Data Integrity Work Group Meeting

-July 30, 2020

Overview of the CBP Quality System (Data Quality Indicators)

Field Measurements:

- Well developed sampling schedule
- Adherence to CBP sampling procedures
- Annual servicing and routine calibration using standard reference solutions
- Precision information from replicates
- Bias information from blanks

Laboratory Analysis:

- Accuracy from spiked samples
- Precision from replicates
- Bias from blanks
- Detection/reporting limits

Quality System is based on TNI standards- lab accreditation is not required

Proficiency Testing / External Quality Assessment

All labs must participate in:

- Coordinated Split Sample Program (CSSP)- mainstem saline and tributary freshwater samples collected four times per year. One sub-sample is to be used to generate a lab duplicate and a lab spike. Use a certified reference material for each parameter analyzed

  Contact: Kristen Heyer @ DNR for details

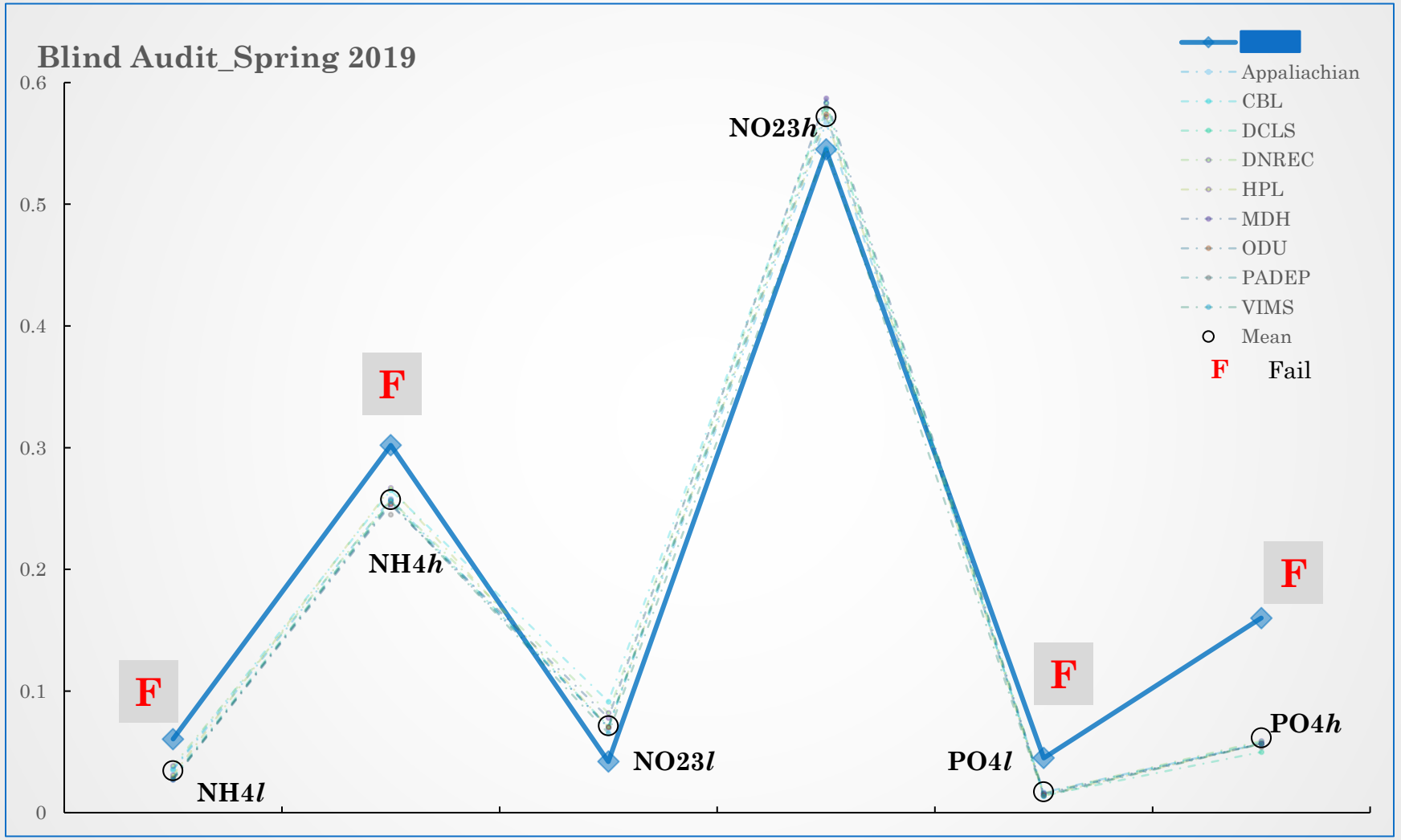
- Blind Audit Program- samples are distributed semi-annually

