Effluent Quality Assessment of Atlantic Beach Wastewater Treatment Facility Duval County NPDES # FL0038776 Sampled December 8, 12, 14 & 16, 2022

Division of Environmental Assessment and Restoration
Florida Department of Environmental Protection
March 2023

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Summary of Results

The effluent iron level exceeded the Class III Water Quality Criterion for Marine Waters. The nutrient and AGP results suggest a potential for nutrient enrichment of receiving waters. Twenty-two organic constituents were detected in the effluent grab sample. Total phosphorous and copper were detected in the equipment blank.

Facility Overview

The Atlantic Beach Wastewater Treatment Facility is a domestic wastewater treatment facility. A Facility Summary, including a description of the facility, summary of permit limits, and any relevant Administrative Order (AO), Consent Order (CO), and Discharge Monitoring Report (DMR) information is provided in Appendix A. The effluent is intermittently discharged into the St. Johns River, a Class III Marine Water [waterbody identification (WBID) 2213A] (Figure 1).

Receiving waters for this facility fall under the Estuary-Specific Numeric Interpretations of the Narrative Nutrient Criteria (NNC) for St. Johns River within the Lower St. Johns region. For this region, the NNC, expressed as an annual load, is 722,834 kg/yr total phosphorus (Paragraph 62-302.532(1)(bb). The Total Maximum Daily Load (TMDL) is 1,376,855 kg/yr total nitrogen Subsection 62-304.415(2), F.A.C.. The NNC, expressed as the long-term average of annual means, is 5.4 µg/L chlorophyll *a* (Subparagraph 62-302.532(1)(bb), F.A.C.). For Class III predominantly marine waters, the daily average dissolved oxygen (DO) saturation shall not be below 42 percent in more than 10 percent of the values (Subsection 62-302.533(2), F.A.C.). This FYI event only provides single sample results. It should be noted that waterbody impairment assessments are based on longer-term data, and individual exceedances of a criterion do not indicate use impairment. http://ca.dep.state.fl.us/mapdirect/?focus=nutrientcriteria

Methods

An equipment blank was collected on December 8, 2022. Effluent grab and 24-hour time proportioned composite samples were collected from monitoring site location EFD-1, for outfall D-001, on December 12, 2022. Effluent renewal composite samples were collected on December 14 and 16, 2022. The permit specifies flow-proportioned composite samples and time-proportioned composite samples were collected.

Samples were collected by Conor Lucey and Philippe Hook (Northeast District). Analyses were performed by Eurofins Laboratories in Savannah, Pensacola, and Tampa, Diversified Environmental Laboratories in Jacksonville, and DEP Laboratory in Tallahassee.

All field and laboratory methods followed DEP Standard Operating Procedures (see https://floridadep.gov/dear/quality-assurance/content/dep-sops and https://floridadep.gov/dear/florida-dep-laboratory/content/dep-laboratory-quality-assurance-manual-and-sops for details) and met DEP quality assurance/quality control standards (see

https://floridadep.gov/dear/quality-assurance). Explanations of specific methods and measurements can be found in Appendix B.

Class III Water Quality Criteria for Fresh and Marine Waters are found in Chapter 62-302, F.A.C. All references to Rule 62-302.530, F.A.C. are to the surface water quality criteria table with an effective date of 02/17/2016 and a notice identification number of 17115667.

Abbreviated Fifth Year Inspection Discharge Location

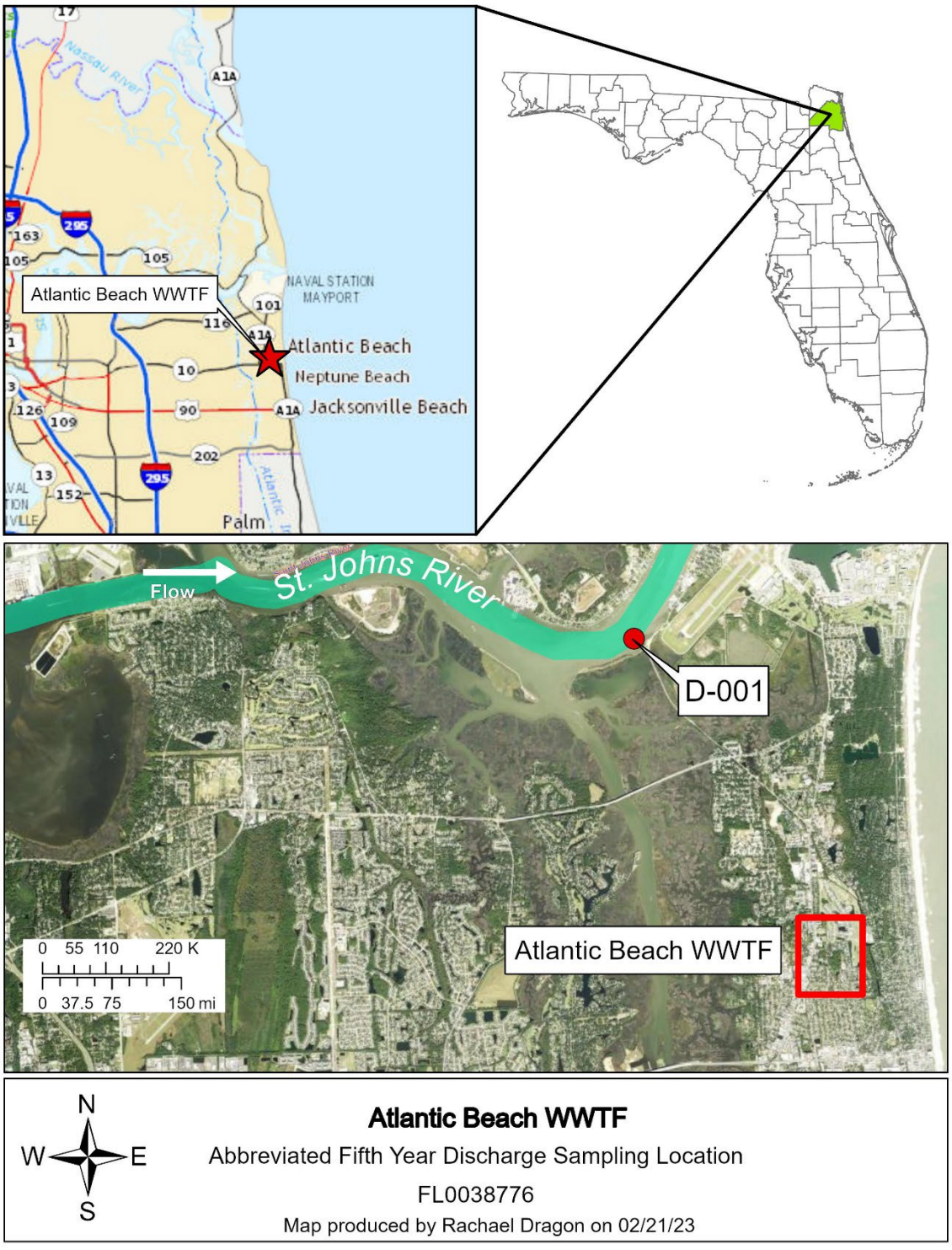


Figure 1. Map of Facility and Discharge Location

Results

Physical and Chemical Parameters (See Table 1 and Appendices C and D)

- All effluent water quality parameters complied with Class III Water Quality Criteria for Marine Waters and effluent permit limits.

Analytical Water Chemistry (See Table 2 and Appendix D)

- All water chemistry analytes detected in the effluent grab and composite sample complied with Class III Water Quality Criteria for Marine Waters and effluent permit limits.

- Total phosphorus was detected in the equipment blank. The laboratory analysis was performed on an improperly preserved equipment blank sample and results were Y qualified.

Microbiology (See Table 2 and Appendix B)

- Effluent enterococci levels complied with Class III Water Quality Criteria for Marine Water and effluent permit limits. Fecal coliform levels complied with effluent permit limits.

Toxicity Whole Effluent Test (See Table 2)

- Tests were performed December 13th through December 20th.

- Chronic bioassay results are reported as the 25% Inhibition Concentration (IC25). 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 Subsection 62-302.200(5), Subsection 62-302.530(20) and/or facility permit limits.

- During the chronic definitive bioassay, the effluent composite sample IC25 for the *Americamysis bahia*, and the IC25 for the fish, *Menidia beryllina*, were calculated as being greater than 100% effluent, and therefore complied with effluent permit limits.

- Aliquots of the bioassay sample were salinity-adjusted according to method requirements from an apparent salinity of approximately 0.6 parts per thousand (ppth) to a salinity of approximately 20 ppth for the *Americamysis bahia* test and to a salinity of approximately 5 ppth for the *Menidia beryllina test*. Control mortality, for both the test controls and salt-adjusted control, were within method acceptance criteria.

- For more information or to obtain copies of the toxicity bench sheets, please contact the Biology Laboratory at 850-245-8177.

Metals (See Table 3 and Appendix D)

- Effluent iron exceeded the Class III Water Quality Criterion for Marine Waters (Subsection 62-302.530(38), F.A.C.).

- Copper was detected in the equipment blank.

Algal Growth Potential (See Table 4 and Appendix B)

- The freshwater unicellular green alga, *Pseudokirchneriella subcapitata* and the marine species, *Dunaliella tertiolecta*, were used to determine the AGP values in the effluent grab. The analytical chemistry suggests that the effluent is nitrogen-limited (Miller et al. 1978).

- The effluent grab sample AGP result of 19.7 mg dry wt/L is within 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).

- Differences greater than an order of magnitude between actual and predicted AGP values are considered sufficient evidence to warrant follow up testing with the algal growth inhibition bioassay. True algal growth inhibition can only be determined by performing an actual algal growth inhibition test. Should algal growth inhibition be suspected, the district should request that the algal growth inhibition test be performed as a follow-up to the inspection.

- An aliquot of the AGP sample was salinity adjusted from an apparent salinity of approximately 0.445 parts per thousand (ppth) to a salinity of approximately 7.1 ppth by the addition of artificial sea salts to meet the salinity requirements of the test species *Dunaliella tertiolecta*.

- The salinity adjusted AGP is 22.5 mg dry wt/L. Raschke and Shultz (1987) determined that AGP values above 10.0 mg dry weight/L, which represents a "problem" threshold for marine receiving waters, imply nutrient enrichment.

Organic Constituents (See Table 5 and Appendix D)

- Atrazine, azinphos methyl, caffeine, chlorfenapyr, cyprodinil, dimethomorph, fipronil, fipronil desulfinyl, fipronil sulfide, fipronil sulfone, fludioxonil, flutolanil, iprodione, loratadine, prodiamine, propiconazole, simazine, sulfentrazone, tebuconazole, terbufos, 2,4,6-trichlorophenol, and hexachloroethane were detected in the effluent grab sample.

- These organic constituents include one stimulant, seven insecticides or derivatives, seven fungicides, one antihistamine, and four herbicides.

- There are no effluent permit limits for organic constituents.

Literature Cited

Miller, W. E., Maloney, T. E. and Greene, J. C. 1978. The *Selenastrum capricornutum* Printz algal assay bottle test. EPA600/978-018. U. S. EPA, Cincinnati, Ohio. 126 p.

Stevenson, R. J. and Bahls, L. L. 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. Measured field parameters

Effluent limits, Class III Water Quality Criteria for Marine Waters, and field parameters

Parameter	Units	Class III Criteria	Effluent Permit Limits	Effluent Grab EFD-01
Temperature	C	-	Report	24.3
pH	SU	6.5 - 8.5	6.5 - 8.5 (EFA-4)	6.89
Specific Conductance	umhos/cm	-	Report	1139
Salinity	ppt	-	Report	0.6 c
Dissolved Oxygen	% saturation	≥ 42.0	-	72.5
Dissolved Oxygen	mg/L	-	≥ 5.0	6.07

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

Table 2. Analytical water chemistry, microbiological, and toxicological data

Effluent limits, Class III Water Quality Criteria for Marine Waters, and analytical water chemistry, microbiological, and toxicological data

Analyte	Units	Class III Criteria	Effluent Permit Limits	Effluent Composite EFD-01	Effluent Grab EFD-01
Ortho-phosphate	mg P/L	-	Report	-	1.7
Total Phosphorus[1]	mg P/L	-	Report	1.3	2.1
Total Ammonia Nitrogen	mg N/L	-	Report	9.6 A	11
Un-ionized Ammonia (calculated salinity)		-	Report	-	0.1 c
Nitrate and Nitrite	mg N/L	-	Report	0.38	0.098
Total Kjeldahl Nitrogen	mg N/L	-	Report	11	13
Organic Nitrogen	mg N/L	-	-	1 c	2 c
Total Nitrogen	mg N/L	-	Report	11 c	13 c
Total Organic Carbon	mg C/L	-	-	-	8.9 A
Chlorophyll *a* - Corrected	µg/L	≤ 5.4 a	-	-	0.82 U
Phaeophytin	µg/L	-	-	-	0.90 U
CBOD, 5 day, N - inhibited	mg/L	-	≤ 60.0 sp (EFA-1)	2.4 Q	2.0 UQ
Hardness	mg CaCO3/L	-	-	296 c	c
Total Suspended Solids	mg/L	-	≤ 60.0 sp (EFA-1)	2 I	2 IA
Turbidity	NTU	≤ 29 t	Report	-	1.3
Color (true)	PCU	-	-	-	24
Alkalinity	mg CaCO3/L	-	-	-	175 A
Chloride	mg Cl/L	-	Report	-	140
Cyanide	µg/L	≤ 1.0	≤ 7.0	-	0.0040 I
Fluoride	mg F/L	≤ 5.0	-	-	0.68
Sulfate	mg SO4/L	-	-	-	180
Fecal Coliforms	MPN/100 mL	-	≤ 800 s (EFA-1)	-	1.0 U
Enterococci	MPN/100 mL	≤ 130	≤ 130.0 (EFA-1)	-	10.6
Bioassay - Fish *(M. beryllina)*	% effluent	-	≥ 100 p	-	100 L
Bioassay - Fish *(A. bahia)*	% effluent	-	≥ 100 p	-	100 L

A dash (-) indicates sample/measurement was not collected or criterion/limit does not exist.
a- Long-term average of annual average
c- Value is calculated
g- Value expressed as annual geometric mean.
p - 24 hour flow proportioned composite
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

L - Actual value is known to be greater than value given
Q - Sample held beyond normal holding time
U - Material analyzed for but not detected; value reported is the method detection limit
1 – Analyte detected in the equipment blank

Table 3. Analytical metals data

Effluent limits, Class III Water Quality Criteria for Marine Waters, and analytical metals data

Analyte	Units	Class III Criteria	Effluent Permit Limits	Effluent Grab EFD-01
Aluminum	µg/L	≤ 1500	-	11 I
Arsenic	µg/L	≤ 50	-	0.31
Cadmium	µg/L	≤ 8.8	-	0.020 U
Calcium	mg/L	-	-	70.9
Chromium, Total [2]	µg/L	≤ 50	-	0.40 U
Copper[1]	µg/L	≤ 3.7	≤ 16 p	1.91
Iron	µg/L	≤ 300	Report	360 e
Lead	µg/L	≤ 8.5	-	0.20 U
Magnesium	mg/L	-	-	29.0
Mercury	ng/L	≤ 25	≤ 25	0.28 I
Nickel	µg/L	≤ 8.3	-	1.1 I
Potassium	mg/L	-	-	12.4
Selenium	µg/L	≤ 71	-	0.20 U
Silver	µg/L	≤ 2.3	-	0.010 U
Sodium	mg/L	-	-	99.2
Zinc	µg/L	≤ 86	-	13 I

