Sewer Authority Mid-Coastside

Board Presentation

JANUARY 10, 2022

Seymour Ditch in Half Moon Bay, December 13, 2021

Source: https://www.youtube.com/watch?v=GWarwroevFU

Credit: Local resident Steve Maller

Heroes of the Storm

Operations

Gabriel Aguilar
Lead Operator

Keith Harvey
Operator I

George Long
Lead Operator

David Partida
Operator Grade III

Collections

Jose Ahumada
Collections Worker I

Felipe Perciado
Collections Worker I

Tony Young
Collections Worker I

Collections

TJ Hussein
Maintenance Mechanic I

Carlos Mendez
Maintenance Mechanic III

Angelo Rovai
Maintenance Mechanic I

Administration

Tim Costello
Supervisor of Treatment Field Operations

George Evans
Finance Officer

Susan Turbay
Administrative Assistant

Agenda

- Main Topic: Three major storms in late 2021 and their impacts on SAM's operations and infrastructure
- Background – SAM WWTP design capacity
- Three major storms from October to December 2021
  - October 20th – 25th: total rainfall of 11.14"
  - December 12th – 16th: total rainfall of 6.66"
  - December 22nd – 25th: total rainfall of 3.05"
- Recommended measures to better handle future storm events

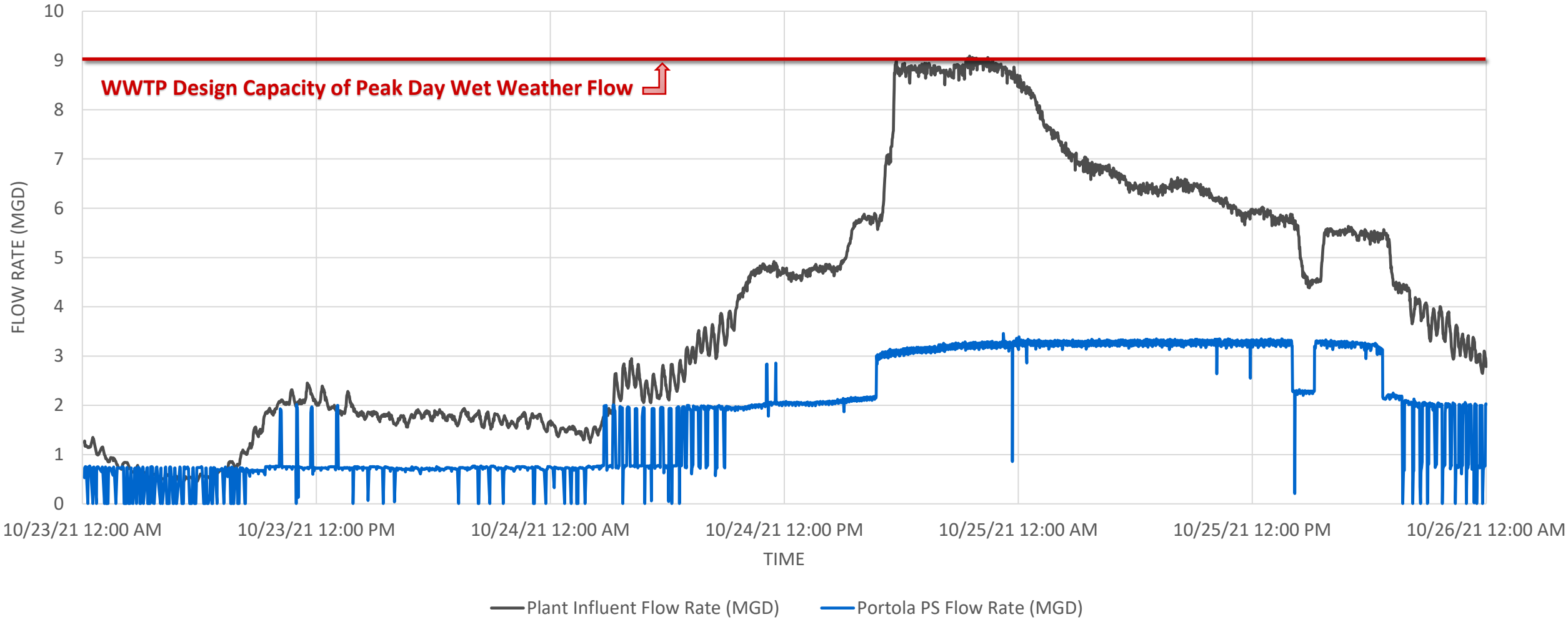
Background

SAM WWTP's design capacity

- Average Daily Dry Weather Flow: 3.69 MGD
- Average Day Maximum Month Flow: 5.0 MGD
- Peak Day Wet Weather Flow: 9.0 MGD
- Peak Hourly Wet Weather Flow: 15.0 MGD

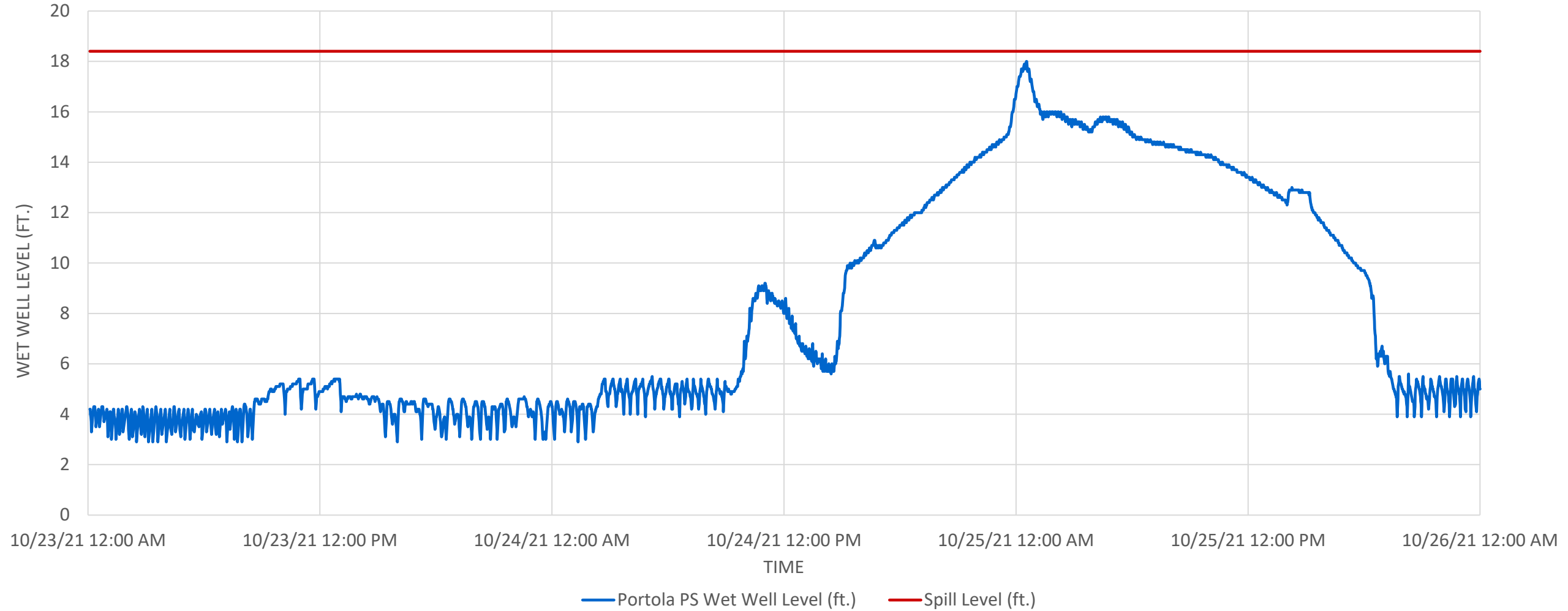
Storm Event October 20 – 25, 2021

- Total Rainfall of 11.14” at WWTP
- Maximum rainfall recorded at 4.94” on October 24, 2021
- Maximum influent flow recorded at 9 MGD at 10:16 pm on October 24, 2021
- All 8 influent pumps were in operation
- Portola Pump Station wet well, as well as the Wet Weather Storage Facility, reached a level of 17.9’, **only 6” away from spill elevation**



