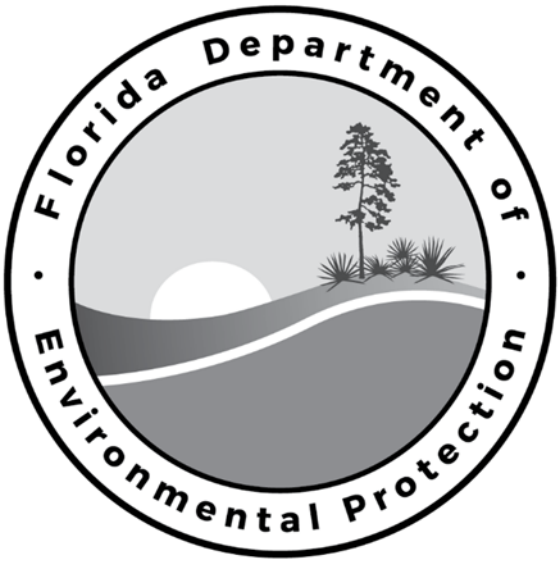


Effluent Quality Assessment of

US Agri-Chemicals, Inc.-Bartow

Polk County

NPDES # FL0001961

Sampled October 5, 2015

February 2016

Biology Program

FDEP Laboratories

Division of Environmental Assessment and Restoration

FDEP Laboratory Quality Manual

NELAC Certification No. E31780

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US Agri-Chemicals, Inc.-Bartow, 2559 Highway 60 West, Bartow, Polk County, Florida, 33830. NPDES #FL0001961.

Facility Overview

US Agri-Chemicals, Inc.-Bartow is a former fertilizer manufacturer's processing plant. See Appendix A for a description of the facility, summary of permit limits, Administrative Order (AO) and Discharge Monitoring Report (DMR) information.

Methods

Effluent grab samples for biological and chemical analyses for this facility were collected on October 5, 2015. All samples were collected from Outfall D-001 by Anthony Annibali and Dennis Pierson (FDEP Southwest District) following DEP-SOP-001/01 FS 2400 Wastewater Sampling (see Appendix B).

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

Results

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

- Total residual chlorine detected in the effluent in the bioassay laboratory was likely due to interfering substances since chlorine is not used in the treatment processes. The total ammonia concentration in the effluent grab sample collected and preserved for chemical analysis was 0.28 mg N/L. Based on the pH, salinity, and temperature of the effluent as collected, the calculated unionized ammonia concentration was <0.02 mg/L.
- The effluent's total phosphorus, turbidity, alkalinity, fluoride, radium 226, radium 226 + 228, arsenic, total chromium, and nickel were detected in the sample at levels that comply with Class III Freshwater Quality Criteria (62-302.530 (69), (1), (32), (57(a)(b), (5)(a), (19)(a), and (44) F.A.C. respectively) and/or permitted limits. Cadmium, copper, iron, lead, selenium and zinc were detected between the laboratory method detection limits (MDL) and practical quantitation limits (PQL).
- Di-n-butyl phthalate, ortho-phosphate and total ammonia were detected between the MDL and PQL in the field blank.

Algal Growth Potential (See Table 4 and Appendix C)

- The effluent Algal Growth Potential (AGP) was 28.4 A mg dry wt/L of the unicellular green alga, *Pseudokirchneriella subcapitata*, formerly known as *Selenastrum capricornutum*. Raschke and Schultz (1987) determined that AGP values above 5.0 mg dry weight/L, which represents a "problem" threshold for fresh receiving waters, imply nutrient enrichment. The analytical chemistry suggests that the effluent is nitrogen-limited (Miller et al. 1978).

Toxicity Test Results (See Appendix C)

- Tests were performed October 6-10, 2015.

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

  Cyprinella leedsi 96-hour acute screening bioassay – LC_{50} > 100%, 0%* mortality in 100% sample at 96 hours

  *NOTE: In a 96-hour acute screening test of 100% effluent, mortality of <20% provides confidence that the effluent meets the acute toxicity criterion of Florida's Surface Water Quality Standards (Rule 62-302.500 (1) (a) 4, F.A.C.). Mortality between 20-50% indicates low to moderate levels of toxicity, and further action may be required. Mortality of >50% indicates that the effluent fails to meet the minimum requirement to discharge to waters of the state (Rule 62-4.244(3) (a), F.A.C.).

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

Conclusion

The effluent sample collected from Outfall D-001 for this facility on October 5, 2015, was not acutely toxic to either test species during the 96-hour acute screening bioassays. The AGP value was greater than the "problem" threshold for fresh receiving waters suggesting that the effluent has the potential to contribute nutrients to the receiving water. The sample's total residual chlorine value was likely due to interfering substances; thus, was not considered an exceedance of Class III Freshwater Criteria (62-302.530 (18)). Additional water quality samples collected on October 5, 2015, did not exceed any applicable water quality standards or any permit conditions.

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

Literature Cited

Miller, W. E., T. E. Maloney, and J. C. Greene. 1978. The *Selenastrum capricornutum* Printz algal assay bottle test. EPA-600/9-78-018. U. S. EPA, Cincinnati, Ohio. 126 p.

Raschke, R. L. and D. A. Schultz. 1987. The use of the algal growth potential test for data assessment. J. Wat. Poll. Cont. Fed. 59(4): 222-227.

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

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

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

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

US Agri-Chemicals, Inc.-Bartow	Units	Class III Criteria	Effluent Permit Limits	Outfall D-001
Sample Depth	m	-	-	0.2
Temperature	C	-	Report	27.1
pH	SU	6.0 - 8.5	6.0 - 8.5	6.7
Specific Conductance	µmhos/cm	≤ 1,275	≤ 1,275	227
Salinity	PPTh	-	-	0.1 c
Dissolved Oxygen	% saturation	≥ 38	-	106.2 c
Dissolved Oxygen	mg/L	≥ 5.0	≥ 5.0	8.4
Flow	MGD	-	Report	4.3
Total Residual Chlorine	mg/L	≤ 0.01	-	0.08 d[1]

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

c - Value is calculated

d - Measurement taken in the FDEP laboratory

1- TRC likely result of interfering substances in the sample

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

US Agri-Chemicals, Inc.-Bartow	Units	Class III Criteria	Effluent Permit Limits	Outfall D-001
Analytical Organic and Pesticide Data				
Di-n-butyl phthalate	µg/L	-	-	0.94 U
Analytical Water Chemistry Data				
Ortho-phosphate	mg P/L	-	Report	1.9
Total Phosphorus	mg P/L	-	≤ 30	2.1
Total Ammonia	mg N/L	-	Report	0.28
Un-ionized Ammonia (calculated salinity)	mg N/L	≤ 0.02	≤ 0.02	< 0.02 c
Nitrate and Nitrite	mg N/L	-	-	0.15
Total Kjeldahl Nitrogen	mg N/L	-	-	1.7
Organic Nitrogen	mg N/L	-	-	1.4 c
Total Nitrogen	mg N/L	-	Report	1.9 c
Total Organic Carbon	mg C/L	-	-	18
Chlorophyll *a* - Corrected	µg/L	-	-	47
Phaeophytin	µg/L	-	-	27
CBOD, 5 day, N - inhibited	mg/L	-	-	2.6 J
Total Suspended Solids	mg/L	-	-	7 I
Turbidity	NTU	< 29 t	< 29 t	3.6
Color (true)	PCU	-	-	74
Alkalinity	mg CaCO3/L	≥ 20	-	37
Chloride	mg Cl/L	-	-	5.7
Fluoride	mg F/L	≤ 10.0	≤ 10.0	1.4
Sulfate	mg SO4/L	-	Report	57
Alpha, Total	pCi/L	≤ 15	≤ 15	1.4 U
Alpha-Counting Error	pCi/L	-	-	0.6
Radium 226	pCi/L	≤ 15	-	0.4
Radium 226-Counting Error	pCi/L	-	-	0.2
Radium 228	pCi/L	≤ 15	-	0.8 U
Radium 228-Counting Error	pCi/L	-	-	0.6
Radium 226 + 228	pCi/L	≤ 5	≤ 5	0.4 c
Toxicity (Acute Definitive, percent LC50)				
Bioassay - Water flea *(Ceriodaphnia dubia)*	%	≥ 100	≥ 100	> 100
Bioassay - Fish *(Cyprinella leedsi)*	%	≥ 100	≥ 100	> 100

A dash (-) indicates sample/measurement was not collected or criterion/limit does not exist.
c - Value is calculated
s - Single sample
t - Shall not exceed 29 NTUs above background
I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit
J - Estimated value
U - Material analyzed for but not detected; value reported is the method detection limit

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

US Agri-Chemicals, Inc.-Bartow	Units	Effluent Permit Limits	Outfall D-001 Class III Criteria	Outfall D-001
Hardness	mg CaCO3/L	-	-	85.6 c
Aluminum	µg/L	-	-	134
Arsenic	µg/L	-	≤ 50	1.87
Cadmium	µg/L	-	≤ 0.241 b	0.026 I
Calcium	mg/L	-	-	21.8
Chromium, Total [2]	µg/L	-	≤ 75.9 b	0.44
Copper	µg/L	-	≤ 8.17 b	0.15 I
Iron	µg/L	-	≤ 1,000	54 I
Lead	µg/L	-	≤ 2.61 b	0.054 I
Magnesium	mg/L	-	-	7.56
Nickel	µg/L	-	≤ 45.7 b	1.98
Potassium	mg/L	-	-	1.2
Selenium	µg/L	-	≤ 5.0	0.21 I
Silver	µg/L	-	≤ 0.07	0.0050 U
Sodium	mg/L	-	-	16.7
Zinc	µg/L	-	≤ 105 b	6.3 I

