



SPOKANE COUNTY DIVISION OF UTILITIES

# *Spokane County Regional Water Reclamation Facility*



## **DO TMDL – POINT SOURCE REDUCTION UPDATES**

Dave Moss, PE – Water Reclamation Manager

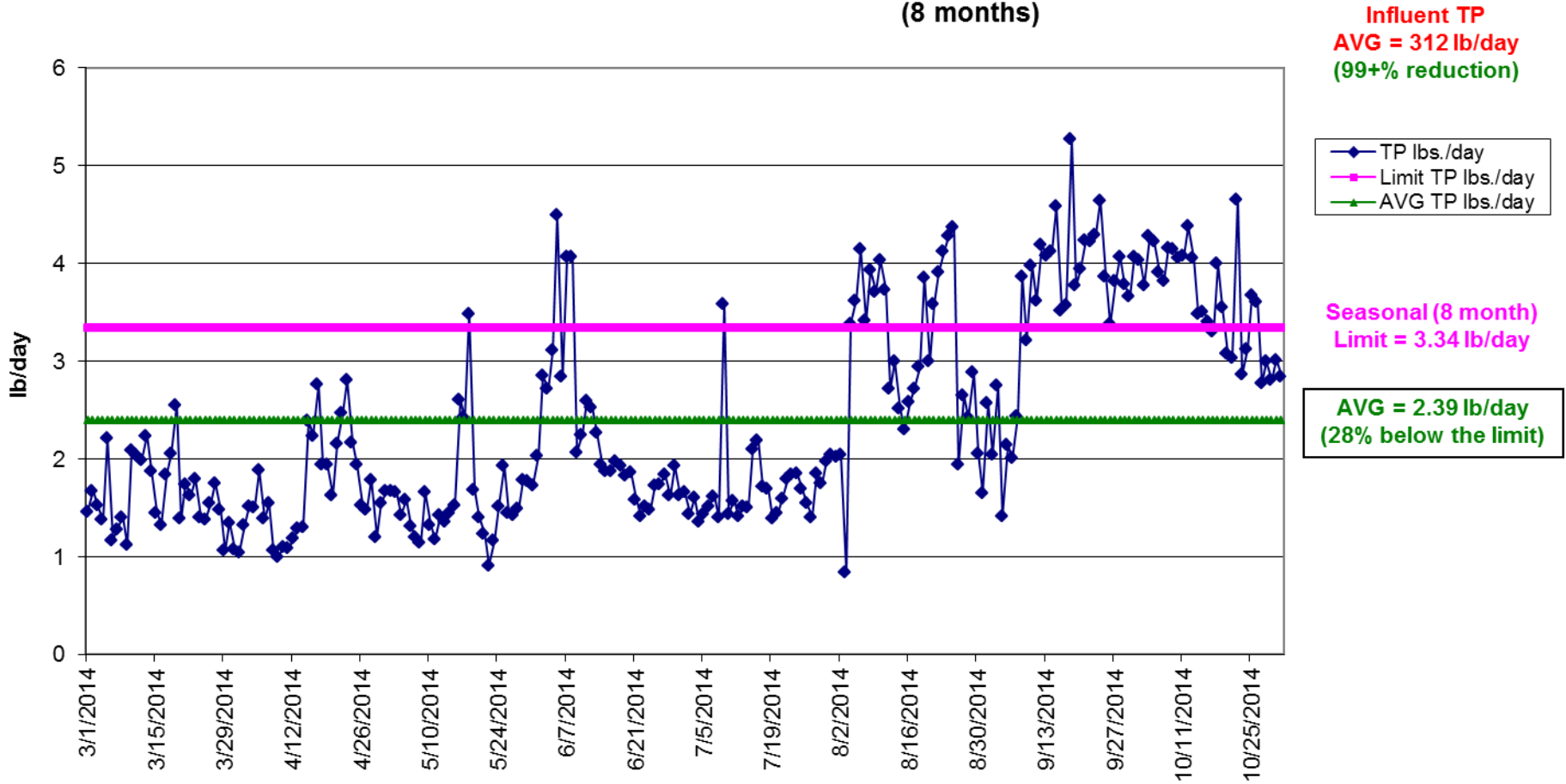
Ben Brattebo, PE – Water Resources Engineer