A dash (-) indicates sample/measurement was not collected or criterion/limit does not exist.
e -Value exceeds the Class III Water Quality Criteria or permit limits
p - 24 hour flow proportioned composite
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
1 - Analyte detected in the equipment blank
2 - Class III Marine Water Quality Criterion (62-302.530(19)(b), F.A.C.) is for chromium-VI

Table 4. Algal Growth Potential (AGP)

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

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 EFD-01	*Pseudokirchneriella subcapitata*	19.7 A	421.7 ± 84.3	731 ± 146.2	497.7 ± 99.5	903 ± 180.6	6.5	6.2
Effluent Grab EFD-01	*Dunaliella tertiolecta*	22.5 A *	not applicable [3]	not applicable [3]	not applicable [3]	not applicable [3]	6.5	6.2

* - sample salinity adjusted to 7.1 ppth

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

3 - predictions not applicable to marine matrix

Table 5. Detected Organic Constituents

Effluent limits, Class III Water Quality Criteria for Marine Waters, and analytical organic and pesticide data

Analyte	Units	Class III Criteria	Effluent Permit Limits	Effluent Grab EFD-01
Atrazine	ng/L	-	-	85
Azinphos Methyl	ng/L	-	-	4.4 I
Caffeine	ng/L	-	-	7.6 I
Chlorfenapyr	ng/L	-	-	1.6
Cyprodinil	ng/L	-	-	0.29 I
Dimethomorph	ng/L	-	-	0.30 I
Fipronil	ng/L	-	-	34
Fipronil Desulfinyl	ng/L	-	-	0.30 I
Fipronil Sulfide	ng/L	-	-	9.5
Fipronil Sulfone	ng/L	-	-	3.8
Fludioxonil	ng/L	-	-	3.1
Flutolanil	ng/L	-	-	1.0
Iprodione	ng/L	-	-	2.0 IJ
Loratadine	ng/L	-	-	6.5
Prodiamine	ng/L	-	-	0.40 I
Propiconazole	ng/L	-	-	4.3
Simazine	ng/L	-	-	4.9
Sulfentrazone	ng/L	-	-	11
Tebuconazole	ng/L	-	-	6.3
Terbufos	ng/L	-	-	0.15 I
2,4,6-Trichlorophenol	µg/L	-	-	0.13 I
Hexachloroethane	µg/L	-	-	0.10 I

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

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

J - Estimated value

Appendix A. Facility Summary

PART I: Information gathered prior to sampling event	
Prepared By: Shannon Taylor	**Contact Number:** (904) 256-1617
Facility Name (as it appears on permit): Atlantic Beach WWTF	**Former Names:** N/A
NPDES Permit Number: FL0038776	**Permit Expiration Date:** 05/03/2024
Physical Address: 1100 Sandpiper Lane, Atlantic Beach, FL 32233	
District: NED	**County: Duval**
Function of Facility: Domestic Wastewater Treatment	
Facility Type: BNR treatment units	**Permitted Capacity (MGD):** **3.5**
Mean Flow for previous 12 months for all EXTERNAL outfalls listed in permit (list date range including months): 1.69 MGD	
If applicable, Mean Flow for previous 12 months for REUSE outfall(s) (list date range including months): 0.2 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):	

Monitoring Site	Description of Monitoring Site
EFD-1	Sample point immediately after dechlorination and prior to discharge to D-001
CAL-1	Calculated percent removal of CBOD5 and TSS
EFA-1	Sample point immediately after chlorination and prior to discharge to D-001
EFA-4	Sample point immediately after disinfection and prior to discharge to Reuse Systems or Surface Water Discharge.
SWA – BE1	Ambient sample located at WIN Station 21 FLA20030464; approximately at latitude 30° 23' 4.4" N, longitude 81° 26' 19.5" W. (See Figure 1 or 2)
SWA – BE2	Ambient sample located at WIN Station 21 FLA20030465; approximately at latitude 30° 22' 57.9" N, longitude 81° 26' 27.2" W. (See Figure 1 or 2)
SWB – BE1	Ambient/background sample located at WIN Station 21 FLA20030056; approximately at latitude 30° 22' 53.965" N, longitude 81° 26' 55.194" W. (See Figure 1 or 2)

Figure 1: City of Atlantic Beach WWTF – Site Plant



Description of Permitted Outfall(s):

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

Surface Water Discharge D-001:
An existing 4.9 MGD AADF permitted capacity discharge to St. Johns River, Class III marine waters, WBID 2213A- within the National Preserve. City of Atlantic Beach WWTF is sharing the effluent force main with

Jacksonville Beach and Neptune Beach wastewater treatment facilities. The point of discharge (D-001) is located approximately 250 feet in length from the shore and discharges at a depth of approximately 8 feet. (i.e. at the offshore end. The effluent shall be discharged from the open-end pipe, directed horizontal towards mid-river (i.e. approximately perpendicular to the river axis and the principal current direction). The point of discharge is located approximately at latitude 30° 22' 58" N, longitude 81° 26' 27" W.

Interim permitted discharge capacity of the surface water discharge is limited to 3.5 MGD annual average daily flow based on the treatment capacity of the wastewater treatment system.

Mixing zones for total recoverable copper and total cyanide have been established for the discharge.

Surface Water Discharge D-002:

An existing 3.0 MGD AADF discharge to Intracoastal Waterway, Class III Marine waters, (WBID# 2205C) at Outfall D-002 which discharges at a depth of approximately 8 feet directly off shore. The point of discharge is located approximately at latitude 30° 20' 08" N, longitude 81° 25' 36" W.

Discharge from the WWTF through Outfall D-002 is a temporary /backup discharge and is utilized only during extreme wet weather condition or in emergency situations.

Land Application R-001:

An existing 0.5 MGD AADF permitted capacity slow-rate public access system R-001, which consists of Atlantic Beach Country Club, residential homes, and common areas

Figure 3: Outfall D-001



Figure 4: Outfall D-002



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)

			Effluent Limitations		Monitoring Requirements			
Parameter	**Units**	**Max/ Min**	**Limit**	**Statistical Basis**	**Frequency of Analysis**	**Sample Type**	**Monitoring Site**	**Notes**
Flow (from outfall D-001)	MGD	Max	3.5	Annual Average	Continuous	Recording Flow Meter with Totalizer	EFD-1	See I.A.4
		Max	Report	Monthly Average				
BOD, Carbonaceous 5 day, 20C	mg/L	Max	60.0	Single Sample	Weekly	24-hr FPC	EFA-1	none
		Max	40.0	Weekly Average				
		Max	25.0	Monthly Average				
		Max	20.0	Annual Average				
CBOD, 5-day,% Removal	percent	Min	85	Monthly Average	Monthly	Calculated	CAL-1	See I.A.9
Solids, Total Suspended	mg/L	Max	60.0	Single Sample	Weekly	24-hr FPC	EFA-1	none
		Max	40.0	Weekly Average				
		Max	30.0	Monthly Average				
		Max	20.0	Annual Average				
Solids, Total Suspended, % Removal	percent	Min	85	Monthly Average	Monthly	Calculated	CAL-1	See I.A.9
pH	s.u.	Min	6.5	Single Sample	Continuous	Meter	EFA-4	See I.A.3
		Max	8.5	Single Sample				
			Effluent Limitations		**Monitoring Requirements**			

Parameter	Units	Max/ Min	Limit	Statistical Basis	Frequency of Analysis	Sample Type	Monitoring Site	Notes
Coliform, Fecal	#/100mL	Max	200	Annual Average	Weekly	Grab	EFA-1	See I.A.6
		Max	200	Monthly Geometric Mean				
		Max	400	90th Percentile				
		Max	800	Single Sample				
Enterococci	#/100mL	Max	35.0	Monthly Geometric Mean	Weekly	Grab	EFA-1	See I.A.7
	#/100mL	Max	130.0	90th Percentile				
Chlorine, Total Residual (For Disinfection)	mg/L	Min	0.5	Single Sample	Continuous	Meter	EFA-1	See I.A.3 and I.A.8
Chlorine, Total Residual (For Dechlorination)	mg/L	Max	0.01	Single Sample	Daily (7days/week)	Grab	EFD-1	See I.A.12
Oxygen, Dissolved (DO)	mg/L	Min	5.0	Single Sample	Daily (7days/week)	Meter	EFD-1	See I.A.10
Nitrogen, Total (as N)	mg/L	Max	Report	Annual Average	Weekly	24-hr FPC	EFA-1	See I.C.3
		Max	Report	Monthly Average				
		Max	Report	Single Sample				
Phosphorus, Total (as P)	mg/L	Max	Report	Annual Average	Monthly	24-hr FPC	EFD-1	See I.C.3
		Max	Report	Monthly Average				
		Max	Report	Single Sample				
Copper, Total Recoverable *(Mixing Zone)*	µg/L	Max	16	Single Sample	Monthly	24-hr FPC	EFD-1	See I.A.16
			Effluent Limitations		**Monitoring Requirements**			

Parameter	Units	Max/ Min	Limit	Statistical Basis	Frequency of Analysis	Sample Type	Monitoring Site	Notes
Cyanide, Total (as CN) *(Mixing Zone)*	µg/L	Max	7.0	Single Sample	Monthly	Grab	EFD-1	See I.A.17
Iron, Total Recoverable	µg/L	Max	Report	Single Sample	Quarterly	24-hr FPC	EFD-1	
Nitrogen, Kjeldahl, Total (as N)	mg/L	Max	Report	Single Sample	Quarterly	24-hr FPC	EFD-1	
Nitrite plus Nitrate, Total (as N)	mg/L	Max	Report	Single Sample	Quarterly	24-hr FPC	EFD-1	
Nitrogen, Ammonia, Total (as N)	mg/L	Max	Report	Single Sample	Quarterly	24-hr FPC	EFD-1	
Phosphate, Ortho (as P)	mg/L	Max	Report	Single Sample	Quarterly	Grab-filtered	EFD-1	
Mercury, Total Recoverable	µg/L	Max	0.025	Single Sample	Annually	Grab	EFD-1	See I.A.17
Chronic Whole Effluent Toxicity, 7-Day IC25 (*Americamysis bahia*)	percent	Min	100	Single Sample	Semi-Annually; twice per year	24-hr FPC	EFD-1	See I.A.13
Chronic Whole Effluent Toxicity, 7-Day IC25 (*Menidia beryllina*)	percent	Min	100	Single Sample	Semi-Annually; twice per year	24-hr FPC	EFD-1	See I.A.13
Dissolved Oxygen	mg/L	Max	Report	Single Sample	Monthly	Meter	SWA – BE1 SWA – BE2 SWB – BE1	See I.A.13

			Effluent Limitations		Monitoring Requirements			
Parameter	**Units**	**Max/ Min**	**Limit**	**Statistical Basis**	**Frequency of Analysis**	**Sample Type**	**Monitoring Site**	**Notes**

pH	S.U.	Max	Report	Single Sample	Monthly	Meter	SWA – BE1 SWA – BE2 SWB – BE1	See I.A.13
Salinity	mg/L	Max	Report	Single Sample	Monthly	Meter	SWA – BE1 SWA – BE2 SWB – BE1	See I.A.13
Specific Conductance	µmhos/cm	Max	Report	Single Sample	Monthly	Meter	SWA – BE1 SWA – BE2 SWB – BE1	See I.A.13
Turbidity	NTU	Max	Report	Single Sample	Monthly	Meter	SWA – BE1 SWA – BE2 SWB – BE1	See I.A.13
Temperature	Deg. C	Max	Report	Single Sample	Monthly	Meter	SWA – BE1 SWA – BE2 SWB – BE1	See I.A.13
Tide Stage	feet	Min	Report	Single Sample	Monthly	Meter	SWA – BE1 SWA – BE2 SWB – BE1	See I.A.13
BOD, Carbonaceous 5 day, 20C	mg/L	Max	Report	Single Sample	Bi-Monthly	Grab	SWA – BE1 SWA – BE2 SWB – BE1	See I.A.13

			Effluent Limitations		**Monitoring Requirements**			
Parameter	**Units**	**Max/ Min**	**Limit**	**Statistical Basis**	**Frequency of Analysis**	**Sample Type**	**Monitoring Site**	**Notes**

Solids, Total Suspended	mg/L	Max	Report	Single Sample	Bi-Monthly	Grab	SWA – BE1 SWA – BE2 SWB – BE1	See I.A.13
Nitrogen, Kjeldahl, Total (as N)	mg/L	Max	Report	Single Sample	Bi-Monthly	Grab	SWA – BE1 SWA – BE2 SWB – BE1	See I.A.13
Ammonia, Nitrogen (as N)	mg/L	Max	Report	Single Sample	Bi-Monthly	Grab	SWA – BE1 SWA – BE2 SWB – BE1	See I.A.13
Nitrite plus Nitrate, Total 1 det. (as N)	mg/L	Max	Report	Single Sample	Bi-Monthly	Grab	SWA – BE1 SWA – BE2 SWB – BE1	See I.A.13
Nitrogen, Total (as N)	mg/L	Max	Report	Single Sample	Bi-Monthly	Grab	SWA – BE1 SWA – BE2 SWB – BE1	See I.A.13
Phosphate, Ortho (as P)	mg/L	Max	Report	Single Sample	Bi-Monthly	Grab	SWA – BE1 SWA – BE2 SWB – BE1	See I.A.13
Phosphorus, Total (as P)	mg/L	Max	Report	Single Sample	Bi-Monthly	Grab	SWA – BE1 SWA – BE2 SWB – BE1	See I.A.13

			Effluent Limitations		**Monitoring Requirements**			
Parameter	**Units**	**Max/ Min**	**Limit**	**Statistical Basis**	**Frequency of Analysis**	**Sample Type**	**Monitoring Site**	**Notes**

Chloride (as Cl)	mg/L	Max	Report	Single Sample	Bi-Monthly	Grab	SWA – BE1 SWA – BE2 SWB – BE1	See I.A.13
Copper, Total Recoverable	µg/L	Max	Report	Single Sample	Bi-Monthly	Grab	SWA – BE1 SWA – BE2 SWB – BE1	See I.A.13
Cyanide	µg/L	Max	Report	Single Sample	Bi-Monthly	Grab	SWA – BE1 SWA – BE2 SWB – BE1	See I.A.13

PART I: Continued	
Receiving Waters: D-001: St. Johns River Class III marine waters, WBID 2213A; D-002: Intercoastal Waterway, Class III marine waters, WBID 2205C.	**Classification (indicate whether fresh or marine):** D-001: St. Johns River Class III marine waters, WBID 2213A; D-002: Intercoastal Waterway, Class III marine waters, WBID 2205C.

