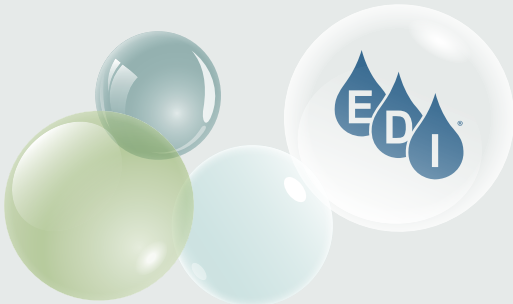




engineered solutions.

EDI engineered solutions are the result of over 40 years experience in the water and wastewater treatment industry. By applying their advanced technology principles of aeration and biological treatment to challenges facing their customers, EDI has earned the reputation of being an innovator and industry leader.



simple  
solution  
superior  
performance

# IDEAL<sup>®</sup> Solution

Intermittently Decanted Extended Aeration Lagoon

Does the IDEAL Solution remove ammonia? Even in the winter?

The IDEAL Solution has demonstrated the ability to remove ammonia to less than 0.05 mg/L even when the water in the reactor was less than 3°C! Thermal insulation may be used to minimize reactor cooling if extremely low temperatures are anticipated.

case study:

Miner, MO | Winter Performance Evaluation

Design Average Flow	0.3 MGD	Design Average BOD	270 mg/L
Design Peak Flow	1.6 MGD	Design Average TSS	220 mg/L
Current Average Flow	0.24 MGD	Storm Flow up to	3 MGD
IDEAL Temp (°C)	5.5 avg, (10 max, 2.3min)	MLSS (mg/L)	1300 +/- 300
F:M Ratio	0.045		

Parameter	Influent (mg/L)	Effluent (mg/L)
BOD	220 +/- 60	4.5 +/- 1.2
TSS	96 +/- 38	5.3 +/- 1.7
Ammonia-N	27 +/- 5	0.05 +/- 0
Nitrate-N	0.06 +/- 0.07	11 +/- 4
Nitrite-N	0.13 +/- 0.21	0.22 +/- 0.215
Total Nitrogen	32 +/- 3	11 +/- 3

Note I: Error calculated using Student's T with 98% confidence interval  
Note II: Effluent Ammonia-N consistently below method detection limit of 0.05 mg/L  
Project designed by: Lambert Engineering, Sikeston, MO



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www.lagoon-solutions.com



a lagoon-based nutrient and ammonia removal solution from  
Environmental Dynamics International  
aeration for life<sup>®</sup>





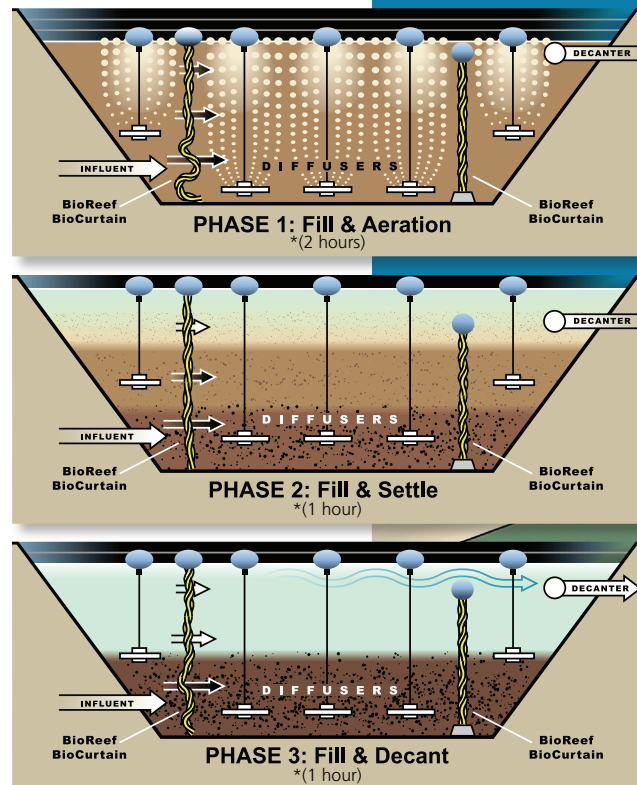
## nutrient removal simplified.

EDI's IDEAL™ Lagoon Solution provides full nitrification even in severe winter conditions. IDEAL incorporates a single lagoon/earthen basin to treat a continuous inflow while maintaining biomass equilibrium.



EDI is the worldwide leading provider for wastewater lagoon solutions. Our innovative design offers simplicity and affordability to both municipal and industrial clients.

- Maintains lagoon operational simplicity and reliability
- Phosphorous removal and filtration options available
- Proven cold temperature nitrification below 3°C
- Removes over 60% nitrate/total nitrogen
- Low total ownership cost



\*Operating sequence adjustable

## IDEAL® BioReactor

- 1 Influent Manifold
- 2 BioReef™ BioCurtain
- 3 WAS Pump (optional)
- 4 Effluent Decanter
- 5 Optional Cover for Cold Climates
- 6 Aeration Units
- 7 Blower Building

## IDEAL® Benefits

### Front-of-the-Plant Ammonia Removal

Removing ammonia at the front of the plant provides major benefits. Other processes typically look to the back of the plant for ammonia removal where BOD concentration is lowest. The IDEAL Process removes BOD and ammonia up front where warm, carbon-rich influent water is available to increase biological activity and allow denitrification for easy recovery of oxygen and alkalinity.

### Nitrate and Total Nitrogen Removal

Total nitrogen and nitrate restrictions are on the horizon. Converting ammonia to nitrate is only the first step. Denitrification, or removing nitrate, is the second step necessary for total nitrogen removal. The IDEAL Process provides this benefit as a natural function of the process, whereas many other systems require expensive upgrades to achieve similar results.

### Long-Term Compliance Planning

Upgrades for advanced system control and maximum pollutant removal are made simple. No modification to the core treatment process is necessary for expansion of performance.

### Energy and Chemical Savings

Microbes can use nitrate in place of oxygen. Denitrification that occurs naturally in the IDEAL process reduces oxygen requirements and decreases operational energy cost. The alkalinity recovered during denitrification can decrease or eliminate the need for chemical addition that some plants need for complete nitrification.

### Worry-Free Operation During and After Peak-Plus Flow Events

The IDEAL Process has shown an excellent ability to maintain performance during and after heavy flow surges. The IDEAL Process also adjusts easily to varying degrees of organic loading.

### Minimum Operator Attention

The IDEAL Process offers simple operation with operator commitment similar to traditional aerated lagoons.