May 21, 2015

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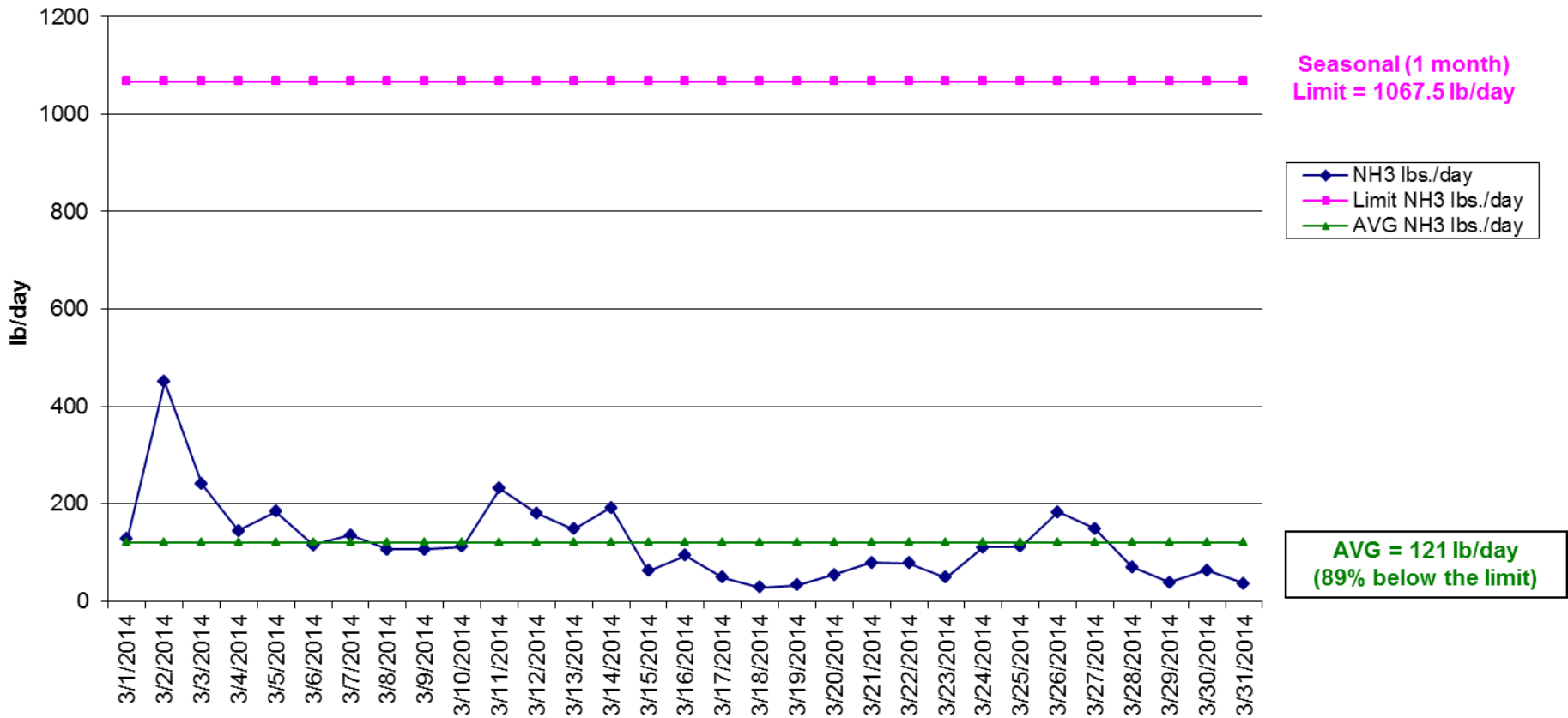
# Phosphorus Treatment (8 months)

SCRWRF Effluent - Total P (Mar - Oct 2014)  
(8 months)



