# *Effluent Quality Assessment of Daytona Beach Westside Regional WRF Volusia County NPDES # FL0111392 Sampled January 11, 2021*

**Division of Environmental Assessment and Restoration**
**Florida Department of Environmental Protection**
**May 2021**

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# Summary of Results

The effluent sample was not toxic to either test species during the 96-hour acute definitive bioassay. Compliance for toxicity could not be determined because a chronic test is required by the permit. The analytical chemistry and Algal Growth Potential (AGP) results suggest a potential for nutrient enrichment. Thirteen measured organic constituents were detected in the effluent grab sample.

# Facility Overview

The Daytona Beach Westside Regional WRF 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. DMR trends show the facility is operating under a long form consent order, OGC #20-0696 executed on October 29, 2020 in response to frequent sanitary sewer overflows within the collection/transmission system. The effluent is intermittently discharged to a portion of the Bennett Swamp and then to the Tomoka River, [waterbody identification (WBID) 2634], a Class III freshwater body (Figure 1).

Receiving waters for this facility fall within the Peninsular Nutrient Watershed Region for Numeric Nutrient Criteria (NNC). For this region, the NNC, expressed as annual geometric means, are 0.12 mg/L total phosphorus and 1.54 mg/L total nitrogen (62-302.531(2)(c), F.A.C.). Tomoka River falls within the Peninsula bioregion where no more than 10 percent of the daily average of dissolved oxygen shall be below the 38 percent saturation (62-302.533(1)(a), 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

Effluent samples were taken as grab samples from monitoring site location EFD-1 for outfall D-001 and from EFB-1 for measurement of total suspended solids on January 11, 2021 (Figure 1). Samples were collected by Phil Kane and Sean Boyles (DEP Central District Office).

For this event, DEP Central District office did not have a composite sampler, therefore, flow proportional composite samples were not collected. The permit specifies 24-hr flow proportional composite samples for carbonaceous-biochemical oxygen demand, total nitrate, and total phosphorus tests, but effluent grab samples were collected instead. A definitive acute toxicity test was scheduled and performed instead of the Chronic Whole Effluent Toxicity test required by the permit. *Escherichia coli* test was scheduled, but samples were submitted for enterococci test to the overflow laboratory. Fecal coliform and enterococci tests were performed by Flowers Chemical Laboratories, Altamonte Springs, Florida.

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 Rule 62-302.530, F.A.C. All references to 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.

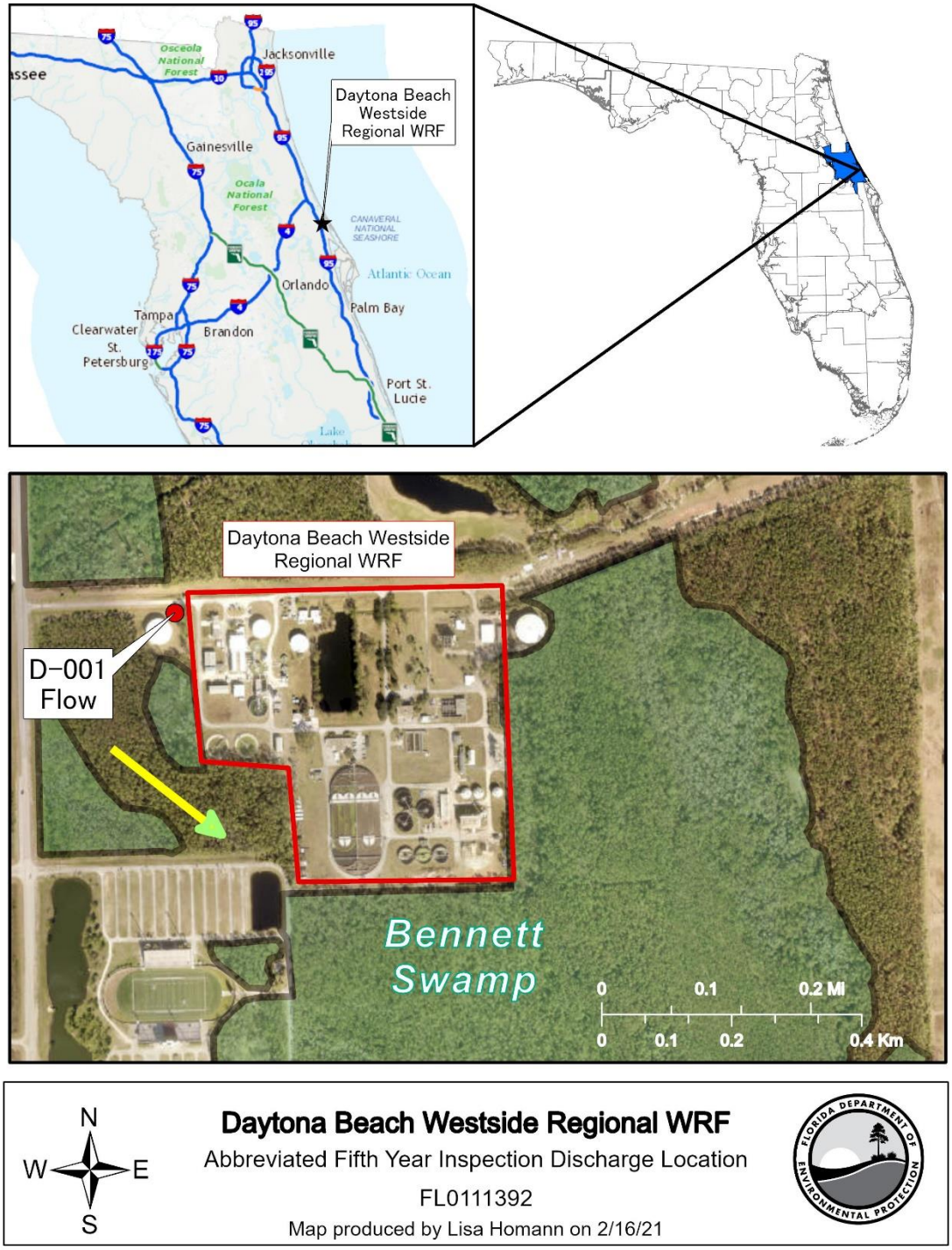



**Figure 1. Map of Facility and Discharge Location**

# Results

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

- Measured pH and dissolved oxygen of the effluent grab sample complied with the Class III Water Quality Criteria for Fresh Waters and effluent permit limits.

## Analytical Water Chemistry (See Table 2 and Appendix D)

- All water chemistry analytes detected in the effluent grab sample complied with effluent permit limits.

- For comparative purposes only, the detected values for total phosphorus and the calculated total nitrogen in the effluent grab sample were greater than the Peninsular Nutrient Watershed Region NNC.

## Microbiology (See Table 2 and Appendix B)

- Fecal coliforms were not detected in the effluent grab sample and therefore complied with facility permit limits. Enterococci was not detected in the effluent grab sample.

## Toxicity Whole Effluent Test (See Table 2)

- Tests were performed January 12 through January 16, 2021.

- The sample was aerated for 10 minutes at a rate of approximately 100 bubbles per minute to decrease the dissolved oxygen from 9.2 mg/L to 8.2 mg/L.

- Acute bioassay results are reported as the Concentration Lethal to 50% of the test organisms (LC50).

- For the 96-hour acute definitive test, the calculated LC50 for the water flea, *Ceriodaphnia dubia*, was 100% effluent with 10% mortality in 100% sample. The calculated LC50 for the fish, *Pimephales promelas*, was 100% effluent with 0% mortality in 100% sample. The effluent grab sample was not toxic to the fish, *Pimephales promelas,* or to the water flea, *Ceriodaphnia dubia,* during the 96-hour acute definitive bioassays. The chronic whole effluent toxicity test required in the permit was not analyzed.

- 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)

- All metals detected in the effluent grab sample complied with Class III Water Quality Criteria for Fresh Waters.

- Copper and nickel were detected in the field blank.

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

- The freshwater unicellular green alga, *Pseudokirchneriella subcapitata*, was used to determine the AGP values in the effluent grab sample. The analytical chemistry suggests that the effluent is nitrogen-phosphorus co-limited (Miller et al. 1978).

- The effluent grab sample AGP result of 49.8 A mg dry wt/L is greater than the AGP range (6.10 to 20.0 mg dry wt/L) suggested to be representative of high productivity for freshwater (Miller et al. 1978).

## Organic Constituents (See Table 5 and Appendix D)

- Atrazine, azoxystrobin, fipronil, fipronil desulfinyl, fipronil sulfide, fipronil sulfone, fludioxonil, propiconazole, simazine, sulfentrazone, and tebuconazole were detected in the effluent grab sample above the practical quantitation limit (PQL). Dithiopyr and fluxapyroxad were detected between the method detection limit (MDL) and PQL.

- There are no effluent permit limits for organic constituents. These organic constituents serve as herbicides, pesticides, and fungicides.

# 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.

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 Fresh Waters, and field parameters

| Parameter | Units | Class III Criteria | Effluent Permit Limits | Effluent Grab |
|---|---|---|---|---|
| Temperature | C | - | - | 22.1 |
| pH | SU | 6.0 - 8.5 | 6.0 - 8.5 s | 7.6 |
| Specific Conductance | µmhos/cm | ≤ 1,275 | - | 623 |
| Salinity | ppt | - | - | 0.3 c |
| Dissolved Oxygen | % saturation | ≥ 38 | - | 96.7 c |
| Dissolved Oxygen | mg/L | - | - | 8.4 |

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

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

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

| Analyte | Units | Class III Criteria | Effluent Permit Limits | Effluent Grab |
|---|---|---|---|---|
| Ortho-phosphate | mg P/L | - | - | 0.14 |
| Total Phosphorus | mg P/L | ≤ 0.12 g | ≤ 2.0 s p | 0.17 |
| Total Ammonia | mg N/L | ≤ 2.77 c s | ≤ 2.77 c s | 0.017 |
| Un-ionized Ammonia (calculated salinity) | mg N/L | - | - | < 0.02 c |
| Nitrate and Nitrite | mg N/L | - | - | 1.5 |
| Total Kjeldahl Nitrogen | mg N/L | - | - | 0.86 |
| Organic Nitrogen | mg N/L | - | - | 0.84 c |
| Total Nitrogen | mg N/L | ≤ 1.54 g | ≤ 6.0 p | 2.4 c |
| Total Organic Carbon | mg C/L | - | - | 12 |
| Chlorophyll *a* - Corrected | µg/L | - | - | 0.82 U |
| Phaeophytin | µg/L | - | - | 0.90 U |
| CBOD, 5 day, N - inhibited | mg/L | - | ≤ 10.0 p | 3.4 |
| Total Suspended Solids | mg/L | - | ≤ 5.0 s | 2 U |
| Turbidity | NTU | ≤ 29 t | - | 0.20 |
| Color (true) | PCU | - | - | 34 A |
| Alkalinity | mg CaCO3/L | ≥ 20 | - | 142 A |
| Chloride | mg Cl/L | - | - | 91 A |
| Fluoride | mg F/L | ≤ 10.0 | - | 0.24 |
| Sulfate | mg SO4/L | - | - | 21 A |
| Fecal Coliforms | MPN/100mL | - | ≤ 25 s | 1.00 U |
| Enterococci | MPN/100mL | - | - | 1.00 U |
| Bioassay - Water flea *(Ceriodaphnia dubia)* | % effluent | - | ≥ 100 p | > 100 |
| Bioassay - Fish *(Pimephales promelas)* | % effluent | - | ≥ 100 p | > 100 |

A dash (-) indicates sample/measurement was not collected or criterion/limit does not exist.
c - Value is calculated
g - Value expressed as annual geometric mean.
s - Single sample
p - 24-hour flow proportioned composite
t - Shall not exceed 29 NTUs above background
A - Value reported is the mean of two or more determinations
U - Material analyzed for but not detected; value reported is the method detection limit

