

**MONTHLY PROGRESS REPORT
MAY 2020**

**EMERGENCY WWTP REPAIR PROJECT
GREENVILLE, MS**

Submitted To:

U.S. Environmental Protection Agency, Region 4
Clean Water Enforcement Branch
61 Forsythe Street, S.W.
Atlanta, GA 30303-8960

and

Mississippi Department of Environmental Quality
P.O. Box 2261
Jackson, MS 39225



Prepared For:

City Hall
340 Main Street
Greenville, MS 38701

June 9, 2020



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CERTIFICATION

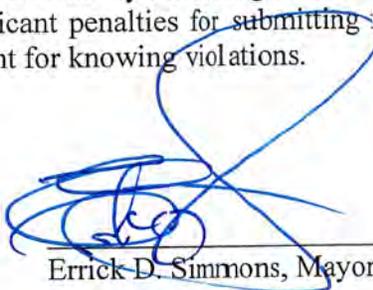
Monthly Progress Report

May 2020

Administrative Order No. CWA-04-2020-0303

City of Greenville, MS

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.



Errick D. Simmons, Mayor

June 9, 2020
Date

File Name: Monthly Progress Report (May 2020)

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Mayor Errick D. Simmons

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SECTION I

PERMIT EFFLUENT EXCEEDANCES

A tabulation of the permit effluent limit exceedances for the month of May 2020 is referenced in Table 1 below. The raw data are referenced in Appendix A.

TABLE 1 - EFFLUENT PERMIT EXCEEDANCES

DATE	FLOW (MGD)	BOD5 (mg/l)	TSS (mg/l)	pH (SU)	TOTAL FECAL COLIFORM (MPN/100ml)
05-01-2020	---	66	42	---	2,666
05-02-2020	---	58	---	---	205,000
05-03-2020	---	58	---	---	60,000,000**
05-04-2020	---	56	---	---	10,000
05-05-2020	---	83	---	---	---
05-06-2020	---	174	122	---	---
05-07-2020	---	195	114	---	300
05-08-2020	---	163	60	---	---
05-09-2020	---	91	90	---	60,000,000**
05-10-2020	---	66	50	---	60,000,000**
05-11-2020	---	84	66	---	---
05-12-2020	---	87	70	---	---
05-13-2020	---	111	44	---	---
05-14-2020	---	122	38	---	300
05-15-2020	---	93	36	---	300
05-16-2020	---	35	46	---	10,000
05-17-2020	---	67	---	---	15,000
05-18-2020	---	81	32	---	62,000
05-19-2020	---	136	---	---	18,000
05-20-2020	---	79	100	---	8,000
05-21-2020	---	151	132	---	13,333
05-22-2020	---	156	135	---	11,667
05-23-2020	---	240	160	---	60,000,000**
05-24-2020	---	115	60	---	17,000
05-25-2020	---	*	96	---	18,333
05-26-2020	---	*	226	---	21,667
05-27-2020	---	*	132	---	11,667
05-28-2020	---	106	38	---	20,000
05-29-2020	---	122	48	---	16,667
05-30-2020	---	122	126	---	60,000,000**
05-31-2020	---	149	134	---	7,500

Notes:

*Invalid test result. The reagent nutrient buffer for BOD test was defective.

**Invalid test result. Sampling error.

- End of Section -

SECTION II

SUMMARY OF ICAP ACTIVITIES

The following ICAP activities were performed prior to and during the month of May 2020:

1. Clarifier Cleanings – Due to the high river stage of the Mississippi River in May 2020¹, and the associated high groundwater table, Hemphill Construction Company (HEMPHILL) was not able to start the clarifier cleaning work without risking damage to the clarifiers. They decided to postpone the work and shift their cleaning crew to the aeration basins (see Item II.3).
2. Clarifier Repairs – Industrial Services (IS) also postponed the clarifier repair work until the river stage falls below 36' (111' Mean Sea Level (MSL)) at the Greenville gage. During May 2020, the Mississippi River stayed above 42' the entire month (See Appendix B). The river is not forecast to fall below 36' until June.
3. Aeration Basins 1-7 Cleanings – On January 20, 2020, HEMPHILL began cleaning Basin No. 7. During February and March, the biosolids were collected and disposed of in the WWTP sludge lagoons (see Item II.11). The cleaning work for Basin No. 7 was completed March 18, 2020. The by-pass channel and Basin No. 2 were both cleaned in April. Basin No. 1 was cleaned in May. HEMPHILL is currently cleaning Basin No. 3.
4. By-Pass Channel Cleaning – HEMPHILL started and completed the cleaning of the by-pass channel in March.
5. UV Disinfection Chamber Cleaning – HEMPHILL has rescheduled this work for October 2020.
6. Interim Disinfection Systems – Upon receipt of the administrative order in December 2019, the City of Greenville, MS (CITY) began disinfecting the WWTP's effluent using chlorine tablets and chlorine gas. This work has continued through this reporting period and will continue until the CITY's interim NaClO disinfection system is installed and operational.

