Phosphorus Trading: A Real WWTP to WWTP Solution

October 17, 2018

Eric Lynne
WWOA Annual Conference
What might you learn today:

• What is WQT
• Benefits of WQT
• How to identify trades
• Examples
• Things to watch out for
What is WQT for TP

- Non-traditional method of compliance
- Credits generated & Credits used
Benefits

- PS:PS Focus
- Contracts
  - Legally binding (prefer no additional effort)
  - PS:PS revise each WPDES Permit
  - Potential longer terms
- Common knowledge base
- Common enemy
- Common sense
Trade Identification

• Common sense
  - Talk to your neighbors
    • Upstream (if buying) / Downstream (if selling)
    • Review
  - Partner with

• WQT Map from WDNR
• Case 1 (MN) (IL)
• Case 2 (WI) TMDL – excess lbs due to WQBEL
• Case 3 (WI) Non-TMDL – balance WQBELs
Trade Examples

- WDNR
Trade Examples

• Same City, Two WWTPs = Negotiating Power
  - NEWater (DePere/GBMSD)
  - Mankato, MN (Willmar)
  - Joliet, IL (Eastside/Westside)

 东区 (~15 mgd)
 无机磷 (Bio-P)
 0.5 mg/L vs. 1.0 mg/L TP

西区 (~13 mgd)
有机磷 (Chem-P)
1.5 mg/L vs. 1.0 mg/L TP
Trade Examples

- Joliet, IL

Two permits, (Eastside/Westside), merged DMRs

SPECIAL CONDITION 21. The Agency may modify this permit if the Permittee has developed and implemented a trading program for any discharge in the watershed, providing for reallocation of allowed phosphorus loadings between two or more POTWs in the watershed, that delivers the same results of overall watershed phosphorus point-source reduction and loading anticipated from the uniform application of the applicable 1.0 mg/L monthly average effluent limitation among the POTW permits in the watershed.

The Permittee shall notify the Agency if they become a member of the Lower Des Plaines Watershed Group or any other watershed group. This Permit may be modified to include additional conditions to implement objectives of the watershed group.
Trade Examples

- Small Facilities

**Facility A**
- upstream
- smaller flow
- favorable WQBEL
- minor chemical dose req’d
- dose extra

**Facility B**
- 0.075
- within HUC 8
- adding chemP
- planning for filters
- **pay for A’s extra chemP**
- ideal = avoid filters
- contract length = facility life
# Trade Examples

- **Small Facilities**

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Trade Examples

• Same Flows, Same River, **New WQBELs for Seller**
• **Concern for:**
  - Enough Facility A credits
  - 5 yr max contract pending each WQBEL
  - Cost/Hassle vs. Benefit

• **Postponed. Utilize MDV for now.**
Trade Examples

• Rock River TMDL
  ▪ WQBEL vs. WLA

  Facility A
  TMDL = 100 lb
  WQBEL 0.075 → 20 lb
  80 lb available

  Facility B
  TMDL = 100 lb + 80 lb
  WQBEL = N/A since TMDL
  • Safety factor
  • Avoid filters

Negotiate cost
A) $50/lb
B) May need to be < $30/lb to drive the decision
Trade Examples

- **TMDL**
  - **WQBEL vs. WLA**

  **Facility C**
  - TMDL = 100 lb
  - WQBEL 0.075 → 20 lb
  - 80 lb available

  **Facility D**
  - TMDL = 100 lb + 80 lb
  - WQBEL = N/A since TMDL
    - Safety factor
    - Avoid filters

**Triple Bottom Line:**
- Lesser improvement to waterbody
- Risk double jeopardy since effluent B remains elevated
Trade Caution

• Issues
  ▪ Trade Ratios  Stay Local
  ▪ NPS can be outside of your control  Focus on those you can control  - Go Fallow
  ▪ Model vs. Reality:
    • Barnyard manure spill: what happens to your credits
    • How to enforce
    • “Firm” credits  Largest out of service
  ▪ Align deadlines
  ▪ Be first if selling
Thank You

Eric Lynne, PE
Donohue & Associates, Inc.
elynne@donohue-associates.com | 920.803.7375

YR 4:
Notice of Intent to Apply for WQT