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2021 Repair Sequencing | April 7, 2021

Persigo Wastewater Treatment Plant

WJE PROJECT NO. 2019.3776.2

TO Kirsten Armbruster
City of Grand Junction, Public Works

FROM Terry McGovern and Adrienne Larson
Wiss Janney Elstner Associates, Inc.

It is our understanding that the City of Grand Junction (CGJ) intends to bid several of the repair scopes which WJE developed in 2020 as one large project. Specifically, we understand that the repairs to the Flow Equalization Basin (FEB, Structure 4), and the Large Repairs, including the Anaerobic Digester (Structure 3), Primary Clarifier (Structure 5), and Sludge Processing Unit (Structure 6) will all be bid as one project.

In a memorandum dated December 23, 2020, WJE provided our preliminary estimated durations for required shutdowns at each structure included as part of the Large Item repair scope (attached). These durations included our estimate for both shortest anticipated duration (should the CGJ include a timeline request for the structures as part of the bidding), and an anticipated duration assuming the bidding does not hold the contractor to specific overall timelines. However, it is our understanding that due to process restrictions of the plant, the work on all the structures listed above cannot all be completed at the same time, and therefore there will be necessary transition time between repairs to different structures.

The information below is provided for consideration by the CGJ, and will eventually be incorporated into the bidding process for the combined project by CGJ in a contract format. It is our understanding that targeted start of construction is late summer 2021 to accommodate typical low flow season for the plant.

WORK RESTRICTIONS

Based on our conversations in the development of the repair documents, it is our understanding that the following restrictions will need to be followed when sequencing the work.

- FEB North Wall Work CANNOT be done at the same time as the Primary Clarifiers.
- Only one Primary Clarifier can be shut down at a time.
- Blending tank cannot be shut down November 15th – April 30th.
- There are no restrictions as to when the work with the Anaerobic Digester panels can be completed.
- During Anaerobic Digester repairs Owner must be provide with access through at least one door.

SEQUENCING OPTION FOR CRITICAL PATH ITEMS

1. Transition 1 - Project Start
    a. Take FEB out of service. (Anticipated 15 calendar days for CGJ - can be completed prior to notice to proceed start date)
    b. Contractor mobilizes and stages into FEB Cell 2.
2. Repair Work following Transition 1

   i. Complete FEB North Wall demolition and replacement (and south wall demolition depending on scope)
      1) Maximum 98 calendar days allowed per CGJ.
3. Transition 2 (Anticipated 7 calendar days for CGJ)
   a. Return FEB Cell 1 to service.
   b. Transition Primary Clarifiers to allow No. 1 to be shut down, drained and cleaned.
4. Repair Work following Transition 2
   i. Complete Primary Clarifier No. 1 dome removal/salvage and coating installation.
   ii. Maximum 98 calendar days allowed per
5. Transition 3 (Anticipated 7 calendar days for CGJ)
   a. Switch process from Primary Clarifier No. 2 to No. 1.
   b. Drain and clean Primary Clarifier No. 2.
   c. Repair Work following Transition 3
      i. Complete Primary Clarifier No. 2 dome removal/salvage and coating installation.
      ii. Maximum 98 calendar days allowed per CGJ.
6. Transition 4 (Anticipated 14 calendar days for CGJ)
   a. Return Primary Clarifier No. 2 to service.
   b. Take Sludge Processing Unit blending tank offline.
   c. Repair Work following Transition 4
      i. Complete coating and connection repairs in the Sludge Processing Building blending tank.
      ii. Maximum 70 calendar days allowed per CGJ.
7. Transition 5 - Project End
   a. Return Sludge Processing Building blending tank to service.

We have summarized this information in Table 1.

ADDITIONAL WORK NOT ON CRITICAL PATH

The following work can be completed at any time during the overall project schedule, which is dictated by the critical path items above.

1. Anaerobic Digester wall panel repairs.
2. FEB South Wall repairs.
3. Primary Clarifier No. 1 and No. 2 grate replacement, guardrail installation, and misc. items outside of the process tank.

Table 1. Project Sequencing Duration Summary (Calendar Days/Weeks)

Activity Description	CGJ Duration for Shutdown and Cleaning	Max Allowable Repair Duration
Transition 1 - FEB		
Take FEB out of service/drain/clean (completed prior to start)	15 days	NA
Complete FEB North Wall repairs	NA	14 weeks
Transition 2 - Primary Clarifier No. 1		
Return FEB Cell 1 to service	7 days	NA
Take Clarifier No. 1 out of service/drain/clean		
Primary Clarifier No. 1 Coating Walls/Dome Removal	NA	10 weeks
Primary Clarifier No. 1 Coating on Slabs	NA	4 weeks
Transition 3 - Primary Clarifier No. 2		
Return Clarifier No. 1 to service	7 days	NA
Take Clarifier No. 2 out of service/drain/clean		
Primary Clarifier No. 2 Coating Walls/Dome Removal	NA	10 weeks
Primary Clarifier No 2 Coating on Slabs	NA	4 weeks
Transition 4 - Blending Tank		
Return Clarifier No. 2 to service	14 days	NA
Take Sludge Processing Unit blending tank out of service		
Sludge Processing Unit blending tank repairs	NA	10 weeks
Transition 5 - Normal Operation		
Sub-Total Duration	3 weeks	52 weeks
Total Duration	55 weeks	