Also in December 2019, the CITY retained W.L. Burle Engineers, P.A. (BURLE) to prepare the construction plans and specifications for the project. BURLE immediately specified the NaClO disinfection equipment and recommended to the CITY that they directly purchase the

¹ The Mississippi River at the Greenville gage was at or above flood stage (48' (122.92' Mean Sea Level (MSL)) May 1 and May 2, a total of 2 days (See Appendix B). It remained above 42' the entire month of May.

equipment. The CITY voted to purchase the equipment during the December 3, 2019 council meeting; delivery is expected in 10 to 12 weeks.

In order to expedite construction, BURLE broke the project into two (2) phases: Phase I – Foundation and Phase II – Equipment Installation. They are discussed below:

- Phase I was bid on January 3, 2020. AVIS was the low bidder (\$37,000) and was awarded the project. AVIS finished the project January 21, 2020.
- Phase II was bid January 30, 2020. AVIS was again the low bidder (\$24,800), and was awarded the project. The 10,000 gallon above-ground storage tank arrived on February 28, 2020, and was installed by AVIS that day. The balance of equipment (pumps, controls, housing, etc.) was delivered in March, with the exception of an eyewash station which was received in April. The installation of the remaining equipment followed.

Start-up was delayed due to Pandemic-related supply disruptions/travel restrictions. On April 21, the equipment representative for the disinfection equipment company conducted a training session, using water, for MANCHAC. Sodium hypochlorite was ordered and delivered the following week. Startup occurred April 29, 2020 and the system has remained operational since.

7. Sludge Lagoon No. 2 Project – BURLE completed the construction plans and specifications, and submitted same to the MDEQ SRF Division for review on January 31, 2020. MDEQ reviewed and approved the documents in March. The project was bid May 27, 2020. Two (2) bids were received. Both were over the budget. The bids were thrown out during the June 2nd council meeting and the project will be re-bid.
8. Wasted Activated Sludge (WAS) Pumps/Piping – In December 2019, the CITY voted to purchase three (3) WAS pumps from NOV Process and Flow Technologies (NOV) of Dallas, TX for \$46,023.00. The CITY issued a purchase order (No. 200995) on January 21, 2020. NOV delivered the pumps in April. The WAS communications and control panels were delivered on May 1, 2020. The pumps, grinders and control panels are scheduled to be installed by MANCHAC after the discharge lines have been inspected and cleaned.

Also, the valving on the WAS suction lines from Aeration Basin Nos. 1 through 8 will be replaced under Contract No. 6-WWTP Effluent Pump Station Improvement Project. Construction documents are scheduled to be delivered to MDEQ for review in June 2020. The bid phase is tentatively scheduled for August 2020.

9. Additional WWTP Improvements – During the February 4, 2020 City Council meeting, the CITY approved additional WWTP improvements which were proposed by Manchac Management Services, LLC (MANCHAC) of Baton Rouge, LA, the CITY’s WWTP operator.

The improvements consist of:

- a. Blowers – MANCHAC plans to rebuild three (3) of the existing blowers. On February 6, 2020, MANCHAC removed Blower No. 4 from the blower building and transported it to Erichson Company, Inc. (ERICHSON) of Metairie, LA for rehabilitation. ERICHSON rebuilt the blower in March 2020, and returned it to the WWTP.

In April, two blowers, Blower Nos. 5 and 6, were delivered to ERICHSON in hopes of rebuilding the better of the two and using the other for parts. ERICHSON rebuilt Blower No. 5 and plans to return it to the WWTP in June. The motor for Blower No. 6 was taken to Mid-South Electric (MID-SOUTH) of Greenville, MS for repair.

- b. Aeration Basin Diffusers – MANCHAC asked the CITY to purchase sufficient diffusers to replace all of the damaged diffusers within eight (8) basins. As many as 14,000 diffusers will be replaced. MANCHAC will perform the work as basins are cleaned and the diffusers are inspected. The CITY issued a purchase order for the diffusers in February. In April, MANCHAC oversaw the replacement of the diffusers in Basin Nos. 2 and 7. In June, MANCHAC will replace the diffusers in Basin No. 1 as soon as HEMPHILL finishes their scheduled repairs to the sluice gate and piping.
- c. Aeration Basin Aeration Valves – MANCHAC is currently replacing the aeration valves for Basin Nos. 1 through 8.
- d. Barrack Replacement – After the CITY receives MDEQ SRF Loan No. 12 in 2021, MANCHAC plans to replace the existing barrack (Item II.8.c) with a new automated bar screen and conveyor/compactor. The new bar screen, along with the new grit chamber bar screen, will give the WWTP solids removal redundancy.
- e. Aeration Basin No. 8 Cleaning – In February 2020, MANCHAC began cleaning Basin No. 8, using MANCHAC’s crew. The work was completed in April.
- f. Exercise/Repair Frozen Sluice Gates for Aeration Basins 1 through 8 – The CITY hired IS to exercise and/or repair eleven (11) frozen sluice gates in Basin Nos. 1 through 8. The work is scheduled to begin in July 2020.

