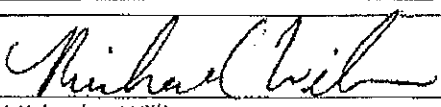
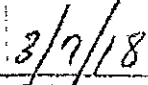
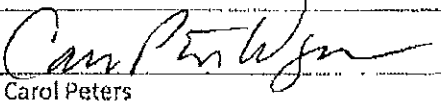
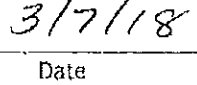


Region 6 Compliance Assurance and Enforcement Division
INSPECTION REPORT

Inspection Date(s):	02/21/2018		
Media:	Water		
Regulatory Program(s)	Clean Water Act		
Company Name:	City of Monroe		
Facility Name:	City of Monroe - Water Pollution Control Center		
Facility Physical Location:	770 Richwood Rd No 2		
(city, state, zip code)	Monroe, LA 70202		
Mailing address:	P.O. Box 123		
(city, state, zip code)	Monroe, LA 70769		
County/Parish:	Ouachita Parish		
Facility Contact:	Charles Westrom	Sewer Manager	
	318-366-3126		
	Joshua Laneaux	WPCC Superintendent	
	318-329-2424		
FRS Number:			
Identification/Permit Number:	LA0038741		
Media Number:	AI#4676		
NAICS:	221320		
SIC:	4952		
Personnel participating in inspection:			
Michael Williams	EPA / 6EN-WMH	Inspector	281-983-2150
Joshua Laneaux	City of Monroe	WPCC Superintendent	318-329-2424
Charles Westrom	City of Monroe	Sewer Manager	318-366-3126
Will Davis	City of Monroe	Wastewater Collection Superintendent	318-329-2392
EPA Lead Inspector			
Signature/Date	Michael D. Williams		Date
Superv'sor			
Signature/Date	Carol Peters		Date

Section I - Introduction

PURPOSE OF THE INSPECTION

EPA Region 6 inspector, Michael Williams, arrived at City of Monroe Water Pollution Control Center Collections at 10:22 am on February 21, 2018 for an unannounced inspection. I met with Will Davis, Wastewater Collection Superintendent. I presented my credentials to Will and informed him that this was an EPA lead inspection to determine compliance with the Clean Water Act and the Consent Decree. The scope of the inspection was with permit LA0038741, the facility operation and maintenance under the Clean Water Act.

The information presented in this report is based on the materials and information supplied by the City of Monroe, representatives (the permittee), observation during the inspection and records and reports maintained by the permittee.

FACILITY DESCRIPTION

City of Monroe Water Pollution Control Center Plant is located in at 770 Richwood Road, No 2 Monroe, Louisiana. The plant provides secondary treatment for the east side of the City of Monroe. The plant has a design capacity of 21-mgd. Treatment is provided by an oxygen activated sludge process using trickling filters and primary clarifiers for primary treatment prior to aeration basin with clarifiers for secondary treatment. Clarified secondary effluent is disinfected using UV light and pumped to its outfall. Secondary bio-solids are sent to anaerobic digesters, dewatered by belt press and hauled to the landfill. The site discharges to Ouachita River as permitted in LA0038741.

The City of Monroe sanitary sewer collection system that serves over 49,000 citizens has three major pump stations that flows into the treatment plant. There are 74 lift stations that feed flow into the major pump stations. The City of Monroe does have other jurisdictions that discharge or that are connected to their sanitary sewer system for treatment.

Section II- Observations

This inspection revealed the following observations:

- *Sanitary Sewer Collection System* - During the inspection all the major sanitary sewer pump station in the collection system appeared well maintained and all essential units were operating adequately. Currently, Hadley Street pump is the last station being replaced with various frequency drive pumps. The city has two backup generators to provide an alternative source of power to the stations. The records and reports for the last five years reflect that the efforts have improved the sanitary sewer conditions and in some years reduced the occurrence of overflows. The City of Monroe will have to continue the work to minimize overflows.
- *Anaerobic Digesters* – On the day of the inspection, the city was still working on repairing one of the digesters. During the last inspection on January 26, 2016, the heating system was not working on the digester. Originally, the city was to be completed with the rehab of both digesters by June 2016.

Section III- Areas of Concerns

This inspection revealed the following areas of concerns:

Under Section C Monitoring and Records of their permit, the monitoring results must be conducted according to test procedures approved under 40 CFR Part 136, unless other test procedures have been specified in their permit.

- The City of Monroe laboratory did not meet permit requirements. The city failed to perform the analysis for Fecal Coliform and Biochemical Oxygen Demand (BOD) according to EPA approved methods listed in CFR 40 part 136
 - a. The City of Monroe is required to perform and report Fecal Coliform according to the approved method as listed in CFR 40 parts 136. The city analyzes Fecal Coliform using Standard Method 9222 D. The lab runs 1 mL, 10 mL and 20 mL volume of sample on the effluent discharges. The City of Monroe calculation of the fecal coliform density does not follow the method as required. (See Appendix 1) The method requires using volumes that will yield counts between 20 and 60 coliform colonies per membrane. The calculation requires the sum of counts for each dilution or volume of sample that yields a count between 20 and 60 range. (See Appendix 2). The result of the incorrect calculations was lower values. An exceedance of Fecal Coliform would have not resulted from the correct values. The months of January 2017 thru December 2017 were reviewed.
 - b. The City of Monroe is required to perform and report BOD according to the approved method as listed in CFR 40 parts .136.3. The city analyzes BOD using Standard Method 5210 B. The City of Monroe failed to meet the quality control checks required to validate results as required by the method. The City reported invalid results from January 2017 thru December 2017 discharge monitoring reporting period. (See Appendix 3)
 - c. The City of Monroe was advised to contract out their BOD analysis until all issues are corrected to ensure valid results are being reported.
 - d. The City of Monroe needs to provide the training to all lab personnel to ensure correct lab procedures are followed.

Proper Operation and Maintenance

- The permittee is required to properly operate and maintain all facilities and systems at all times. To ensure the City of Monroe is able to continue meet the criteria it needs to address the lack of trained professional operators. Operators are needed in operations and the lab. Operators do the collection of information necessary to determine the operating status of the facility and make the appropriate operational adjustments. The City of Monroe is a large plant and its continuous operation requires 24 hours a day presence of trained operators. Currently the City has only 4 operators and one permanent lab tech.

