MONTHLY PROGRESS REPORT
DECEMBER 2019 and JANUARY 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

February 7, 2020

W.L. BURLE ENGINEERS, P.A.
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CERTIFICATION

Monthly Progress Report
December 2019 and January 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

2/7/20
Date

File Name: Monthly Progress Report (December 2019/January 2020)

Sara Janovitz, EPA Region IV
Diane Schober, MDEQ
Gretchen Zmitrovich, MDEQ
Bob Blanz, P.E., Arkansas Dept. of Environmental Quality
Dwight Bradshaw, Louisiana Dept. of Environmental Quality
Les Herrington, P.E., MDH
Chris McDonald, Mississippi Department of Agriculture
Justin Haydel, P.E., Manchac Management Services, LLC
Thelma Glasco, U.S. Dept. of Agriculture Rural Development
Mayor Errick D. Simmons

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SECTION I

PERMIT EFFLUENT EXCEEDANCES

The list of permit effluent limit exceedances for the months of December 2019 and January 2020 are tabulated in Table 1 on the following page. 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)
12-8-19	---	---	32	---	>60 million
12-9-19	---	88	---	---	>60 million
12-11-19	---	66	62	---	>60 million
12-12-19	---	68	40	---	>60 million
12-13-19	---	120	34	---	>60 million
12-14-19	---	52	60	---	>60 million
12-15-19	---	54	58	---	>60 million
12-16-19	---	70	72	---	>60 million
12-17-19	---	33	86	---	>60 million
12-18-19	---	82	82	---	500,000
12-19-19	---	51	---	---	2,200,000
12-20-19	---	90	312	---	21,333,333
12-21-19	---	---	42	---	1,100,000
12-22-19	---	---	46	---	>60 million
12-23-19	---	114	158	---	4,000,000
12-24-19	---	47	52	---	NT
12-25-19	---	43	100	---	>60 million
12-26-19	---	56	---	---	650,000
12-27-19	---	33	36	---	150,000
12-28-19	---	54	46	---	400,000
12-29-19	---	38	---	---	1,670,000
12-30-19	---	71	34	---	---
12-31-19	---	70	---	---	>60 million
1-1-20	---	60.43	---	---	400,000
1-2-20	28.9	60.43	50	---	100,000
1-3-20	24.9	36.08	---	---	NT
1-4-20	---	---	40	---	300,000
1-5-20	---	50.32	36	---	400,000
1-6-20	---	40.18	38	---	---
1-7-20	---	---	---	---	500,000
1-8-20	---	43.01	---	---	---
1-9-20	---	---	---	---	1,600,000
1-10-20	---	---	---	---	100,000
1-11-20	---	---	---	---	150,000
1-12-20	---	32	---	---	---
1-13-20	21	---	---	---	50,000
1-14-20	21.2	---	38	---	NT
1-15-20	24.4	115	32	---	NT
1-16-20	---	41	---	---	---
1-17-20	---	38	---	---	---
1-18-20	---	85	106	---	165,000
1-19-20	---	---	---	---	500,000
1-20-20	---	39.51	42	---	200,000
1-21-20	---	63	---	---	10,000
1-22-20	20.2	123	88	---	20,000
1-23-20	20.9	77	40	---	50,000
1-24-20	---	150	---	---	20,000
1-25-20	22.2	106	36	---	10,000
1-26-20	---	42	---	---	70,000
1-27-20	---	53	---	---	10,000
1-28-20	---	56	---	---	10,000
1-29-20	22.7	53	56	---	20,000
1-30-20	---	33	---	---	500,000

NT – No Test

- End of Section -

SECTION II

SUMMARY OF ICAP ACTIVITIES

The following ICAP activities were performed during the months of December 2019 and January 2020:

1. Clarifier Cleanings – Due to the high river stage of the Mississippi River in January 2020, and the resulting high groundwater table, Hemphill Construction Company (HEMPHILL) could not start the clarifier cleaning work without risking damage to the clarifiers. They decided to postpone the work and shift their cleaning crew from the clarifiers 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)).

3. Aeration Basins 1-7 Cleanings – On January 20, 2020, HEMPHILL began cleaning Basin No. 7. The solids were disposed of on the WWTP biosolids land application site (see Item II.9). Upon completion, HEMPHILL will move their cleaning crew to Basin No. 3.

