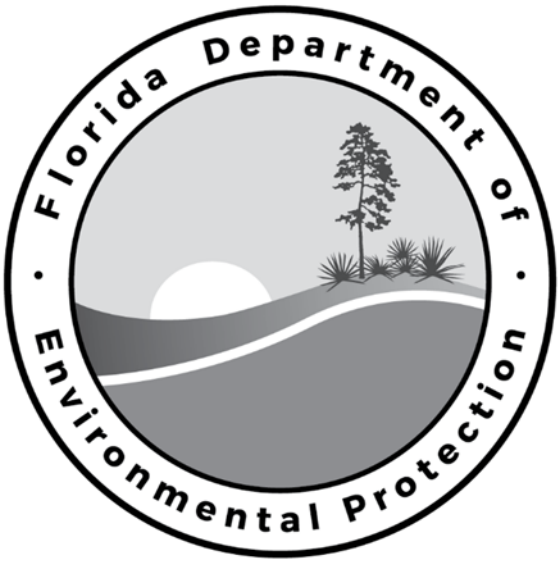


Effluent Quality Assessment of

Bunnell Wastewater Treatment Facility

Flagler County

NPDES # FL0020907

Sampled January 20, 2016

December 2016

Biology Program

FDEP Laboratory

Division of Environmental Assessment and Restoration

FDEP Laboratory Quality Manual

NELAC Certification No. E31780

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Bunnell Wastewater Treatment Facility (WWTF), 305 South Tolman Street, Bunnell, Flagler County, Florida, 32110. NPDES #FL0020907.

Facility Overview

Bunnell WWTF is an extended aeration 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, biological and chemical analyses for this facility were collected on January 20, 2016. All samples were collected from the EFA-01 NPDES sampling point (immediately after disinfection and prior to dechlorination) due to effluent going to reuse. Samples were collected by Jann Gruentzel and Patrick O'Connor (FDEP Northeast ROC) following DEP-SOP-001/01 FS 2400 Wastewater Sampling (see Appendix B).

The 48-hour acute definitive and screening toxicity tests and the algal growth potential test were performed following internal DEP SOPs TA07_01, TA07_02, and TA08_01 through TA08_09 (see Appendix B).

All field and laboratory methods followed FDEP Standard Operating Procedures (see http://www.dep.state.fl.us/labs/library/lab_sops.htm and http://www.dep.state.fl.us/water/sas/sop/sops.htm for details) and met DEP quality assurance/quality control standards (see http://www.dep.state.fl.us/water/sas/qa/index.htm). Explanations of specific methods and measurements can be found in Appendix C.

Results

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

- Receiving Waters for this facility fall within the Peninsular Nutrient Watershed Region for Numeric Nutrient Criteria (NNC). This FYI event can only provide single sample results, therefore, compliance should be determined with additional sampling events.
- Copper, fluoride and total residual chlorine were detected in the effluent at levels that comply with Class III Freshwater Quality Criteria (62-302.530, F.A.C.) and/or permitted limits. Arsenic, iron, nickel and zinc were detected between the laboratory method detection limits (MDL) and practical quantitation limits (PQL). The facility's specific conductance (1341 µmhos-cm) exceeded both the Class III Freshwater Criterion (62-302.530 (22), F.A.C) and permitted limit (≤ the greater of 1275 µmhos-cm or 1.5 X background specific conductance). Based on the facility's self-monitoring data for background specific conductance, 245 µmhos-cm reported for January 2016, the limit for the facility was ≤ 1275 µmhos-cm for that month.

Algal Growth Potential (See Table 4 and Appendix B and Appendix C)

- The effluent Algal Growth Potential (AGP) was 206 A mg dry wt/L of the unicellular green alga, *Pseudokirchneriella subcapitata*, formerly known as *Selenastrum capricornutum*. This effluent AGP result is greater than the AGP range (6.10 to 20.0 mg dry wt/L) suggested to be representative of high productivity for freshwater (Miller et al. 1978).
- Based on analytical chemistry, the ratio of total soluble inorganic nitrogen to ortho-phosphate (9.3) and the ratio of total nitrogen to total phosphorus (9.4) suggest that the effluent is nitrogen limited (Miller et al. 1978, US EPA 2000). To determine actual nutrient limitation, a limiting-nutrient algal growth potential test with associated nutrient chemistry should be performed (Miller et al. 1978).
- The AGP result, although less than the predicted values based on nutrient chemistry, is sufficiently great enough to suggest that a nutrient other than nitrogen or phosphorus may be limiting algal growth.

Toxicity Test Results (See Appendix C)

- Tests were performed January 21-23, 2016.

Ceriodaphnia dubia 48-hour acute screening bioassay – LC_{50} < 100%, 100%* mortality in 100% sample at 24 hours

Ceriodaphnia dubia 48-hour acute definitive bioassay – LC_{50} > 100%, 0%* mortality in 100% dechlorinated sample at 48 hours

Cyprinella leedsi 48-hour acute screening bioassay – LC_{50} > 100%, 5%* mortality in 100% sample at 48 hours

Cyprinella leedsi 48-hour acute definitive bioassay – LC_{50} > 100%, 0%* mortality in 100% dechlorinated sample at 48 hours

*NOTE: In a 48-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 sample was acutely toxic to *Ceriodaphnia dubia* in the test sample that was not dechlorinated. The cause of toxicity was attributed to the residual chlorine in the sample.
- Total residual chlorine (TRC) (0.87 mg/L) was detected in the effluent sample received (LIMS sample #1764580) in the laboratory. An aliquot of this sample was dechlorinated by the addition of sodium thiosulfate (0.025 N) at a rate of 0.95 mL per liter of sample to neutralize the chlorine. Bioassays were performed on the dechlorinated aliquot in addition to the bioassays performed on the original sample. The same concentration of sodium thiosulfate was added to the dechlorinated test controls. The purpose of the dechlorinated test controls was to confirm that there was no adverse effect of adding sodium thiosulfate to the sample. There was no mortality in the dechlorinated controls of either test species.

Conclusion

The effluent sample collected from the EFA-01 NPDES sampling point for this facility on January 20, 2016 was acutely toxic to the *Ceriodaphnia dubia* test organisms but did not show acute toxicity to the *Cyprinella leedsi* test organisms during the 48-hour acute definitive bioassays. The cause of toxicity was attributed to the total residual chlorine in the effluent. The effluent AGP result is significantly greater than the AGP range (6.10 - 20.0 mg dry wt/L) representative of high productivity for freshwater (Miller et al. 1978). This result indicates that the effluent has the potential to contribute nutrients to the receiving water. The effluent's specific conductance exceeded both the Class III Freshwater criterion and the permitted limit. Additional effluent water quality samples collected on January 20, 2016, did not exceed any applicable water quality standards or 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.

Manahan, S. E. 1994. Environmental Chemistry, 6th edition. Lewis Publishers, USA. 811 pp

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. 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

Bunnell WWTF	Units	Class III Criteria	Effluent Permit Limits	Effluent Grab
Sample Depth	m	-	-	0.3
Temperature	C	-	-	17.53
pH	SU	6.0 - 8.5	-	6.90
Specific Conductance	µmhos/cm	≤ 1,275	≤ 1,275£	1341
Salinity	ppth	-	-	0.7
Dissolved Oxygen	% saturation	-	-	82.0
Dissolved Oxygen	mg/L	-	-	7.99
Total Residual Chlorine	mg/L	≤ 0.01	≥ 0.5 s	4.04 ¥

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

s – Single sample

£ – For this sampling event.

¥ - Collected immediately after disinfection, prior to dechlorination

Table 2. Effluent limits for EFA-1, Class III Freshwater Criteria and analytical water chemistry data.

Bunnell WWTF	Units	Class III Criteria	Effluent Permit Limits	Effluent Grab	Field Blank
Ortho-phosphate	mg P/L	-	-	1.4	0.004 U
Total Phosphorus	mg P/L	-	-	1.5	0.002 U
Total Ammonia	mg N/L	-	-	0.032	0.002 U
Un-ionized Ammonia (measured salinity)	-	≤ 0.02 s	-	0.0001 c	-
Nitrate and Nitrite	mg N/L	-	-	13	0.004 U
Total Kjeldahl Nitrogen	mg N/L	-	-	1.1	0.080 U
Organic Nitrogen	mg N/L	-	-	1.1 c	0.039 c
Total Nitrogen	mg N/L	-	-	14 c	0.042 c
Total Organic Carbon	mg C/L	-	-	12	0.50 U
Chlorophyll *a* - Corrected	µg/L	-	-	0.55 U	-
Phaeophytin	µg/L	-	-	0.40 U	-
Chlorophyll *a*	µg/L	-	-	0.40 U	-
CBOD, 5 day, N - inhibited	mg/L	-	-	0.20 UJ	-
Total Suspended Solids	mg/L	-	-	2 I	-
Turbidity	NTU	< 29 t	-	0.90	0.10 U
Color (true)	PCU	-	-	11	2.5 U
Alkalinity	mg CaCO3/L	≥ 20	-	224 A	0.65 U
Chloride	mg Cl/L	-	-	230 A	0.20 U
Fluoride	mg F/L	≤ 10.0	-	0.23	0.035 U
Sulfate	mg SO4/L	-	-	22 A	0.20 U
Microbiology					
Fecal Coliforms[1]	cfu/100 mL	≤ 400s #	≤ 800s #	2 UQ	-
Toxicity (LC50 Acute in Definitive and Screening Bioassay Tests)					
Bioassay - Water flea *(Ceriodaphnia dubia)*	% effluent	-	-	100 K	-
Bioassay - Water flea dechlorinated	% effluent	-	-	≥100	-
Bioassay - Fish *(Cyprinella leedsi)*	% effluent	-	-	≥100	-
Bioassay - Fish dechlorinated	% effluent	-	-	≥100	-

