

Improving Wastewater
Progress Evaluation:
*Crediting BMPs
Using ENR Startup Dates*

WWTWG Conference Call
May 7, 2013

Improving Wastewater Progress Evaluation

- Goals
 - Better show the results of management actions on nutrient loads
 - Achieve better consistency with NPS Progress reporting
- Two separate proposals
 - Credit wastewater BMPs using ENR startup dates
 - Remove the effects of precipitation-induced load variability

Internal Inconsistency in Progress Scenarios

- Point Source and Nonpoint Source Progress are credited differently
 - **NPS** ... A BMP is receives full credit in the Progress year when it is installed
 - **WWTP** ... A BMP only receives partial credit in the Progress year when it is installed
- To achieve internal consistency, both sectors should receive full credit for BMPs completed during the progress year
 - A snapshot of what is on the ground on June 30th at 11:59:59 PM

Nonpoint Source Reporting

- An acre of forest buffer installed in the middle of Progress Year 2013 receives full credit in the progress scenario

Urban Forest Buffer



1 acre
Installed mid-2013

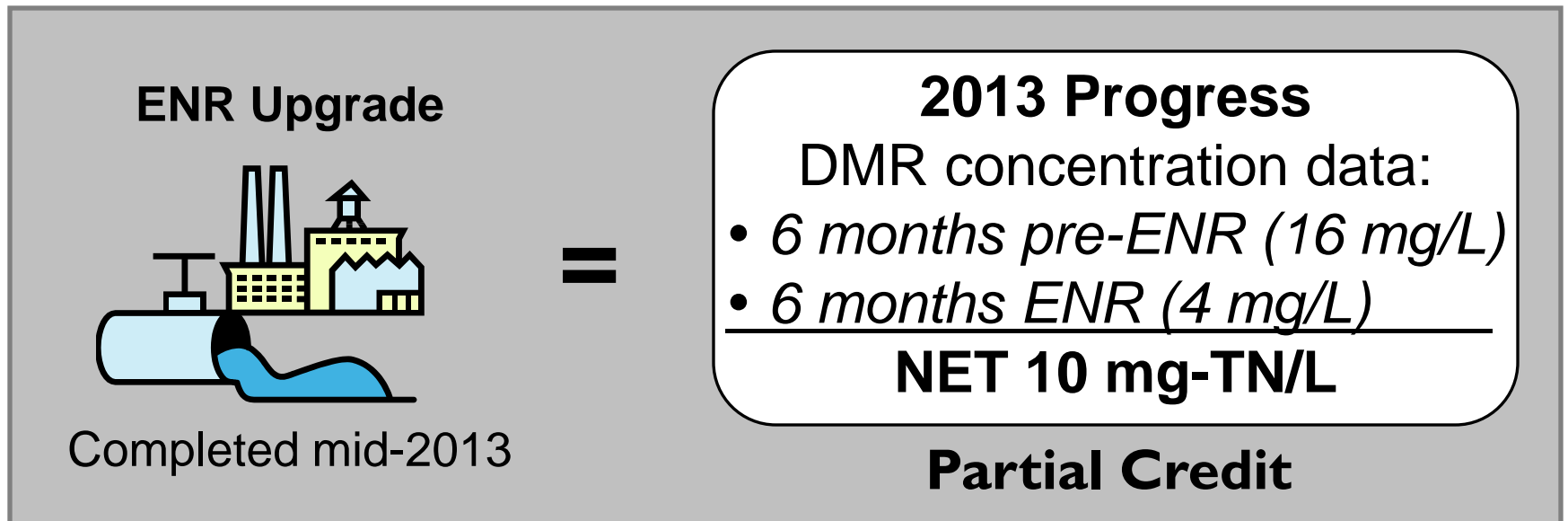
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2013 Progress
1 acre of
Urban Forest Buffer

