of the LSJR TMDL-BMAP*). Thus, the WWT gains 6,981.6 Kg/yr (15,359.5 Lbs/yr) or 18.75 % of WLA for total nitrogen discharge to St. Johns River.

The permittee, CCUA, may not need to meet the waste allocation limit of TMDL–BMAP for TN, but shall meet the aggregate cap through collectively managing the total nitrogen loads of each individual CCUA's facilities listed the Clay County Utility Authority - Aggregated Total Nitrogen (Permit ID: FL0626009) which will be issued in simultaneously or prior to issuance of this permit.

PART II: Sampling Event Information	
Date(s) sample collected: October 7, 2013 - planned	Sampler(s): Eesa Ali, Sharon Piltz
Temperature (Deg C):	pH (SU):
Dissolved Oxygen (mg/L):	Conductivity (umhos/cm):
Total Residual Chlorine (mg/L):	Total Residual Chlorine - after Disinfection (mg/L):
Method of Chlorination:	Method of De-chlorination:
Flow During Sample Collection for each outfall(MGD):	
Mean Flow for each outfall for previous 12 months based on sampling date (If samples are taken on more than one day, indicate Mean Flow for each day):	
Describe Discharge during Sampling Event: ☐ Continuous ☐ Intermittent ☐ Seasonal ☐ Rainfall Dependent ☐ Other, please specify	
Describe any conditions, difficulties or abnormal events that occurred during the sample collection and any other additional comments here:	

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.floridadep.org/labs/sop/index.htm and/or http://www.floridadep.org/labs/qa/index.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. Exceedances of Water Quality Criteria may constitute violations of specific provisions of Chapter 62-302 (F.A.C.) and/ or 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 a violation of 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 a violation of 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 a violation of 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 a violation of 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.

(8) 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	Components	Result	Remark	Units	MDL	PQL
10/7/2013 9:40	Miller St WWTF 3YI EFF-1 GRAB	Overflow	Fecal Coliforms-Membrane Filter	31	B	cfu/100 mL	1.6	
10/7/2013 9:40	Miller St WWTF 3YI EFF-1 GRAB	Metals	Iron	240		ug/L	30	120
10/7/2013 9:40	Miller St WWTF 3YI EFF-1 GRAB	Metals	Nickel	2.31		ug/L	0.25	1
10/7/2013 9:40	Miller St WWTF 3YI EFF-1 GRAB	Metals	Sodium	115		mg/L	0.5	2
10/7/2013 9:40	Miller St WWTF 3YI EFF-1 GRAB	Metals	Aluminum	8.6	I	ug/L	5	20
10/7/2013 9:40	Miller St WWTF 3YI EFF-1 GRAB	Metals	Magnesium	15.7		mg/L	0.04	0.16
10/7/2013 9:40	Miller St WWTF 3YI EFF-1 GRAB	Metals	Cadmium	0.050	U	ug/L	0.05	0.2
10/7/2013 9:40	Miller St WWTF 3YI EFF-1 GRAB	Metals	Chromium	0.30	U	ug/L	0.3	1.2
10/7/2013 9:40	Miller St WWTF 3YI EFF-1 GRAB	Metals	Potassium	13.3		mg/L	0.3	1.2
10/7/2013 9:40	Miller St WWTF 3YI EFF-1 GRAB	Metals	Lead	0.20	U	ug/L	0.2	0.8
10/7/2013 9:40	Miller St WWTF 3YI EFF-1 GRAB	Metals	Calcium	36.5		mg/L	0.075	0.3
10/7/2013 9:40	Miller St WWTF 3YI EFF-1 GRAB	Metals	Arsenic	0.28	I	ug/L	0.25	1
10/7/2013 9:40	Miller St WWTF 3YI EFF-1 GRAB	Metals	Copper	1.86		ug/L	0.5	1
10/7/2013 9:40	Miller St WWTF 3YI EFF-1 GRAB	Metals	Selenium	0.20	U	ug/L	0.2	0.8
10/7/2013 9:40	Miller St WWTF 3YI EFF-1 GRAB	Metals	Silver	0.025	U	ug/L	0.025	0.1
10/7/2013 9:40	Miller St WWTF 3YI EFF-1 GRAB	Metals	Zinc	71		ug/L	5	20
10/7/2013 9:40	Miller St WWTF 3YI EFF-1 GRAB	Nutrients	Color (true)	3.4	I	PCU	2.5	6
10/7/2013 9:40	Miller St WWTF 3YI EFF-1 GRAB	Nutrients	O-Phosphate-P	1.2		mg P/L	0.08	0.2
10/7/2013 9:40	Miller St WWTF 3YI EFF-1 GRAB	Nutrients	Chloride	110	A	mg Cl/L	2	5
10/7/2013 9:40	Miller St WWTF 3YI EFF-1 GRAB	Nutrients	Fluoride	0.46		mg F/L	0.035	0.1
10/7/2013 9:40	Miller St WWTF 3YI EFF-1 GRAB	Nutrients	Organic Carbon	6.2	A	mg C/L	0.5	1
10/7/2013 9:40	Miller St WWTF 3YI EFF-1 GRAB	Nutrients	Sulfate	230	A	mg SO4/L	2	5
10/7/2013 9:40	Miller St WWTF 3YI EFF-1 GRAB	Nutrients	Alkalinity	21	A	mg CaCO3/L	0.65	2.5
10/7/2013 9:40	Miller St WWTF 3YI EFF-1 GRAB	Pesticides	Simazine	0.0097	U	ug/L	0.0097	0.039
10/7/2013 9:40	Miller St WWTF 3YI EFF-1 GRAB	Pesticides	Parathion Ethyl	0.019	U	ug/L	0.019	0.077
10/7/2013 9:40	Miller St WWTF 3YI EFF-1 GRAB	Pesticides	Chlorpyrifos Methyl	0.0097	U	ug/L	0.0097	0.039
10/7/2013 9:40	Miller St WWTF 3YI EFF-1 GRAB	Pesticides	Parathion Methyl	0.0097	U	ug/L	0.0097	0.039
10/7/2013 9:40	Miller St WWTF 3YI EFF-1 GRAB	Pesticides	Phorate	0.0048	U	ug/L	0.0048	0.019

