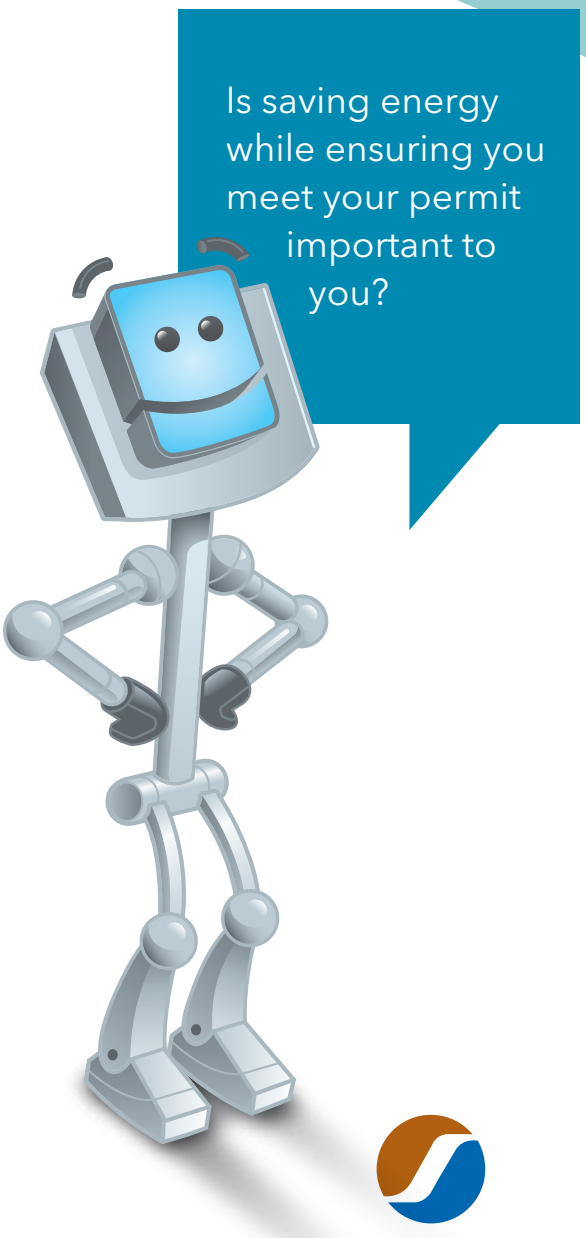
OSCAR Knows ICEAS Nutrient Control

REAL-TIME MONITORING | REAL-TIME CONTROL | REAL-TIME SAVINGS

OSCAR process performance optimizer with NURO controller is a tailor-made control system for the Sanitaire ICEAS advanced SBR. It combines the operational flexibility provided by the ICEAS system with advanced process control to improve the treatment capacity while reducing operational cost.

If you can't measure it, you can't control it. Robust WTW/YSI sensors are used to measure dissolved oxygen, temperature and ammonia. The OSCAR system uses more data from the sensors than just the process variables, because smart sensors should mean smart control.

Keeping plant operations staff in mind. Operator friendly screens enable simple adjustment of setpoints and flexibility to freely adjust cycle operation to a plant's needs.



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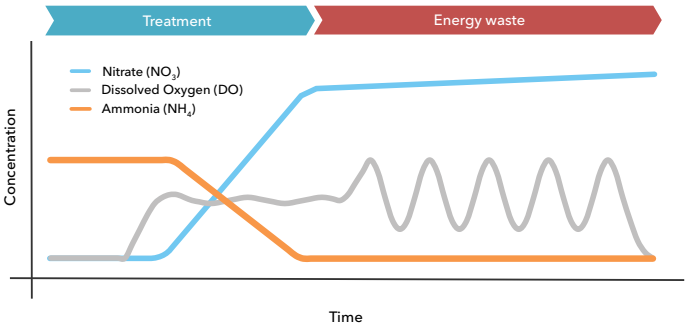
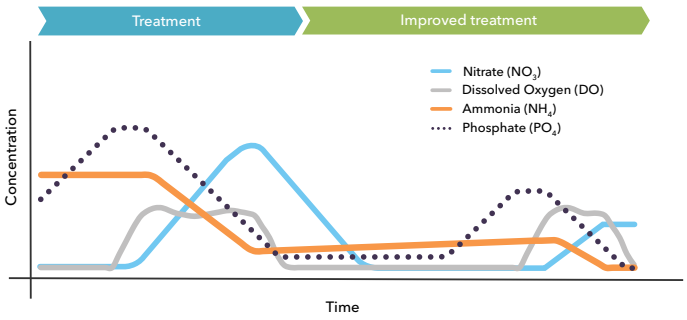
Biological Nutrient Removal Optimized

Most SBR treatment systems use pre-defined aeration and mixing periods. As the load and conditions vary with day, week and season, this pre-defined cycle is seldom optimal for the current conditions. As a result, plants are not only wasting energy but are not using their plants full capacity.

Without NURO Controller



With NURO Controller



Without nutrient control, low loaded treatment cycles are only partially used for treatment. Once the organic and ammonia load is treated, the remaining aeration time results in unstable aeration control and wasted energy. With the NURO controller, aeration is automatically adjusted to the current cycle need, shifting the previous energy waste to improved treatment.

- **NURO controller stabilizes treatment:** The NURO controller uses online measurements of ammonia and temperature to ensure the effluent ammonia is always in compliance.
- **NURO optimizes nitrogen removal:** Excessive aeration and high oxygen concentrations inhibit denitrification. As influent load varies over the day and season, the NURO controller automatically shuts the blower off when not needed, allowing for anoxic conditions.
- **NURO enables biological phosphorus removal:** The NURO controller automatically optimizes conditions for biological phosphorus removal. With the continuous carbon source of the Sanitaire ICEAS system, the NURO controller uses the full treatment cycle to maximize biological phosphorus release and uptake as the current conditions allow.
- **NURO reduces energy:** Excessive aeration is not only hurting the process but also cost money. With the OSCAR system controlling the ICEAS process, energy savings of 20% can be realized.
- **NURO reduces the need for chemicals:** By optimizing the conditions for removing phosphorus biologically, the OSCAR system can reduce or even eliminate the need to add chemicals.
- **NURO protects equipment:** Excess aeration during underloaded conditions results in unstable oxygen control, often requiring unnecessary starts and stops of the blowers. The NURO controller reduces the blower wear by reducing the starts and stops on the blower by up to 50%.

Backed by Sanitaire biological process expertise and supported by Xylem's suite of premium products, the OSCAR ensures process optimization. Optimal treatment starts with optimized nutrient control. Let one of our process experts show you how the OSCAR system takes the guesswork out of nutrient control.

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