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

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) In any routine or additional follow-up test for chronic whole effluent toxicity, the 25 percent inhibition concentration (IC25) for growth shall not be less than 100% effluent. [Rules 62-302.530(61) and 62-4.241(1)(b), F.A.C.]
(2) For acute whole effluent toxicity, the 96-hour LC50 shall not be less than 100% effluent in any test. [Rules 62-302.500(1)(a)4. and 62-4.241(1)(a), F.A.C.]
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b. Monitoring Frequency
(1) Routine toxicity tests shall be conducted once every 6 months starting within 6 months of the most recent tests and lasting for the duration of this permit.
c. Sampling Requirements
(1) For each routine test or additional follow-up test conducted, a total of three flow proportional 24-hr composite samples of final effluent shall be collected and used in accordance with the sampling protocol discussed in EPA-821-R-02-014, Section 8.
(2) The first sample shall be used to initiate the test. The remaining two samples shall be collected according to the protocol and used as renewal solutions on Day 3 (48 hours) and Day 5 (96 hours) of the test.
(3) Samples for routine and additional follow-up tests shall not be collected on the same day.
d. Test Requirements
(1) Routine Tests: All routine tests shall be conducted using a control (0% effluent) and a minimum of five test dilutions: 100%, 50%, 25%, 12.5%, and 6.25% final effluent.
(2) The permittee shall conduct 7-day survival and growth chronic toxicity tests with a mysid shrimp, Americamysis (Mysidopsis) bahia, Method 1007.0, and an inland silverside, Menidia beryllina, Method 1006.0, 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 Marine and Estuarine Organisms, 3rd Edition, EPA-821-R-02-014. 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 used shall be artificial sea salts as described in EPA-821-R-02-014, Section 7.2. The test salinity shall be determined as follows:
(a) For the Americamysis bahia bioassays, the effluent shall be adjusted to a salinity of 20 parts per thousand (ppt) with artificial sea salts. The salinity of the control/dilution water (0% effluent) shall be 20 ppt. If the salinity of the effluent is greater than 20 ppt, no salinity adjustment shall be made to the effluent and the test shall be run at the effluent salinity. The salinity of the control/dilution water shall match the salinity of the effluent.
(b) For the Menidia beryllina bioassays, if the effluent salinity is less that 5 ppt, the salinity shall be adjusted to 5 ppt with artificial sea salts. The salinity of the control/dilution water (0% effluent) shall be 5 ppt. If the salinity of the effluent is greater than 5 ppt, no salinity adjustment shall be made to the effluent and the test shall be run at the effluent salinity. The salinity of the control/dilution water shall match the salinity of the effluent.
(c) If the salinity of the effluent requires adjustment, a salinity adjustment control should be prepared and included with each bioassay. The salinity adjustment control is intended to identify toxicity resulting from adjusting the effluent salinity with artificial sea salts. To prepare the salinity adjustment control, dilute the control/dilution water to the salinity of the effluent and adjust the salinity of the salinity adjustment control at the same time and to the same salinity that the salinity of the effluent is adjusted using the same artificial sea salts

e. Quality Assurance Requirements
(1) A standard reference toxicant (SRT) quality assurance (QA) chronic toxicity test shall be conducted with each species used in the required toxicity tests either concurrently or initiated no more than 30 days before the date of each routine or additional follow-up test conducted. Additionally, the SRT test must be conducted concurrently if the test organisms are obtained from outside the test laboratory unless the test organism supplier provides control chart data from at least the last five monthly chronic toxicity tests using the same reference toxicant and test conditions. If the organism supplier provides the required SRT data, the organism
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supplier's SRT data and the test laboratory's monthly SRT-QA data shall be included in the reports for each companion routine or additional follow-up test required.
(2) If the mortality in the control (0% effluent) exceeds 20% for either species in any test or the "test acceptability criteria" are not met, the test for that species (including the control) shall be invalidated and the test repeated. Test acceptability criteria for each species are defined in EPA-821-R-02-014, Section 14.12 (Americamysis bahia) and Section 13.12 (Menidia beryllina). The repeat test shall begin within 21 days after the last day of the invalid test.
(3) If 100% mortality occurs in all effluent concentrations for either species prior to the end of any test and the control mortality is less than 20% at that time, the test (including the control) for that species shall be terminated with the conclusion that the test fails and constitutes non-compliance.
(4) Routine and additional follow-up tests shall be evaluated for acceptability based on the observed dose-response relationship as required by EPA-821-R-02-014, Section 10.2.6., and the evaluation shall be included with the bioassay laboratory reports.
f. Reporting Requirements
(1) Results from all required tests shall be reported on the Discharge Monitoring Report (DMR) as follows:
(a) Routine and Additional Follow-up Test Results: The calculated IC25 for growth for each test species shall be entered on the DMR.
(2) A bioassay laboratory report for each routine test shall be prepared according to EPA-821-R-02-014, Section 10, Report Preparation and Test Review, and mailed to the Department at the address below within 30 days after the last day of the test.
(3) For additional follow-up tests, a single bioassay laboratory report shall be prepared according to EPA-821-R-02-014, Section 10, and mailed within 30 days after the last day of the second valid additional follow-up test.
(4) Data for invalid tests shall be included in the bioassay laboratory report for the repeat test.
(5) The same bioassay data shall not be reported as the results of more than one test.
(6) All bioassay laboratory reports shall be sent to:
Florida Department of Environmental Protection
Northeast District Office
8800 Baymeadows Way West, Suite 100
Jacksonville, Florida 32256-7577
g. Test Failures
(1) A test fails when the test results do not meet the limits in 11.a.(1).
(2) Additional Follow-up Tests:
(a) If a routine test does not meet the chronic toxicity limitation in 11.a.(1) above, the permittee shall notify the Department at the address above within 21 days after the last day of the failed routine test and conduct two additional follow-up tests on each species that failed the test in accordance with 11.d.
(b) The first test shall be initiated within 28 days after the last day of the failed routine test. The remaining additional follow-up tests shall be conducted weekly thereafter until a total of two valid additional follow-up tests are completed.

(c) The first additional follow-up test shall be conducted using a control (0% effluent) and a minimum of five dilutions: 100%, 50%, 25%, 12.5%, and 6.25% effluent. The permittee may modify the dilution series in the second additional follow-up test to more accurately bracket the toxicity such that at least two dilutions above and two dilutions below the target concentration and a control (0% effluent) are run. All test results shall be analyzed according to the procedures in EPA-821-R-02-014.
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(3) In the event of three valid test failures (whether routine or additional follow-up tests) within a 12-month period, the permittee shall notify the Department within 21 days after the last day of the third test failure.
(a) The permittee shall submit a plan for correction of the effluent toxicity within 60 days after the last day of the third test failure.
(b) The Department shall review and approve the plan before initiation.
(c) The plan shall be initiated within 30 days following the Department's written approval of the plan.
(d) Progress reports shall be submitted quarterly to the Department at the address above.
(e) During the implementation of the plan, the permittee shall conduct quarterly routine whole effluent toxicity tests in accordance with 11.d. Additional follow-up tests are not required while the plan is in progress. Following completion or termination of the plan, the frequency of monitoring for routine and additional follow-up tests shall return to the schedule established in 11.b.(1). If a routine test is invalid according to the acceptance criteria in EPA-821-R-02-014, a repeat test shall be initiated within 21 days after the last day of the invalid routine test.
(f) Upon completion of four consecutive quarterly valid routine tests that demonstrate compliance with the effluent limitation in 11.a.(1) above, the permittee may submit a written request to the Department to terminate the plan. The plan shall be terminated upon written verification by the Department that the facility has passed at least four consecutive quarterly valid routine whole effluent toxicity tests. If a test within the sequence of the four is deemed invalid, but is replaced by a repeat valid test initiated within 21 days after the last day of the invalid test, the invalid test will not be counted against the requirement for four consecutive quarterly valid routine tests for the purpose of terminating the plan.
(4) If chronic toxicity test results indicate greater than 50% mortality within 96 hours in an effluent concentration equal to or less than the effluent concentration specified as the acute toxicity limit in 11.a.(2), the Department may revise this permit to require acute definitive whole effluent toxicity testing.
(5) The additional follow-up testing and the plan do not preclude the Department taking enforcement action for acute or chronic whole effluent toxicity failures

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

Facility Mixing Zone Details (if applicable):

A mixing zone for concentration of copper (total recoverable) in the effluent discharged through the existing outfall D-001 to St. Johns River has been established. The mixing zone consists of the 36,379 m^2 -polygonal embayment and a 15,848 m^2 -quadrilateral strip (28 m by 566 m) adjoining the polygonal embayment. The total mixing zone shall be 52,227 m^2 , centered over the end-of-pipe of the Outfall D-001 perpendicular to the shore and extends approximately 256 meters up-river and 310 meters down-river from the POD. Within the mixing zone, a minimum dilution ration of 9:1 is achieved at critical/worse care hydrologic scenarios. The maximum concentration limit at the end-of-pipe for copper (total recoverable) is 16.0 µg/L for the combined flow rates of three Beaches facilities: Jacksonville Beach WWTF (4.5 MGD AADF), Atlantic Beach WWTF (3.5 MGD AADF), and Neptune Beach WWTF (1.5 MGD AADF), at the total permitted capacity of 9.5 MGD AADF. The dischargers shall meet the water quality criterion of 3.7 µg/L for copper at the edge of mixing area.



A mixing zone for concentration of total cyanide in the effluent discharged through the existing outfall D-001 to St. Johns River has been established. The mixing zone consists of the 36,379 m2-polygonal embayment and a 28,830 m^2 -quadrilateral strip (31 m by 930 m) adjoining the polygonal embayment. The total mixing zone shall be 65,209 m^2, centered over the end-of-pipe of the Outfall D-001 perpendicular to the shore and extends approximately 497 meters up-river and 433 meters down-river from the POD. Within the mixing zone, a minimum dilution ration of 12:1 is achieved at critical/worse case hydrologic scenarios. The maximum concentration limit at the end-of-pipe for total cyanide of 7 µg/L at the permitted capacity of 9.5 MGD AADF, is a combination of flow rates of three Beach facilities: City of Jacksonville Beach WWTF (4.5 MGD AADF), Atlantic Beach WWTF (3.5 MGD AADF), and Neptune Beach WWTF (1.5 MGD AADF). The dischargers shall meet the water quality criterion of 1.0 µg/L for cyanide or are identified in compliance with Rule 62-4.246(7), FAC, at the edge of mixing area.

Figure 2: Cyanide Mixing Zone Area



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

Monitoring Group	Date	Monitoring Location	Description	Result	Limit	Units	Statistical Base
R-001	04/30/2022	EFA-1	Nitrogen, Total	7.95	5	mg/L	MK - Monthly Average
R-001	03/31/2022	EFA-1	Nitrogen, Total	7.37	5	mg/L	MK - Monthly Average
D-001	12/31/2021	EFA-1	Enterococci	200	130	#/100mL	9A - 90th Percentile
D-001	12/31/2021	EFD-1	Oxygen, Dissolved (DO)	2.58	5	mg/L	ME - Minimum
D-SUM	12/31/2021	CAL-2	Nitrogen, Total	47423	46614	lb/yr	AD - Annual Total
R-001	12/31/2021	EFB-1	Solids, Total Suspended	52	5	mg/L	MB - Maximum
R-001	12/31/2021	EFA-1	Nitrogen, Total	17.99	5	mg/L	MK - Monthly Average
R-001	12/31/2021	EFA-1	Nitrogen, Total	41.9	10	mg/L	MB - Maximum
D-001	11/30/2021	EFA-1	Enterococci	200	130	#/100mL	9A - 90th Percentile
R-001	11/30/2021	EFB-1	Solids, Total Suspended	13	5	mg/L	MB - Maximum
R-001	11/30/2021	EFA-4	Coliform, Fecal	32	25	#/100mL	MB - Maximum
R-001	11/30/2021	EFA-1	Nitrogen, Total	11.18	5	mg/L	MK - Monthly Average
R-001	11/30/2021	EFA-1	Nitrogen, Total	23	10	mg/L	MB - Maximum

Describe previous FYI and WQBEL study:

Water Quality Based Effluent Limitation (WQBEL)

Water quality based effluent limitations (WQBELs) are effluent limitations, which may be more stringent than a technology based effluent limitation, that have been determined necessary by the Department to ensure that water quality standards in a receiving body of water will not be violated. WQBELs are developed in accordance with Chapter 62-650, F.A.C., and are based on the characteristics of the discharge, the receiving water characteristics, and the criteria and standards in Chapters 62-4, 62-302, and the 62-600 series, F.A.C.; they were developed based on Total Maximum Daily Load (TMDL) allocations adopted in Chapter 62-304, F.A.C., and allocations developed as part of a Basin Management Action Plan (BMAP) or/and a Reasonable Assurance Plan (RAP). WQBELs are included in the permit for the following pollutants of concern.

(a) Bacteriological Qualities:

(i) Enterococci: In 2004, EPA promulgated bacteriological water quality criteria for Florida in 40 CFR 131.41. A requirement for discharges from the Outfall D-001 to meet the federal criteria was adopted in subsection 62-600.520(5), F.A.C.; thus, enterococci was required to monitor in the existing permit. In July 2017, EPA approved Florida's bacteriological water quality standards in Rule 62-302.530, F.A.C., superseding the criteria in 40 CFR 131.41. The enterococci effluent limitations previously included in the permit have been replaced with enterococci effluent limitations consistent with the bacteriological water quality standards for enterococci in Rule 62-302.530, F.A.C.

(ii) Fecal Coliform: Because there is no established relationship between fecal coliform and enterococci bacteria, limitations based on both the disinfection requirements for fecal coliform from Rule 62-600.440, F.A.C., and based on the bacteriological water quality standards for enterococci for discharges to Class III predominately marine waters under Rule 62-302.530, F.A.C., have been included in the permit

(b) Dissolved Oxygen:

(i) Site Specific Alternative Criteria (SSACs) for dissolved oxygen has established for the St. Johns River marine portions of the lower St. Johns River and its tributaries (between Julington Creek and the mouth of the river at the Atlantic Ocean). Pursuant to the SSAC, Dissolved Oxygen shall not be less than a minimum concentration of 4.0 mg/L, and a Total Fractional Exposure not greater than 1.0 over an annual evaluation period as defined by the following equation for segments of the river: WBID 2213A (outfall location).

(ii) The effluent limitations for CBOD5, TKN and DO have been established such the water quality criterion for DO concentration of the segment of waterbody is meet. In addition, the permittee shall continue to monitor for dissolved oxygen for the segment waterbody where the discharge/outfall located to confirm that the discharge would not impact to the dissolve oxygen level of the waterbody. The fact that the ambient river monitoring has confirmed that the DO level of the River has been in compliance with the SSAC for DO. There is no evidence to show that the effluent would impact the DO level of the waterbody. Therefore, the limit for DO is proposed to remain unchanged.

c) Iron:

Iron is listed as an impaired parameter of the segments of the river WBID 2213A and WBID 2213B (Segment waterbody south of the Outfall). Although the facility receives 100% domestic wastewater (there are no known industrial wastewater connections to the facility), there are not any available data to verify whether the effluent would be complying with the water quality standard for iron. A DEP sample from 2013 for iron did indicate the facility met the criteria. In addition, the segment of the receiving waterbody is within the National Preserve; the permittee is required to monitor for iron.