Date Sampled	Field ID	Analysis Group	Components	Result	Remark	Units	MDL	PQL
10/7/2013 9:40	Miller St WWTF 3YI EFF-1 GRAB	Pesticides	Ethoprop	0.0048	U	ug/L	0.0048	0.019
10/7/2013 9:40	Miller St WWTF 3YI EFF-1 GRAB	Pesticides	Ametryn	0.0097	U	ug/L	0.0097	0.039
10/7/2013 9:40	Miller St WWTF 3YI EFF-1 GRAB	Pesticides	Alachlor	0.058	U	ug/L	0.058	0.23
10/7/2013 9:40	Miller St WWTF 3YI EFF-1 GRAB	Pesticides	Diazinon	0.0097	U	ug/L	0.0097	0.039
10/7/2013 9:40	Miller St WWTF 3YI EFF-1 GRAB	Pesticides	Mevinphos	0.0097	U	ug/L	0.0097	0.039
10/7/2013 9:40	Miller St WWTF 3YI EFF-1 GRAB	Pesticides	Chlorpyrifos Ethyl	0.0097	U	ug/L	0.0097	0.039
10/7/2013 9:40	Miller St WWTF 3YI EFF-1 GRAB	Pesticides	Fenamiphos	0.029	U	ug/L	0.029	0.12
10/7/2013 9:40	Miller St WWTF 3YI EFF-1 GRAB	Pesticides	Metolachlor	0.058	U	ug/L	0.058	0.23
10/7/2013 9:40	Miller St WWTF 3YI EFF-1 GRAB	Pesticides	Fonofos	0.013	U	ug/L	0.013	0.052
10/7/2013 9:40	Miller St WWTF 3YI EFF-1 GRAB	Pesticides	Butylate	0.019	U	ug/L	0.019	0.077
10/7/2013 9:40	Miller St WWTF 3YI EFF-1 GRAB	Pesticides	Hexazinone	0.029	U	ug/L	0.029	0.12
10/7/2013 9:40	Miller St WWTF 3YI EFF-1 GRAB	Pesticides	Metribuzin	0.019	U	ug/L	0.019	0.077
10/7/2013 9:40	Miller St WWTF 3YI EFF-1 GRAB	Pesticides	Prometryn	0.019	U	ug/L	0.019	0.077
10/7/2013 9:40	Miller St WWTF 3YI EFF-1 GRAB	Pesticides	Ethion	0.0097	U	ug/L	0.0097	0.039
10/7/2013 9:40	Miller St WWTF 3YI EFF-1 GRAB	Pesticides	Malathion	0.0097	U	ug/L	0.0097	0.039
10/7/2013 9:40	Miller St WWTF 3YI EFF-1 GRAB	Pesticides	Atrazine	0.029	U	ug/L	0.029	0.12
10/7/2013 9:40	Miller St WWTF 3YI EFF-1 GRAB	Pesticides	Azinphos Methyl	0.019	U	ug/L	0.019	0.077
10/7/2013 9:40	Miller St WWTF 3YI EFF-1 GRAB	Pesticides	Bromacil	0.039	U	ug/L	0.039	0.15
10/7/2013 9:40	Miller St WWTF 3YI EFF-1 GRAB	Pesticides	Norflurazon	0.029	U	ug/L	0.029	0.12
10/7/2013 9:40	Miller St WWTF 3YI EFF-1 GRAB	Pesticides	Naled	0.039	U	ug/L	0.039	0.15
10/7/2013 9:40	Miller St WWTF 3YI EFF-1 GRAB	Pesticides	Metalaxyl	0.039	U	ug/L	0.039	0.15
10/7/2013 9:40	Miller St WWTF 3YI EFF-1 GRAB	Priority Organic Pollutants	2,4-Dichlorophenol	0.97	U	ug/L	0.97	3.9
10/7/2013 9:40	Miller St WWTF 3YI EFF-1 GRAB	Priority Organic Pollutants	2,4-Dimethylphenol	9.7	U	ug/L	9.7	39
10/7/2013 9:40	Miller St WWTF 3YI EFF-1 GRAB	Priority Organic Pollutants	2,4-Dinitrotoluene	0.97	U	ug/L	0.97	3.9
10/7/2013 9:40	Miller St WWTF 3YI EFF-1 GRAB	Priority Organic Pollutants	Anthracene	0.19	U	ug/L	0.19	0.78
10/7/2013 9:40	Miller St WWTF 3YI EFF-1 GRAB	Priority Organic Pollutants	Bis(2-chloroethoxy)methane	0.97	U	ug/L	0.97	3.9
10/7/2013 9:40	Miller St WWTF 3YI EFF-1 GRAB	Priority Organic Pollutants	2,4-Dinitrophenol	15	UJ	ug/L	15	58
10/7/2013 9:40	Miller St WWTF 3YI EFF-1 GRAB	Priority Organic Pollutants	4-Bromophenyl phenyl ether	0.97	U	ug/L	0.97	3.9
10/7/2013 9:40	Miller St WWTF 3YI EFF-1 GRAB	Priority Organic Pollutants	Benzo(a)anthracene	0.19	U	ug/L	0.19	0.78
10/7/2013 9:40	Miller St WWTF 3YI EFF-1 GRAB	Priority Organic Pollutants	Benzo(b)fluoranthene	0.19	U	ug/L	0.19	0.78
10/7/2013 9:40	Miller St WWTF 3YI EFF-1 GRAB	Priority Organic Pollutants	Nitrobenzene	1.9	U	ug/L	1.9	7.8