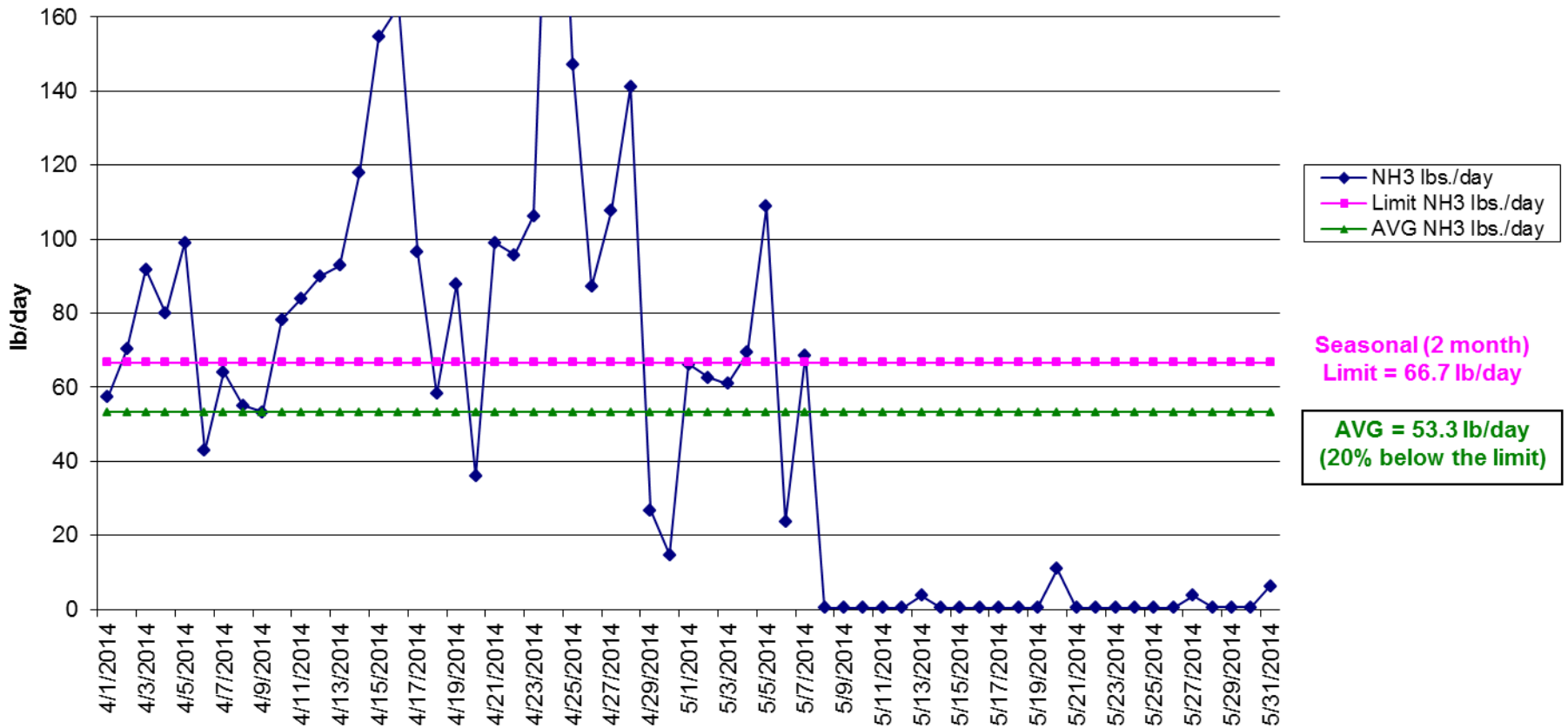
# Ammonia Treatment (March 2014)

SCRWRF Effluent - Ammonia (March 2014)  
(1 month)



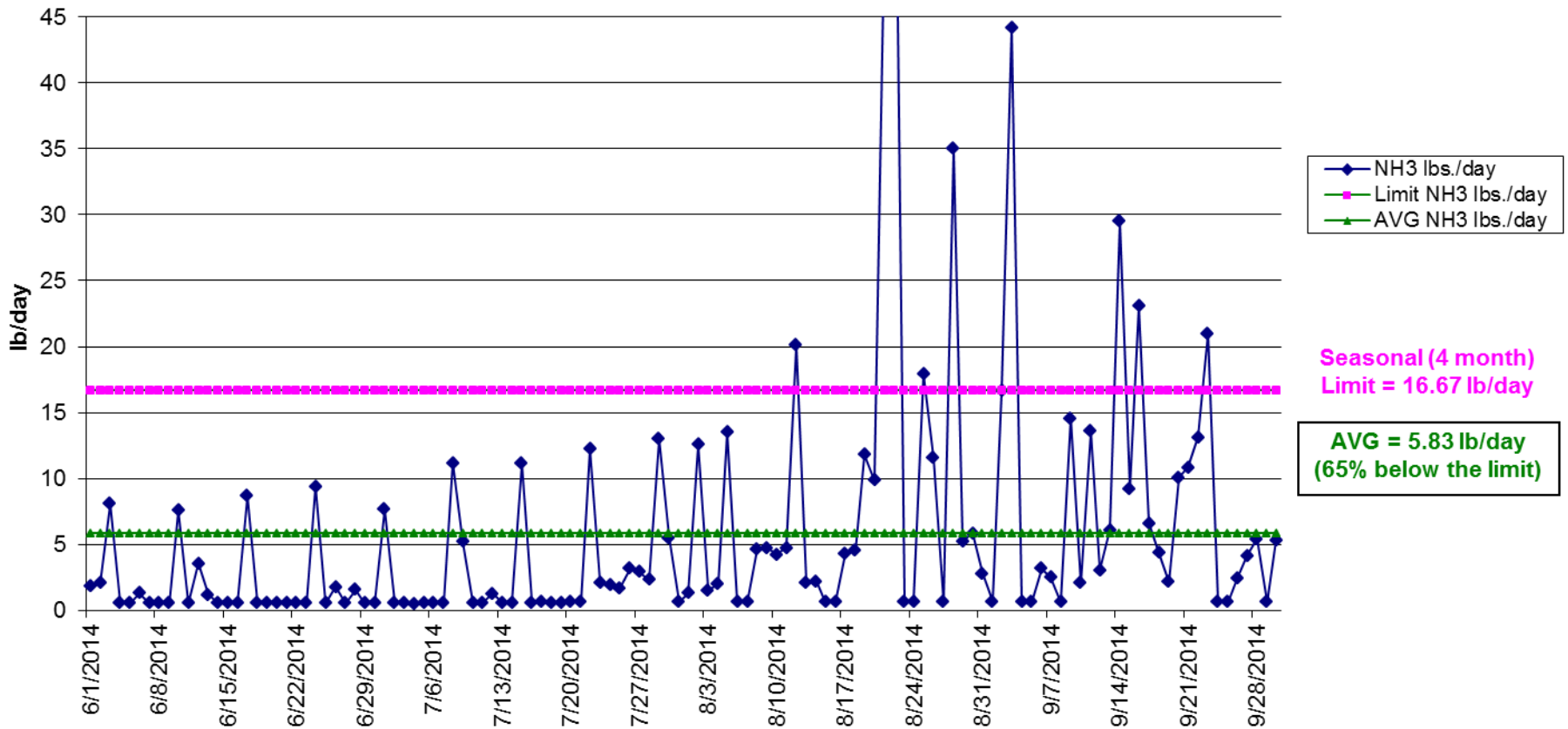
# Ammonia Treatment (April - May)