(d) Mercury:

The analytical results indicate that the discharge has complied with the permit limit for mercury. Based on the Statewide mercury TMDL, the permittee is required to continue

to monitor for mercury. EPA Method 1631E is recommended. However, an alternative EPA approved method such as Method 245.1 or 245.7 with a MDL of 14.0 ng/L or less operated in the high sensitivity mode can be used as for initial screening for mercury. If mercury is not detected (e.g., the results are less than the MDL of 14.0 ng/L), then mercury is in compliance with the water quality criterion of Rule 62-302.530(41), FAC. However, for any sample results that have a value greater than the MDL but less than the PQL, the permittee shall conduct an additional evaluation for mercury using clean sampling techniques such as Method 1631E. If test results show quantifiable mercury levels in the effluent, the permittee shall prepare and implement a mercury minimization plan addressing sources of mercury.

(e) Lead:

Lead is listed as an impaired parameter of the segment of the river. The chemical data included in the third-year sampling inspection report and the effluent expanded testing data showed that the concentrations of lead were at a level that complied with the water quality standard. 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 lead concentration in the effluent is impacting the lead level of the water body. The facility will not be required to monitor for lead at this time.

(f) Copper:

(i) The effluent from three Beaches' wastewater facilities, which include City of Jacksonville Beach WWTF, Atlantic Beach WWTF and Neptune Beach WWTF, has been combined and discharges through 30-inch diameter outfall pipe (D – 001). The Beaches have been required to monitor for concentration of copper in the effluent before discharge, and compared the results with the water quality standards (WQS) of 3.7µg/L. Exceedances of WQS in surface water discharge are not authorized, except with a localized area defined and approved as a mixing zone.

(ii) Copper Mixing Zone – Evaluation:

• The effluent from three Beaches' wastewater facilities, which include City of Jacksonville Beach WWTF, Atlantic Beach WWTF and Neptune Beach WWTF, has been combined and discharges through 30-inch diameter outfall pipe (D – 001). The Beaches have been required to monitor for concentration of copper in the effluent before discharge, and compared the results with the water quality standards (WQS) of 3.7µg/L. Exceedances of WQS in surface water discharge are not authorized, except with a localized area defined and approved as a mixing zone.

• Mixing Zone for copper has been established which consist of the 36,379 m^2 - polygonal embayment and a 15,848 m^2 -quadrilateral strip (28 m by 566 m) adjoining the polygonal embayment. The total mixing zone is 52,227 m^2, centered over the end-of-pipe of the Outfall D-001 perpendicular to the shore and extends approximately 256 meters up-river and 310 meters down-river from the outfall. Within the mixing zone, a minimum dilution ratio of 9:1 is achieved at critical/worse care hydrologic scenarios

(g) Cyanide:

• The Beaches have been required to monitor for concentration of total cyanide in the effluent before discharge, and compared the results with the water quality standards (WQS). Exceedances of WQS in surface water discharge are not authorized, except with a localized area defined and approved as a mixing zone.

• Mixing Zone for total cyanide has been established which consist of the 36,379 m^2- polygonal embayment and a 28,830 m^2 -quadrilateral strip (31 m by 930 m) adjoining the polygonal embayment. The total mixing zone is 65,209 m^2, centered over the end-of-pipe of the Outfall D-001 perpendicular to the shore and extends approximately 497 meters up-river and 433 meters down-river from the outfall. Within the mixing zone, a minimum dilution ration of 12:1 is achieved at critical/worse care hydrologic scenarios.

(h) Other Heavy Metals

Results of the Department's Sampling Inspection indicates that the concentrations of

the above listed metals were either below the MDL or in compliance with the Florida Water Quality Criteria (WQC). In addition, the data listed in the Expanded Effluent Testing (Application Form 2A) show that concentrations of the metals were at level that complied with the fresh water quality standard. Also, the facility receives almost 100% domestic wastewater; there are not any new industrial users. Therefore, there are no any new metals other than copper and iron are recommended to be monitor at the current time

(i) Narrative Nutrient Criterion of Numeric Nutrient Standards

¬ St. Johns River was verified as impaired for nutrients based on elevated chlorophyll a and Trophic State Index (TSI) levels. The TMDLs establish the allowable loadings of nutrients of the LSJR that would restore the river so that it meets its applicable water quality criteria for nutrients and dissolved oxygen (DO).

¬ Pursuant with Rule 62-302.531(2)(a).1a, the narrative water quality criterion for nutrients in paragraph 62-302.530(47)(b), F.A.C., is numerically interpreted for both nutrients and nutrient response variables in the manner of the TMDL – Nutrient for the Lower St. Johns River.

¬ Discharge from Atlantic Beach WWTF through Outfall D-001 is subject the effluent limitation of annual total maximum mass load of the total nitrogen (i.e., the sum of monthly mass loading of total nitrogen for each month starting from the first day of the second month following permit issuance through the last day of the 12th month period (rolling 12-month period)) to the Lower St. Johns River basin.

(j) Whole Effluent Toxicity Testing:

¬ Under Section 301(b)(1)(C) of the CWA, discharges are subject to effluent limitations based on water quality standards that the water shall be free from pollutants in concentrations or combinations that are toxic to humans, aquatic life or wildlife.

¬ In order to provide reasonable assurance that the discharge will not adversely affect the designated use of the receiving water, whole effluent toxicity testing is required. In accordance with requirement of Rule 62-620.620(3)(b), FAC, the facility is required to conduct chronic definitive tests starting with 100% effluent using a minimum of five dilution concentrations.

¬ Taking into account the dilution of the effluent in the receiving water, WET is conducted with marine water species which include the mysid shrimp, Americamysis bahia, and inland silverside, Menidia beryllina (marine species).

(k) Ambient Sampling:

The Permittee shall conduct regular monitoring of the segment of the waterbody near the outfall D-001 for maintaining data on the effect of the discharge to the water quality of the surface water body.

(l) Benthic Macroinvertebrate Communities:

At the present time, the facility is not required to conduct bio-integrity monitoring. However, if the future studies reveal that benthic monitoring is necessary, the facility will be required to conduct additional regular monitoring of the segment of the St. Johns River near the outfall.

(m) Downstream Waterbodies Protection

he effluent discharging from the Outfall D-001 includes limitations that protects the downstream waterbodies. The discharge should not adversely affect the designated use of the downstream waterbodies

iii) Conclusion:

The review included in-stream monitoring data, discharge monitoring reports, the Department's 305(b) report, EPA 303(d) report, FDEP 303 (d) and the Department's compliance sampling inspection reports. A TMDL for this water-body has been developed for nutrients. Specific allocations for the point source discharger have been established. The permit includes implementation actions to comply with the new requirements. Considering the above, reasonable assurance of compliance has been provided with the effluent limits and applicable surface water quality standards for each parameter of concern (based upon rules referenced in the tables above).

Describe previous or current Enforcement Actions (including WLs): An SSO was identified, and a WL was issued and a Enterococci test was missed over the last year.
Describe any violations or problems noted in previous inspection: The only issue identified during the last inspection was effluent exceedances.
Discuss whether DMR trends within previous five years are improving or declining: NO significant trends were identified.
Additional Comments (this should include a trend of the Effluent, i.e. if the facility is now Reuse): N/A

Appendix B. Explanations of Measurements

Biological assessments are prepared by DEP staff to provide information for review of NPDES permit renewal applications. Biological assessments, in conjunction with other information concerning the subject facility and its receiving-water body, are used to determine appropriate permit conditions. References to Rule 62-302.530, F.A.C., are to the currently applicable surface water quality criteria table with an effective date of 02/17/2016 and a notice identification number of 17115667.

- **Chemical Analyses of the Effluent**

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

- **Toxicity Bioassays**

  Greater than 50% mortality in an acute toxicity test may constitute an exceedance of Paragraph 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 Subsection 62-302.530(20), Subsection 62-302.530(62) and/or facility permit limits. A no observed effect concentration (NOEC) less than 100% effluent in a chronic test may constitute an exceedance of Subsection 62-302.530(62) and/or facility permit limits. Standard reference toxicant (SRT) tests are conducted monthly to ensure quality in toxicity testing.

- **Bacteriological Testing**

  High levels of fecal indicator bacteria may constitute an exceedance of Subsection 62-302.530(6) and/or facility permit limits. Fecal coliform 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.

- **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. AGP results within the range 6.10 to 20.0 mg dry wt/L are suggested to be representative of high productivity for freshwaters (Miller et al. 1978). High AGP values may constitute exceedances of Subsection 62-302.530(47), F.A.C., Paragraph 62-302.530(48)(a), F.A.C. and/or Paragraph 62-302.530(48)(b), F.A.C.

  The concentration of nutrients in a water sample may be used to calculate the expected yield of AGP 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 ± 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 (USEPA 2000). 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 Subsection 62-302.530(62), F.A.C.

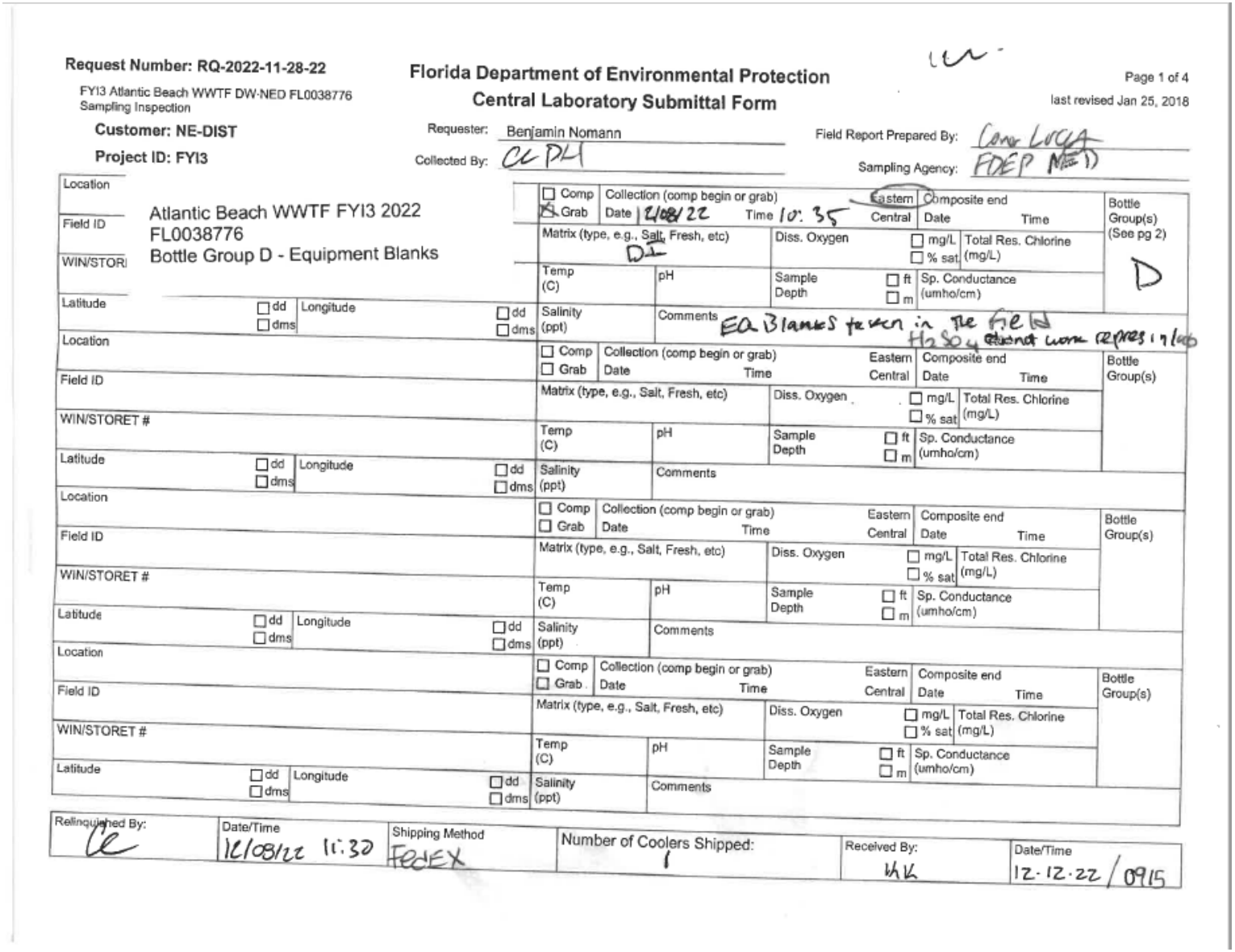
- **Chlorophyll a Content**

  Chlorophyll a content is an estimate of algal biomass. High algal biomass implies nutrientstress (Stevenson and Bahls 1999) and may be constitute exceedances of Subsection 62-302.530(47), F.A.C., Paragraph 62-302.530(48)(a) F.A.C. and/or Paragraph 62-302.530(48)(b) F.A.C..

- **Definition of Qualifiers** (Rule 62-160.700, F.A.C.)

  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. Chain of Custody



Request Number: RQ-2022-11-28-22

FYI3 Atlantic Beach WWTF DW-NED FL0038776 Sampling Inspection

Customer: NE-DIST

Project ID: FYI3

Florida Department of Environmental Protection
Central Laboratory Submittal Form

Page 1 of 4
last revised Jan 25, 2018

Requester: Benjamin Nomann
Collected By: CL PH
Field Report Prepared By: Cora Lucia
Sampling Agency: FDEP NED

Location: Atlantic Beach WWTF FYI3 2022
Field ID: FL0038776
WIN/STORET: Bottle Group D - Equipment Blanks

Comp / Grab: Grab
Collection (comp begin or grab) Date: 12/08/22 Time: 10:35
Eastern / Central
Composite end Date / Time
Bottle Group(s) (See pg 2): D

Matrix (type, e.g., Salt, Fresh, etc): DI
Diss. Oxygen ☐ mg/L ☐ % sat
Total Res. Chlorine (mg/L)
Temp (C)
pH
Sample Depth ☐ ft ☐ m
Sp. Conductance (umho/cm)
Latitude ☐ dd ☐ dms
Longitude ☐ dd ☐ dms
Salinity (ppt)
Comments: EQ Blanks taken in the field H2SO4 preserved upon return to lab

Location
Field ID
WIN/STORET #
Comp / Grab
Collection (comp begin or grab) Date / Time
Eastern / Central
Composite end Date / Time
Bottle Group(s)
Matrix (type, e.g., Salt, Fresh, etc)
Diss. Oxygen ☐ mg/L ☐ % sat
Total Res. Chlorine (mg/L)
Temp (C)
pH
Sample Depth ☐ ft ☐ m
Sp. Conductance (umho/cm)
Latitude ☐ dd ☐ dms
Longitude ☐ dd ☐ dms
Salinity (ppt)
Comments

Location
Field ID
WIN/STORET #
Comp / Grab
Collection (comp begin or grab) Date / Time
Eastern / Central
Composite end Date / Time
Bottle Group(s)
Matrix (type, e.g., Salt, Fresh, etc)
Diss. Oxygen ☐ mg/L ☐ % sat
Total Res. Chlorine (mg/L)
Temp (C)
pH
Sample Depth ☐ ft ☐ m
Sp. Conductance (umho/cm)
Latitude ☐ dd ☐ dms
Longitude ☐ dd ☐ dms
Salinity (ppt)
Comments

Location
Field ID
WIN/STORET #
Comp / Grab
Collection (comp begin or grab) Date / Time
Eastern / Central
Composite end Date / Time
Bottle Group(s)
Matrix (type, e.g., Salt, Fresh, etc)
Diss. Oxygen ☐ mg/L ☐ % sat
Total Res. Chlorine (mg/L)
Temp (C)
pH
Sample Depth ☐ ft ☐ m
Sp. Conductance (umho/cm)
Latitude ☐ dd ☐ dms
Longitude ☐ dd ☐ dms
Salinity (ppt)
Comments

Relinquished By:	Date/Time	Shipping Method	Number of Coolers Shipped:	Received By:	Date/Time
CL	12/08/22 11:30	FedEX	1	MK	12-12-22 / 0915

DIVERSIFIED ENVIRONMENTAL LABORATORIES, INC.