- g. Slide Gate/Stop Gate Installations – MANCHAC plans to use Basin No. 8 as an interim grit chamber until the new grit chamber is operational in January 2021. To accomplish this, MANCHAC will reconfigure the flow through the aeration basins from parallel flow to serpentine flow as shown in Figure 4. This will be accomplished by installing four (4) slide gates and two (2) stop plates as shown in the drawing. The CITY has issued purchase orders for both the equipment and to IS for the installation of the equipment. The work is scheduled to begin in July 2020.
- h. Temporary Sludge Dewatering – In order to provide sludge dewatering services prior to the completion of the Sludge Lagoon No. 2 project, MANCHAC plans to provide belt press sludge dewatering services during the interim. In February, MANCHAC inspected the WWTP’s two (2) belt presses and scheduled an equipment representative to evaluate the condition of both presses.

The diffuser replacement work, barrack repair, sluice gate/stop gate installation work and temporary sludge dewatering have been added to the emergency WWTP repair project construction schedule (see Appendix B); the remaining items are not essential to plant start-up under average dry weather flow conditions and are, therefore, not described in the construction schedule.

- 10. Grit Chamber Construction Project – HEMPHILL began construction of the grit chamber in February 2020. The work has continued through the end of this reporting period.
- 11. WWTP Biosolids Land Application Site – In January 2020, MANCHAC constructed the WWTP biosolids land application site which was approved of by MDEQ and referred to in their approval letter (dated December 3, 2019) as the “Basin Material Removal Plan”. MANCHAC made the site available to HEMPHILL for disposal of the aeration basin material in January.

During the January 23, 2020 public works committee meeting, a neighbor living south of the WWTP, Ms. Sarah Moorman, complained about both the odor from the land application activities and the land application site’s stormwater run-off impacting her property. The CITY told Ms. Moorman that they were operating the land application site within the terms of their MDEQ-approved plan. She stated she would attend the February 4, 2020 council meeting to object to the disposal practices.

On January 30, 2020, MDEQ inspected the site and subsequently instructed MANCHAC to discontinue land application work until the site was dryer and the biosolids could be properly incorporated into the surficial soils as required in MDEQ’s approval plan. This action temporarily forced HEMPHILL to cease basin cleaning activities.

In February 2020, HEMPHILL installed a HDPE pipeline from the aeration basins to the sludge lagoons. This pipeline gave HEMPHILL the option of pumping the biosolid to either the sludge lagoons, as originally planned under the grit chamber project, or to the biosolids land application site. Since February, HEMPHILL has used the pipeline to convey the solids from the basins to the lagoons.

12. WWTP Effluent Pump Station Repair – In March 2020, MANCHAC informed the CITY that the effluent pumps were in poor condition. Of the three effluent pumps, only two were marginally operational. The situation was such that the pump station could not process the CITY's anticipated wastewater flow during a rain fall event.

The following actions were taken to address the problem:

- CITY issued a purchase order to MANCHAC to purchase one (1) new effluent pump. MANCHAC has placed the order and delivery is expected within 20 weeks. Upon receipt, the CITY will hire a contractor to install it.
- BURLE moved the effluent pump station repair and aeration basin valve replacement project up in order of design under MDEQ SRF Loan 11 and called it Contract No. 6 WWTP Effluent Pump Station Improvement Project. The project, as it relates to the effluent pump station, will involve the complete replacement of two pumps and the valves for all three pumps. The project has been expedited such that plans/specifications will be delivered to MDEQ for review/approval in June 2020, instead of the original deadline of September 30, 2020. The bid phase is tentatively scheduled for August 2020.
- MANCHAC has installed two (2) by-pass pumps to assist Pump No. 3 in meeting demand. While they are in use, MANCHAC is making the following repairs:
 - Pump No. 1 – The motor was removed and taken to MID-SOUTH for repair. The motor was repaired and returned on May 20, 2020.
 - Pump No. 2 – The motor was also removed and taken to MID-SOUTH for repair; the motor was repaired and returned on May 20, 2020. Luckett Pumps (LUCKETT) of Tutwiller, MS was hired to remove the pump for a breakdown inspection. The work is ongoing.
 - Pump No. 3 – LUCKETT was also hired to inspect the pump. The inspection has been rescheduled to occur during a dry weather month when the river gage reading is low (<36' at the Greenville gage).

