

SEDIMENTATION

**SEL**<sup>™</sup>

**SUBMERGED EFFLUENT LAUNDER**



Bringing water to life®

# SUBMERGED EFFLUENT LAUNDER DESIGN

## 5 IN 1 ONE COMPONENT SERVING AS FIVE FUNCTIONS

- Effluent Launder
- Weir
- Scum Baffle
- Density Current Baffle
- Launder Cover



## EVEN FLOW DISTRIBUTION

Ovivo's proprietary sizing program ensures uniform flow around the tank perimeter by optimizing:

1. Orifice size, depth, and spacing
2. Number of orifices
3. Launder cross-sectional area
4. Maximum velocities
5. Head loss
6. Flow rate at each orifice

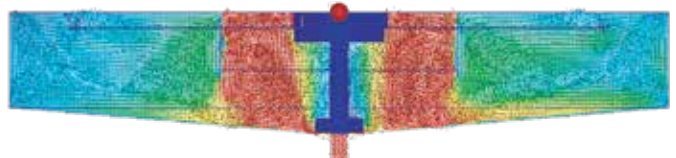
CFD analysis confirms that the Ovivo SEL™ system distributes effluent flow as evenly as traditional inboard launders. Sludge blanket samples from Sykes Creek Regional WWTP show consistent depths, validating the CFD results. The SEL system also maintains flow distribution during high winds better than traditional overflow weirs.

## REDUCED VELOCITY VECTORS

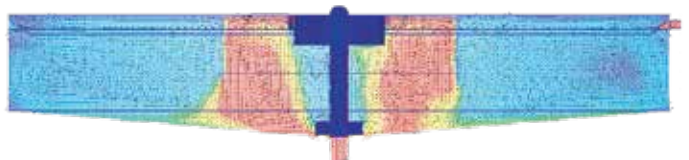
CFD analysis reveals lower velocity magnitudes for the SEL system, with a greater proportion of blue vectors indicating slower velocities. This results in a more stable environment conducive to better settling. Effluent samples from the Ovivo SEL Clarifier consistently show lower total suspended solids (TSS) compared to traditional systems, demonstrating superior performance.

## CFD ANALYSIS AND RESULTS

TRADITIONAL INBOARD LAUNDER



SUBMERGED EFFLUENT LAUNDER



# FEATURES AND BENEFITS

- **Versatile Design:** Suitable for both new and retrofit projects.
- **Cost and Time Efficient:** Eliminates the need for launder covers, algae cleaning systems, weirs, scum baffles, density current baffles and access walkways around the tank, significantly reducing installation time and costs.
- **Simplified Installation:** No need to form concrete effluent launders; the system is self-supporting and requires no external supports.
- **Lower Maintenance Costs:** Removes the need for algae brush or spray cleaning systems, reducing maintenance and replacement costs.
- **Enhanced Safety:** Eliminates manual cleaning of effluent launders and prevents launder cover projectiles during high winds, addressing associated safety concerns.
- **Reduced Algae Issues:** Minimizes algae growth and downstream algae fouling problems.
- **Improved Performance:** Features more surface area for settling, full surface area skimming, and submerged orifices to prevent floatables from exiting. Ensures equal or better effluent quality.
- **Better Flow Management:** Prevents unequal flow distribution during high winds and minimizes UV degradation.

# THE OVIVO SOLUTION

Transform your system with the Ovivo SEL, which significantly reduces total installed costs while minimizing algae growth. This innovative solution eliminates the need for launder covers, algae brush or spray systems, weirs, scum baffles, and density current baffles. Moreover, it removes the need for manual cleaning of effluent launders, offering a cost-effective and efficient alternative.



TRADITIONAL

SEL



## PROCESS CONTROL SYSTEM

The submerged launder creates a differential head that necessitates an active control system to regulate the clarifier's liquid level. There are three control system which Ovivo offers:

### 1. Electrical control gate system which includes:

- Two level transmitters for redundancy
- A control panel with PLC/HMI
- A final control element, such as a weir or gate, equipped with an automatic actuator.

### 2. Mechanical liquid level control system (Beaman Gate) which includes:

- Counterweighted hinge gate
- No electrical controls required

### 3. Serpentine weir control system which includes:

- Serpentine weir
- No electrical controls required

These systems are designed to minimize liquid level variance with plants fluctuating flow rates. Failsafe options are also provided to ensure reliable operation. Each control system has its benefits.

Please contact an Ovivo representative for more information on each systems benefits.



ELECTRICAL CONTROLS



MECHANICAL CONTROLS



SERPENTINE WEIR CONTROLS



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