## Table 3. Analytical metals data

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

| Analyte | Units | Effluent Grab Class III Criteria | Effluent Permit Limits | Effluent Grab |
|---|---|---|---|---|
| Hardness | mg CaCO3/L | - | - | 148 c |
| Aluminum | µg/L | - | - | 8.7 I |
| Arsenic | µg/L | ≤ 50 | - | 0.35 |
| Cadmium | µg/L | ≤ 0.362 b | - | 0.020 U |
| Calcium | mg/L | - | - | 49.3 |
| Chromium, Total | µg/L | ≤ 119 [1] b | - | 0.41 I |
| Copper [2] | µg/L | ≤ 13 b | - | 0.54 I |
| Iron | µg/L | ≤ 1,000 | - | 42 I |
| Lead | µg/L | ≤ 5.24 b | - | 0.20 U |
| Magnesium | mg/L | - | - | 6.02 |
| Nickel [2] | µg/L | ≤ 72.6 b | - | 1.5 I |
| Selenium | µg/L | ≤ 5.0 | - | 0.20 U |
| Silver | µg/L | ≤ 0.07 | - | 0.010 U |
| Sodium | mg/L | - | - | 66.5 |
| Zinc | µg/L | ≤ 167 b | - | 26 |

A dash (-) indicates sample/measurement was not collected or criterion/limit does not exist.
b - Value is calculated based on hardness, (62-302.530(3))
c - Value is calculated
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 - Class III Water Quality Criteria for Fresh Waters (Paragraph 62-302.530(19)(a), F.A.C.) is for chromium-III
2 - Detected in the field blank at 0.81 µg/L (Copper) and 1.5 I µg/L (Nickel)

## 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 | *Pseudokirchneriella subcapitata* | 49.8 A | 57.6 ± 11.5 | 60.2 ± 12.0 | 89.7 ± 17.9 | 73.1 ± 14.6 | 10.8 | 13.9 |

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

## Table 5. Detected Organic Constituents

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

| Analyte | Units | Class III Criteria | Effluent Permit Limits | Effluent Grab |
|---|---|---|---|---|
| Atrazine | ng/L | - | - | 11 |
| Azoxystrobin | ng/L | - | - | 3.0 |
| Dithiopyr | ng/L | - | - | 0.26 I |
| Fipronil | ng/L | - | - | 14 |
| Fipronil Desulfinyl | ng/L | - | - | 4.3 |
| Fipronil Sulfide | ng/L | - | - | 2.4 |
| Fipronil Sulfone | ng/L | - | - | 3.1 |
| Fludioxonil | ng/L | - | - | 1.4 |
| Fluxapyroxad | ng/L | - | - | 0.18 I |
| Propiconazole | ng/L | - | - | 2.4 |
| Simazine | ng/L | - | - | 5.0 |
| Sulfentrazone | ng/L | - | - | 6.6 |
| Tebuconazole | ng/L | - | - | 12 |

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

# Appendix A. Facility Summary

## State of Florida
## Department of Environmental Protection
## Facility Introduction & Summary

| **PART I: Information gathered prior to sampling event** | |
|---|---|
| **Prepared By:** Jenny E. Farrell | **Contact Number:** 407-897-4173 |
| **Facility Name (as it appears on permit):** Daytona Beach Westside Regional WRF | **Former Names:** N/A |
| **NPDES Permit Number:** FL0111392 (fka FLA111392) | **Permit Expiration Date:** January 13, 2024 |
| **Physical Address:** 3651 LPGA Blvd. Daytona Beach, FL 32124-2016 | |
| **District:** Central | **County:** Volusia |
| **Function of Facility:** Domestic Wastewater Treatment Facility | |
| **Facility Type:** Domestic Wastewater | **Permitted Capacity (MGD):** 15.0 MGD AADF |
| **Mean Flow for previous 12 months for all EXTERNAL outfalls listed in permit (list date range including months):** D-001 outfall flow: Reported as "MNR" since the discharge to this location only began in May 2020, the highest monthly average was 2.1 MGD which was reported on the June 2020 DMR (December 2019 through November 2020 reporting period). OTH-1 (Wetland outfall at Thayer Canal) flow recording was initiated in May 2020, the highest monthly average of 63.9 MGD was reported on the September 2020 DMR. OTH-2 (Wetland outfall at US Hwy 92) flow recording was initiated in May 2020, the highest monthly average of 40.0 MGD was reported on the September 2020 DMR. | |
| **If applicable, Mean Flow for previous 12 months for REUSE outfall(s) (list date range including months):** R-001 public access reuse system: 2.5 MGD AADF; R-002 flow to Convergence Point: 3.4 MGD AADF, R-003 flow to Direct Potable Reuse Project: 0.0 MGD as reported on the November 2020 DMR (December 2019 through November 2020 reporting period). | |
| **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):** The sampling location of D-001 is EFD-1, located at the Discharge to Bennett Swamp, OTH-1 - Wetland outfall at Thayer Canal, and the OTH-2- Wetland outfall at US Hwy 92. The sampling location of R-001 and R-002 is EFA-1, located at the sampling point at the discharge of the Ultraviolet Disinfection Chamber. Total suspended solids grab samples are collected from EFB-1, after filtration and prior to disinfection. | |
| **Description of Permitted Outfall(s):** In 2017 DEP permitted the 6.0 MGD AADF outfall of reclaimed water to a portion of the Bennett Swamp, which flows to the Tomoka River (WBID #2634, Class III Fresh Waters (The completion of this outfall was scheduled for March 2019, first discharge occurred in May 2020). The southernmost 1100 acres of Bennett Swamp receive reclaimed water through dispersal pipes located at the northern boundary of the area and the central portion (See Attachment A). | |

- Northern Line – 3053 LF of 10-inch and 2403 LF of 12-inch pipe, installed by directional bore.
- Middle Line – 3937 of 14-inch and 2053 LF of 18-inch pipe, installed by direct burial.

Water flow through Bennett Swamp through either the Thayer Canal, located near the midsection of the eastern boundary of the project, or at the south end of the swamp at US Hwy 92 (See Attachment B).

The R-001 is a land application site for public access reuse system. The R-002, convergence point combines this discharge with Bethune Point (FL0025984) that goes the Halifax River, this is covered under the Bethune Point WRF permit. The R-003 sends effluent to a Direct Potable Reuse Demonstration Project.

**Description of Treatment Process (if multiple discharge points, include a detailed map or diagram of facility):** The Daytona Beach Westside Regional Facility is permitted for 15.0 MGD AADF as an advanced wastewater treatment facility consisting of a 5-stage modified Bardenpho system with anaerobic and anoxic basins, secondary clarifiers, Peracetic Acid Addition (PAA) system, tertiary filters, chemical feed facilities (for carbon and alum), ultraviolet disinfection, and a belt filter press for sludge/biosolids dewatering (See Attachments A & B).

## PART I: Continued

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

| | | | Effluent Limitations | | | | Monitoring Requirements | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Parameter | Units | Max/Min | Annual Average | Monthly Average | Weekly Average | Single Sample | Monitoring Frequency | Sample Type | Monitoring Location Site Number | Notes |
| Flow | MGD | Max | 6.0 | Report | -- | -- | Continuous | Recording Flow Meter with Totalizer | FLW-6 | See I.**Error! Reference source not found..Error! Reference source not found.** |
| BOD, Carbonaceous 5 day, 20C | mg/L | Max | 5.0 | 6.25. | 7.50 | 10.0 | Daily; 24 hours | 24-hr FPC | EFD-1 | See I.**Error! Reference source not found..Error! Reference source not found.** |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Solids, Total Suspended | mg/L | Max | -- | -- | -- | 5.0 | Daily; 24 hours | Grab | EFB-1 | See I.**Error! Reference source not found..Error! Reference source not found.** |
| Coliform, Fecal | #/100mL | Max | -- | -- | -- | 25 | Daily; 24 hours | Grab | EFD-1 | |
| Coliform, Fecal, % less than detection | percent | Min | -- | 100 | -- | -- | Daily; 24 hours | Calculated | EFD-1 | See I.**Error! Reference source not found..Error! Reference source not found.** |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| pH | s.u. | Min<br>Max | -- | -- | -- | 6.0<br>8.5 | Continuous | Meter | EFD-1 | See I.**Error! Reference source not found..Error! Reference source not found.** |
| Nitrogen, Nitrate, Total (as N) | mg/L | Max | 3.0 | 3.75 | 4.50 | 6.0 | Daily; 24 hours | 24-hr FPC | EFD-1 | |
| Ammonia (Total Ammonia Nitrogen) (TAN) (Effluent) | mg/L | Max | -- | Report | -- | Report | Daily; 24 hours | Grab | EFD-1 | See I.A.9 |
| Nitrogen, Total Ammonia (TAN) (as N) (Limits) | mg/L | Max | -- | Report | -- | Report | Daily; 24 hours | Calculated | CAL-1 | See I.A.9 |
| Nitrogen, Total Ammonia (TAN) (as N) (Compliance) | mg/L | Max | -- | 0.0 | -- | 0.0 | Daily; 24 hours | Calculated | CAL-1 | See I.A.9 |
| Phosphorus, Total (as P) | mg/L | Max | 1.0 | 1.25 | 1.5 | 2.0 | Daily; 24 hours | 24-hr FPC | EFD-1 | |
| Nitrogen, Total | mg/L | Max | 3.0 | -- | -- | -- | Daily; 24 hours | Grab | OTH-1 | |
| Nitrogen, Total | mg/L | Max | 3.0 | -- | -- | -- | Daily; 24 hours | Grab | OTH-2 | |
| Phosphorus, Total (as P) | mg/L | Max | 0.20 | -- | -- | -- | Daily; 24 hours | Grab | OTH-1 | |
| Phosphorus, Total (as P) | mg/L | Max | 0.20 | -- | -- | -- | Daily; 24 hours | Grab | OTH-2 | |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Flow (at Thayer Canal Outfall) | MGD | Max | Report | Report | -- | Report | Continuous | Recording Flow Meter with Totalizer | OTH-1 | |
| Flow (at Hwy 92 Outfall) | MGD | Max | Report | Report | -- | Report | Continuous | Recording Flow Meter with Totalizer | OTH-2 | |
| Nitrogen, Total | lb/yr | Max | Report | Report | -- | -- | Monthly | Calculated | OTH-1 | |
| Nitrogen, Total | lb/yr | Max | Report | Report | -- | -- | Monthly | Calculated | OTH-2 | |
| Nitrogen, Total | lb/yr | Max | 15000 | Report | -- | -- | Monthly | Calculated | CAL-1 | |
| Phosphorus, Total (as P) | lb/yr | Max | Report | Report | -- | -- | Monthly | Calculated | OTH-1 | |
| Phosphorus, Total (as P) | lb/yr | Max | Report | Report | -- | -- | Monthly | Calculated | OTH-2 | |
| Phosphorus, Total (as P) | lb/yr | Max | 800 | Report | -- | -- | Monthly | Calculated | CAL-1 | |
| Chronic Whole Effluent Toxicity, 7-Day IC25 (Ceriodaphnia dubia) | percent | Min | -- | -- | -- | 100 | Semi-Annually; twice per year | 24-hr FPC | EFD-1 | See I.**Error! Reference source not found.**.0 |
| Chronic Whole Effluent Toxicity, 7-Day IC25 (Pimephales promelas) | percent | Min | -- | -- | -- | 100 | Semi-Annually; twice per year | 24-hr FPC | EFD-1 | See I.**Error! Reference source not found.**.0 |

| **PART I: Continued** | |
|---|---|
| **Receiving Waters:**<br>Tomoka River | **Classification (indicate whether fresh or marine):**<br>Class III Fresh Water, WBID #2634 |

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

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 reproduction or growth shall not be less than 100% effluent. *[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. *[62-302.500(1)(a)4. and 62-4.241(1)(a), F.A.C.]*

b. Monitoring Frequency

(1) Routine toxicity tests shall be conducted once every six months, the first starting within 60 days of the first use of the discharge 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-02-013, Section 8.