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

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

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

US Agri-Chemicals, Inc.-Bartow								
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**
Outfall D-001	*Pseudokirchneriella subcapitata*	28.4 A	16.3 ± 3.3	817 ± 163.4	70.3 ± 14.1	903 ± 180.6	0.2	0.9

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

Appendix A

Facility Summary

State of Florida
Department of Environmental Protection
Facility Introduction & Summary

PART I: Information gathered prior to sampling event	
Prepared By: **Victoria Sowell**	**Contact Number:** **813-470-5749**
Facility Name (as it appears on permit): US Agri-Chemicals, Inc.- Bartow	**Former Names:**
NPDES Permit Number: **FL0001961**	**Permit Expiration Date:** **September 6, 2016**
Physical Address: **2559 Highway 60 West, Bartow, FL 33830**	
District: **Southwest (Phosphate)**	**County:** **Polk**
Function of Facility: **Formerly manufactured mono-ammonium and di-ammonium phosphate (DAP) fertilizer products. The facility also produced sulfuric and phosphoric acids. In addition, it stored phosphogypsum, conducted process material handling and shipped product material.**	
Facility Type: **Industrial- primary SIC code 2874- Phosphatic Fertilizers**	**Permitted Capacity (MGD):** **Design capacity for the facility was not used as a basis to determine conditions related to discharge**
Mean Flow for previous 12 months for all EXTERNAL outfalls listed in permit (list date range including months): **1.79 MGD mean flow for Outfalls D-001 and D-003 from 7/31/2014-6/30/2015 (no discharge data available for July 2015)**	
If applicable, Mean Flow for previous 12 months for REUSE outfall(s) (list date range including months): **Not applicable**	
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):	
Outfall D-00 I 27° 54' 30.3649" N 81° 52' 26.7663" W lll, Freshwater EFF-001	
Outfall D-003 27° 54' 28.4520" N 81° 52' 26.7669"W lll, Freshwater EFF-003	
Outfall 1-004 27° 54' 31.2102"N 81° 52' 48.3872" W Internal Ditch EFF-004	
Description of Permitted Outfall(s):	
Outfall D-00 I - discharges treated process water, non-process wastewater, and stormwater into Bear Branch (WBID #1611), a tributary of the Peace River.	
Outfall D-003 - discharges stormwater to Bear Branch (WBID #1611), a tributary of the Peace River.	
Internal Outfall 1-004 - discharges stormwater to a ditch upstream of Outfall D-00 I, which discharges into Bear Branch (WBID #1611), a tributary of the Peace River.	
Description of Treatment Process (if multiple discharge points, include a detailed map or diagram of facility): D-001- discharges treated process water, non-process wastewater, and stormwater in Bear Branch (WBID 1611- should be listed as WBID 1631). D-003 discharges stormwater to Bear Branch (WBID 1611- should be listed as WBID 1631). Internal outfall I-004 discharges stormwater to a ditch upstream of Outfall D-001.	

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	Annual Average	Monthly Average	Weekly Average	Single Sample	Monitoring Frequency	Sample Type	Monitoring Location Site Number	Notes
Flow	MGD	Max- Report Min- N/A	N/A	Report	N/A		Continuous	Recorder	EFF-001 SWU-001	
Flow	MGD	Min- N/A Max- Report		Report			Instantaneous	Calculation	OUI-004	Internal Outfall
Flow	MGD	Min- N/A Max- Report		Report			Continuous	Recorder	EFF-003	
pH	SU	Min- 6.0 Max- 8.5	N/A	Report	N/A		Continuous	Recorder	EFF-001	
pH	SU	Min/Max- Report	N/A	Report	N/A		Weekly	Instantaneous	SWU-001	
pH	SU	Min- Report Max- Report		Report			Weekly	Instantaneous	OUI-004	Internal Outfall
pH	SU	Min- 6.0 Max- 8.5		Report			Continuous	Recorder	EFF-003	
Fluoride, Total (as F)	mg/L	Min- N/A Max- 10.0		Report			Weekly	Grab	EFF-001	
Temperature (C), Water	Deg. C	Min- N/A Max- Report		Report			Weekly	Instantaneous	EFF-001	Cond. I.A.9 (will be below)
Temperature (C), Water	Deg. C	Min- N/A Max- Report		Report			Weekly	Instantaneous	OUI-004	Internal Outfall
Temperature (C), Water	Deg. C	Min- N/A Max- Report		Report			Monthly	Grab	EFF-003	

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	Annual Average	Monthly Average	Weekly Average	Single Sample	Monitoring Frequency	Sample Type	Monitoring Location Site Number	Notes
Sulfate, Total	mg/L	Min- N/A Max- Report		Report			Weekly	Grab	EFF-001	
Phosphate, Ortho (as P)	mg/L	Min- N/A Max- Report		Report			Weekly	Grab	EFF-001	
Phosphorous, Total (as P)	mg/L	Min- N/A Max- 40		30			Weekly	Grab	EFF-001	
Phosphorous, Total (as P)	mg/L	Min-N/A Max- Report		Report			Weekly	Grab	SWU-001	Upstream
Phosphorous, Total (as P)	mg/L	Min- N/A Max- Report		Report			Monthly	Grab	EFF-003	
Phosphorous, Total (as P)	lbs/day	Min- N/A Max- Report	68,420	Report			Weekly / Monthly	Calculation	EFF-001 SWU-001 EFF-003	Cond. I.A.6 & I.A.7.
Nitrogen, Total (as N)	mg/L	Min-N/A Max- Report		Report			Weekly	Grab	EFF-001 SWU-001	
Nitrogen, Total (as N)	mg/L	Min- N/A Max- Report		Report			Monthly	Grab	EFF-003	
Nitrogen, Total (as N)	lbs/day	Min- N/A Max- Report	33,650	Report			Weekly / Monthly	Calculation	EFF-001 SWU-001 EFF-003	Cond. I.A.6 & I.A.7

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	Annual Average	Monthly Average	Weekly Average	Single Sample	Monitoring Frequency	Sample Type	Monitoring Location Site Number	Notes
Nitrogen, Ammonia, Total (as N)	mg/L	Min- N/A Max- Report		Report			Weekly	Grab	EFF-001	Cond. I.A.9
Ammonia, Un-ionized (as NH_3)	mg/L	Min- N/A Max- 0.02		Report			Weekly	Calculation	EFF-001	Cond. I.A.9
Oxygen, Dissolved (DO)	mg/L	Min- 5.0 Max- N/A		Report			Weekly	Instantaneous	EFF-001	Older w/o new limit
Oxygen, Dissolved (DO)	mg/L	Min- 5.0 Max- N/A		N/A			Monthly	Instantaneous	EFF-003	
Specific Conductance	UMHOS/cm	Min- N/A Max- 1275		Report			Weekly	Instantaneous	EFF-001	Cond. I.A.10
Specific Conductance	UMHOS/cm	Min-N/A Max- Report		Report			Weekly	Instantaneous	SWU-001	Upstream
Specific Conductance	UMHOS/cm	Min- N/A Max- Report		Report			Weekly	Instantaneous	OUI-004	Internal Outfall
Specific Conductance	UMHOS/cm	Min- N/A Max- 1275		N/A			Monthly	Instantaneous	EFF-003	
Turbidity	NTU	Min- N/A Max- 29		Report			Weekly	Instantaneous	EFF-001	Cond. I.A.11
Turbidity	NTU	Min- N/A Max- 29		N/A			Monthly	Instantaneous	EFF-003	Cond. I.A.11
Alpha, Gross Particle Activity	pci/L	Min- N/A Max- 15		N/A			Monthly	Grab	EFF-001	Cond. I.A.5
Radium ^{226} +Radium ^{228} combined	pci/L	Min- N/A Max- 5.0		N/A			Monthly	Grab	EFF-001	Cond. I.A.5
Acute WET, 96 hour LC50 (C. dubia)		Min-100%						Grab	EFF-001	Cond. I.A.13

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	Annual Average	Monthly Average	Weekly Average	Single Sample	Monitoring Frequency	Sample Type	Monitoring Location Site Number	Notes
Acute WET, 96 hour LC50 (C. leedsi)		Min-100%						Grab	EFF-001	Cond. I.A.13

Conditions:

5. During any sampling event performed in accordance with the monitoring requirements for the radioactive species specified in Parts I.A.1. above, a properly preserved sample must be taken for the determination of gross alpha particle activity, and combined Radium $^{226\text{-}228}$. The sample must fist be analyzed for gross alpha particle activity and if the total value exceeds the MCL of 15.0 pCi/L, the sample (appropriately preserved as required above) shall be analyzed for combined Radium $^{226+228}$. The analytical results shall be reported as required by this permit (Part I.E.3), on the appropriate Discharge Monitoring Report.

6. The reported nutrient loadings for Total Nitrogen and Total Phosphorous are to be calculated using the total daily flow recorded for the day on which the sample is taken.

7. An EPA TMDL Load Allocation for total nitrogen has been determined for this facility. The allocation is **33,650** lbs/yr maximum contribution for the USAC Bartow Complex. Until a Load Allocation for total phosphorous is determined for this facility and this permit modified pursuant to Florida Administrative Code Rules 62-4.080 and 62-620.325, the permittee shall monitor and report loading for total nitrogen (as N) and total phosphorous (as P) from Outfall D-001, Outfall D-003, and Upstream Monitoring Station D-01A as listed in conditions I.A.1 and I.A.2 above. The facility shall only be operated as authorized by this permit and shall make no changes outside of the scope of this authorization, which would increase nutrient loading without prior approval from the Department. The target value for total phosphorous was calculated using the discharge concentrations during the last permit cycle. The loading values are as follows:

- Total Nitrogen loading for Outfalls D-001 and D-003 is limited to a combined maximum loading value of **33,650** pounds per year, excluding the upstream loading from D-01A.
- Total Phosphorous loading for Outfalls D-001 and D-003 is report only, but a combined target value, calculated using the discharge concentrations from the previous permit cycle of **68,420** pounds per year using the 5-year rolling annual average method applies, excluding the upstream loading from D-01A.

