

**MONTHLY PROGRESS REPORT
AUGUST 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

September 10, 2020



W.L.BURLE

E N G I N E E R S , P . A .

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CERTIFICATION

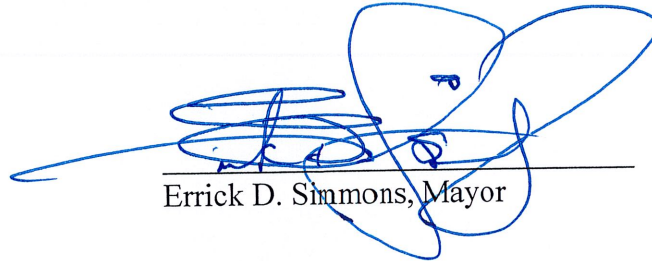
Monthly Progress Report

August 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

September 10, 2020

Date

File Name: Monthly Progress Report (August 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 August 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)
08-01-2020	---	116	46	---	6,667
08-02-2020	---	65	34	---	56,667
08-03-2020	---	76	---	---	78,333
08-04-2020	---	129	48	---	21,667
08-05-2020	---	152	48	---	158,333
08-06-2020	---	187	68	---	131,667
08-07-2020	---	201	70	---	153,333
08-08-2020	---	252	70	---	168,333
08-09-2020	---	143	240	---	43,333
08-10-2020	---	106	---	---	75,000
08-11-2020	---	102	36	---	108,000
08-12-2020	---	188	52	---	100,000
08-13-2020	---	205	68	---	163,333
08-14-2020	20.8	192	208	---	105,555
08-15-2020	---	98	198	---	86,667
08-16-2020	---	95	130	---	110,000
08-17-2020	---	125	170	---	90,000
08-18-2020	---	106	130	---	121,667
08-19-2020	---	190	106	---	90,000
08-20-2020	---	148	50	---	111,667
08-21-2020	---	188	248	---	153,333
08-22-2020	---	195	354	---	131,667
08-23-2020	---	143	104	---	146,667
08-24-2020	---	95	76	---	163,333
08-25-2020	---	88	---	---	158,333
08-26-2020	---	189	82	---	128,400
08-27-2020	---	223	154	---	173,333
08-28-2020	---	192	78	---	128,333
08-29-2020	---	154	66	---	203,333
08-30-2020	---	105	154	---	100,000
08-31-2020	---	88	44	---	95,000

- End of Section -

SECTION II

SUMMARY OF ICAP ACTIVITIES

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

1. Clarifier Cleanings – With the seasonal fall of the Mississippi River gage over the months of June and July¹ and the anticipated drop in the shallow groundwater table to 116' Mean Sea Level (MSL), Hemphill Construction Company (HEMPHILL) of Florence, MS, rescheduled the cleaning of Clarifier Nos. 1, 3, & 4 to begin July 15, 2020, and end December 4, 2020. The construction schedule (Appendix C) has been amended to recognize HEMPILL's revised schedule.
2. Clarifier Repairs – W.L. Burle, Engineers, P.A. (BURLE) worked with Industrial Services, Inc. (IS) to reschedule the clarifier repair work to follow HEMPILL's cleaning work. IS planned to begin the repair work by August 15, 2020, if the groundwater table falls to manageable levels. The construction schedule (Appendix C) has also been amended to recognize IS's revised schedule.
3. Aeration Basins 1-7 Cleanings – On January 20, 2020, HEMPILL began cleaning Basin No. 7 and completed the work March 18, 2020. Basin No. 2 was cleaned in April. Basin No. 1 was cleaned in May. Basin No. 3 was cleaned in July. The cleaning of Basin Nos. 4 and 6 began in July and continued through the end of the month.
4. By-Pass Channel Cleaning – HEMPILL started and completed the cleaning of the by-pass channel in March 2020.
5. UV Disinfection Chamber Cleaning – HEMPILL has rescheduled this work for December 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 and continued using chlorine until the CITY's interim NaClO disinfection system was installed and operational.

¹ The Mississippi River at the Greenville gage was below flood stage (48' (122.92' Mean Sea Level (MSL)) during the entire month of August (See Appendix B). It also remained below 36' during the month; however, the groundwater table in the vicinity of the clarifiers remained above the floor elevation of the clarifiers (116' MSL) and thus prevented any cleaning and repair work to occur in August.