- End of Section -

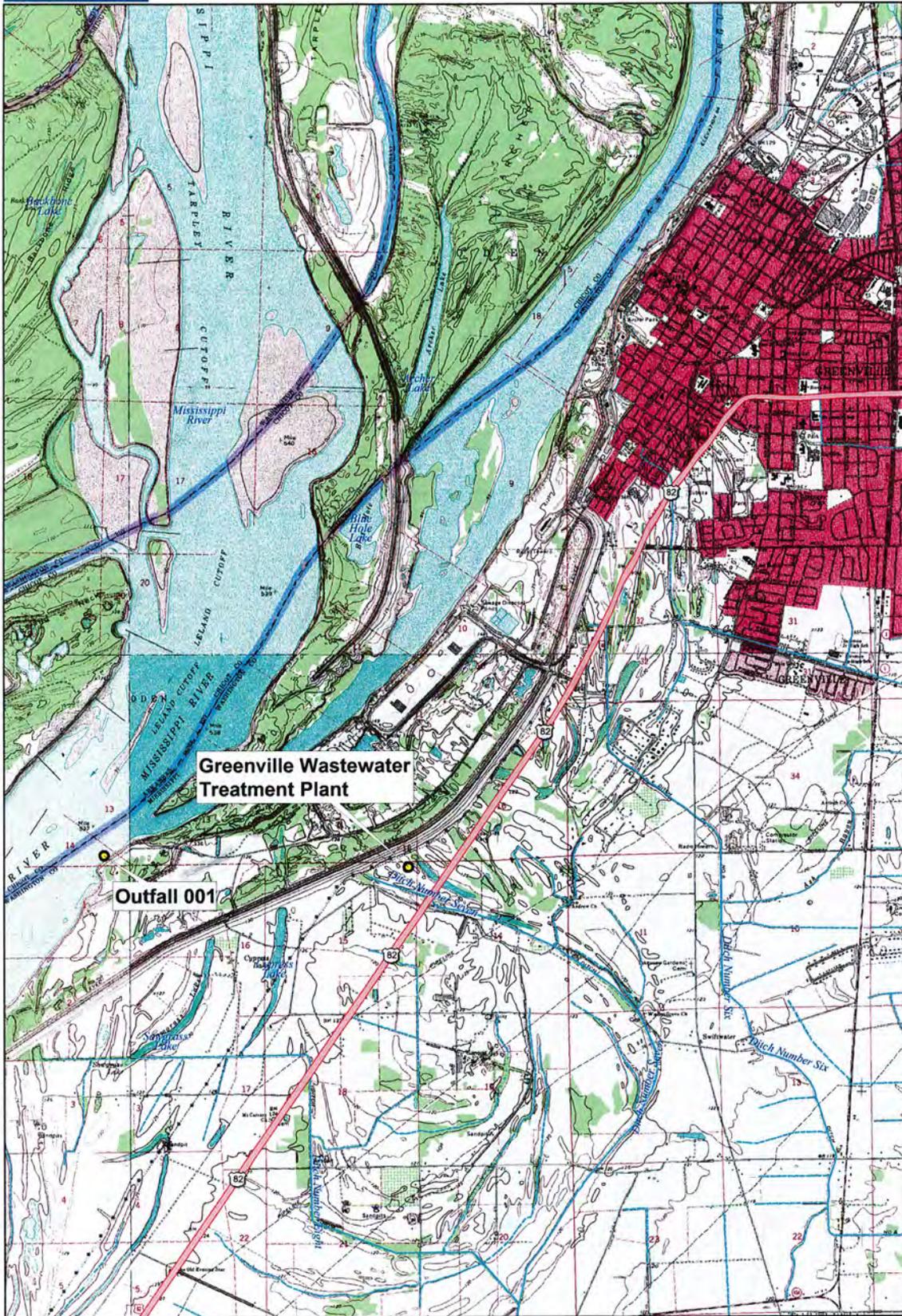
SECTION III

ICAP SCHEDULE

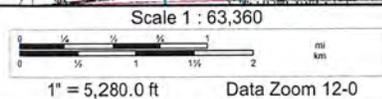
During the month of May, the CITY discussed with EPA the impact both the COVID-19 pandemic and the 2020 Spring Flood Event have had on the CITY's Emergency WWTP Repair Project. The construction and delivery delays caused by both events are referenced on the amended ICAP schedule (Appendix C). The CITY will send a formal letter regarding these events to EPA in June 2020.