A dash (-) indicates sample/measurement was not collected or criterion/limit does not exist.
c - Value is calculated
s - Single sample
t - Shall not exceed 29 NTUs above background
A - Value reported is the mean of two or more determinations
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
Q - Sample held beyond normal holding time
U - Material analyzed for but not detected; value reported is the method detection limit
- If 10 or fewer samples are taken within a month, the single sample limit is 400 CFU (62-302.530(6), F.A.C.)
1 – Fecal coliform analysis performed by ALS Environmental, Jacksonville

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

Bunnell WWTF	Units	Effluent Grab Class III Criteria	Effluent Permit Limits	Effluent Grab	Field Blank
Hardness	mg/L	-	-	288 c	0.35 c
Aluminum	µg/L	-	-	15 U	5.0 U
Arsenic	µg/L	≤ 50	-	1.1 I	0.25 U
Cadmium	µg/L	≤ 0.592 b	-	0.15 U	0.050 U
Calcium	mg/L	-	-	103	0.075 U
Chromium, Total [g]	µg/L	≤ 205 b	-	0.90 U	0.30 U
Copper	µg/L	≤ 23 b	-	3.1	0.50 U
Iron	µg/L	≤ 1,000	-	48 I	30 U
Lead	µg/L	≤ 12.2 b	-	0.60 U	0.20 U
Magnesium	mg/L	-	-	7.41	0.040 U
Nickel	µg/L	≤ 128 b	-	1.1 I	0.25 U
Potassium	mg/L	-	-	9.0	0.30 U
Selenium	µg/L	≤ 5.0	-	0.60 U	0.20 U
Silver	µg/L	≤ 0.07	-	0.075 U	0.025 U
Sodium	mg/L	-	-	151	0.50 U
Zinc	µg/L	≤ 293 b	-	18 I	5.0 U

A dash (-) indicates sample/measurement was not collected or criterion/limit does not exist.
b - Value is calculated based on hardness, (62-302.530(3))
c - Value is calculated
g - Class III Freshwater Quality Criterion (62-302.530(19)(a), F.A.C.) is for chromium-III
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

Bunnell WWTF								
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**
Effluent Grab	*Pseudokirchneriella subcapitata*	206 A	495.2 ± 99	602 ± 120.4	535.8 ± 107.2	645 ± 129	9.3	9.4

Appendix A

Facility Summary

State of Florida

Department of Environmental Protection

Facility Introduction & Summary

BUNNELL WWTF – FL0020907 – DECEMBER 2015

PART I: Information gathered prior to sampling event

Prepared By: Edward Jamro	**Contact Number: 904-256-1617**
Facility Name (as it appears on permit): Bunnell WWTF	**Former Names: None Known**
NPDES Permit Number: FL0020907	**Permit Expiration Date: September 25, 2016**
Physical Address: 305 South Tolman Street Bunnell, Florida 32110	
District: NED	**County: Flagler**
Function of Facility: Facility is an extended aeration domestic wastewater treatment facility with an annual average permitted flow of 0.6 MGD.	
Facility Type: Domestic WWTP	**Permitted Capacity (MGD): 0.60 MGD- design The permitted capacity of the WWTF is limited to 0.499 MGD AADF per applicant request for an interim period while the flows are low.**
Mean Flow for previous 12 months for all EXTERNAL outfalls listed in permit (list date range including months): at EFD-1 – Annual Average flow = 0.115 MGD	
If applicable, Mean Flow for previous 12 months for REUSE outfall(s) (list date range including months): At EFA-1 – annual Average flow = 0.207 MGD	
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):

EFD-1 - Effluent sample point immediately after dechlorination and prior discharge to the Outfall D-001
EFA-1 - Effluent sample point immediately after disinfection and prior to dechlorination.

SWB – 1	**Station 1 - 200 yards above the outfall to determine background**
SWD – 3	**Station 3 - 200 yards below the outfall**
SWD – 4	**Station 4 - Below bend in canal where canal turns to run along SR-11**
SWD – 5	**Station 5 - Canal just before it enters Black Branch**

Description of Permitted Outfall(s):
Surface Water Discharge D-001: An existing 0.30 MGD annual average daily flow discharge to Haw Creek and Black Branch, Class III fresh waters, (WBID# 2610) through Outfall D – 001 which is approximately 100 feet in length and discharges at a depth of approximately 1.2 feet below water surface. The point of discharge D – 001 is located approximately at latitude 29°27' 51" N, longitude 81°15' 50" W.

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

To operate an existing 0.60 MGD annual average daily flow (AADF) design capacity extended aeration wastewater treatment facility (WWTF) consisting of following units:

- **Two surge pumps (with a minimum capacity of 833 GPM each and two manual bar screens (One is located before the equalization basin, and one is located before the splitter box);**
- **One flow equalization basin (120,000 gallons) and one splitter box;**
- **One Carrousel oxidation ditch (0.345 million gallon (MG), 13.4 feet water depth) and two 0.155 MG ring steel biological treatment units (BTU) each of which is divided into a 18,080-gal re-aeration zone, a 77,500-gal aeration zone, a 19,375-gal swing zone, a 18,080-gal 1st post anoxic zone, and a 21,960-gal 2nd post anoxic zone;**
- **Two clarifiers (95,000 gallons each);**
- **One aerobic digester (123,000 gallons) and one sludge holding tank (34,500 gallons);**
- **One tertiary filter (capacity of 0.6 MGD AADF);**
- **One chlorine contact chamber (18,850 gallons);**
- **One post aeration & dechlorination basin (9,000 gallons);**
- **One reuse water storage tank (0.90 MG),**

The permitted capacity of the WWTF is limited to 0.499 MGD AADF per applicant request for an interim period while the flows are low.

The wastewater biosolids are hauled to America Bioclean Services BMF, or a DEP-permitted BMF, or a DEP-permitted WWTF for final treatment and disposal.

The primary method of disposal of the effluent is reuse of reclaimed water via spray irrigation to public access reuse sites. **Surface water discharge serves as an alternative (backup) disposal method.**

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)

A. Surface Water Discharges

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 Haw Creek and Black Branch. Such discharge shall be limited and monitored by the permittee as specified below and reported in accordance with Permit Condition. The surface water discharge is used as a backup discharge to the reuse system R-001.

a. When the surface water discharge occurs, the permittee shall monitor for the parameters specified below:

			Effluent Limitations		Monitoring Requirements			
Parameter	**Units**	**Max/Min**	**Limit**	**Statistical Basis**	**Frequency of Analysis**	**Sample Type**	**Monitoring Site Number**	**Notes**
Flow to D-001	**MGD**	**Max**	**0.30**	**Annual Average**	**5 Days/Week (During Discharge)**	**Recording Flow Meter with Totalizer**	**EFD – 1**	
		Max	**Report**	**Monthly Average**				
BOD, Carbonaceous 5-day, 20ºC	**mg/L**	**Max**	**8.0**	**Annual Average**	**Bi-weekly; every 2 weeks (During Discharge)**	**8-hr FPC***	**EFD – 1**	
		Max	**8.0**	**Monthly Average**				
		Max	**16.0**	**Single Sample**				
Solids, Total Suspended	**mg/L**	**Max**	**20.0**	**Annual Average**	**Bi-weekly; every 2 weeks (During Discharge)**	**8-hr FPC***	**EFD – 1**	
		Max	**30.0**	**Monthly Average**				
		Max	**45.0**	**Weekly Average****				
		Max	**60.0**	**Single Sample**				
Solids, Total Suspended, % Removal	**percent**	**Min**	**85**	**Monthly Average**	**Bi-weekly; every 2 weeks (During Discharge)**	**Calculated**	**CAL – 1**	

			Effluent Limitations		Monitoring Requirements			
Parameter	**Units**	**Max/Min**	**Limit**	**Statistical Basis**	**Frequency of Analysis**	**Sample Type**	**Monitoring Site Number**	**Notes**
Coliform, Fecal	**#/100mL**	**Max**	**200**	**Annual Average**	**Bi-weekly; every 2 weeks (During Discharge)**	**Grab**	**EFA – 1**	
		Max	**200**	**Monthly Geometric Mean**				
		Max	**800**	**Single Sample**				
pH	**s.u.**	**Min**	**6.0**	**Single Sample**	**5 Days/Week (During Discharge)**	**Grab**	**EFD – 1**	
		Max	**8.5**	**Single Sample**				
Chlorine, Total Residual (For Disinfection)	**mg/L**	**Min**	**0.5**	**Single Sample**	**5 Days/Week (During Discharge)**	**Grab**	**EFA – 1**	
Chlorine, Total Residual (For Dechlorination)	**mg/L**	**Max**	**0.01**	**Single Sample**	**Weekly (During Discharge)**	**Grab**	**EFD – 1**	
Oxygen, Dissolved (DO)	**mg/L**	**Min**	**6.0**	**Single Sample**	**5 Days/Week (During Discharge)**	**Meter**	**EFD – 1**	
Nitrogen, Kjeldahl, Total (as N)	**mg/L**	**Max**	**2.50**	**Annual Average**	**Bi-weekly; every 2 weeks (During Discharge)**	**8-hr FPC***	**EFD – 1**	
		Max	**2.50**	**Monthly Average**				
		Max	**5.00**	**Single Sample**				
Nitrogen, Total, as N	**mg/L**	**Max**	**Report**	**Annual Average**	**Bi-weekly; every 2 weeks (During Discharge)**	**8-hr FPC***	**EFD – 1**	
		Max	**Report**	**Monthly Average**				
		Max	**Report**	**Single Sample**				
Nitrogen, Total, as N	**Lbs/mon**	**Max**	**Report**	**Monthly Total**	**Monthly**	**Calculated**	**CAL – 1**	