Also in December 2019, the CITY retained 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 equipment. The CITY voted to purchase the equipment during the December 3, 2019 council meeting; delivery was 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 Construction Company (AVIS) of Avon, MS, 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 for the WWTP staff. Sodium hypochlorite was then 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 budget. The bids were rejected during the June 2nd council meeting.

BURLE redesigned the project to emphasize landfill disposal instead of land application and also extended the construction period by 110 days, bringing the total construction period to 475 days. MDEQ reviewed/approved the amended plans and specifications. The CITY bid the project August 26, 2020. The low bidder was Mitchell Contracting of Madisonville, LA; however, their bid was unbalanced. The CITY will evaluate the bids during the September 1st Council Meeting.

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 2020. The WAS comminutors and control panels were delivered on May 1, 2020. The pumps, grinders and control panels are scheduled to be installed by Manchac Management Services, LLC (MANCHAC) of Baton Rouge, LA 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 were prepared/delivered to MDEQ for review in June 2020. MDEQ approved the construction documents in July. The CITY scheduled the bid opening for September 2, 2020.

9. Additional WWTP Improvements – During the February 4, 2020 City Council meeting, the CITY approved additional WWTP improvements which were proposed by MANCHAC, the CITY's WWTP operator.

The improvements consist of:

- a. Blowers – MANCHAC proposed 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 MANCHAC transported 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.

In July, MANCHAC installed the blowers and now have four (4) operational blowers.

- b. Aeration Basin Diffusers – MANCHAC asked the CITY to purchase sufficient diffusers to replace all of the diffusers for eight (8) aeration basins. The CITY issued a purchase order for the diffusers in February. As many as 14,000 diffusers will be replaced. MANCHAC is performing the work as basins are cleaned and the diffusers are inspected. In April, MANCHAC oversaw the replacement of the diffusers in Basin Nos. 2 and 7. In July, MANCHAC started replacing the diffusers in Basin Nos. 1 and 2; the work was completed in August.

- 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 gross solids removal redundancy.
- e. Aeration Basin No. 8 Cleaning – In February 2020, MANCHAC began cleaning Basin No. 8, using MANCHAC's crew and completed the work 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 began in June. Several of the gates are in need of concrete wall repairs. The repairs will be performed by HEMPHILL under a change order which was brought before the City Council for review/approval in July 2020. This work continued through the month.
- 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 April 2021. To accomplish this, MANCHAC will reconfigure the flow through the aeration basins from parallel flow to serpentine, series 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 began in July 2020 and should be completed in October 2020.

In June, BURLE prepared construction documents for the installation of the slide gate electrical services. The project was bid on July 29, 2020. McInnis Electric was the lone bidder with a bid of \$228,570.00. The CITY discussed the bid during the August 4th council meeting and voted to table the award.

- h. Temporary Sludge Dewatering – In order to provide interim sludge dewatering services prior to the completion of the Sludge Lagoon No. 2 project, the CITY plans to rebuild the belt press sludge dewatering system and dispose of the sludge at a landfill. This will consist of:
 - Existing Belt Press Building Repairs – The existing belt press building will be repaired. In July, the CITY inspected the WWTP's two (2) belt presses, a 2 meter Phoenix press and a 1 meter Carter press, and scheduled an equipment representative to evaluate the condition of both presses. Phoenix Process Equipment provided a quote to rebuild the 2 meter Phoenix belt press; the 1 meter

Carter belt press was not repairable. The CITY also received quotes in July to repair the belt press building and electrical system. BURLE brought these quotes before the City Council August 18, 2020; the CITY voted to schedule the work to begin in October 2020.

- Leasing Belt Press Equipment – MANCHAC plans to lease and operate a trailer-mounted, 2 meter belt press. The system will be installed adjacent to the existing, belt press building.
- Biosolids Land Application Site – BURLE is preparing a biosolids land application permit for a 1,400 acre site in Washington County, MS. The biosolids currently stored in Aeration Basins 9 through 12 and Lagoon Nos. 1 and 3 will be disposed of on the land application site.

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. The anticipated completion date is April 23, 2021.