  Contact: Jerry Frank @ CBL for details

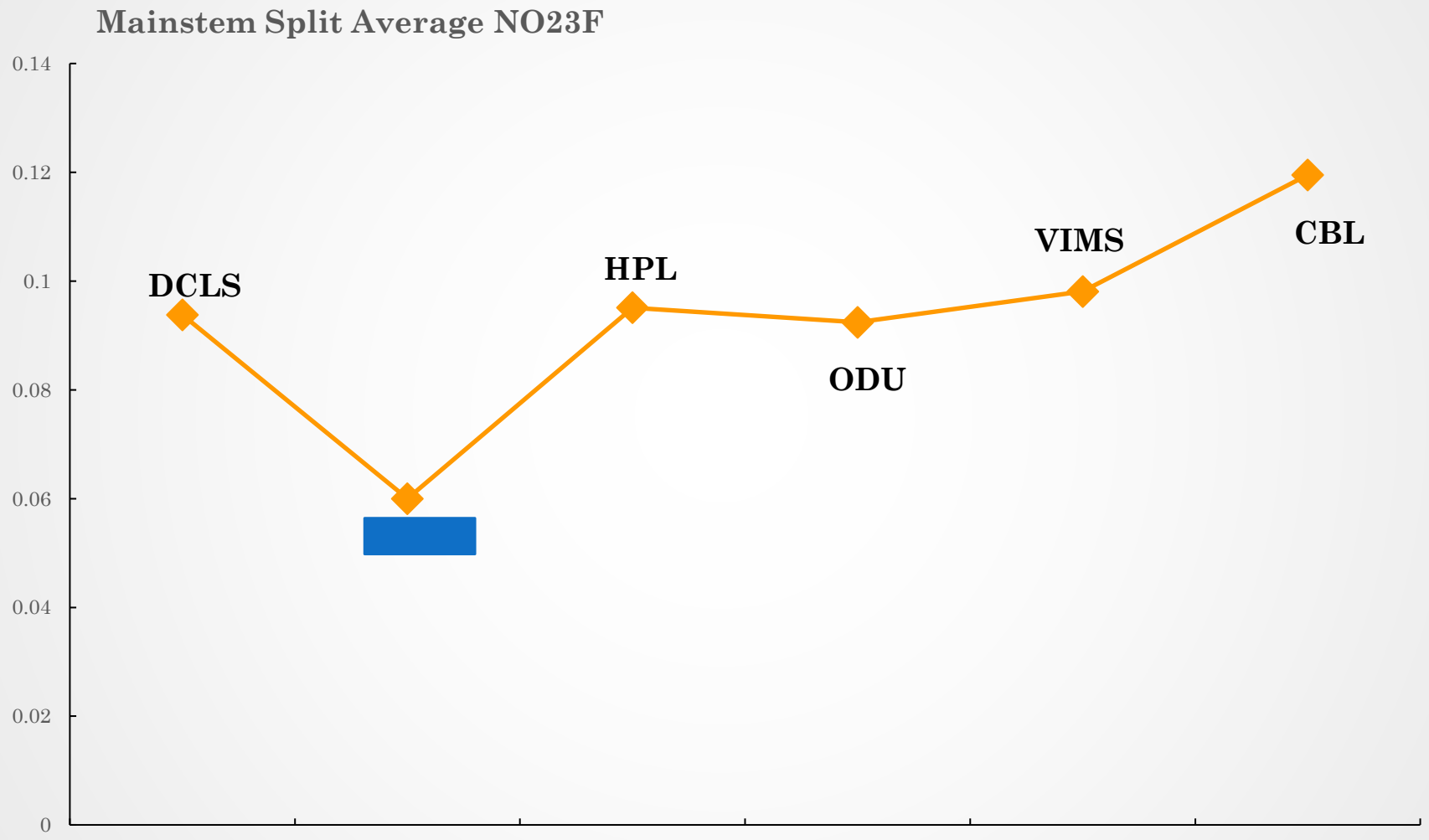
- USGS Standard Reference Sample Study- National program for nutrients at both high and low concentrations

