

Wastewater Management for High-TDS Wastewaters in Pennsylvania



Total Dissolved Solids (TDS)

- TDS are a measurement of inorganic salts, organic matter and other dissolved materials in water.
- TDS are a secondary drinking water contaminant.
- TDS cause toxicity through increases in salinity, changes in the ionic composition of the water, and the toxicity of individual ions.



Sources of High-TDS

- Mining Operations
 - Active
 - Inactive
 - Abandoned
- Oil & Gas Extraction
- Landfills
- Food Processing
- Others



Water Quality Considerations

- Water quality analyses show that our rivers and streams have a very limited ability to assimilate additional TDS.
- Growing demand for assimilative capacity strains our ability to protect water quality.
- Last fall, actual water quality issues related to TDS emerged in the Monongahela River basin.



Management Strategy

Two-tiered approach:

- Establish effluent standards to level the playing field.
- Provide additional protection for most sensitive water use through instream criteria.



Water Quality Standards

- DEP regulations currently have a numeric criterion for Osmotic Pressure (OP) in Chapter 93.
- OP effects can vary from effluent to effluent, depending on the actual constituents present.
- DEP has begun development of instream numeric criteria (concentrations) for TDS, chlorides and sulfates.
- Will require regulatory changes to Chapter 93.



Effluent Standards

- A treatment-based management approach that addresses TDS will rely on the Pennsylvania Clean Streams Law.
- The approach is tailored by specific categories of industrial discharges.
- Effluent standards will be established in regulation through changes to Chapter 95.



Regulatory Changes

Changes to both Chapters 93 and 95 will be submitted to the Environmental Quality Board (EQB) as proposed rulemaking in the next few months, with an opportunity for public comment.

They will be completed prior to January of 2011.



Permitting Strategy

- Goal: By January 1, 2011, new sources of High-TDS wastewaters will be prevented from entering Pennsylvania's waters.
- The interim strategy will focus on those new sources that have the greatest potential to adversely affect the quality of Pennsylvania's receiving streams.



Interim Strategy

Maximize the use of available assimilative capacity of receiving streams where that is feasible.



New Sources of High-TDS Wastewater

- No permits for new sources of High-TDS industrial waste unless the applicant proposes to install treatment for TDS, that meets effluent standards, on or before January of 2011.
- Where sufficient assimilative capacity exists, such capacity may be allocated as mass loads, and permit limitations will be set using these allocations.



New Sources of High-TDS Wastewater

Where sufficient assimilative capacity does not exist, new sources can only be authorized if permits limits are set equal to the numeric water quality criteria for the pollutant(s) of concern.



Pretreatment at POTWs

- Much of the authority for pretreatment requirements remains with the POTW
- PA is not delegated to implement pretreatment
- EPA has authority for pretreatment in Pennsylvania.
- Local limits will be established by the receiving POTW.



Existing Sources of High-TDS Wastewater

- Will be able to continue to operate under their existing permit limits and conditions until such time as they propose to expand or to increase their existing daily discharge load.
- If expansion were to be proposed:
 - Prior to January 1, 2011, the New Sources strategy above.
 - After January 1, 2011, the more stringent of the applicable effluent standards or water quality based effluent limitations.



POTWs

POTWs may be authorized to accept these wastewaters, where analysis of a watershed determines that sufficient assimilative capacity exists.

- Such an allocation would terminate on January 1, 2011. Beyond that date, the discharge will be limited to the more stringent of the applicable effluent or water quality standards.
- Wastewaters discharged from these facilities also must meet any other applicable treatment requirements.
- These facilities must obtain EPA approval of a Pretreatment Program and install appropriate pre-treatment facilities prior to January 1, 2011.



Existing Pretreatment Facilities

Existing pretreatment facilities will be able to continue to operate under their existing permit limits and conditions until such time as they propose to expand their existing daily discharge load of any pollutant of concern.



Next Steps

- Begin to issue draft NPDES permits for applications we have received.
- Develop regulatory packages and meet with WRAC and CAC.
- Moved proposed rule changes to EQB.
- Public comment period.
- Continue to meet with treatment technology representatives.
- Finalize regulation based on public and legislative comments and submit final rule to the EQB.



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