

Idaho Pollutant Discharge Elimination System

Effluent Limit Development Guidance

Draft Outline



**State of Idaho
Department of Environmental Quality**

January 2017

Effluent Limit Development Guidance Draft Outline

- ✓ 1. Introduction
 - ✓ a. Purpose and Need
 - ✓ b. Effluent Limit Development Process
 - ✓ c. Relationship to Existing Rules and Guidance
 - ✓ i. Clean Water Act (CWA) Background
 - ✓ ii. Idaho Water Quality Standards
 - ✓ d. Regulatory Citations
- ✓ 2. Data Analyses and Considerations
 - ✓ a. Background
 - ✓ b. Data Quality
 - ✓ c. Data Applicability and Grouping
 - ✓ d. Statistical Software
 - ✓ e. Analytical Methods
 - ✓ i. MDL and ML Definitions
 - ✓ ii. Sufficiently Sensitive Methods
 - ✓ **iii. Calculating and Reporting Values < MDL or ML**
 - ✓ **1) Calculations Using Values < MDL or ML**
 - ✓ **2) Reporting Calculations of Average Values**
 - ✓ **3) Mass Calculations**
 - ✓ d. Compliance with Water Quality-based Effluent Limits (WQBELs) below MDL or ML
 - ✓ e. Significant Figures, Rounding, and Precision
 - ✓ i. Significant Figures
 - ✓ ii. Rounding
 - ✓ iii. Reporting Significant Figures
 - ✓ **iv. Permit Calculation Examples**
 - ✓ f. Sample Size, Data Normality, and Outliers
 - ✓ i. Sample Size
 - ✓ ii. Data Normality
 - ✓ iii. Outlier Analysis
- ✓ 3. Determining Technology-Based Effluent Limits (TBELs)
 - ✓ a. TBELs for Publicly Owned Treatment Works (POTWs)
 - ✓ i. Secondary and Equivalent to Secondary Treatment
 - ✓ 1) Secondary Treatment Standards
 - ✓ 2) Equivalent to Secondary Treatment
 - ✓ 3) Criteria to Qualify for Equivalent to Secondary Treatment Standards
 - ✓ ii. Adjustments to Equivalent to Secondary Treatment
 - ✓ iii. Apply Secondary and Equivalent to Secondary Treatment Standards
 - ✓ 1) Determine Appropriate Standards to Apply
 - ✓ 2) Calculate Effluent Limits Based on Secondary Treatment
 - ✓ 3) Calculate Effluent Limits Based on Equivalent to Secondary Standards
 - ✓ 4) Apply Special Considerations and Adjustments
 - ✓ a) Substitution of Chemical Oxygen Demand (COD) or Total Organic Carbon

- (TOC) for 5-day Biochemical Oxygen Demand (BOD5)
 - ✓ b) Adjustments for Industrial Contributions
 - ✓ c) Adjustments to Percent Removal Requirements
 - ✓ 5) Document the Application Standards, Adjustments, and Considerations in the Fact Sheet
- ✓ iv. Pretreatment Standards
 - ✓ 1) Prohibited Discharges
 - ✓ 2) Categorical Standards
- 3. Local Limits
- ✓ 4) Pretreatment Standards for Existing Sources (PSES)
- ✓ 5) Pretreatment Standards for New Sources (PSNS)
- ✓ b. TBELs for Non-POTWs
 - ✓ i. Effluent Guidelines and the Statutory Foundation
 - ✓ 1) Best Practicable Control Technology Currently Available (BPT)
 - ✓ 2) Best Conventional Pollutant Control Technology (BCT)
 - ✓ 3) Best Available Technology Economically Achievable (BAT)
 - ✓ 4) New Source Performance Standards (NSPS)
 - ✓ ii. Apply Effluent Guidelines
 - ✓ 1) Learn About the Industrial Discharger
 - ✓ 2) Identify the Applicable Effluent Guideline Categories
 - ✓ 3) Identify the Applicable Effluent Guideline Subcategories
 - ✓ 4) Determine whether Existing or New Source Standards Apply
 - ✓ 5) Calculate TBELs from the Effluent Guidelines
 - ✓ a) Calculating Mass-Based TBELs from Production-Normalized Effluent Guidelines
 - ✓ b) Calculating Mass-Based TBELs from Flow-Normalized Effluent Guidelines
 - ✓ c) Calculating Mass-Based TBELs from Concentration-based Effluent Guidelines
 - ✓ d) Supplementing Mass-Based TBELs with Concentration Limits
 - ✓ e) Incorporating Narrative Requirements from Effluent Guidelines
 - ✓ 6) Account for Overlapping or Multiple Effluent Guidelines Requirements
 - ✓ a) Superseding Effluent Guidelines
 - ✓ b) Multiple Effluent Guidelines Requirements
 - ✓ 7) Apply Additional Regulatory Considerations in Calculating TBELs
 - ✓ a) Tiered Discharge Limits
 - ✓ b) Internal Outfalls
 - ✓ c) Effluent Guidelines Variances, Waivers, and Intake Credits
 - ✓ 8) Apply Additional Requirements in Effluent Guidelines
 - ✓ 9) Document the Application of Effluent Guidelines in the Fact Sheet
 - ✓ iii. Case-by-Case TBELs for Industrial Dischargers