Sanitary Sewer Collection System Multijurisdictional Issues

- Bypass is prohibited in the City of Monroe permit. Currently the City only reports SSOs that result in bypasses in their collection system they manage. Any bypass within collection systems from other jurisdictions that collect and transport wastewater for treatment at the City of Monroe plant is required to report under the City of Monroe permit. The collection systems owned by other jurisdictions such as the Town of Richwood, currently do not report any sanitary overflows to the City of Monroe or the permitting authority. The City of Monroe is the control authority for any wastewater coming into their system. Legal agreements are necessary to ensure maintenance and reporting standards will be enforced in contributing jurisdictions. No provisions have been made for the incorporation of the City of Monroe collection system preventive maintenance policy or program plan by contributing jurisdictions.

Section IV -- LIST OF APPENDICES

- Appendix 1 – City of Monroe Fecal Bench sheet
- Appendix 2- Example of Correct Calculations
- Appendix 3 – City of Monroe BOD Bench Sheet
- Appendix 4 – Process Flow Diagram
- Appendix 5 – City of Monroe Reported SSO Chart

Appendix 1

City of Monroe Fecal Bench sheet

MONTH: Jan 2017

WPCC FECAL COLIFORM LAB BENCH SHEET/EFFLUENT GRAB

Standard Methods 20th ed. 9222 D.

DATE	TEST TIME	ML OF SAMPLE & NUMBER OF COLONIES					RESULTS	INCUBATION		REMOVAL	
		Start	Blank	1 mL	10 mL	50 mL		DATE	INITIALS	DATE	INITIALS
1	12:08	12:10	0	0	1	26	119	1-1-17	D/-	1-2-17	D/-
2	11:02	11:04	0	0	12	34	148	1-2-17	D/-	1-3-17	D/-
3	10:14	10:20	0	3	14	27	141	1-3-17	D/-	1-4-17	D/-
4	9:11	9:13	0	2	11	14	103	1-4-17	D/-	1-5-17	D/-
5	9:13	9:15	0	0	13	24	87	1-5-17	D/-	1-6-17	D/-
6	9:21	9:23	0	0	6	21	158	1-6-17	D/-	1-7-17	D/-
7	11:41	11:43	0	4	16	33	138	1-7-17	D/-	1-8-17	D/-
8	10:01	10:03	0	4	15	24	132	1-8-17	D/-	1-9-17	D/-
9	10:20	10:22	0	6	18	31	134	1-9-17	D/-	1-10-17	D/-
10	10:26	10:28	0	7	15	26	154	1-10-17	D/-	1-11-17	D/-
11	10:44	10:46	0	0	21	37	181	1-11-17	D/-	1-12-17	D/-
12	9:42	9:44	0	0	13	25	122	1-12-17	D/-	1-13-17	D/-
13	9:54	9:56	0	0	4	20	143	1-13-17	D/-	1-14-17	D/-
14	10:06	10:08	0	0	4	14	74	1-14-17	D/-	1-15-17	D/-
15	11:26	11:30	0	0	3	21	83	1-15-17	D/-	1-16-17	D/-
16	11:36	11:38	0	0	3	6	9	1-16-17	D/-	1-17-17	D/-
17	9:51	9:53	0	0	13	14	312	1-17-17	D/-	1-18-17	D/-
18	10:29	10:31	0	0	7	35	146	1-18-17	D/-	1-19-17	D/-
19	10:08	10:10	0	0	15	26	135	1-19-17	D/-	1-20-17	D/-
20	9:28	9:30	0	3	15	34	141	1-20-17	D/-	1-21-17	D/-
21	11:05	11:07	0	0	21	0	140	1-21-17	D/-	1-22-17	D/-
22	11:55	11:57	0	0	2	33	93	1-22-17	D/-	1-23-17	D/-
23	9:15	9:17	0	0	15	37	138	1-23-17	D/-	1-24-17	D/-
24	9:10	9:12	0	0	3	38	135	1-24-17	D/-	1-25-17	D/-
25	9:32	9:34	0	0	7	26	145	1-25-17	D/-	1-26-17	D/-
26	9:44	9:46	0	0	10	39	125	1-26-17	D/-	1-27-17	D/-
27	9:04	9:06	0	2	10	36	148	1-27-17	D/-	1-28-17	D/-
28	11:40	11:42	0	0	10	36	149	1-28-17	D/-	1-29-17	D/-
29	10:42	10:44	0	1	13	70	119	1-29-17	D/-	1-30-17	D/-
30	10:43	10:45	0	0	13	70	110	1-30-17	D/-	1-31-17	D/-
31	10:38	10:40	0	0	12	20	90	1-31-17	D/-	1-31-17	D/-

Comments:

 Analysis: Sheryl Dwyer
 Analysis:

Appendix 2

Example of Correct Calculations

Correct Calculation of Coliform Density

For verified coliform counts that yield counts between 20 and 60 coliform colonies per membrane:

Total coliforms, No./100 ml = ([number of verified colonies x 100]/ total volume of mL sample filtered)

(The City of Monroe sheet states "50mL" but sample volume is actually "20mL")

Ex: Jan 1, 2017

ML. OF Sample & Number of Colonies

1 mL	10mL	20mL
------	------	------

0	11	26
---	----	----

Correct Calculation for Jan 1, 2017:

Only the 20mL meets the criteria of 20 – 60 coliform colonies per membrane

$$[(26) \times 100] / 20 = 130 \text{ CFU}/100\text{mL}$$

Ex: Jan 17, 2017

ML. Of Sample & Number of Colonies

1mL	10mL	20mL
-----	------	------

0	36	61
---	----	----

Correct Calculation for Jan 17, 2017

Only the 10mL & 20mL meets the criteria of 20-60 coliform colonies per membrane

$$[(36+61) \times 100] / (10 + 20) = 323 \text{ CFU}/100 \text{ mL}$$

Appendix 3

City of Monroe BOD January Bench sheet

City of Monroe BOD

Quality Control Failures

1. Minimum residual DO of 1mg /L and minimum DO depletion of 2mg/L (EX January 6, 2017 Sample)
2. Glucose-glutamic acid check: The resulting average for the three bottles, after correction for dilution and seeding, must fall into the range of 198 +/- 30.5 mg/L (Example of out of range – Week of January 1-8, 2018)
3. Dilution water quality: DO uptake in 5 days must not be more than 0.20 mg/L and preferably not more than 0.10 mg/L, before making seed corrections. (Example of failures – January 1, 2017) in some case there was increase (Example January 13, 2017)