SCRWRF Effluent - Ammonia (Apr - May 2014)  
(2 months)



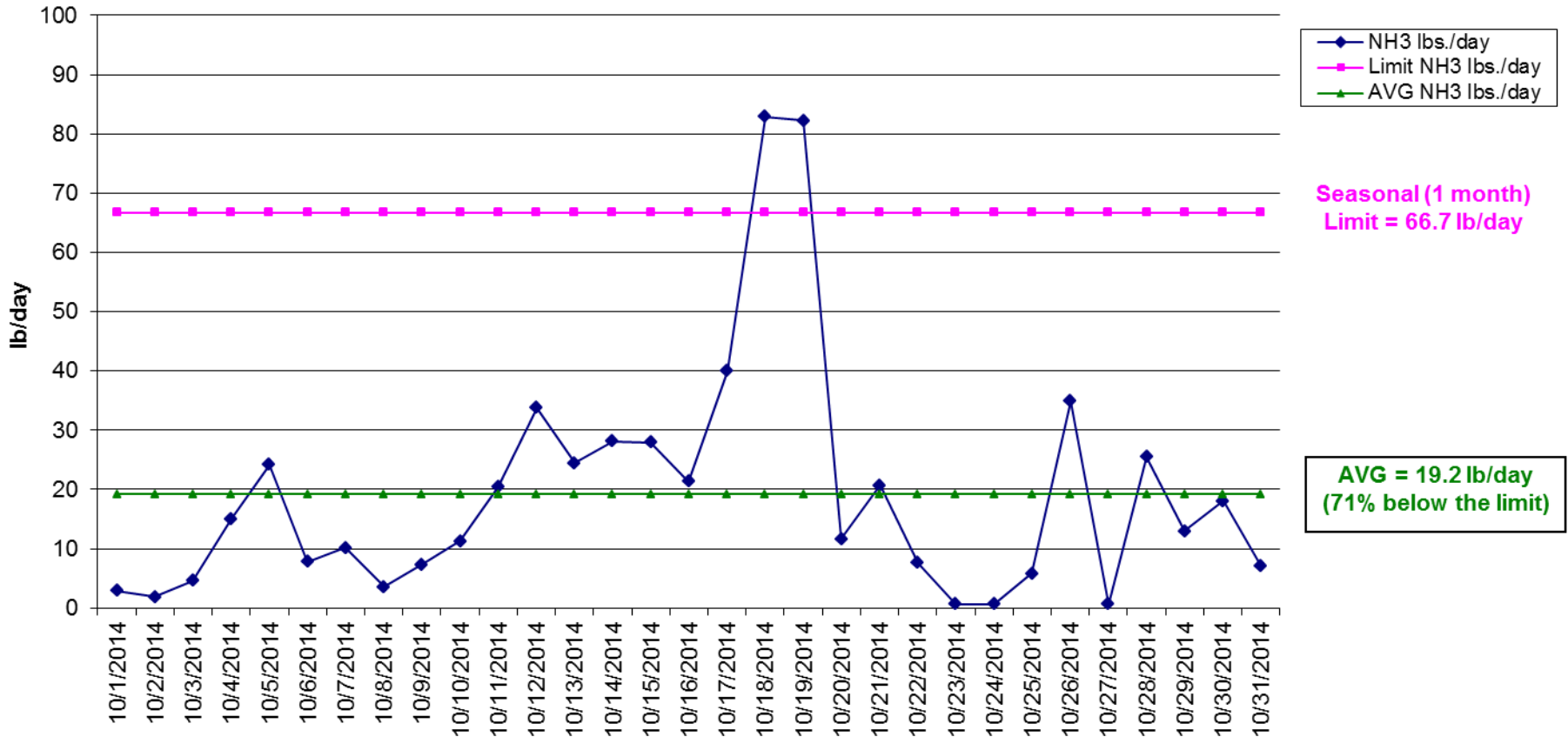
# Ammonia Treatment (June - September)