The total nutrient loading for the calendar year from this facility is determined using the formulas as shown below.

Annual Nitrogen Load Calculation for Weekly Sampling

$$TN_L = \frac{[\sum_i^{260}(F_{Wk_i} \times C_{TN_i} \times 8.34)]_{D001} + [\sum_i^{260}(F_{Wk_i} \times C_{TN_i} \times 8.34)]_{D003} - [\sum_i^{260}(F_{Wk_i} \times C_{TN_i} \times 8.34)]_{D11A}}{}$$

TN_L = Annual Total Nitrogen Load in pounds per calendar year

$\sum_i^{260}$ = Sum of Total Nitrogen Loads for the past 260 calendar weeks (current ($i = 1$) + previous 259) in pounds

F_{Wk_i} = Total discharge flow in million gallons per calendar week

C_{TN_i} = Measured Total Nitrogen concentration in parts per million per calendar week

5-Year Rolling Annual Average Phosphorus Load Calculation for Weekly Sampling

$$TP_L = \frac{[\sum_i^{260}(F_{Wk_i} \times C_{TP_i} \times 8.34)]_{D001} + [\sum_i^{260}(F_{Wk_i} \times C_{TP_i} \times 8.34)]_{D003} - [\sum_i^{260}(F_{Wk_i} \times C_{TP_i} \times 8.34)]_{D11A}}{5}$$

TP_L = Annual Total Phosphorus Load in pounds per calendar year

$\sum_i^{260}$ = Sum of Total Phosphorus Loads for the past 260 calendar weeks (current ($i = 1$) + previous 259) in pounds

F_{Wk_i} = Total discharge flow in million gallons per calendar week

C_{TP_i} = Measured Total Phosphorus concentration in parts per million per calendar week

If the Total Phosphorous target value or the Total Nitrogen effluent limitation for this facility is exceeded, the permittee shall notify the Department within 3 days of discovery and within 7 days of discover submit a written explanation for the exceedences. The permittee shall also describe what follow-up action is necessary to provide reasonable assurance that the requirements of the Florida Administrative Code Rule 62-302.530(47) [Nutrients] will be met and to prevent reoccurance of the exceedances, which is inconsistent with the requirements of the requirements of this condition.

9. Effluent samples for pH and temperature shall be monitored at the same time and location as the total ammonia grab sample, which is used to calculate the unionized ammonia value. Unionized ammonia shall be calculated using the DEP Standard Operating Procedure for "Calculation of Un-Ionized Ammonia in Fresh Water" dated February 12, 2001. All measured values for pH, temperature, and total ammonia used to calculate an un-ionized ammonia value shall be kept on record. The daily maximum value and average monthly value for un-ionized ammonia for each reporting period shall be reported on the DMR. [62-4.246(4) and 62-602.530(3)]

10. For Outfalls D-001 and D-003, the Specific Conductance final effluent limit shall be fixed at 1275 µmhos/cm.

11. The final daily maximum effluent limit for Turbidity shall be set at 29 nephelometric turbidity units (NTUs).

13. The permittee shall comply with the following requirements to evaluate whole effluent toxicity of the discharge from Outfall D-001. (Also see toxicity test requirements section below).

PART I: Continued

Receiving Waters:	**Classification (indicate whether fresh or marine):**
Discharges to Bear Branch (WBID 1611- should be listed as WBID 1631) then to the Peace River	**III Fresh**

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

Acute, 96-hour LC50 *Ceriodaphnia dubia, Cyprinella leedsi*, routine testing every 6-months, EPA Method for measuring acute toxicity of effluents to freshwater and marine organisms (EPA/600/4-90/027F); mortality of greater than 50% in "routine" sample or an LC50 of less than 100% effluent in any additional definitive test will be considered a violation of permit conditions. Effluent concentrations to be used are 12.5%, 25%, 50%, 75%, and 100%.

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

Consent Order No. 91-2384; executed 11-19-2013; CO addresses Department's concern regarding a remedy for contaminated ground water at former Clay Settling Area SA No. 1. This remedy involved the installation of a soil-bentonite slurry cutoff wall adjacent to the east and south sides of the USAC Bartow Gypsum Stack system, as an interim corrective measure. In the report reviewed by the Department, USAC and USS (United States Steel Corporation) agreed to the CO. The CO requires that USS submit design and construction details for the cutoff wall (include all related monitor locations/devices/frequencies). USS shall submit a predictive analysis to show how infiltration into the intermediate I-1 zone (or deeper) will decline over time. In addition, a predictive analysis to show how the installation of the slurry wall will reduce seepage impacts; and provide interim progress reports and any corrective measures. Additional offsite assessments will need to be completed as well. (see attached CO)

Facility Mixing Zone Details (if applicable):
None Applicable

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

Date	Parameter and Units	Limit	Result
Last DMR violation pH 10/11 & 6/12	**pH- 4.7 SU & 5.22 SU**	**6.0-8.5**	

Describe previous FYI and WQBEL study:

Two FYI's have been completed for this facility. An FYI-05 was conducted in March 2003 and an FYI-03 was conducted in September 2009. There is a TMDL for fecal coliforms for the immediate downstream system (WBID 1623J). (documents attached)

Describe previous or current Enforcement Actions (including WLs):

On October 14, 2014, Department (Dept.) staff issued a Compliance Assistance Offer (CAO) in response to an authorized discharge that occurred on August 19, 2014. The discharge resulted from a damaged HDPE pipeline, which was used to convey wastewater to the treatment system. The damage to the pipeline resulted in the release of an estimated 0.473 MG of wastewater through the permitted NPDES Outfall D-001. The facility had taken measures to eliminate the discharge and hired an environmental consulting firm to investigate and assess the impacts associated with the unauthorized discharge event.
In the CAO, the Dept. advised the facility to provide a final summary report on the actions taken to stop or mitigate the discharge and the efforts taken to investigate the downstream impacts associated with the incident. In addition, the facility was to provide a plan or procedure outlining the steps that USAC will implement to prevent further occurrences of this nature. (CAO letter attached)

Facility provided appropriate monitoring and response documents to the Department. Multiple inspections were conducted post the release (during the month of August) with a final follow-up site inspection completed by Department staff on November 5, 2014. During this inspection, staff noted that the facility had successfully mitigated for the unauthorized release and was therefore In-Compliance. No formal enforcement was required.

Describe any violations or problems noted in previous inspection:

The last inspection (Compliance Evaluation Inspection) was conducted on June 17, 2015. The inspector, Dennis Pierson, noted that the facility was in-compliance. No discharge was occurring at time of the inspection.

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

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

PART II: Sampling Event Information

Date(s) sample collected: **10/5/2015**	**Sampler(s):** **Anthony Annibali & Dennis Pierson**
Temperature (Deg C): **27.1**	**pH (SU):** **6.73**
Dissolved Oxygen (mg/L): **8.44**	**Conductivity (umhos/cm):** **227**

Total Residual Chlorine (mg/L): **Not taken**	**Total Residual Chlorine - after Disinfection (mg/L):** **Not taken**
Method of Chlorination: **Not taken/applicable**	**Method of De-chlorination:** **Not taken/applicable**

Flow During Sample Collection for each outfall(MGD):
The flow was taken using the facility's ISCO 4230 Bubble/flowmeter and read 4.3 MGD at time of arrival.

Mean Flow for each outfall for previous 12 months based on sampling date (If samples are taken on more than one day, indicate Mean Flow for each day):
D-001 was only outfall sampled- 2.54 monthly averaged flow from 09/2014-08/2015. (Each month's reading can be provided if necessary).

Describe Discharge during Sampling Event:
☒ **Continuous** ☐ **Intermittent** ☒ **Seasonal** ☒ **Rainfall Dependent** ☐ **Other, please specify**



Photo 1: taken of active discharge were samples were collected (D-001).



Photo 2: taken immediately upstream of the discharge at Outfall D-001 (building on right of photo is where ISCO flowmeter is housed).

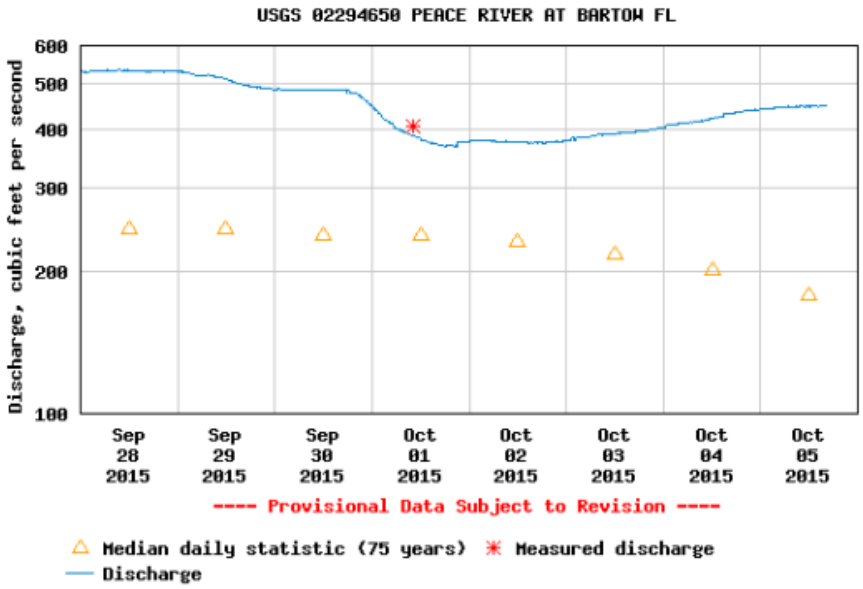
Describe any conditions, difficulties or abnormal events that occurred during the sample collection and any other additional comments here:

The sampling event was downgraded from an FYI05 to an FYI3 due to high recent rainfall events. During the reconnaissance time-frame, it was determined that the frequent heavy rainfalls would not be conducive to performing an SCI/full biological sampling event. Staff gauges were reviewed at close-proximity USGS stations (two- 02294650 and 02294161), which indicated a very high and fast stream flow. Department staff were concerned with scouring and not having enough time to allow for recolonization, so the FYI05 was downgraded. Below are some data collected pre-sampling and graphs of conditions that were present at the two gauging stations during the sampling event.