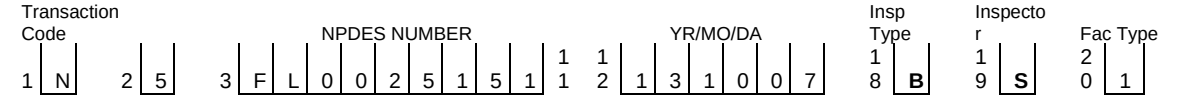
Date Sampled	Field ID	Analysis Group	Components	Result	Remark	Units	MDL	PQL
10/7/2013 9:40	Miller St WWTF 3YI EFF-1 GRAB	Priority Organic Pollutants	Phenol	0.97	U	ug/L	0.97	3.9
10/7/2013 9:40	Miller St WWTF 3YI EFF-1 GRAB	Priority Organic Pollutants	4-Chloro-3-methylphenol	0.97	U	ug/L	0.97	3.9
10/7/2013 9:40	Miller St WWTF 3YI EFF-1 GRAB	Priority Organic Pollutants	4-Nitrophenol	15	U	ug/L	15	58
10/7/2013 9:40	Miller St WWTF 3YI EFF-1 GRAB	Priority Organic Pollutants	Benzo(k)fluoranthene	0.19	U	ug/L	0.19	0.78
10/7/2013 9:40	Miller St WWTF 3YI EFF-1 GRAB	Priority Organic Pollutants	Bis(2-chloroisopropyl)ether	2.9	U	ug/L	2.9	12
10/7/2013 9:40	Miller St WWTF 3YI EFF-1 GRAB	Priority Organic Pollutants	Hexachlorobutadiene	2.9	U	ug/L	2.9	12
10/7/2013 9:40	Miller St WWTF 3YI EFF-1 GRAB	Priority Organic Pollutants	Indeno(1,2,3-cd)pyrene	0.19	U	ug/L	0.19	0.78
10/7/2013 9:40	Miller St WWTF 3YI EFF-1 GRAB	Priority Organic Pollutants	Isophorone	0.97	U	ug/L	0.97	3.9
10/7/2013 9:40	Miller St WWTF 3YI EFF-1 GRAB	Priority Organic Pollutants	Pyrene	0.19	U	ug/L	0.19	0.78
10/7/2013 9:40	Miller St WWTF 3YI EFF-1 GRAB	Priority Organic Pollutants	2-Nitrophenol	0.97	U	ug/L	0.97	3.9
10/7/2013 9:40	Miller St WWTF 3YI EFF-1 GRAB	Priority Organic Pollutants	Bis(2-ethylhexyl)phthalate	1.9	U	ug/L	1.9	7.8
10/7/2013 9:40	Miller St WWTF 3YI EFF-1 GRAB	Priority Organic Pollutants	Dibenzo(a,h)anthracene	0.19	U	ug/L	0.19	0.78
10/7/2013 9:40	Miller St WWTF 3YI EFF-1 GRAB	Priority Organic Pollutants	Naphthalene	0.19	U	ug/L	0.19	0.78
10/7/2013 9:40	Miller St WWTF 3YI EFF-1 GRAB	Priority Organic Pollutants	Butyl benzyl phthalate	0.97	U	ug/L	0.97	3.9
10/7/2013 9:40	Miller St WWTF 3YI EFF-1 GRAB	Priority Organic Pollutants	Fluorene	0.19	U	ug/L	0.19	0.78
10/7/2013 9:40	Miller St WWTF 3YI EFF-1 GRAB	Priority Organic Pollutants	Hexachlorobenzene	0.97	U	ug/L	0.97	3.9
10/7/2013 9:40	Miller St WWTF 3YI EFF-1 GRAB	Priority Organic Pollutants	2-Methyl-4,6-dinitrophenol	2.9	U	ug/L	2.9	12
10/7/2013 9:40	Miller St WWTF 3YI EFF-1 GRAB	Priority Organic Pollutants	3,3'-Dichlorobenzidine	39	U	ug/L	39	160
10/7/2013 9:40	Miller St WWTF 3YI EFF-1 GRAB	Priority Organic Pollutants	Acenaphthene	0.19	U	ug/L	0.19	0.78
10/7/2013 9:40	Miller St WWTF 3YI EFF-1 GRAB	Priority Organic Pollutants	Acenaphthylene	0.19	U	ug/L	0.19	0.78
10/7/2013 9:40	Miller St WWTF 3YI EFF-1 GRAB	Priority Organic Pollutants	Bis(2-chloroethyl)ether	0.97	U	ug/L	0.97	3.9
10/7/2013 9:40	Miller St WWTF 3YI EFF-1 GRAB	Priority Organic Pollutants	Di-n-butyl phthalate	0.97	U	ug/L	0.97	3.9
10/7/2013 9:40	Miller St WWTF 3YI EFF-1 GRAB	Priority Organic Pollutants	Dimethyl phthalate	0.97	U	ug/L	0.97	3.9
10/7/2013 9:40	Miller St WWTF 3YI EFF-1 GRAB	Priority Organic Pollutants	Hexachloroethane	2.9	U	ug/L	2.9	12
10/7/2013 9:40	Miller St WWTF 3YI EFF-1 GRAB	Priority Organic Pollutants	N-Nitrosodi-n-propylamine	1.9	U	ug/L	1.9	7.8
10/7/2013 9:40	Miller St WWTF 3YI EFF-1 GRAB	Priority Organic Pollutants	N-Nitrosodiphenylamine/ Diphenylamine	2.9	U	ug/L	2.9	12
10/7/2013 9:40	Miller St WWTF 3YI EFF-1 GRAB	Priority Organic Pollutants	Pentachlorophenol	2.9	U	ug/L	2.9	12
10/7/2013 9:40	Miller St WWTF 3YI EFF-1 GRAB	Priority Organic Pollutants	2,4,6-Trichlorophenol	0.97	U	ug/L	0.97	3.9
10/7/2013 9:40	Miller St WWTF 3YI EFF-1 GRAB	Priority Organic Pollutants	2,6-Dinitrotoluene	0.97	U	ug/L	0.97	3.9
10/7/2013 9:40	Miller St WWTF 3YI EFF-1 GRAB	Priority Organic Pollutants	2-Chloronaphthalene	0.97	U	ug/L	0.97	3.9
10/7/2013 9:40	Miller St WWTF 3YI EFF-1 GRAB	Priority Organic Pollutants	4-Chlorophenyl phenyl ether	1.9	U	ug/L	1.9	7.8