Incubation Date 1-2-17

Time

Initials

Removal Date 1-7-17

Time

Initials

Temperature of incubator

City of Monroe WPC
Quality control Analyst Worksheet/Lab Bench Sheet
CBODs Day Test

Collection Data:

Sample Date Time Initials
24 hr sample 1-2-17 9:15 DC

Initial Results:

Sample

ABOD - 1.58

6071-580.3833

6111-1557

Sample	pH	Bottle No	Sample Vol (ml)	Seed Vol (mL)	GGA Vol (mL)	Initial DO (mg/L)	Final DO (mg/L)	IDO-FDO (mg/L)	Calculations	Seed Sample	CBOD (mg/L)
Blank #1		106				9.39	8.00				
Blank #2		4				9.40	8.01				
Seed Control #1		102		10		9.43	8.81				
Seed Control #2		47		15		9.40	0.40				
Seed Control #3		24		20		9.39	0.24				
GGA #1		41		4	6	9.54	0.36				
GGA #2		122	30		6	9.55	1.00				
Effluent		15	75			9.44	7.87				
Effluent		23	75			9.40	7.77				
Effluent		35	150			9.44	6.65				
		10	6			9.56	7.84				
		84	10			9.50	6.72				
		390	10			9.47	7.00				
		1A	20			9.35	5.12				

1.2573

Correction (avg)

Comments

Incubation: 1-3-17

Date: 1-3-17

Time: 1:30

Initials: K4

Removal: 1-8-17

Date: 1-8-17

Time: 1:30

Initials: K4

Temperature of incubator: 20

City of Monroe WPCP
Quality control Analyst Worksheet/Lab Bench Sheet
CBODs Day Test

20th Edition Standard Methods
510 B

Collection Data:

Sample 2
Date 1-3-17
Time 1:30
Initials K4

Initial Results:

Sample

CBOD
Avg. 0.87

600.394.516

99.17.12

Correction (avg)

Comments

0.6797

Sample	Bottle No	Sample Vol (ml)	Seed Vol (mL)	GGA Vol (mL)	Initial DO (mg/L)	Final DO (mg/L)	IDO-FDO (mg/L)	Seed	Sample	CBOD (mg/L)
Blank #1	34				10.30	17.87				
Blank #2	34				10.24	17.80				
Seed Control #1	34				10.20	9.02				
Seed Control #2	40				10.22	5.40				
Seed Control #3	45				10.25	1.23				
GGA #1	19				10.40	1.84				
GGA #2	41				10.34	1.81				
Effluent	42	30			10.24	12.02				
Effluent	43	15			10.30	4.34				
Effluent	48	15			10.30	4.31				
Effluent	5	150			10.32	5.24				
	45	6			10.24	15.12				
	46	10			10.19	13.25				
	47	10			10.17	10.34				
	112	20			10.03	5.20				

Incubation: 1-4-17

Date: 1-4-17

Time: 1:40

Initials: [Signature]

Removal: 1-9-17

Date: 1-9-17

Time: 1:40

Initials: [Signature]

Temperature of Incubator: 20°C

City of Monroe WPCB
Quality Control Analyst Worksheet/Lab Bench Sheet
CBODs Day Test

20th Edition Standard Methods
510 B

Collection Date:

Sample Date: 1-4-17, Time: 1:40, Initials: [Signature]

1-4-17 1:40 [Signature]
1-4-17 1:40 [Signature]
1-4-17 1:40 [Signature]
1-4-17 1:40 [Signature]
1-4-17 1:40 [Signature]
1-4-17 1:40 [Signature]

Initial Results:

Sample

OGOD: 6.88
Avg. 6.88

GGA: 450.1383

KAW: 40.79

Correction (avg)

Comments

1.3622

Sample	pH	Bottle No	Sample Vol (ml)	Seed Vol (mL)	GGA Vol (mL)	Initial DO (mg/L)	Final DO (mg/L)	IDO-FDO (mg/L)	Seed Calculations	Sample Calculations	CBOD (mg/L)
Blank #1		401				11.02	7.94				
Blank #2		405				11.00	3.87				
Seed Control #1		138				10.92	1.76				
Seed Control #2		144				10.93	0.20				
Seed Control #3		149				10.96	0.19				
GGA #1		428			6	11.15	0.17				
GGA #2		428			6	11.14	0.17				
Effluent		17	30			11.19	6.87				
Effluent		128	75			11.57	6.23				
Effluent		38	75			11.53	6.35				
Effluent		49	150			12.18	5.82				
		234	18			10.95	7.40				
		28	10			10.91	6.18				
		21	10			10.90	5.84				
		42	20			10.73	5.08				

Incubation: 1-5-17

Date: _____

Time: _____

Initials: _____

Removal: _____

Date: 1-10-17

Time: _____

Initials: _____

Temperature of incubator: _____

City of Monroe WPOCC
Quality control Worksheet/Lab Bench Sheet
CBODs Day Test

20th Edition Standard Methods
510 B

Collection Data:

Sample 2776
Date 1-5-17
Time 17:20
Initials KH

Initial Results:

Sample _____

CBOD
ATD 0.83
GGA 344.2033
ATW 11.3

Sample	pH	Bottle No	Sample Vol (ml)	Seed Vol (ml)	GGA Vol (ml)	Initial DO (mg/L)	Final DO (mg/L)	IDO-FDO (mg/L)	Calculations	Seed	Sample	CBOD (mg/L)
Blank #1		142				8.47	8.18					
Blank #2		20				8.49	8.14					
Seed Control #1		11		10		8.49	8.14					
Seed Control #2		47		15		8.49	8.14					
Seed Control #3		47		20		8.49	8.14					
GGA #1		417		4	6	8.49	8.14					
GGA #2		386	30			8.49	8.14					
Effluent		104	75			8.49	8.14					
Effluent		85	75			8.49	8.14					
Effluent		30	150			8.49	8.14					
		35	6			8.49	8.14					
		130	10			8.49	8.14					
		427	10			8.49	8.14					
		398	20			8.49	8.14					