  Contact: USGS @ https://bqs.usgs.gov/srs/

Performance Testing Results: Blind Audit



Performance Testing Results: Coordinated Split Sample Analysis



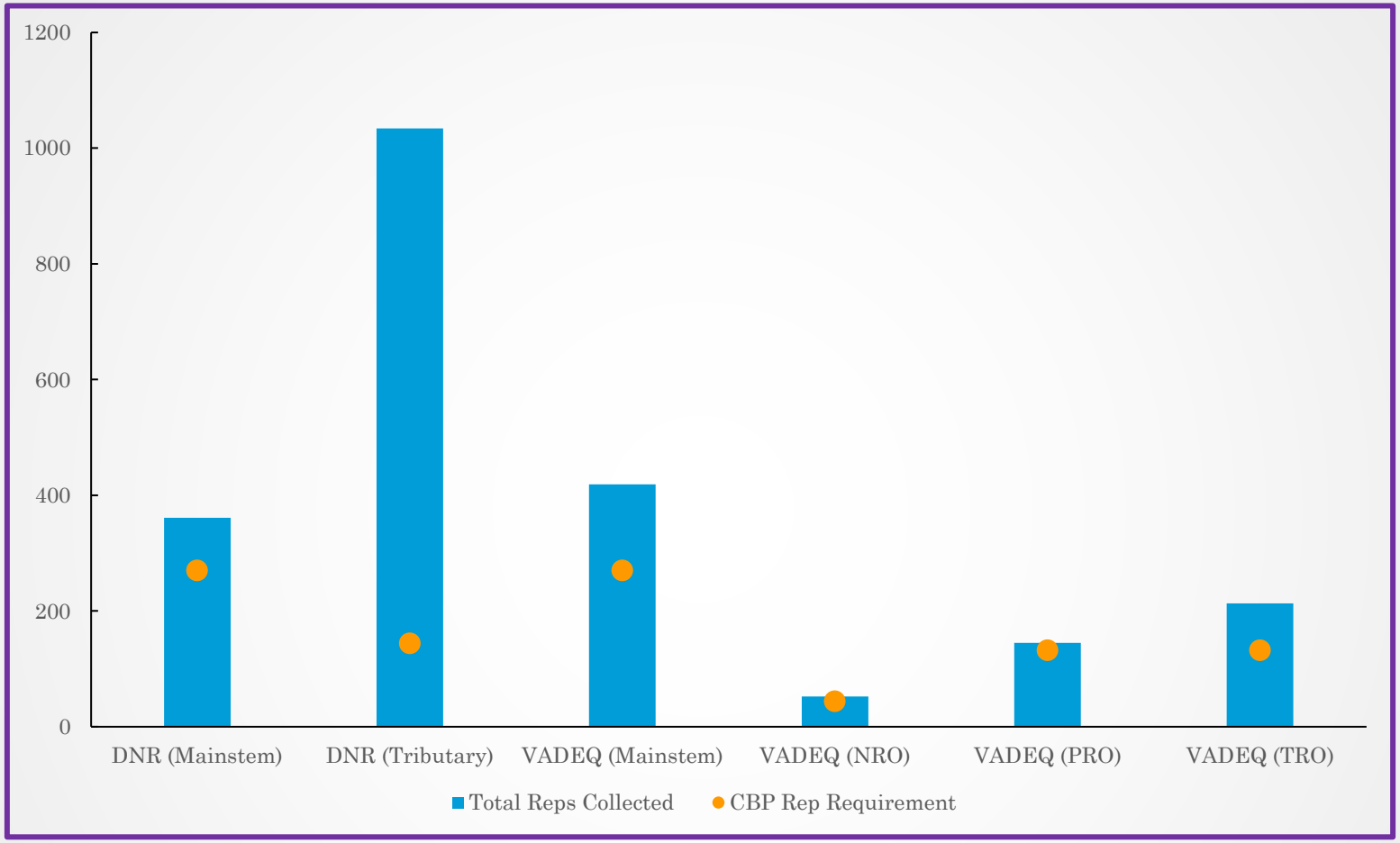
Rigorous Quality Assurance = Reproducible and Comparable Data