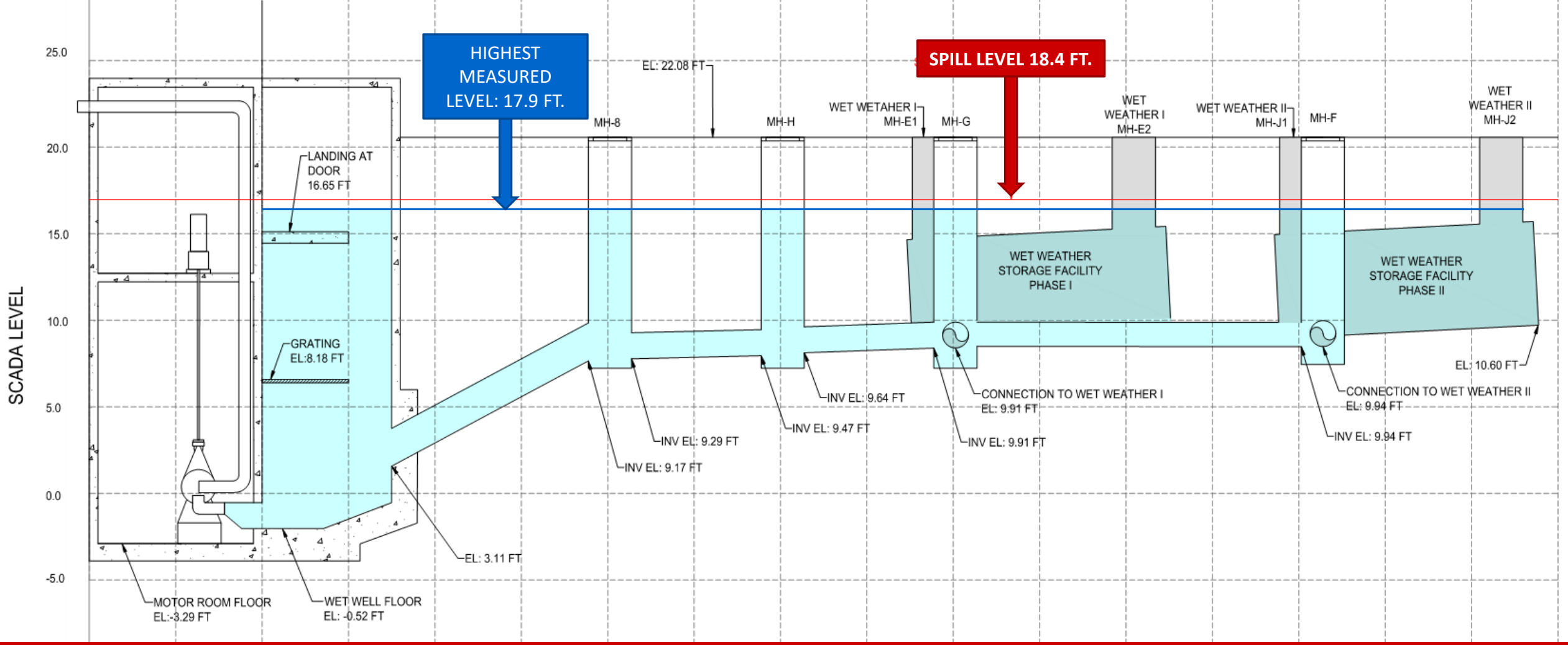
Plant Influent and Portola Pump Station Flow Rate