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. 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 sludge 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 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:

- 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 inspect, repair and re-install the pump; the work is scheduled for September 2020. Upon completion, the two bypass pumps will be removed from service.
 - Pump No. 3 – LUCKETT was also hired to inspect the pump. The inspection has been scheduled to occur during a dry weather month when the river gage reading is low (<36' at the Greenville gage).
- The 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 of the order. 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 design of the project was expedited. Plans/specifications were delivered to MDEQ for review/approval in June 2020, instead of the original deadline of September 30, 2020. MDEQ approved the plans/specifications in July. The CITY will receive bids September 2, 2020.

- End of Section -

SECTION III

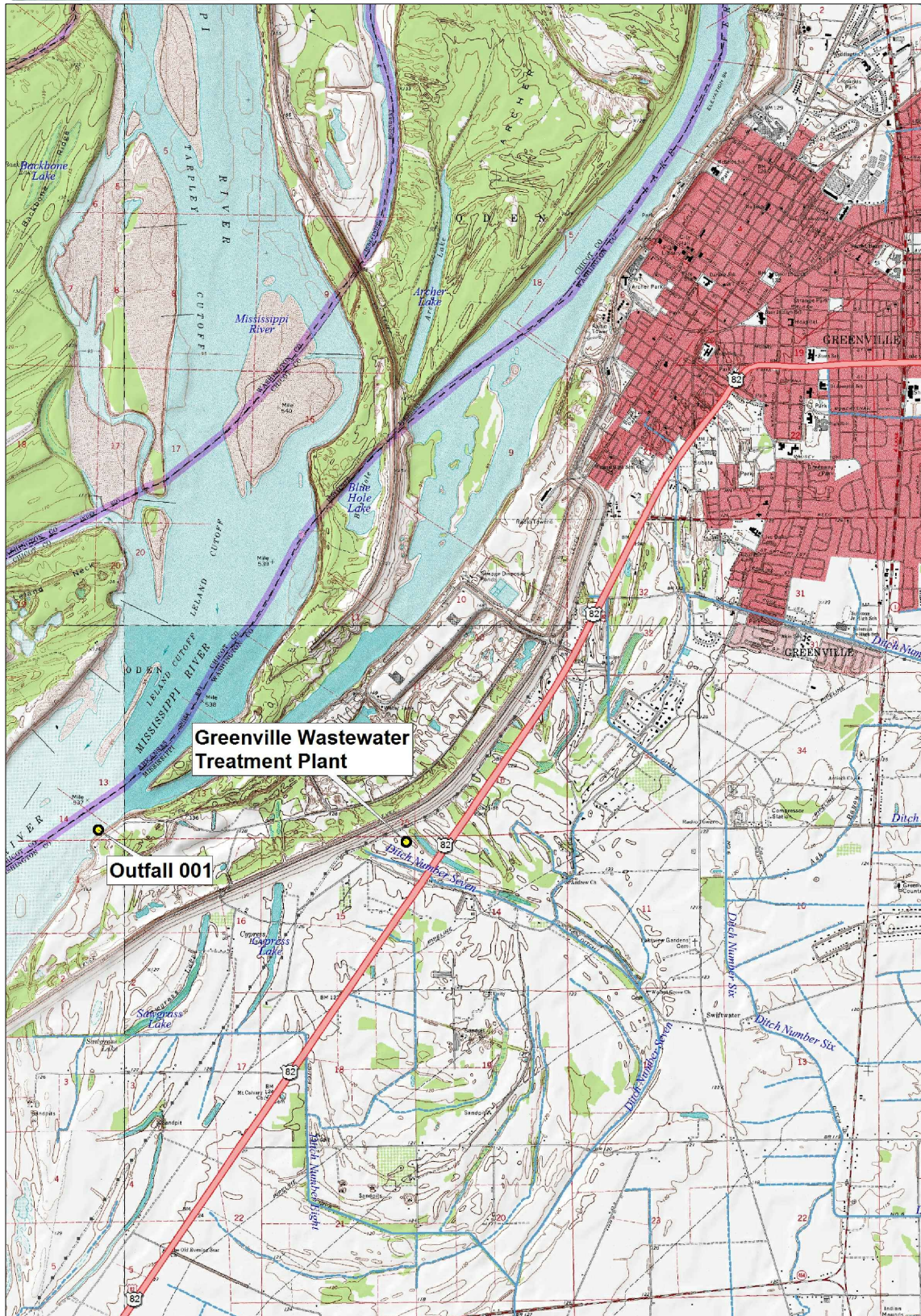
ICAP SCHEDULE

During the July 10th conference call with EPA, DOJ and MDEQ, the CITY discussed the impact the COVID-19 pandemic, the 2020 Spring Flood Event and the complexity of the repair work have had on the CITY's Emergency WWTP Repair Project. EPA requested an amended ICAP Schedule which recognizes the impacts and delays.