			Effluent Limitations		Monitoring Requirements			
Parameter	**Units**	**Max/Min**	**Limit**	**Statistical Basis**	**Frequency of Analysis**	**Sample Type**	**Monitoring Site Number**	**Notes**
	Lbs/yr	**Max**	**2740.0**	**Annual Total**				
Phosphorus, Total (as P)	**mg/L**	**Max** **Max**	**Report** **Report**	**Annual Average** **Single Sample**	**Bi-weekly; every 2 weeks (During Discharge)**	**8-hr FPC***	**EFD – 1**	
Phosphorus, Total (as P)	**lb/mon**	**Max**	**Report**	**Monthly Total**	**Monthly**	**Calculated**	**CAL – 1**	
	lb/yr	**Max**	**913.0**	**Annual Total**				
Specific Conductance (Effluent)	**µmhos/cm**	**Max**	**1275 or 1.5 x specific conductance of background**	**Single Sample**	**Monthly**	**Meter**	**EFD – 1**	
Specific Conductance (Background)	**µmhos/cm**	**Max**	**Report**	**Single Sample**	**Monthly**	**Meter**	**SWB – 1**	

Note (*):* 8-hour flow proportioned composite or flow proportioned composite samples for the time period of discharge if discharge is less than 8 hours.
***** The weekly limits are applicable when more than one sample is taken in seven (7) consecutive day period.***

b. When the surface water discharge exceeds 0.10 MGD monthly average daily flow (MADF), in addition to the limitations and monitoring requirements specified in Condition I.A.1.a above, the permittee shall monitor for the parameters specified below:

			Effluent Limitations		Monitoring Requirements			
Parameter	Units	Max/Min	Limit	Statistical Basis	Frequency of Analysis	Sample Type	Monitoring Site Number	Notes
Nitrite plus Nitrate, Total 1 det. (as N)	mg/L	Max	Report	Single Sample	Quarterly	Grab	EFD – 1	See I.A.11
Nitrogen, Organic, Total (as N)	mg/L	Max	Report	Single Sample	Quarterly	Grab	EFD – 1	See I.A.11
Nitrogen, Ammonia, Total (as N)	mg/L	Max	Report	Single Sample	Quarterly	Grab	EFD – 1	See I.A.11
Temperature (C), Water	Deg C	Max	Report	Single Sample	Quarterly	Grab	EFD – 1	See I.A.11
Nitrogen, Ammonia, Total unionized (as N)	mg/L	Max	0.024	Single Sample	Quarterly	Calculated	CAL – E	See I.A.11
Phosphate, Ortho (as P)	mg/L	Max	Report	Single Sample	Quarterly	Grab	EFD – 1	See I.A.11
Silver, Total Recoverable	ug/L	Max	0.07	Single Sample	Quarterly	Grab	EFD – 1	See I.A.11
Oxygen, Dissolved (DO)	mg/L	Min	Report	Single Sample	Quarterly	Grab	SWB – 1 SWD – 3 SWD – 4 SWD – 5	See I.A.11
pH	s.u.	Max	Report	Single Sample	Quarterly	Grab	SWB – 1 SWD – 3 SWD – 4 SWD – 5	

			Effluent Limitations		Monitoring Requirements			
Parameter	**Units**	**Max/Min**	**Limit**	**Statistical Basis**	**Frequency of Analysis**	**Sample Type**	**Monitoring Site Number**	**Notes**
Temperature (C), Water	**Deg C**	**Max**	**Report**	**Single Sample**	**Quarterly**	**Grab**	**SWB – 1 SWD – 3 SWD – 4 SWD – 5**	
BOD, Carbonaceous 5-day, 20ºC	**mg/L**	**Max**	**Report**	**Single Sample**	**Quarterly**	**Grab**	**SWB – 1 SWD – 3 SWD – 4 SWD – 5**	
Nitrogen, Total (as N)	**mg/L**	**Max**	**Report**	**Single Sample**	**Quarterly**	**Grab**	**SWB – 1 SWD – 3 SWD – 4 SWD – 5**	
Nitrogen, Ammonia, Total (as N)	**mg/L**	**Max**	**Report**	**Single Sample**	**Quarterly**	**Grab**	**SWB – 1 SWD – 3 SWD – 4 SWD – 5**	**See I.A.11**
Nitrogen, Organic, Total (as N)	**mg/L**	**Max**	**Report**	**Single Sample**	**Quarterly**	**Grab**	**SWB – 1 SWD – 3 SWD – 4 SWD – 5**	**See I.A.11**

			Effluent Limitations		Monitoring Requirements			
Parameter	Units	Max/Min	Limit	Statistical Basis	Frequency of Analysis	Sample Type	Monitoring Site Number	Notes
Nitrite plus Nitrate, Total 1 det. (as N)	mg/L	Max	Report	Single Sample	Quarterly	Grab	SWB – 1 SWD – 3 SWD – 4 SWD – 5	See I.A.11
Nitrogen, Ammonia, unionized (as N)	mg/L	Max	Report	Single Sample	Quarterly	Calculated	CAL –B CAL – D3 CAL – D4 CAL – D5	See I.A.9 & I.A.11
Phosphorus, Total (as P)	mg/L	Max	Report	Single Sample	Quarterly	Grab	SWB – 1 SWD – 3 SWD – 4 SWD – 5	See I.A.11
Phosphate, Ortho (as P)	mg/L	Max	Report	Single Sample	Quarterly	Grab	SWB – 1 SWD – 3 SWD – 4 SWD – 5	See I.A.9 & I.A.11
Coliform, Fecal	#/100mL	Max	Report	Single Sample	Quarterly	Grab	SWB – 1 SWD – 3 SWD – 4 SWD – 5	See I.A.4, & I.A.11
Chlorophyll a	mg/L	Max	Report	Single Sample	Quarterly	Grab	SWB – 1 SWD – 3 SWD – 4 SWD – 5	See I.A.11

			Effluent Limitations		Monitoring Requirements			
Parameter	**Units**	**Max/Min**	**Limit**	**Statistical Basis**	**Frequency of Analysis**	**Sample Type**	**Monitoring Site Number**	**Notes**
Specific Conductance	**mg/L**	**Max**	**Report**	**Single Sample**	**Quarterly**	**Grab**	**SWB – 1 SWD – 3 SWD – 4 SWD – 5**	**See I.A.11**
Acute Whole Effluent Toxicity, 96-hour LC50 (*Ceriodaphnia dubia* & *Cyprinella leedsi*)	**percent**	**Min**	**100**	**Single Sample**	**Semi-Annually; twice per year**	**Grab**	**EFD – 1**	**See I.A.11, & I.A.12**

3. **A recording flow meter with totalizer shall be utilized to measure flow and calibrated at least once every 12 months.** ***[62-601.200(17) and .500(6)]***
4. **The effluent limitation for the monthly geometric mean for fecal coliform is only applicable if 10 or more values are reported. If fewer than 10 values are reported, the monthly geometric mean shall be calculated and reported on the Discharge Monitoring Report.** ***[62-600.440(4)(c)]***
5. **Total residual chlorine must be maintained for a minimum contact time of 15 minutes based on peak hourly flow.** ***[62-600.440(4)(b), (5)(b), and (6)(b)]***
6. **The average of DO level shall not be less than 6.0 mg/L in a 24-hour period and shall never be less than 5.0 mg/L. Normal daily and seasonal fluctuations above these levels shall be maintained.** ***[62-302.530(31)] and [62-650.400(2)]***
7. **Florida water quality criteria and standards shall not be violated as a result of the discharge.** ***[62-620.320(9), and 62-302.500(1) and (2)]***
8. **Discharge from City of Bunnell WWTF is subject the effluent limitation for annual mass load of the total nitrogen and total phosphorus. The annual mass-based effluent limitations shall be 2,740 lbs/year (1,242 kg/year) for total nitrogen and 913 lbs/year (414 kg/year) for total phosphorus.**

Monthly mass load and annually mass loads of total nitrogen and phosphorus shall be calculated as follows:

- Monthly Mass Load (Lbs/month)

  ML (Lbs/Month) = (Flow ($\frac{MG}{Mon}$)) x (TN ($\frac{mg}{L}$) or TP ($\frac{mg}{L}$)) x 8.34 ($\frac{L}{MG}\frac{Lbs}{mg}$)

  Where:

  ML = Monthly mass load of total nitrogen or total phosphorus from each treatment facility; (Lbs/month)

  Flow = Monthly volume of effluent discharged from Outfalls D-001.(MG)

  TN = Monthly Average Concentration of TN monitored at EFD-1 for City of Bunnell WWTF.

