

# SWIFT Program Update (11:00am)

## Annual Groundwater Stakeholder Forum



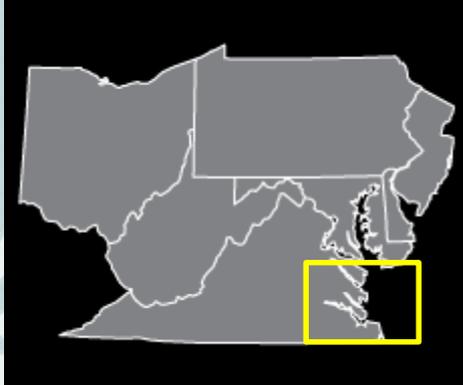
Jamie Heisig-Mitchell | HRSD

Dan Holloway, PG | Jacobs

November 15, 2019

**JACOBS**<sup>®</sup>

**HRSD**



8 MGD

WBTP



12 MGD

YRTP



JRTP  
13 MGD



BHTP



NTP



33 MGD

ABTP



VIP  
38 MGD



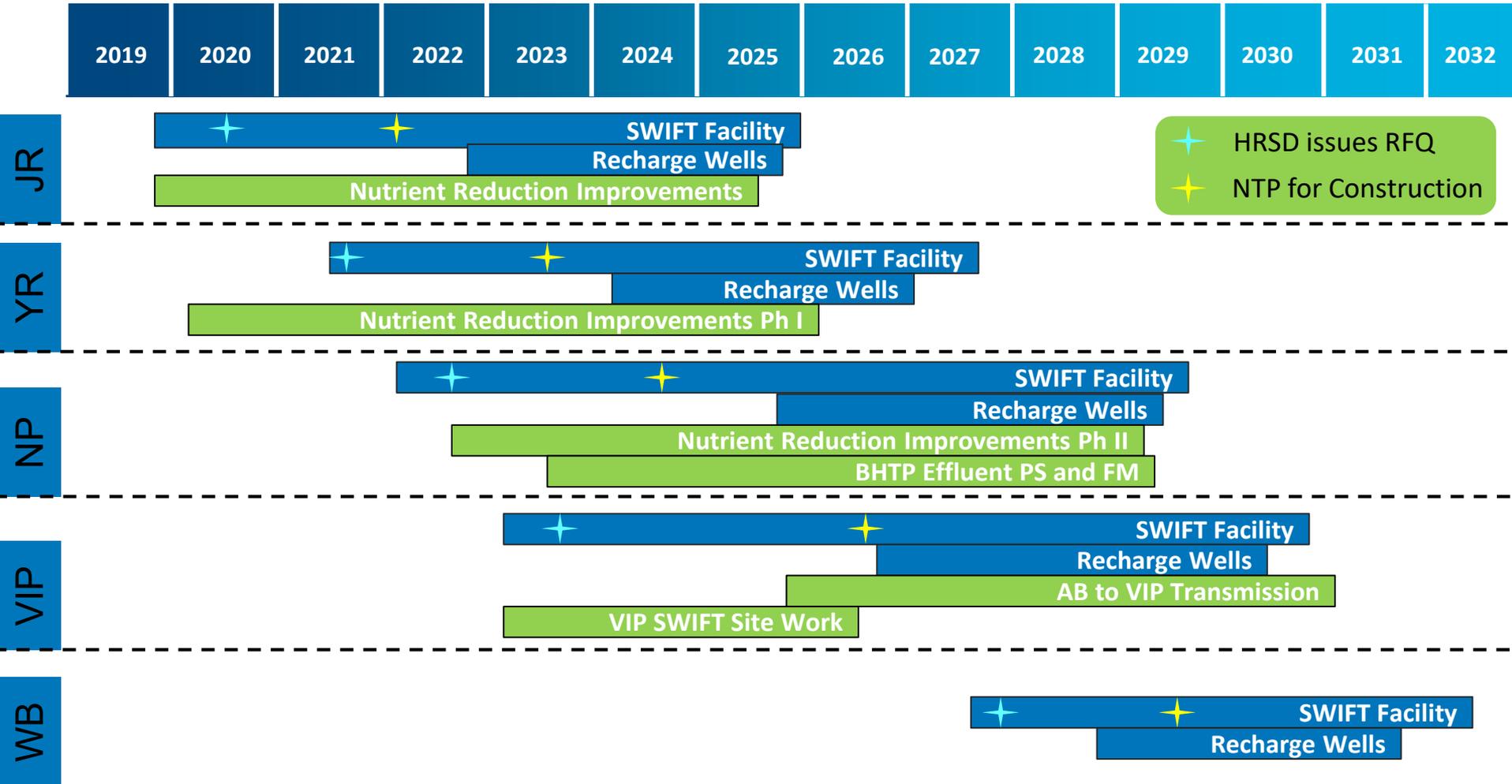
ATLANTIC OCEAN

Total Capacity Goal  
~ 100 MGD