The CITY sent the amended schedule to EPA/MDEQ on August 7, 2020, for review and comment (See Appendix C).

FIGURES

FIGURE 1
VICINITY MAP



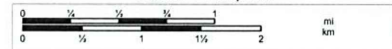
Data use subject to license.

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Scale 1 : 63,360



1" = 5,280.0 ft Data Zoom 12-0



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FIGURE 1 VICINITY MAP

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



QUADRANGLE LOCATION

Proj. No.	02500-1-0419
CAD File No.	GWTP_Vicinity.Dwg
Drawn By: M.J.J.	Dwg. No.
Chkd. By: W.L.B., JR.	1
Date: 8/27/2020	
Scale: 1"=1 MILE	

FIGURE 2
WWTP MAP NO. 1



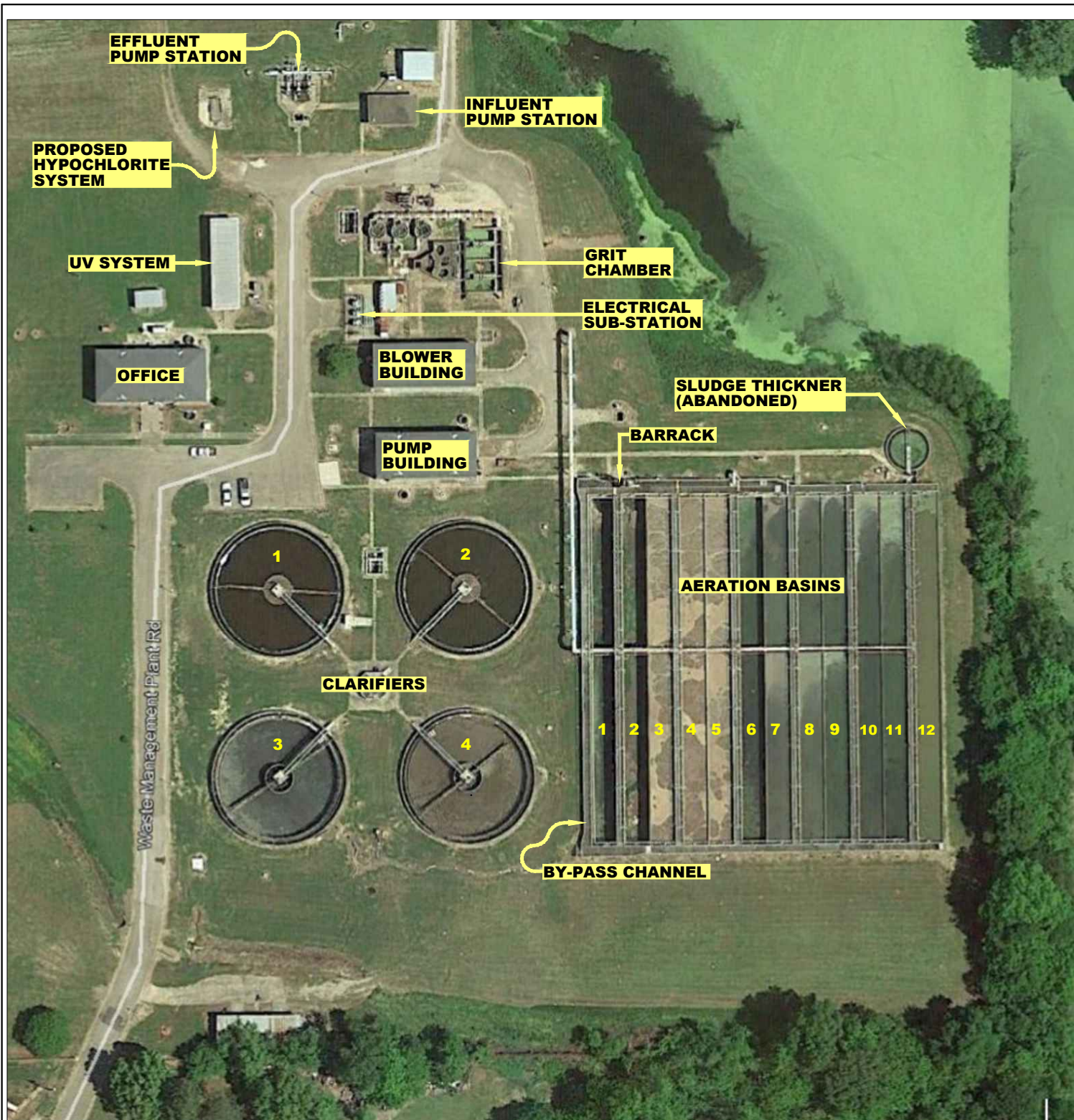
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MONTHLY PROGRESS REPORT
AUGUST 2020
WASTEWATER TREATMENT PLANT
REPAIR PROJECT
GREENVILLE, MISSISSIPPI