(2) The first sample shall be used to initiate the test. The remaining two samples shall be collected according to the protocol and used as renewal solutions on Day 3 (48 hours) and Day 5 (96 hours) of the test.

(3) Samples for routine and additional follow-up tests shall not be collected on the same day.

d. Test Requirements

(1) Routine Tests: All routine tests shall be conducted using a control (0% effluent) and a minimum of five test dilutions: 100%, 50%, 25%, 12.5%, and 6.25% final effluent.

(2) The permittee shall conduct a daphnid, Ceriodaphnia dubia, Survival and Reproduction Test and a fathead minnow, Pimephales promelas, Larval Survival and Growth Test, concurrently.

(3) All test species, procedures and quality assurance criteria used shall be in accordance with Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, 4th Edition, EPA-821-R-02-013. Any deviation of the bioassay procedures outlined herein shall be submitted in writing to the Department for review and approval prior to use. In the event the above method is revised, the permittee shall conduct chronic toxicity testing in accordance with the revised method.

(4) The control water and dilution water shall be moderately hard water as described in EPA-821-R-02-013, Section 7.2.3.

e. Quality Assurance Requirements

(1) A standard reference toxicant (SRT) quality assurance (QA) chronic toxicity test shall be conducted with each species used in the required toxicity tests either concurrently or initiated no more than 30 days before the date of each routine or additional follow-up test conducted. Additionally, the SRT test must be conducted concurrently if the test organisms are obtained from outside the test laboratory unless the test organism supplier provides control chart data from at least the last five monthly chronic toxicity tests using the same reference toxicant and test conditions. If the organism supplier provides the required SRT data, the organism supplier's SRT data and the test laboratory's monthly SRT-QA data shall be included in the reports for each companion routine or additional follow-up test required.

(2) If the mortality in the control (0% effluent) exceeds 20% for either species in any test or 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-02-013, Section 13.12 (Ceriodaphnia dubia) and Section 11.11 (Pimephales promelas). The repeat test shall begin within 21 days after the last day of the invalid test.

(3) If 100% mortality occurs in all effluent concentrations for either test 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-02-013, Section 10.2.6., and the evaluation shall be included with the bioassay laboratory reports.

f. Reporting Requirements

(1) Results from all required tests shall be reported on the Discharge Monitoring Report (DMR) as follows:
   (a) Routine and Additional Follow-up Test Results: The calculated IC25 for reproduction or 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-02-013, Section 10, Report Preparation and Test Review, and mailed to the Department at the address below within 30 days after the last day of the test.

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

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

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

(6) All bioassay laboratory reports shall be sent to:
Florida Department of Environmental Protection
Central District Office
3319 Maguire Blvd, Suite 232
Orlando, Florida 32803-3767

g. Test Failures

(1) A test fails when the test results do not meet the limits in 0.a.(1).

(2) Additional Follow-up Tests:
   (a) If a routine test does not meet the chronic toxicity limitation in 0.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 0.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-02-013.

(3) In the event of three valid test failures (whether routine or additional follow-up tests) within a 12-month period, the permittee shall notify the Department within 21 days after the last day of the third test failure.
   (a) The permittee shall submit a plan for correction of the effluent toxicity within 60 days after the last day of the third test failure.
   (b) The Department shall review and approve the plan before initiation.

(c) The plan shall be initiated within 30 days following the Department's written approval of the plan.
(d) Progress reports shall be submitted quarterly to the Department at the address above.
(e) During the implementation of the plan, the permittee shall conduct quarterly routine whole effluent toxicity tests in accordance with 0.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 0.b.(1). If a routine test is invalid according to the acceptance criteria in EPA-821-R-02-013, a repeat test shall be initiated within 21 days after the last day of the invalid routine test.
(f) Upon completion of four consecutive quarterly valid routine tests that demonstrate compliance with the effluent limitation in 0.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 0.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.

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

**Administrative or Consent Orders (date executed, specific requirements, interim limit dates-if applicable, etc.):** A long form consent order, OGC #20-0696 was executed on October 29, 2020, this order was in response to frequent sanitary sewer overflows within the collection/transmission system. This order did not contain any interim limits for the WRF.

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

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

| Date | Parameter and Units | Result | Limit |
|---|---|---|---|
| 8/31/2020 | Annual Total Nitrogen, lb/yr | 37550.6 | 15000 |
| 8/31/2020 | Annual Total Phosphorus, lb/yr | 1328.3 | 800 |
| 09/30/2020 | Annual Total Nitrogen, lb/yr | 39466 | 15000 |
| 09/30/2020 | Annual Total Phosphorus, lb/yr | 1022.2 | 800 |
| 10/31/2020 | Annual Total Nitrogen, lb/yr | 64618.4 | 15000 |
| 10/31/2020 | Annual Total Phosphorus, lb/yr | 1541 | 800 |

| | | | |
|---|---|---|---|
| 11/30/2020 | Annual Total Nitrogen, lb/yr | 76075.7 | 15000 |
| 11/30/2020 | Annual Total Phosphorus, lb/yr | 1739.6 | 800 |

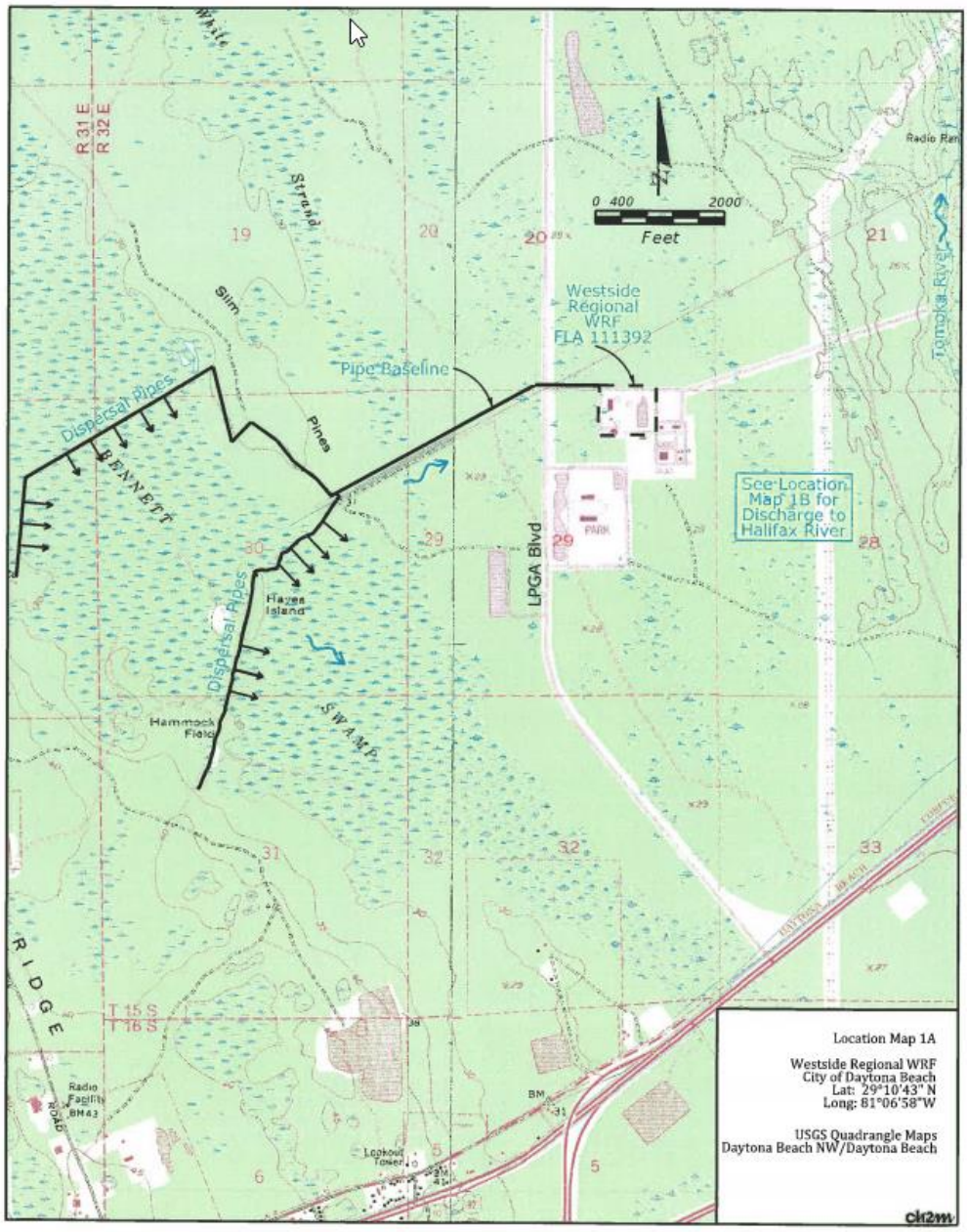
**Describe previous FYI and WQBEL study:**
Flow from the D-001 outfall was discharged for the first time in May 2020, therefore no previous FYI or WQBEL studies have been performed at this outfall by the Department.

**Describe previous or current Enforcement Actions (including WLs):**
A WL is currently being drafted for the TN and TP loading exceedances for D-001. A LFCO will be drafted to address the issues noted in the TN and TP loading calculations to provide additional time for the facility to work with FDEP permitting to resolve this issue.

**Describe any violations or problems noted in previous inspection:**
A few fecal coliform and UV light Transmittance exceedances were noted but none in the last year. These exceedances have not occurred within the past year of data review. Some low pH's/high TDS results in the GW wells but this appears to be a historical issue with these GW wells.

**Discuss whether DMR trends within previous five years are improving or declining:**
Since the outfall just was placed into service there are no treads other than the loading exceedances increase for TP and TN through Bennett Swamp. Flow to Bennett Swamp has not (decreased) occurred since August 2020 since the loading exceedances were noted by the facility.

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




***Attachment A Map of dispersal pipes from Westside Regional WRF into Bennet Swamp***

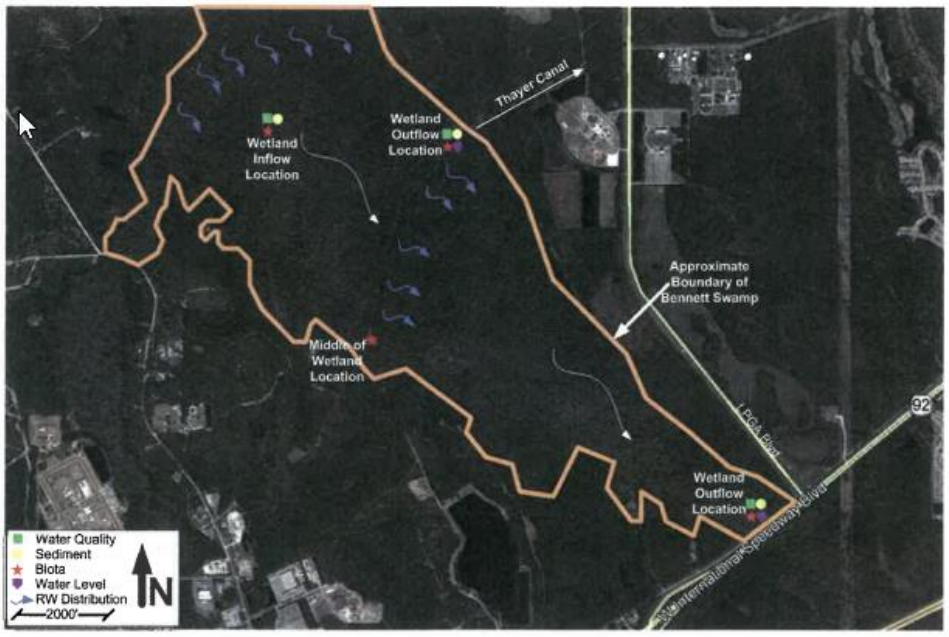



Figure 2-1 Monitoring Stations
*Plan of Study Bennett Swamp Aquifer Recharge Project*