October 23, 2021 12:00 AM – October 26, 2021 12:00 AM



Portola Pump Station Wet Well Level

October 23, 2021 12:00 AM – October 26, 2021 12:00 AM



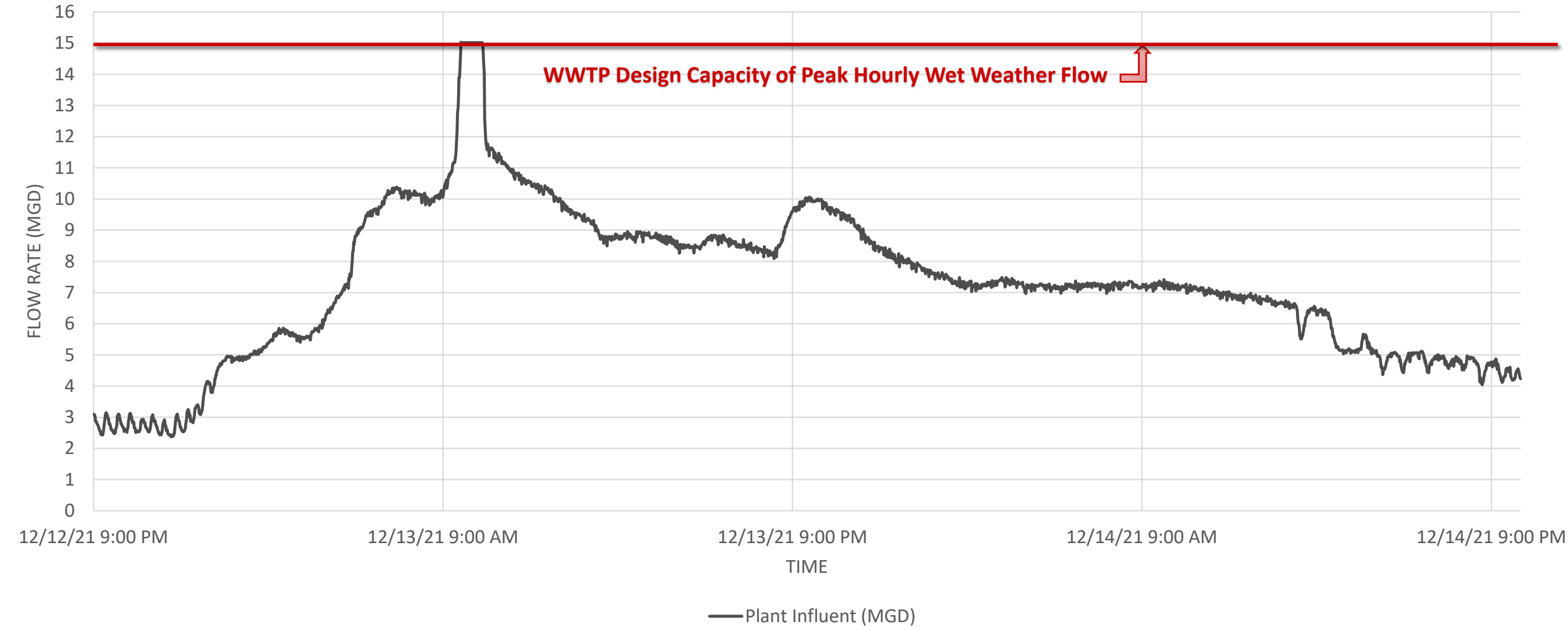
Portola Pump Station and Wet Weather Storage Facility Schematics

Storm Event December 12 – 16, 2021

- Total rainfall of 6.66” at the Plant
- Maximum rainfall recorded at 4.71” on December 13, 2021
- Maximum influent flow recorded at **15 MGD*** for almost 1 hour at 9:37 am on December 13, 2021