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: 8/27/2020	
Scale: N.T.S.	

FIGURE 3
WWTP MAP NO. 2



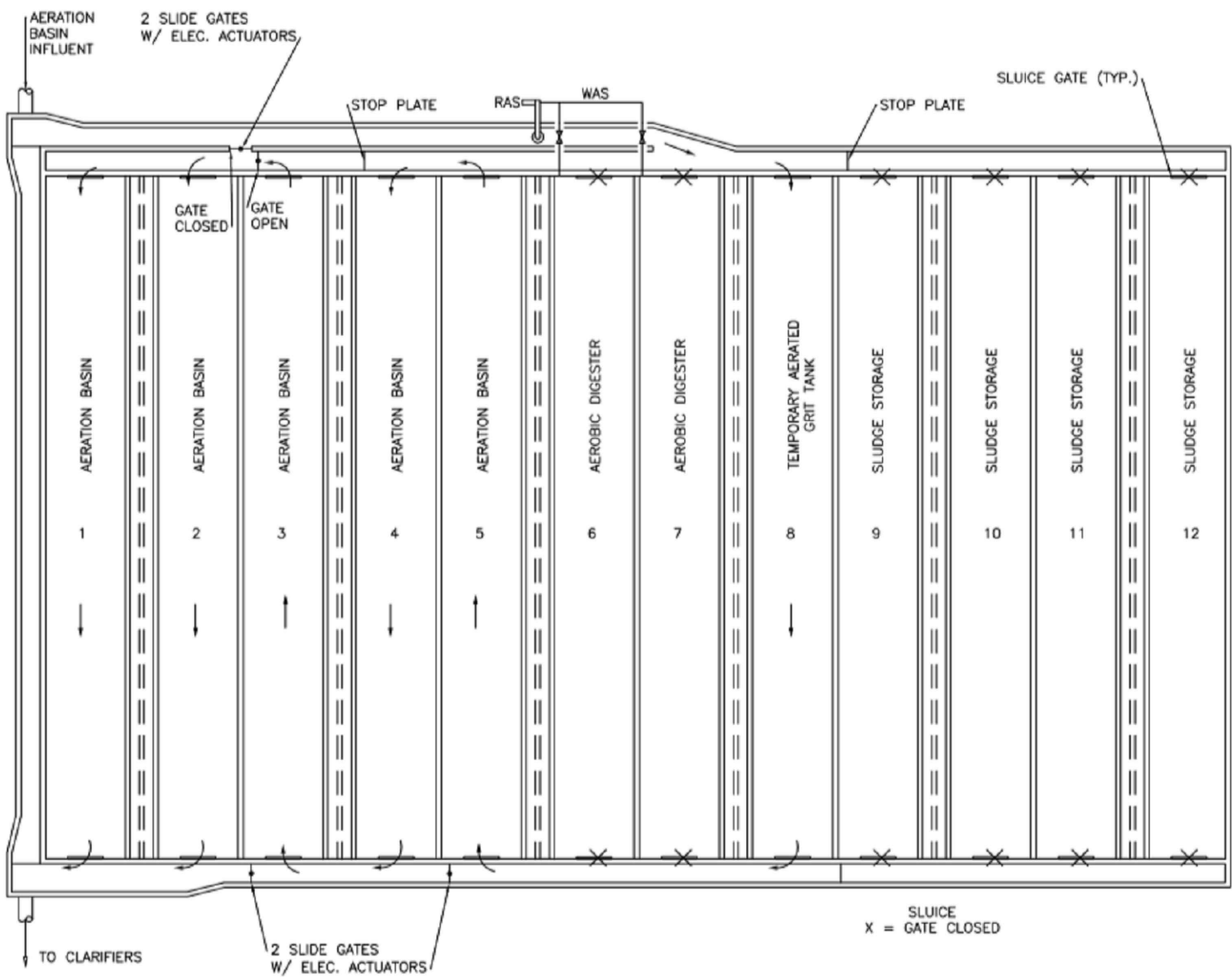
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MONTHLY PROGRESS REPORT
AUGUST 2020
WASTEWATER TREATMENT PLANT
REPAIR PROJECT
GREENVILLE, MISSISSIPPI