Date Sampled	Field ID	Analysis Group	Components	Result	Remark	Units	MDL	PQL
10/7/2013 9:40	Miller St WWTF 3YI EFF-1 GRAB	Priority Organic Pollutants	Benzo(g,h,i)perylene	0.19	U	ug/L	0.19	0.78
10/7/2013 9:40	Miller St WWTF 3YI EFF-1 GRAB	Priority Organic Pollutants	Chrysene	0.19	U	ug/L	0.19	0.78
10/7/2013 9:40	Miller St WWTF 3YI EFF-1 GRAB	Priority Organic Pollutants	Hexachlorocyclopentadiene	2.9	U	ug/L	2.9	12
10/7/2013 9:40	Miller St WWTF 3YI EFF-1 GRAB	Priority Organic Pollutants	Phenanthrene	0.19	U	ug/L	0.19	0.78
10/7/2013 9:40	Miller St WWTF 3YI EFF-1 GRAB	Priority Organic Pollutants	1,2,4-Trichlorobenzene	0.97	U	ug/L	0.97	3.9
10/7/2013 9:40	Miller St WWTF 3YI EFF-1 GRAB	Priority Organic Pollutants	2-Chlorophenol	0.97	U	ug/L	0.97	3.9
10/7/2013 9:40	Miller St WWTF 3YI EFF-1 GRAB	Priority Organic Pollutants	Benzidine	97	U	ug/L	97	390
10/7/2013 9:40	Miller St WWTF 3YI EFF-1 GRAB	Priority Organic Pollutants	Benzo(a)pyrene	0.19	U	ug/L	0.19	0.78
10/7/2013 9:40	Miller St WWTF 3YI EFF-1 GRAB	Priority Organic Pollutants	Di-n-octyl phthalate	0.97	U	ug/L	0.97	3.9
10/7/2013 9:40	Miller St WWTF 3YI EFF-1 GRAB	Priority Organic Pollutants	Diethyl phthalate	0.97	U	ug/L	0.97	3.9
10/7/2013 9:40	Miller St WWTF 3YI EFF-1 GRAB	Priority Organic Pollutants	Fluoranthene	0.19	U	ug/L	0.19	0.78
10/7/2013 9:40	Miller St WWTF 3YI EFF-1 GRAB	Priority Organic Pollutants	N-Nitrosodimethylamine	1.9	U	ug/L	1.9	7.8
10/7/2013 9:40	Miller St WWTF 3YI EFF-1 GRAB	Field Parameter	Dissolved Oxygen	2.33		mg/L		
10/7/2013 9:40	Miller St WWTF 3YI EFF-1 GRAB	Field Parameter	Temperature	26.33		C		
10/7/2013 9:40	Miller St WWTF 3YI EFF-1 GRAB	Field Parameter	Specific Conductance	913		umhos/cm		
10/7/2013 9:40	Miller St WWTF 3YI EFF-1 GRAB	Field Parameter	pH	6.40				
10/7/2013 8:00	Miller St WWTF 3YI EFF-1 Comp	Chlorophyll/Grain Size/BOD	Biochemical Oxygen Demand-5 Day,N-Inhib	1.9	IQ	mg/L	0.2	2
10/7/2013 8:00	Miller St WWTF 3YI EFF-1 Comp	Toxicology	Bioassay-Chron-Def-FW-Fish, NOEC	100		NOEC		
10/7/2013 8:00	Miller St WWTF 3YI EFF-1 Comp	Toxicology	Bioassay-Chron-Def-FW-C.dubia, NOEC	75.0		NOEC		
10/7/2013 8:00	Miller St WWTF 3YI EFF-1 Comp	Toxicology	Bioassay-Chron-Def-FW-C.dubia, IC25	94.3		IC25		
10/7/2013 8:00	Miller St WWTF 3YI EFF-1 Comp	Toxicology	Bioassay-Chron-Def-FW-Fish, IC25	100	L	IC25		
10/7/2013 8:00	Miller St WWTF 3YI EFF-1 Comp	Nutrients	Ammonia-N	0.078		mg N/L	0.002	0.005
10/7/2013 8:00	Miller St WWTF 3YI EFF-1 Comp	Nutrients	NO2NO3-N	0.45		mg N/L	0.008	0.02
10/7/2013 8:00	Miller St WWTF 3YI EFF-1 Comp	Nutrients	Kjeldahl Nitrogen	0.91		mg N/L	0.08	0.2
10/7/2013 8:00	Miller St WWTF 3YI EFF-1 Comp	Nutrients	Total-P	2.8		mg P/L	0.025	0.25
10/7/2013 8:00	Miller St WWTF 3YI EFF-1 Comp	Nutrients	TSS	2	I	mg/L	2	10
10/7/2013 8:00	Miller St WWTF 3YI EFF-1 Comp	Field Parameter	Total Residual Chlorine	0.01		mg/L		
10/7/2013 8:00	Miller St WWTF 3YI EFF-1 Comp	Field Parameter	Temperature	3.4		C		
10/7/2013 9:30	Field Blank	Metals	Potassium	0.30	U	mg/L	0.3	1.2
10/7/2013 9:30	Field Blank	Metals	Copper	0.50	U	ug/L	0.5	1
10/7/2013 9:30	Field Blank	Metals	Chromium	0.30	U	ug/L	0.3	1.2