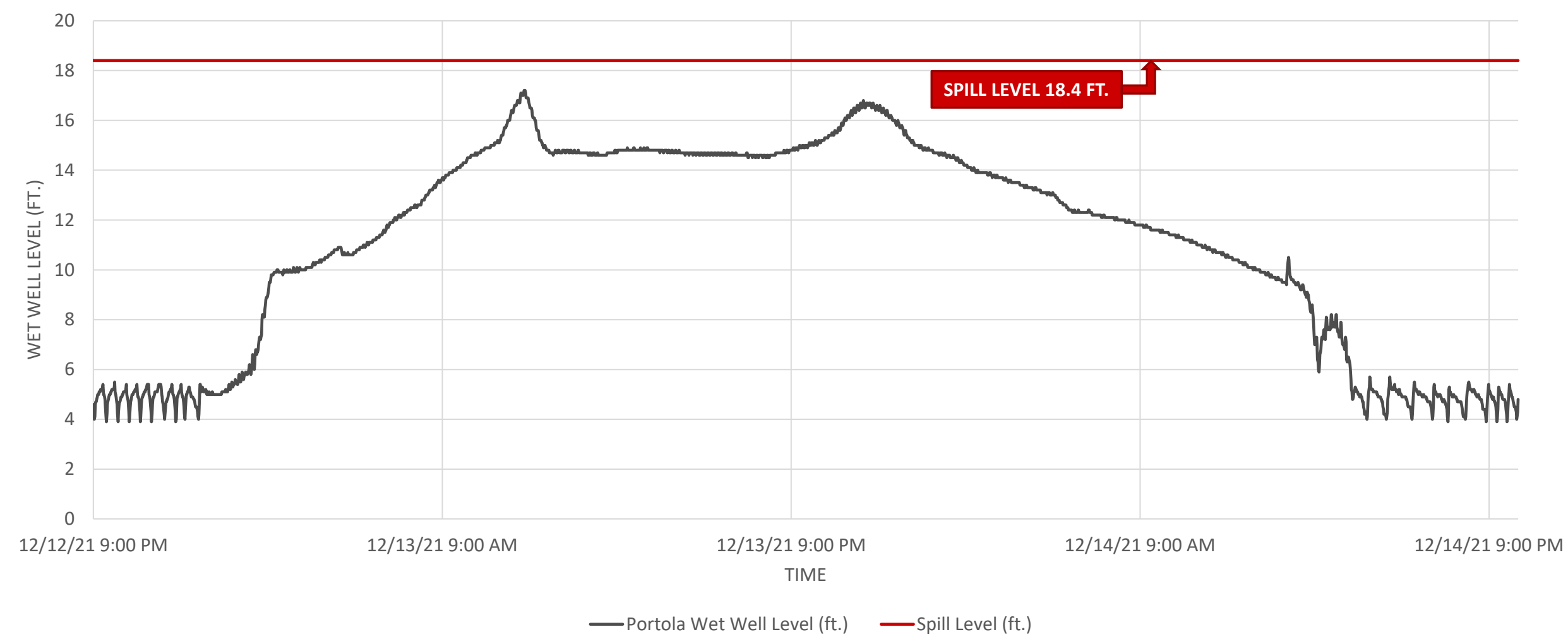
*The influent flow rate was likely to be higher than 15 MGD because the flow sensors are calibrated to measure a maximum of 15 MGD

- Wet Weather Storage Facility reached a level of 17.2 ft. on 11:49 AM on December 13, 2021



SAM WWTP Influent Flow Rate

December 12, 2021 9:00 PM – December 14, 2021 10:00 PM



Portola Pump Station Wet Well Level

December 12, 201 9:00 PM - December 14, 2021 10:00 PM

Storm Impacts on SAM WWTP

- SAM WWTP sustained significant damages from the high influent flow rate caused by the storm, including:
  - Flooding at the Effluent Building
  - Effluent entering into headworks as a result of the flooding
    - SAM staff used a portable pump to pump influent into the primary just in time to prevent further damages
  - Chlorine contact basin being overwhelmed
  - Skimmers completely submerged
  - PLC failures due to short circuit at the digester building