FIGURE 3
WASTEWATER
TREATMENT
PLANT MAP

Proj. No. 02500-1-0419	
CAD File No. GreenvilleWWTP Layout.dwg	
Drawn By: MJJ	Dwg. No. 3
Chkd. By: WLB, Jr.	
Date: 8/27/2020	
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
AUGUST 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. 4
Chkd. By: WLB, Jr.	
Date: 8/27/2020	
Scale: N.T.S.	

APPENDICES

APPENDIX A

WWTP EFFLUENT DATA (AUGUST 2020)

Greenville Daily WWTP Report

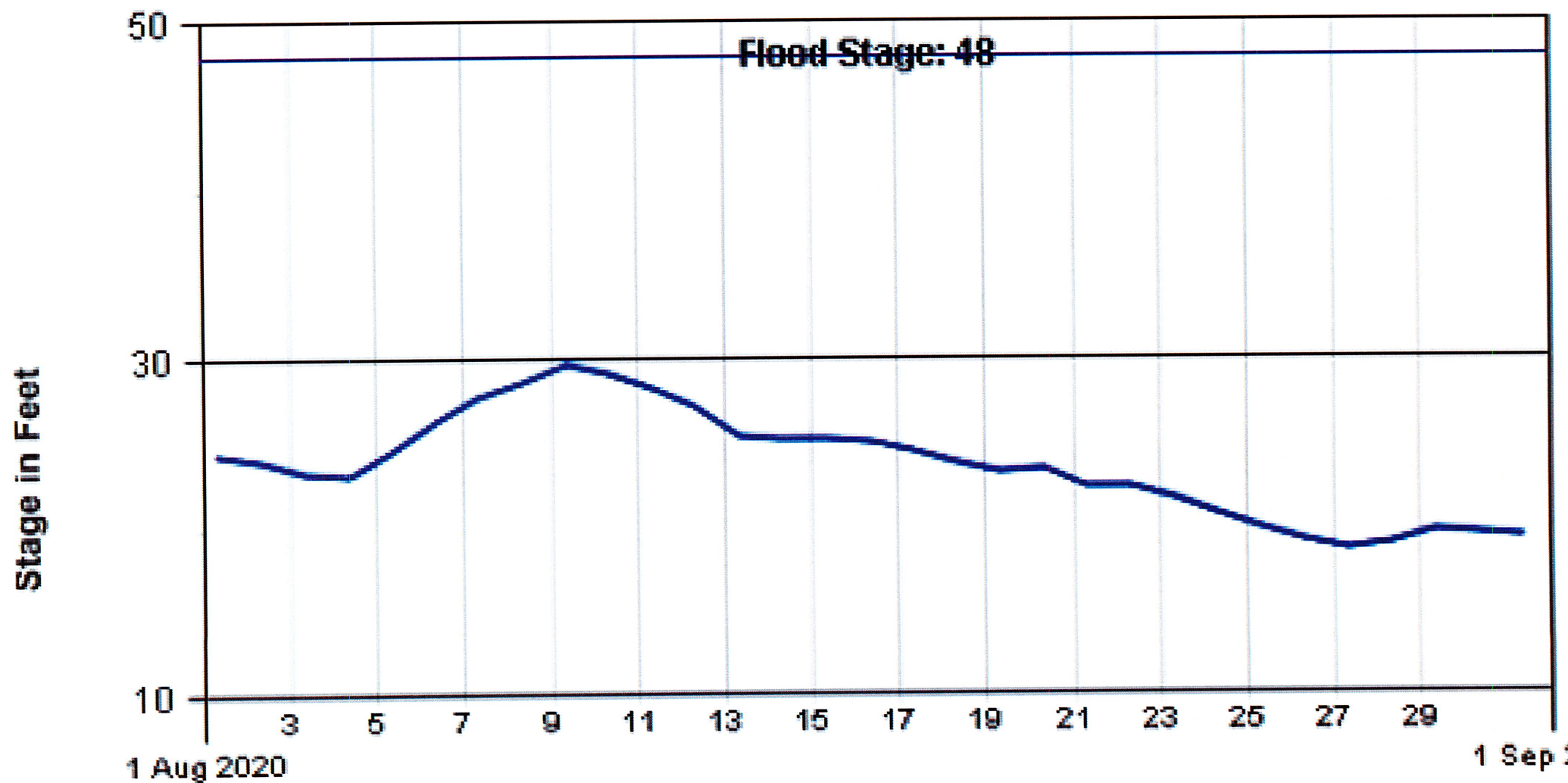
	MGD		Effluent (ppm)				colonies/100mL	
	Effluent flow		BOD	TSS	Total N	Chlorine Residual	Total Fecal Coliform	
Saturday, August 01, 2020	8.4		116	46		0.02	6667	
Sunday, August 02, 2020	3.0		65	34		0.07	56667	
Monday, August 03, 2020	8.6		76	22		0.01	78333	
Tuesday, August 04, 2020	3.1		129	48		0.02	21667	
Wednesday, August 05, 2020	3.5		152	48		0.19	158333	
Thursday, August 06, 2020	9.5		187	68		0.01	131667	
Friday, August 07, 2020	5.8		201	70		0.07	153333	
Saturday, August 08, 2020	5.2		182	70		0.06	168333	
Sunday, August 09, 2020	3.1		143	240		0.17	43333	
Monday, August 10, 2020	3.2		106	26		0.14	75000	
Tuesday, August 11, 2020	3.2		102	36	16.4	0.26	108000	
Wednesday, August 12, 2020	13.8		188	52		0.13	100000	