SCRWRF Effluent - Ammonia (Jun - Sep 2014)  
(4 months)



# Ammonia Treatment (October 2014)

SCRWRF Effluent - Ammonia (October 2014)  
(1 month)



# Carbonaceous Biochemical Oxygen Demand (CBOD) – 2014 Status

- The County's NPDES permit limit (monthly average) for CBOD is 2.0 mg/L (133 lbs/day)
- The lab detection limit for CBOD is 2.0 mg/L
- Essentially every day is “non-detect” and the DMR value is reported as <2.0 mg/L

# Total Phosphorus Treatment – 2014

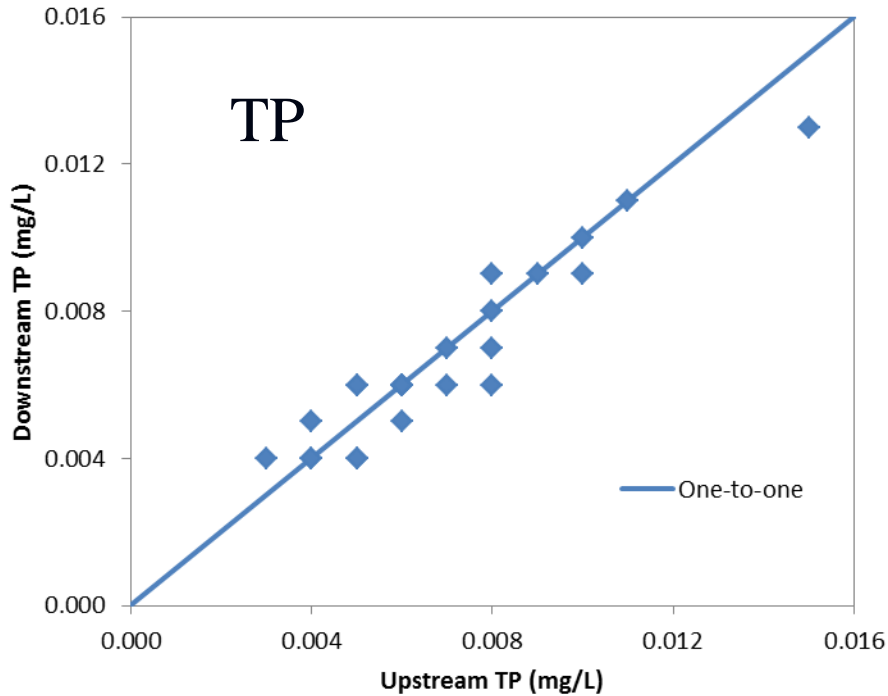
- Phosphorus “season” in County’s NPDES permit is March thru October (8 months)
- Total pounds of Phosphorus into SCRWRF = 76,300 lbs *[76,700 lbs in 2013]*
- Total pounds of Phosphorus out of SCRWRF = 585 lbs *[600 lbs in 2013]*
- Total Phosphorus reduction from SCRWRF treatment = 99.2% *[99.2% in 2013]*



