

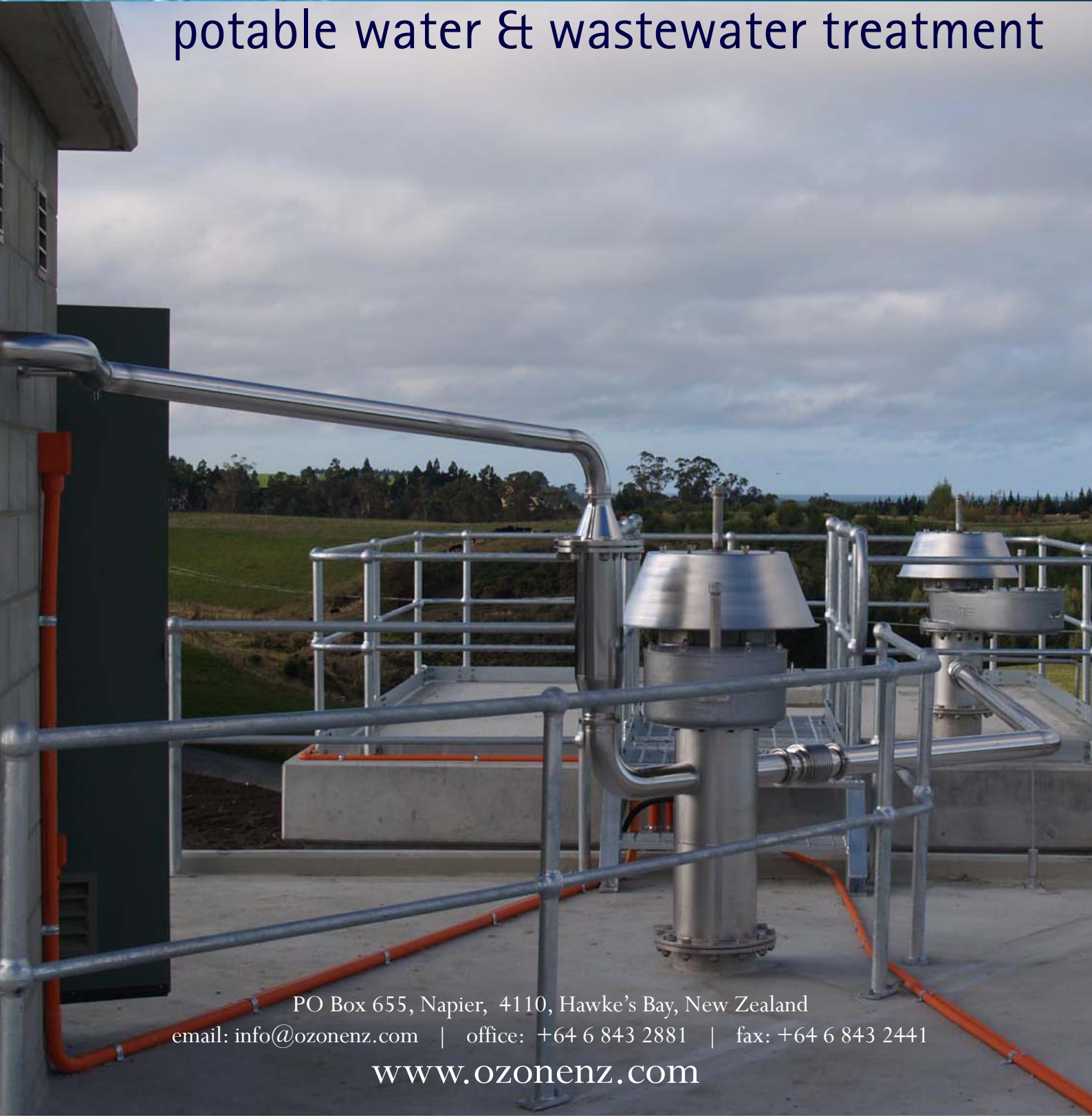


ozone

technologies ltd

protecting our environment

municipal and commercial
potable water & wastewater treatment



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ozone enhanced treatment for potable water and wastewater

The use of ozone processes in domestic drinking water treatment has been significant in Europe since the early 1900's, and in North America for the past three decades. Here in New Zealand Timaru, Wanganui, Oamaru and Takapau are leading the way forward with these cost effective and sustainable treatment practises. Compare the long term benefits of ozone based treatment systems against traditional alternatives of this outstanding performer. The many advantages of ozone as a multi-platform treatment are well documented, but cost savings for running are often overlooked. Some examples are below:

As a flocculant ozone results in rapid and enhanced microflocculation of raw waters. This results in better flow rates, decrease size of filtration and lower chemical costs.