USGS Station 02294650 Peace River at Bartow (8-17-15) levels:
Gauge height- 7.94 ft. Discharge- 1,120 ft^3/s Long-term median flow- 228

Discharge, cubic feet per second

Most recent instantaneous value: 448 10-05-2015 16:15 EDT



Create presentation-quality / stand-alone graph. Subscribe to WaterAlert

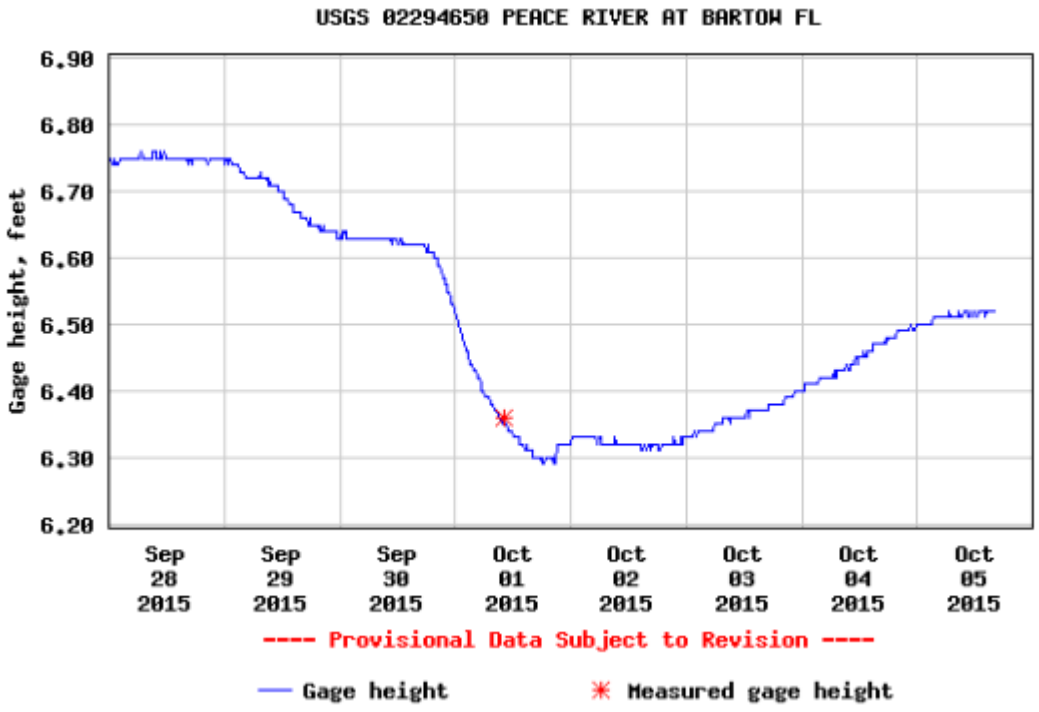
Share this graph |

Daily discharge, cubic feet per second -- statistics for Oct 5 based on 76 years of record more

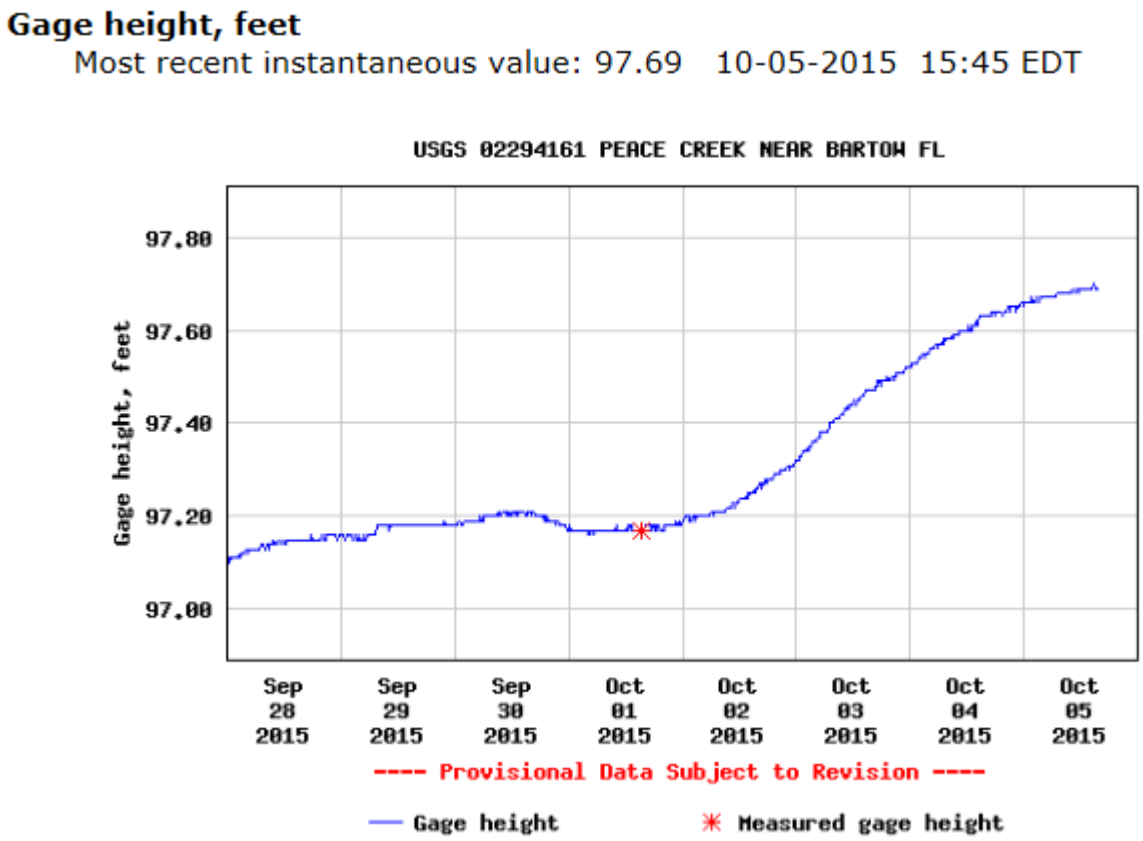
Min (1991)	25th percen-tile	Median	Mean	Most Recent Instantaneous Value Oct 5	75th percen-tile	Max (2005)
14	88	178	404	448	473	2960

Gage height, feet

Most recent instantaneous value: 6.52 10-05-2015 16:15 EDT

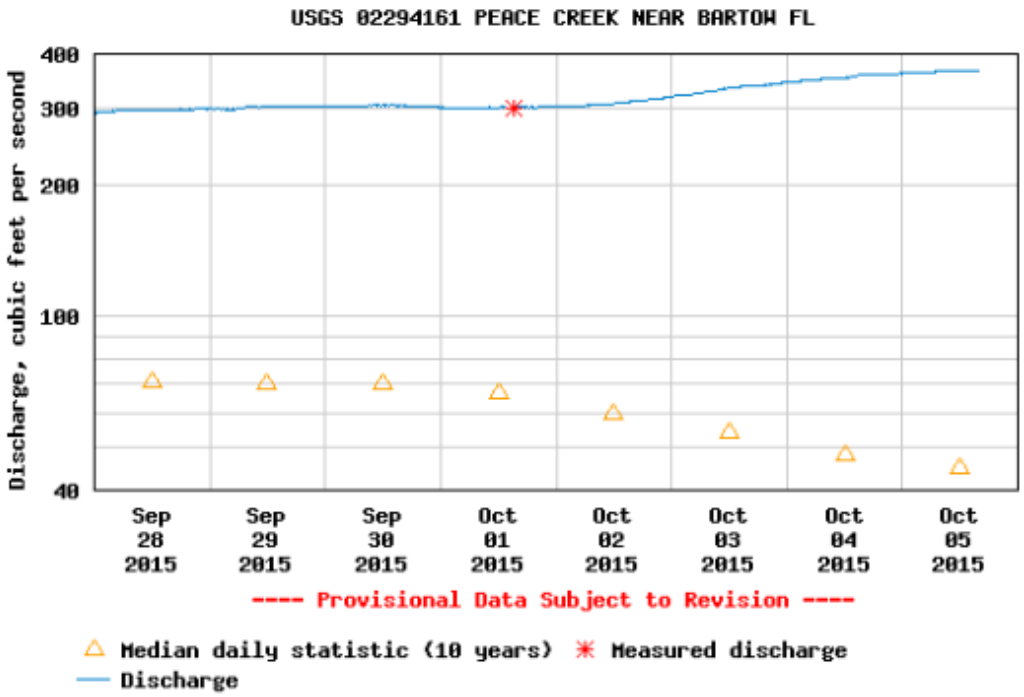

USGS 02294650 PEACE RIVER AT BARTOW FL
Gage height, feet
6.90
6.80
6.70
6.60
6.50
6.40
6.30
6.20
Sep 28 2015
Sep 29 2015
Sep 30 2015
Oct 01 2015
Oct 02 2015
Oct 03 2015
Oct 04 2015
Oct 05 2015
---- Provisional Data Subject to Revision ----
Gage height
Measured gage height