# Spokane River Receiving Water Study

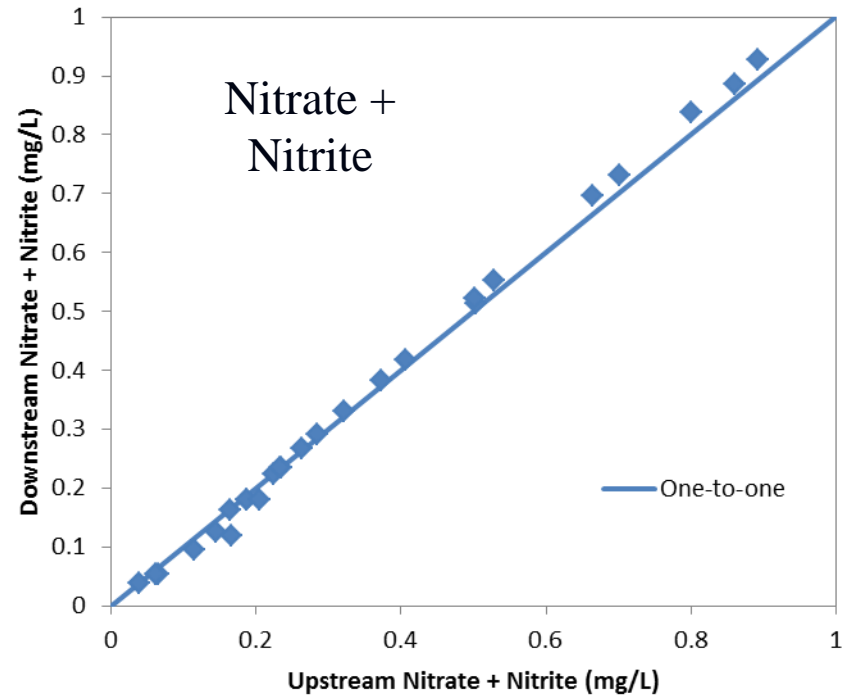
- Sample collection required by NPDES permit in:
  - 2013 and 2015 (ten times per year)
- Extra samples collected in:
  - 2014 (monthly)
  - Plus monthly samples in 2015
- Samples collected:
  - Upstream and downstream of SCRWRF outfall
  - Effluent from SCRWRF
- Samples for nutrients, hardness, alkalinity, Cd, Pb, & Zn