4. UV Disinfection Chamber Cleaning – HEMPHILL has rescheduled this work for May 2020.

5. Interim Disinfection System Construction – In December 2019, the City of Greenville, MS (CITY) retained W.L. Burle Engineers, P.A. (BURLE) to prepare the construction plans and specifications for the project. BURLE 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 is anticipated 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. Phase I was bid on January 3, 2020. Avis Construction Company (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). The award of the Phase II project has been placed on the agenda for the February 4, 2020 council meeting.

6. Sludge Lagoon No. 2 Project – BURLE completed the construction plans and specifications, and submitted same to the MDEQ SRF Division for review and approval on January 31, 2020.

7. Wasted Activated Sludge (WAS) Pumps – 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 will deliver pumps by February 21, 2020.

8. Additional WWTP Improvements – Manchac Management Services, LLC (MANCHAC) of Baton Rouge, LA, the CITY's WWTP operator, proposed additional improvements to the WWTP during the CITY's Public Works Committee meeting held January 23, 2020. The improvements consisted of:

   a. Blowers – MANCHAC recommended rebuilding two (2) of the existing blowers.

   b. 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 may be in need of replacement. The work will be performed by MANCHAC's crews as basins are cleaned and the diffusers are inspected.

   c. Barrack Repair – MANCHAC recommended the CITY hire IS to rebuild the existing barrack located in the channel to the aeration basins (see Figure 3).

   d. Barrack Replacement – After the CITY receives MDEQ SRF Loan No. 12 in 2021, MANCHAC plans to replace the repaired 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 8 Cleaning – MANCHAC proposes cleaning an additional basin, Basin No. 8, using MANCHAC's crew.

   f. Exercise/Repair Frozen Sluice Gates for Aeration Basins 1 through 8 – MANCHAC recommended the CITY hire IS to exercise and/or repair eleven (11) frozen sluice gates in Basin Nos. 1 through 8.

   g. Sluice Gate/Stop Gate Installations – MANCHAC recommended using Basin No. 8 as an interim grit chamber until the new grit chamber is operational in January 2021. In order to accomplish this, MANCHAC plans to 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 three (3) stop plates as shown in the drawing. MANCHAC recommends hiring IS to perform the work.

h. Temporary Sludge Dewatering – In order to provide sludge dewatering services until Sludge Lagoon No. 2 has been cleaned and is operational, MANCHAC plans to provide belt press sludge dewatering services during the interim.

The Public Works Committee approved the scope of work and sent it for final approval to the council meeting scheduled for February 4, 2020.

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.

9. Grit Chamber Construction Project – HEMPHILL did not work directly on the grit chamber system during this reporting period. They plan to begin cleaning the existing grit chamber basins during the first half of February 2020.

10. 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.