CHAIN OF CUSTODY RECORD

Project Number: (Lab Use Only) 221212.02

3653 Regent Boulevard, Suite # 509
Jacksonville, FL 32224
P. (904) 807-9625 E. info@delilab.com
F. (904) 807-9627

Page 1 of 1

Company Name: Florida Department of Environmental Protection
Address: 8800 Baymeadows Way West
City: Jacksonville State: Fl. Zip: 32256
Attn.: Dep-overflowmicro@fldep.state.fl.us
Tel.: E-mail or Fax
Project Name: Atlantic Beach FYI3
Project Number: 2022- AtlanticBeachWTF
Project Location: Atlantic Beach
Sampler Name/Signature: Conor Lucy

Transfer #	Sample # (Lab Use Only)	Sample Identification	Date Sampled	Time Sampled	Sample Matrix Code	Specific Cond. (Field)	Comp	Grab	E. Coli - Quantitray (DW)	Enterococci - Quantitray	Coliform, Fecal - MF 3 Dilutions (DW)	Fecal Coliform - QT
1	61863	Atlantic Beach FYI3 BacT	12/12/22	10:50	WW			X	X	X	X	X
2												
3												
4												
5												
6												
7												
8												
9												
0												

Container Information (Qty, Size, & Type): NPW | 250mLP HNO3 (DW) | NPW | 250mLP | | | | | |
Container Preservation Codes: 6 | 6 | 6 | G | | | | | |
Parameters: E. Coli - Quantitray (DW) | Enterococci - Quantitray | Coliform, Fecal - MF 3 Dilutions (DW) | Fecal Coliform - QT

Sample Matrix Codes:
A. Air P. Petroleum
B. Bulk S. Soil/Sludge
W. Wipe O. Other _____
PW. Potable Water
NPW. Non-Potable Water

Sample Kit or Container Lot #: NA

Preservation Codes:
0. None 5. Na2S2O3
1. H2SO4 6. Crushed Ice (4C)
2. HNO3 7. C6H8O6
3. HCl 8. NH4Cl
4. NaOH 9. Other: (List)

Thermal Preservation:
In Crushed Ice? (Yes) / No
Cooler Temp: 0.3 °C
Sample Cont. Temp: 6.6 °C

Turnaround Requested:
X Standard (10 Business Days)
___ Semi-Rush (3-5 Business Days)
___ Rush (1-2 Business Days)
Turnaround times are estimated & subject to change. Surcharges apply for all Rush samples.

Billing Information:
_____ Invoice with Report
_____ Invoice to Accounting
Req. #: _____
P.O. #: C0319A

Special Instructions: * see PLF

Transfer Numbers	Relinquished By	Date / Time	Received By	Date / Time
1	Conor Lucy	12/12/22 1359	DC VC	12/12/22 1359

NELAP ACCREDITED TNI LABORATORY
Certification #E821059

Lab General Form 059, Rev. #1, Rev. Date: 02/07/22, Effective Date: 02/07/22.

Visit us online & order kits at: www.delilab.com

Request Number: RQ-2022-11-28-22

FY13 Atlantic Beach WWTF DW NED FL0038776
Sampling Inspection

Customer: NE-DIST

Project ID: FYI3

Florida Department of Environmental Protection
Central Laboratory Submittal Form

Page 1 of 4
last revised Jan 25, 2018

Requester: Benjamin Nomann
Collected By: Conor Lucas Philippe Hook
Field Report Prepared By: CL
Sampling Agency: FDEP NED

Bottle Group A - Effluent (Grab)

Location: Atlantic Beach WWTF FYI3 2022
Field ID: FL0038776
WIN/STORET #: EFD-1
Latitude: ☐ dd ☐ dms Longitude
Salinity (ppt):
Collection (comp begin or grab): ☐ Comp ☒ Grab Date 12/12/22 Time 10:50 Eastern / Central
Composite end: Date Time
Matrix (type, e.g., Salt, Fresh, etc): WW
Diss. Oxygen: 6.07 ☐ mg/L ☐ % sat
Total Res. Chlorine (mg/L):
Temp (C): 24.3
pH: 6.89
Sample Depth: ☐ ft ☐ m
Sp. Conductance (umho/cm): 1139
Bottle Group(s) (See pg 2): A
Comments: overcast, slightly windy 72.5% DO

Bottle Group B - Effluent (COMP)

Location: Atlantic Beach WWTF FYI3 2022
Field ID: FL0038776
WIN/STORET #: EFD-1
Latitude: ☐ dd ☐ dms Longitude
Salinity (ppt):
Collection (comp begin or grab): ☒ Comp ☐ Grab Date 12/11/22 Time 10:00 Eastern / Central
Composite end: Date 12/12/22 Time 10:00
Matrix (type, e.g., Salt, Fresh, etc): WW
Diss. Oxygen: ☐ mg/L ☐ % sat
Total Res. Chlorine (mg/L):
Temp (C):
pH:
Sample Depth: ☐ ft ☐ m
Sp. Conductance (umho/cm): 1135
Bottle Group(s): B
Comments:

Bottle Group C - Field Blank

Location: Atlantic Beach WWTF FYI3 2022
Field ID: FL0038776
WIN/STORET #: Bottle Group C - Field Blank
Latitude: ☐ dd ☐ dms Longitude
Salinity (ppt):
Collection (comp begin or grab): ☐ Comp ☒ Grab Date 12/12/22 Time 10:00 Eastern / Central
Composite end: Date Time
Matrix (type, e.g., Salt, Fresh, etc): DI
Diss. Oxygen: ☐ mg/L ☐ % sat
Total Res. Chlorine (mg/L):
Temp (C):
pH:
Sample Depth: ☐ ft ☐ m
Sp. Conductance (umho/cm):
Bottle Group(s): C
Comments:

Bottle Group

Location:
Field ID:
WIN/STORET #:
Latitude: ☐ dd ☐ dms Longitude
Salinity (ppt):
Collection (comp begin or grab): ☐ Comp ☐ Grab Date Time Eastern / Central
Composite end: Date Time
Matrix (type, e.g., Salt, Fresh, etc):
Diss. Oxygen: ☐ mg/L ☐ % sat
Total Res. Chlorine (mg/L):
Temp (C):
pH:
Sample Depth: ☐ ft ☐ m
Sp. Conductance (umho/cm):
Bottle Group(s):
Comments:

Relinquished By:	Date/Time	Shipping Method	Number of Coolers Shipped:	Received By:	Date/Time
CL	12/12/22 12:30	FedEX	5	R	12-13-2022 9:14

Request Number: RQ-2022-11-28-22

FY13 Atlantic Beach WWTF DW NED FL0038776
Sampling Inspection

Customer: NE-DIST

Project ID: FY13

Florida Department of Environmental Protection
Central Laboratory Submittal Form

last revised Jan 25, 2018

Requester: Benjamin Nomann

Field Report Prepared By: Conor Lilley

Collected By: Conor Lilley Philippe Hook

Sampling Agency: FDEP NED

Locatio	Atlantic Beach WWTF FY13 2022	☒ Comp ☐ Grab	Collection (comp begin or grab) Date 12/13/22 Time 10:00	Eastern Central	Composite end Date 12/13/22 Time 10:00	Bottle Group(s) (See pg 2)			
Field ID	FL0038776	Matrix (type, e.g., Salt, Fresh, etc) WW		Diss. Oxygen	☐ mg/L ☐ % sat	Total Res. Chlorine (mg/L)			
WIN/ST	EFD-1	Temp (C)	pH	Sample Depth	☐ ft ☐ m	Sp. Conductance (umho/cm)	B		
Latitude ☐ dd ☐ dms	Longitude ☐ dd ☐ dms	Salinity (ppt)	Comments Raining on Collection Collected at 10:10						
Location	Bottle Group B - Effluent (COMP)	☐ Comp ☐ Grab	Collection (comp begin or grab) Date Time	Eastern Central	Composite end Date Time	Bottle Group(s)			
Field ID		Matrix (type, e.g., Salt, Fresh, etc)		Diss. Oxygen	☐ mg/L ☐ % sat	Total Res. Chlorine (mg/L)			
WIN/STORET #		Temp (C)	pH	Sample Depth	☐ ft ☐ m	Sp. Conductance (umho/cm)			
Latitude ☐ dd ☐ dms	Longitude ☐ dd ☐ dms	Salinity (ppt)	Comments						
Location		☐ Comp ☐ Grab	Collection (comp begin or grab) Date Time	Eastern Central	Composite end Date Time	Bottle Group(s)			
Field ID		Matrix (type, e.g., Salt, Fresh, etc)		Diss. Oxygen	☐ mg/L ☐ % sat	Total Res. Chlorine (mg/L)			
WIN/STORET #		Temp (C)	pH	Sample Depth	☐ ft ☐ m	Sp. Conductance (umho/cm)			
Latitude ☐ dd ☐ dms	Longitude ☐ dd ☐ dms	Salinity (ppt)	Comments						
Location		☐ Comp ☐ Grab	Collection (comp begin or grab) Date Time	Eastern Central	Composite end Date Time	Bottle Group(s)			
Field ID		Matrix (type, e.g., Salt, Fresh, etc)		Diss. Oxygen	☐ mg/L ☐ % sat	Total Res. Chlorine (mg/L)			
WIN/STORET #		Temp (C)	pH	Sample Depth	☐ ft ☐ m	Sp. Conductance (umho/cm)			
Latitude ☐ dd ☐ dms	Longitude ☐ dd ☐ dms	Salinity (ppt)	Comments						

Relinquished By:	Date/Time	Shipping Method	Number of Coolers Shipped:	Received By:	Date/Time
CL	12/14/22 11:00	FedEx	2	IHK	12·15·22/0942

Request Number: RQ-2022-11-28-22

FYI3 Atlantic Beach WWTF DW NED FL0038776 Sampling Inspection

Customer: NE-DIST

Project ID: FYI3

Florida Department of Environmental Protection
Central Laboratory Submittal Form

Page 1 of 4

last revised Jan 25, 2018

Requester: Benjamin Nomann

Field Report Prepared By: CC

Collected By: Devon Lucas, Phillip Hall

Sampling Agency: FDEP NED

Location: Atlantic Beach WWTF FYI3 2022

Field ID: FL0038776

WIN: EFD-1

Bottle Group B - Effluent (COMP)

Latitude ☐dd ☐dms	Longitude ☐dd ☐dms	☐ Comp ☐ Grab	Collection (comp begin or grab) Date 12/15/22 Time 10:00	Eastern Central	Composite end Date 12/16/22 Time 10:00	Bottle Group(s) (See pg 2) B
		Matrix (type, e.g., Salt, Fresh, etc)		Diss. Oxygen	☐ mg/L ☐ % sat	Total Res. Chlorine (mg/L)	
		Temp (C)	pH	Sample Depth	☐ ft ☐ m	Sp. Conductance (umho/cm)	
		Salinity (ppt)	Comments Parred at 10:10				
Location		☐ Comp ☐ Grab	Collection (comp begin or grab) Date Time	Eastern Central	Composite end Date Time	Bottle Group(s)
Field ID		Matrix (type, e.g., Salt, Fresh, etc)		Diss. Oxygen	☐ mg/L ☐ % sat	Total Res. Chlorine (mg/L)	
WIN/STORET #		Temp (C)	pH	Sample Depth	☐ ft ☐ m	Sp. Conductance (umho/cm)	
Latitude ☐dd ☐dms	Longitude ☐dd ☐dms	Salinity (ppt)	Comments				
Location		☐ Comp ☐ Grab	Collection (comp begin or grab) Date Time	Eastern Central	Composite end Date Time	Bottle Group(s)
Field ID		Matrix (type, e.g., Salt, Fresh, etc)		Diss. Oxygen	☐ mg/L ☐ % sat	Total Res. Chlorine (mg/L)	
WIN/STORET #		Temp (C)	pH	Sample Depth	☐ ft ☐ m	Sp. Conductance (umho/cm)	
Latitude ☐dd ☐dms	Longitude ☐dd ☐dms	Salinity (ppt)	Comments				
Location		☐ Comp ☐ Grab	Collection (comp begin or grab) Date Time	Eastern Central	Composite end Date Time	Bottle Group(s)
Field ID		Matrix (type, e.g., Salt, Fresh, etc)		Diss. Oxygen	☐ mg/L ☐ % sat	Total Res. Chlorine (mg/L)	
WIN/STORET #		Temp (C)	pH	Sample Depth	☐ ft ☐ m	Sp. Conductance (umho/cm)	
Latitude ☐dd ☐dms	Longitude ☐dd ☐dms	Salinity (ppt)	Comments				

Relinquished By:	Date/Time	Shipping Method	Number of Coolers Shipped:	Received By:	Date/Time
	12/16/22 12:00	FedEx	2	Devon Witcofski	12.17.22/0915