0.6959

Correction (avg)

Comments

Incubation: 1-7-17

Date: 1-7-17

Time: 1-7-17

Initials: 1-7-17

Removal: 1-12-17

Date: 1-12-17

Time: 1-12-17

Initials: 1-12-17

Temperature of incubator: 1-12-17

City of Monroe WPCOC
Quality control Analyst Worksheet/Lab Bench Sheet
CBODs Day Test

Collection Data:

Sample: 24 hr sample 1-7-17 18:50 Initials: DLT

Date: 1-7-17 18:50
Time: 1-7-17 18:50
Initials: DLT

Initial Results:

Sample: 3.32

Blank #1: 16

Blank #2: 10

Seed Control #1: 131

Seed Control #2: 12

Seed Control #3: 34

GGA #1: 32

GGA #2: 29

Effluent: 373

Effluent: 119

Effluent: 36

Effluent: 29

Effluent: 33

Effluent: 13

Effluent: 44

Correction (avg): 0.71660

Comments:

Sample	pH	Bottle No	Sample Vol (ml)	Seed Vol (ml)	GGA Vol (ml)	Initial DO (mg/L)	Final DO (mg/L)	IDO-FDO (mg/L)	Calculations	Seed	Sample	CBOD (mg/L)
Blank #1		16				8.42	7.40					
Blank #2		10				8.40	7.40					
Seed Control #1		131		10		8.36	7.40					
Seed Control #2		12		15		8.32	7.40					
Seed Control #3		34		20		8.35	7.40					
GGA #1		32		4	6	8.54	7.02					
GGA #2		29	30			8.16	6.82					
Effluent		373	75			4.19	6.32					
Effluent		119	75			4.18	6.46					
Effluent		36	150			9.87	6.70					
Effluent		29	6			8.46	7.37					
Effluent		33	10			8.36	6.81					
Effluent		13	10			8.40	6.81					
Effluent		44	20			8.30	4.90					

Temperature of Incubation

Figure 1

111

Incubation: 1-10-17

Date 1-10-17

Time

Initials

Removal: 1-15-17

Date 1-15-17

Time

Initials

Temperature of incubator

City of Monroe WPCB
Quality control Analyst Worksheet/Lab Bench Sheet
CBODs Day Test

20th Edition Standard Methods
510 B

Collection Data:

Sample ~~1-10-17~~ Date 1-10-17 Time 1:17 Initials KH

Initial Results:

Sample

CBOD 1.24

GGA 308.9233

KHN. 14.65

0.12515

Sample	pH	Bottle No	Sample Vol (ml)	Seed Vol (mL)	GGA Vol (mL)	Initial DO (mg/L)	Final DO (mg/L)	IDO-FDO (mg/L)	Calculations	Seed Sample	CBOD (mg/L)
Blank #1		21				8.64	9.72				
Blank #2		12A				8.08	9.76				
Seed Control #1		42		10		8.05	6.05				
Seed Control #2		73A		15		8.10	4.12				
Seed Control #3		28		20		8.04	2.36				
GGA #1		26A		4	6	8.14	1.73				
GGA #2		17		4	6	8.79	2.17				
Effluent		429	30			8.82	7.85				
Effluent		39	15			9.12	7.55				
Effluent		38	15			9.01	7.51				
Effluent		38A	150			9.51	6.76				
		48	6			8.41	8.99				
		34	10			8.47	4.52				
		19	10			8.50	8.27				
		42	20			8.22	5.91				

Correction (avg)

Comments

Incubation: 1-11-17

Date: 1-11-17

Time: 1:14

Initials: KA

Removal: 1-11-17

Date: 1-11-17

Time: 1:14

Initials: KA

Temperature of incubator: 20.4

City of Monroe WPCO
Quality control Worksheet/Lab Bench Sheet
CBODs Day Test

20th Edition Standard Methods
510 B

Collection Data:

Sample 1-11-17, 1:14, KA

Initial Results:
CBOD - 2.49
AVG - 3.0517

GGA - 3.0517
RAW - 11.89

Sample	pH	Bottle No	Sample Vol (ml)	Seed Vol (mL)	GGA Vol (mL)	Initial DO (mg/L)	Final DO (mg/L)	IDO-FDO (mg/L)	Seed	Calculations	Sample	CBOD (mg/L)
Blank #1	11.2	97	30	10	6	8.10	8.54					
Blank #2	9.7	1	15	15	6	8.05	8.79					
Seed Control #1	4.19	126	10	20	4	8.03	8.16					
Seed Control #2	12.6	10	4	4	6	8.00	8.43					
Seed Control #3	10	4	4	4	6	8.17	8.72					
GGA #1	9.4	30	15	15	6	8.22	8.86					
Effluent	10.2	15	15	15	6	8.32	8.92					
Effluent	4.1	15	15	15	6	8.37	8.92					
Effluent	15	15	15	15	6	8.55	9.10					
Effluent	3.90	47	10	10	6	8.90	7.94					
Effluent	4.7	14	10	10	6	8.91	7.40					
Effluent	4.0	20	10	10	6	8.10	5.37					

0.7270

Correction (avg) Comments

Temperature of incubator _____

Sample	Date	Time	Initials
211R	COMP 11/2-17, 7-17		KH

1000

FAV: 12-29

Comments

Sample	pH	Bottle No	Sample Vol (ml)	Seed Vol (ml)	GGA Vol (ml)	Initial DO (mg/L)	Final DO (mg/L)	IDO-FDO (mg/L)	Calculations	CBOD (mg/L)
									Seed	Sample
Blank #1		12				8.59	8.19			
Blank #2		41				8.58	8.35			
Seed Control #1		387		10		8.41	4.28			
Seed Control #2		31		15		8.55	4.13			
Seed Control #3		401		20		8.56	1.24			
GGA #1		427		4	6	8.73	0.58			
GGA #2		79		4	6	8.74	0.75			
Effluent		4	30			8.70	6.77			
Effluent		422	15			8.91	6.60			
Effluent		46	150			8.89	6.73			
Effluent		48	12			8.52	7.54			
		47	10			8.42	6.45			
		45	10			8.44	6.48			
		37	20			8.19	5.03			