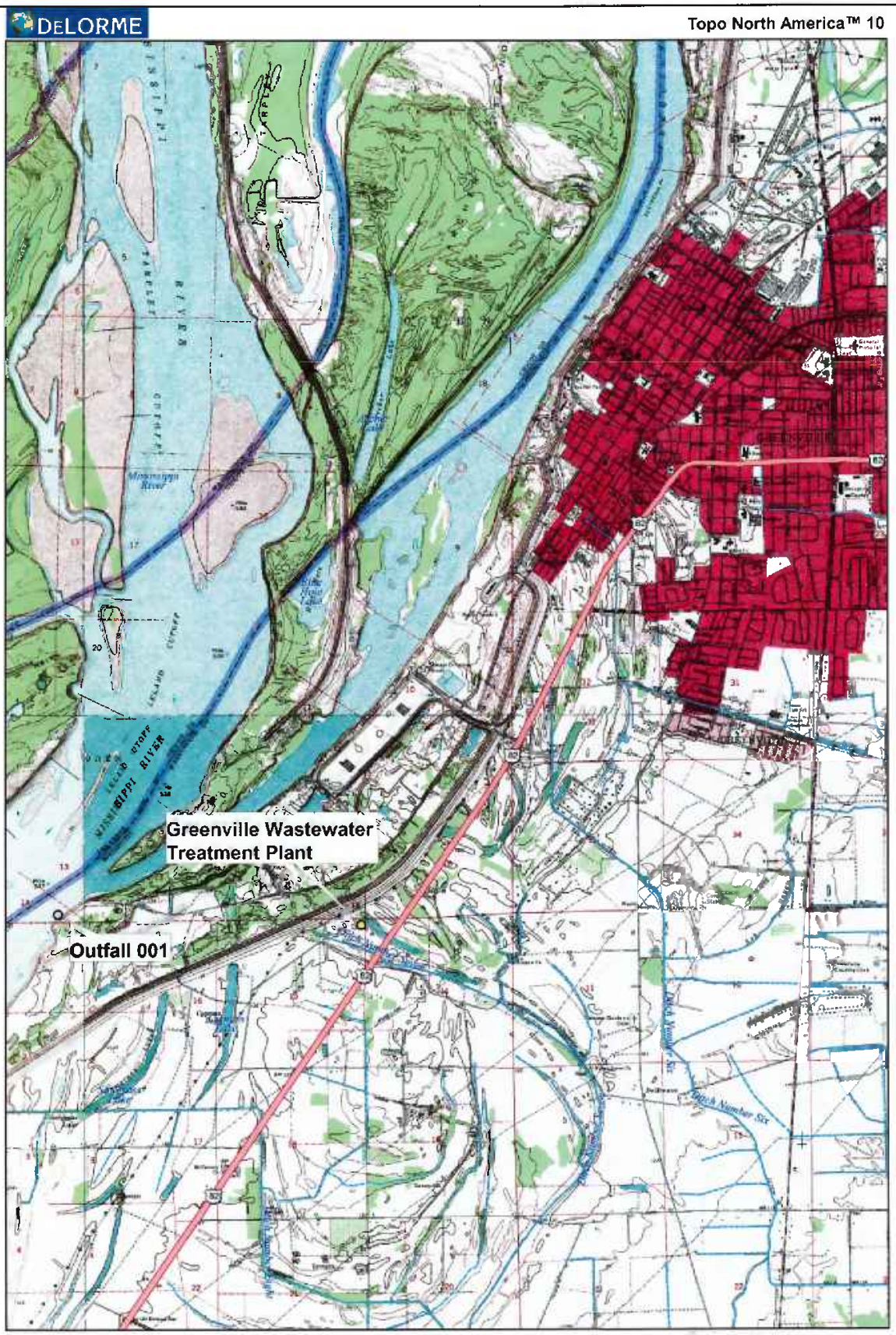
    On January 30, 2020, MDEQ inspected the site and subsequently instructed MANCHAC to discontinue land application work until the site was dryer and the biosolids could be properly incorporated into the surficial soils as required in MDEQ's approval plan. This action temporarily forced HEMPHILL to cease basin cleaning activities. Going forward, HEMPHILL plans to install piping to the sludge lagoons and can then pump the biosolid to either the sludge lagoons as originally planned under the grit chamber project or to the biosolids land application site.

- End of Section -

FIGURES

FIGURE 1

VICINITY MAP



W. L. BURLE
ENGINEERS, P.A.
111 South Walnut Street
Greenville, MS 38701

FIGURE 1
VICINITY MAP

MONTHLY PROGRESS REPORT
DECEMBER 2019 AND JANUARY 2020
WASTEWATER TREATMENT PLANT REPAIR PROJECT
GREENVILLE, MISSISSIPPI

QUADRANGLE LOCATION

Proj. No.	02500-1-0419
CAD File No.	GWWTP Vicinity.Dwg
Drawn By: MJJ	Dwg. No. 1
Chkd. By: WLB, JR.	
Date: 2/3/2020	
Scale: 1"=1 MILE	

FIGURE 2

WWTP MAP NO. 1

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ENGINEERS, P.A.
111 South Walnut Street
Greenville, MS 38701