FIGURES

FIGURE 1
VICINITY MAP



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**FIGURE 1
 VICINITY MAP**

MONTHLY PROGRESS REPORT
 MAY 2020
 WASTEWATER TREATMENT PLANT REPAIR PROJECT
 GREENVILLE, MISSISSIPPI



QUADRANGLE LOCATION

Proj. No.	02500-1-0419
CAD File No.	GWWTWP Vicinity.Dwg
Drawn By:	MJJ
Chkd. By:	WLB, JR.
Date:	6/1/2020
Scale:	1" = 1 MILE
Dwg. No.	1

FIGURE 2
WWTP MAP NO. 1



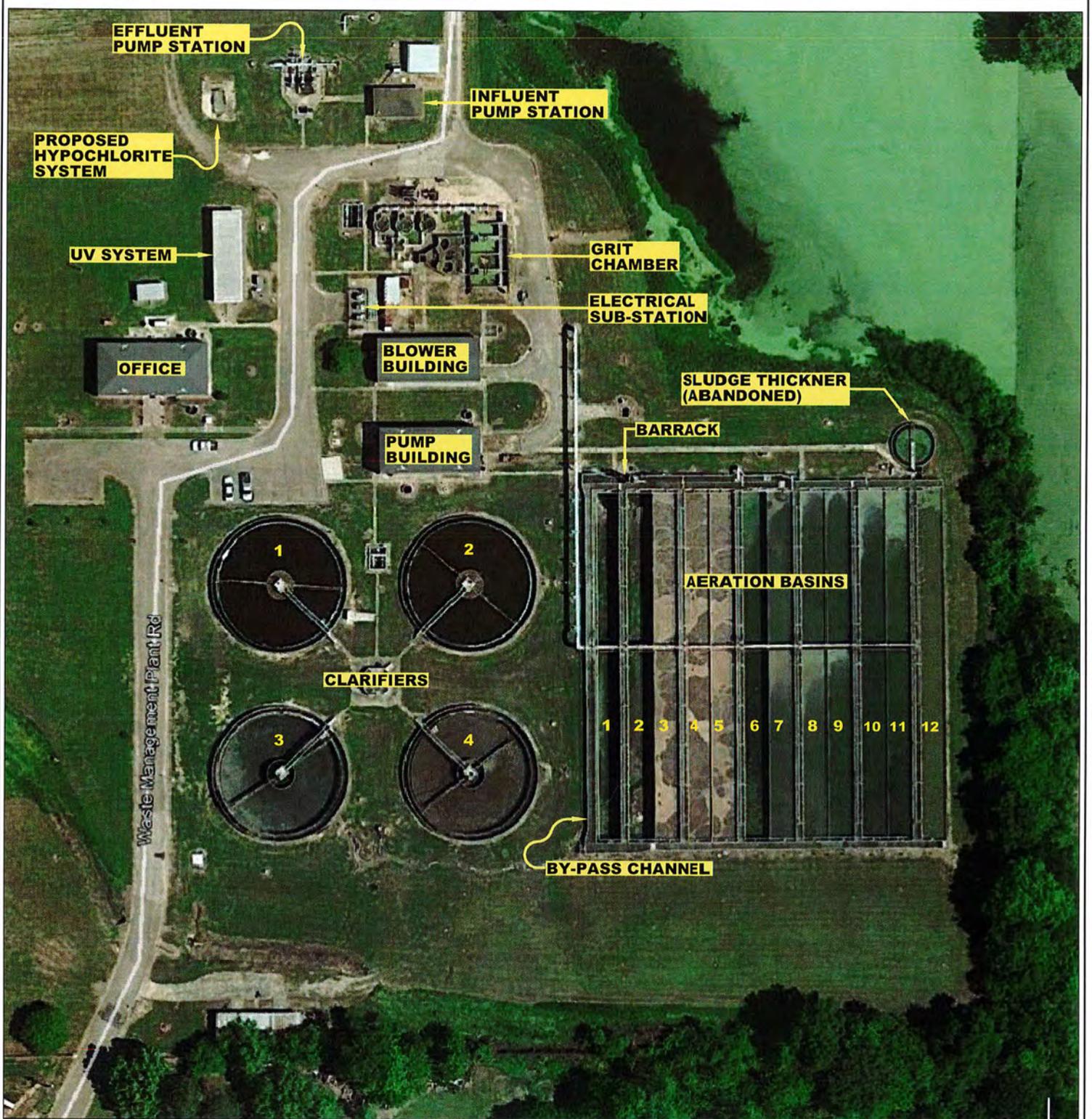
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MONTHLY PROGRESS REPORT
 MAY 2020
 WASTEWATER TREATMENT PLANT
 REPAIR PROJECT
 GREENVILLE, MISSISSIPPI

FIGURE 2
 WASTEWATER
 TREATMENT
 PLANT MAP

Proj. No. 02500-1-0419	
CAD File No. GreenvilleWWTP Layout.dwg	
Drawn By: MJJ	Dwg. No.
Chkd. By: WLB, Jr.	2
Date: 6/1/2020	
Scale: N.T.S.	