510 B

CBOs Day Test

Incubation:
Date 1-16-17
Time _____
Initials _____

Removal:
Date 1-21-17
Time _____
Initials _____

Temperature of incubator _____

Initial Results:
Sample

CAQD
AVG. - D. 66

QGA. 152. 0250

REV: -3.71

Sample	pH	Bottle No	Sample Vol (ml)	Seed Vol (mL)	GGA Vol (mL)	Initial DO (mg/L)	Final DO (mg/L)	IDO-FDO (mg/L)	Calculations	CBOD (mg/L)
									Seed Sample	
Blank #1		12A				8.89	8.58			
Blank #2		21				8.83	8.68			
Seed Control #1		26A		10		8.76	8.64			
Seed Control #2		34		15		8.77	8.12			
Seed Control #3		29		20		8.77	2.92			
GGA #1		28		4	6	8.77	2.29			
GGA #2		23A		4	6	8.90	5.36			
Effluent		42B	30			8.94	8.63			
Effluent		38A	75			8.91	8.26			
Effluent		17	75			8.93	8.16			
Effluent		42	150			9.12	2.85			
		19	6			8.81	8.36			
		407	10			8.81	8.16			
		34	10			8.74	8.43			
		89	20			8.64	7.81			

0.5545

Correction (avg)

Comments

Incubation:
Date 1-17-17

Time

Initials

Removal:
Date 1-22-17

Time

Initials

Temperature of incubator

City of Monroe WPCP
Quality control Worksheet/Lab Bench Sheet
CBODs Day Test

20th Edition Standard Methods
510 B

Collection Data:

Sample 24hr comp / 1-17-17 / 7:25 / DC

Initials
/ / / / / / / / / /

Initial Results:
Sample

Blank #1

Blank #2

Seed Control #1

Seed Control #2

Seed Control #3

GGA #1

GGA #2

Effluent

Effluent

Effluent

Effluent

Effluent

Effluent

Effluent

Effluent

Effluent

Effluent

Effluent

Effluent

Effluent

Effluent

Effluent

Effluent

Effluent

Effluent

Effluent

Effluent

Effluent

Effluent

Effluent

Effluent

Effluent

Effluent

Effluent

Effluent

Effluent

CBOD 1.32

GGA #1 1.12-17

GGA #2 2.8.25

Effluent 2.8.25

Effluent 2.8.25

Effluent 2.8.25

Effluent 2.8.25

Effluent 2.8.25

Effluent 2.8.25

Effluent 2.8.25

Effluent 2.8.25

Effluent 2.8.25

Effluent 2.8.25

Effluent 2.8.25

Effluent 2.8.25

Effluent 2.8.25

Effluent 2.8.25

Effluent 2.8.25

Effluent 2.8.25

Effluent 2.8.25

Effluent 2.8.25

Effluent 2.8.25

Effluent 2.8.25

Effluent 2.8.25

Effluent 2.8.25

Effluent 2.8.25

Effluent 2.8.25

Effluent 2.8.25

Effluent 2.8.25

Effluent 2.8.25

Effluent 2.8.25

Effluent 2.8.25

Effluent 2.8.25

Effluent 2.8.25

Effluent 2.8.25

Sample	pH	Bottle No	Sample Vol (ml)	Seed Vol (ml)	GGA Vol (ml)	Initial DO (mg/L)	Final DO (mg/L)	IDO-FDO (mg/L)	Calculations	Seed Sample	CBOD (mg/L)
Blank #1		39				9.32	8.19				
Blank #2		9				9.34	8.10				
Seed Control #1		47				9.29	6.04				
Seed Control #2		41				9.31	4.56				
Seed Control #3		390				9.24	2.32				
GGA #1		126				9.44	2.36				
GGA #2		10				9.47	2.64				
Effluent		112	30			9.34	2.62				
Effluent		15	75			9.41	2.46				
Effluent		30	75			9.40	2.43				
Effluent		419	150			9.310	2.13				
Effluent		102	6			9.17	7.43				
Effluent		97	10			9.11	6.86				
Effluent		24	10			9.09	6.92				
Effluent		14	20			9.81	6.01				

0.1 326

Correction (avg)

Comments

Incubation:

Date 1-18-17

Time

Initials

Removal:

Date 1-23-17

Time

Initials

Temperature of incubator

City of Monroe WPCB
Quality control Worksheet Lab Bench Sheet
CBODs Day Test

20th Edition Standard Methods
510 B

Collection Data:

Sample Date Time Initials

24 hr comp 1-18-17 7:43 106

1 1 1 1

1 1 1 1

1 1 1 1

1 1 1 1

1 1 1 1

Initial Results:
Sample

CBOD
Avg. 10.1925

GAH-215.9150

GAH-40.107

Sample	pH	Bottle No	Sample Vol (ml)	Seed Vol (mL)	GGA Vol (mL)	Initial DO (mg/L)	Final DO (mg/L)	IDO-FDO (mg/L)	Calculations	CBOD (mg/L)
Blank #1		47				12.41	8.71			
Blank #2		31				12.32	7.61			
Seed Control #1		10				12.24	7.31			
Seed Control #2		79				12.27	6.35			
Seed Control #3		4				12.25	4.98			
GGA #1		37				12.33	3.95			
GGA #2		46	30			12.14	3.41			
Effluent		387	75			12.24	6.78			
Effluent		41	75			12.25	6.88			
Effluent		77	150			12.15	4.52			
		14	6			12.10	7.57			
		422	10			12.14	6.84			
		45	10			12.12	6.88			
		427	20			11.91	3.30			

0.9205

Correction (avg)

Comments

Sample	pH	Bottle No	Sample Vol (ml)	Seed Vol (ml)	GGA Vol (ml)	Initial DO (mg/L)	Final DO (mg/L)	IDO/FDO (mg/L)	Calculations Seed	Calculations Sample	CBOD (mg/L)
Blank #1		10		10		9.18	8.43				
Blank #2		21				9.48	8.57				
Seed Control #1		22		15		9.39	8.75				
Seed Control #2		131		20		9.41	8.79				
Seed Control #3		119		4		9.58	8.43				
GGA #1		12		4	6	9.39	8.43				
GGA #2		49			6	9.39	8.43				
Effluent		34				9.18	7.67				
Effluent		36				9.10	7.68				
Effluent		13				8.75	7.10				
		7	2			9.40	8.74				
		33	10			9.39	8.30				
		44	10			9.33	8.32				
		119	20			9.20	7.40				