Table 2-1 Wetlands Application Rule Monitoring Requirements for Receiving Wetland
*Plan of Study Bennett Swamp Aquifer Recharge Project*

| Parameter | Surface Water[1] | Sediment[1] | Biota[2] |
|---|---|---|---|
| Temperature, Dissolved Oxygen | Once per hour, for 48 hrs. | | |
| pH, Conductivity | Once | | |
| $CBOD_5$, TSS, TP, TKN, $NH_3$, $NO_3$-$NO_2$, SO4, Fecal Coliforms, Chlorophyll *a* | Once | Once (S* only) | |
| Water level | Continuously | | |
| Woody vegetation (canopy, subcanopy) (quadrats) | | | Once |
| Herbaceous vegetation (quadrats) | | | Once |
| Fish | | | Once |
| Threatened and Endangered Plant and Animal Species List | | | Once |

Notes:
1 – Three stations, one at the discharge to, and one at each of the point of discharge from the wetland.
2 – Four stations, one at the discharge to, one in the middle, and one at the points of discharge from the wetland (Thayer Canal and US-92)

*Attachment B Map of w**ater flow throμgh Bennett Swamp***

# 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 (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.

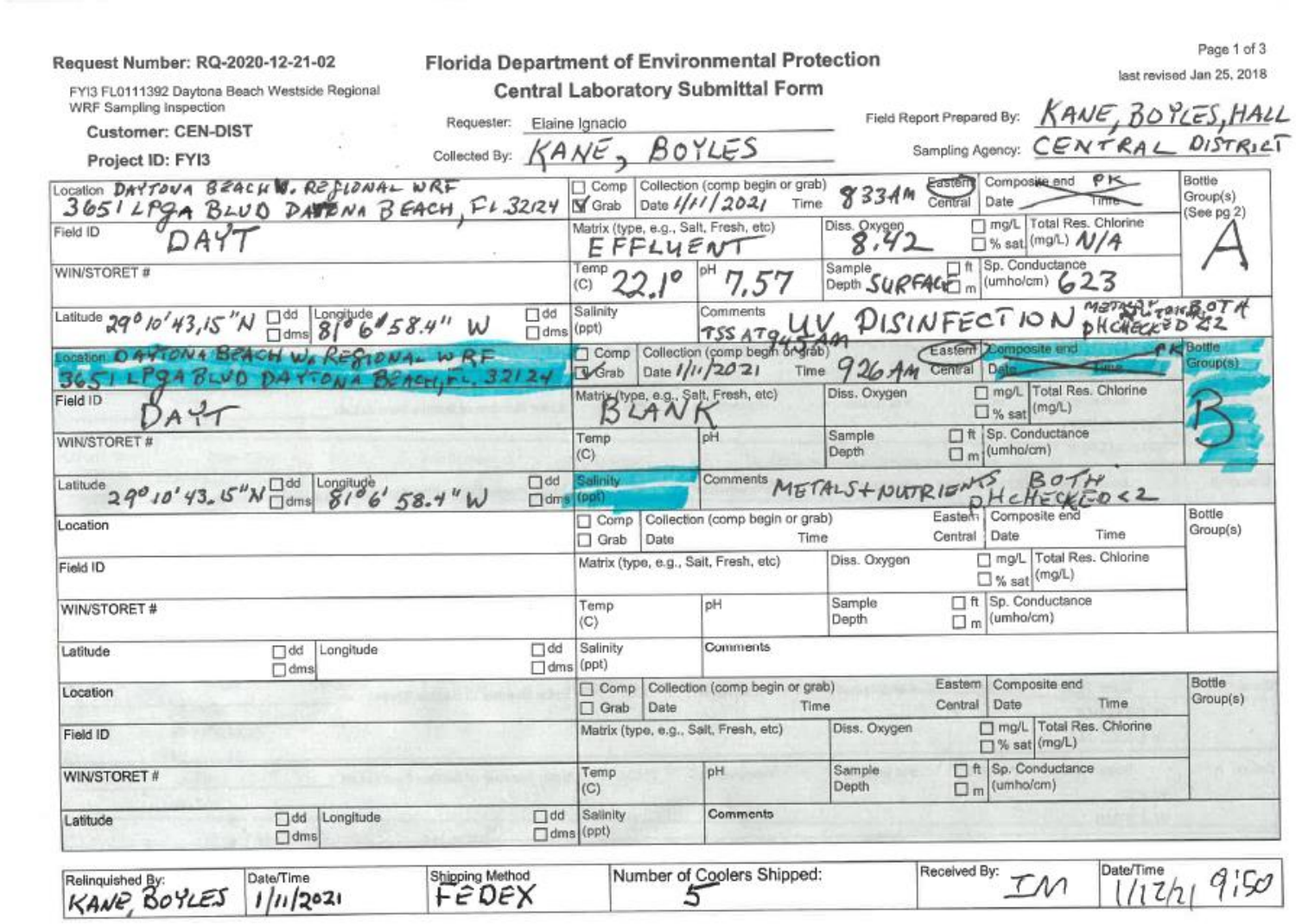
- **Sediment Sampling**

  Sediments were collected using a petite ponar dredge at all sampling stations. Sediment samples were analyzed for metals, organic constituents, pesticides, organic content and sediment grain size. The results from these analyses were compared with sediment quality assessment guidelines applicable to Florida coastal waters (Table 4. in MacDonald 1994). The range of sediment contaminant concentrations that fall below the threshold effects level (TEL) are not likely to be associated with adverse biological effects on aquatic organisms. The range of sediment contaminant concentrations that fall above the probable effects level (PEL) are usually or always associated with adverse biological effects. Within the range of concentrations delineated by the TEL (lower limit) and the PEL (upper limit), adverse biological effects are possible, but it is difficult to predict the occurrence, nature, and/or severity of these effects (MacDonald 1994).

- **Definition of Qualifiers**

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

# Appendix C. Chain of Custody



**Request Number: RQ-2020-12-21-02**

FYI3 FL0111392 Daytona Beach Westside Regional WRF Sampling Inspection

**Customer: CEN-DIST**

**Project ID: FYI3**

**Florida Department of Environmental Protection**
**Central Laboratory Submittal Form**

Page 1 of 3
last revised Jan 25, 2018

Requester: Elaine Ignacio
Collected By: KANE, BOYLES
Field Report Prepared By: KANE, BOYLES, HALL
Sampling Agency: CENTRAL DISTRICT

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Location: DAYTONA BEACH W. REGIONAL WRF 3651 LPGA BLVD DAYTONA BEACH, FL 32124 | Field ID: DAYT | WIN/STORET # | Latitude: 29°10'43.15"N dd/dms | Longitude: 81°6'58.4" W dd/dms | ☐ Comp ☑ Grab | Collection (comp begin or grab) Date: 1/11/2021 Time: 833AM Eastern/Central | Matrix (type, e.g., Salt, Fresh, etc): EFFLUENT | Diss. Oxygen: 8.42 ☐ mg/L ☐ % sat | Total Res. Chlorine (mg/L): N/A | Composite end Date: PK Time: | Bottle Group(s) (See pg 2): A |
| | | | | | | Temp (C): 22.1° | pH: 7.57 | Sample Depth: SURFACE ☐ ft ☐ m | Sp. Conductance (umho/cm): 623 | | |
| | | | | | | Salinity (ppt): | Comments: UV DISINFECTION METALS+NUTRIENTS BOTH pH CHECKED <2 TSS AT 945AM | | | | |
| Location: DAYTONA BEACH W. REGIONAL WRF 3651 LPGA BLVD DAYTONA BEACH, FL. 32124 | Field ID: DAYT | WIN/STORET # | Latitude: 29°10'43.5"N dd/dms | Longitude: 81°6'58.4"W dd/dms | ☐ Comp ☑ Grab | Collection (comp begin or grab) Date: 1/11/2021 Time: 926AM Eastern/Central | Matrix (type, e.g., Salt, Fresh, etc): BLANK | Diss. Oxygen: ☐ mg/L ☐ % sat | Total Res. Chlorine (mg/L): | Composite end Date: PK Time: | Bottle Group(s): B |
| | | | | | | Temp (C): | pH: | Sample Depth: ☐ ft ☐ m | Sp. Conductance (umho/cm): | | |
| | | | | | | Salinity (ppt): | Comments: METALS+NUTRIENTS BOTH pH CHECKED <2 | | | | |
| Location | Field ID | WIN/STORET # | Latitude: ☐ dd ☐ dms | Longitude: ☐ dd ☐ dms | ☐ Comp ☐ Grab | Collection (comp begin or grab) Date: Time: Eastern/Central | Matrix (type, e.g., Salt, Fresh, etc) | Diss. Oxygen: ☐ mg/L ☐ % sat | Total Res. Chlorine (mg/L) | Composite end Date: Time: | Bottle Group(s) |
| | | | | | | Temp (C): | pH: | Sample Depth: ☐ ft ☐ m | Sp. Conductance (umho/cm): | | |
| | | | | | | Salinity (ppt): | Comments: | | | | |
| Location | Field ID | WIN/STORET # | Latitude: ☐ dd ☐ dms | Longitude: ☐ dd ☐ dms | ☐ Comp ☐ Grab | Collection (comp begin or grab) Date: Time: Eastern/Central | Matrix (type, e.g., Salt, Fresh, etc) | Diss. Oxygen: ☐ mg/L ☐ % sat | Total Res. Chlorine (mg/L) | Composite end Date: Time: | Bottle Group(s) |
| | | | | | | Temp (C): | pH: | Sample Depth: ☐ ft ☐ m | Sp. Conductance (umho/cm): | | |
| | | | | | | Salinity (ppt): | Comments: | | | | |

| Relinquished By: | Date/Time | Shipping Method | Number of Coolers Shipped: | Received By: | Date/Time |
|---|---|---|---|---|---|
| KANE, BOYLES | 1/11/2021 | FEDEX | 5 | TM | 1/12/21 9:50 |

*Check Box That Applies To Your Location*

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Port St. Lucie, FL 34986
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Fax: 850-973-6878

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Marathon, FL 33050
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Fax: 305-743-8598

FLOWERS CHEMICAL LABORATORIES INCORPORATED

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| | | |
|---|---|---|
| Client: Florida Department of Environmental Protection - Central District | Project Name: Daytona Beach W. Regional WRF | P.O. # |
| Address: 3319 Maguire Blvd, Suite 232, Orlando, FL 32803 | Client Contact: Kara / FDEP | FAX |
| (407)897-4156 | FCL Project Manager | E-MAIL |
| Phone: Kara / Boyles | Requested Due Date 10 Day Standard OR | Rush Charges May Apply |
| Sampled By (PRINT): KARA, BOYLES 1/11/2021 | Pick-Up Fee $ | Vehicle Surcharge $ |
| Sampler Signature: Phil Kara Date Sampled | | Sampling Fee $ |

GW - ground water DW - drinking water (WW) - wastewater
SW - surface water S - soil/solid SL - sludge HW - waste

| ITEM NO. | SAMPLE ID | DATE | TIME | MATRIX | (LAB USE ONLY) LAB NO. | PRESERVATIVES: NONE | $H_2SO_4$ | $HNO_3$ | HCl | $Na_2S_2O_3$ | Ice | ANALYSES REQUEST | COMMENTS | Total # Containers |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Dayt | 1/11/2021 | 833AM | Effluent | 458975WW1 | | | | | | 1 | ✓ Fecals ✓ Salmonella 1/11/21 ✓ Enterococci | | 2 |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | | |

| Relinquished By / Affiliation | Date | Time | Accepted By / Affiliation | Date | Time | Relinquished By / Affiliation | Date | Time | Accepted By / Affiliation | Date | Time |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Kara Boyles / FDEP | 1/11/2021 | 10 38Am | | | | | | | [signature] | 1/11 | 10:40 |