  TP = Monthly Average Concentration of TP monitored at EFD-1 for City of Bunnell WWTF.

- Annual Mass Load (Lbs/Year)

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 or total phosphorus starting from the second month following permit issuance month. *[62-302.530]*

[62-4.240, 62-302.300(13), 62-650.400(1)]

9. **The pH and temperature of the effluent shall be taken at the time of total ammonia sample collection. The un-ionized ammonia fraction shall be calculated based on the total ammonia, pH, and temperature. Ortho Phosphate (OP) is filtered at the time of sample collection.**
10. **The Permittee shall monitor for specific conduction of the effluent. Specific conductance of effluent collected at EFD – 1 shall not exceed 1275 µmhos/cm or shall not be increased more than 50% above background, whichever is greater. Specific conductance of the background shall be collected at SWB -1 which is 200 yards above the point of discharge D – 001. Monitoring shall be on a monthly basis, and result shall be reported on the discharge monitoring report (DMR) and submitted to the Department. See specific Condition number I.C.8.**
11. **The surface water discharge from the Outfall D-001 is a backup discharge. When the backup discharge occurs, the permittee shall monitor for the parameters under Condition I.A.2.a. When the backup discharge occurs and amount of effluent discharge exceeds 0.10 MGD monthly average daily flow (MADF), the permittee shall monitor for the parameters under Conditions I.A.2.a and I.A.2.b. When no discharge occurs from D-001, this fact shall be reported on the discharge monitoring report (DMR) and submitted to the Department. See specific Condition number I.C.8.**

Monthly average daily flow (MADF) means total volume of effluent or reclaimed water flowing from the

Outfall D-001 during a calendar month, divided by the number of days in that month and expressed in MGD)

12. The permittee shall comply with the following requirements to evaluate acute whole effluent toxicity of the discharge from outfall D-001, when a discharge to D-001 exceeds 0.10 mgd MADF within a six (6)- month period. Routine tests will not be required more than once for each half of the year.

a. Effluent Limitation

(1) **In any routine or additional follow-up test for acute whole effluent toxicity, the 96-hour LC50 shall not be less than 100% effluent.** ***[Rules 62-302.200(1), 62-302.500(1)(a)4., 62-4.244(3)(a), and 62-4.241, F.A.C.]***

b. Monitoring Frequency

(1) Routine toxicity tests shall be conducted semi – annually (once every 6 months), the first starting within 60 days of the issuance date of this permit and lasting for the duration of this permit.

c. Sampling Requirements

(1) All tests shall be conducted on a single grab sample of final effluent.

Test Requirements

(2) Routine Tests: All routine tests shall be conducted using a control (0% effluent) and a minimum of five dilutions: 100%, 75%, 50%, 25%, and 12.5% effluent.

(3) The permittee shall conduct 96-hour acute static renewal multi-concentration toxicity tests using the daphnid, *Ceriodaphnia dubia*, and the bannerfin shiner, *Cyprinella leedsi*, concurrently.

PART I: Continued

Receiving Waters: **Haw Creek & Black Branch – WBID #2610**	**Classification (indicate whether fresh or marine):** **Class III – Fresh water**

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

See section 12 on previous page.

Administrative or Consent Orders (date executed, specific requirements, interim limit dates-if applicable, etc.):
Under AO-152NE – Interim limit for Specific Conductance of 1,500 umhos/cm or 1.5 times background. The limit was to be achieved by December 1, 2013 and facility met that date.

Facility Mixing Zone Details (if applicable): NONE

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

Date	Parameter and Units	Limit	Result
Jan to Oct. 2015	Influent Flow – MGD	0.499	0.5 to 0.624

Describe previous FYI and WQBEL study:

(1) The Department Sampling Inspection: A Third-Year inspection was conducted on July 11, 2010 to July 12, 2010 for the effluent discharged through Outfall D-001. At the time of sampling, the facility was discharging into the Type III reuse system and not to surface water. However, the results summarized are based as if the facility was discharging into D-001.

(a) Results of the Water Chemistry:

Total residual chlorine (TRC) (1.12 mg/L) was detected in bioassay sample # 4 in the laboratory. At the time of effluent collection for bioassay sample #4, the effluent's TRC concentration was (3.9 mg/L) as recorded by the facility's meter. Since the effluent was being routed to the R-001 reuse system and not being discharged into surface water, the TRC concentration, although exceeding the Class III freshwater criterion (limit ≤0.01 mg/L, 62- 302.530 (18), F.AC.), the concentrations are in compliance with the permit requirement for disinfection (limit ≥ 0.5 mg/L TRC). TRC was not detected in bioassay samples #1, #2 or #3. Total ammonia was not detected in any of the four bioassay samples in the laboratory. The total ammonia concentration in the composite sample collected and preserved for chemical analysis was 0.023 mg N/L. Based on the pH, salinity, and temperature of the effluent as collected, the calculated unionized ammonia concentration was in compliance, < 0.02 mg/L.

Copper and zinc were detected in the effluent at levels that comply with Class III fresh water quality criteria (62-302.530, F.A.C.). Aluminum, arsenic, chromium - III, iron and nickel were detected between the laboratory method detection limits (MDL) and practical quantitation limits (PQL).

The conductivity of the effluent collected for bioassay sample #3 (1320 µmhos/cm) was greater than the Class III freshwater numerical value of 1275 µmhos/cm. Based on historical background conductivity data from the facility discharge monitoring reports (DMRs from September 2005 –May 2010; range 155 – 799 µmhos/cm; mean 343 µmhos/cm), the conductivity of the effluent as measured in bioassay sample #3 is thought to have exceeded the Class III freshwater criterion for specific conductance (62-302.530 (22) F.A.C. "Shall not be increased more than 50% above background or 1275, whichever is greater.").

(b) Toxicity Test Result:

The effluent samples were collected by DEP from R-001 for this facility on July 11, 2010 and July 12, 2010. Effluent sample # 4, collected from the EFD-01 NPDES sampling point for Outfall D-001 for this facility on July 12, 2010, was acutely toxic to both test species, producing 100% mortality within 24-hours of test initiation. The toxicity was attributed to the TRC in the effluent at 1.12 mg/L. An aliquot of sample #4 was dechlorinated with sodium thiosulfate and was not acutely toxic to either test species. Effluent samples #1, #2 and #3, collected on July 11-12, 2010, were not acutely toxic to either test species during the 96-hr screening tests.

(c) Algal Growth Potential (AGP):

The effluent AGP result was greater than the "problem" threshold for fresh receiving waters; the presumptive evidence suggests that nutrient-enrichment would have been demonstrated with the freshwater species.

(2) Summary of Effluent Toxicity Testing at D-001

The current permit requires semi-annual 96-hr acute definitives with 4 grab samples using freshwater species, *C.dubia* and *C.leedsi*. Any failure of a semi-annual test, if LC50 < 100% final effluent, triggers 3 additional definitive tests. During the current permit cycle, no toxicity test failed and no additional tests were required. Routine toxicity tests shall be conducted once every six months, and sampling is only required when a discharge to D-001 exceeds 0.10 mgd MADF.

(1) **Water Quality Based Effluent Limitation (WQBEL)**

(a) Coliform:

Coliform is listed impaired water (WBID 3598C, EPA 303(d), September 2, 2009 version). Therefore, the effluent limit for fecal coliform needs to be re-evaluated. WBID #2610 is not listed on EPA 303(d) list.

Data from DMRs (January 2004 through October 2010) show that the maximum total coliform in a single sample effluent was 99.90 counts in 100 mL average, mode, and median of annual average of the fecal coliform were

4.01,2.0, and 1.67 count in 100 mL, respectively. Based on the fecal coliform data, there is no evidence to show that the coliform in the effluent contributed to the total coliform of the receiving waterbody. Therefore, the permittee is not required to increase a disinfection treatment level of the effluent before discharge to the creek. The limit of fecal coliform, which was established in accordance with Rule 62-600.440(4)(c), FAC, is remained.

(b) BOD, Carbonaceous 5-day and Dissolved Oxygen:

Limitations of CBOD5 and DO have been complied with Class III Fresh Water Quality Criteria (62-302.530, FAC). Therefore, no additional monitoring requires for metals

(c) Nutrients:

Mass load limits for TN and TP were established based on a discharge of an advance wastewater facility discharge, even though the facility is a secondary treatment facility with filters. The permitted discharge capacity of the D-001 0.30 mgd and the concentration limit of 3.0 mg/L and 1.0 mg/L for TN and TP were used to determine the annual mass load limit.

(d) Metals:

Metals, if present in effluent, have been complied with Class III Fresh Water Quality Criteria (62-302.530, FAC). Therefore, no additional monitoring requires for metals.

(e) Effluent Toxicity

Whole effluent toxicity (acute) testing is required by the permit per Rule 62-620.620(3)(a), FAC, but is contingent upon discharges to surface water exceeding 0.10 MGD MADF since the primary disposal is to reuse.