12.19.22 / 13.45

Appendix D. Chemical Analysis of Effluent Water

Date_Sampled	Site ID	Analysis Group	Component	Result	Units	MDL	PQL
12/12/2022 10:50	Effluent Grab	AGP/LN	Algal Growth Potential-Salinity Adjusted	22.5 A	mg DryWt/L	3.00	3.00
12/12/2022 10:50	Effluent Grab	AGP/LN	Algal Growth Potential	19.7 A	mg DryWt/L	0.300	0.900
12/12/2022 10:50	Effluent Grab	Chlorophyll/Grain Size/BOD	Phaeophytin-a	0.90 U	µg/L	0.90	2.7
12/12/2022 10:50	Effluent Grab	Chlorophyll/Grain Size/BOD	Chlorophyll-a, Uncorrected	0.60 U	µg/L	0.60	1.8
12/12/2022 10:50	Effluent Grab	Chlorophyll/Grain Size/BOD	Chlorophyll-a, Corrected	0.82 U	µg/L	0.82	2.5
12/12/2022 10:50	Effluent Grab	Overflow	Enterococci-Quanti-Tray	10.6	MPN/100 mL	1.0	1.0
12/12/2022 10:50	Effluent Grab	Overflow	Fecal Coliform-Quanti-Tray	1.0 U	MPN/100 mL	1.0	1.0
12/12/2022 10:00	Effluent Composite	Overflow	Carbonaceous Biochemical Oxygen Demand	2.4 Q	mg/L	2.0	2.0
12/12/2022 10:50	Effluent Grab	Overflow	Carbonaceous Biochemical Oxygen Demand	2.0 UQ	mg/L	2.0	2.0
12/12/2022 10:00	Effluent Composite	Toxicology	Bioassay-Chron-Def-SW-Mysid, IC25	100 L	IC25		
12/12/2022 10:00	Effluent Composite	Toxicology	Bioassay-Chron-Def-SW-Fish, IC25	100 L	IC25		
12/12/2022 10:00	Effluent Composite	Metals	Cadmium	0.020 U	µg/L	0.020	0.080
12/12/2022 10:00	Effluent Composite	Metals	Potassium	12.4	mg/L	0.30	1.2
12/12/2022 10:00	Effluent Composite	Metals	Chromium	0.40 U	µg/L	0.40	1.6
12/12/2022 10:00	Effluent Composite	Metals	Copper	1.91	µg/L	0.40	0.80
12/12/2022 10:00	Effluent Composite	Metals	Iron	360	µg/L	30	120
12/12/2022 10:00	Effluent Composite	Metals	Lead	0.20 U	µg/L	0.20	0.40
12/12/2022 10:00	Effluent Composite	Metals	Sodium	99.2	mg/L	0.50	2.0
12/12/2022 10:00	Effluent Composite	Metals	Magnesium	29.0	mg/L	0.040	0.16
12/12/2022 10:00	Effluent Composite	Metals	Calcium	70.9	mg/L	0.075	0.30
12/12/2022 10:00	Effluent Composite	Metals	Silver	0.010 U	µg/L	0.010	0.040
12/12/2022 10:00	Effluent Composite	Metals	Nickel	1.1 I	µg/L	0.50	2.0
12/12/2022 10:00	Effluent Composite	Metals	Arsenic	0.31	µg/L	0.050	0.20
12/12/2022 10:00	Effluent Composite	Metals	Selenium	0.20 U	µg/L	0.20	0.80
12/12/2022 10:00	Effluent Composite	Metals	Zinc	13 I	µg/L	5.0	20
12/12/2022 10:00	Effluent Composite	Metals	Aluminum	11 I	µg/L	5.0	20
12/12/2022 10:50	Effluent Grab	Nutrients	Chloride	140	mg Cl/L	2.0	5.0
12/12/2022 10:50	Effluent Grab	Nutrients	Ammonia-N	11	mg N/L	0.40	1.0
12/12/2022 10:50	Effluent Grab	Nutrients	O-Phosphate-P	1.7	mg P/L	0.040	0.10
12/12/2022 10:00	Effluent Composite	Nutrients	Kjeldahl Nitrogen	11	mg N/L	0.80	2.0
12/12/2022 10:50	Effluent Grab	Nutrients	NO2NO3-N	0.098	mg N/L	0.0040	0.010

Date_Sampled	Site ID	Analysis Group	Component	Result	Units	MDL	PQL
12/12/2022 10:50	Effluent Grab	Nutrients	Fluoride	0.68	mg F/L	0.025	0.10
12/12/2022 10:50	Effluent Grab	Nutrients	Total-P	2.1	mg P/L	0.050	0.25
12/12/2022 10:00	Effluent Composite	Nutrients	TSS	2 I	mg/L	2.0	10
12/12/2022 10:00	Effluent Composite	Nutrients	Total-P	1.3	mg P/L	0.050	0.25
12/12/2022 10:50	Effluent Grab	Nutrients	Color (true)	24	PCU	2.5	6.0
12/12/2022 10:50	Effluent Grab	Nutrients	Sulfate	180	mg SO4/L	2.0	5.0
12/12/2022 10:50	Effluent Grab	Nutrients	Kjeldahl Nitrogen	13	mg N/L	0.80	2.0
12/12/2022 10:00	Effluent Composite	Nutrients	NO2NO3-N	0.38	mg N/L	0.0040	0.010
12/12/2022 10:50	Effluent Grab	Nutrients	Organic Carbon	8.9 A	mg C/L	0.50	1.0
12/12/2022 10:50	Effluent Grab	Nutrients	Total Alkalinity	175 A	mg CaCO3/L	0.65	2.5
12/12/2022 10:50	Effluent Grab	Nutrients	Turbidity	1.3	NTU	0.10	1.0
12/12/2022 10:50	Effluent Grab	Nutrients	TSS	2 IA	mg/L	2.0	10
12/12/2022 10:00	Effluent Composite	Nutrients	Ammonia-N	9.6 A	mg N/L	0.40	1.0
12/12/2022 10:50	Effluent Grab	Overflow	Mercury	0.28 I	ng/L	0.20	0.50
12/12/2022 10:50	Effluent Grab	Overflow	Cyanide	0.0040 I	mg/L	0.0025	0.010
12/12/2022 10:50	Effluent Grab	Pesticides	Pyriproxyfen	0.12 U	ng/L	0.12	0.49
12/12/2022 10:50	Effluent Grab	Pesticides	Azinphos Methyl	4.4 I	ng/L	2.0	7.9
12/12/2022 10:50	Effluent Grab	Pesticides	Carbophenothion	0.20 U	ng/L	0.20	0.79
12/12/2022 10:50	Effluent Grab	Pesticides	Carfentrazone Ethyl	0.098 UJ	ng/L	0.098	0.39
12/12/2022 10:50	Effluent Grab	Pesticides	Chlorpyrifos Ethyl	0.25 U	ng/L	0.25	0.98
12/12/2022 10:50	Effluent Grab	Pesticides	Demeton	1.5 U	ng/L	1.5	5.9
12/12/2022 10:50	Effluent Grab	Pesticides	Malathion	0.34 U	ng/L	0.34	1.4
12/12/2022 10:50	Effluent Grab	Pesticides	Pendimethalin	0.98 U	ng/L	0.98	3.9
12/12/2022 10:50	Effluent Grab	Pesticides	Napropamide	0.39 U	ng/L	0.39	1.6
12/12/2022 10:50	Effluent Grab	Pesticides	Sulfentrazone	11	ng/L	0.49	2.0
12/12/2022 10:50	Effluent Grab	Pesticides	Fenamiphos	0.49 U	ng/L	0.49	2.0
12/12/2022 10:50	Effluent Grab	Pesticides	Flumioxazin	4.4 U	ng/L	4.4	18
12/12/2022 10:50	Effluent Grab	Pesticides	Fluxapyroxad	0.098 U	ng/L	0.098	0.39
12/12/2022 10:50	Effluent Grab	Pesticides	Loratadine	6.5	ng/L	0.34	1.4
12/12/2022 10:50	Effluent Grab	Pesticides	Terbuthylazine	0.42 U	ng/L	0.42	1.7
12/12/2022 10:50	Effluent Grab	Pesticides	Acetochlor	0.25 U	ng/L	0.25	0.98
12/12/2022 10:50	Effluent Grab	Pesticides	Ametryn	0.59 U	ng/L	0.59	2.4
12/12/2022 10:50	Effluent Grab	Pesticides	Butylate	0.39 U	ng/L	0.39	1.6
12/12/2022 10:50	Effluent Grab	Pesticides	Chlorpyrifos Methyl	0.049 U	ng/L	0.049	0.20

Date_Sampled	Site ID	Analysis Group	Component	Result	Units	MDL	PQL
12/12/2022 10:50	Effluent Grab	Pesticides	Fipronil Sulfide	9.5	ng/L	0.15	0.59
12/12/2022 10:50	Effluent Grab	Pesticides	Imazalil	0.74 U	ng/L	0.74	2.9
12/12/2022 10:50	Effluent Grab	Pesticides	Metribuzin	1.5 U	ng/L	1.5	5.9
12/12/2022 10:50	Effluent Grab	Pesticides	Prometon	0.88 U	ng/L	0.88	3.5
12/12/2022 10:50	Effluent Grab	Pesticides	Thiobencarb	0.59 U	ng/L	0.59	2.4
12/12/2022 10:50	Effluent Grab	Pesticides	Triadimefon	0.25 U	ng/L	0.25	0.98
12/12/2022 10:50	Effluent Grab	Pesticides	Ibuprofen	0.29 I	µg/L	0.20	0.80
12/12/2022 10:50	Effluent Grab	Pesticides	Atrazine	85	ng/L	2.5	9.8
12/12/2022 10:50	Effluent Grab	Pesticides	Caffeine	7.6 I	ng/L	7.4	29
12/12/2022 10:50	Effluent Grab	Pesticides	Dimethenamid	0.098 U	ng/L	0.098	0.39
12/12/2022 10:50	Effluent Grab	Pesticides	Dithiopyr	0.61 U	ng/L	0.61	2.5
12/12/2022 10:50	Effluent Grab	Pesticides	Norflurazon	0.49 U	ng/L	0.49	2.0
12/12/2022 10:50	Effluent Grab	Pesticides	Coumaphos	0.49 U	ng/L	0.49	2.0
12/12/2022 10:50	Effluent Grab	Pesticides	Propargite	1.5 U	ng/L	1.5	5.9
12/12/2022 10:50	Effluent Grab	Pesticides	Sucralose	67	µg/L	0.10	0.40
12/12/2022 10:50	Effluent Grab	Pesticides	Pronamide	0.15 U	ng/L	0.15	0.59
12/12/2022 10:50	Effluent Grab	Pesticides	Simazine	4.9	ng/L	0.49	2.0
12/12/2022 10:50	Effluent Grab	Pesticides	Atrazine Desethyl	1.5 U	ng/L	1.5	5.9
12/12/2022 10:50	Effluent Grab	Pesticides	Fludioxonil	3.1	ng/L	0.12	0.49
12/12/2022 10:50	Effluent Grab	Pesticides	Flutolanil	1.0	ng/L	0.098	0.39
12/12/2022 10:50	Effluent Grab	Pesticides	Oxadiazon	0.29 U	ng/L	0.29	1.2
12/12/2022 10:50	Effluent Grab	Pesticides	Prodiamine	0.40 I	ng/L	0.17	0.69
12/12/2022 10:50	Effluent Grab	Pesticides	Dimethomorph	0.30 I	ng/L	0.17	1.0
12/12/2022 10:50	Effluent Grab	Pesticides	Etridiazole	0.15 U	ng/L	0.15	0.59
12/12/2022 10:50	Effluent Grab	Pesticides	Naproxen	0.28	µg/L	0.0080	0.032
12/12/2022 10:50	Effluent Grab	Pesticides	Alachlor	0.25 U	ng/L	0.25	0.98
12/12/2022 10:50	Effluent Grab	Pesticides	Bromacil	0.49 U	ng/L	0.49	2.0
12/12/2022 10:50	Effluent Grab	Pesticides	Diazinon	0.12 U	ng/L	0.12	0.49
12/12/2022 10:50	Effluent Grab	Pesticides	Disulfoton	0.49 U	ng/L	0.49	2.0
12/12/2022 10:50	Effluent Grab	Pesticides	Molinate	0.29 U	ng/L	0.29	1.2
12/12/2022 10:50	Effluent Grab	Pesticides	Naled	1.5 UJ	ng/L	1.5	5.9
12/12/2022 10:50	Effluent Grab	Pesticides	Chlorfenapyr	1.6	ng/L	0.17	0.69
12/12/2022 10:50	Effluent Grab	Pesticides	Propanil	0.12 U	ng/L	0.12	0.49
12/12/2022 10:50	Effluent Grab	Pesticides	Propiconazole	4.3	ng/L	0.49	2.0

Date_Sampled	Site ID	Analysis Group	Component	Result	Units	MDL	PQL
12/12/2022 10:50	Effluent Grab	Pesticides	Azoxystrobin	0.49 U	ng/L	0.49	2.0
12/12/2022 10:50	Effluent Grab	Pesticides	Difenoconazole	0.59 U	ng/L	0.59	2.4
12/12/2022 10:50	Effluent Grab	Pesticides	Fenbuconazole	0.12 U	ng/L	0.12	0.49
12/12/2022 10:50	Effluent Grab	Pesticides	Fipronil	34	ng/L	0.25	0.98
12/12/2022 10:50	Effluent Grab	Pesticides	Fipronil Desulfinyl	0.30 I	ng/L	0.12	0.49
12/12/2022 10:50	Effluent Grab	Pesticides	Iprodione	2.0 IJ	ng/L	0.59	2.4
12/12/2022 10:50	Effluent Grab	Pesticides	Metalaxyl	0.74 U	ng/L	0.74	2.9
12/12/2022 10:50	Effluent Grab	Pesticides	Mevinphos	1.0 U	ng/L	1.0	4.1
12/12/2022 10:50	Effluent Grab	Pesticides	Myclobutanil	0.25 U	ng/L	0.25	0.98
12/12/2022 10:50	Effluent Grab	Pesticides	Parathion Ethyl	0.25 U	ng/L	0.25	0.98
12/12/2022 10:50	Effluent Grab	Pesticides	Parathion Methyl	0.54 U	ng/L	0.54	2.2
12/12/2022 10:50	Effluent Grab	Pesticides	Prometryn	0.20 U	ng/L	0.20	0.79
12/12/2022 10:50	Effluent Grab	Pesticides	Cyprodinil	0.29 I	ng/L	0.098	0.49
12/12/2022 10:50	Effluent Grab	Pesticides	Pyraflufen Ethyl	0.25 U	ng/L	0.25	0.98
12/12/2022 10:50	Effluent Grab	Pesticides	Tebuconazole	6.3	ng/L	0.49	2.0
12/12/2022 10:50	Effluent Grab	Pesticides	Terbufos	0.15 I	ng/L	0.098	0.39
12/12/2022 10:50	Effluent Grab	Pesticides	Cyanazine	3.2 U	ng/L	3.2	13
12/12/2022 10:50	Effluent Grab	Pesticides	EPTC	1.2 U	ng/L	1.2	4.9
12/12/2022 10:50	Effluent Grab	Pesticides	Ethion	0.15 U	ng/L	0.15	0.59
12/12/2022 10:50	Effluent Grab	Pesticides	Ethoprop	0.098 U	ng/L	0.098	0.39
12/12/2022 10:50	Effluent Grab	Pesticides	Fipronil Sulfone	3.8	ng/L	0.15	0.59
12/12/2022 10:50	Effluent Grab	Pesticides	Fluazifop-P-butyl	0.098 U	ng/L	0.098	0.39
12/12/2022 10:50	Effluent Grab	Pesticides	Fonofos	0.20 U	ng/L	0.20	0.79
12/12/2022 10:50	Effluent Grab	Pesticides	Hexazinone	0.49 U	ng/L	0.49	2.0
12/12/2022 10:50	Effluent Grab	Pesticides	Metolachlor	0.34 U	ng/L	0.34	1.4
12/12/2022 10:50	Effluent Grab	Pesticides	Oxyfluorfen	0.15 U	ng/L	0.15	0.59
12/12/2022 10:50	Effluent Grab	Pesticides	Phorate	0.52 U	ng/L	0.52	2.1
12/12/2022 10:50	Effluent Grab	Pesticides	Phenytoin	3.4 U	ng/L	3.4	14
12/12/2022 10:50	Effluent Grab	Pesticides	Pyridaben	0.44 UJ	ng/L	0.44	2.2
12/12/2022 10:50	Effluent Grab	Pesticides	Stirophos	0.12 U	ng/L	0.12	0.49
12/12/2022 10:50	Effluent Grab	Priority Organic Pollutants	Acenaphthene	0.026 U	µg/L	0.026	0.10
12/12/2022 10:50	Effluent Grab	Priority Organic Pollutants	4-Nitrophenol	10 U	µg/L	10	42
12/12/2022 10:50	Effluent Grab	Priority Organic Pollutants	Benzo(a)pyrene	0.026 U	µg/L	0.026	0.10
12/12/2022 10:50	Effluent Grab	Priority Organic Pollutants	Hexachlorobenzene	0.052 U	µg/L	0.052	0.21