Full Credit

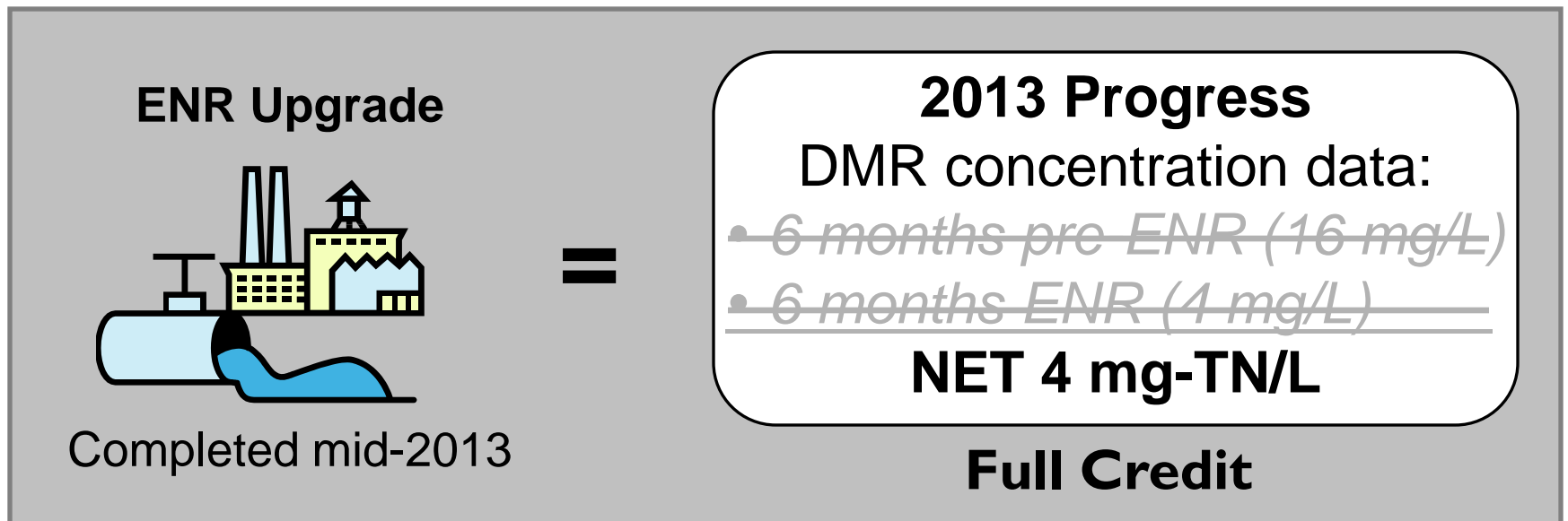
Current WWTP Reporting

- Using 12 months of DMR data, an ENR upgrade that begins operation in the middle of Progress Year 2013 receives credit in the progress scenario for only the portion of time it was operational



Proposed WWTP Reporting

- To match how NPS BMPs are credited, WWTPs should be given full credit for ENR upgrades in the year they are completed



Technical Proposal

- States can submit to the Bay Program a list of WWTPs that upgraded to ENR treatment during the Progress year
- For these WWTPs, TN & TP Progress loads will be calculated using the ENR permit limit concentration, not reported concentration data