# Current Schedule for Facility Implementation

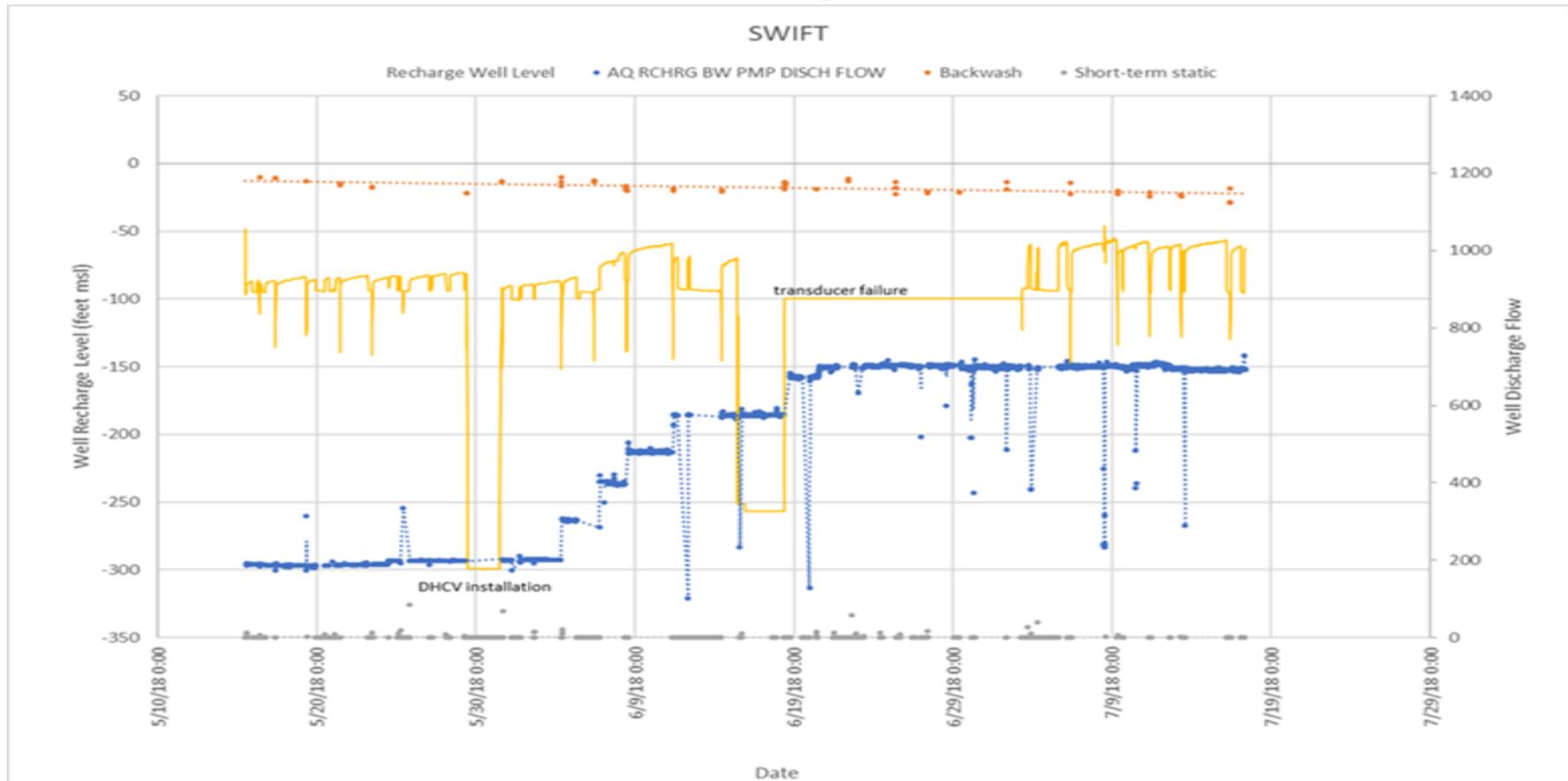




## SWIFT Progress to Date

- Successfully recharged 218 million gallons with approximately 14 months of operation
- Continually optimizing performance at the Research Center
- Potomac Aquifer Recharge Oversight Committee formed through legislative action held first meeting in August
- Potomac Aquifer Recharge Monitoring Laboratory headed by ODU and VT initiated first year of activities and outfitting laboratory space in Hampton