Temperature of Incubator _____

20th Edition Standard Methods
510 B

Figure 1

1 1 1

KTN-6.18

4292.0

Comments

Sample	pH	Bottle No	Sample Vol (ml)	Seed Vol (mL)	GGA Vol (mL)	Initial DO (mg/L)	Final DO (mg/L)	IDO-FDO (mg/L)	Calculations	CBOD (mg/L)
									Seed Sample	
Blank #1		43				8.87	7.45			
Blank #2		47				8.80	8.01			
Seed Control #1		45		10		8.76	5.98			
Seed Control #2		11		15		8.75	3.14			
Seed Control #3		26		20		8.71	1.01			
GGA #1		23		4	6	8.77	8.07			
GGA #2		19		4	6	8.77	8.07			
Effluent		25	30			8.72	8.06			
Effluent		40	15			8.74	7.38			
Effluent		142	75			8.69	7.26			
Effluent		138	150			8.69	6.49			
		48A	6			8.68	8.00			
		386	18			8.56	7.96			
		401	10			8.63	7.89			
		5	200			8.50	7.50			

Incubation:

Date 1-22-17

Time

Initials

Removal:

Date 1-27-17

Time

Initials

Temperature of incubator

City of Monroe WPCB
Quality control Worksheet/Lab Bench Sheet
CBODs Day Test

Collection Data:

Sample

24hr comp

Date

1-22-17

Time

4:05

Initials

DC

-1.4611

Initial Results:

Sample

CBOD

AVG

205.08

STW

6.4724

Comments

Correction (avg)

Sample	Bottle No	Sample Vol (ml)	Seed Vol (ml)	GGA Vol (ml)	Initial DO (mg/L)	Final DO (mg/L)	IDO-FDO (mg/L)	Seed	Sample	CBOD (mg/L)
Blank #1	373				8.14	7.81				
Blank #2	42				8.19	7.86				
Seed Control #1	34				8.11	7.21				
Seed Control #2	428				8.10	7.44				
Seed Control #3	38				8.08	7.78				
GGA #1	28				8.24	7.05				
GGA #2	89				8.08	7.71				
Effluent	12A	30			7.94	7.18				
Effluent	38A	75			8.14	7.39				
Effluent	401	75			8.10	7.39				
Effluent	26A	150			8.26	7.49				
	21	6			8.10	7.78				
	29	10			8.02	7.69				
	23A	10			8.06	7.54				
	19	20			8.05	7.29				

0.6783

Incubation: 1-23-17

Date: 1-23-17

Time: 1:12

Initials: [Signature]

Removal: 1-28-17

Date: 1-28-17

Time: 1:12

Initials: [Signature]

Temperature of incubator: 20°C

City of Monroe WPCOC
Quality control Worksheet/Lab Bench Sheet
CBODs Day Test

Collection Data:

Sample: 1-23-17 1:12 Initials: [Signature]

1-23-17 1:12
1-23-17 1:12
1-23-17 1:12
1-23-17 1:12
1-23-17 1:12
1-23-17 1:12

Initial Results:

Sample

CBOD
11.12

GGA: 382.10

FAV: 64.31

Correction (avg)

Comments

0.1580

Sample	Bottle No	Sample Vol (ml)	Seed Vol (ml)	GGA Vol (ml)	Initial DO (mg/L)	Final DO (mg/L)	IDO-FDO (mg/L)	Seed	Sample	CBOD (mg/L)
Blank #1	34				10.87	8.58				
Blank #2	9				10.40	9.14				
Seed Control #1	41				10.77	6.52				
Seed Control #2	10				10.75	4.25				
Seed Control #3	117				10.45	2.73				
GGA #1	120				10.45	8.64				
GGA #2	340				11.75	7.70				
Effluent	102				11.20	7.81				
Effluent	405				11.07	7.55				
Effluent	419				10.43	8.55				
	97	18			10.77	7.96				
	30	10			10.79	7.33				
	15	40			10.63					

Incubation: 1-24-17

Date: _____

Time: _____

Initials: _____

Removal: 1-29-17

Date: _____

Time: _____

Initials: _____

Temperature of Incubator: _____

City of Monroe WPCB
Quality Control Worksheet/Lab Bench Sheet
CBODs Day Test

20th Edition Standard Methods
510 B

Collection Data:

Sample 241116
Date 1/24/17
Time 1:50
Initials KH

Initial Results:

Sample

CBOD
Avg: 1.67

664: 25.34

664: 7.70

Correction (avg)

Comments

0.971

Sample	PH	Bottle No	Sample Vol (ml)	Seed Vol (ml)	GGA Vol (ml)	Initial DO (mg/L)	Final DO (mg/L)	IDO-FDO (mg/L)	Seed	Sample	CBOD (mg/L)
Blank #1		422				8.74	8.31				
Blank #2		423				8.10	7.33				
Seed Control #1		43				8.10	7.96				
Seed Control #2		48				8.10	8.06				
Seed Control #3		412				8.17	8.18				
GGA #1		44	30		6	8.17	8.17				
GGA #2		347	75			8.93	8.40				
Effluent		37	150			8.10	8.42				
Effluent		47	10			8.10	8.19				
Effluent		31	10			8.10	8.13				
Effluent		12	10			8.10	8.12				
Effluent		74	20			8.10	7.96				

1. *Journal of the American Medical Association*, 1997; 278: 1363-1368.

1.