QA and PT samples are integral to the program despite:

- Rising costs for laboratory analysis of samples
- Funding uncertainties
- Inclusion of new laboratories into the fold
- Exploring new methods for sample analysis by community science groups

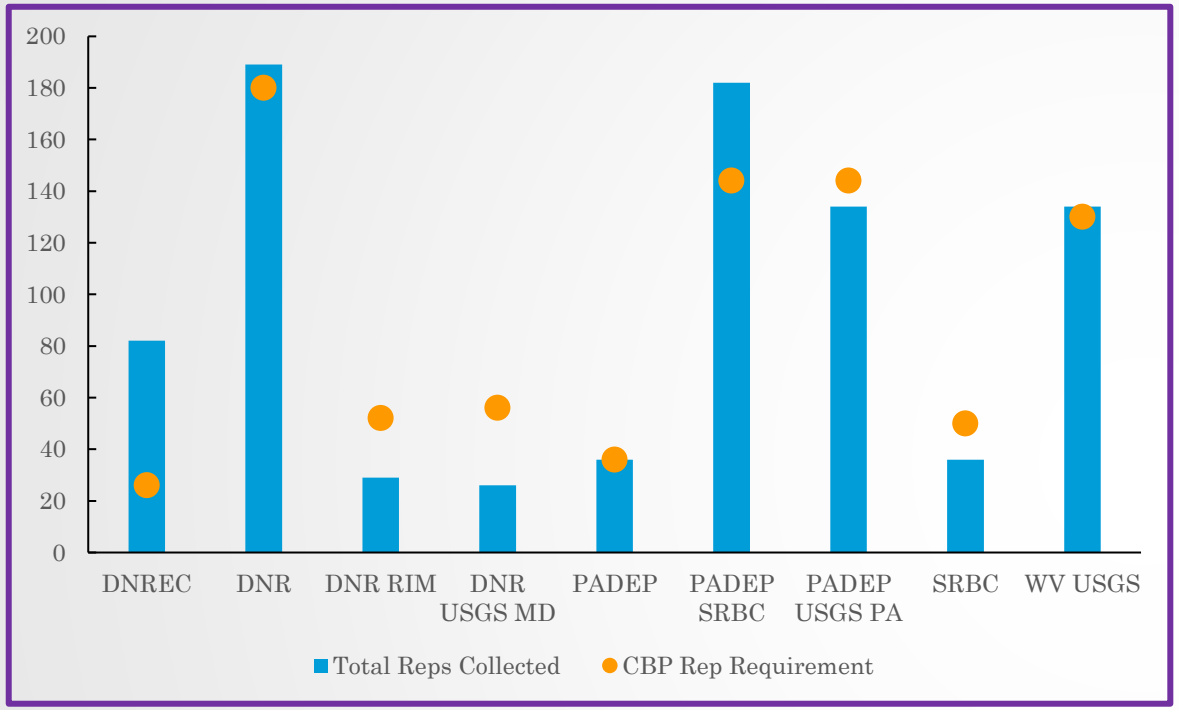
Replicate and Bias Data