Date Sampled	Field ID	Analysis Group	Components	Result	Remark	Units	MDL	PQL
10/7/2013 9:30	Field Blank	Metals	Magnesium	0.040	U	mg/L	0.04	0.16
10/7/2013 9:30	Field Blank	Metals	Calcium	0.075	U	mg/L	0.075	0.3
10/7/2013 9:30	Field Blank	Metals	Selenium	0.20	U	ug/L	0.2	0.8
10/7/2013 9:30	Field Blank	Metals	Zinc	5.0	U	ug/L	5	20
10/7/2013 9:30	Field Blank	Metals	Lead	0.20	U	ug/L	0.2	0.8
10/7/2013 9:30	Field Blank	Metals	Aluminum	5.0	U	ug/L	5	20
10/7/2013 9:30	Field Blank	Metals	Iron	30	U	ug/L	30	120
10/7/2013 9:30	Field Blank	Metals	Nickel	0.25	U	ug/L	0.25	1
10/7/2013 9:30	Field Blank	Metals	Silver	0.025	U	ug/L	0.025	0.1
10/7/2013 9:30	Field Blank	Metals	Sodium	0.50	U	mg/L	0.5	2
10/7/2013 9:30	Field Blank	Metals	Cadmium	0.050	U	ug/L	0.05	0.2
10/7/2013 9:30	Field Blank	Metals	Arsenic	0.25	U	ug/L	0.25	1
10/7/2013 9:30	Field Blank	Nutrients	Fluoride	0.035	UY	mg F/L	0.035	0.1
10/7/2013 9:30	Field Blank	Nutrients	O-Phosphate-P	0.004	U	mg P/L	0.004	0.01
10/7/2013 9:30	Field Blank	Nutrients	Color (true)	2.5	UY	PCU	2.5	6