As a pure disinfectant, the higher oxidation potential of ozone versus chlorine results in reduced contact time, which can mean smaller contactors (footprint). The reduced space requirement is a tremendous advantage, and saves in construction materials.

Some pollutants and bacteria are oxidized only by ozone or advanced oxidation combinations. *Cryptosporidium parvum*, for example, are very resistant to most chemical disinfectants but are swiftly destroyed by ozonation. Most other methods act as inhibitors to cysts but do not actually destroy them. UV inactivates organisms by disrupting the reproductive cycle, without killing the organism. Microfiltration strips water of all minerals, many of which are essential to human health. The ecological impact of the waste removed from the filters must also be dealt with as a separate issue for pollutants of wastewater.

Ozone has a positive effect on COD removal by breaking down refractory compounds and making them biodegradable, and also prolongs the life of GAC. Ozone can replace chlorine, chloramines or chlorine dioxide in the preoxidation and main oxidation stages. If your system requires chlorine in the distribution network, ozone can dramatically reduce its need, enhance the quality of the water without forming THM's and still be more economical than other oxidants.

With recent advances in technology the cost of ozone from both capital and operating investment is less than half of what it was several years ago. Ozone will continue to be a clear leader for pleasant tasting and economical drinking water treatment.

This year Ozone Technologies installation into the Oamaru WTP was awarded a silver medal in the ACENZ awards for innovation and design.

Antactica NZ has their wastewater treatment plant upgraded to remove their existing UV plant and include our recycling ozone treatment system to enable the Scott Base facility to reuse this disinfected, clear wastewater for toilet flushing, saving power, decreasing the need for RO filtration of sea water for potable use, and ensuring any discharged water has no environmental impact.

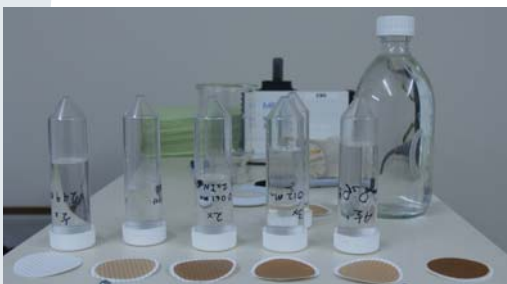
water treatment with ozone common issues addressed

Potable water treatment with ozone and combined technologies can be a cost-effective solution to many common water supply issues. Did you know that ozone used in a well designed system can address most of these with ease:

- Or Disinfection, with residual control
- Or Iron and manganese oxidation
- Or Colour removal
- Or Taste and odours controlled
- Or Improved filtration systems and flocculation ability
- Or Cryptosporidium, Giardia and virus inactivation
- Or Decontamination of infrastructure
- Or Destruction of endocrine disruptors & chemical contaminants

There are considerable further benefits to our modern, efficient system designs. Vastly superior control and technology advances now make ozone a cost effective option from the first day, without the considerable running and maintenance costs of other treatment types available.

- Or Low capital outlay
- Or Each plant is sized to your specific needs, without wastage
- Or Low running costs, for power, maintenance and consumables
- Or Low installation costs, often systems can be pre-manufactured
- Or No ongoing chemical provision outlays, and downtime for ordering
- Or Low maintenance costs for optimal plant condition
- Or GRAS Status USFDA (generally regarded as safe)
- Or Low environmental impact
- Or Significant improvements in water quality, minimal waste



*Iron, manganese removal, microbial disinfection,
Process designed for Central HB DC.*



*Ammonia, DOC, colour and odour removal and
microbial disinfection, for Wanganui DC.*