- ✓ 1) Legal Authority to Establish Case-by-Case TBELs
- ✓ 2) Identify Need for Case-by-Case TBELs
- ✓ 3) Factors Considered When Developing Case-by-Case TBELs
- ✓ 4) Resources for Developing Case-by-Case TBELs
- ✓ 5) Statistical Considerations When Establishing Case-by-Case TBELs
- ✓ 6) Document Case-by-Case TBELs in the Fact Sheet
- ✓ 4. Determining Water Quality-Based Effluent Limits (WQBELs)
 - ✓ a. Characterize the Effluent
 - ✓ i. Identify Pollutants of Concern in the Effluent
 - ✓ 1) Pollutants with Applicable TBELs
 - ✓ 2) Pollutants with a Total Maximum Daily Load (TMDL) Wasteload Allocation (WLA)
 - ✓ 3) Pollutants Identified as Needing WQBELs in the Previous Permit
 - ✓ 4) Pollutants Identified as Present in the Effluent through Monitoring
 - ✓ 5) Pollutants Otherwise Expected to be Present in the Discharge
 - ✓ ~~6. Non-Conventional Pollutants (ammonia, nutrients, ...)~~
 - ✓ ii. Identify Effluent Critical Conditions
 - ✓ 1) Effluent Flow
 - ✓ 2) Effluent Pollutant Concentration
 - ✓ **b. Characterize Receiving Water Critical Conditions**
 - ✓ **i. Receiving Water Upstream Flow**
 - ✓ **ii. Receiving Water Background Pollutant Concentration**
 - ✓ **iii. Other Receiving Water Characteristics**
 - ✓ c. Determine Applicable Water Quality Standards
 - ✓ i. Beneficial Uses
 - ✓ ii. Water Quality Criteria
 - ✓ 1) Numeric Criteria—Aquatic Life
 - ✓ **a) Calculating Metals and Ammonia Criteria**
 - ✓ **b) Special Considerations for Temperature Numeric Criteria**
 - ✓ 2) Numeric Criteria—Human Health
 - ✓ 3) Narrative Criteria
 - ✓ **iii. Antidegradation Policy**
 - ✓ **iv. Additional Considerations**
 - ✓ 4) Site-Specific Water Quality Criteria Implementation
 - ✓ 5) Water Quality Standard Variances **and Intake Credits**
 - ✓ **iii. Antidegradation**
- ✓ **e. Identify Receiving Water Critical Conditions**
 - ✓ **1) Receiving Water Upstream Flow**

~~2) Receiving Water Background Pollutant Concentration~~

~~3) Other Receiving Water Characteristics~~

~~d. Determine the Need for WQBELs~~ ~~Establish an Appropriate Dilution Allowance or Mixing Zone~~

~~i. Define Reasonable Potential~~

~~ii. Assess Critical Conditions~~

~~iii. Establish an Appropriate Mixing Zone~~

~~1) Type of Mixing Under Critical Conditions~~

~~2) Maximum Dilution Allowance or Mixing Zone Size~~

~~a) Dilution Allowances in Rapid and Complete Mix Situations~~

~~b) Dilution Allowances and Regulatory Mixing Zones in Incomplete Mix Situations~~

~~3) Restrictions on Dilution Allowance or Mixing Zone Size~~

~~e. Determine the Need for WQBELs~~

~~i. Define Reasonable Potential~~

~~iiiv. Conduct a Reasonable Potential Analysis (RPA) Using Data~~

~~iiiv. Conduct a RPA without Data~~ ~~What to do if Data is not Available~~

~~i. Determine the Appropriate Water Quality Model~~

~~vi. Determine and Document RPA in the Fact Sheet~~

~~e.iv.~~ Calculate Parameter-specific WQBELs

i. Calculate Parameter-specific WQBELs from Aquatic Life Criteria

1) Determine Acute and Chronic WLAs

2) Calculate Long-term Average (LTA) Concentrations for each WLA

3) Select the Lowest LTA as the Performance Basis for the Permitted Discharger

4) Calculate an Average Monthly Limit (AML) and a Maximum Daily Limit (MDL)

5) Document Calculation of WQBELs in the Fact Sheet

ii. Calculate Chemical-specific WQBELs based on Human Health Criteria for Toxic Pollutants

f. Calculate RPA and WQBELs for Whole Effluent Toxicity (WET)

1) Types of WET Tests

2) Express WET Limits or Test Results

3) Determine WET Limits and Triggers

4) Document WET Calculations in the Fact Sheet

g. Special Considerations

1) Water Quality Trading

2) Intake Credits

3) Variances

4) Emerging Contaminants

5) Watershed Permitting

5. Final Effluent Limits and Antibacksliding
 - a. Determine Final Effluent Limits
 - b. Apply Antibacksliding Requirements
 - c. Document Final Effluent Limit Rationale in the Fact Sheet