- First full-scale facility permit for the James River facility will be submitted in early 2020

# TW-1 Initial Recharge Water Level and Flow

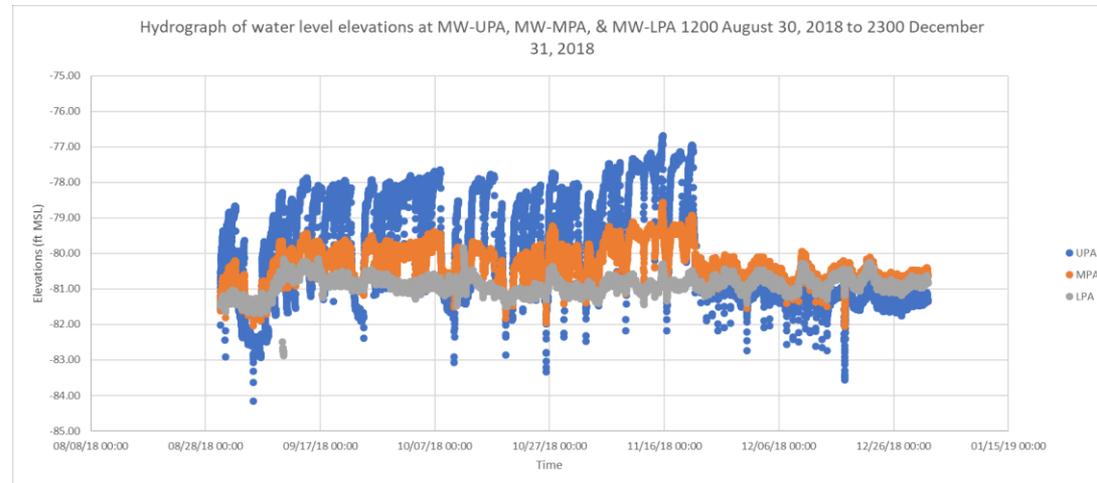
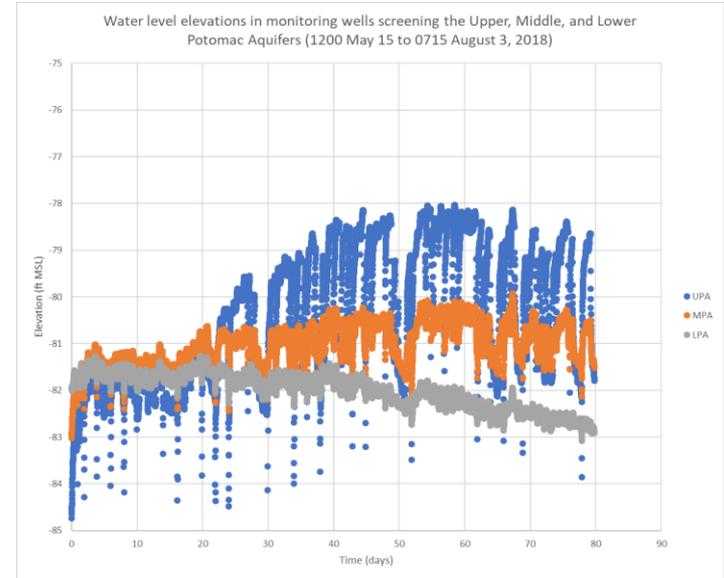


- The data indicates that recharging has not damaged clays in the aquifer.
- A backflushing frequency of three times weekly, keeps TW-1 operating at near peak performance.