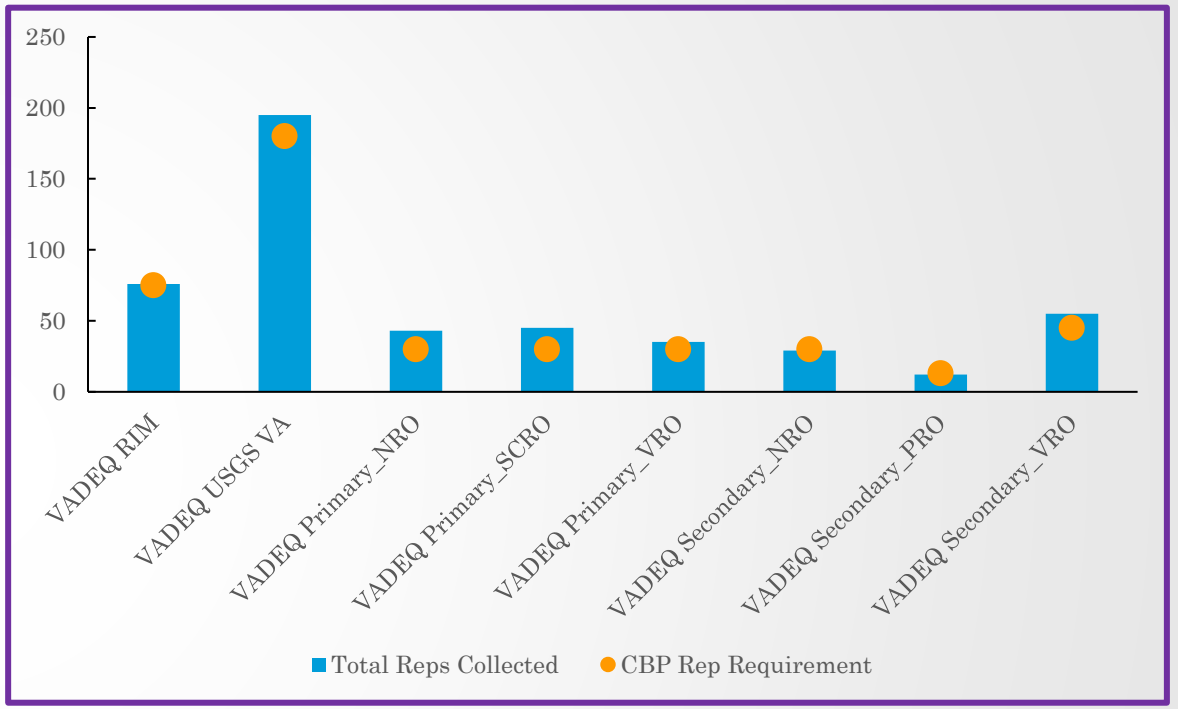
Tidal Replicates Collected (Completeness)



- Ideal Scenario for replicates collected = 90 – 95%
- Dates considered for this plot = July 2013 – September 2019
- Excellent results for all agencies ☺

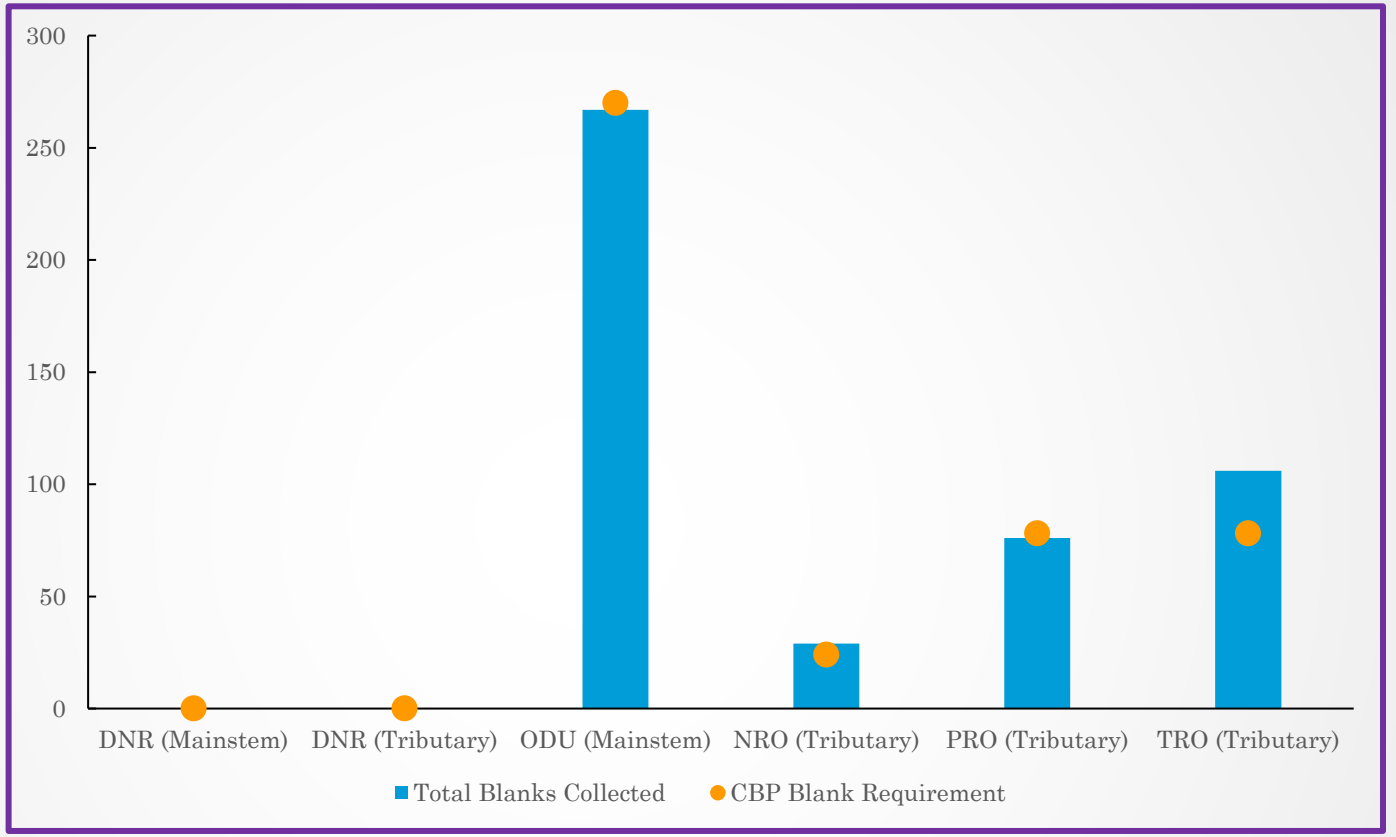
Nontidal Replicates Collected (Completeness)