Thursday, August 13, 2020	9.9		205	68		0.04	163333	
Friday, August 14, 2020	20.8		192	208		0.10	105555	
Saturday, August 15, 2020	7.5		98	198		0.07	86667	
Sunday, August 16, 2020	5.0		95	130		0.08	110000	
Monday, August 17, 2020	7.3		125	170		0.05	90000	
Tuesday, August 18, 2020	6.5		106	130		0.02	121667	
Wednesday, August 19, 2020	5.7		190	106		0.05	90000	
Thursday, August 20, 2020	6.3		148	50		0.10	111667	
Friday, August 21, 2020	6.7		188	248		0.04	153333	
Saturday, August 22, 2020	5.4		195	354		0.03	131667	
Sunday, August 23, 2020	5.7		143	104		0.04	146667	
Monday, August 24, 2020	5.8		95	76		0.06	163333	
Tuesday, August 25, 2020	6.2		88	26		0.01	158333	
Wednesday, August 26, 2020	5.8		189	82		0.02	128400	
Thursday, August 27, 2020	5.3		223	154		0.00	173333	
Friday, August 28, 2020	5.9		192	78		0.11	128333	
Saturday, August 29, 2020	6.1		154	66		0.09	203333	

Sunday, August 30, 2020	5.3		105	154		0.02		100000	
Monday, August 31, 2020	6.2		88	44		0.02		95000	
Aug. 2020 Total	204		xxxx	xxxx	xxxx	xxxx		xxxx	
Aug 2020 Average	7		144	103	#DIV/0!	0		99750	
Aag.2020 Max	21		223	354	0	0		203333	
Aag.2020 Min	3		65	22	0	0		6667	