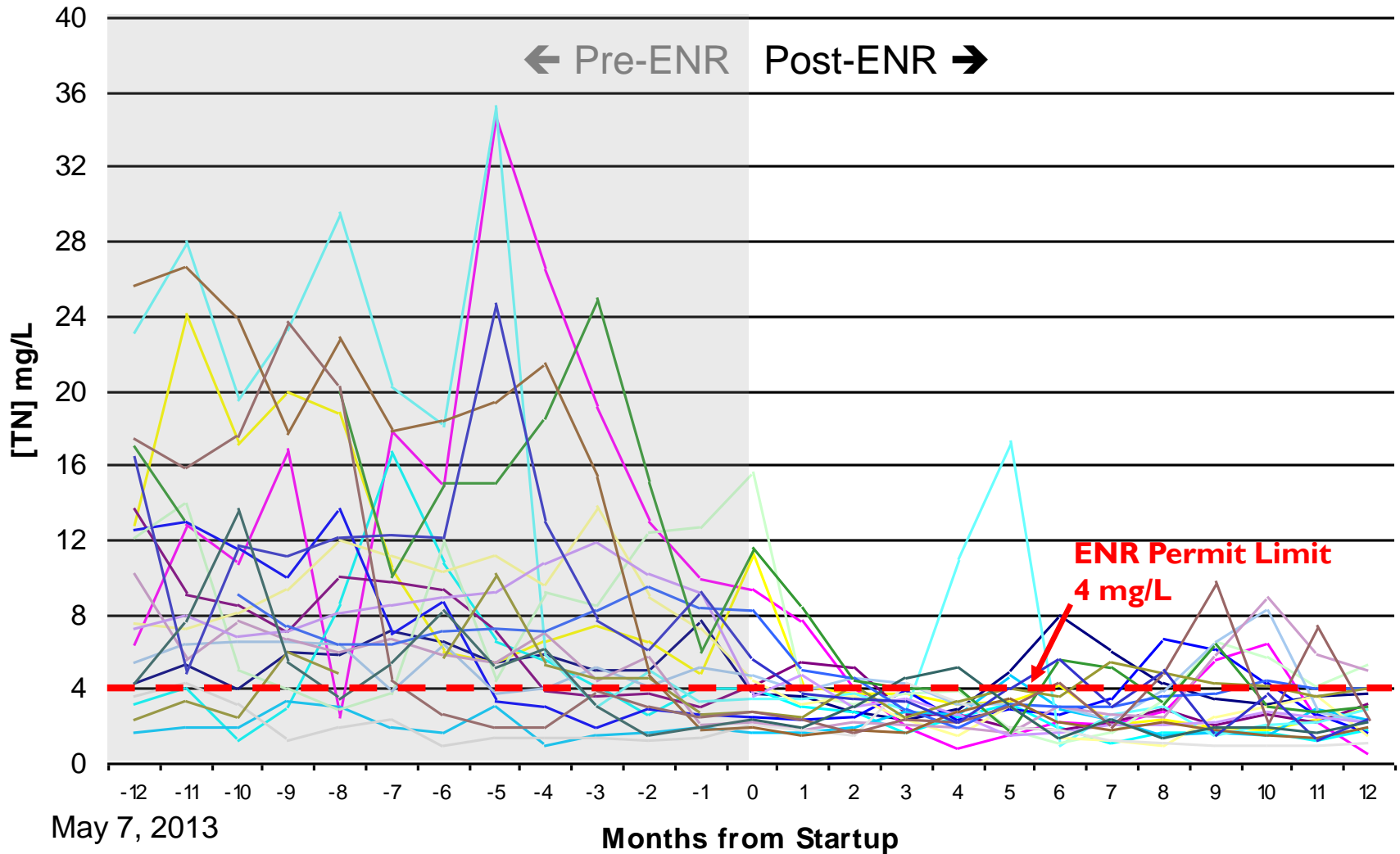
Note: Some facilities discharge below their ENR permit limits even before their upgrades to ENR treatment. For example, in Maryland's 2012 Progress scenario, Blue Plains WWTP reported annual TN concentrations below its 4 mg/L ENR permit limit, although it is not scheduled to complete ENR construction until March 2015. To avoid showing erroneous concentration increases, if the annual reported concentration for a facility upgrading to ENR is already below its ENR permit limit, then that annual reported concentration should be used for Progress reporting.

Technical Reasonability

- It is reasonable to assume that upgraded facilities will rapidly achieve reductions
- For 21 facilities upgraded in Maryland:
 - The average effluent TN concentration dropped below 4 mg/L during the month following ENR startup
 - 70% of WWTPs achieved their permit limit concentrations for the month following startup