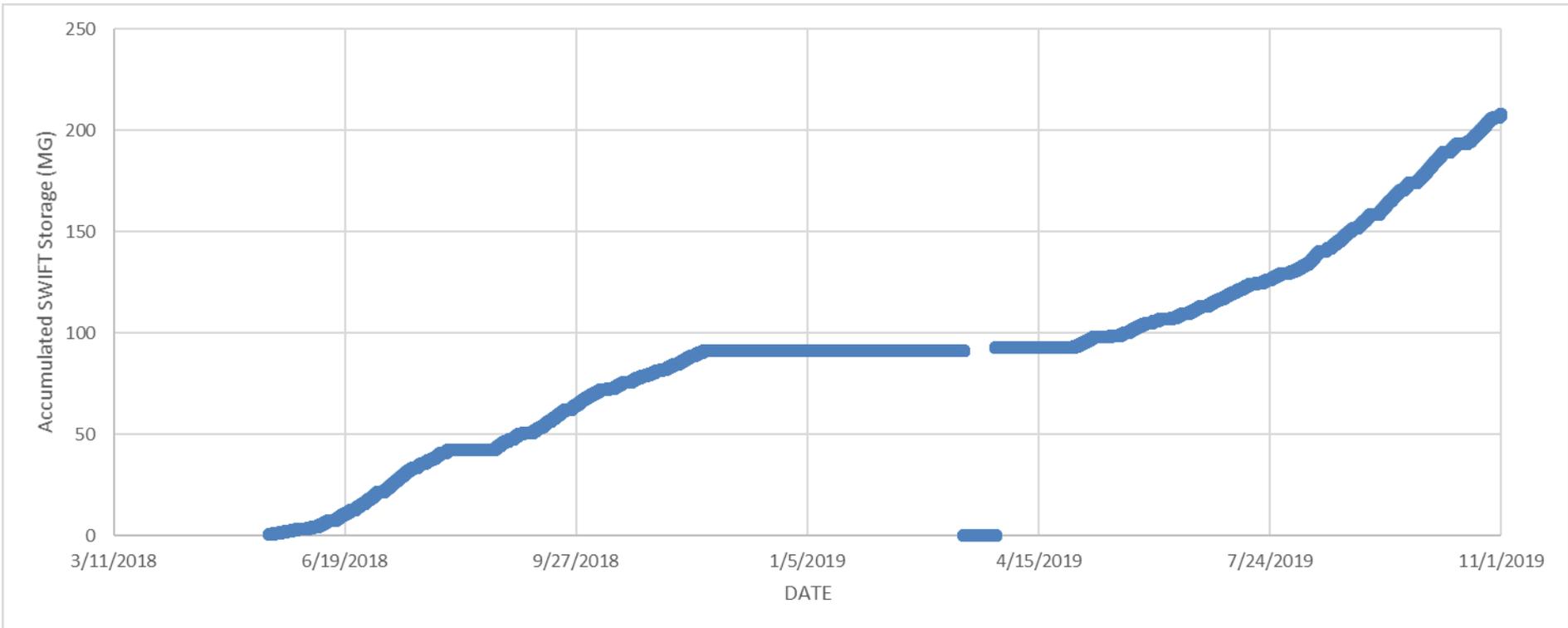
# Water level response to recharging, first 6 months of operation

- Levels in the UPA drew-up by 6 feet during recharge and then dropped 3 feet during the brief periods offline.
- By comparison, elevations in the MPA drew-up 3 feet and dropped by 1.5 feet during brief respites.
- It's hard to tell if elevations in the LPA respond to MAR operations at TW-1, or just follow regional fluctuations in water levels.