APPENDIX B

MISSISSIPPI RIVER @ GREENVILLE GAGE – AUGUST 2020

Mississippi River @ Greenville, MS
From 08/01/2020 To 08/31/2020



Gage Zero = 74.92 Ft. NGVD29

APPENDIX C

EMERGENCY WWTP REPAIR PROJECT CONSTRUCTION SCHEDULE

APPENDIX C - SCHEDULE, EMERGENCY WWTP REPAIR PROJECT, GREENVILLE, MS as of 9/10/2020																																												
ID	Task Name	Duration	Start	Finish	Firm																																							
						O	N	D	Half 1, 2020						Half 2, 2020						Half 1, 2021						Half 2, 2021						Half 1, 20											
						J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J														
1	Aeration Basins 3,4,5,6,7 Cleaning	209 days	Mon 1/20/20	Fri 11/6/20	Hemphill				209 days																																			
2	Aeration Basin 8 Cleaning	29 days	Mon 3/23/20	Thu 4/30/20	Manchac				29 days																																			
3	Bypass Channel Cleaning	6 days	Thu 3/19/20	Thu 3/26/20	Hemphill				6 days																																			
4	Structural Repair for Aeration Basins 1, 2, 6 & 7 Slide Gates	72 days	Thu 8/6/20	Fri 11/13/20	Hemphill									72 days																														
5	Aeration Basin 1 & 2 Cleaning	39 days	Mon 3/30/20	Thu 5/21/20	Hemphill				39 days																																			
6	Aeration Basin Diffuser Replacements (Basins 1 thru 8)	200 days	Wed 4/1/20	Tue 1/5/21	Manchac				200 days																																			
7	Interim Sludge Management System	175 days	Mon 8/31/20	Fri 4/30/21	Manchac									175 days																														
8	Clean Clarifiers	103 days	Wed 7/15/20	Fri 12/4/20	Hemphill									103 days																														
9	Internal Gravity, CCTV, and Gravity Sewer Cleaning	5 days	Mon 12/7/20	Fri 12/11/20	Hemphill																																							
10	Clean Process Lift Station	1 day	Mon 12/14/20	Mon 12/14/20	Hemphill																																							
11	Clean UV System	2 days	Tue 12/15/20	Wed 12/16/20	Hemphill																																							
12	Clean Effluent Pump Station	2 days	Tue 12/15/20	Wed 12/16/20	Hemphill																																							
13	Grit Chamber Reconstruction	311 days	Fri 2/14/20	Fri 4/23/21	Hemphill				311 days																																			
14	Sluice Gates/Slide Gate/Stop Plate Order/Delivery/Installation	182 days	Wed 2/5/20	Thu 10/15/20	I.S. Inc.				182 days																																			
15	Exercising Sluice Gates (Total 11 Gates)	168 days	Wed 4/1/20	Fri 11/20/20	I.S. Inc.				168 days																																			
16	Clarifier 1, 2 and 4 Repairs	77 days	Sat 8/15/20	Sun 11/29/20	I.S. Inc.									77 days																														
17	Clarifier 3 Repairs	65 days	Sat 12/5/20	Thu 3/4/21	I.S. Inc.																																							
18	WAS Pump Order/Delivery/Installation	235 days	Tue 12/10/19	Sat 10/31/20	I.S. Inc.				235 days																																			
19	WAS Sewer Cleaning/Repairs	177 days	Wed 4/29/20	Thu 12/31/20	To Be Determined				177 days																																			
20	Hypochlorite Disinfection System Construction	97 days	Tue 12/10/19	Wed 4/22/20	Avis				97 days																																			
21	Hypochlorite Disinfection System Operation	269 days	Wed 4/22/20	Sun 5/2/21	Manchac				269 days																																			
22	Chlorine Tablet/Gas Disinfection System	103 days	Mon 12/2/19	Wed 4/22/20	Manchac				103 days																																			
23	Biomass Generation	13 days	Thu 4/15/21	Sun 5/2/21	Manchac																																							
24	UV Disinfection System Repair	98 days	Thu 12/17/20	Sun 5/2/21	Trojan Technologies																																							
25	WWTP with UV System Operational		Sat 5/15/21		Manchac																																							
26	Contract No. 4 Sludge Lagoon #2 Cleaning/Disposal (Construction)	339 days	Wed 9/30/20	Mon 1/17/22	To Be Determined				339 days																																			
27	Contract No. 6 WWTP Effluent Pump Station Repair & Aeration Basin Valve Replacement (Construction)	194 days	Wed 9/30/20	Sat 6/26/21	To Be Determined				194 days																																			