*Start Prep Date:___/___/_____Initial____ Page 1/4
*Stop Prep or Response Date:___/___/_____Initial____

Towamencin Municipal Authority
High Flow Management Plan

Plant High Flow Preparedness
And Alarm Response
Guidelines
Revised 8/23/2019

The intent of this procedure is to reduce or stop the possibility of a wastewater surcharge, discharge, or spill from the collection system or WWTP. This is achieved by increasing flow throughput in the WWTP during high flows attributable to localized flooding events, but without causing flooding damage within the plant.

Heavy rainfall events of one inch or more in short time frames, such as one to four hours, have, in the past, severely impacted the WWTP and collection system. When we have prepared ahead of time and responded to alarms to make sure our preparations are correct, the WWTP has not had process spills.

This plan is set up in two levels:

1. Preparedness: When high flows are anticipated due to wet weather.

    a. If a high flow is anticipated or when a National Weather Service announcement of a flood watch or warning for the Montgomery County area, preparedness measures should be undertaken in advance of the arrival of such a storm event.

2. Response: After the plant high flow alarm has been activated.

    a. The plant high flow alarm will activate due to a higher than normal operating level (greater than 95 inches) in the stage 2 wet well.
    b. The alarm system will cause the enunciator panel in the plant control room to sound.
    c. After two minutes, if the alarm is not acknowledged, the plant alarm dialer will call the plant, the home of the on call employee, and the plant cell phone carried by the on call employee.
    d. Then if the alarm is not acknowledged, the dialer will call the Operations Manager or Maintenance Manager.
    e. NPDES sampling and testing is required when a highflow occurs (total daily flow above 7.3 MGD Parameters are listed in Item 8 of the response checklist.

Plant High Flow Preparedness Checklist Revised 8/23/19

Date:___/___/___ Time: ___:____ Operator:_____

If a high flow is anticipated due to a National Weather Service announcement of a flood watch or warning for the Montgomery County area, preparedness measures should be undertaken in advance of the arrival of such a storm event.

☐ 1. All tanks in both stage 1 and stage 2 that have been taken out of service should be returned to service if at all possible.

☐ 2. Open all pre-aeration tank equalization valves.

☐ 3. **VERIFY that all drains are closed in ALL tanks.**

☐ 4. Stop all in-plant recirculation, stage 1 final t-valves and skimmers.

☐ 5. Shut off the scum wasting pump and scum collectors in the MCC room at the stage 2 sludge handling building.

☐ 6. Test run all raw pumps to verify prime/pumping. Turn all on in the “auto” position. If stage 1 raw pumps were not operating, purge the stage1 wet well, set stage 1 raw pump VFD’s to 100%
NOTE the Gorman Rupp is to be in auto. The Bertha pump is to be in the off position.

☐ 7. Make sure that all (4) comminutors are operating, stage 1 & 2. Open both Stg 2 gates.

☐ 8. The lower holding tank Penn Valley pump should be in the “auto” position.

☐ 9. Confirm that both stage 1 & 2 effluent samplers are operable for flow proportioned sampling.

☐ 10. Make sure the stage 1 chlorine contact chamber valves are open. These valves are down in the gallery of the stage 1 tertiary building.

☐ 11. Note on the white bulletin board outside the control room that the plant has been prepared for high flow.

☐ 12. Make sure that the chatterbox is armed appropriately for calling out for a high flow .

☐ 13. Bypass the Stage 2 utility water Orival strainer

☐ 14. Open the Storm drain valve in driveway near sludge storage (normally closed).

☐

Additional Notes (if needed): _____

Plant High Flow Alarm Response Checklist revised 8/23/2019

Date: ___/___/___ Time: ___:____ Responders:_____/_____

ANY QUESTIONS CONTACT YOUR SUPERVISOR IMMEDIATELY

When the plant high flow alarm has been activated (stage 2 wet well level has exceeded 95 inches), the responders need to make sure all of the procedures in the High Flow Preparedness Checklist (previous page) were carried out. Then all of the Items below need to be checked when completed.

*****ITEMS #1 THROUGH #6 PLEASE FOLLOW IN SEQUENCE*****

☐ 1 Items on the High Flow preparedness Checklist are reviewed and confirmed.

☐ 2 Acknowledge and disarm channel 2 on Chatterbox to discontinue calls for high flow.

☐ 3 Adjust valves on ***ALL*** rotostrainers to fine tune the maximum controlled plant flow through the Preaeration tanks without overflowing (all stage 1 & 2 raw pumps & Bertha temporarily in hand assists in setting rotostrainers if not already running, **then set #7 pump back to auto**).

☐ 4 Stop the auto waste for stage 1 & 2 Activated sludge (control room slide bar on the SCADA computer).

☐ 5 Confirm that both stage 1 & 2 chlorination equipment is operable.

☐ 6 Open both side channel Flocculater gate valves to reduce hydraulic bottleneck, And turn chemicals to off.
(**At 7 mgd-Stage 1 & 2 TURN CHEMICALS OFF)**

☐ 7 NPDES sampling and testing of the effluent is **required** for the parameters of CBOD, Total Suspended Solids, and Ammonia **whenever the high flow plan is used and the daily total flow is at or above 7.3 mgd.** (two 1 liter bottles of composited effluent, both chilled, with one bottle preserved with H2S04 to a pH of < 2.0)

If the combined effluent flow exceeds 10 mgd then:

☐ 8 Have 3 recirc pumps running for both Stage 1 and Stage 2 tricklers

☐ 9 Open the four "auxiliary" sodium bisulfite discharge valves located on the railing at the effluent pump area. This allows for proper de-chlorination if the effluent pump operates. **All six valves need to be opened to force the chemical to all locations.**
(Normal operation should be the two valves at the Effluent weir.)

☐ 10 Open re-seed valve for final sludge in the sludge handling building, make computer adjustments to send final sludge to the stage 2 RAS pit, shut off Ferric and polymer feeds to the floculator tanks.

☐ 11 Make sure that the two effluent discharge pump switches are in the "auto" position.

☐ 12. If the plant is expected to have high flow for more than 2 hours (above 10 MGD combined Stage 1 and Stage 2) the blowers for Aeration tanks are to be turned off to save the solids from being washed out. Also, the RAS t-valves are to be raised to stop all RAS flow and the **stage 2 RAS shear gate is to be closed.*******
Restarted after the total plant flows are below 10MGD combined Stage 1 and Stage2. When blowers off, start #5 blower for LHT mixing. Close the two air valves that feed Stage 1 aeration tanks. One is up in the rotostrainer gallery, the other one is at the corner of the thickner building in front of #5 final settling tank.

☐ 13. Immediately following a high flow event or following 1.0" of rain the Kriebel Road Interceptor needs to be inspected from Valley Forge road to the WWTP and Chatem Village to the Turnpike during daylight hours Any and all SSO's need to be recorded below for proper reporting. Coordinate this inspection with your supervisor or the maintenance supervisor.

If raw pumps 1-4 fail, #8 will automatically replace the failed pump in the auto and remote settings. If raw pump 5, 6, or 7 fails, pump #8 needs to be in auto and local. It will then run off of the Stage 1 level indicator.

Any type of tank leak or plant process or manhole leak is reportable to PA DEP. If this occurs, report it to Matt Detweiler or Ralph Jacoby Immediately. If neither is unavailable, contact PA DEP at 484 250-5900 and inform them of the discharge. Note below the date and time of the occurrence.

*Name of Operator/s who take plant out of high flow mode:_____/_____

Additional Notes, If needed, should be included on the back of this sheet.

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