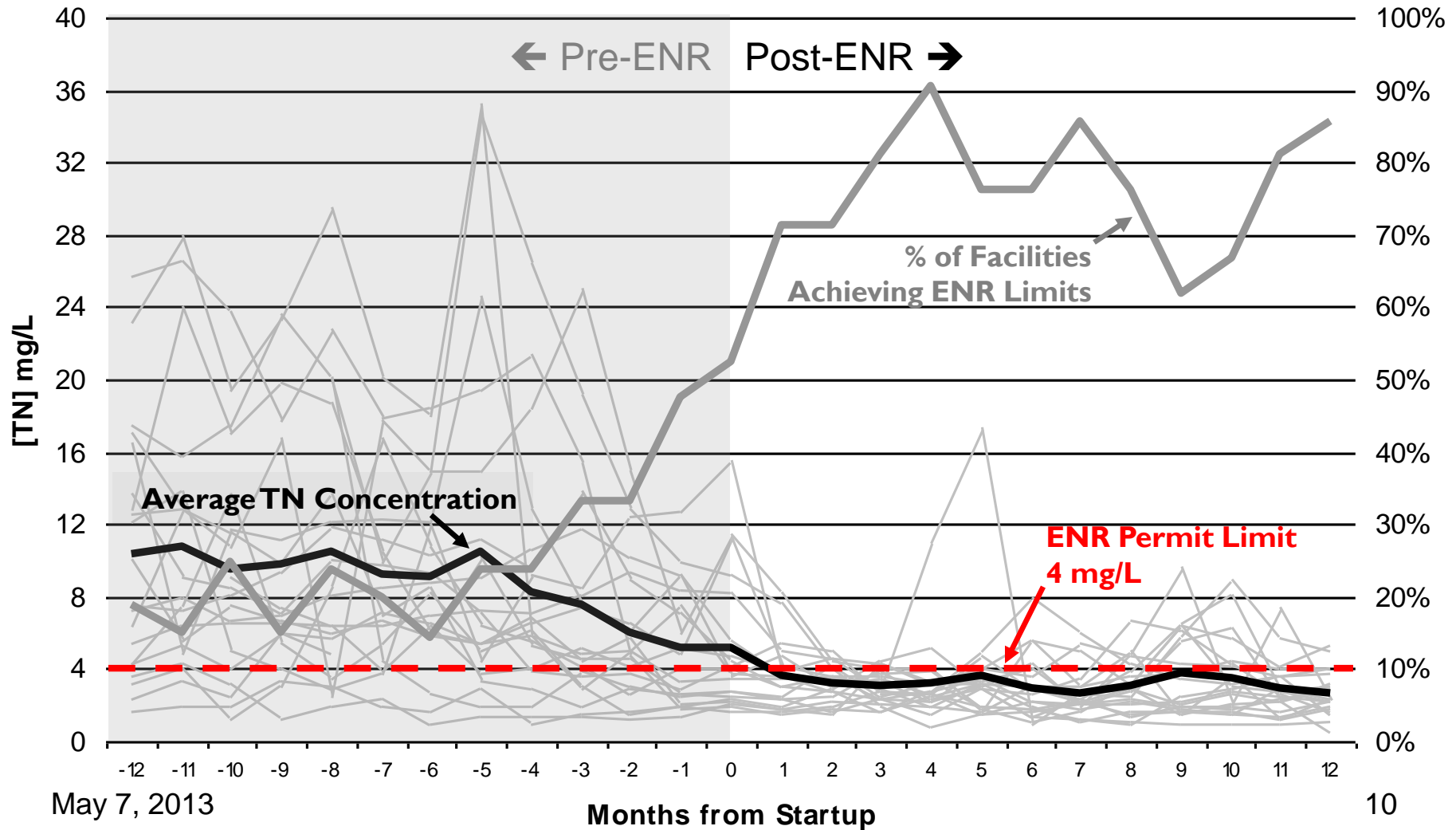
ENR Performance

WWTP Effluent Concentrations for 24-Month Period Preceding and Following ENR Startup