USGS Station 02294161 Peace River at Bartow (8-17-15) levels:
Gauge height- 98.44 ft. Discharge- 453 ft^3/s Long-term median flow- 59.0



Discharge, cubic feet per second

Most recent instantaneous value: 366 10-05-2015 15:45 EDT



Create presentation-quality / stand-alone graph. Subscribe to WaterAlert

Share this graph |

Daily discharge, cubic feet per second -- statistics for Oct 5 based on 10 years of record more

Min (2008)	25th percen-tile	Median	Mean	75th percen-tile	Most Recent Instantaneous Value Oct 5	Max (2015)
24	33	45	126	166	366	623

Appendix B

Explanation of Measurements

(1) Quality Assurance and Quality Control

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

(2) Chemical Analyses of the Effluent

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

(3) Toxicity Bioassays

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

(4) Chlorophyll *a* Content

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

(5) Algal Growth Potential (AGP)

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

The concentration of nutrients in a water sample may be used to calculate the expected yield of AGP in a low salinity sample under the assumption that other required nutrients (e.g. silicon, micronutrients) are present in excess (Miller *et al*. 1978). The expected amount of production is calculated as 38 times the total soluble inorganic nitrogen (nitrate and nitrite plus ammonia) under nitrogen limitation or 430 times the ortho-phosphate (OP) concentration under phosphorus limitation with an error of $\pm$ 20%. When the ratio of nitrogen to phosphorus (N:P) is less than 10:1, nitrogen limitation of algal production is likely. When the N:P ratio is 20:1 or greater, phosphorus limitation is likely (EPA-822-B-00-002). For ratios in-between, co-limitation may occur. Production of lower biomass than expected may be evidence of growth inhibition related to toxic compounds present in the water sample tested and may constitute an exceedance of 62-302.530(61) F.A.C. Expected AGP is not calculated for marine samples incubated with *Dunaliella*.

(6) Definition of Qualifiers

A - Value reported is the mean of two or more determinations
B - Results based on colony counts outside the acceptable range.
I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
J - Estimated value
K - Actual value is known to be less than value given
L - Actual value is known to be greater than value given
N - Presumptive evidence of presence of material.

O - Sampled, but analysis lost or not performed.
Q - Sample held beyond normal holding time.
T - Value reported is less than the criterion of detection.
U - Material was analyzed for but not detected. The reported value is the method detection limit for the sample analyzed.
V - Analyte was detected in both sample and method blank.
X - Too few individuals to calculate SCI value.
Y - The laboratory analysis was from an unpreserved or improperly preserved sample. The data may not be accurate
Z - Colonies were too numerous to count (TNTC)

Appendix C

Chemical analysis of effluent

Date Sampled	Field ID	Analysis Group	Component	Result	Units	MDL	PQL
10/5/2015 12:00	Outfall D-001	AGP/LN	Algal Growth Potential	28.4 A	mg DryWt/L	0.3	0.9
10/5/2015 12:00	Outfall D-001	Chlorophyll/Grain Size/BOD	Chlorophyll-a, Corrected	47	ug/L	1.1	3.4
10/5/2015 11:30	Outfall D-001	Chlorophyll/Grain Size/BOD	Biochemical Oxygen Demand-5 Day,N-Inhib	2.6 J	mg/L	0.2	2
10/5/2015 12:00	Outfall D-001	Chlorophyll/Grain Size/BOD	Phaeophytin-a	27	ug/L	0.8	2.4
10/5/2015 12:00	Outfall D-001	Toxicology	Bioassay-Acute-Screen-FW-Fish, LC50	100 L	LC50		
10/5/2015 12:00	Outfall D-001	Toxicology	Bioassay-Acute-Screen-FW-C.dubia, LC50	100 L	LC50		
10/5/2015 12:00	Outfall D-001	Metals	Sodium	16.7	mg/L	0.5	2
10/5/2015 12:00	Outfall D-001	Metals	Silver	0.0050 U	ug/L	0.005	0.02
10/5/2015 12:00	Outfall D-001	Metals	Iron	54 I	ug/L	30	120
10/5/2015 12:00	Outfall D-001	Metals	Potassium	1.2	mg/L	0.3	1.2
10/5/2015 12:00	Outfall D-001	Metals	Chromium	0.44	ug/L	0.05	0.2
10/5/2015 12:00	Outfall D-001	Metals	Arsenic	1.87	ug/L	0.05	0.2
10/5/2015 12:00	Outfall D-001	Metals	Copper	0.15 I	ug/L	0.1	0.4
10/5/2015 12:00	Outfall D-001	Metals	Calcium	21.8	mg/L	0.075	0.3
10/5/2015 12:00	Outfall D-001	Metals	Zinc	6.3 I	ug/L	5	20
10/5/2015 12:00	Outfall D-001	Metals	Aluminum	134	ug/L	2	8
10/5/2015 12:00	Outfall D-001	Metals	Lead	0.054 I	ug/L	0.05	0.2
10/5/2015 12:00	Outfall D-001	Metals	Magnesium	7.56	mg/L	0.04	0.16
10/5/2015 12:00	Outfall D-001	Metals	Cadmium	0.026 I	ug/L	0.02	0.08
10/5/2015 12:00	Outfall D-001	Metals	Selenium	0.21 I	ug/L	0.2	0.8
10/5/2015 12:00	Outfall D-001	Metals	Nickel	1.98	ug/L	0.25	1
10/5/2015 11:30	Outfall D-001	Nutrients	Total Alkalinity	37	mg CaCO3/L	0.65	2.5
10/5/2015 11:30	Outfall D-001	Nutrients	Sulfate	57	mg SO4/L	0.2	0.5
10/5/2015 11:30	Outfall D-001	Nutrients	Color (true)	74	PCU	2.5	6
10/5/2015 11:30	Outfall D-001	Nutrients	Kjeldahl Nitrogen	1.7	mg N/L	0.08	0.2
10/5/2015 11:30	Outfall D-001	Nutrients	Total-P	2.1	mg P/L	0.025	0.25
10/5/2015 11:30	Outfall D-001	Nutrients	Turbidity	3.6	NTU	0.1	0.1
10/5/2015 11:30	Outfall D-001	Nutrients	NO2NO3-N	0.15	mg N/L	0.004	0.01
10/5/2015 11:30	Outfall D-001	Nutrients	Organic Carbon	18	mg C/L	0.5	1
10/5/2015 11:30	Outfall D-001	Nutrients	Chloride	5.7	mg Cl/L	0.2	0.5
10/5/2015 11:30	Outfall D-001	Nutrients	Fluoride	1.4	mg F/L	0.035	0.1
10/5/2015 11:30	Outfall D-001	Nutrients	O-Phosphate-P	1.9	mg P/L	0.04	0.1

Date Sampled	Field ID	Analysis Group	Component	Result	Units	MDL	PQL
10/5/2015 11:30	Outfall D-001	Nutrients	TSS	7 I	mg/L	2	10
10/5/2015 11:30	Outfall D-001	Nutrients	Ammonia-N	0.28	mg N/L	0.01	0.025
10/5/2015 12:00	Outfall D-001	Overflow	Radium 228	0.8 U	pCi/L	0.8	0.8
10/5/2015 12:00	Outfall D-001	Overflow	Radium 226-Counting Error	0.2	pCi/L	0.4	0.4
10/5/2015 12:00	Outfall D-001	Overflow	Radium 226	0.4	pCi/L	0.4	0.4
10/5/2015 12:00	Outfall D-001	Overflow	Alpha-Counting Error	0.6	pCi/L	1.4	1.4
10/5/2015 12:00	Outfall D-001	Overflow	Radium 228-Counting Error	0.6	pCi/L	0.8	0.8
10/5/2015 12:00	Outfall D-001	Overflow	Alpha, Total	1.4 U	pCi/L	1.4	1.4
10/5/2015 12:00	Outfall D-001	Pesticides	Mevinphos	0.0094 U	ug/L	0.0094	0.038
10/5/2015 12:00	Outfall D-001	Pesticides	Atrazine Desisopropyl	0.0094 U	ug/L	0.0094	0.038
10/5/2015 12:00	Outfall D-001	Pesticides	Butylate	0.019 U	ug/L	0.019	0.075
10/5/2015 12:00	Outfall D-001	Pesticides	Hexazinone	0.028 UJ	ug/L	0.028	0.11
10/5/2015 12:00	Outfall D-001	Pesticides	Prometryn	0.019 U	ug/L	0.019	0.075
10/5/2015 12:00	Outfall D-001	Pesticides	Alachlor	0.057 U	ug/L	0.057	0.23
10/5/2015 12:00	Outfall D-001	Pesticides	Ethoprop	0.0047 U	ug/L	0.0047	0.019
10/5/2015 12:00	Outfall D-001	Pesticides	Fonofos	0.0094 U	ug/L	0.0094	0.038
10/5/2015 12:00	Outfall D-001	Pesticides	Simazine	0.0094 U	ug/L	0.0094	0.038
10/5/2015 12:00	Outfall D-001	Pesticides	Atrazine	0.0094 U	ug/L	0.0094	0.038
10/5/2015 12:00	Outfall D-001	Pesticides	Diazinon	0.0094 U	ug/L	0.0094	0.038
10/5/2015 12:00	Outfall D-001	Pesticides	Parathion Methyl	0.0094 U	ug/L	0.0094	0.038
10/5/2015 12:00	Outfall D-001	Pesticides	Atrazine Desethyl	0.0094 U	ug/L	0.0094	0.038
10/5/2015 12:00	Outfall D-001	Pesticides	Bromacil	0.038 U	ug/L	0.038	0.15
10/5/2015 12:00	Outfall D-001	Pesticides	Disulfoton	0.0047 U	ug/L	0.0047	0.019
10/5/2015 12:00	Outfall D-001	Pesticides	Ethion	0.0094 U	ug/L	0.0094	0.038
10/5/2015 12:00	Outfall D-001	Pesticides	Metolachlor	0.057 U	ug/L	0.057	0.23
10/5/2015 12:00	Outfall D-001	Pesticides	Parathion Ethyl	0.019 U	ug/L	0.019	0.075
10/5/2015 12:00	Outfall D-001	Pesticides	Prometon	0.019 U	ug/L	0.019	0.075
10/5/2015 12:00	Outfall D-001	Pesticides	Azinphos Methyl	0.019 U	ug/L	0.019	0.075
10/5/2015 12:00	Outfall D-001	Pesticides	Chlorpyrifos Ethyl	0.0094 U	ug/L	0.0094	0.038
10/5/2015 12:00	Outfall D-001	Pesticides	Chlorpyrifos Methyl	0.0094 U	ug/L	0.0094	0.038
10/5/2015 12:00	Outfall D-001	Pesticides	Malathion	0.0094 U	ug/L	0.0094	0.038
10/5/2015 12:00	Outfall D-001	Pesticides	Phorate	0.0047 U	ug/L	0.0047	0.019
10/5/2015 12:00	Outfall D-001	Pesticides	Metribuzin	0.019 U	ug/L	0.019	0.075
10/5/2015 12:00	Outfall D-001	Pesticides	Metalaxyl	0.038 U	ug/L	0.038	0.15
10/5/2015 12:00	Outfall D-001	Pesticides	Fenamiphos	0.028 U	ug/L	0.028	0.11