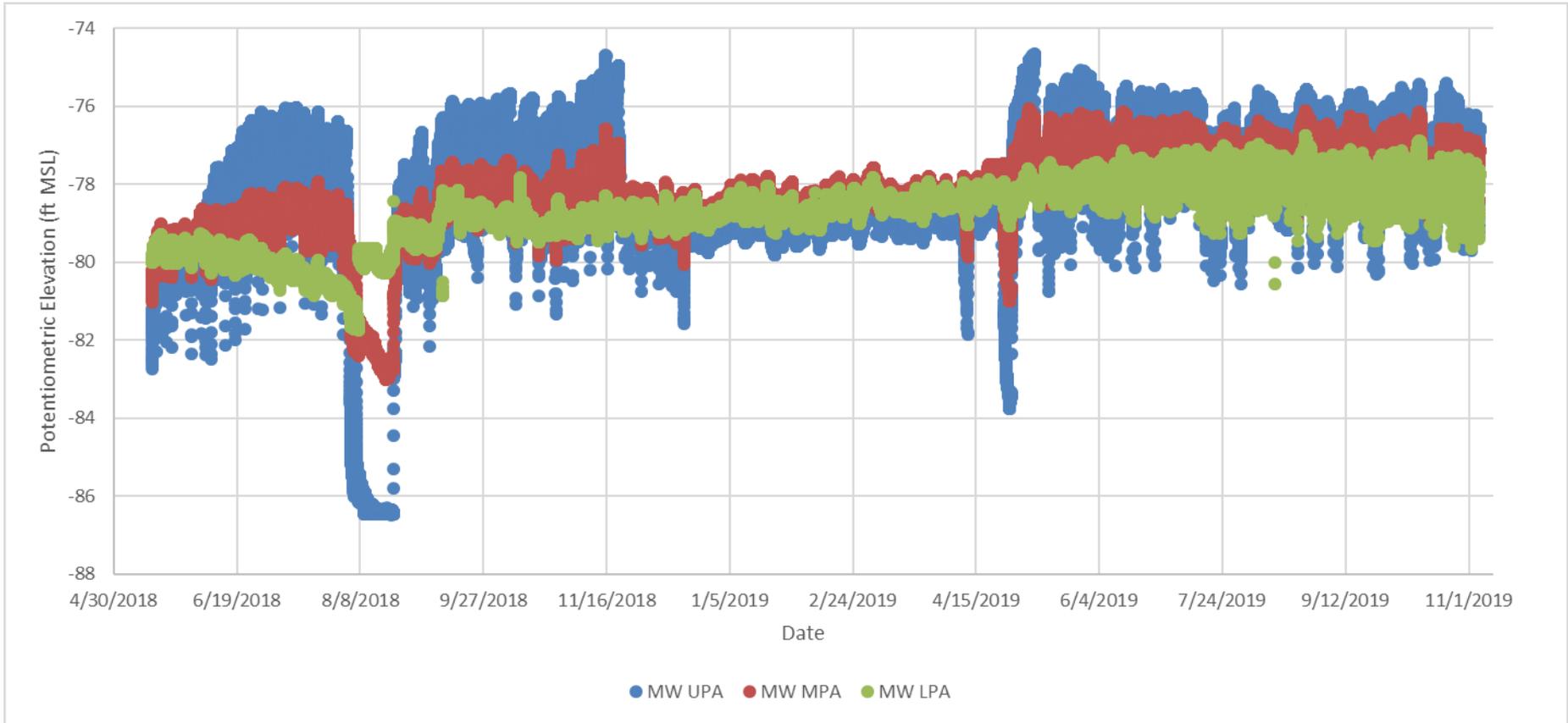


# Cumulative stored SWIFT Water since operation began

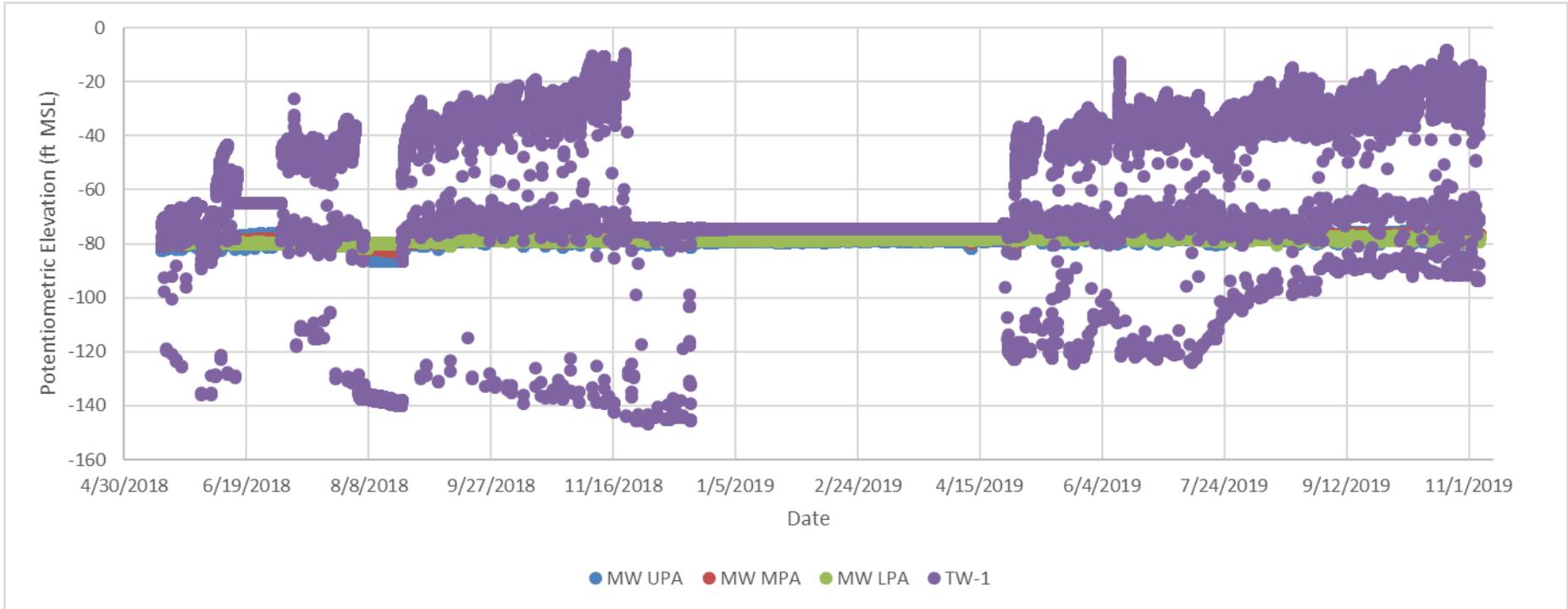