FIGURE 3
WWTP MAP NO. 2



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MONTHLY PROGRESS REPORT
 MAY 2020
 WASTEWATER TREATMENT PLANT
 REPAIR PROJECT
 GREENVILLE, MISSISSIPPI

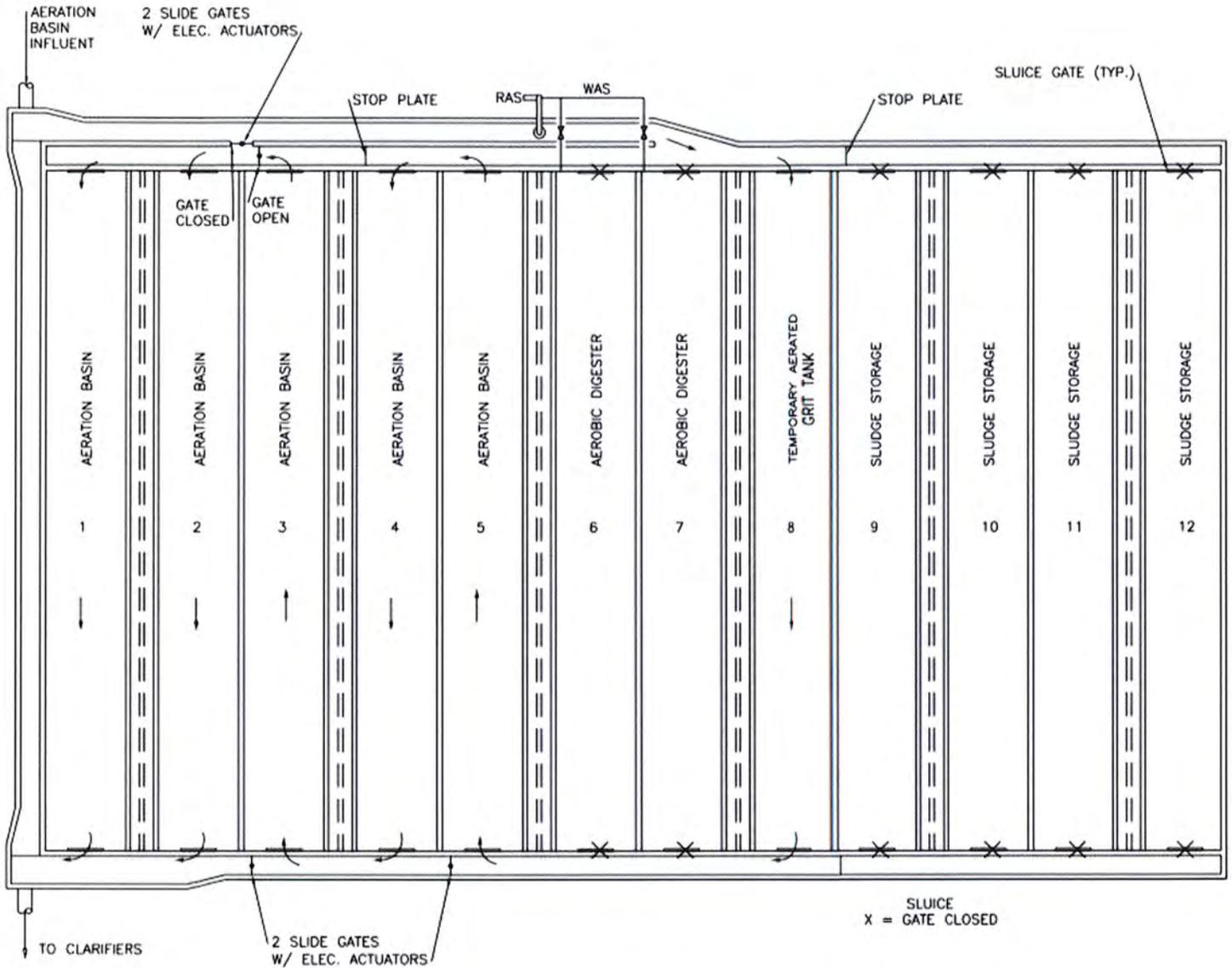
FIGURE 3
 WASTEWATER
 TREATMENT
 PLANT MAP

Proj. No.
 02500-1-0419

CAD File No.
 GreenvilleWWTP Layout.dwg

Drawn By: MJJ	Dwg. No.
Chkd. By: WLB, Jr.	3
Date: 6/1/2020	
Scale: N.T.S.	

FIGURE 4
AERATION BASIN RE-CONFIGURATION PLAN



GREENVILLE WWTP
AERATION BASIN OPERATION
NORMAL FLOW



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MONTHLY PROGRESS REPORT
MAY 2020
WASTEWATER TREATMENT PLANT
REPAIR PROJECT
GREENVILLE, MISSISSIPPI

FIGURE 4
AERATION BASINS
PLAN

Proj. No. 02500-1-0419	
CAD File No. GreenvilleWWTP Layout.dwg	
Drawn By: MJJ	Dwg. No.
Chkd. By: WLB, Jr.	4
Date: 6/1/2020	
Scale: N.T.S.	