Date Sampled	Field ID	Analysis Group	Component	Result	Units	MDL	PQL
10/5/2015 12:00	Outfall D-001	Pesticides	Demeton	0.023 U	ug/L	0.023	0.091
10/5/2015 12:00	Outfall D-001	Pesticides	Ametryn	0.0094 U	ug/L	0.0094	0.038
10/5/2015 12:00	Outfall D-001	Pesticides	Naled	0.038 U	ug/L	0.038	0.15
10/5/2015 12:00	Outfall D-001	Pesticides	Norflurazon	0.028 U	ug/L	0.028	0.11
10/5/2015 12:00	Outfall D-001	Priority Organic Pollutants	2,4-Dinitrotoluene	0.94 U	ug/L	0.94	3.8
10/5/2015 12:00	Outfall D-001	Priority Organic Pollutants	2-Chloronaphthalene	0.94 U	ug/L	0.94	3.8
10/5/2015 12:00	Outfall D-001	Priority Organic Pollutants	Acenaphthene	0.19 U	ug/L	0.19	0.75
10/5/2015 12:00	Outfall D-001	Priority Organic Pollutants	Diethyl phthalate	0.94 U	ug/L	0.94	3.8
10/5/2015 12:00	Outfall D-001	Priority Organic Pollutants	Fluorene	0.19 U	ug/L	0.19	0.75
10/5/2015 12:00	Outfall D-001	Priority Organic Pollutants	Hexachlorocyclopentadiene	2.8 U	ug/L	2.8	11
10/5/2015 12:00	Outfall D-001	Priority Organic Pollutants	Isophorone	0.94 U	ug/L	0.94	3.8
10/5/2015 12:00	Outfall D-001	Priority Organic Pollutants	2,4-Dinitrophenol	14 U	ug/L	14	57
10/5/2015 12:00	Outfall D-001	Priority Organic Pollutants	2-Methyl-4,6-dinitrophenol	2.8 U	ug/L	2.8	11
10/5/2015 12:00	Outfall D-001	Priority Organic Pollutants	4-Nitrophenol	14 U	ug/L	14	57
10/5/2015 12:00	Outfall D-001	Priority Organic Pollutants	Acenaphthylene	0.19 U	ug/L	0.19	0.75
10/5/2015 12:00	Outfall D-001	Priority Organic Pollutants	Hexachlorobutadiene	2.8 U	ug/L	2.8	11
10/5/2015 12:00	Outfall D-001	Priority Organic Pollutants	Phenanthrene	0.19 U	ug/L	0.19	0.75
10/5/2015 12:00	Outfall D-001	Priority Organic Pollutants	2,6-Dinitrotoluene	0.94 U	ug/L	0.94	3.8
10/5/2015 12:00	Outfall D-001	Priority Organic Pollutants	4-Bromophenyl phenyl ether	0.94 U	ug/L	0.94	3.8
10/5/2015 12:00	Outfall D-001	Priority Organic Pollutants	4-Chloro-3-methylphenol	0.94 U	ug/L	0.94	3.8
10/5/2015 12:00	Outfall D-001	Priority Organic Pollutants	Benzo(a)anthracene	0.19 U	ug/L	0.19	0.75
10/5/2015 12:00	Outfall D-001	Priority Organic Pollutants	Benzo(b)fluoranthene	0.19 U	ug/L	0.19	0.75
10/5/2015 12:00	Outfall D-001	Priority Organic Pollutants	Dibenzo(a,h)anthracene	0.19 U	ug/L	0.19	0.75
10/5/2015 12:00	Outfall D-001	Priority Organic Pollutants	Hexachlorobenzene	0.94 U	ug/L	0.94	3.8
10/5/2015 12:00	Outfall D-001	Priority Organic Pollutants	Hexachloroethane	2.8 U	ug/L	2.8	11
10/5/2015 12:00	Outfall D-001	Priority Organic Pollutants	N-Nitrosodimethylamine	1.9 U	ug/L	1.9	7.5
10/5/2015 12:00	Outfall D-001	Priority Organic Pollutants	Phenol	0.94 U	ug/L	0.94	3.8
10/5/2015 12:00	Outfall D-001	Priority Organic Pollutants	Anthracene	0.19 U	ug/L	0.19	0.75
10/5/2015 12:00	Outfall D-001	Priority Organic Pollutants	Benzo(a)pyrene	0.19 U	ug/L	0.19	0.75
10/5/2015 12:00	Outfall D-001	Priority Organic Pollutants	Fluoranthene	0.19 U	ug/L	0.19	0.75
10/5/2015 12:00	Outfall D-001	Priority Organic Pollutants	Indeno(1,2,3-cd)pyrene	0.19 U	ug/L	0.19	0.75
10/5/2015 12:00	Outfall D-001	Priority Organic Pollutants	Pentachlorophenol	0.94 U	ug/L	0.94	3.8
10/5/2015 12:00	Outfall D-001	Priority Organic Pollutants	Pyrene	0.19 U	ug/L	0.19	0.75
10/5/2015 12:00	Outfall D-001	Priority Organic Pollutants	1,2,4-Trichlorobenzene	0.94 U	ug/L	0.94	3.8
10/5/2015 12:00	Outfall D-001	Priority Organic Pollutants	2-Chlorophenol	0.94 U	ug/L	0.94	3.8