# Upstream vs Downstream

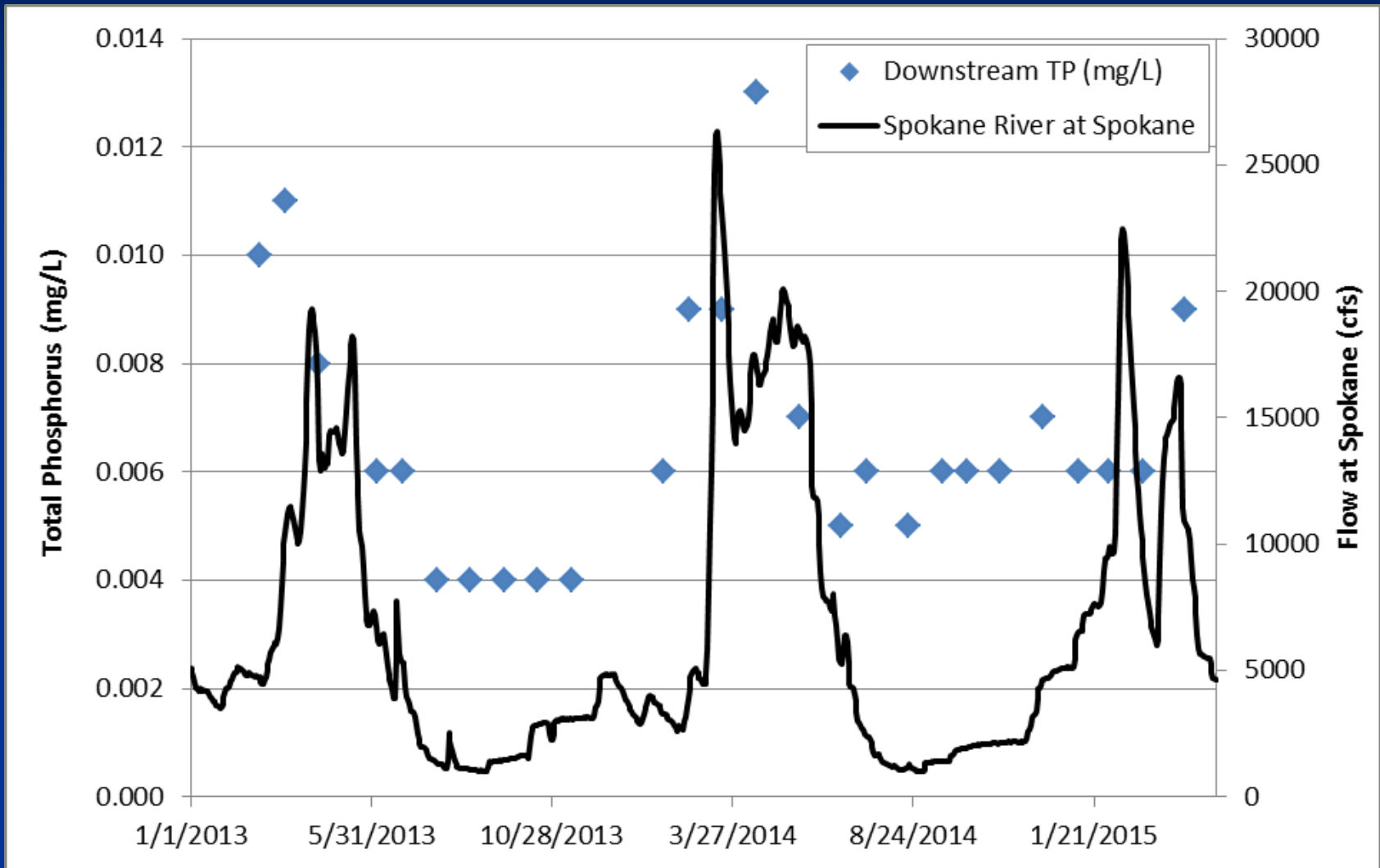


Concentrations downstream of the SCRWRf outfall are similar to upstream

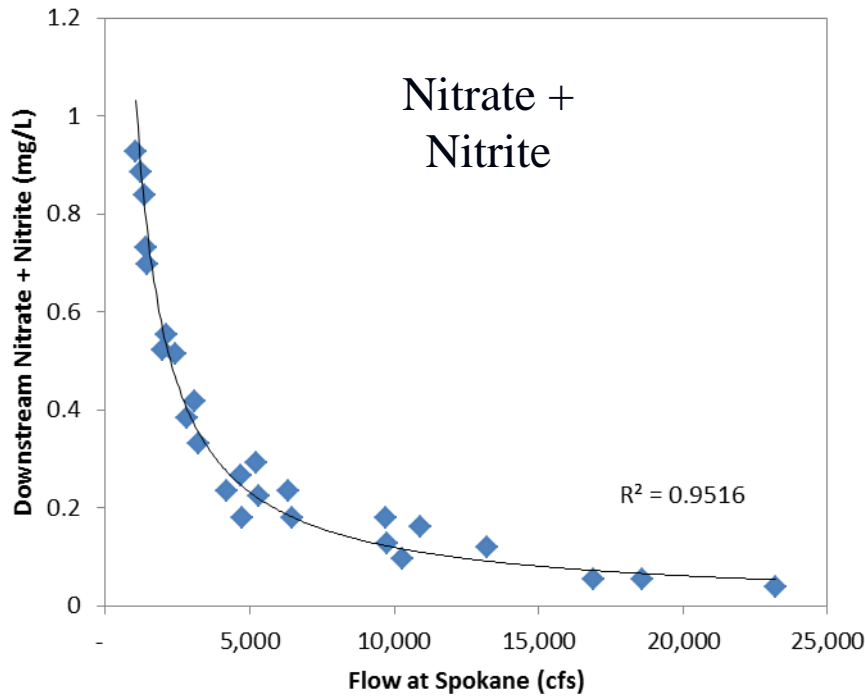
- Remainder of slides will present downstream concentration