(f) Conductivity

The facility during the permit renewal sampling conducted by the department, the facility would have a violation if the facility was discharging to the surface water though discharge D-001. To better understand what the sources of the pollutant, the facility sample the effluent for the Month of May 2011. Out of 22 samples all would have been a violation the Class II fresh water standard. The facility agreed to an Administrative Order to give them time to study the problems and find a solution.

Describe previous or current Enforcement Actions (including WLs):
LFCO 14-0059 for Total Nitrogen mass exceedances (TMDL's) – Dec-2012 to Jan. 2014

Describe any violations or problems noted in previous inspection:
High Total Nitrogen mass discharges. But covered under LFCO 14-0059.

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

Facility's influent flow has increased beyond the approved maximum. Reuse flows are variable each month. Effluent flows at D001 / EFD-1 have been increasing.

Additional Comments (this should include a trend of the Effluent, i.e. if the facility is now Reuse):
D001 is supposed to be a back-up but flow is trending higher every month.

PART II: Sampling Event Information	
Date(s) sample collected: **Planned – January 20, 2016**	**Sampler(s):** **TBD**
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.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. 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 analysis of effluent

Date Sampled	UDL	SCH_Group	Component	Result	Units	MDL	PQL
1/20/2016 9:15	Effluent Grab	AGP/LN	Algal Growth Potential	206 A	mg DryWt/L	0.3	0.9
1/20/2016 9:15	Effluent Grab	Chlorophyll/Grain Size/BOD	Phaeophytin-a	0.40 U	ug/L	0.4	1.2
1/20/2016 9:15	Effluent Grab	Chlorophyll/Grain Size/BOD	Biochemical Oxygen Demand-5 Day,N-Inhib	0.20 UJ	mg/L	0.2	2
1/20/2016 9:15	Effluent Grab	Chlorophyll/Grain Size/BOD	Chlorophyll/Phaeophytin Ratio	1.0		0	0
1/20/2016 9:15	Effluent Grab	Chlorophyll/Grain Size/BOD	Chlorophyll-a, Corrected	0.55 U	ug/L	0.55	1.7
1/20/2016 9:15	Effluent Grab	Chlorophyll/Grain Size/BOD	Chlorophyll-a, Uncorrected	0.40 U	ug/L	0.4	1.2
1/20/2016 9:15	Effluent Grab	Microbiology	Fecal Coliforms-Membrane Filter	2 UQ	cfu/100 mL	2	2
1/20/2016 9:15	Effluent Grab	Toxicology	Bioassay-Acute-Df-FW-C.dubia,LC50-dechlr	100 L	LC50		
1/20/2016 9:15	Effluent Grab	Toxicology	Bioassay-Acute-Screen-FW-C.dubia, LC50	100 K	LC50		
1/20/2016 9:15	Effluent Grab	Toxicology	Bioassay-Acute-Def-FW-Fish, LC50-dechlor	100 L	LC50		
1/20/2016 9:15	Effluent Grab	Toxicology	Bioassay-Acute-Screen-FW-Fish, LC50	100 L	LC50		
1/20/2016 9:15	Effluent Grab	Metals	Aluminum	15 U	ug/L	15	60
1/20/2016 9:15	Effluent Grab	Metals	Cadmium	0.15 U	ug/L	0.15	0.6
1/20/2016 9:15	Effluent Grab	Metals	Selenium	0.60 U	ug/L	0.6	2.4
1/20/2016 9:15	Effluent Grab	Metals	Copper	3.1	ug/L	1.5	3
1/20/2016 9:15	Effluent Grab	Metals	Chromium	0.90 U	ug/L	0.9	3.6
1/20/2016 9:15	Effluent Grab	Metals	Potassium	9.0	mg/L	0.3	1.2
1/20/2016 9:15	Effluent Grab	Metals	Sodium	151	mg/L	0.5	2
1/20/2016 9:15	Effluent Grab	Metals	Magnesium	7.41	mg/L	0.04	0.16
1/20/2016 9:15	Effluent Grab	Metals	Arsenic	1.1 I	ug/L	0.75	3
1/20/2016 9:15	Effluent Grab	Metals	Calcium	103	mg/L	0.075	0.3
1/20/2016 9:15	Effluent Grab	Metals	Nickel	1.1 I	ug/L	0.75	3
1/20/2016 9:15	Effluent Grab	Metals	Silver	0.075 U	ug/L	0.075	0.3
1/20/2016 9:15	Effluent Grab	Metals	Lead	0.60 U	ug/L	0.6	2.4
1/20/2016 9:15	Effluent Grab	Metals	Zinc	18 I	ug/L	5	20
1/20/2016 9:15	Effluent Grab	Metals	Iron	48 I	ug/L	30	120
1/20/2016 9:15	Effluent Grab	Nutrients	NO2NO3-N	13	mg N/L	0.4	1
1/20/2016 9:15	Effluent Grab	Nutrients	Total Alkalinity	224 A	mg CaCO3/L	0.65	2.5
1/20/2016 9:15	Effluent Grab	Nutrients	Total-P	1.5	mg P/L	0.01	0.1
1/20/2016 9:15	Effluent Grab	Nutrients	Kjeldahl Nitrogen	1.1	mg N/L	0.16	0.4
1/20/2016 9:15	Effluent Grab	Nutrients	Organic Carbon	12	mg C/L	0.5	1
1/20/2016 9:15	Effluent Grab	Nutrients	TSS	2 I	mg/L	2	10

Date Sampled	UDL	SCH_Group	Component	Result	Units	MDL	PQL
1/20/2016 9:15	Effluent Grab	Nutrients	Ammonia-N	0.032	mg N/L	0.002	0.005
1/20/2016 9:15	Effluent Grab	Nutrients	Ammonia-N	0.033	mg N/L	0.002	0.005
1/20/2016 9:15	Effluent Grab	Nutrients	Kjeldahl Nitrogen	1.2	mg N/L	0.16	0.4
1/20/2016 9:15	Effluent Grab	Nutrients	Sulfate	22 A	mg SO4/L	8	20
1/20/2016 9:15	Effluent Grab	Nutrients	Organic Carbon	12	mg C/L	0.5	1
1/20/2016 9:15	Effluent Grab	Nutrients	Total-P	1.6	mg P/L	0.01	0.1
1/20/2016 9:15	Effluent Grab	Nutrients	NO2NO3-N	13	mg N/L	0.4	1
1/20/2016 9:15	Effluent Grab	Nutrients	O-Phosphate-P	1.4	mg P/L	0.08	0.2
1/20/2016 9:15	Effluent Grab	Nutrients	Turbidity	0.90	NTU	0.1	0.1
1/20/2016 9:15	Effluent Grab	Nutrients	Fluoride	0.23	mg F/L	0.07	0.2
1/20/2016 9:15	Effluent Grab	Nutrients	Color (true)	11	PCU	2.5	6
1/20/2016 9:15	Effluent Grab	Nutrients	Chloride	230 A	mg Cl/L	8	20
1/20/2016 9:15	Effluent Grab	Pesticides	Atrazine Desisopropyl	0.010 U	ug/L	0.01	0.04
1/20/2016 9:15	Effluent Grab	Pesticides	Demeton	0.024 U	ug/L	0.024	0.096
1/20/2016 9:15	Effluent Grab	Pesticides	Hexazinone	0.030 U	ug/L	0.03	0.12
1/20/2016 9:15	Effluent Grab	Pesticides	Norflurazon	0.030 U	ug/L	0.03	0.12
1/20/2016 9:15	Effluent Grab	Pesticides	Carbamazepine	0.12	ug/L	0.0004	0.0016
1/20/2016 9:15	Effluent Grab	Pesticides	Alachlor	0.060 U	ug/L	0.06	0.24
1/20/2016 9:15	Effluent Grab	Pesticides	Ametryn	0.010 U	ug/L	0.01	0.04
1/20/2016 9:15	Effluent Grab	Pesticides	Metalaxyl	0.040 U	ug/L	0.04	0.16
1/20/2016 9:15	Effluent Grab	Pesticides	Phorate	0.0050 UJ	ug/L	0.005	0.02
1/20/2016 9:15	Effluent Grab	Pesticides	Simazine	0.010 U	ug/L	0.01	0.04
1/20/2016 9:15	Effluent Grab	Pesticides	Atrazine Desethyl	0.035 U	ug/L	0.035	0.14
1/20/2016 9:15	Effluent Grab	Pesticides	Ethoprop	0.0050 U	ug/L	0.005	0.02
1/20/2016 9:15	Effluent Grab	Pesticides	Malathion	0.010 U	ug/L	0.01	0.04
1/20/2016 9:15	Effluent Grab	Pesticides	Naled	0.040 U	ug/L	0.04	0.16
1/20/2016 9:15	Effluent Grab	Pesticides	Disulfoton	0.0050 UJ	ug/L	0.005	0.02
1/20/2016 9:15	Effluent Grab	Pesticides	Metribuzin	0.020 UJ	ug/L	0.02	0.08
1/20/2016 9:15	Effluent Grab	Pesticides	Prometryn	0.020 U	ug/L	0.02	0.08
1/20/2016 9:15	Effluent Grab	Pesticides	Diazinon	0.010 U	ug/L	0.01	0.04
1/20/2016 9:15	Effluent Grab	Pesticides	Ethion	0.010 UJ	ug/L	0.01	0.04
1/20/2016 9:15	Effluent Grab	Pesticides	Fenamiphos	0.030 U	ug/L	0.03	0.12
1/20/2016 9:15	Effluent Grab	Pesticides	Acetaminophen	0.0040 U	ug/L	0.004	0.016
1/20/2016 9:15	Effluent Grab	Pesticides	Sucralose	31	ug/L	1	4
1/20/2016 9:15	Effluent Grab	Pesticides	Butylate	0.020 U	ug/L	0.02	0.08