Flooding at Effluent Building

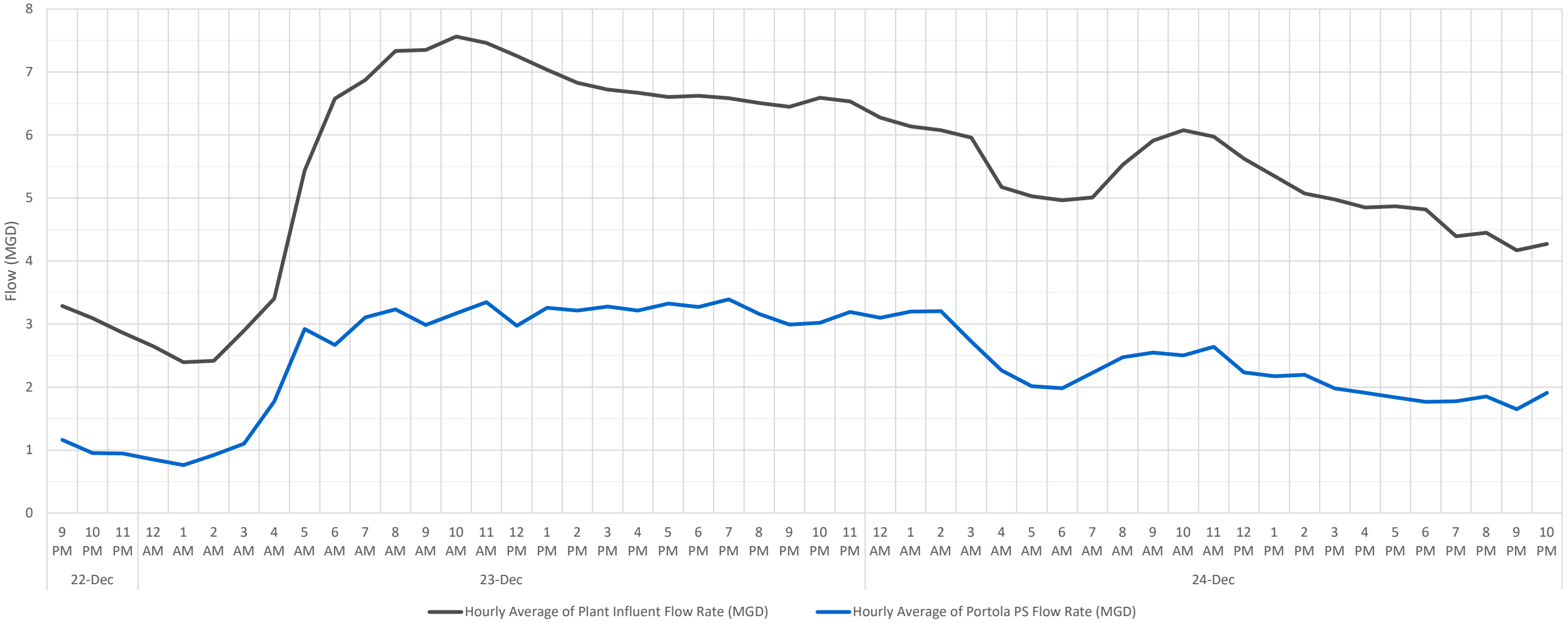
Flooding at manhole outside of Effluent Building