# Downstream TP and River Flow

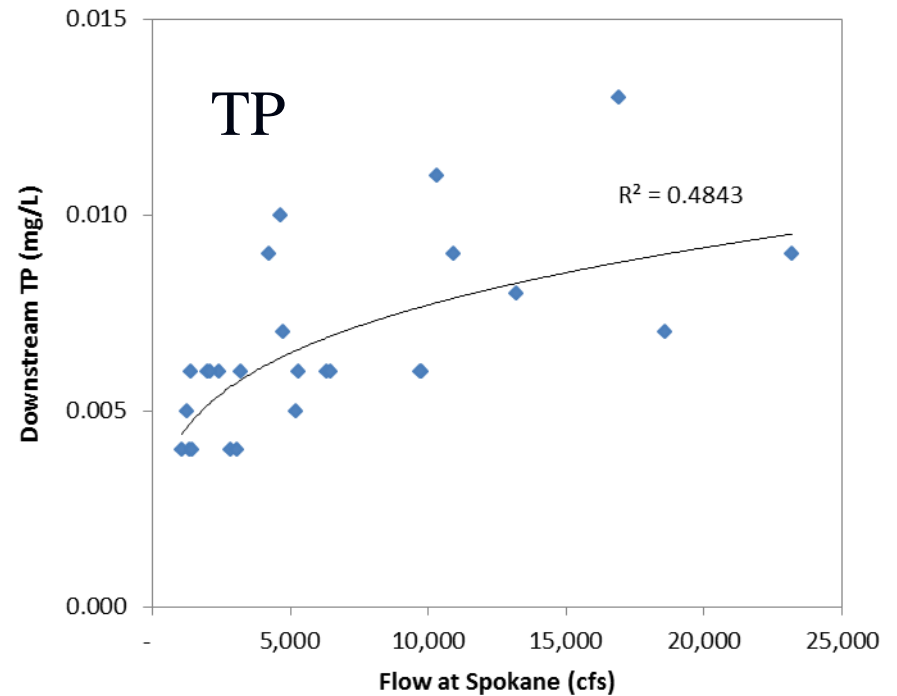


# Impact of Spokane River Flow

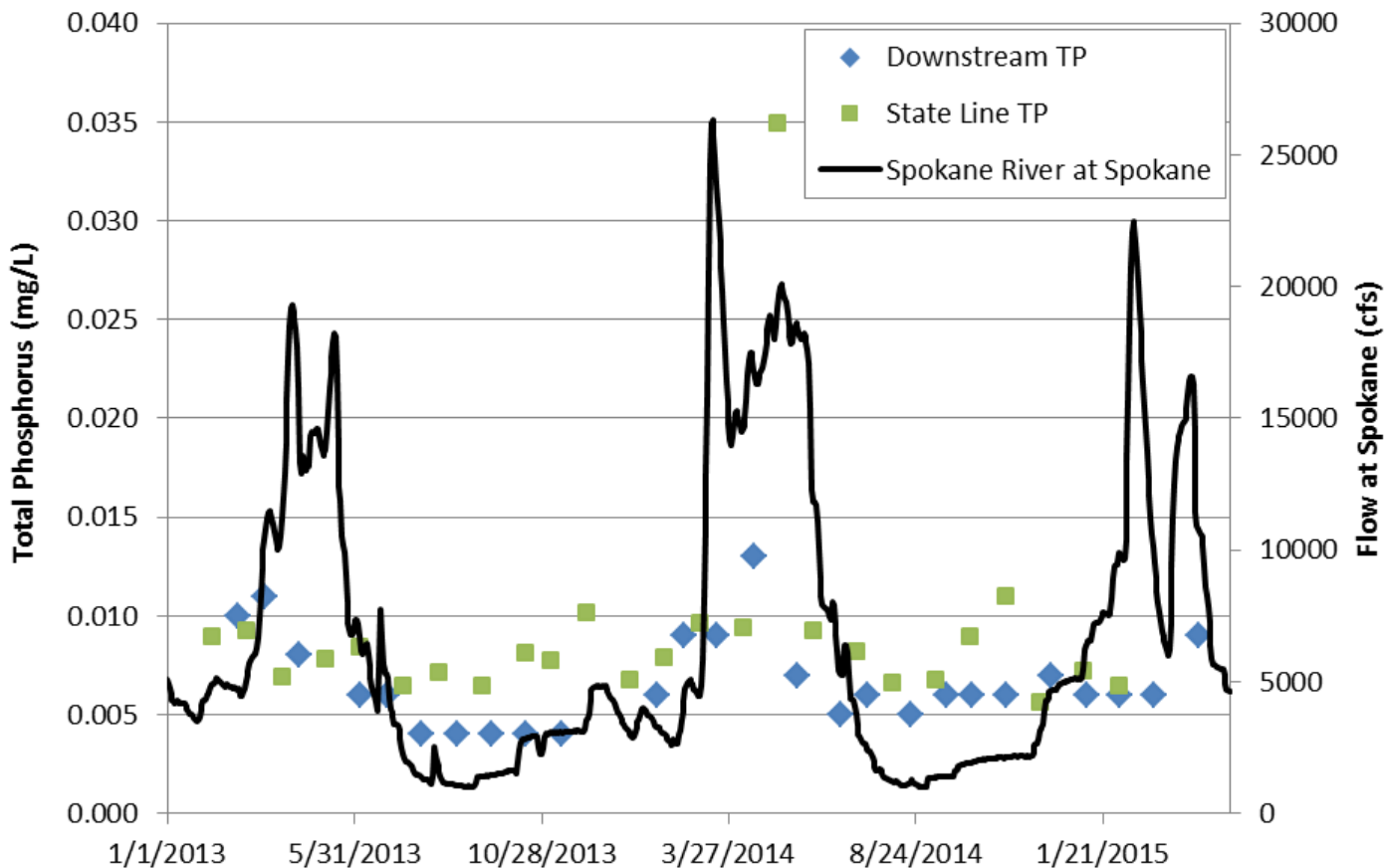


As river flow decreases:

- Groundwater influence increases
  - Indicated by Nitrate+Nitrite increase
- TP concentration decreases



# Comparison with Ecology State Line TP



Both sites have similar TP trends:

- Decreased river flow reduces TP
- Highest TP concentrations at both sites collected during 2014 spring high flow

Notes: Ecology data from Water Year 2014 & 2015 are preliminary



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