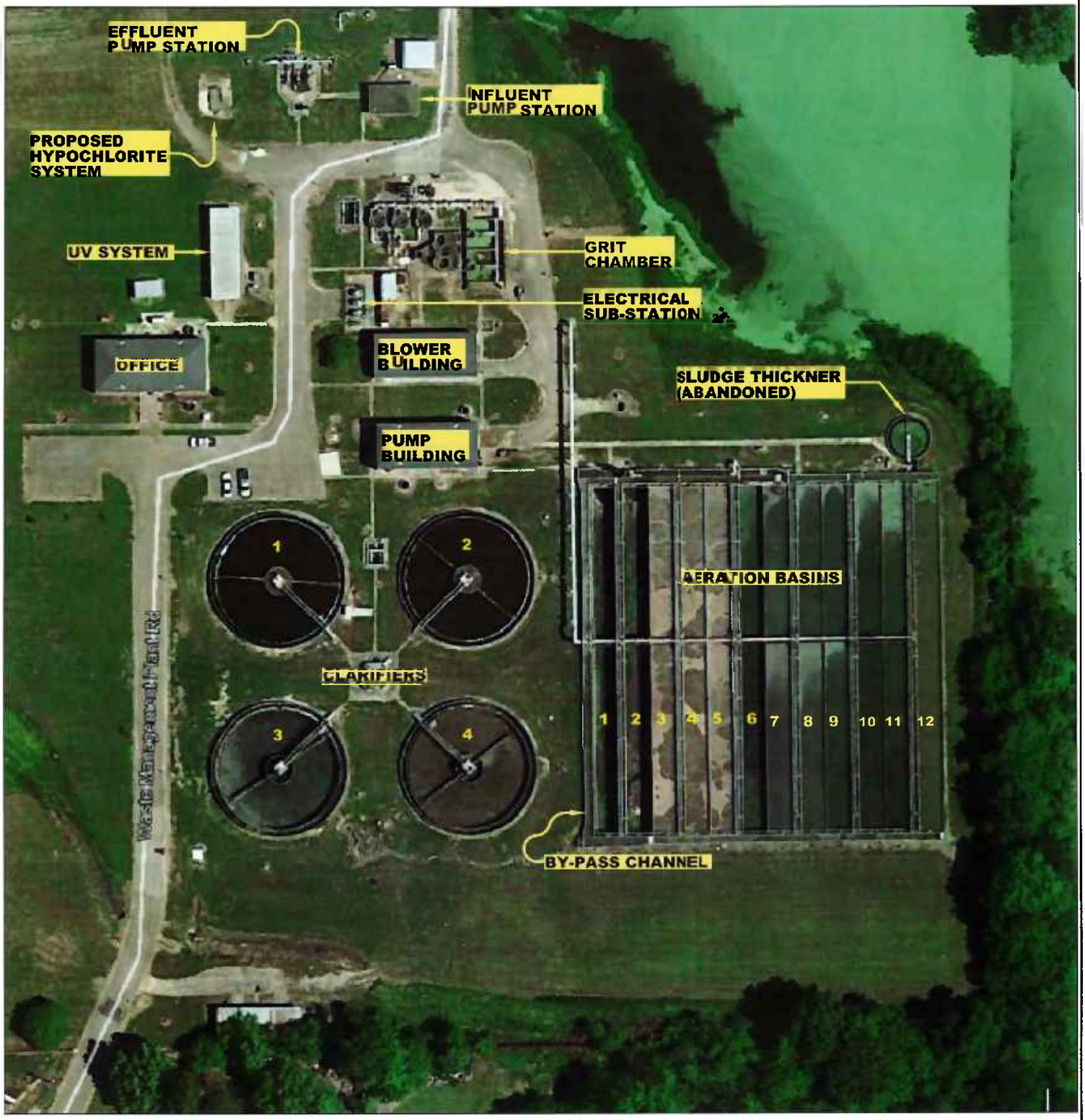
MONTHLY PROGRESS REPORT
DECEMBER 2019 AND JANUARY 2020
WASTEWATER TREATMENT PLANT
REPAIR PROJECT
GREENVILLE, MISSISSIPPI

FIGURE 2
WASTEWATER
TREATMENT
PLANT MAP
NUMBER 1

Proj. No.	02500-1-0419
CAD File No.	GreenvilleWWTP Layout.dwg
Drawn By: MJJ	Dwg. No. 2
Chkd. By: WLB, Jr.	
Date: 2/3/2020	
Scale: N.T.S.	