The Bioassay of Miller Street Wastewater Treatment Facility effluent sampled on October 7, 9, and 11, 2013. NPDES #FL0025151.

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

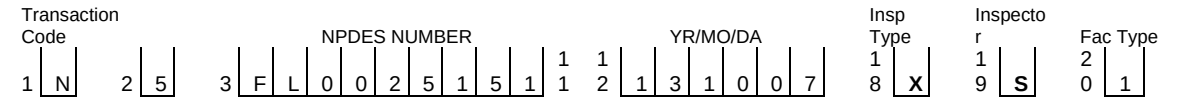


Remarks

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The Priority Pollutants Analysis of Miller Street Wastewater Treatment Facility effluent sampled on October 7, 2013. NPDES #FL0025151.

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

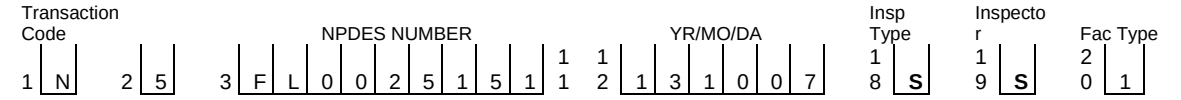


Remarks

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Biological Analyses of Miller Street Wastewater Treatment Facility effluent sampled on October 7, 2013. NPDES #FL0025151.

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



Remarks

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