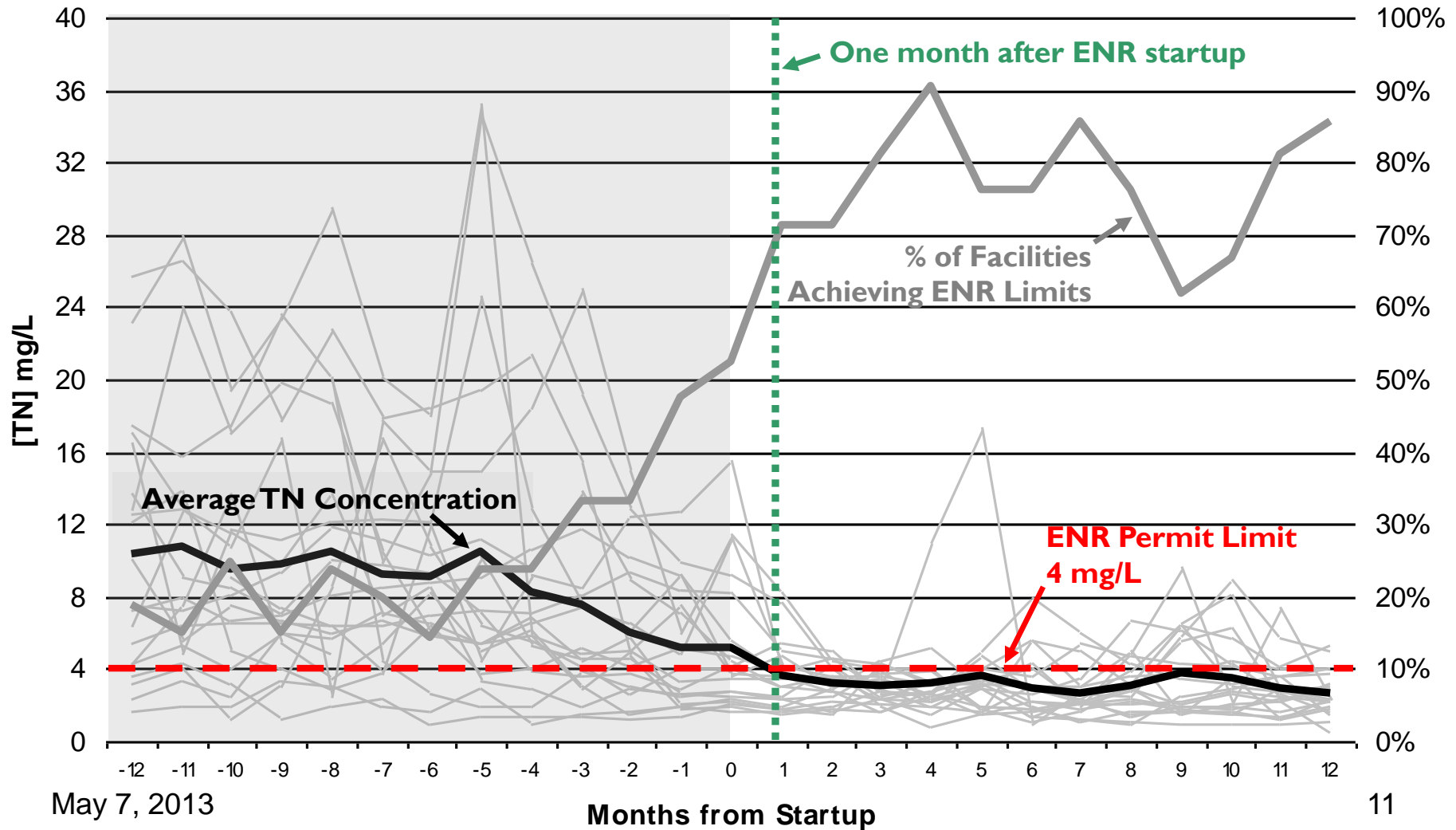
ENR Performance

WWTP Effluent Concentrations for 24-Month Period Preceding and Following ENR Startup



ENR Performance

WWTP Effluent Concentrations for 24-Month Period Preceding and Following ENR Startup