[illegible]

Comments

Incubation: 1-27-17

Date: 1-27-17

Time: 1:23

Initials: KJH

Removal: 2-1-17

Date: 2-1-17

Time: 1:23

Initials: KJH

Temperature of incubator: 20

City of Monroe WPOC
Quality control Analyst's Worksheet/Lab Bench Sheet
CBODs Day Test

20th Edition Standard Methods
510 B

Collection Data:

Sample: 24 hr CBOD
Date: 1-27-17
Time: 1:23
Initials: KJH

Initial Results:
Sample: APBOD 0.6432

Sample: GGA #1 2.96.66

Sample: GGA #2 6.35

0.5380

Sample	Bottle No	Sample Vol (ml)	Seed Vol (ml)	GGA Vol (ml)	Initial DO (mg/L)	Final DO (mg/L)	IDO-FDO (mg/L)	Calculations	CBOD (mg/L)
Sample									
Blank #1	380				9.15	8.15			
Blank #2	480				9.15	8.15			
Seed Control #1	401		10		9.15	7.93			
Seed Control #2	5		15		9.15	5.93			
Seed Control #3	45		20		9.15	4.81			
GGA #1	43		4	6	9.15	3.21			
GGA #2	47		4	6	9.15	3.19			
Effluent	20	30			9.15	8.45			
Effluent	23	15			9.15	8.10			
Effluent	25	15			10.00	8.90			
Effluent	14	150			10.22	8.81			
	40	6			9.58	8.92			
	11	10			9.52	8.54			
	14	10			9.44	8.45			
	138	20			9.27	7.14			

Correction (avg) _____

Comments _____

Sample

271.64.15

0.2433

Comments

Sample	pH	Bottle No	Sample Vol (ml)	Seed Vol (mL)	GGA Vol (mL)	Initial DO (mg/L)	Final DO (mg/L)	IDO-FDO (mg/L)	Calculations	CBOD (mg/L)
									Seed Sample	
Blank #1		23A				11.28	10.86			
Blank #2		24				11.24	10.84			
Seed Control #1		21		10		11.27	9.74			
Seed Control #2		14		15		11.24	8.63			
Seed Control #3		26A		20		11.23	9.71			
GGA #1		40A		4		11.19	9.52			
GGA #2		38		4	6	11.19	9.50			
Effluent		28	30			11.34	11.24			
Effluent		89	15			11.31	11.20			
Effluent		124	75			11.36	11.13			
Effluent		40	150			11.40	11.21			
		373	10			10.89	9.74			
		42	10			10.82	8.52			
		34	10			10.76	8.27			
		407	20			10.73	8.34			

Incubation: _____

Date 1-24-17

Time _____

Initials _____

Removal: _____

Date 2-3-17

Time _____

Initials _____

Temperature of Incubator _____

City of Monroe WPCOC
Quality Control Worksheet/Lab Bench Sheet
CBODs Day Test

20th Edition Standard Methods
510 B

Collection Data:

Sample 24hr Long Date 1-24-17 Time 9:20 Initials DC

Initial Results:

Sample _____

CBOD
Avg - 0.3133

GGA 346.81

RAW 46.15

0.0837

Sample	pH	Bottle No	Sample Vol (ml)	Seed Vol (ml)	GGA Vol (ml)	Initial DO (mg/L)	Final DO (mg/L)	IDO-FDO (mg/L)	Calculations	Seed Sample	CBOD (mg/L)
Blank #1		9				10.87	10.23				
Blank #2		10				10.85	10.20				
Seed Control #1		39		10		10.35	9.46				
Seed Control #2		41		15		10.33	9.79				
Seed Control #3		405		20		10.36	9.76				
GGA #1		47		4	6	10.27	2.87				
GGA #2		126		4	6	10.24	2.58				
Effluent		47	30			10.11	11.01				
Effluent		360	75			10.75	10.82				
Effluent		24	75			10.79	10.67				
Effluent		112	150			10.82	10.71				
		15	6			10.11	8.71				
		102	10			10.45	8.84				
		30	10			10.21	8.75				
		35	20			10.24	7.43				

Correction (avg)

Comments

Incubation: 1-30-17

Date: 1-30-17

Time: 1:10

Initials: KJ

Removal: 2-4-17

Date: 2-4-17

Time: 1:10

Initials: KJ

Temperature of Incubator: 20.0

City of Monroe WPCB
Quality Control Analyst's Worksheet/Lab Bench Sheet
CBODs Day Test

Initial Results:

Sample CBOD 2.56

Blank #1 465.25

Seed Control #1 18.82

Seed Control #2 18.82

Seed Control #3 18.82

GGA #1 18.82

GGA #2 18.82

Effluent 18.82

Effluent 18.82

Effluent 18.82

Effluent 18.82

Effluent 18.82

Effluent 18.82

Effluent 18.82

Effluent 18.82

Effluent 18.82

Effluent 18.82

Effluent 18.82

Effluent 18.82

Effluent 18.82

Effluent 18.82

Effluent 18.82

Effluent 18.82

Effluent 18.82

Effluent 18.82

Effluent 18.82

Effluent 18.82

0.4706

Correction (avg)

Comments

Sample	pH	Bottle No	Sample Vol (ml)	Seed Vol (ml)	GGA Vol (ml)	Initial DO (mg/L)	Final DO (mg/L)	IDO-FDO (mg/L)	Calculations	Seed Sample	CBOD (mg/L)
Blank #1		42-1				12.83	10.44				
Blank #2		44				12.76	10.82				
Seed Control #1		42-2		10		12.81	9.72				
Seed Control #2		45		15		12.74	9.86				
Seed Control #3		14		20		12.19	9.79				
GGA #1		14		4		12.68	2.85				
GGA #2		17		4		12.65	2.94				
Effluent		38-7	30			12.94	11.86				
Effluent		79	15			12.90	12.04				
Effluent		12	150			12.98	12.15				
Effluent		41	12			13.01	11.96				
Effluent		41	12			12.76	9.24				
Effluent		42	10			12.21	9.21				
Effluent		41	10			12.17	9.18				
Effluent		41	20			12.19	9.30				

Incubation: 1-31-17
Date
Time

Initials

Removal: 2-5-17
Date

Time

Initials

Temperature of incubator

City of Monroe WPCO
Quality control Worksheet/Lab Bench Sheet
CBODs Day Test

20th Edition Standard Methods
510 B

Collection Data:

Sample 24 H11,0MP1-31-17-15, KFF
Date 1-31-17
Time 15
Initials KFF

Initial Results:

Sample

CBOD
AVG: 5.76

667.383, 16

KAN: 64.15

Correction (avg)