10°c

**FINANCE CHARGES APPLIED TO PAST DUE INVOICES**

• **WHITE** - Lab Copy - To Be Scanned • **YELLOW** - Client Copy

Rev 04-08

# Appendix D. Chemical Analysis of Effluent and Receiving Water

| Date_Sampled | Site ID | Analysis_Group | Component | Result | Units | MDL | PQL |
|---|---|---|---|---|---|---|---|
| 1/11/2021 8:33 | Effluent Grab | AGP/LN | Algal Growth Potential | 49.8 A | mg DryWt/L | 0.300 | 0.900 |
| 1/11/2021 8:33 | Effluent Grab | Chlorophyll/Grain Size/BOD | Phaeophytin-a | 0.90 U | µg/L | 0.90 | 2.7 |
| 1/11/2021 8:33 | Effluent Grab | Chlorophyll/Grain Size/BOD | Biochemical Oxygen Demand-5 Day,N-Inhib | 3.4 | mg/L | | |
| 1/11/2021 8:33 | Effluent Grab | Chlorophyll/Grain Size/BOD | Chlorophyll-a, Uncorrected | 0.60 U | µg/L | 0.60 | 1.8 |
| 1/11/2021 8:33 | Effluent Grab | Chlorophyll/Grain Size/BOD | Chlorophyll-a, Corrected | 0.82 U | µg/L | 0.82 | 2.5 |
| 1/11/2021 8:33 | Effluent Grab | Toxicology | Bioassay-Acute-Def-FW-C.dubia, LC50 | 100 L | LC50 | | |
| 1/11/2021 8:33 | Effluent Grab | Toxicology | Bioassay-Acute-Def-FW-Fish, LC50 | 100 L | LC50 | | |
| 1/11/2021 8:33 | Effluent Grab | Metals | Sodium | 66.5 | mg/L | 0.50 | 2.0 |
| 1/11/2021 8:33 | Effluent Grab | Metals | Cadmium | 0.020 U | µg/L | 0.020 | 0.080 |
| 1/11/2021 8:33 | Effluent Grab | Metals | Zinc | 26 | µg/L | 5.0 | 20 |
| 1/11/2021 8:33 | Effluent Grab | Metals | Calcium | 49.3 | mg/L | 0.075 | 0.30 |
| 1/11/2021 8:33 | Effluent Grab | Metals | Selenium | 0.20 U | µg/L | 0.20 | 0.80 |
| 1/11/2021 8:33 | Effluent Grab | Metals | Silver | 0.010 U | µg/L | 0.010 | 0.040 |
| 1/11/2021 8:33 | Effluent Grab | Metals | Arsenic | 0.35 | µg/L | 0.050 | 0.20 |
| 1/11/2021 8:33 | Effluent Grab | Metals | Iron | 42 I | µg/L | 30 | 120 |
| 1/11/2021 8:33 | Effluent Grab | Metals | Aluminum | 8.7 I | µg/L | 5.0 | 20 |
| 1/11/2021 8:33 | Effluent Grab | Metals | Copper | 0.54 I | µg/L | 0.40 | 0.80 |
| 1/11/2021 8:33 | Effluent Grab | Metals | Nickel | 1.5 I | µg/L | 0.50 | 2.0 |
| 1/11/2021 8:33 | Effluent Grab | Metals | Lead | 0.20 U | µg/L | 0.20 | 0.40 |
| 1/11/2021 8:33 | Effluent Grab | Metals | Chromium | 0.41 I | µg/L | 0.40 | 1.6 |
| 1/11/2021 8:33 | Effluent Grab | Metals | Magnesium | 6.02 | mg/L | 0.040 | 0.16 |
| 1/11/2021 8:33 | Effluent Grab | Nutrients | NO2NO3-N | 1.5 | mg N/L | 0.040 | 0.10 |
| 1/11/2021 8:33 | Effluent Grab | Nutrients | Ammonia-N | 0.017 | mg N/L | 0.0020 | 0.0050 |
| 1/11/2021 8:33 | Effluent Grab | Nutrients | Total Alkalinity | 142 A | mg CaCO3/L | 0.65 | 2.5 |
| 1/11/2021 8:33 | Effluent Grab | Nutrients | Total-P | 0.17 | mg P/L | 0.0050 | 0.050 |
| 1/11/2021 8:33 | Effluent Grab | Nutrients | O-Phosphate-P | 0.14 | mg P/L | 0.0080 | 0.020 |
| 1/11/2021 8:33 | Effluent Grab | Nutrients | Chloride | 91 A | mg Cl/L | 0.40 | 1.0 |
| 1/11/2021 8:33 | Effluent Grab | Nutrients | TSS | 2 U | mg/L | 2.0 | 10 |
| 1/11/2021 8:33 | Effluent Grab | Nutrients | Color (true) | 34 A | PCU | 2.5 | 6.0 |
| 1/11/2021 8:33 | Effluent Grab | Nutrients | Organic Carbon | 12 | mg C/L | 0.50 | 1.0 |
| 1/11/2021 8:33 | Effluent Grab | Nutrients | Sulfate | 21 A | mg SO4/L | 0.40 | 1.0 |
| 1/11/2021 8:33 | Effluent Grab | Nutrients | Kjeldahl Nitrogen | 0.86 | mg N/L | 0.080 | 0.20 |

| Date_Sampled | Site ID | Analysis_Group | Component | Result | Units | MDL | PQL |
|---|---|---|---|---|---|---|---|
| 1/11/2021 8:33 | Effluent Grab | Nutrients | Fluoride | 0.24 | mg F/L | 0.035 | 0.10 |
| 1/11/2021 8:33 | Effluent Grab | Nutrients | Turbidity | 0.20 | NTU | 0.10 | 0.13 |
| 1/11/2021 8:33 | Effluent Grab | Pesticides | Prometryn | 0.19 U | ng/L | 0.19 | 0.76 |
| 1/11/2021 8:33 | Effluent Grab | Pesticides | Propiconazole | 2.4 | ng/L | 0.47 | 1.9 |
| 1/11/2021 8:33 | Effluent Grab | Pesticides | Simazine | 5.0 | ng/L | 0.47 | 1.9 |
| 1/11/2021 8:33 | Effluent Grab | Pesticides | Acetochlor | 0.24 U | ng/L | 0.24 | 0.95 |
| 1/11/2021 8:33 | Effluent Grab | Pesticides | Chlorpyrifos Ethyl | 0.24 U | ng/L | 0.24 | 0.95 |
| 1/11/2021 8:33 | Effluent Grab | Pesticides | Chlorpyrifos Methyl | 0.047 U | ng/L | 0.047 | 0.19 |
| 1/11/2021 8:33 | Effluent Grab | Pesticides | Dithiopyr | 0.26 I | ng/L | 0.17 | 0.66 |
| 1/11/2021 8:33 | Effluent Grab | Pesticides | Fenamiphos | 0.47 U | ng/L | 0.47 | 1.9 |
| 1/11/2021 8:33 | Effluent Grab | Pesticides | Fenbuconazole | 0.12 U | ng/L | 0.12 | 0.47 |
| 1/11/2021 8:33 | Effluent Grab | Pesticides | Fluazifop-P-butyl | 0.095 U | ng/L | 0.095 | 0.38 |
| 1/11/2021 8:33 | Effluent Grab | Pesticides | Iprodione | 0.57 U | ng/L | 0.57 | 2.3 |
| 1/11/2021 8:33 | Effluent Grab | Pesticides | Metolachlor | 0.33 U | ng/L | 0.33 | 1.3 |
| 1/11/2021 8:33 | Effluent Grab | Pesticides | Mevinphos | 0.99 U | ng/L | 0.99 | 4.0 |
| 1/11/2021 8:33 | Effluent Grab | Pesticides | Prodiamine | 0.17 UJ | ng/L | 0.17 | 0.66 |
| 1/11/2021 8:33 | Effluent Grab | Pesticides | Terbufos | 0.095 U | ng/L | 0.095 | 0.38 |
| 1/11/2021 8:33 | Effluent Grab | Pesticides | Alachlor | 0.24 U | ng/L | 0.24 | 0.95 |
| 1/11/2021 8:33 | Effluent Grab | Pesticides | Dimethenamid | 0.095 U | ng/L | 0.095 | 0.38 |
| 1/11/2021 8:33 | Effluent Grab | Pesticides | Fludioxonil | 1.4 | ng/L | 0.12 | 0.47 |
| 1/11/2021 8:33 | Effluent Grab | Pesticides | Fluxapyroxad | 0.18 I | ng/L | 0.095 | 0.38 |
| 1/11/2021 8:33 | Effluent Grab | Pesticides | Hexazinone | 0.47 U | ng/L | 0.47 | 1.9 |
| 1/11/2021 8:33 | Effluent Grab | Pesticides | Naled | 1.4 U | ng/L | 1.4 | 5.7 |
| 1/11/2021 8:33 | Effluent Grab | Pesticides | Norflurazon | 0.47 U | ng/L | 0.47 | 1.9 |
| 1/11/2021 8:33 | Effluent Grab | Pesticides | Prometon | 0.85 U | ng/L | 0.85 | 3.3 |
| 1/11/2021 8:33 | Effluent Grab | Pesticides | Terbuthylazine | 0.40 U | ng/L | 0.40 | 1.6 |
| 1/11/2021 8:33 | Effluent Grab | Pesticides | Butylate | 0.38 U | ng/L | 0.38 | 1.5 |
| 1/11/2021 8:33 | Effluent Grab | Pesticides | Molinate | 0.28 U | ng/L | 0.28 | 1.1 |
| 1/11/2021 8:33 | Effluent Grab | Pesticides | Phorate | 0.50 U | ng/L | 0.50 | 2.0 |
| 1/11/2021 8:33 | Effluent Grab | Pesticides | Sulfentrazone | 6.6 | ng/L | 0.47 | 1.9 |
| 1/11/2021 8:33 | Effluent Grab | Pesticides | Azinphos Methyl | 1.9 U | ng/L | 1.9 | 7.6 |
| 1/11/2021 8:33 | Effluent Grab | Pesticides | Difenoconazole | 0.57 U | ng/L | 0.57 | 2.3 |
| 1/11/2021 8:33 | Effluent Grab | Pesticides | Disulfoton | 0.47 U | ng/L | 0.47 | 1.9 |
| 1/11/2021 8:33 | Effluent Grab | Pesticides | Fipronil Sulfone | 3.1 | ng/L | 0.14 | 0.57 |
| 1/11/2021 8:33 | Effluent Grab | Pesticides | Imazalil | 0.71 U | ng/L | 0.71 | 2.8 |

