

Introduction to Water Quality Trading

ORSANCO Roundtable

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What is Water Quality Trading

- Water quality trading involves a party facing relatively high pollutant reduction costs compensating another party to achieve less costly pollutant reduction with the same or greater water quality benefit.
- Trading can be PS/PS or PS/NPS

Why Participate?

- Economic benefits
 - Dischargers can take advantage of economies of scale
 - Reduce the overall costs of achieving water quality objectives
- Environmental benefits
 - Improvements in sensitive areas

Where will it work?

- Needs a “Driver” that requires NPDES permit holders to reduce nutrients
 - TMDL
 - Nutrient Criteria
- Sources of nutrients in the watershed have significantly different costs to control the nutrients
 - Point source capital upgrades (\$\$\$)
 - Non-point source BMPs (\$)

Where will trading not work?

- Seasonality or “Hot Spots”
 - Trading is in lbs/yr not mg/L
- Reduction needs in the watershed are not so large that all sources must reduce as much as possible to meet goals
 - There is no surplus to sell

Example Scenario

South Point, OH WWTP

- Flow = 1.16 mgd
- Concentration
 - TP = 3.5 mg/L
 - TN = 23 mg/L
- Discharge in lbs
 - TP = 35 lbs/day
 - TN = 224 lbs/day

Reduction Goal

- Gulf of Mexico Hypoxia Task Force = 45%
- TP reduction
 - $35 \times 0.45 \times 365 = \mathbf{5749}$ lbs/yr
- TN reduction
 - $224 \times 0.45 \times 365 = \mathbf{36,792}$ lbs/yr

Total reduction needed = **42,541 lbs/yr**

South Point, Ohio WWTP

Cost of Compliance

Reduction Goal	Annual Upgrade Cost (2010\$)	\$/lb BMP	Annual Credit Cost	Annual Savings
42,541 lbs	\$282,500	\$2	\$85,082	\$197,418
		\$4	\$170,164	\$112,336
		\$8	\$340,128	\$57,628

What is Water Quality Trading

- a compliance option