FIGURE 3

WWTP MAP NO. 2

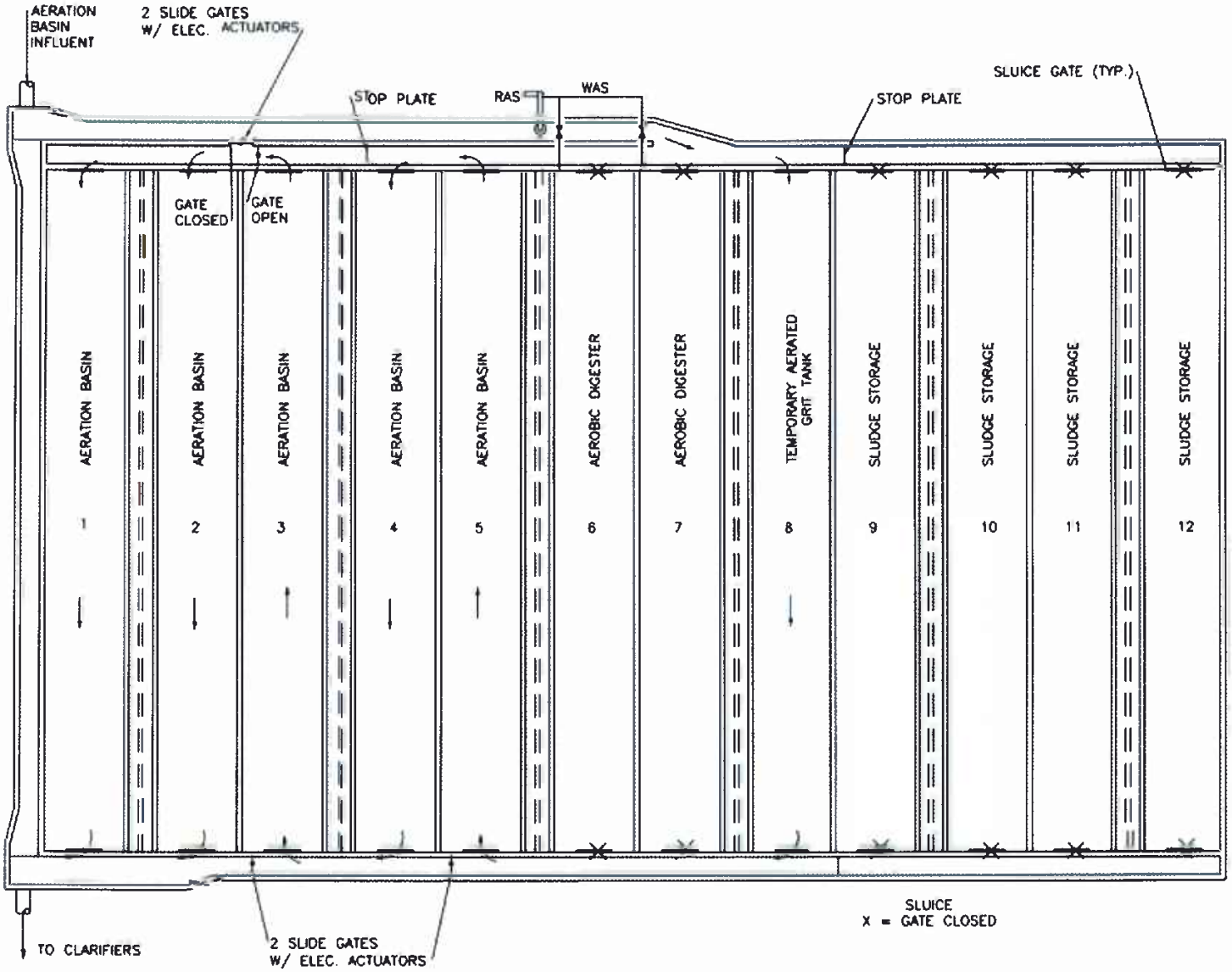


N

W. L. BURLE ENGINEERS, P.A. 111 South Walnut Street Greenville, MS 38701	MONTHLY PROGRESS REPORT DECEMBER 2019 AND JANUARY 2020 WASTEWATER TREATMENT PLANT REPAIR PROJECT GREENVILLE, MISSISSIPPI	FIGURE 3 WASTEWATER TREATMENT PLANT MAP NUMBER 2	Proj. No. 02500-1-0419 CAD File No. GreenvilleWWTP Layout.dwg Drawn By: MJJ Chkd. By: WLB, Jr. Date: 2/3/2020 Scale: N.T.S. Dwg. No. 3

FIGURE 4

AERATION BASIN RE-CONFIGURATION PLAN



GREENVILLE WWTP
AERATION BASIN OPERATION
NORMAL FLOW

N

W. L. BURLE
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111 South Walnut Street
Greenville, MS 38701

MONTHLY PROGRESS REPORT
DECEMBER 2019 AND JANUARY 2020
WASTEWATER TREATMENT PLANT
REPAIR PROJECT
GREENVILLE, MISSISSIPPI

FIGURE 4
WASTEWATER
TREATMENT
PLANT MAP
NUMBER 3

Proj. No.	02500-1-0419
CAD File No.	GreenvilleWWTP Layout.dwg
Drawn By: MJJ	Dwg. No. 3
Chkd. By: WLB, Jr.	
Date: 2/3/2020	
Scale: N.T.S.	