Date Sampled	Field ID	Analysis Group	Component	Result	Units	MDL	PQL
10/5/2015 12:00	Outfall D-001	Priority Organic Pollutants	Benzidine	94 UJ	ug/L	94	380
10/5/2015 12:00	Outfall D-001	Priority Organic Pollutants	Benzo(g,h,i)perylene	0.19 U	ug/L	0.19	0.75
10/5/2015 12:00	Outfall D-001	Priority Organic Pollutants	Bis(2-chloroethoxy)methane	0.94 U	ug/L	0.94	3.8
10/5/2015 12:00	Outfall D-001	Priority Organic Pollutants	2,4,6-Trichlorophenol	0.94 U	ug/L	0.94	3.8
10/5/2015 12:00	Outfall D-001	Priority Organic Pollutants	2,4-Dimethylphenol	9.4 U	ug/L	9.4	38
10/5/2015 12:00	Outfall D-001	Priority Organic Pollutants	3,3'-Dichlorobenzidine	38 U	ug/L	38	150
10/5/2015 12:00	Outfall D-001	Priority Organic Pollutants	Di-n-butyl phthalate	0.94 U	ug/L	0.94	3.8
10/5/2015 12:00	Outfall D-001	Priority Organic Pollutants	Di-n-octyl phthalate	0.94 U	ug/L	0.94	3.8
10/5/2015 12:00	Outfall D-001	Priority Organic Pollutants	Dimethyl phthalate	0.94 U	ug/L	0.94	3.8
10/5/2015 12:00	Outfall D-001	Priority Organic Pollutants	N-Nitrosodi-n-propylamine	1.9 U	ug/L	1.9	7.5
10/5/2015 12:00	Outfall D-001	Priority Organic Pollutants	2-Nitrophenol	0.94 U	ug/L	0.94	3.8
10/5/2015 12:00	Outfall D-001	Priority Organic Pollutants	Benzo(k)fluoranthene	0.19 U	ug/L	0.19	0.75
10/5/2015 12:00	Outfall D-001	Priority Organic Pollutants	Bis(2-chloroethyl)ether	0.94 U	ug/L	0.94	3.8
10/5/2015 12:00	Outfall D-001	Priority Organic Pollutants	Bis(2-ethylhexyl)phthalate	1.9 U	ug/L	1.9	7.5
10/5/2015 12:00	Outfall D-001	Priority Organic Pollutants	Chrysene	0.19 U	ug/L	0.19	0.75
10/5/2015 12:00	Outfall D-001	Priority Organic Pollutants	N-Nitrosodiphenylamine/ Diphenylamine	2.8 U	ug/L	2.8	11
10/5/2015 12:00	Outfall D-001	Priority Organic Pollutants	Naphthalene	0.19 U	ug/L	0.19	0.75
10/5/2015 12:00	Outfall D-001	Priority Organic Pollutants	Nitrobenzene	1.9 U	ug/L	1.9	7.5
10/5/2015 12:00	Outfall D-001	Priority Organic Pollutants	2,4-Dichlorophenol	0.94 U	ug/L	0.94	3.8
10/5/2015 12:00	Outfall D-001	Priority Organic Pollutants	4-Chlorophenyl phenyl ether	1.9 U	ug/L	1.9	7.5
10/5/2015 12:00	Outfall D-001	Priority Organic Pollutants	Bis(2-chloroisopropyl)ether	2.8 U	ug/L	2.8	11
10/5/2015 12:00	Outfall D-001	Priority Organic Pollutants	Butyl benzyl phthalate	0.94 U	ug/L	0.94	3.8
10/5/2015 11:30	Outfall D-001	Nutrients	Temperature	27.1	C		
10/5/2015 11:30	Outfall D-001	Nutrients	pH	6.73			
10/5/2015 12:00	Outfall D-001	Nutrients	Specific Conductance	227	umhos/cm		
10/5/2015 11:30	Outfall D-001	Nutrients	Dissolved Oxygen	8.44	mg/L		
10/5/2015 12:00	Outfall D-001	Nutrients	Sample Depth	0.2	m		
10/5/2015 11:35	Blank Sample	Metals	Iron	30 U	ug/L	30	120
10/5/2015 11:35	Blank Sample	Metals	Zinc	5.0 U	ug/L	5	20
10/5/2015 11:35	Blank Sample	Metals	Calcium	0.075 U	mg/L	0.075	0.3
10/5/2015 11:35	Blank Sample	Metals	Arsenic	0.050 U	ug/L	0.05	0.2
10/5/2015 11:35	Blank Sample	Metals	Selenium	0.20 U	ug/L	0.2	0.8
10/5/2015 11:35	Blank Sample	Metals	Lead	0.050 U	ug/L	0.05	0.2
10/5/2015 11:35	Blank Sample	Metals	Potassium	0.30 U	mg/L	0.3	1.2
10/5/2015 11:35	Blank Sample	Metals	Cadmium	0.020 U	ug/L	0.02	0.08

Date Sampled	Field ID	Analysis Group	Component	Result	Units	MDL	PQL
10/5/2015 11:35	Blank Sample	Metals	Sodium	0.50 U	mg/L	0.5	2
10/5/2015 11:35	Blank Sample	Metals	Magnesium	0.040 U	mg/L	0.04	0.16
10/5/2015 11:35	Blank Sample	Metals	Copper	0.10 U	ug/L	0.1	0.4
10/5/2015 11:35	Blank Sample	Metals	Silver	0.0050 U	ug/L	0.005	0.02
10/5/2015 11:35	Blank Sample	Metals	Nickel	0.25 U	ug/L	0.25	1
10/5/2015 11:35	Blank Sample	Metals	Chromium	0.050 U	ug/L	0.05	0.2
10/5/2015 11:35	Blank Sample	Metals	Aluminum	2.0 U	ug/L	2	8
10/5/2015 11:35	Blank Sample	Nutrients	O-Phosphate-P	0.006 I	mg P/L	0.004	0.01
10/5/2015 11:35	Blank Sample	Nutrients	Ammonia-N	0.004 I	mg N/L	0.002	0.005
10/5/2015 11:35	Blank Sample	Nutrients	Total Alkalinity	0.65 U	mg CaCO3/L	0.65	2.5
10/5/2015 11:35	Blank Sample	Nutrients	Chloride	0.20 U	mg Cl/L	0.2	0.5
10/5/2015 11:35	Blank Sample	Nutrients	Fluoride	0.035 U	mg F/L	0.035	0.1
10/5/2015 11:35	Blank Sample	Nutrients	Color (true)	2.5 U	PCU	2.5	6
10/5/2015 11:35	Blank Sample	Nutrients	Total-P	0.002 U	mg P/L	0.002	0.005
10/5/2015 11:35	Blank Sample	Nutrients	Sulfate	0.20 U	mg SO4/L	0.2	0.5
10/5/2015 11:35	Blank Sample	Nutrients	Turbidity	0.10 U	NTU	0.1	0.1
10/5/2015 11:35	Blank Sample	Nutrients	Organic Carbon	0.50 U	mg C/L	0.5	1
10/5/2015 11:35	Blank Sample	Nutrients	Kjeldahl Nitrogen	0.080 U	mg N/L	0.08	0.2
10/5/2015 11:35	Blank Sample	Nutrients	NO2NO3-N	0.004 U	mg N/L	0.004	0.01
10/5/2015 11:35	Blank Sample	Overflow	Alpha, Total	1.2 U	pCi/L	1.2	1.2
10/5/2015 11:35	Blank Sample	Overflow	Radium 228-Counting Error	0.6	pCi/L	0.8	0.8
10/5/2015 11:35	Blank Sample	Overflow	Radium 226-Counting Error	0.2	pCi/L	0.3	0.3
10/5/2015 11:35	Blank Sample	Overflow	Alpha-Counting Error	0.6	pCi/L	1.2	1.2
10/5/2015 11:35	Blank Sample	Overflow	Radium 228	0.8 U	pCi/L	0.8	0.8
10/5/2015 11:35	Blank Sample	Overflow	Radium 226	0.3 U	pCi/L	0.3	0.3
10/5/2015 11:35	Blank Sample	Pesticides	Ametryn	0.0098 U	ug/L	0.0098	0.039
10/5/2015 11:35	Blank Sample	Pesticides	Disulfoton	0.0049 U	ug/L	0.0049	0.02
10/5/2015 11:35	Blank Sample	Pesticides	Demeton	0.023 U	ug/L	0.023	0.094
10/5/2015 11:35	Blank Sample	Pesticides	Atrazine	0.0098 U	ug/L	0.0098	0.039
10/5/2015 11:35	Blank Sample	Pesticides	Chlorpyrifos Ethyl	0.0098 U	ug/L	0.0098	0.039
10/5/2015 11:35	Blank Sample	Pesticides	Metalaxyl	0.039 U	ug/L	0.039	0.16
10/5/2015 11:35	Blank Sample	Pesticides	Norflurazon	0.029 U	ug/L	0.029	0.12
10/5/2015 11:35	Blank Sample	Pesticides	Alachlor	0.059 U	ug/L	0.059	0.23
10/5/2015 11:35	Blank Sample	Pesticides	Naled	0.039 U	ug/L	0.039	0.16
10/5/2015 11:35	Blank Sample	Pesticides	Chlorpyrifos Methyl	0.0098 U	ug/L	0.0098	0.039

Date Sampled	Field ID	Analysis Group	Component	Result	Units	MDL	PQL
10/5/2015 11:35	Blank Sample	Pesticides	Ethoprop	0.0049 U	ug/L	0.0049	0.02
10/5/2015 11:35	Blank Sample	Pesticides	Phorate	0.0049 U	ug/L	0.0049	0.02
10/5/2015 11:35	Blank Sample	Pesticides	Prometryn	0.020 U	ug/L	0.02	0.078
10/5/2015 11:35	Blank Sample	Pesticides	Hexazinone	0.029 UJ	ug/L	0.029	0.12
10/5/2015 11:35	Blank Sample	Pesticides	Atrazine Desethyl	0.0098 U	ug/L	0.0098	0.039
10/5/2015 11:35	Blank Sample	Pesticides	Azinphos Methyl	0.020 U	ug/L	0.02	0.078
10/5/2015 11:35	Blank Sample	Pesticides	Prometon	0.020 U	ug/L	0.02	0.078
10/5/2015 11:35	Blank Sample	Pesticides	Malathion	0.0098 U	ug/L	0.0098	0.039
10/5/2015 11:35	Blank Sample	Pesticides	Fonofos	0.0098 U	ug/L	0.0098	0.039
10/5/2015 11:35	Blank Sample	Pesticides	Diazinon	0.0098 U	ug/L	0.0098	0.039
10/5/2015 11:35	Blank Sample	Pesticides	Bromacil	0.039 U	ug/L	0.039	0.16
10/5/2015 11:35	Blank Sample	Pesticides	Butylate	0.020 U	ug/L	0.02	0.078
10/5/2015 11:35	Blank Sample	Pesticides	Metribuzin	0.020 U	ug/L	0.02	0.078
10/5/2015 11:35	Blank Sample	Pesticides	Parathion Ethyl	0.020 U	ug/L	0.02	0.078
10/5/2015 11:35	Blank Sample	Pesticides	Mevinphos	0.0098 U	ug/L	0.0098	0.039
10/5/2015 11:35	Blank Sample	Pesticides	Fenamiphos	0.029 U	ug/L	0.029	0.12
10/5/2015 11:35	Blank Sample	Pesticides	Ethion	0.0098 U	ug/L	0.0098	0.039
10/5/2015 11:35	Blank Sample	Pesticides	Atrazine Desisopropyl	0.0098 U	ug/L	0.0098	0.039
10/5/2015 11:35	Blank Sample	Pesticides	Parathion Methyl	0.0098 U	ug/L	0.0098	0.039
10/5/2015 11:35	Blank Sample	Pesticides	Simazine	0.0098 U	ug/L	0.0098	0.039
10/5/2015 11:35	Blank Sample	Pesticides	Metolachlor	0.059 U	ug/L	0.059	0.23
10/5/2015 11:35	Blank Sample	Priority Organic Pollutants	4-Bromophenyl phenyl ether	0.94 U	ug/L	0.94	3.8
10/5/2015 11:35	Blank Sample	Priority Organic Pollutants	4-Chlorophenyl phenyl ether	1.9 U	ug/L	1.9	7.5
10/5/2015 11:35	Blank Sample	Priority Organic Pollutants	Benzidine	94 U	ug/L	94	380
10/5/2015 11:35	Blank Sample	Priority Organic Pollutants	Benzo(k)fluoranthene	0.19 U	ug/L	0.19	0.75
10/5/2015 11:35	Blank Sample	Priority Organic Pollutants	Bis(2-chloroethyl)ether	0.94 U	ug/L	0.94	3.8
10/5/2015 11:35	Blank Sample	Priority Organic Pollutants	Dimethyl phthalate	0.94 U	ug/L	0.94	3.8
10/5/2015 11:35	Blank Sample	Priority Organic Pollutants	Isophorone	0.94 U	ug/L	0.94	3.8
10/5/2015 11:35	Blank Sample	Priority Organic Pollutants	Naphthalene	0.19 U	ug/L	0.19	0.75
10/5/2015 11:35	Blank Sample	Priority Organic Pollutants	Nitrobenzene	1.9 U	ug/L	1.9	7.5
10/5/2015 11:35	Blank Sample	Priority Organic Pollutants	2,4-Dinitrophenol	14 U	ug/L	14	57
10/5/2015 11:35	Blank Sample	Priority Organic Pollutants	2-Methyl-4,6-dinitrophenol	2.8 U	ug/L	2.8	11
10/5/2015 11:35	Blank Sample	Priority Organic Pollutants	Anthracene	0.19 U	ug/L	0.19	0.75
10/5/2015 11:35	Blank Sample	Priority Organic Pollutants	Benzo(a)anthracene	0.19 U	ug/L	0.19	0.75
10/5/2015 11:35	Blank Sample	Priority Organic Pollutants	Dibenzo(a,h)anthracene	0.19 U	ug/L	0.19	0.75