Portable pump used to pump influent into Primary Tanks

Chlorine contact basin being overwhelmed

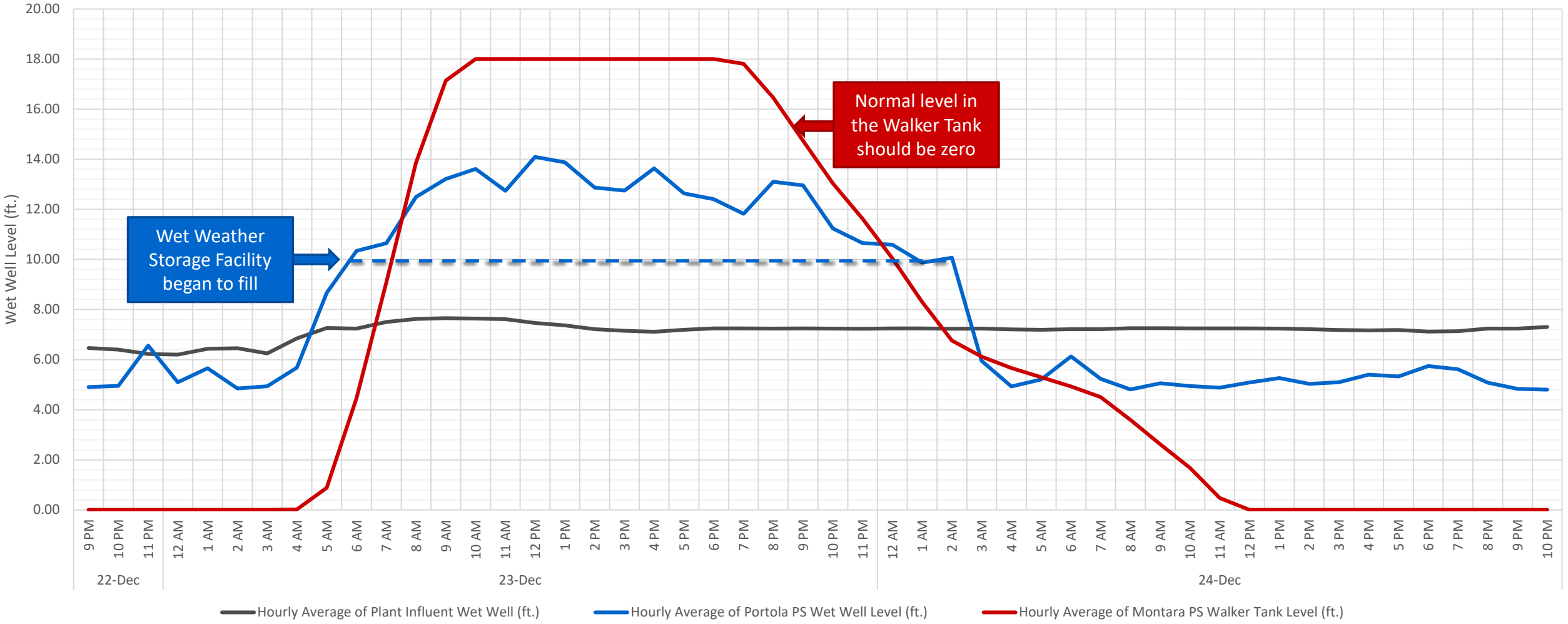
Storm Event December 22 – 25, 2021

- Total rainfall of 3.05” at the Plant
- Maximum rainfall recorded at 1.32” on December 23, 2021
- Maximum influent recorded: 7.7 MGD at 11:00 am on December 23
- The precipitation was more intense in the north side of SAM’s service area compared to the south side
  - The Walker Tank at Montara Pump Station was close to being overwhelmed
  - The level at the manhole outside the Montara Pump Station was 4’ away from overflowing



Plant Influent Flow Rate and Portola Flow Rate

December 22, 2021 9:00 AM – December 24, 2021 10:00 PM



Levels at Plant Influent Wet Well, Portola Pump Station Wet Well, and Montara Pump Station Walker Tank

December 22, 2021 9:00 AM – December 24, 2021 10:00 PM

Manhole outside of Montara Pump Station

The water level is only 4 ft. below the manhole rim.

Recommendations

The following measures are recommended in order for SAM to better handle future storm events and prevent significant impacts on SAM's operations and infrastructure:

- Reducing Inflow and Infiltration (I&I) in all of the Member Agencies' systems
- Installing wet weather storage facility south of SAM's WWTP
- Expanding the existing wet weather storage facility at Portola Pump Station
- Hiring an engineering firm to recommend changes in SAM's facility to adequately address wet weather related issues

QUESTIONS AND COMMENTS?