Date Sampled	UDL	SCH_Group	Component	Result	Units	MDL	PQL
1/20/2016 9:15	Effluent Grab	Pesticides	Fonofos	0.010 U	ug/L	0.01	0.04
1/20/2016 9:15	Effluent Grab	Pesticides	Metolachlor	0.060 U	ug/L	0.06	0.24
1/20/2016 9:15	Effluent Grab	Pesticides	Mevinphos	0.010 U	ug/L	0.01	0.04
1/20/2016 9:15	Effluent Grab	Pesticides	Azinphos Methyl	0.020 U	ug/L	0.02	0.08
1/20/2016 9:15	Effluent Grab	Pesticides	Bromacil	0.040 U	ug/L	0.04	0.16
1/20/2016 9:15	Effluent Grab	Pesticides	Chlorpyrifos Methyl	0.010 U	ug/L	0.01	0.04
1/20/2016 9:15	Effluent Grab	Pesticides	Parathion Methyl	0.010 U	ug/L	0.01	0.04
1/20/2016 9:15	Effluent Grab	Pesticides	Atrazine	0.055	ug/L	0.01	0.04
1/20/2016 9:15	Effluent Grab	Pesticides	Chlorpyrifos Ethyl	0.010 U	ug/L	0.01	0.04
1/20/2016 9:15	Effluent Grab	Pesticides	Parathion Ethyl	0.020 U	ug/L	0.02	0.08
1/20/2016 9:15	Effluent Grab	Pesticides	Prometon	0.020 U	ug/L	0.02	0.08
1/20/2016 9:15	Effluent Grab	Priority Organic Pollutants	2,4,6-Trichlorophenol	0.95 U	ug/L	0.95	3.8
1/20/2016 9:15	Effluent Grab	Priority Organic Pollutants	Hexachlorocyclopentadiene	2.9 U	ug/L	2.9	11
1/20/2016 9:15	Effluent Grab	Priority Organic Pollutants	4-Chloro-3-methylphenol	0.95 U	ug/L	0.95	3.8
1/20/2016 9:15	Effluent Grab	Priority Organic Pollutants	Benzo(a)pyrene	0.19 U	ug/L	0.19	0.76
1/20/2016 9:15	Effluent Grab	Priority Organic Pollutants	2,4-Dichlorophenol	0.95 U	ug/L	0.95	3.8
1/20/2016 9:15	Effluent Grab	Priority Organic Pollutants	2-Methyl-4,6-dinitrophenol	2.9 U	ug/L	2.9	11
1/20/2016 9:15	Effluent Grab	Priority Organic Pollutants	Hexachlorobenzene	0.95 U	ug/L	0.95	3.8
1/20/2016 9:15	Effluent Grab	Priority Organic Pollutants	Indeno(1,2,3-cd)pyrene	0.19 U	ug/L	0.19	0.76
1/20/2016 9:15	Effluent Grab	Priority Organic Pollutants	N-Nitrosodi-n-propylamine	1.9 U	ug/L	1.9	7.6
1/20/2016 9:15	Effluent Grab	Priority Organic Pollutants	2,4-Dimethylphenol	9.5 U	ug/L	9.5	38
1/20/2016 9:15	Effluent Grab	Priority Organic Pollutants	4-Chlorophenyl phenyl ether	1.9 U	ug/L	1.9	7.6
1/20/2016 9:15	Effluent Grab	Priority Organic Pollutants	Anthracene	0.19 U	ug/L	0.19	0.76
1/20/2016 9:15	Effluent Grab	Priority Organic Pollutants	Butyl benzyl phthalate	0.95 U	ug/L	0.95	3.8
1/20/2016 9:15	Effluent Grab	Priority Organic Pollutants	Chrysene	0.19 U	ug/L	0.19	0.76
1/20/2016 9:15	Effluent Grab	Priority Organic Pollutants	Phenanthrene	0.19 U	ug/L	0.19	0.76
1/20/2016 9:15	Effluent Grab	Priority Organic Pollutants	Phenol	0.95 U	ug/L	0.95	3.8
1/20/2016 9:15	Effluent Grab	Priority Organic Pollutants	Pyrene	0.19 U	ug/L	0.19	0.76
1/20/2016 9:15	Effluent Grab	Priority Organic Pollutants	2,4-Dinitrophenol	14 U	ug/L	14	57
1/20/2016 9:15	Effluent Grab	Priority Organic Pollutants	2,6-Dinitrotoluene	0.95 U	ug/L	0.95	3.8
1/20/2016 9:15	Effluent Grab	Priority Organic Pollutants	Acenaphthene	0.19 U	ug/L	0.19	0.76
1/20/2016 9:15	Effluent Grab	Priority Organic Pollutants	Bis(2-chloroethyl)ether	0.95 U	ug/L	0.95	3.8
1/20/2016 9:15	Effluent Grab	Priority Organic Pollutants	Fluoranthene	0.19 U	ug/L	0.19	0.76
1/20/2016 9:15	Effluent Grab	Priority Organic Pollutants	Nitrobenzene	1.9 U	ug/L	1.9	7.6
1/20/2016 9:15	Effluent Grab	Priority Organic Pollutants	2-Chlorophenol	0.95 U	ug/L	0.95	3.8

Date Sampled	UDL	SCH_Group	Component	Result	Units	MDL	PQL
1/20/2016 9:15	Effluent Grab	Priority Organic Pollutants	3,3'-Dichlorobenzidine	38 U	ug/L	38	150
1/20/2016 9:15	Effluent Grab	Priority Organic Pollutants	Acenaphthylene	0.19 U	ug/L	0.19	0.76
1/20/2016 9:15	Effluent Grab	Priority Organic Pollutants	Benzo(g,h,i)perylene	0.19 U	ug/L	0.19	0.76
1/20/2016 9:15	Effluent Grab	Priority Organic Pollutants	Benzo(k)fluoranthene	0.19 U	ug/L	0.19	0.76
1/20/2016 9:15	Effluent Grab	Priority Organic Pollutants	Bis(2-chloroethoxy)methane	0.95 U	ug/L	0.95	3.8
1/20/2016 9:15	Effluent Grab	Priority Organic Pollutants	N-Nitrosodiphenylamine/ Diphenylamine	2.9 U	ug/L	2.9	11
1/20/2016 9:15	Effluent Grab	Priority Organic Pollutants	Naphthalene	0.19 U	ug/L	0.19	0.76
1/20/2016 9:15	Effluent Grab	Priority Organic Pollutants	Benzo(b)fluoranthene	0.19 U	ug/L	0.19	0.76
1/20/2016 9:15	Effluent Grab	Priority Organic Pollutants	Fluorene	0.19 U	ug/L	0.19	0.76
1/20/2016 9:15	Effluent Grab	Priority Organic Pollutants	Hexachloroethane	2.9 U	ug/L	2.9	11
1/20/2016 9:15	Effluent Grab	Priority Organic Pollutants	N-Nitrosodimethylamine	1.9 U	ug/L	1.9	7.6
1/20/2016 9:15	Effluent Grab	Priority Organic Pollutants	Pentachlorophenol	0.95 U	ug/L	0.95	3.8
1/20/2016 9:15	Effluent Grab	Priority Organic Pollutants	1,4-Dioxane	0.46	ug/L	0.02	0.1
1/20/2016 9:15	Effluent Grab	Priority Organic Pollutants	2,4-Dinitrotoluene	0.95 U	ug/L	0.95	3.8
1/20/2016 9:15	Effluent Grab	Priority Organic Pollutants	4-Bromophenyl phenyl ether	0.95 U	ug/L	0.95	3.8
1/20/2016 9:15	Effluent Grab	Priority Organic Pollutants	4-Nitrophenol	14 U	ug/L	14	57
1/20/2016 9:15	Effluent Grab	Priority Organic Pollutants	Benzidine	95 UJ	ug/L	95	380
1/20/2016 9:15	Effluent Grab	Priority Organic Pollutants	Bis(2-chloroisopropyl)ether	2.9 U	ug/L	2.9	11
1/20/2016 9:15	Effluent Grab	Priority Organic Pollutants	Dibenzo(a,h)anthracene	0.19 U	ug/L	0.19	0.76
1/20/2016 9:15	Effluent Grab	Priority Organic Pollutants	Diethyl phthalate	0.95 U	ug/L	0.95	3.8
1/20/2016 9:15	Effluent Grab	Priority Organic Pollutants	Dimethyl phthalate	0.95 UJ	ug/L	0.95	3.8
1/20/2016 9:15	Effluent Grab	Priority Organic Pollutants	Isophorone	0.95 U	ug/L	0.95	3.8
1/20/2016 9:15	Effluent Grab	Priority Organic Pollutants	1,2,4-Trichlorobenzene	0.95 U	ug/L	0.95	3.8
1/20/2016 9:15	Effluent Grab	Priority Organic Pollutants	2-Nitrophenol	0.95 U	ug/L	0.95	3.8
1/20/2016 9:15	Effluent Grab	Priority Organic Pollutants	Benzo(a)anthracene	0.19 U	ug/L	0.19	0.76
1/20/2016 9:15	Effluent Grab	Priority Organic Pollutants	Bis(2-ethylhexyl)phthalate	1.9 U	ug/L	1.9	7.6
1/20/2016 9:15	Effluent Grab	Priority Organic Pollutants	Di-n-butyl phthalate	0.95 UJ	ug/L	0.95	3.8
1/20/2016 9:15	Effluent Grab	Priority Organic Pollutants	Di-n-octyl phthalate	0.95 U	ug/L	0.95	3.8
1/20/2016 9:15	Effluent Grab	Priority Organic Pollutants	Hexachlorobutadiene	2.9 U	ug/L	2.9	11
1/20/2016 9:15	Effluent Grab	Priority Organic Pollutants	2-Chloronaphthalene	0.95 U	ug/L	0.95	3.8
1/20/2016 9:15	Effluent Grab	Nutrients	Dissolved Oxygen	7.99	mg/L		
1/20/2016 9:15	Effluent Grab	Nutrients	Temperature	17.53	C		
1/20/2016 9:15	Effluent Grab	Nutrients	pH	6.90			
1/20/2016 9:15	Effluent Grab	Nutrients	Sample Depth	0.3	m		
1/20/2016 9:15	Effluent Grab	Nutrients	Specific Conductance	13410	umhos/cm		