| Date_Sampled | Site ID | Analysis_Group | Component | Result | Units | MDL | PQL |
|---|---|---|---|---|---|---|---|
| 1/11/2021 8:33 | Effluent Grab | Pesticides | Pyriproxyfen | 0.12 U | ng/L | 0.12 | 0.47 |
| 1/11/2021 8:33 | Effluent Grab | Pesticides | Tebuconazole | 12 | ng/L | 0.47 | 1.9 |
| 1/11/2021 8:33 | Effluent Grab | Pesticides | Atrazine Desethyl | 1.4 U | ng/L | 1.4 | 5.7 |
| 1/11/2021 8:33 | Effluent Grab | Pesticides | Atrazine | 11 | ng/L | 0.24 | 0.95 |
| 1/11/2021 8:33 | Effluent Grab | Pesticides | Bromacil | 0.47 U | ng/L | 0.47 | 1.9 |
| 1/11/2021 8:33 | Effluent Grab | Pesticides | EPTC | 1.2 U | ng/L | 1.2 | 4.7 |
| 1/11/2021 8:33 | Effluent Grab | Pesticides | Fipronil | 14 | ng/L | 0.24 | 0.95 |
| 1/11/2021 8:33 | Effluent Grab | Pesticides | Fipronil Desulfinyl | 4.3 | ng/L | 0.12 | 0.47 |
| 1/11/2021 8:33 | Effluent Grab | Pesticides | Flumioxazin | 1.7 U | ng/L | 1.7 | 6.6 |
| 1/11/2021 8:33 | Effluent Grab | Pesticides | Fonofos | 0.19 U | ng/L | 0.19 | 0.76 |
| 1/11/2021 8:33 | Effluent Grab | Pesticides | Oxadiazon | 0.28 U | ng/L | 0.28 | 1.1 |
| 1/11/2021 8:33 | Effluent Grab | Pesticides | Sucralose | 52 | µg/L | 0.010 | 0.040 |
| 1/11/2021 8:33 | Effluent Grab | Pesticides | Pronamide | 0.14 U | ng/L | 0.14 | 0.57 |
| 1/11/2021 8:33 | Effluent Grab | Pesticides | Ametryn | 0.57 U | ng/L | 0.57 | 2.3 |
| 1/11/2021 8:33 | Effluent Grab | Pesticides | Azoxystrobin | 3.0 | ng/L | 0.47 | 1.9 |
| 1/11/2021 8:33 | Effluent Grab | Pesticides | Carbophenothion | 0.47 U | ng/L | 0.47 | 1.9 |
| 1/11/2021 8:33 | Effluent Grab | Pesticides | Carfentrazone Ethyl | 0.095 U | ng/L | 0.095 | 0.38 |
| 1/11/2021 8:33 | Effluent Grab | Pesticides | Ethion | 0.14 U | ng/L | 0.14 | 0.57 |
| 1/11/2021 8:33 | Effluent Grab | Pesticides | Ethoprop | 0.095 U | ng/L | 0.095 | 0.38 |
| 1/11/2021 8:33 | Effluent Grab | Pesticides | Fipronil Sulfide | 2.4 | ng/L | 0.14 | 0.57 |
| 1/11/2021 8:33 | Effluent Grab | Pesticides | Malathion | 0.33 U | ng/L | 0.33 | 1.3 |
| 1/11/2021 8:33 | Effluent Grab | Pesticides | Myclobutanil | 0.24 U | ng/L | 0.24 | 0.95 |
| 1/11/2021 8:33 | Effluent Grab | Pesticides | Oxyfluorfen | 0.14 U | ng/L | 0.14 | 0.57 |
| 1/11/2021 8:33 | Effluent Grab | Pesticides | Pendimethalin | 0.95 U | ng/L | 0.95 | 3.8 |
| 1/11/2021 8:33 | Effluent Grab | Pesticides | Naproxen | 0.0080 U | µg/L | 0.0080 | 0.032 |
| 1/11/2021 8:33 | Effluent Grab | Pesticides | Demeton | 1.4 U | ng/L | 1.4 | 5.7 |
| 1/11/2021 8:33 | Effluent Grab | Pesticides | Diazinon | 0.12 U | ng/L | 0.12 | 0.47 |
| 1/11/2021 8:33 | Effluent Grab | Pesticides | Cyanazine | 3.1 U | ng/L | 3.1 | 12 |
| 1/11/2021 8:33 | Effluent Grab | Pesticides | Flutolanil | 0.095 U | ng/L | 0.095 | 0.38 |
| 1/11/2021 8:33 | Effluent Grab | Pesticides | Metalaxyl | 0.71 U | ng/L | 0.71 | 2.8 |
| 1/11/2021 8:33 | Effluent Grab | Pesticides | Metribuzin | 3.1 U | ng/L | 3.1 | 12 |
| 1/11/2021 8:33 | Effluent Grab | Pesticides | Parathion Ethyl | 0.24 U | ng/L | 0.24 | 0.95 |
| 1/11/2021 8:33 | Effluent Grab | Pesticides | Parathion Methyl | 0.52 U | ng/L | 0.52 | 2.1 |
| 1/11/2021 8:33 | Effluent Grab | Pesticides | Ibuprofen | 0.020 U | µg/L | 0.020 | 0.080 |
| 1/11/2021 8:33 | Effluent Grab | Priority Organic Pollutants | 2-Chlorophenol | 0.048 U | µg/L | 0.048 | 0.19 |

| Date_Sampled | Site ID | Analysis_Group | Component | Result | Units | MDL | PQL |
|---|---|---|---|---|---|---|---|
| 1/11/2021 8:33 | Effluent Grab | Priority Organic Pollutants | 2-Methyl-4,6-dinitrophenol | 2.9 U | µg/L | 2.9 | 12 |
| 1/11/2021 8:33 | Effluent Grab | Priority Organic Pollutants | 2,6-Dinitrotoluene | 0.048 U | µg/L | 0.048 | 0.19 |
| 1/11/2021 8:33 | Effluent Grab | Priority Organic Pollutants | 4-Bromophenyl phenyl ether | 0.048 U | µg/L | 0.048 | 0.19 |
| 1/11/2021 8:33 | Effluent Grab | Priority Organic Pollutants | Benzo(b)fluoranthene | 0.024 U | µg/L | 0.024 | 0.096 |
| 1/11/2021 8:33 | Effluent Grab | Priority Organic Pollutants | Bis(2-ethylhexyl)phthalate | 4.8 U | µg/L | 4.8 | 19 |
| 1/11/2021 8:33 | Effluent Grab | Priority Organic Pollutants | Bis(2-chloroethyl)ether | 0.048 U | µg/L | 0.048 | 0.19 |
| 1/11/2021 8:33 | Effluent Grab | Priority Organic Pollutants | N-Nitrosodimethylamine | 1.9 U | µg/L | 1.9 | 7.7 |
| 1/11/2021 8:33 | Effluent Grab | Priority Organic Pollutants | Phenanthrene | 0.096 U | µg/L | 0.096 | 0.38 |
| 1/11/2021 8:33 | Effluent Grab | Priority Organic Pollutants | Phenol | 0.048 U | µg/L | 0.048 | 0.19 |
| 1/11/2021 8:33 | Effluent Grab | Priority Organic Pollutants | 1,2,4-Trichlorobenzene | 0.048 U | µg/L | 0.048 | 0.19 |
| 1/11/2021 8:33 | Effluent Grab | Priority Organic Pollutants | 4-Chlorophenyl phenyl ether | 0.048 U | µg/L | 0.048 | 0.19 |
| 1/11/2021 8:33 | Effluent Grab | Priority Organic Pollutants | Anthracene | 0.048 U | µg/L | 0.048 | 0.19 |
| 1/11/2021 8:33 | Effluent Grab | Priority Organic Pollutants | Hexachlorobutadiene | 0.048 U | µg/L | 0.048 | 0.19 |
| 1/11/2021 8:33 | Effluent Grab | Priority Organic Pollutants | 3,3'-Dichlorobenzidine | 9.6 U | µg/L | 9.6 | 38 |
| 1/11/2021 8:33 | Effluent Grab | Priority Organic Pollutants | Benzo(a)anthracene | 0.024 U | µg/L | 0.024 | 0.096 |
| 1/11/2021 8:33 | Effluent Grab | Priority Organic Pollutants | Di-n-butyl phthalate | 1.9 U | µg/L | 1.9 | 7.7 |
| 1/11/2021 8:33 | Effluent Grab | Priority Organic Pollutants | Pyrene | 0.096 U | µg/L | 0.096 | 0.38 |
| 1/11/2021 8:33 | Effluent Grab | Priority Organic Pollutants | 4-Nitrophenol | 9.6 U | µg/L | 9.6 | 38 |
| 1/11/2021 8:33 | Effluent Grab | Priority Organic Pollutants | Dimethyl phthalate | 0.19 U | µg/L | 0.19 | 0.77 |
| 1/11/2021 8:33 | Effluent Grab | Priority Organic Pollutants | Fluorene | 0.024 U | µg/L | 0.024 | 0.096 |
| 1/11/2021 8:33 | Effluent Grab | Priority Organic Pollutants | Hexachlorocyclopentadiene | 0.048 U | µg/L | 0.048 | 0.19 |
| 1/11/2021 8:33 | Effluent Grab | Priority Organic Pollutants | Isophorone | 0.048 U | µg/L | 0.048 | 0.19 |
| 1/11/2021 8:33 | Effluent Grab | Priority Organic Pollutants | Naphthalene | 0.096 U | µg/L | 0.096 | 0.38 |
| 1/11/2021 8:33 | Effluent Grab | Priority Organic Pollutants | Nitrobenzene | 0.048 U | µg/L | 0.048 | 0.19 |
| 1/11/2021 8:33 | Effluent Grab | Priority Organic Pollutants | Pentachlorophenol | 0.48 U | µg/L | 0.48 | 1.9 |
| 1/11/2021 8:33 | Effluent Grab | Priority Organic Pollutants | Bis(2-chloroethoxy)methane | 0.048 U | µg/L | 0.048 | 0.19 |
| 1/11/2021 8:33 | Effluent Grab | Priority Organic Pollutants | Butyl benzyl phthalate | 0.96 U | µg/L | 0.96 | 3.8 |
| 1/11/2021 8:33 | Effluent Grab | Priority Organic Pollutants | Di-n-octyl phthalate | 0.048 U | µg/L | 0.048 | 0.19 |
| 1/11/2021 8:33 | Effluent Grab | Priority Organic Pollutants | Hexachloroethane | 0.048 U | µg/L | 0.048 | 0.19 |
| 1/11/2021 8:33 | Effluent Grab | Priority Organic Pollutants | 2-Chloronaphthalene | 0.048 U | µg/L | 0.048 | 0.19 |
| 1/11/2021 8:33 | Effluent Grab | Priority Organic Pollutants | 2,4-Dichlorophenol | 0.048 U | µg/L | 0.048 | 0.19 |
| 1/11/2021 8:33 | Effluent Grab | Priority Organic Pollutants | 2,4-Dinitrotoluene | 0.048 U | µg/L | 0.048 | 0.19 |
| 1/11/2021 8:33 | Effluent Grab | Priority Organic Pollutants | Benzo(a)pyrene | 0.024 U | µg/L | 0.024 | 0.096 |
| 1/11/2021 8:33 | Effluent Grab | Priority Organic Pollutants | Benzo(k)fluoranthene | 0.024 U | µg/L | 0.024 | 0.096 |
| 1/11/2021 8:33 | Effluent Grab | Priority Organic Pollutants | Dibenzo(a,h)anthracene | 0.024 U | µg/L | 0.024 | 0.096 |