Date_Sampled	Site ID	Analysis Group	Component	Result	Units	MDL	PQL
12/12/2022 10:50	Effluent Grab	Priority Organic Pollutants	Hexachloroethane	0.10 I	µg/L	0.052	0.21
12/12/2022 10:50	Effluent Grab	Priority Organic Pollutants	Nitrobenzene	0.052 U	µg/L	0.052	0.21
12/12/2022 10:50	Effluent Grab	Priority Organic Pollutants	1,2,4-Trichlorobenzene	0.052 U	µg/L	0.052	0.21
12/12/2022 10:50	Effluent Grab	Priority Organic Pollutants	2,4-Dimethylphenol	0.052 U	µg/L	0.052	0.21
12/12/2022 10:50	Effluent Grab	Priority Organic Pollutants	Benzo(k)fluoranthene	0.026 U	µg/L	0.026	0.10
12/12/2022 10:50	Effluent Grab	Priority Organic Pollutants	Bis(2-chloroisopropyl)ether	0.052 U	µg/L	0.052	0.21
12/12/2022 10:50	Effluent Grab	Priority Organic Pollutants	Fluorene	0.026 U	µg/L	0.026	0.10
12/12/2022 10:50	Effluent Grab	Priority Organic Pollutants	Isophorone	0.052 U	µg/L	0.052	0.21
12/12/2022 10:50	Effluent Grab	Priority Organic Pollutants	2-Nitrophenol	0.052 U	µg/L	0.052	0.21
12/12/2022 10:50	Effluent Grab	Priority Organic Pollutants	2,4-Dichlorophenol	0.052 U	µg/L	0.052	0.21
12/12/2022 10:50	Effluent Grab	Priority Organic Pollutants	Bis(2-chloroethyl)ether	0.052 U	µg/L	0.052	0.21
12/12/2022 10:50	Effluent Grab	Priority Organic Pollutants	Fluoranthene	0.052 U	µg/L	0.052	0.21
12/12/2022 10:50	Effluent Grab	Priority Organic Pollutants	Benzo(g,h,i)perylene	0.026 U	µg/L	0.026	0.10
12/12/2022 10:50	Effluent Grab	Priority Organic Pollutants	Chrysene	0.026 U	µg/L	0.026	0.10
12/12/2022 10:50	Effluent Grab	Priority Organic Pollutants	Diethyl phthalate	2.1 U	µg/L	2.1	8.3
12/12/2022 10:50	Effluent Grab	Priority Organic Pollutants	Dimethyl phthalate	0.21 U	µg/L	0.21	0.83
12/12/2022 10:50	Effluent Grab	Priority Organic Pollutants	Indeno(1,2,3-cd)pyrene	0.026 U	µg/L	0.026	0.10
12/12/2022 10:50	Effluent Grab	Priority Organic Pollutants	Naphthalene	0.10 U	µg/L	0.10	0.42
12/12/2022 10:50	Effluent Grab	Priority Organic Pollutants	Pentachlorophenol	0.52 U	µg/L	0.52	2.1
12/12/2022 10:50	Effluent Grab	Priority Organic Pollutants	2-Chlorophenol	0.052 U	µg/L	0.052	0.21
12/12/2022 10:50	Effluent Grab	Priority Organic Pollutants	2,4-Dinitrotoluene	0.052 U	µg/L	0.052	0.21
12/12/2022 10:50	Effluent Grab	Priority Organic Pollutants	4-Chloro-3-methylphenol	0.052 U	µg/L	0.052	0.21
12/12/2022 10:50	Effluent Grab	Priority Organic Pollutants	Di-n-butyl phthalate	2.1 U	µg/L	2.1	8.3
12/12/2022 10:50	Effluent Grab	Priority Organic Pollutants	Hexachlorobutadiene	0.052 U	µg/L	0.052	0.21
12/12/2022 10:50	Effluent Grab	Priority Organic Pollutants	Hexachlorocyclopentadiene	0.052 U	µg/L	0.052	0.21
12/12/2022 10:50	Effluent Grab	Priority Organic Pollutants	2,6-Dinitrotoluene	0.052 U	µg/L	0.052	0.21
12/12/2022 10:50	Effluent Grab	Priority Organic Pollutants	3,3'-Dichlorobenzidine	10 U	µg/L	10	42
12/12/2022 10:50	Effluent Grab	Priority Organic Pollutants	4-Bromophenyl phenyl ether	0.052 U	µg/L	0.052	0.21
12/12/2022 10:50	Effluent Grab	Priority Organic Pollutants	4-Chlorophenyl phenyl ether	0.052 U	µg/L	0.052	0.21
12/12/2022 10:50	Effluent Grab	Priority Organic Pollutants	Benzidine	10 U	µg/L	10	42
12/12/2022 10:50	Effluent Grab	Priority Organic Pollutants	Benzo(a)anthracene	0.026 U	µg/L	0.026	0.10
12/12/2022 10:50	Effluent Grab	Priority Organic Pollutants	Benzo(b)fluoranthene	0.026 U	µg/L	0.026	0.10
12/12/2022 10:50	Effluent Grab	Priority Organic Pollutants	Bis(2-ethylhexyl)phthalate	5.2 U	µg/L	5.2	21
12/12/2022 10:50	Effluent Grab	Priority Organic Pollutants	N-Nitrosodimethylamine	2.1 U	µg/L	2.1	8.3

Date_Sampled	Site ID	Analysis Group	Component	Result	Units	MDL	PQL
12/12/2022 10:50	Effluent Grab	Priority Organic Pollutants	Phenanthrene	0.10 U	µg/L	0.10	0.42
12/12/2022 10:50	Effluent Grab	Priority Organic Pollutants	Pyrene	0.10 U	µg/L	0.10	0.42
12/12/2022 10:50	Effluent Grab	Priority Organic Pollutants	2-Methyl-4,6-dinitrophenol	3.1 U	µg/L	3.1	12
12/12/2022 10:50	Effluent Grab	Priority Organic Pollutants	Acenaphthylene	0.026 U	µg/L	0.026	0.10
12/12/2022 10:50	Effluent Grab	Priority Organic Pollutants	Bis(2-chloroethoxy)methane	0.052 U	µg/L	0.052	0.21
12/12/2022 10:50	Effluent Grab	Priority Organic Pollutants	Dibenzo(a,h)anthracene	0.026 U	µg/L	0.026	0.10
12/12/2022 10:50	Effluent Grab	Priority Organic Pollutants	N-Nitrosodi-n-propylamine	0.052 U	µg/L	0.052	0.21
12/12/2022 10:50	Effluent Grab	Priority Organic Pollutants	Phenol	0.052 U	µg/L	0.052	0.21
12/12/2022 10:50	Effluent Grab	Priority Organic Pollutants	2-Chloronaphthalene	0.052 U	µg/L	0.052	0.21
12/12/2022 10:50	Effluent Grab	Priority Organic Pollutants	2,4-Dinitrophenol	10 U	µg/L	10	42
12/12/2022 10:50	Effluent Grab	Priority Organic Pollutants	Butyl benzyl phthalate	1.0 U	µg/L	1.0	4.2
12/12/2022 10:50	Effluent Grab	Priority Organic Pollutants	Di-n-octyl phthalate	0.052 U	µg/L	0.052	0.21
12/12/2022 10:50	Effluent Grab	Priority Organic Pollutants	2,4,6-Trichlorophenol	0.13 I	µg/L	0.052	0.21
12/12/2022 10:50	Effluent Grab	Priority Organic Pollutants	Anthracene	0.052 U	µg/L	0.052	0.21
12/12/2022 10:50	Effluent Grab	Nutrients	Specific Conductance	1139	umhos/cm		
12/12/2022 10:50	Effluent Grab	Nutrients	pH	6.89			
12/12/2022 10:00	Effluent Composite	Nutrients	Specific Conductance	1135	umhos/cm		
12/12/2022 10:50	Effluent Grab	Nutrients	Temperature	24.3	C		
12/12/2022 10:50	Effluent Grab	Nutrients	Dissolved Oxygen %Sat	92.5	%Sat		
12/12/2022 11:00	Field Blank	Nutrients	NO2NO3-N	0.004 U	mg N/L	0.0040	0.010
12/12/2022 11:00	Field Blank	Nutrients	Turbidity	0.10 U	NTU	0.10	1.0
12/12/2022 11:00	Field Blank	Nutrients	Ammonia-N	0.002 U	mg N/L	0.0020	0.0050
12/12/2022 11:00	Field Blank	Nutrients	Fluoride	0.025 U	mg F/L	0.025	0.10
12/12/2022 11:00	Field Blank	Nutrients	Chloride	0.20 U	mg Cl/L	0.20	0.50
12/12/2022 11:00	Field Blank	Nutrients	Sulfate	0.20 U	mg SO4/L	0.20	0.50
12/12/2022 11:00	Field Blank	Nutrients	Kjeldahl Nitrogen	0.080 U	mg N/L	0.080	0.20
12/12/2022 11:00	Field Blank	Nutrients	Color (true)	2.5 U	PCU	2.5	6.0
12/12/2022 11:00	Field Blank	Nutrients	Total-P	0.002 U	mg P/L	0.0020	0.0050
12/12/2022 11:00	Field Blank	Nutrients	Organic Carbon	0.50 U	mg C/L	0.50	1.0
12/12/2022 11:00	Field Blank	Nutrients	Total Alkalinity	0.65 U	mg CaCO3/L	0.65	2.5
12/12/2022 11:00	Field Blank	Nutrients	O-Phosphate-P	0.004 U	mg P/L	0.0040	0.010
12/12/2022 11:00	Field Blank	Overflow	Mercury	0.20 U	ng/L	0.20	0.50
12/12/2022 11:00	Field Blank	Overflow	Cyanide	0.0025 U	mg/L	0.0025	0.010
12/12/2022 11:00	Field Blank	Pesticides	Acetochlor	0.24 U	ng/L	0.24	0.97

Date_Sampled	Site ID	Analysis Group	Component	Result	Units	MDL	PQL
12/12/2022 11:00	Field Blank	Pesticides	Alachlor	0.24 U	ng/L	0.24	0.97
12/12/2022 11:00	Field Blank	Pesticides	Disulfoton	0.48 U	ng/L	0.48	1.9
12/12/2022 11:00	Field Blank	Pesticides	Prodiamine	0.17 U	ng/L	0.17	0.68
12/12/2022 11:00	Field Blank	Pesticides	Propiconazole	0.48 U	ng/L	0.48	1.9
12/12/2022 11:00	Field Blank	Pesticides	Thiobencarb	0.58 U	ng/L	0.58	2.3
12/12/2022 11:00	Field Blank	Pesticides	Naproxen	0.0080 U	µg/L	0.0080	0.032
12/12/2022 11:00	Field Blank	Pesticides	Chlorpyrifos Ethyl	0.24 U	ng/L	0.24	0.97
12/12/2022 11:00	Field Blank	Pesticides	Fipronil Sulfide	0.15 U	ng/L	0.15	0.58
12/12/2022 11:00	Field Blank	Pesticides	Fipronil Sulfone	0.15 U	ng/L	0.15	0.58
12/12/2022 11:00	Field Blank	Pesticides	Flutolanil	0.097 U	ng/L	0.097	0.39
12/12/2022 11:00	Field Blank	Pesticides	Fonofos	0.19 U	ng/L	0.19	0.78
12/12/2022 11:00	Field Blank	Pesticides	Sulfentrazone	0.48 U	ng/L	0.48	1.9
12/12/2022 11:00	Field Blank	Pesticides	Tebuconazole	0.48 U	ng/L	0.48	1.9
12/12/2022 11:00	Field Blank	Pesticides	Terbufos	0.097 U	ng/L	0.097	0.39
12/12/2022 11:00	Field Blank	Pesticides	Terbuthylazine	0.41 U	ng/L	0.41	1.6
12/12/2022 11:00	Field Blank	Pesticides	Loratadine	0.34 U	ng/L	0.34	1.4
12/12/2022 11:00	Field Blank	Pesticides	Propanil	0.12 U	ng/L	0.12	0.48
12/12/2022 11:00	Field Blank	Pesticides	Carfentrazone Ethyl	0.097 UJ	ng/L	0.097	0.39
12/12/2022 11:00	Field Blank	Pesticides	Diazinon	0.12 U	ng/L	0.12	0.48
12/12/2022 11:00	Field Blank	Pesticides	Difenoconazole	0.58 U	ng/L	0.58	2.3
12/12/2022 11:00	Field Blank	Pesticides	Fenbuconazole	0.12 U	ng/L	0.12	0.48
12/12/2022 11:00	Field Blank	Pesticides	Imazalil	0.73 U	ng/L	0.73	2.9
12/12/2022 11:00	Field Blank	Pesticides	Malathion	0.34 U	ng/L	0.34	1.4
12/12/2022 11:00	Field Blank	Pesticides	Molinate	0.29 U	ng/L	0.29	1.2
12/12/2022 11:00	Field Blank	Pesticides	Naled	1.5 UJ	ng/L	1.5	5.8
12/12/2022 11:00	Field Blank	Pesticides	Parathion Methyl	0.53 U	ng/L	0.53	2.1
12/12/2022 11:00	Field Blank	Pesticides	Prometon	0.87 U	ng/L	0.87	3.5
12/12/2022 11:00	Field Blank	Pesticides	Pronamide	0.15 U	ng/L	0.15	0.58
12/12/2022 11:00	Field Blank	Pesticides	Chlorfenapyr	0.17 U	ng/L	0.17	0.68
12/12/2022 11:00	Field Blank	Pesticides	Coumaphos	0.48 U	ng/L	0.48	1.9
12/12/2022 11:00	Field Blank	Pesticides	Phenytoin	3.4 U	ng/L	3.4	14
12/12/2022 11:00	Field Blank	Pesticides	Propargite	1.5 U	ng/L	1.5	5.8
12/12/2022 11:00	Field Blank	Pesticides	Pyridaben	0.44 UJ	ng/L	0.44	2.2
12/12/2022 11:00	Field Blank	Pesticides	Atrazine Desethyl	1.5 U	ng/L	1.5	5.8