APPENDICES

APPENDIX A

WWTP EFFLUENT DATA (DECEMBER 2019 AND JANUARY 2020)

Greenville Daily WWTP Report

	MGD	Effluent (ppm)				colonies/100mL
	Effluent flow	BOD	TSS	Total N	Chlorine Residual	Total Fecal Coliform
Sunday, December 08, 2019	4.7		32	17.5	0.1	> 60 mil
Monday, December 09, 2019	4.8	88	24		0.05	> 60 mil
Tuesday, December 10, 2019	9.8	111	84		0.21	> 60 mil
Wednesday, December 11, 2019	7.7	66	62		0.09	> 60 mil
Thursday, December 12, 2019	7.1	68	40		0.05	> 60 mil
Friday, December 13, 2019	5.6	120	34		0.02	> 60 mil
Saturday, December 14, 2019	5.7	52	60		0.04	> 60 mil
Sunday, December 15, 2019	3	54	58		0.04	>60mil
Monday, December 16, 2019	19.9	70	72		0	>60mil
Tuesday, December 17, 2019	15.6	33	86		0	>60mil
Wednesday, December 18, 2019	10.3	82	82		0.1	500000
Thursday, December 19, 2019	6.6	51	26		0.07	2200000
Friday, December 20, 2019	7.1	90	312		0.06	21333333
Saturday, December 21, 2019	6.4	13	42		0.07	1100000
Sunday, December 22, 2019	13.7	5	46		0.02	>60mil
Monday, December 23, 2019	12.9	114	158		0.08	4000000
Tuesday, December 24, 2019	11	47	52		0.04	
Wednesday, December 25, 2019	4.3	43	100		0.1	>60mil
Thursday, December 26, 2019	2.7	56	12		0.09	650000
Friday, December 27, 2019	6.1	33	36		0.07	150000
Saturday, December 28, 2019	8.4	54	46		0.07	400000
Sunday, December 29, 2019	15.1	38	28		0	1670000
Monday, December 30, 2019	12.5	71	34		0.25	0
Tuesday, December 31, 2019	10.9	70	24		0.15	>60000000
Wednesday, January 01, 2020	8.7	60.43	18		0.03	400000
Thursday, January 02, 2020	28.9	60.43	50		0.02	100000
Friday, January 03, 2020	24.9	36.08	20		0.03	
Saturday, January 04, 2020	11.6	29.54	40		0	300000
Sunday, January 05, 2020	9.9	50.32	36		0.01	400000
Monday, January 06, 2020	9.2	40.18	38		0.03	0
Tuesday, January 07, 2020	6	28.18	16		0.04	500000

Wednesday, January 08, 2020	4.3		43.01	8		0.94		0
Thursday, January 09, 2020	6.16		9	4		0.47		1600000
Friday, January 10, 2020	11.53		24	26		0.02		100000
Saturday, January 11, 2020	11.2		22	28		0.04		150000
Sunday, January 12, 2020	8		32	22		0.47		0
Monday, January 13, 2020	21		25	24		0.09		50000
Tuesday, January 14, 2020	21.2		22	38		0.02		
Wednesday, January 15, 2020	24.4		115	32		0.09		
Thursday, January 16, 2020	16.5		41	22		0.15		0
Friday, January 17, 2020	18.7		38	18		0.01		0
Saturday, January 18, 2020	18.9		85	106		0		165000
Sunday, January 19, 2020	14.77		26.27	26		0		500000
Monday, January 20, 2020	9.62		39.51	42		0		200000
Tuesday, January 21, 2020	10.9		63	16		0.24		10000
Wednesday,January 22, 2020	20.2		123	88		0.01		20000
Thursday, January 23, 2020	20.9		77	40		0.08		50000
Friday, January 24, 2020	14.8		150	26		0.08		20000
Saturday, January 25, 2020	22.2		106	36		0.04		10000
Sunday, January 26, 2020	16.3		42	18		0.26		70000
Monday, January 27, 2020	9.4		53	20		0.6		10000
Tuesday, January 28, 2020	15.3		56	14		0.74		10000
Wednesday, January 29, 2020	22.7		53	56		0.38		20000
Thursday, January 30, 2020	13.5		33	30		0.35		500000
Friday, January 31, 2020	10.9		154	98		0.34		25000
Jun. 2020 Total	462.58		xxxx	xxxx	xxxx	xxxx		xxxx
Jun 2020 Average	14.92194		56.03065	34.06452	#DIV/0!	0.18		#NUM!
Jan.2020 Max	28.9		154	106	0	0.94		1600000
Jan.2020 Min	4.3		9	4	0	0		0
Saturday, February 01, 2020	12.5			56		0.17		100000
Sunday, February 02, 2020	20.6			82		0.06		15000
Monday, February 03, 2020	11.7			66		0.75		100000
Tuesday, February 04, 2020	13.8			70		0.19		35000
Wednesday, February 05, 2020				42		0.04		
Thursday, February 06, 2020								
Friday, February 07, 2020								
Saturday, February 08, 2020								

William L. Burle, Jr.