| Date_Sampled | Site ID | Analysis_Group | Component | Result | Units | MDL | PQL |
|---|---|---|---|---|---|---|---|
| 1/11/2021 8:33 | Effluent Grab | Priority Organic Pollutants | Fluoranthene | 0.048 U | µg/L | 0.048 | 0.19 |
| 1/11/2021 8:33 | Effluent Grab | Priority Organic Pollutants | Hexachlorobenzene | 0.048 U | µg/L | 0.048 | 0.19 |
| 1/11/2021 8:33 | Effluent Grab | Priority Organic Pollutants | Indeno(1,2,3-cd)pyrene | 0.024 U | µg/L | 0.024 | 0.096 |
| 1/11/2021 8:33 | Effluent Grab | Priority Organic Pollutants | N-Nitrosodi-n-propylamine | 0.048 U | µg/L | 0.048 | 0.19 |
| 1/11/2021 8:33 | Effluent Grab | Priority Organic Pollutants | 2-Nitrophenol | 0.048 U | µg/L | 0.048 | 0.19 |
| 1/11/2021 8:33 | Effluent Grab | Priority Organic Pollutants | 2,4-Dinitrophenol | 9.6 U | µg/L | 9.6 | 38 |
| 1/11/2021 8:33 | Effluent Grab | Priority Organic Pollutants | 4-Chloro-3-methylphenol | 0.048 U | µg/L | 0.048 | 0.19 |
| 1/11/2021 8:33 | Effluent Grab | Priority Organic Pollutants | Benzidine | 9.6 U | µg/L | 9.6 | 38 |
| 1/11/2021 8:33 | Effluent Grab | Priority Organic Pollutants | Chrysene | 0.024 U | µg/L | 0.024 | 0.096 |
| 1/11/2021 8:33 | Effluent Grab | Priority Organic Pollutants | Diethyl phthalate | 1.9 U | µg/L | 1.9 | 7.7 |
| 1/11/2021 8:33 | Effluent Grab | Priority Organic Pollutants | 2,4-Dimethylphenol | 0.048 U | µg/L | 0.048 | 0.19 |
| 1/11/2021 8:33 | Effluent Grab | Priority Organic Pollutants | 2,4,6-Trichlorophenol | 0.048 U | µg/L | 0.048 | 0.19 |
| 1/11/2021 8:33 | Effluent Grab | Priority Organic Pollutants | Acenaphthene | 0.024 U | µg/L | 0.024 | 0.096 |
| 1/11/2021 8:33 | Effluent Grab | Priority Organic Pollutants | Acenaphthylene | 0.024 U | µg/L | 0.024 | 0.096 |
| 1/11/2021 8:33 | Effluent Grab | Priority Organic Pollutants | Benzo(g,h,i)perylene | 0.024 U | µg/L | 0.024 | 0.096 |
| 1/11/2021 8:33 | Effluent Grab | Priority Organic Pollutants | Bis(2-chloroisopropyl)ether | 0.048 U | µg/L | 0.048 | 0.19 |
| 1/11/2021 8:33 | Effluent Grab | Nutrients | Temperature | 22.1 | C | | |
| 1/11/2021 8:33 | Effluent Grab | Nutrients | pH | 7.57 | | | |
| 1/11/2021 8:33 | Effluent Grab | Nutrients | Dissolved Oxygen | 8.42 | mg/L | | |
| 1/11/2021 8:33 | Effluent Grab | Nutrients | Specific Conductance | 623 | umhos/cm | | |
| 1/11/2021 9:26 | Field Blank | Metals | Magnesium | 0.040 U | mg/L | 0.040 | 0.16 |
| 1/11/2021 9:26 | Field Blank | Metals | Copper | 0.81 | µg/L | 0.40 | 0.80 |
| 1/11/2021 9:26 | Field Blank | Metals | Iron | 30 U | µg/L | 30 | 120 |
| 1/11/2021 9:26 | Field Blank | Metals | Calcium | 0.075 U | mg/L | 0.075 | 0.30 |
| 1/11/2021 9:26 | Field Blank | Metals | Selenium | 0.20 U | µg/L | 0.20 | 0.80 |
| 1/11/2021 9:26 | Field Blank | Metals | Chromium | 0.40 U | µg/L | 0.40 | 1.6 |
| 1/11/2021 9:26 | Field Blank | Metals | Arsenic | 0.050 U | µg/L | 0.050 | 0.20 |
| 1/11/2021 9:26 | Field Blank | Metals | Zinc | 5.0 U | µg/L | 5.0 | 20 |
| 1/11/2021 9:26 | Field Blank | Metals | Aluminum | 5.0 U | µg/L | 5.0 | 20 |
| 1/11/2021 9:26 | Field Blank | Metals | Silver | 0.010 U | µg/L | 0.010 | 0.040 |
| 1/11/2021 9:26 | Field Blank | Metals | Cadmium | 0.020 U | µg/L | 0.020 | 0.080 |
| 1/11/2021 9:26 | Field Blank | Metals | Nickel | 1.5 I | µg/L | 0.50 | 2.0 |
| 1/11/2021 9:26 | Field Blank | Metals | Lead | 0.20 U | µg/L | 0.20 | 0.40 |
| 1/11/2021 9:26 | Field Blank | Metals | Sodium | 0.50 U | mg/L | 0.50 | 2.0 |
| 1/11/2021 9:26 | Field Blank | Nutrients | Kjeldahl Nitrogen | 0.080 U | mg N/L | 0.080 | 0.20 |

| Date_Sampled | Site ID | Analysis_Group | Component | Result | Units | MDL | PQL |
|---|---|---|---|---|---|---|---|
| 1/11/2021 9:26 | Field Blank | Nutrients | Turbidity | 0.10 U | NTU | 0.10 | 0.13 |
| 1/11/2021 9:26 | Field Blank | Nutrients | Color (true) | 2.5 U | PCU | 2.5 | 6.0 |
| 1/11/2021 9:26 | Field Blank | Nutrients | O-Phosphate-P | 0.004 U | mg P/L | 0.0040 | 0.010 |
| 1/11/2021 9:26 | Field Blank | Nutrients | Fluoride | 0.035 U | mg F/L | 0.035 | 0.10 |
| 1/11/2021 9:26 | Field Blank | Nutrients | Total-P | 0.002 U | mg P/L | 0.0020 | 0.0050 |
| 1/11/2021 9:26 | Field Blank | Nutrients | NO2NO3-N | 0.004 U | mg N/L | 0.0040 | 0.010 |
| 1/11/2021 9:26 | Field Blank | Nutrients | Ammonia-N | 0.002 U | mg N/L | 0.0020 | 0.0050 |
| 1/11/2021 9:26 | Field Blank | Nutrients | Total Alkalinity | 0.65 U | mg CaCO3/L | 0.65 | 2.5 |
| 1/11/2021 9:26 | Field Blank | Nutrients | Organic Carbon | 0.50 U | mg C/L | 0.50 | 1.0 |
| 1/11/2021 9:26 | Field Blank | Nutrients | Chloride | 0.20 U | mg Cl/L | 0.20 | 0.50 |
| 1/11/2021 9:26 | Field Blank | Nutrients | Sulfate | 0.20 U | mg SO4/L | 0.20 | 0.50 |
| 1/11/2021 9:26 | Field Blank | Pesticides | Difenoconazole | 0.65 U | ng/L | 0.65 | 2.6 |
| 1/11/2021 9:26 | Field Blank | Pesticides | Disulfoton | 0.54 U | ng/L | 0.54 | 2.2 |
| 1/11/2021 9:26 | Field Blank | Pesticides | Fipronil | 0.27 U | ng/L | 0.27 | 1.1 |
| 1/11/2021 9:26 | Field Blank | Pesticides | Metalaxyl | 0.82 U | ng/L | 0.82 | 3.3 |
| 1/11/2021 9:26 | Field Blank | Pesticides | Metribuzin | 3.5 U | ng/L | 3.5 | 14 |
| 1/11/2021 9:26 | Field Blank | Pesticides | Norflurazon | 0.54 U | ng/L | 0.54 | 2.2 |
| 1/11/2021 9:26 | Field Blank | Pesticides | Oxyfluorfen | 0.16 U | ng/L | 0.16 | 0.65 |
| 1/11/2021 9:26 | Field Blank | Pesticides | Pyriproxyfen | 0.14 U | ng/L | 0.14 | 0.54 |
| 1/11/2021 9:26 | Field Blank | Pesticides | Butylate | 0.43 U | ng/L | 0.43 | 1.7 |
| 1/11/2021 9:26 | Field Blank | Pesticides | Fenamiphos | 0.54 U | ng/L | 0.54 | 2.2 |
| 1/11/2021 9:26 | Field Blank | Pesticides | Fipronil Desulfinyl | 0.14 U | ng/L | 0.14 | 0.54 |
| 1/11/2021 9:26 | Field Blank | Pesticides | Molinate | 0.33 U | ng/L | 0.33 | 1.3 |
| 1/11/2021 9:26 | Field Blank | Pesticides | Prometryn | 0.22 U | ng/L | 0.22 | 0.87 |
| 1/11/2021 9:26 | Field Blank | Pesticides | Simazine | 0.54 U | ng/L | 0.54 | 2.2 |
| 1/11/2021 9:26 | Field Blank | Pesticides | Naproxen | 0.0080 U | µg/L | 0.0080 | 0.032 |
| 1/11/2021 9:26 | Field Blank | Pesticides | Alachlor | 0.27 U | ng/L | 0.27 | 1.1 |
| 1/11/2021 9:26 | Field Blank | Pesticides | Bromacil | 0.54 U | ng/L | 0.54 | 2.2 |
| 1/11/2021 9:26 | Field Blank | Pesticides | Chlorpyrifos Ethyl | 0.27 U | ng/L | 0.27 | 1.1 |
| 1/11/2021 9:26 | Field Blank | Pesticides | Ethion | 0.16 U | ng/L | 0.16 | 0.65 |
| 1/11/2021 9:26 | Field Blank | Pesticides | Flumioxazin | 1.9 U | ng/L | 1.9 | 7.6 |
| 1/11/2021 9:26 | Field Blank | Pesticides | Fluxapyroxad | 0.11 U | ng/L | 0.11 | 0.43 |
| 1/11/2021 9:26 | Field Blank | Pesticides | Naled | 1.6 U | ng/L | 1.6 | 6.5 |
| 1/11/2021 9:26 | Field Blank | Pesticides | Oxadiazon | 0.33 U | ng/L | 0.33 | 1.3 |
| 1/11/2021 9:26 | Field Blank | Pesticides | Tebuconazole | 0.54 U | ng/L | 0.54 | 2.2 |

| Date_Sampled | Site ID | Analysis_Group | Component | Result | Units | MDL | PQL |
|---|---|---|---|---|---|---|---|
| 1/11/2021 9:26 | Field Blank | Pesticides | Terbufos | 0.11 U | ng/L | 0.11 | 0.43 |
| 1/11/2021 9:26 | Field Blank | Pesticides | Sucralose | 0.010 U | µg/L | 0.010 | 0.040 |
| 1/11/2021 9:26 | Field Blank | Pesticides | Atrazine | 0.27 U | ng/L | 0.27 | 1.1 |
| 1/11/2021 9:26 | Field Blank | Pesticides | Azoxystrobin | 0.54 U | ng/L | 0.54 | 2.2 |
| 1/11/2021 9:26 | Field Blank | Pesticides | Carbophenothion | 0.54 U | ng/L | 0.54 | 2.2 |
| 1/11/2021 9:26 | Field Blank | Pesticides | Ethoprop | 0.11 U | ng/L | 0.11 | 0.43 |
| 1/11/2021 9:26 | Field Blank | Pesticides | Flutolanil | 0.11 U | ng/L | 0.11 | 0.43 |
| 1/11/2021 9:26 | Field Blank | Pesticides | Fonofos | 0.22 U | ng/L | 0.22 | 0.87 |
| 1/11/2021 9:26 | Field Blank | Pesticides | Iprodione | 0.65 U | ng/L | 0.65 | 2.6 |
| 1/11/2021 9:26 | Field Blank | Pesticides | Metolachlor | 0.38 U | ng/L | 0.38 | 1.5 |
| 1/11/2021 9:26 | Field Blank | Pesticides | Myclobutanil | 0.27 U | ng/L | 0.27 | 1.1 |
| 1/11/2021 9:26 | Field Blank | Pesticides | Diazinon | 0.14 U | ng/L | 0.14 | 0.54 |
| 1/11/2021 9:26 | Field Blank | Pesticides | Parathion Ethyl | 0.27 U | ng/L | 0.27 | 1.1 |
| 1/11/2021 9:26 | Field Blank | Pesticides | Prodiamine | 0.19 UJ | ng/L | 0.19 | 0.76 |
| 1/11/2021 9:26 | Field Blank | Pesticides | Acetochlor | 0.27 U | ng/L | 0.27 | 1.1 |
| 1/11/2021 9:26 | Field Blank | Pesticides | Carfentrazone Ethyl | 0.11 U | ng/L | 0.11 | 0.43 |
| 1/11/2021 9:26 | Field Blank | Pesticides | Chlorpyrifos Methyl | 0.054 U | ng/L | 0.054 | 0.22 |
| 1/11/2021 9:26 | Field Blank | Pesticides | Demeton | 1.6 U | ng/L | 1.6 | 6.5 |
| 1/11/2021 9:26 | Field Blank | Pesticides | Dithiopyr | 0.19 U | ng/L | 0.19 | 0.76 |
| 1/11/2021 9:26 | Field Blank | Pesticides | Fipronil Sulfide | 0.16 U | ng/L | 0.16 | 0.65 |
| 1/11/2021 9:26 | Field Blank | Pesticides | Pronamide | 0.16 U | ng/L | 0.16 | 0.65 |
| 1/11/2021 9:26 | Field Blank | Pesticides | Ametryn | 0.65 U | ng/L | 0.65 | 2.6 |
| 1/11/2021 9:26 | Field Blank | Pesticides | Hexazinone | 0.54 U | ng/L | 0.54 | 2.2 |
| 1/11/2021 9:26 | Field Blank | Pesticides | Imazalil | 0.82 U | ng/L | 0.82 | 3.3 |
| 1/11/2021 9:26 | Field Blank | Pesticides | Fipronil Sulfone | 0.16 U | ng/L | 0.16 | 0.65 |
| 1/11/2021 9:26 | Field Blank | Pesticides | Fludioxonil | 0.14 U | ng/L | 0.14 | 0.54 |
| 1/11/2021 9:26 | Field Blank | Pesticides | Malathion | 0.38 U | ng/L | 0.38 | 1.5 |
| 1/11/2021 9:26 | Field Blank | Pesticides | Mevinphos | 1.1 U | ng/L | 1.1 | 4.6 |
| 1/11/2021 9:26 | Field Blank | Pesticides | Parathion Methyl | 0.60 U | ng/L | 0.60 | 2.4 |
| 1/11/2021 9:26 | Field Blank | Pesticides | Pendimethalin | 1.1 U | ng/L | 1.1 | 4.3 |
| 1/11/2021 9:26 | Field Blank | Pesticides | Propiconazole | 0.54 U | ng/L | 0.54 | 2.2 |
| 1/11/2021 9:26 | Field Blank | Pesticides | Sulfentrazone | 0.54 U | ng/L | 0.54 | 2.2 |
| 1/11/2021 9:26 | Field Blank | Pesticides | Terbuthylazine | 0.46 U | ng/L | 0.46 | 1.8 |
| 1/11/2021 9:26 | Field Blank | Pesticides | Atrazine Desethyl | 1.6 U | ng/L | 1.6 | 6.5 |
| 1/11/2021 9:26 | Field Blank | Pesticides | Azinphos Methyl | 2.2 U | ng/L | 2.2 | 8.7 |