Date Sampled	UDL	SCH_Group	Component	Result	Units	MDL	PQL
1/20/2016 9:15	Effluent Grab	Nutrients	Temperature	17.53	C		
1/20/2016 9:15	Effluent Grab	Nutrients	Sample Depth	0.3	m		
1/20/2016 9:15	Effluent Grab	Nutrients	Specific Conductance	13410	umhos/cm		
1/20/2016 9:15	Effluent Grab	Nutrients	Dissolved Oxygen	7.99	mg/L		
1/20/2016 9:15	Effluent Grab	Nutrients	pH	6.90			
1/20/2016 9:30	Field Blank	Metals	Sodium	0.50 U	mg/L	0.5	2
1/20/2016 9:30	Field Blank	Metals	Selenium	0.20 U	ug/L	0.2	0.8
1/20/2016 9:30	Field Blank	Metals	Zinc	5.0 U	ug/L	5	20
1/20/2016 9:30	Field Blank	Metals	Magnesium	0.040 U	mg/L	0.04	0.16
1/20/2016 9:30	Field Blank	Metals	Iron	30 U	ug/L	30	120
1/20/2016 9:30	Field Blank	Metals	Nickel	0.25 U	ug/L	0.25	1
1/20/2016 9:30	Field Blank	Metals	Chromium	0.30 U	ug/L	0.3	1.2
1/20/2016 9:30	Field Blank	Metals	Lead	0.20 U	ug/L	0.2	0.8
1/20/2016 9:30	Field Blank	Metals	Arsenic	0.25 U	ug/L	0.25	1
1/20/2016 9:30	Field Blank	Metals	Calcium	0.075 U	mg/L	0.075	0.3
1/20/2016 9:30	Field Blank	Metals	Cadmium	0.050 U	ug/L	0.05	0.2
1/20/2016 9:30	Field Blank	Metals	Aluminum	5.0 U	ug/L	5	20
1/20/2016 9:30	Field Blank	Metals	Silver	0.025 U	ug/L	0.025	0.1
1/20/2016 9:30	Field Blank	Metals	Copper	0.50 U	ug/L	0.5	1
1/20/2016 9:30	Field Blank	Metals	Potassium	0.30 U	mg/L	0.3	1.2
1/20/2016 9:30	Field Blank	Nutrients	Organic Carbon	0.50 U	mg C/L	0.5	1
1/20/2016 9:30	Field Blank	Nutrients	O-Phosphate-P	0.004 U	mg P/L	0.004	0.01
1/20/2016 9:30	Field Blank	Nutrients	NO2NO3-N	0.004 U	mg N/L	0.004	0.01
1/20/2016 9:30	Field Blank	Nutrients	Fluoride	0.035 U	mg F/L	0.035	0.1
1/20/2016 9:30	Field Blank	Nutrients	Chloride	0.20 U	mg Cl/L	0.2	0.5
1/20/2016 9:30	Field Blank	Nutrients	Total-P	0.002 U	mg P/L	0.002	0.005
1/20/2016 9:30	Field Blank	Nutrients	Turbidity	0.10 U	NTU	0.1	0.1
1/20/2016 9:30	Field Blank	Nutrients	Sulfate	0.20 U	mg SO4/L	0.2	0.5
1/20/2016 9:30	Field Blank	Nutrients	Total Alkalinity	0.65 U	mg CaCO3/L	0.65	2.5
1/20/2016 9:30	Field Blank	Nutrients	Ammonia-N	0.002 U	mg N/L	0.002	0.005
1/20/2016 9:30	Field Blank	Nutrients	Color (true)	2.5 U	PCU	2.5	6
1/20/2016 9:30	Field Blank	Nutrients	Kjeldahl Nitrogen	0.080 U	mg N/L	0.08	0.2
1/20/2016 9:30	Field Blank	Pesticides	Alachlor	0.058 U	ug/L	0.058	0.23
1/20/2016 9:30	Field Blank	Pesticides	Bromacil	0.039 U	ug/L	0.039	0.15
1/20/2016 9:30	Field Blank	Pesticides	Chlorpyrifos Methyl	0.0097 U	ug/L	0.0097	0.039

Date Sampled	UDL	SCH_Group	Component	Result	Units	MDL	PQL
1/20/2016 9:30	Field Blank	Pesticides	Disulfoton	0.0048 U	ug/L	0.0048	0.019
1/20/2016 9:30	Field Blank	Pesticides	Fenamiphos	0.029 U	ug/L	0.029	0.12
1/20/2016 9:30	Field Blank	Pesticides	Fonofos	0.0097 U	ug/L	0.0097	0.039
1/20/2016 9:30	Field Blank	Pesticides	Malathion	0.0097 U	ug/L	0.0097	0.039
1/20/2016 9:30	Field Blank	Pesticides	Phorate	0.0048 U	ug/L	0.0048	0.019
1/20/2016 9:30	Field Blank	Pesticides	Carbamazepine	4.0E-04 U	ug/L	0.0004	0.0016
1/20/2016 9:30	Field Blank	Pesticides	Butylate	0.019 U	ug/L	0.019	0.077
1/20/2016 9:30	Field Blank	Pesticides	Ethion	0.0097 U	ug/L	0.0097	0.039
1/20/2016 9:30	Field Blank	Pesticides	Metalaxyl	0.039 U	ug/L	0.039	0.15
1/20/2016 9:30	Field Blank	Pesticides	Naled	0.039 U	ug/L	0.039	0.15
1/20/2016 9:30	Field Blank	Pesticides	Parathion Methyl	0.0097 U	ug/L	0.0097	0.039
1/20/2016 9:30	Field Blank	Pesticides	Ametryn	0.0097 U	ug/L	0.0097	0.039
1/20/2016 9:30	Field Blank	Pesticides	Atrazine Desisopropyl	0.0097 U	ug/L	0.0097	0.039
1/20/2016 9:30	Field Blank	Pesticides	Chlorpyrifos Ethyl	0.0097 U	ug/L	0.0097	0.039
1/20/2016 9:30	Field Blank	Pesticides	Diazinon	0.0097 U	ug/L	0.0097	0.039
1/20/2016 9:30	Field Blank	Pesticides	Parathion Ethyl	0.019 U	ug/L	0.019	0.077
1/20/2016 9:30	Field Blank	Pesticides	Sucralose	0.010 U	ug/L	0.01	0.04
1/20/2016 9:30	Field Blank	Pesticides	Atrazine Desethyl	0.0097 U	ug/L	0.0097	0.039
1/20/2016 9:30	Field Blank	Pesticides	Metribuzin	0.019 U	ug/L	0.019	0.077
1/20/2016 9:30	Field Blank	Pesticides	Mevinphos	0.0097 U	ug/L	0.0097	0.039
1/20/2016 9:30	Field Blank	Pesticides	Norflurazon	0.029 U	ug/L	0.029	0.12
1/20/2016 9:30	Field Blank	Pesticides	Prometryn	0.019 U	ug/L	0.019	0.077
1/20/2016 9:30	Field Blank	Pesticides	Metolachlor	0.058 U	ug/L	0.058	0.23
1/20/2016 9:30	Field Blank	Pesticides	Atrazine	0.0097 U	ug/L	0.0097	0.039
1/20/2016 9:30	Field Blank	Pesticides	Ethoprop	0.0048 U	ug/L	0.0048	0.019
1/20/2016 9:30	Field Blank	Pesticides	Prometon	0.019 U	ug/L	0.019	0.077
1/20/2016 9:30	Field Blank	Pesticides	Simazine	0.0097 U	ug/L	0.0097	0.039
1/20/2016 9:30	Field Blank	Pesticides	Azinphos Methyl	0.019 U	ug/L	0.019	0.077
1/20/2016 9:30	Field Blank	Pesticides	Demeton	0.023 U	ug/L	0.023	0.093
1/20/2016 9:30	Field Blank	Pesticides	Hexazinone	0.029 U	ug/L	0.029	0.12
1/20/2016 9:30	Field Blank	Pesticides	Acetaminophen	0.0040 U	ug/L	0.004	0.016
1/20/2016 9:30	Field Blank	Priority Organic Pollutants	2,4-Dinitrotoluene	0.95 U	ug/L	0.95	3.8
1/20/2016 9:30	Field Blank	Priority Organic Pollutants	N-Nitrosodiphenylamine/ Diphenylamine	2.9 U	ug/L	2.9	11
1/20/2016 9:30	Field Blank	Priority Organic Pollutants	Benzo(a)anthracene	0.19 U	ug/L	0.19	0.76
1/20/2016 9:30	Field Blank	Priority Organic Pollutants	Bis(2-chloroethyl)ether	0.95 U	ug/L	0.95	3.8