Comments

0.0617

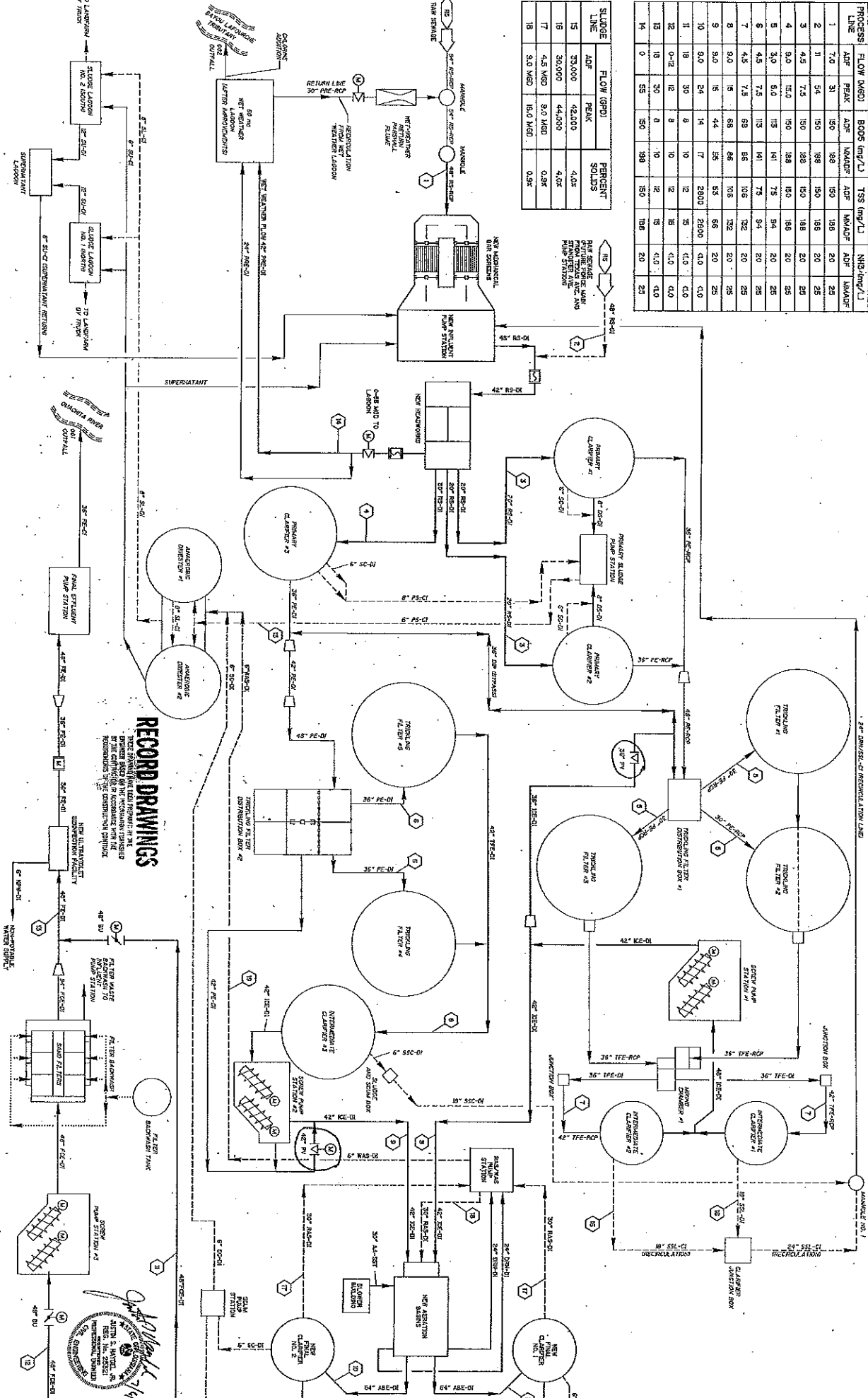
Sample	pH	Bottle No	Sample Vol (ml)	Seed Vol (mL)	GGA Vol (mL)	Initial DO (mg/L)	Final DO (mg/L)	IDO-FDO (mg/L)	Calculations	Seed Sample	CBOD (mg/L)
Blank #1		131				10.83	10.72				
Blank #2		28				10.86	10.78				
Seed Control #1		27		10		10.74	10.41				
Seed Control #2		32		15		10.75	10.26				
Seed Control #3		17		20		10.73	10.35				
GGA #1		17		4		10.82	3.01				
GGA #2		17	30		6	10.82	2.84				
Effluent		10	75			10.94	9.84				
Effluent		13	75			10.91	9.82				
Effluent		110	150			11.01	9.44				
		34	16			10.86	8.71				
		33	10			10.81	8.64				
		44	10			10.58	8.38				
		30	20			10.66	8.11				

Appendix 4

Process Flow Diagram

PROCESS LINE	FLOW (MGD)	BOOD (MG/L)	TSS (MG/L)	NH ₄ -N (MG/L)
1	7.0	31	180	150
2	11	54	180	180
3	4.5	7.5	180	180
4	5.0	15.0	180	180
5	3.0	5.0	113	141
6	4.5	7.5	113	141
7	4.5	7.5	98	106
8	5.0	15	68	86
9	9.0	15	44	53
10	5.0	24	14	17
11	18	30	9	10
12	0-12	12	8	10
13	18	30	8	10
14	0	55	180	180

SLUDGE LINE	ADP	PEAK	PERCENT SOLIDS
15	33,000	42,000	4.0%
16	30,000	44,000	4.0%
17	4.5 MGD	8.0 MGD	0.3%
18	3.0 MGD	5.0 MGD	0.3%



Appendix 5

City of Monroe Reported SSO Chart 2012-2018

CITY OF MONROE

WASTEWATER SSO'S

	MONTH	2012	2013	2014	2015	2016	2017	2018
	JAN	2	2	4	0	0	1	2
	FEB	3	0	4	0	1	3	2+1
	MARCH	8	3	2	1	0	7	
	APRIL	3	1	3	0	3	4	
	MAY	6	1	2	5	2	1	
	JUNE	4	0	1	1	2	4	
	JULY	3	1	2	3	1	2	
	AUG	2	0	2	1	0	3	
	SEPT	3	3	3	2	1	2	
	OCT	4	2	2	2	3	0	
	NOV	2	0	0	0	5	4	
	DEC	0	5	3	0	3	3	