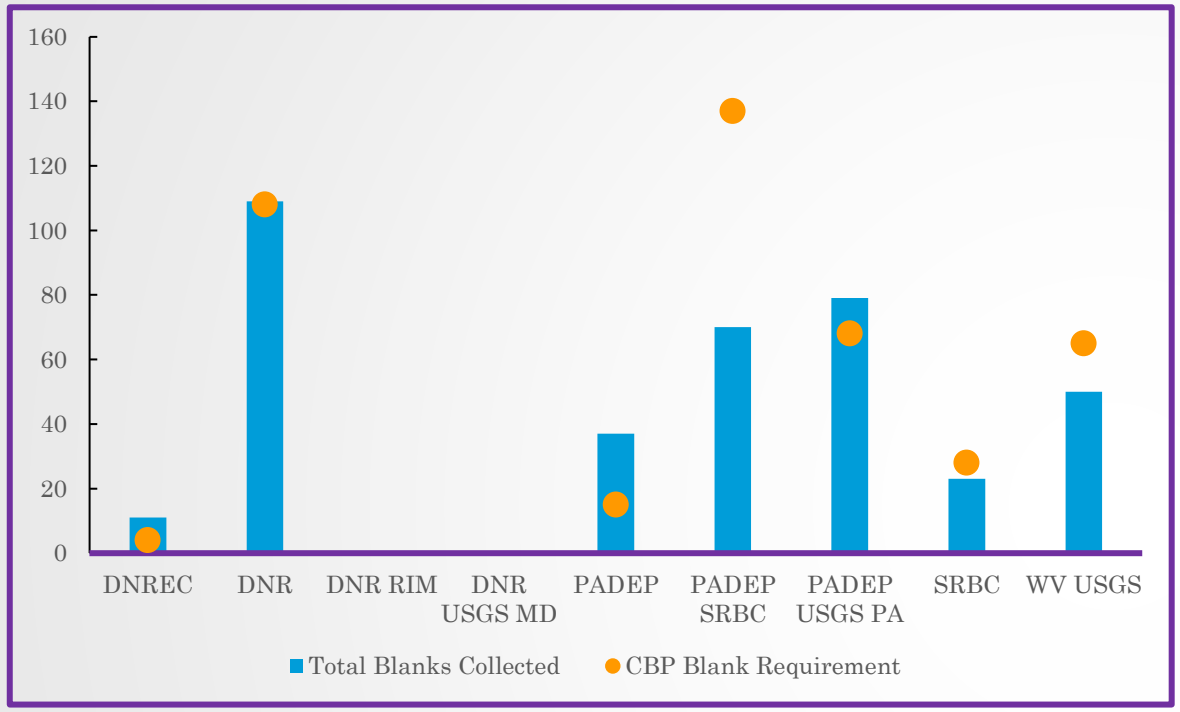
- Ideal Scenario for replicates collected = 90 – 95%
  (Note: Values > 85% are considered good due to disparity in WY & calendar year dates)
- Dates considered for this plot = September 2011 – September 2019
- Excellent results for most agencies ☺
- Double check MD RIM (56%) & USGS (46%) station data (uploading issues?)
- SRBC numbers are lower (72%)