Submission to CBP

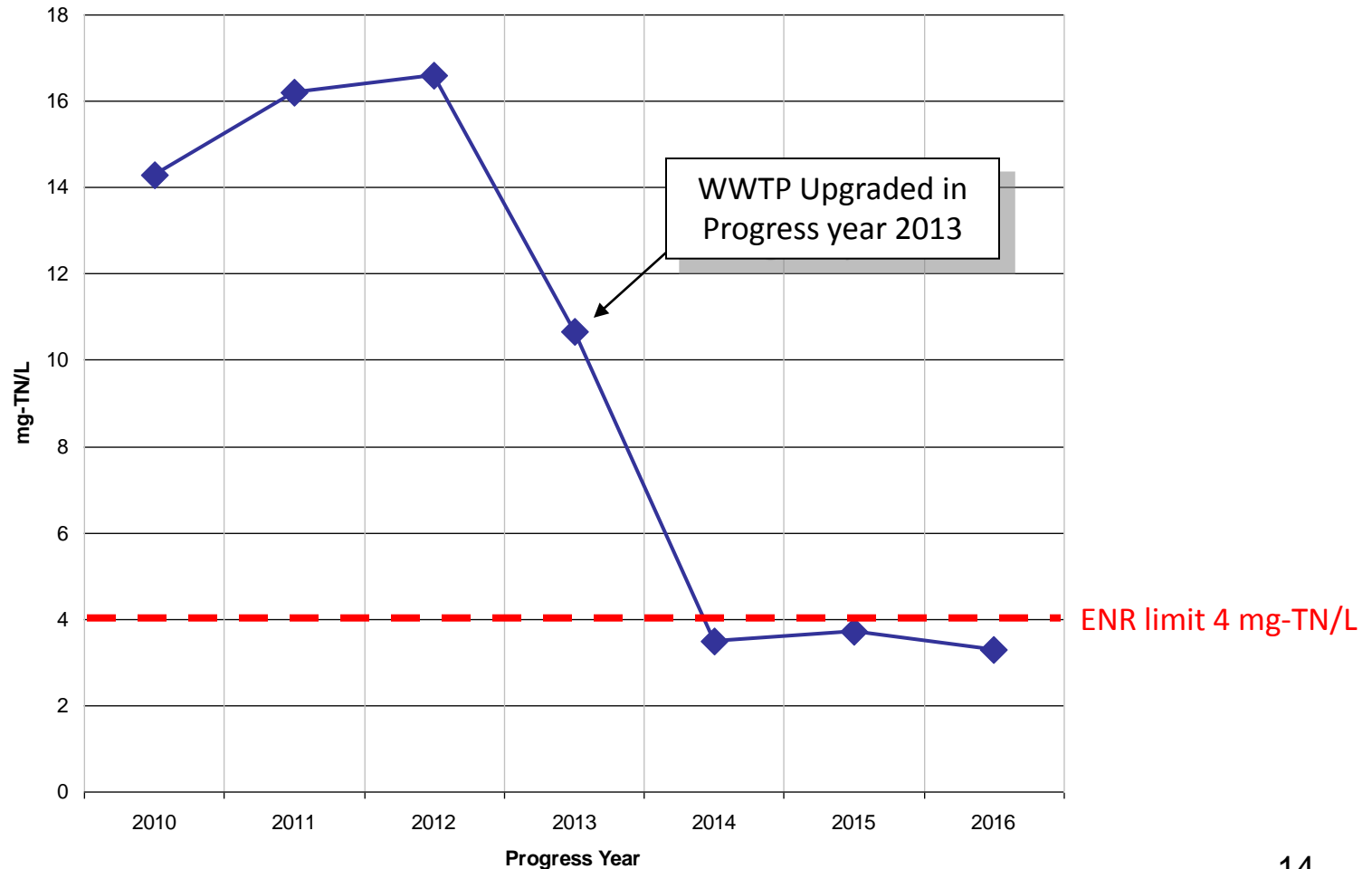
- **List of facilities upgrading to ENR during the Progress year**
 - Optional submission
 - Like with BMPs from other sectors, states would have the option of providing a list of facilities that were upgraded
 - If a state does not submit a list of ENR startups, full credit would be achieved in the subsequent Progress year

Verification

- Wastewater upgrades would be verified during each subsequent Progress year using DMR data
- Whereas many urban BMPs are inspected every three to five years, for wastewater BMPs, the DMR would effectively serve as an annual inspection