Date Sampled	Field ID	Analysis Group	Component	Result	Units	MDL	PQL
10/5/2015 11:35	Blank Sample	Priority Organic Pollutants	N-Nitrosodimethylamine	1.9 U	ug/L	1.9	7.5
10/5/2015 11:35	Blank Sample	Priority Organic Pollutants	Pentachlorophenol	0.94 U	ug/L	0.94	3.8
10/5/2015 11:35	Blank Sample	Priority Organic Pollutants	1,2,4-Trichlorobenzene	0.94 U	ug/L	0.94	3.8
10/5/2015 11:35	Blank Sample	Priority Organic Pollutants	Acenaphthene	0.19 U	ug/L	0.19	0.75
10/5/2015 11:35	Blank Sample	Priority Organic Pollutants	Di-n-butyl phthalate	1.4 I	ug/L	0.94	3.8
10/5/2015 11:35	Blank Sample	Priority Organic Pollutants	Hexachlorobenzene	0.94 U	ug/L	0.94	3.8
10/5/2015 11:35	Blank Sample	Priority Organic Pollutants	Hexachlorobutadiene	2.8 U	ug/L	2.8	11
10/5/2015 11:35	Blank Sample	Priority Organic Pollutants	2,4-Dichlorophenol	0.94 U	ug/L	0.94	3.8
10/5/2015 11:35	Blank Sample	Priority Organic Pollutants	3,3'-Dichlorobenzidine	38 U	ug/L	38	150
10/5/2015 11:35	Blank Sample	Priority Organic Pollutants	4-Chloro-3-methylphenol	0.94 U	ug/L	0.94	3.8
10/5/2015 11:35	Blank Sample	Priority Organic Pollutants	Benzo(b)fluoranthene	0.19 U	ug/L	0.19	0.75
10/5/2015 11:35	Blank Sample	Priority Organic Pollutants	Bis(2-chloroethoxy)methane	0.94 U	ug/L	0.94	3.8
10/5/2015 11:35	Blank Sample	Priority Organic Pollutants	Hexachlorocyclopentadiene	2.8 U	ug/L	2.8	11
10/5/2015 11:35	Blank Sample	Priority Organic Pollutants	N-Nitrosodiphenylamine/ Diphenylamine	2.8 U	ug/L	2.8	11
10/5/2015 11:35	Blank Sample	Priority Organic Pollutants	2,4,6-Trichlorophenol	0.94 U	ug/L	0.94	3.8
10/5/2015 11:35	Blank Sample	Priority Organic Pollutants	2,6-Dinitrotoluene	0.94 U	ug/L	0.94	3.8
10/5/2015 11:35	Blank Sample	Priority Organic Pollutants	2-Chlorophenol	0.94 U	ug/L	0.94	3.8
10/5/2015 11:35	Blank Sample	Priority Organic Pollutants	Benzo(a)pyrene	0.19 U	ug/L	0.19	0.75
10/5/2015 11:35	Blank Sample	Priority Organic Pollutants	Bis(2-ethylhexyl)phthalate	1.9 U	ug/L	1.9	7.5
10/5/2015 11:35	Blank Sample	Priority Organic Pollutants	Fluoranthene	0.19 U	ug/L	0.19	0.75
10/5/2015 11:35	Blank Sample	Priority Organic Pollutants	Phenanthrene	0.19 U	ug/L	0.19	0.75
10/5/2015 11:35	Blank Sample	Priority Organic Pollutants	Acenaphthylene	0.19 U	ug/L	0.19	0.75
10/5/2015 11:35	Blank Sample	Priority Organic Pollutants	Benzo(g,h,i)perylene	0.19 U	ug/L	0.19	0.75
10/5/2015 11:35	Blank Sample	Priority Organic Pollutants	Butyl benzyl phthalate	0.94 U	ug/L	0.94	3.8
10/5/2015 11:35	Blank Sample	Priority Organic Pollutants	Di-n-octyl phthalate	0.94 U	ug/L	0.94	3.8
10/5/2015 11:35	Blank Sample	Priority Organic Pollutants	Diethyl phthalate	0.94 U	ug/L	0.94	3.8
10/5/2015 11:35	Blank Sample	Priority Organic Pollutants	Indeno(1,2,3-cd)pyrene	0.19 U	ug/L	0.19	0.75
10/5/2015 11:35	Blank Sample	Priority Organic Pollutants	N-Nitrosodi-n-propylamine	1.9 U	ug/L	1.9	7.5
10/5/2015 11:35	Blank Sample	Priority Organic Pollutants	Pyrene	0.19 U	ug/L	0.19	0.75
10/5/2015 11:35	Blank Sample	Priority Organic Pollutants	2,4-Dimethylphenol	9.4 U	ug/L	9.4	38
10/5/2015 11:35	Blank Sample	Priority Organic Pollutants	2-Chloronaphthalene	0.94 U	ug/L	0.94	3.8
10/5/2015 11:35	Blank Sample	Priority Organic Pollutants	2-Nitrophenol	0.94 U	ug/L	0.94	3.8
10/5/2015 11:35	Blank Sample	Priority Organic Pollutants	Bis(2-chloroisopropyl)ether	2.8 U	ug/L	2.8	11
10/5/2015 11:35	Blank Sample	Priority Organic Pollutants	Hexachloroethane	2.8 U	ug/L	2.8	11
10/5/2015 11:35	Blank Sample	Priority Organic Pollutants	2,4-Dinitrotoluene	0.94 U	ug/L	0.94	3.8

Date Sampled	Field ID	Analysis Group	Component	Result	Units	MDL	PQL
10/5/2015 11:35	Blank Sample	Priority Organic Pollutants	4-Nitrophenol	14 U	ug/L	14	57
10/5/2015 11:35	Blank Sample	Priority Organic Pollutants	Chrysene	0.19 U	ug/L	0.19	0.75
10/5/2015 11:35	Blank Sample	Priority Organic Pollutants	Fluorene	0.19 U	ug/L	0.19	0.75
10/5/2015 11:35	Blank Sample	Priority Organic Pollutants	Phenol	0.94 U	ug/L	0.94	3.8
10/5/2015 11:35	Blank Sample	Nutrients	Temperature	27.1	C		

EPA End Sheet

The Bioassay of US Agri-Chemicals, Inc.-Bartow effluent sampled on October 5 , 2015. NPDES #FL0001961.

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

Transaction Code	NPDES NUMBER	YR/MO/DA	Insp Type	Inspector	Fac Type
1 N 2 5	3 F L 0 0 0 1 9 6 1	11 12 15 10 05	18 **B**	19 **S**	20 2

Remarks

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The Priority Pollutants Analysis of US Agri-Chemicals, Inc.-Bartow effluent sampled on October 5 , 2015. NPDES #FL0001961.

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

Transaction Code	NPDES NUMBER	YR/MO/DA	Insp Type	Inspector	Fac Type
1 N 2 5	3 F L 0 0 0 1 9 6 1	11 12 15 10 05	18 **X**	19 **S**	20 2

Remarks

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Biological Analyses of US Agri-Chemicals, Inc.-Bartow effluent sampled on October 5 , 2015. NPDES #FL0001961.

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

Transaction Code	NPDES NUMBER	YR/MO/DA	Insp Type	Inspector	Fac Type
1 N 2 5	3 F L 0 0 0 1 9 6 1	11 12 15 10 05	18 **S**	19 **S**	20 2

Remarks

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