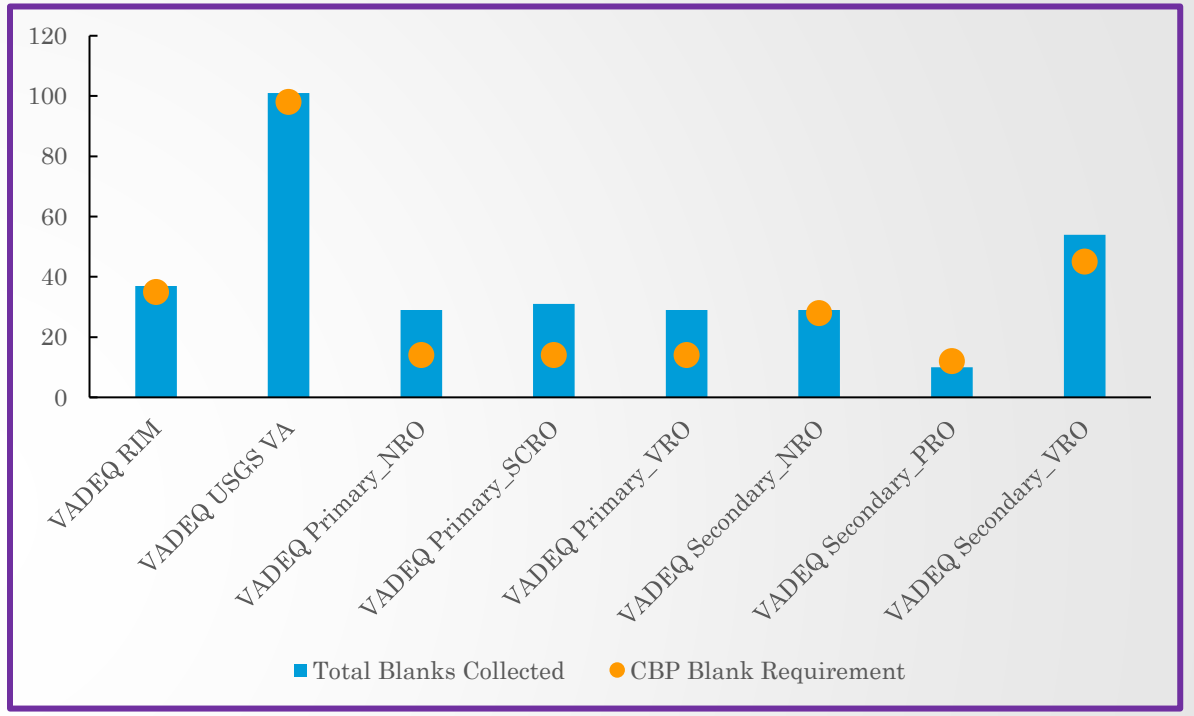
Tidal Blanks Collected (Completeness)



- Ideal Scenario for duplicates collected = 90 – 95%
- Dates considered for this plot = June 2013 – September 2019
- Excellent results for all agencies ☺
- DNR data collected but not uploaded

Nontidal Blanks Collected (Completeness)





- Ideal Scenario for duplicates collected = 90 – 95%
  (Note: Values > 85% are considered good due to disparity in WY & calendar year dates)
- Dates considered for this plot = September 2011 – March 2019
- Excellent results for most agencies ☺
- DNR data collected but not uploaded
- PA SRBC (51%) and WV USGS (77%) numbers are lower

Your input would be greatly appreciated

Thank you and stay safe