From: Danielle Butler <dbutler@manchacgroup.com>
Sent: Wednesday, February 05, 2020 4:46 PM
To: William L. Burle, Jr.
Subject: RE: Full spread sheet for the AO monthly

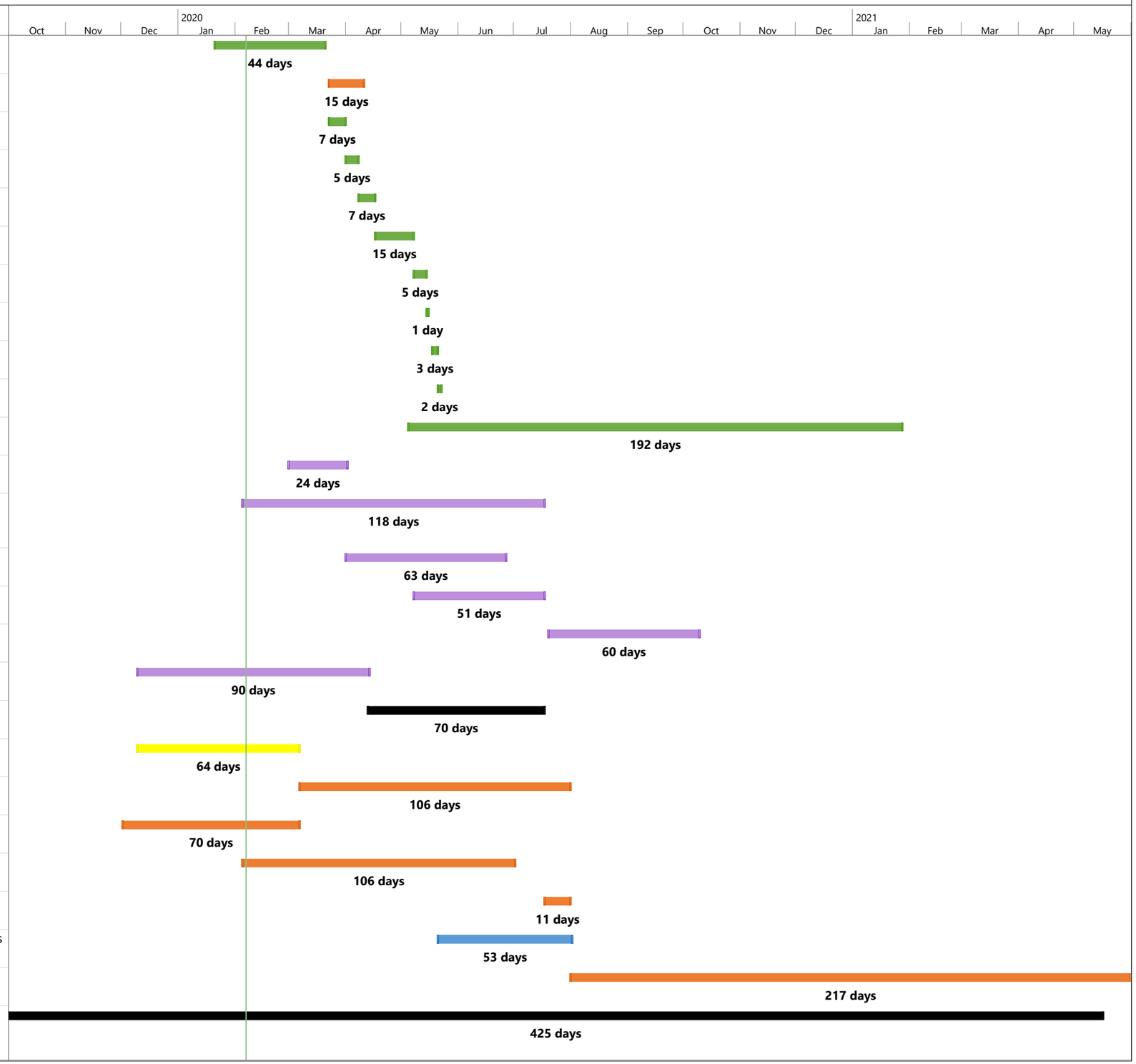
pH values

Dec-19		Jan-20	
1	7.6	1	7.4
2	7.5	2	7.5
3	7.4	3	7.6
4	7.4	4	7.6
5	7.5	5	7.6
6	7.4	6	7.6
7	7.6	7	7.6
8	7.3	8	7.6
9	7.4	9	7.6
10	7.5	10	7.5
11	7.3	11	6.9
12	7.3	12	7.4
13	7.1	13	7.5
14	7.1	14	7.5
15	7.1	15	7.4
16	7.3	16	7.5
17	7.5	17	7.2
18	7.4	18	7.5
19	7.4	19	7.5
20	7.5	20	7.6
21	7.5	21	7.6
22	7.6	22	7.5
23	7.3	23	7.2
24	7.3	24	7.5
25	7.2	25	7.6
26	7.5	26	7.5
27	7.6	27	7.6
28	7.6	28	7.5
29	7.6	29	7.4
30	7.6	30	7.2
31	7.3	31	7.5

From: William L. Burle, Jr. <wlb@wlburle.com>
Sent: Wednesday, February 05, 2020 4:14 PM

APPENDIX B

EMERGENCY WWTP REPAIR PROJECT CONSTRUCTION SCHEDULE

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

ID	Task Name	Duration	Start	Finish	Firm
1	Aeration Basins 2-7 Cleaning	44 days	Mon 1/20/20	Fri 3/20/20	Hemphill
2	Aeration Basin 8 Cleaning	15 days	Mon 3/23/20	Fri 4/10/20	Manchac
3	Bypass Channel Cleaning	7 days	Mon 3/23/20	Tue 3/31/20	Hemphill
4	Structural Repair for Aeration Basin 1 Slide Gate	5 days	Wed 4/1/20	Tue 4/7/20	Hemphill
5	Aeration Basin 1 Cleaning	7 days	Wed 4/8/20	Thu 4/16/20	Hemphill
6	Clean Clarifiers	15 days	Fri 4/17/20	Thu 5/7/20	Hemphill
7	Internal Gravity, CCTV, and Gravity Sewer Cleaning	5 days	Fri 5/8/20	Thu 5/14/20	Hemphill
