Amendment to Act 537

ACT 26 of 2017 – Alternate Systems Planning and System Evaluation

Sewage Advisory Committee Meeting

October 4, 2017

Tom Wolf, Governor   Patrick McDonnell, Secretary

PA Sewage Facilities - Act 537

- Framework for Comprehensive Plans

- 35 P.S. § 750.3 Declaration of Policy

- Section 5 – Municipal Requirements and Department Obligations

Act 26 of 2017

- Alternate Systems in Planning

- Development of Standard for Review of Existing Alternate Systems

- Effective Dates – 9/18/17 and 3/17/18

- Use Existing Regs and Guidance to Implement

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Alternate System Review

- Existing Regs - Review of Alternate and Experimental Systems on Case-by-Case Basis

- Experimental Onlot Wastewater Technology Verification Program, DEP Doc ID 381-2208-001 (TVP Guidance)

TVP Guidance

- Step 1 – Performance Verification at a Test Center

- Step 2 – Field Testing Performance Verification

- Step 3 – Periodic Verification of Ongoing Performance.

DEP Proposed Performance Standards

Level of Treatment	CBOD5 mg/L	TSS mg/L	TN mg/L	Fecal C #/100ml
Primary Treatment	125	80		
Secondary Treatment	25	30		
Advanced Treatment	10	10		
Disinfection				?
Advanced Disinfection				?
Nitrogen Reduction			20	
Advanced Nitrogen Reduction			10	

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Test Center Performance Data

- NSF/ANSI Standard 40

- Apply Standard Statistical Analysis Principals

- 85% Probability that Technology Performs at the Required Level

- Actual Effluent Levels will be compared to numerical standards

Mean Plus One Standard Deviation Ex.

1. The mean (μ) of the full test data for $CBOD_5$ is 4.27 mg/L.

2. The standard deviation (σ) is 3.85 mg/L.

3. Mean plus one standard deviation is 8.38 mg/L.

4. This technology meets the performance standard for Advanced Treatment for $CBOD_5$.

Field Testing

- Normally 12 sites with 1 year of testing

- Test Plan by Qualified Testing Organization

- Existing Field Data will be considered for areas outside PA on a case-by-case basis

Field Testing (con't)

- Case-by-case Factors (Not all inclusive)

- Where were the sites? (Climate, Soils)

- Type of loading? (Residential, high strength)

- Third Party Collected?

Field Data Performance Verification

- Confidence Interval (C.I) for Field Data

- Show 90% or great C.I.

- C.I. for $CBOD_5$, TSS, TN(if applicable) and Fecal Coliform (if applicable) will be evaluated

Confidence Interval for field testing data ex.

- 60 (**n**) acceptable samples of field testing data were provided to the Department and determined to be normally distributed.
- The mean (**μ**) and standard deviation (**σ**) are calculated for $CBOD_5$ and are 9.00 and 5.94 mg/L respectively.
- Using the top CI of 10 mg/L for both $CBOD_5$ or TSS we are able to determine the CI for the data using the t-test.
- t in this case would be 1.309.
- t table value for 90% and n=60 is 1.296.

Alternate System Review Process

- Review Process in Consultation with SAC

- Public Comment for Review Methodology

- Review Methodology applied to proposed alternate systems.

- Already Requested performance data from existing alternate systems.

Future Rule Making

- Alternate System Review Methodology

- Alternate System General Site Suitability Criteria

- Existing Alternate Systems that Pass TVP

- Public Notice of Alternate System Review Process and TVP Results

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