Date Sampled	UDL	SCH_Group	Component	Result	Units	MDL	PQL
1/20/2016 9:30	Field Blank	Priority Organic Pollutants	Dibenzo(a,h)anthracene	0.19 U	ug/L	0.19	0.76
1/20/2016 9:30	Field Blank	Priority Organic Pollutants	2,6-Dinitrotoluene	0.95 U	ug/L	0.95	3.8
1/20/2016 9:30	Field Blank	Priority Organic Pollutants	Isophorone	0.95 U	ug/L	0.95	3.8
1/20/2016 9:30	Field Blank	Priority Organic Pollutants	Hexachloroethane	2.9 U	ug/L	2.9	11
1/20/2016 9:30	Field Blank	Priority Organic Pollutants	Di-n-octyl phthalate	0.95 U	ug/L	0.95	3.8
1/20/2016 9:30	Field Blank	Priority Organic Pollutants	Butyl benzyl phthalate	0.95 U	ug/L	0.95	3.8
1/20/2016 9:30	Field Blank	Priority Organic Pollutants	Benzo(k)fluoranthene	0.19 U	ug/L	0.19	0.76
1/20/2016 9:30	Field Blank	Priority Organic Pollutants	Benzo(g,h,i)perylene	0.19 U	ug/L	0.19	0.76
1/20/2016 9:30	Field Blank	Priority Organic Pollutants	2-Chloronaphthalene	0.95 U	ug/L	0.95	3.8
1/20/2016 9:30	Field Blank	Priority Organic Pollutants	3,3'-Dichlorobenzidine	38 U	ug/L	38	150
1/20/2016 9:30	Field Blank	Priority Organic Pollutants	Dimethyl phthalate	0.95 U	ug/L	0.95	3.8
1/20/2016 9:30	Field Blank	Priority Organic Pollutants	Hexachlorobutadiene	2.9 U	ug/L	2.9	11
1/20/2016 9:30	Field Blank	Priority Organic Pollutants	Indeno(1,2,3-cd)pyrene	0.19 U	ug/L	0.19	0.76
1/20/2016 9:30	Field Blank	Priority Organic Pollutants	Phenanthrene	0.19 U	ug/L	0.19	0.76
1/20/2016 9:30	Field Blank	Priority Organic Pollutants	Phenol	0.95 U	ug/L	0.95	3.8
1/20/2016 9:30	Field Blank	Priority Organic Pollutants	Pyrene	0.19 U	ug/L	0.19	0.76
1/20/2016 9:30	Field Blank	Priority Organic Pollutants	2,4-Dinitrophenol	14 U	ug/L	14	57
1/20/2016 9:30	Field Blank	Priority Organic Pollutants	4-Chlorophenyl phenyl ether	1.9 U	ug/L	1.9	7.6
1/20/2016 9:30	Field Blank	Priority Organic Pollutants	Benzo(a)pyrene	0.19 U	ug/L	0.19	0.76
1/20/2016 9:30	Field Blank	Priority Organic Pollutants	Di-n-butyl phthalate	0.95 U	ug/L	0.95	3.8
1/20/2016 9:30	Field Blank	Priority Organic Pollutants	Hexachlorocyclopentadiene	2.9 U	ug/L	2.9	11
1/20/2016 9:30	Field Blank	Priority Organic Pollutants	Naphthalene	0.19 U	ug/L	0.19	0.76
1/20/2016 9:30	Field Blank	Priority Organic Pollutants	4-Nitrophenol	14 U	ug/L	14	57
1/20/2016 9:30	Field Blank	Priority Organic Pollutants	Acenaphthylene	0.19 U	ug/L	0.19	0.76
1/20/2016 9:30	Field Blank	Priority Organic Pollutants	Bis(2-ethylhexyl)phthalate	1.9 U	ug/L	1.9	7.6
1/20/2016 9:30	Field Blank	Priority Organic Pollutants	N-Nitrosodi-n-propylamine	1.9 U	ug/L	1.9	7.6
1/20/2016 9:30	Field Blank	Priority Organic Pollutants	2,4-Dichlorophenol	0.95 U	ug/L	0.95	3.8
1/20/2016 9:30	Field Blank	Priority Organic Pollutants	2,4-Dimethylphenol	9.5 U	ug/L	9.5	38
1/20/2016 9:30	Field Blank	Priority Organic Pollutants	4-Chloro-3-methylphenol	0.95 U	ug/L	0.95	3.8
1/20/2016 9:30	Field Blank	Priority Organic Pollutants	Anthracene	0.19 U	ug/L	0.19	0.76
1/20/2016 9:30	Field Blank	Priority Organic Pollutants	Benzo(b)fluoranthene	0.19 U	ug/L	0.19	0.76
1/20/2016 9:30	Field Blank	Priority Organic Pollutants	Bis(2-chloroethoxy)methane	0.95 U	ug/L	0.95	3.8
1/20/2016 9:30	Field Blank	Priority Organic Pollutants	Bis(2-chloroisopropyl)ether	2.9 U	ug/L	2.9	11
1/20/2016 9:30	Field Blank	Priority Organic Pollutants	Fluoranthene	0.19 U	ug/L	0.19	0.76
1/20/2016 9:30	Field Blank	Priority Organic Pollutants	Fluorene	0.19 U	ug/L	0.19	0.76

Date Sampled	UDL	SCH_Group	Component	Result	Units	MDL	PQL
1/20/2016 9:30	Field Blank	Priority Organic Pollutants	Nitrobenzene	1.9 U	ug/L	1.9	7.6
1/20/2016 9:30	Field Blank	Priority Organic Pollutants	2,4,6-Trichlorophenol	0.95 U	ug/L	0.95	3.8
1/20/2016 9:30	Field Blank	Priority Organic Pollutants	2-Chlorophenol	0.95 U	ug/L	0.95	3.8
1/20/2016 9:30	Field Blank	Priority Organic Pollutants	2-Methyl-4,6-dinitrophenol	2.9 U	ug/L	2.9	11
1/20/2016 9:30	Field Blank	Priority Organic Pollutants	4-Bromophenyl phenyl ether	0.95 U	ug/L	0.95	3.8
1/20/2016 9:30	Field Blank	Priority Organic Pollutants	Acenaphthene	0.19 U	ug/L	0.19	0.76
1/20/2016 9:30	Field Blank	Priority Organic Pollutants	Chrysene	0.19 U	ug/L	0.19	0.76
1/20/2016 9:30	Field Blank	Priority Organic Pollutants	Diethyl phthalate	0.95 U	ug/L	0.95	3.8
1/20/2016 9:30	Field Blank	Priority Organic Pollutants	Hexachlorobenzene	0.95 U	ug/L	0.95	3.8
1/20/2016 9:30	Field Blank	Priority Organic Pollutants	Pentachlorophenol	0.95 U	ug/L	0.95	3.8
1/20/2016 9:30	Field Blank	Priority Organic Pollutants	1,4-Dioxane	0.020 U	ug/L	0.02	0.1
1/20/2016 9:30	Field Blank	Priority Organic Pollutants	1,2,4-Trichlorobenzene	0.95 U	ug/L	0.95	3.8
1/20/2016 9:30	Field Blank	Priority Organic Pollutants	2-Nitrophenol	0.95 U	ug/L	0.95	3.8
1/20/2016 9:30	Field Blank	Priority Organic Pollutants	N-Nitrosodimethylamine	1.9 U	ug/L	1.9	7.6
1/20/2016 9:30	Field Blank	Priority Organic Pollutants	Benzidine	95 U	ug/L	95	380

EPA End Sheet

The Bioassay of Bunnell Wastewater Treatment Facility effluent sampled on January 20, 2016. NPDES #FL0020907.

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 FL0020907	11 12 160120	18 B	19 S	20 1

Remarks

66

The Priority Pollutants Analysis of Bunnell Wastewater Treatment Facility effluent sampled on January 20, 2016. NPDES #FL0020907.

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 FL0020907	11 12 160120	18 X	19 S	20 1

Remarks

66

Biological Analyses of Bunnell Wastewater Treatment Facility effluent sampled on January 20, 2016. NPDES #FL0020907.

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 FL0020907	11 12 160120	18 S	19 S	20 1

Remarks

66