# Water level response to recharging, since start of operation to present



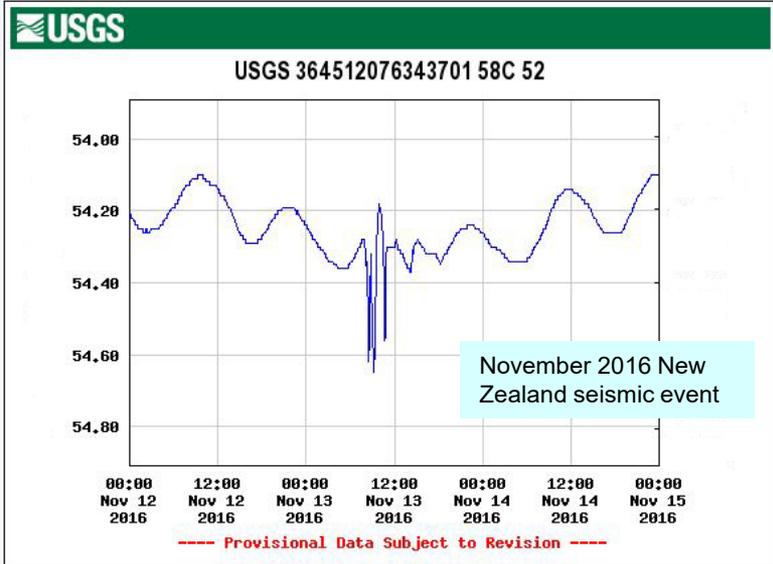
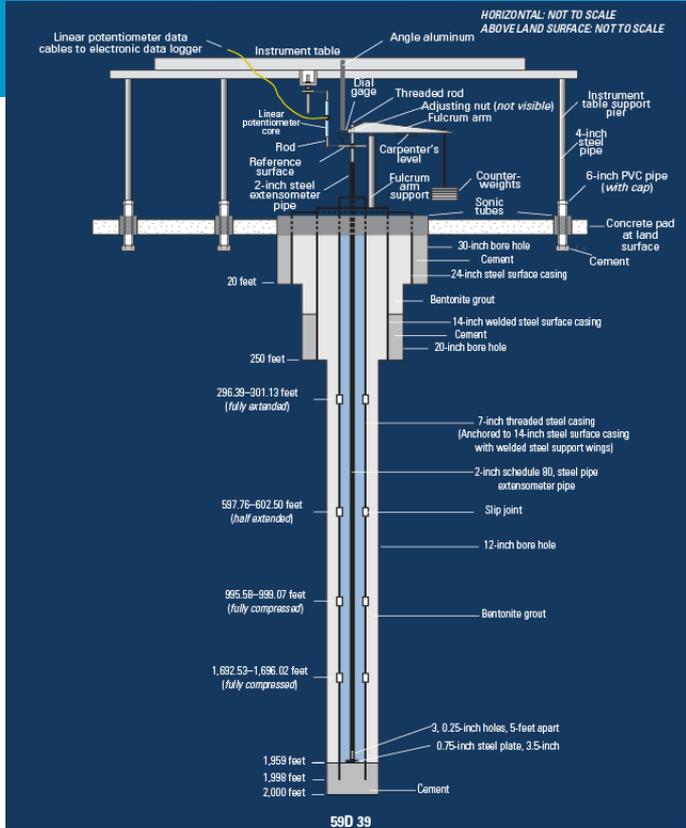
# Water levels with TW-1