8	Clean Process Lift Station	1 day	Fri 5/15/20	Fri 5/15/20	Hemphill
9	Clean UV System	3 days	Mon 5/18/20	Wed 5/20/20	Hemphill
10	Effluent Pump Station	2 days	Thu 5/21/20	Fri 5/22/20	Hemphill
11	Grit Chamber Reconstruction	192 days	Tue 5/5/20	Wed 1/27/21	Hemphill
12	Barrack Repair	24 days	Sun 3/1/20	Wed 4/1/20	I.S. Inc.
13	Sluice Gates/Slide Gate/Stop Plate Order/Delivery/Installation	118 days	Wed 2/5/20	Fri 7/17/20	I.S. Inc.
14	Exercising Sluice Gates (Total 11 Gates)	63 days	Wed 4/1/20	Fri 6/26/20	I.S. Inc.
15	Clarifier 1, 2 and 4 Repairs	51 days	Fri 5/8/20	Fri 7/17/20	I.S. Inc.
16	Clarifier 3 Repair	60 days	Mon 7/20/20	Fri 10/9/20	I.S. Inc.
17	WAS Pump Order/Delivery/Installation	90 days	Tue 12/10/19	Mon 4/13/20	I.S. Inc.
18	WAS Sewer Cleaning (If Needed)	70 days	Mon 4/13/20	Fri 7/17/20	To Be Determined
19	Hypochlorite Disinfection System Construction	64 days	Tue 12/10/19	Fri 3/6/20	Avis
20	Hypochlorite Disinfection System Operation	106 days	Sat 3/7/20	Fri 7/31/20	Manchac
21	Chlorine Tablet System	70 days	Mon 12/2/19	Fri 3/6/20	Manchac
22	Aeration Basin Diffuser Order/Delivery/Replacement	106 days	Wed 2/5/20	Wed 7/1/20	Manchac
23	Biomass Generation	11 days	Sat 7/18/20	Fri 7/31/20	Manchac
24	UV Disinfection System Repair	53 days	Thu 5/21/20	Sat 8/1/20	Trojan Technologies
25	WWTP with UV System Operational	217 days	Sat 8/1/20	Mon 5/31/21	Manchac
26	Sludge Lagoon #2 Cleaning/Disposal Design/Bid/Construction	425 days	Tue 10/1/19	Sun 5/16/21	To Be Determined