APPENDICES

APPENDIX A

WWTP EFFLUENT DATA (MAY 2020)

Date	EFFLUENT											FECAL			
	Eff Flow	Eff flow weekly	Eff pH	Eff Temp	Eff D.O.	TSS mg/l	TSS Lbs	TSS mg/L, Weekly avg	TSS lbs, Weekly avg	Eff BOD5 mg/L	Eff BOD5 lbs	BOD mg/L, Weekly avg	BOD lbs, Weekly avg	Eff Fecal	Fecal, Weekly avg
Friday, May 01, 2020	12.3		7.3	70	4.3	42	4308			66	6770			2666	
Saturday, May 02, 2020	7.3		7.3	70	4.1	24	1461			58	3531			205000	205000
Sunday, May 03, 2020	5.9		7.3	70	3.9	26	1279			58	2854			6E+07	6E+07
Monday, May 04, 2020	5.6	12	7.3	70	3.7	16	747	35	4135	56	2615	71	7493	10000	10000
Tuesday, May 05, 2020	11.6		7.2	68	5.2	30	2902			83	8030			20	20
Wednesday, May 06, 2020	10.3		7.2	64	5.2	122	10480			174	14947			28	28
Thursday, May 07, 2020	10.5		7.3	72	4.1	114	9983			195	17076			300	300
Friday, May 08, 2020	19.3		7.5			60	9658			163	26237			50	50
Saturday, May 09, 2020	10.4		7.2			90	7806			91	7893			6E+07	6E+07

Sunday, May 10, 2020	9.8				7.4			50	4087					66	5394			6E+07	6E+07
Monday, May 11, 2020	10.4	12	7.4	66	6.1	66	66	66	5725	76	7234	84	7286	122	12409	27	27	2606	
Tuesday, May 12, 2020	5.9		7.3	66	6.6	70	3444					87	4281			53	53		
Wednesday, May 13, 2020	9.9		7.3	72	2.7	44	3633					111	9165			25	25		
Thursday, May 14, 2020	9.5		7.3	73	5.6	38	3011					122	9666			300	300		
Friday, May 15, 2020	11.7		7.3	73	6.2	36	3513					93	9075			300	300		
Saturday, May 16, 2020	10		7.3	73	5.1	46	3836					35	2919			10000	10000		
Sunday, May 17, 2020	9.8		7.3	73	6.2	26	2125					67	5476			15000	15000		
Monday, May 18, 2020	9.6	9	7.3	73	5.9	32	2562			42	3161	81	6485	85	6724	62000	62000	1015	
Tuesday, May 19, 2020	8.4		7.2	72	2.4	22	1541					136	9528			18000	18000		
Wednesday, May 20, 2020	8.2		7.1	73	6.2	100	6839					89	6087			8000	8000		

Thursday, May 21, 2020	8.2	7.2	73	5.7	132	9027	101	6300	151	10327	148	9166	18333	13333	13333
Friday, May 22, 2020	11	7.2		6	135	12385			156	14311			11667	11667	
Saturday, May 23, 2020	4.3	7.1			160	5738			240	8607			6E+07	6E+07	
Sunday, May 24, 2020	6.4	7.3			60	3203			115	6138			17000	17000	
Monday, May 25, 2020	6.7	8	7.3		96	5364	101	6300			148	9166	18333	18333	45740
Tuesday, May 26, 2020	8.9	7.2			226	16775							21667	21667	
Wednesday, May 27, 2020	3.8	7.2			132	4183							11667	11667	
Thursday, May 28, 2020	9.6	7.2			38	3042			109	8727			20000	20000	
Friday, May 29, 2020	3.8	7.2			48	1521			122	3866			16667	16667	
Saturday, May 30, 2020	8.1	7.2			126	8512			122	8242			6E+07	6E+07	
Sunday, May 31, 2020	3.8	7.4			134	4247			149	4722			7500	7500	

MIN	3.8	7.6	7.1	64	2.4	16	747	34.9	3160.6	35	2615	70.5	6723.8	20	1014.89
MAX	25.3	12.4	7.5	73	7.4	226	16775	100.7	7234.4	240	26237	147.8	12409	6E+07	67160.9
AVG	9.6	10.3	7.3	70	5.2	72.9	5414	63.3	5207.3	108.8	8648	106.4	8947.9	9E+06	29130.5
SUM	326.9	41.3	247	1471	114.4	2477	2E+05	253.3	20829.3	3264	259440	425.8	35791.7	3E+08	116522
WkAvg 1	12.4	12.4	7.3	68.6	5	34.9	4135	34.9	4134.7	70.5	7492.7	70.5	7492.7	9E+06	67160.9
WkAvg 2	11.8	11.8	7.3	67.5	5.2	76	7234	76	7234.4	122.3	12409	122.3	12409	2E+07	2606.1
WkAvg 3	9.5	9.5	7.3	71.9	5.5	41.7	3161	41.7	3160.6	85.1	6723.8	85.1	6723.8	12525	1014.9
WkAvg 4	7.6	7.6	7.2	72.7	5.1	100.7	6300	100.7	6299.6	147.8	9166.2	147.8	9166.2	9E+06	45740.2
WkAvg 5															

