New Mexico's Approach to Nutrient Impaired Waters

New Mexico Municipal Environmental Quality Association - Spring Meeting

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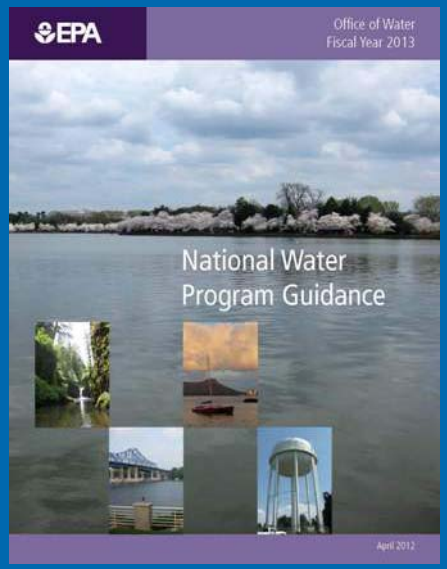
James Hogan, Chief
Surface Water Quality Bureau



WQ-26 Measure Discussion

EPA Office of Water

with ACWA & ECOS

May 9, 2012

WQ-26 Measure Approach

- **Purpose** : Track certain key actions that states can take to address nitrogen and phosphorus pollution in the nation's waters.

- **FY 2013 Focus**: Identifying strong state and territorial progress toward achieving framework elements #1, #2, and #8 (prioritizing, targeting, and numeric criteria).
  - Partial success will be calculated based on adequately addressing one or more of the three elements as described.
  - Essentially, one third credit may be awarded for each element.

New Mexico's current Nutrient Standard states:

"*Plant nutrients from other than natural causes shall not be present in concentrations which will produce undesirable aquatic life or result in a dominance of nuisance species in surface waters of the state*."

The question is, how to assess for attainment of this standard and define *quantifiable endpoints*.

Nutrient Data Collection

- Sampling typically extends over three seasons with a regular sampling schedule.
- Water quality monitoring includes:
  - Level I Nutrient Survey (qualitative)
    - *Results of the Level I assessment will determine if a Level II survey is needed*
  - Level II Nutrient Survey (quantitative)
- Nutrient data are assessed using SWQB's current assessment protocols.

Nutrient Assessment

Weight-of-Evidence Approach

is used:

- to strengthen the ASSESSMENT
- to account for various situations, such as:

  the rapid assimilation of TN and TP by autotrophs and/or exceedences due to suspended solids during peak flows

Threshold values used in assessment are derived from water quality standards, SWQB analyses, or published literature.

NM's indicators of nutrient enrichment:

Indicator	Streams	Lakes	Rivers
Nutrient Concentrations	X	X	X
Dissolved Oxygen (mg/L)	X	X	X
DO % Local Saturation	X		
Stream Metabolism (diurnal DO flux)			X
pH	X		X
Secchi Depth		X	
Chlorophyll *a* Concentration	X	X	X
% Bluegreen Algae		X	
% Algal Cover			X

TMDL Development

- NM writes Nutrient TMDLs that address causal variables (phosphorus and nitrogen)
- TP and TN targets are set to ecoregion – aquatic life use thresholds or to a value that have proven effective at maintaining the integrity of the waterbody
- WLA calculated as a percentage of the TMDL
  - *Often times WLA is below what is technologically feasible because NM doesn't have much water for dilution – have recommended a phased implementation in TMDLs*

Recognizing that the water-quality based, ecoregional targets defined in the TMDL are unachievable, the phased approach uses the limits of technology to set effluent limits

WWTP	**Nutrient effluent limits[a] (no more stringent than)**
New facility [b]	TN = 3.0 mg/L and TP = 0.1 mg/L
Upgrade/expansion of existing facility or increase in design capacity [b]	TN = 3.0 mg/L and TP = 0.1 mg/L
Existing facility (no expansion/increase in design flow)	TN = 8.0 mg/L and TP = 1.0 mg/L

(a) Effluent limits are annual averages that are designed to help communities begin the process of converting their WWTPs for nutrient removal. Literature indicates these limits are technologically achievable

(b) Biological treatment is highly temperature dependent therefore the permit may need to consider seasonal targets based on WWTP design.

Nutrient TMDL Workgroup

The New Mexico Nutrient TMDL Work Group acknowledges that nutrients exist in all waters of the State but that excessive levels lead to impairment of designated uses.

It is the goal of this Work Group that New Mexico adopt nutrient TMDLs that recognize the threshold concentrations necessary to be protective of designated uses while developing approaches for implementation of the waste load allocations that are technologically achievable and are neither over- nor under-protective.

The Work Group will evaluate alternative approaches to the implementation of TMDL waste load allocations for municipal point-source discharges that are scientifically based, environmentally sound, and consider the existing facility design, facility age and local economic factors.

NM is currently working on revisions to its Water Quality Management Plan (WQMP) that will include a path for "alternative" permit limits.

Contact Information

Shelly Lemon

New Mexico Environment Department
Surface Water Quality Bureau
1190 St. Francis Dr.
Santa Fe, NM 87505

Telephone: (505) 827-2814 – Shelly Lemon

Email: shelly.lemon@state.nm.us

SWQB's Nutrient Criteria Homepage:

http://www.nmenv.state.nm.us/swqb/Nutrients/