Date_Sampled	Site ID	Analysis Group	Component	Result	Units	MDL	PQL
12/12/2022 11:00	Field Blank	Pesticides	Azoxystrobin	0.48 U	ng/L	0.48	1.9
12/12/2022 11:00	Field Blank	Pesticides	Chlorpyrifos Methyl	0.048 U	ng/L	0.048	0.19
12/12/2022 11:00	Field Blank	Pesticides	Dimethenamid	0.097 U	ng/L	0.097	0.39
12/12/2022 11:00	Field Blank	Pesticides	Ethoprop	0.097 U	ng/L	0.097	0.39
12/12/2022 11:00	Field Blank	Pesticides	Iprodione	0.58 UJ	ng/L	0.58	2.3
12/12/2022 11:00	Field Blank	Pesticides	Cyprodinil	0.097 U	ng/L	0.097	0.48
12/12/2022 11:00	Field Blank	Pesticides	Atrazine	0.24 U	ng/L	0.24	0.97
12/12/2022 11:00	Field Blank	Pesticides	Bromacil	0.48 U	ng/L	0.48	1.9
12/12/2022 11:00	Field Blank	Pesticides	Dithiopyr	0.61 U	ng/L	0.61	2.4
12/12/2022 11:00	Field Blank	Pesticides	EPTC	1.2 U	ng/L	1.2	4.8
12/12/2022 11:00	Field Blank	Pesticides	Fenamiphos	0.48 U	ng/L	0.48	1.9
12/12/2022 11:00	Field Blank	Pesticides	Fipronil	0.24 U	ng/L	0.24	0.97
12/12/2022 11:00	Field Blank	Pesticides	Fipronil Desulfinyl	0.12 U	ng/L	0.12	0.48
12/12/2022 11:00	Field Blank	Pesticides	Fluazifop-P-butyl	0.097 U	ng/L	0.097	0.39
12/12/2022 11:00	Field Blank	Pesticides	Oxadiazon	0.29 U	ng/L	0.29	1.2
12/12/2022 11:00	Field Blank	Pesticides	Oxyfluorfen	0.15 U	ng/L	0.15	0.58
12/12/2022 11:00	Field Blank	Pesticides	Parathion Ethyl	0.24 U	ng/L	0.24	0.97
12/12/2022 11:00	Field Blank	Pesticides	Pendimethalin	0.97 U	ng/L	0.97	3.9
12/12/2022 11:00	Field Blank	Pesticides	Simazine	0.48 U	ng/L	0.48	1.9
12/12/2022 11:00	Field Blank	Pesticides	Napropamide	0.39 U	ng/L	0.39	1.6
12/12/2022 11:00	Field Blank	Pesticides	Azinphos Methyl	1.9 U	ng/L	1.9	7.8
12/12/2022 11:00	Field Blank	Pesticides	Carbophenothion	0.19 U	ng/L	0.19	0.78
12/12/2022 11:00	Field Blank	Pesticides	Ethion	0.15 U	ng/L	0.15	0.58
12/12/2022 11:00	Field Blank	Pesticides	Metolachlor	0.34 U	ng/L	0.34	1.4
12/12/2022 11:00	Field Blank	Pesticides	Mevinphos	1.0 U	ng/L	1.0	4.1
12/12/2022 11:00	Field Blank	Pesticides	Prometryn	0.19 U	ng/L	0.19	0.78
12/12/2022 11:00	Field Blank	Pesticides	Etridiazole	0.15 U	ng/L	0.15	0.58
12/12/2022 11:00	Field Blank	Pesticides	Sucralose	0.010 U	µg/L	0.010	0.040
12/12/2022 11:00	Field Blank	Pesticides	Caffeine	7.3 U	ng/L	7.3	29
12/12/2022 11:00	Field Blank	Pesticides	Demeton	1.5 U	ng/L	1.5	5.8
12/12/2022 11:00	Field Blank	Pesticides	Fludioxonil	0.12 U	ng/L	0.12	0.48
12/12/2022 11:00	Field Blank	Pesticides	Hexazinone	0.48 U	ng/L	0.48	1.9
12/12/2022 11:00	Field Blank	Pesticides	Myclobutanil	0.24 U	ng/L	0.24	0.97
12/12/2022 11:00	Field Blank	Pesticides	Norflurazon	0.48 U	ng/L	0.48	1.9

Date_Sampled	Site ID	Analysis Group	Component	Result	Units	MDL	PQL
12/12/2022 11:00	Field Blank	Pesticides	Phorate	0.51 U	ng/L	0.51	2.0
12/12/2022 11:00	Field Blank	Pesticides	Triadimefon	0.24 U	ng/L	0.24	0.97
12/12/2022 11:00	Field Blank	Pesticides	Ibuprofen	0.20 U	µg/L	0.20	0.80
12/12/2022 11:00	Field Blank	Pesticides	Ametryn	0.58 U	ng/L	0.58	2.3
12/12/2022 11:00	Field Blank	Pesticides	Butylate	0.39 U	ng/L	0.39	1.6
12/12/2022 11:00	Field Blank	Pesticides	Cyanazine	3.1 U	ng/L	3.1	13
12/12/2022 11:00	Field Blank	Pesticides	Flumioxazin	4.4 U	ng/L	4.4	17
12/12/2022 11:00	Field Blank	Pesticides	Fluxapyroxad	0.097 U	ng/L	0.097	0.39
12/12/2022 11:00	Field Blank	Pesticides	Metalaxyl	0.73 U	ng/L	0.73	2.9
12/12/2022 11:00	Field Blank	Pesticides	Metribuzin	1.5 U	ng/L	1.5	5.8
12/12/2022 11:00	Field Blank	Pesticides	Pyriproxyfen	0.12 U	ng/L	0.12	0.48
12/12/2022 11:00	Field Blank	Pesticides	Dimethomorph	0.17 U	ng/L	0.17	1.0
12/12/2022 11:00	Field Blank	Pesticides	Pyraflufen Ethyl	0.24 U	ng/L	0.24	0.97
12/12/2022 11:00	Field Blank	Pesticides	Stirophos	0.12 U	ng/L	0.12	0.48
12/12/2022 11:00	Field Blank	Priority Organic Pollutants	2-Chloronaphthalene	0.052 U	µg/L	0.052	0.21
12/12/2022 11:00	Field Blank	Priority Organic Pollutants	Phenol	0.052 U	µg/L	0.052	0.21
12/12/2022 11:00	Field Blank	Priority Organic Pollutants	Benzo(a)pyrene	0.026 U	µg/L	0.026	0.10
12/12/2022 11:00	Field Blank	Priority Organic Pollutants	Di-n-butyl phthalate	2.1 U	µg/L	2.1	8.3
12/12/2022 11:00	Field Blank	Priority Organic Pollutants	Dibenzo(a,h)anthracene	0.026 U	µg/L	0.026	0.10
12/12/2022 11:00	Field Blank	Priority Organic Pollutants	Fluorene	0.026 U	µg/L	0.026	0.10
12/12/2022 11:00	Field Blank	Priority Organic Pollutants	Hexachlorocyclopentadiene	0.052 U	µg/L	0.052	0.21
12/12/2022 11:00	Field Blank	Priority Organic Pollutants	Isophorone	0.052 U	µg/L	0.052	0.21
12/12/2022 11:00	Field Blank	Priority Organic Pollutants	Anthracene	0.052 U	µg/L	0.052	0.21
12/12/2022 11:00	Field Blank	Priority Organic Pollutants	Dimethyl phthalate	0.21 U	µg/L	0.21	0.83
12/12/2022 11:00	Field Blank	Priority Organic Pollutants	Di-n-octyl phthalate	0.052 U	µg/L	0.052	0.21
12/12/2022 11:00	Field Blank	Priority Organic Pollutants	Bis(2-ethylhexyl)phthalate	5.2 U	µg/L	5.2	21
12/12/2022 11:00	Field Blank	Priority Organic Pollutants	Acenaphthene	0.026 U	µg/L	0.026	0.10
12/12/2022 11:00	Field Blank	Priority Organic Pollutants	4-Chlorophenyl phenyl ether	0.052 U	µg/L	0.052	0.21
12/12/2022 11:00	Field Blank	Priority Organic Pollutants	3,3'-Dichlorobenzidine	10 U	µg/L	10	42
12/12/2022 11:00	Field Blank	Priority Organic Pollutants	4-Bromophenyl phenyl ether	0.052 U	µg/L	0.052	0.21
12/12/2022 11:00	Field Blank	Priority Organic Pollutants	Benzidine	10 U	µg/L	10	42
12/12/2022 11:00	Field Blank	Priority Organic Pollutants	Benzo(a)anthracene	0.026 U	µg/L	0.026	0.10
12/12/2022 11:00	Field Blank	Priority Organic Pollutants	Bis(2-chloroisopropyl)ether	0.052 U	µg/L	0.052	0.21
12/12/2022 11:00	Field Blank	Priority Organic Pollutants	Butyl benzyl phthalate	1.0 U	µg/L	1.0	4.2

Date_Sampled	Site ID	Analysis Group	Component	Result	Units	MDL	PQL
12/12/2022 11:00	Field Blank	Priority Organic Pollutants	2-Nitrophenol	0.052 U	µg/L	0.052	0.21
12/12/2022 11:00	Field Blank	Priority Organic Pollutants	2,4-Dichlorophenol	0.052 U	µg/L	0.052	0.21
12/12/2022 11:00	Field Blank	Priority Organic Pollutants	2,4,6-Trichlorophenol	0.052 U	µg/L	0.052	0.21
12/12/2022 11:00	Field Blank	Priority Organic Pollutants	2,6-Dinitrotoluene	0.052 U	µg/L	0.052	0.21
12/12/2022 11:00	Field Blank	Priority Organic Pollutants	Fluoranthene	0.052 U	µg/L	0.052	0.21
12/12/2022 11:00	Field Blank	Priority Organic Pollutants	Hexachlorobutadiene	0.052 U	µg/L	0.052	0.21
12/12/2022 11:00	Field Blank	Priority Organic Pollutants	Indeno(1,2,3-cd)pyrene	0.026 U	µg/L	0.026	0.10
12/12/2022 11:00	Field Blank	Priority Organic Pollutants	N-Nitrosodimethylamine	2.1 U	µg/L	2.1	8.3
12/12/2022 11:00	Field Blank	Priority Organic Pollutants	Phenanthrene	0.10 U	µg/L	0.10	0.42
12/12/2022 11:00	Field Blank	Priority Organic Pollutants	1,2,4-Trichlorobenzene	0.052 U	µg/L	0.052	0.21
12/12/2022 11:00	Field Blank	Priority Organic Pollutants	Benzo(b)fluoranthene	0.026 U	µg/L	0.026	0.10
12/12/2022 11:00	Field Blank	Priority Organic Pollutants	Hexachlorobenzene	0.052 U	µg/L	0.052	0.21
12/12/2022 11:00	Field Blank	Priority Organic Pollutants	2-Chlorophenol	0.052 U	µg/L	0.052	0.21
12/12/2022 11:00	Field Blank	Priority Organic Pollutants	2-Methyl-4,6-dinitrophenol	3.1 U	µg/L	3.1	12
12/12/2022 11:00	Field Blank	Priority Organic Pollutants	Benzo(k)fluoranthene	0.026 U	µg/L	0.026	0.10
12/12/2022 11:00	Field Blank	Priority Organic Pollutants	Hexachloroethane	0.052 U	µg/L	0.052	0.21
12/12/2022 11:00	Field Blank	Priority Organic Pollutants	Naphthalene	0.10 U	µg/L	0.10	0.42
12/12/2022 11:00	Field Blank	Priority Organic Pollutants	Pyrene	0.10 U	µg/L	0.10	0.42
12/12/2022 11:00	Field Blank	Priority Organic Pollutants	2,4-Dinitrotoluene	0.052 U	µg/L	0.052	0.21
12/12/2022 11:00	Field Blank	Priority Organic Pollutants	4-Chloro-3-methylphenol	0.052 U	µg/L	0.052	0.21
12/12/2022 11:00	Field Blank	Priority Organic Pollutants	Nitrobenzene	0.052 U	µg/L	0.052	0.21
12/12/2022 11:00	Field Blank	Priority Organic Pollutants	Pentachlorophenol	0.52 U	µg/L	0.52	2.1
12/12/2022 11:00	Field Blank	Priority Organic Pollutants	4-Nitrophenol	10 U	µg/L	10	42
12/12/2022 11:00	Field Blank	Priority Organic Pollutants	Acenaphthylene	0.026 U	µg/L	0.026	0.10
12/12/2022 11:00	Field Blank	Priority Organic Pollutants	Benzo(g,h,i)perylene	0.026 U	µg/L	0.026	0.10
12/12/2022 11:00	Field Blank	Priority Organic Pollutants	Bis(2-chloroethoxy)methane	0.052 U	µg/L	0.052	0.21
12/12/2022 11:00	Field Blank	Priority Organic Pollutants	Bis(2-chloroethyl)ether	0.052 U	µg/L	0.052	0.21
12/12/2022 11:00	Field Blank	Priority Organic Pollutants	Chrysene	0.026 U	µg/L	0.026	0.10
12/12/2022 11:00	Field Blank	Priority Organic Pollutants	Diethyl phthalate	2.1 U	µg/L	2.1	8.3
12/12/2022 11:00	Field Blank	Priority Organic Pollutants	N-Nitrosodi-n-propylamine	0.052 U	µg/L	0.052	0.21
12/12/2022 11:00	Field Blank	Priority Organic Pollutants	2,4-Dimethylphenol	0.052 U	µg/L	0.052	0.21
12/12/2022 11:00	Field Blank	Priority Organic Pollutants	2,4-Dinitrophenol	10 U	µg/L	10	42
12/8/2022 10:35	Equipment Blank	Metals	Selenium	0.20 U	µg/L	0.20	0.80
12/8/2022 10:35	Equipment Blank	Metals	Copper	0.49 I	µg/L	0.40	0.80

Date_Sampled	Site ID	Analysis Group	Component	Result	Units	MDL	PQL
12/8/2022 10:35	Equipment Blank	Metals	Calcium	0.075 U	mg/L	0.075	0.30
12/8/2022 10:35	Equipment Blank	Metals	Potassium	0.30 U	mg/L	0.30	1.2
12/8/2022 10:35	Equipment Blank	Metals	Iron	30 U	µg/L	30	120
12/8/2022 10:35	Equipment Blank	Metals	Chromium	0.40 U	µg/L	0.40	1.6
12/8/2022 10:35	Equipment Blank	Metals	Cadmium	0.020 U	µg/L	0.020	0.080
12/8/2022 10:35	Equipment Blank	Metals	Nickel	0.50 U	µg/L	0.50	2.0
12/8/2022 10:35	Equipment Blank	Metals	Aluminum	5.0 U	µg/L	5.0	20
12/8/2022 10:35	Equipment Blank	Metals	Lead	0.20 U	µg/L	0.20	0.40
12/8/2022 10:35	Equipment Blank	Metals	Silver	0.010 U	µg/L	0.010	0.040
12/8/2022 10:35	Equipment Blank	Metals	Arsenic	0.050 U	µg/L	0.050	0.20
12/8/2022 10:35	Equipment Blank	Metals	Zinc	5.0 U	µg/L	5.0	20
12/8/2022 10:35	Equipment Blank	Metals	Sodium	0.50 U	mg/L	0.50	2.0
12/8/2022 10:35	Equipment Blank	Metals	Magnesium	0.040 U	mg/L	0.040	0.16
12/8/2022 10:35	Equipment Blank	Nutrients	NO2NO3-N	0.004 UY	mg N/L	0.0040	0.010
12/8/2022 10:35	Equipment Blank	Nutrients	TSS	2 UY	mg/L	2.0	10
12/8/2022 10:35	Equipment Blank	Nutrients	Kjeldahl Nitrogen	0.080 UY	mg N/L	0.080	0.20
12/8/2022 10:35	Equipment Blank	Nutrients	Ammonia-N	0.002 UY	mg N/L	0.0020	0.0050
12/8/2022 10:35	Equipment Blank	Nutrients	Total-P	0.012 Y	mg P/L	0.0020	0.0050