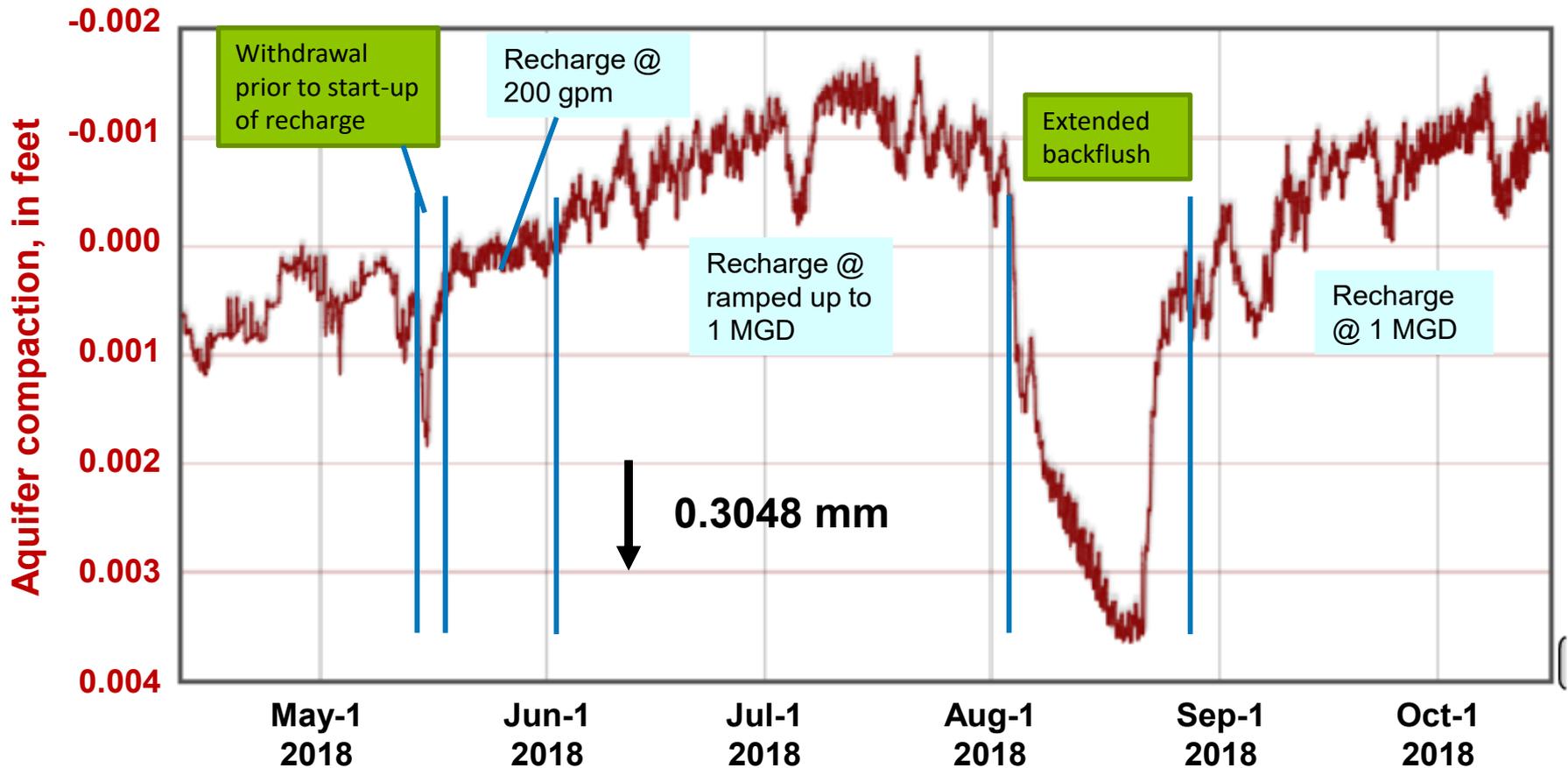


# Extensometer at SRC

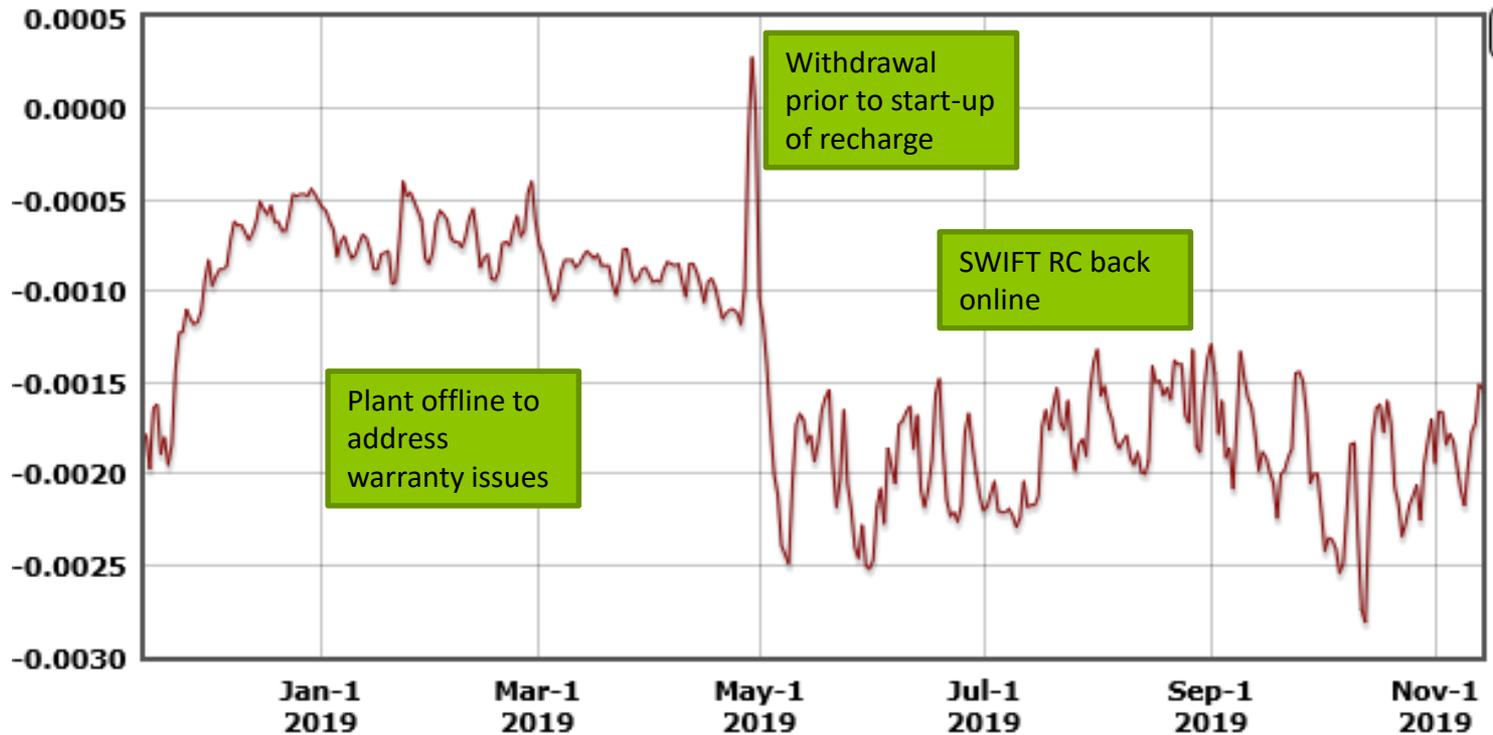
- 1,959-ft pipe extensometer
- 4 slip joints
- Compaction monitored with linear displacement potentiometer (sub-mm)
- 5 observation wells
- 6-min recording interval
- Deep rod benchmark for DGPS surveys
- Continuous GPS to monitor bedrock



# Compaction at Nansemond measured from Extensometer



# Compaction at Nansemond measured from Extensometer



# Questions?

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