| Date_Sampled | Site ID | Analysis_Group | Component | Result | Units | MDL | PQL |
|---|---|---|---|---|---|---|---|
| 1/11/2021 9:26 | Field Blank | Pesticides | Cyanazine | 3.5 U | ng/L | 3.5 | 14 |
| 1/11/2021 9:26 | Field Blank | Pesticides | Dimethenamid | 0.11 U | ng/L | 0.11 | 0.43 |
| 1/11/2021 9:26 | Field Blank | Pesticides | EPTC | 1.4 U | ng/L | 1.4 | 5.4 |
| 1/11/2021 9:26 | Field Blank | Pesticides | Fenbuconazole | 0.14 U | ng/L | 0.14 | 0.54 |
| 1/11/2021 9:26 | Field Blank | Pesticides | Fluazifop-P-butyl | 0.11 U | ng/L | 0.11 | 0.43 |
| 1/11/2021 9:26 | Field Blank | Pesticides | Phorate | 0.57 U | ng/L | 0.57 | 2.3 |
| 1/11/2021 9:26 | Field Blank | Pesticides | Prometon | 0.98 U | ng/L | 0.98 | 3.8 |
| 1/11/2021 9:26 | Field Blank | Pesticides | Ibuprofen | 0.020 U | µg/L | 0.020 | 0.080 |
| 1/11/2021 9:26 | Field Blank | Priority Organic Pollutants | Benzo(k)fluoranthene | 0.029 U | µg/L | 0.029 | 0.12 |
| 1/11/2021 9:26 | Field Blank | Priority Organic Pollutants | Bis(2-chloroisopropyl)ether | 0.059 U | µg/L | 0.059 | 0.24 |
| 1/11/2021 9:26 | Field Blank | Priority Organic Pollutants | Butyl benzyl phthalate | 1.2 U | µg/L | 1.2 | 4.7 |
| 1/11/2021 9:26 | Field Blank | Priority Organic Pollutants | Hexachlorobenzene | 0.059 U | µg/L | 0.059 | 0.24 |
| 1/11/2021 9:26 | Field Blank | Priority Organic Pollutants | Isophorone | 0.059 U | µg/L | 0.059 | 0.24 |
| 1/11/2021 9:26 | Field Blank | Priority Organic Pollutants | Nitrobenzene | 0.059 U | µg/L | 0.059 | 0.24 |
| 1/11/2021 9:26 | Field Blank | Priority Organic Pollutants | Bis(2-chloroethoxy)methane | 0.059 U | µg/L | 0.059 | 0.24 |
| 1/11/2021 9:26 | Field Blank | Priority Organic Pollutants | Di-n-octyl phthalate | 0.059 U | µg/L | 0.059 | 0.24 |
| 1/11/2021 9:26 | Field Blank | Priority Organic Pollutants | Dibenzo(a,h)anthracene | 0.029 U | µg/L | 0.029 | 0.12 |
| 1/11/2021 9:26 | Field Blank | Priority Organic Pollutants | Dimethyl phthalate | 0.24 U | µg/L | 0.24 | 0.94 |
| 1/11/2021 9:26 | Field Blank | Priority Organic Pollutants | Hexachloroethane | 0.059 U | µg/L | 0.059 | 0.24 |
| 1/11/2021 9:26 | Field Blank | Priority Organic Pollutants | 2-Nitrophenol | 0.059 U | µg/L | 0.059 | 0.24 |
| 1/11/2021 9:26 | Field Blank | Priority Organic Pollutants | 4-Nitrophenol | 12 U | µg/L | 12 | 47 |
| 1/11/2021 9:26 | Field Blank | Priority Organic Pollutants | Anthracene | 0.059 U | µg/L | 0.059 | 0.24 |
| 1/11/2021 9:26 | Field Blank | Priority Organic Pollutants | Benzo(a)anthracene | 0.029 U | µg/L | 0.029 | 0.12 |
| 1/11/2021 9:26 | Field Blank | Priority Organic Pollutants | Fluoranthene | 0.059 U | µg/L | 0.059 | 0.24 |
| 1/11/2021 9:26 | Field Blank | Priority Organic Pollutants | Phenol | 0.059 U | µg/L | 0.059 | 0.24 |
| 1/11/2021 9:26 | Field Blank | Priority Organic Pollutants | 1,2,4-Trichlorobenzene | 0.059 U | µg/L | 0.059 | 0.24 |
| 1/11/2021 9:26 | Field Blank | Priority Organic Pollutants | 4-Chlorophenyl phenyl ether | 0.059 U | µg/L | 0.059 | 0.24 |
| 1/11/2021 9:26 | Field Blank | Priority Organic Pollutants | Benzidine | 12 U | µg/L | 12 | 47 |
| 1/11/2021 9:26 | Field Blank | Priority Organic Pollutants | Benzo(a)pyrene | 0.029 U | µg/L | 0.029 | 0.12 |
| 1/11/2021 9:26 | Field Blank | Priority Organic Pollutants | Bis(2-chloroethyl)ether | 0.059 U | µg/L | 0.059 | 0.24 |
| 1/11/2021 9:26 | Field Blank | Priority Organic Pollutants | 2-Chloronaphthalene | 0.059 U | µg/L | 0.059 | 0.24 |
| 1/11/2021 9:26 | Field Blank | Priority Organic Pollutants | Bis(2-ethylhexyl)phthalate | 5.9 U | µg/L | 5.9 | 24 |
| 1/11/2021 9:26 | Field Blank | Priority Organic Pollutants | Diethyl phthalate | 2.4 U | µg/L | 2.4 | 9.4 |
| 1/11/2021 9:26 | Field Blank | Priority Organic Pollutants | Indeno(1,2,3-cd)pyrene | 0.029 U | µg/L | 0.029 | 0.12 |
| 1/11/2021 9:26 | Field Blank | Priority Organic Pollutants | N-Nitrosodimethylamine | 2.4 U | µg/L | 2.4 | 9.4 |

| Date_Sampled | Site ID | Analysis_Group | Component | Result | Units | MDL | PQL |
|---|---|---|---|---|---|---|---|
| 1/11/2021 9:26 | Field Blank | Priority Organic Pollutants | Pentachlorophenol | 0.59 U | µg/L | 0.59 | 2.4 |
| 1/11/2021 9:26 | Field Blank | Priority Organic Pollutants | 2,4-Dinitrophenol | 12 U | µg/L | 12 | 47 |
| 1/11/2021 9:26 | Field Blank | Priority Organic Pollutants | Benzo(g,h,i)perylene | 0.029 U | µg/L | 0.029 | 0.12 |
| 1/11/2021 9:26 | Field Blank | Priority Organic Pollutants | Pyrene | 0.12 U | µg/L | 0.12 | 0.47 |
| 1/11/2021 9:26 | Field Blank | Priority Organic Pollutants | 2-Methyl-4,6-dinitrophenol | 3.5 U | µg/L | 3.5 | 14 |
| 1/11/2021 9:26 | Field Blank | Priority Organic Pollutants | 2,4-Dichlorophenol | 0.059 U | µg/L | 0.059 | 0.24 |
| 1/11/2021 9:26 | Field Blank | Priority Organic Pollutants | 2,4-Dimethylphenol | 0.059 U | µg/L | 0.059 | 0.24 |
| 1/11/2021 9:26 | Field Blank | Priority Organic Pollutants | 2,4,6-Trichlorophenol | 0.059 U | µg/L | 0.059 | 0.24 |
| 1/11/2021 9:26 | Field Blank | Priority Organic Pollutants | Acenaphthylene | 0.029 U | µg/L | 0.029 | 0.12 |
| 1/11/2021 9:26 | Field Blank | Priority Organic Pollutants | Benzo(b)fluoranthene | 0.029 U | µg/L | 0.029 | 0.12 |
| 1/11/2021 9:26 | Field Blank | Priority Organic Pollutants | N-Nitrosodi-n-propylamine | 0.059 U | µg/L | 0.059 | 0.24 |
| 1/11/2021 9:26 | Field Blank | Priority Organic Pollutants | Naphthalene | 0.12 U | µg/L | 0.12 | 0.47 |
| 1/11/2021 9:26 | Field Blank | Priority Organic Pollutants | Phenanthrene | 0.12 U | µg/L | 0.12 | 0.47 |
| 1/11/2021 9:26 | Field Blank | Priority Organic Pollutants | 2,4-Dinitrotoluene | 0.059 U | µg/L | 0.059 | 0.24 |
| 1/11/2021 9:26 | Field Blank | Priority Organic Pollutants | 2,6-Dinitrotoluene | 0.059 U | µg/L | 0.059 | 0.24 |
| 1/11/2021 9:26 | Field Blank | Priority Organic Pollutants | 4-Bromophenyl phenyl ether | 0.059 U | µg/L | 0.059 | 0.24 |
| 1/11/2021 9:26 | Field Blank | Priority Organic Pollutants | 4-Chloro-3-methylphenol | 0.059 U | µg/L | 0.059 | 0.24 |
| 1/11/2021 9:26 | Field Blank | Priority Organic Pollutants | Acenaphthene | 0.029 U | µg/L | 0.029 | 0.12 |
| 1/11/2021 9:26 | Field Blank | Priority Organic Pollutants | Chrysene | 0.029 U | µg/L | 0.029 | 0.12 |
| 1/11/2021 9:26 | Field Blank | Priority Organic Pollutants | Di-n-butyl phthalate | 2.4 U | µg/L | 2.4 | 9.4 |
| 1/11/2021 9:26 | Field Blank | Priority Organic Pollutants | Fluorene | 0.029 U | µg/L | 0.029 | 0.12 |
| 1/11/2021 9:26 | Field Blank | Priority Organic Pollutants | Hexachlorobutadiene | 0.059 U | µg/L | 0.059 | 0.24 |
| 1/11/2021 9:26 | Field Blank | Priority Organic Pollutants | Hexachlorocyclopentadiene | 0.059 U | µg/L | 0.059 | 0.24 |
| 1/11/2021 9:26 | Field Blank | Priority Organic Pollutants | 2-Chlorophenol | 0.059 U | µg/L | 0.059 | 0.24 |
| 1/11/2021 9:26 | Field Blank | Priority Organic Pollutants | 3,3'-Dichlorobenzidine | 12 U | µg/L | 12 | 47 |