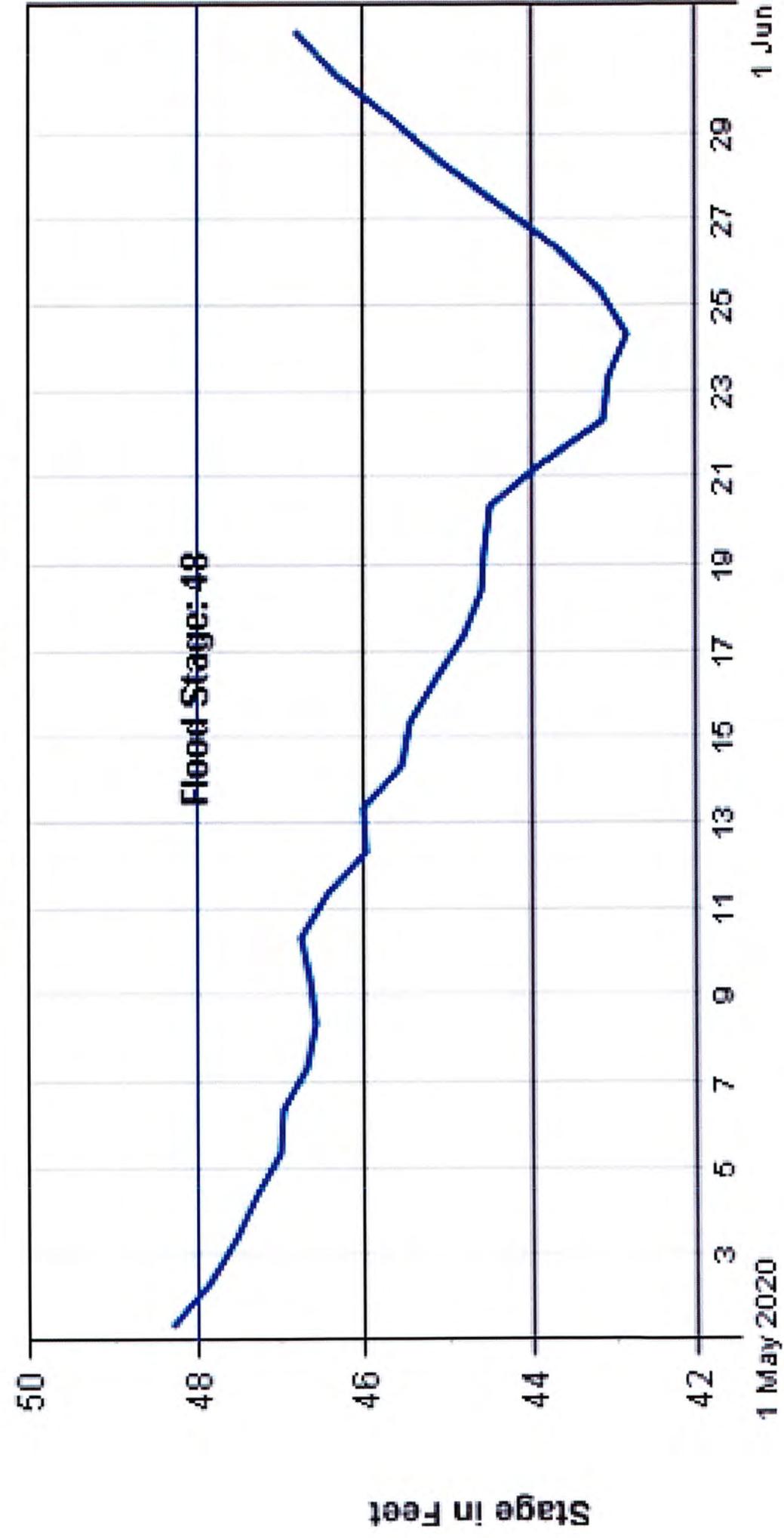
Weekly 1 Max Flow	25.3														
Weekly 2 Max Flow	19.3														
Weekly 3 Max Flow	11.7														
Weekly 4 Max Flow	11														
Weekly 5 Max Flow															
Weekly Max Avg							7355				14876				
Monthly Max Avg							15372				22957				

Parameter

APPENDIX B

MISSISSIPPI RIVER @ GREENVILLE GAGE – MAY 2020

**Mississippi River @ Greenville, MS
From 05/01/2020 To 05/31/2020**



Gage Zero = 74.92 Ft. NGVD29

APPENDIX C

EMERGENCY WWTP REPAIR PROJECT CONSTRUCTION SCHEDULE

APPENDIX C - EMERGENCY WWTP REPAIR PROJECT, GREENVILLE, MS SCHEDULE

