

# ENviroPak™ Nitrate Removal

## Low Waste Ion Exchange Systems



With significantly less waste than other nitrate removal technologies, the ENviroPak™ System is the most sustainable solution for nitrate removal.

### Nitrate Removal

Technologies to remove nitrate are increasingly being sought after as rising demand and scarce water supplies are forcing many utilities to consider water sources previously ignored due to the presence of nitrate. In some areas, wells that were previously low in nitrate now require treatment due to increases in the nitrate concentration.

Sources of nitrate include fertilizers from agricultural activities and discharges from wastewater plants and septic systems. When these inputs make their way into water supplies, nitrate levels can increase, making it necessary to install treatment to stay beneath the EPA MCL of 10mg/L (as N).

Traditionally, the only feasible treatment options available for removing nitrate from drinking water supplies were

conventional ion exchange and reverse osmosis. Both of these options can generate a significant amount of waste that can be difficult and expensive to dispose of.

### The Orica Watercare Solution

The ENviroPak™ System combines the familiar conventional packed bed ion exchange technology with Orica Watercare's waste minimization expertise. The volume of waste brine produced by the process is less than 0.5% of the treated water flow. This translates into lower costs for resin regeneration and waste disposal and allows water systems to utilize more of their limited water supplies.

More importantly, with significantly less waste discharged than other nitrate removal technologies, the ENviroPak™ System is the most sustainable solution for nitrate removal.

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**ENviroPak™ System Benefits**

- Low waste volumes
- Reduced salt consumption
- Maximum water source utilization
- Unparalleled service and support
- Equipment lease options

**ENviroPak™ System Sizing**

ENviroPak™ nitrate removal systems are available as packaged units up to 1 MGD and custom-designed systems for all capacities over 1 MGD. Orica Watercare's experienced engineers work closely with

consultants and water utilities in order to design systems for full and split-flow treatment, with the degree of redundancy required by local regulatory agencies.

With low waste volumes less than 0.5% of throughput, these systems provide a more cost effective and sustainable solution to the increasing need for nitrate removal.

**Contact Us**

Contact Orica Watercare for more information or to inquire about a specific nitrate removal application.

Table 1: Waste Volumes for Nitrate Removal Technologies

Treatment Alternative	Waste Volume (gal/MG)	Waste Volume (% Throughput)
ENviroPak™ System	<5,000	<0.5
Conventional Ion Exchange	5,000-20,000	0.5-2
Reverse Osmosis	100,000-200,000	10-20

Figure 1: ENviroPak™ System Schematic

