

ECONOMICAL ANALYSIS OF DIFFUSER SYSTEMS

Aeration Systems

Bulletin Brief

Many times it is necessary to compare the value of one type aeration versus a competing aeration system. All analyses must consider two general categories of cost:

1. Capital cost i.e., first cost.
2. Operating cost over design life of project brought back to present worth.

Technical Presentation

A complete diffuser computer program analysis can be developed and analyzed considering many variables or options of equipment and application. For this example a more typical comparison of one fine bubble system versus a competitive fine bubble system should be evaluated.

Since operating cost is the primary item separating value of two similar type diffuser systems, only energy costs need detailed evaluation. The attached calculation sheet shows energy savings and how a power evaluation can be developed to influence total project economics and diffuser buying decisions.

NOTE: For complete system analysis with most variables and/or a vigorous computer analysis of your project and equipment options please contact EDI.

In the example on page 2, two types of comparisons may be considered:

1. Diffuser by EDI versus competitive system:
Item 9 - The new system savings must be subtracted from the capital cost of the EDI FlexAir™ aeration system to allow a life cycle cost (value) comparison versus competitive diffuser system (20 years in example).
2. EDI diffusers to upgrade existing hardware:
If comparing EDI diffusers versus existing equipment the savings in item number 9 are subtracted from the cost of the more efficient EDI system to see the effective savings by upgrading existing equipment or to determine if there are economic reasons to change. Obviously with existing equipment the item number 1 is zero for the analysis.

TYPICAL EXAMPLE
DIFFUSER COMPARISON
PRESENT WORTH ANALYSIS

Aeration System Operating Cost Evaluation
EDI FlexAir Aeration - Mixing System

Project Location: **NEW TOWN, USA**

NAME: **EDI CUSTOMER**

Date: **January 1, 2001**

1) Estimated horsepower requirement for competitive system	100 Hp
2) Estimated horsepower requirement with EDI FlexAir Aeration-Mixing System	55 Hp
3) Estimated horsepower reduction with FlexAir in comparison to competitive system	45 Hp
4) Electrical energy cost in cents per kwh	10¢/kwh
5) Annual operating cost per horsepower	\$653/hp
6) Potential annual savings provided with FlexAir Aeration-Mixing System	\$29,407/year
7) Cost of Funds or Interest rate	6%/year
8) Term of Life Cycle Cost Evaluation	20 year
9) Projected power savings with FlexAir Aeration-Mixing System, Present Worth Basis	\$337,300/project

Notes:

For additional information regarding your specific application contact Environmental Dynamics Inc. at (573) 474-9456