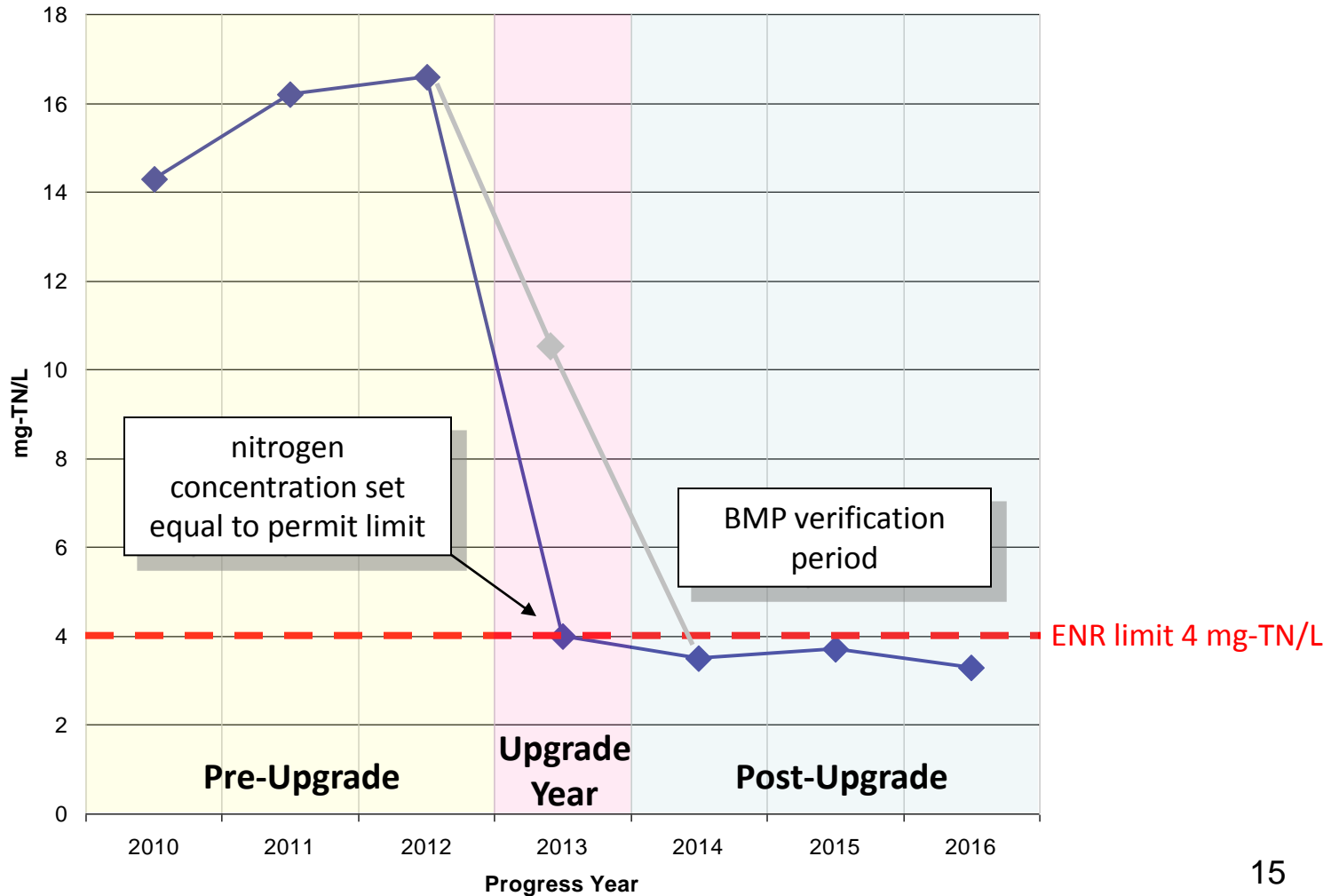
Wastewater BMP Example

Annual Nitrogen Effluent Concentration at WWTP
from DMR data



Example

Annual Nitrogen Effluent Concentration at WWTP for
Progress reporting



Conclusion

- For greater consistency between sectors, ENR upgrades can be credited in the same way as agricultural & stormwater BMPs – *in the Progress year that they go online*
- This estimate is reasonable, since most WWTPs achieve ENR-level treatment in the month following startup
- Like with other BMPs, states would have the option of whether or not to report ENR startups
 - States that want credit can get it, but no one would be required to submit additional data