

## Case Study: Kaipara



### Project ID:

<b>Company:</b>	Kaipara District Council
<b>Location:</b>	Mangawhai, New Zealand
<b>Year:</b>	2009
<b>Description:</b>	Tertiary Effluent Filtration
<b>Goal:</b>	Remove parasitic Helminth Nematode eggs, reduce turbidity and TSS
<b>Capacity:</b>	20 m <sup>3</sup> /hour
<b>Water Source:</b>	Municipal effluent

### The Problems:

- Mangawhai is a water-surrounded popular tourist resort, on New Zealand's east coast.
- Its population grows considerably during the summer months, and septic tank effluent was causing poor water quality in the harbour.
- The wastewater contained a high concentration of the parasitic nematode *Ascaris* spp. The worm infects the blood, lungs, internal

organs and can grow up to 35cm in the intestine. The nematode can prove to be fatal. The infectious egg (40  $\mu\text{m}$ ) must be removed from the wastewater to allow it to be used for irrigation.

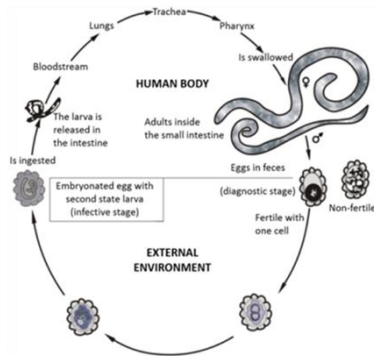
**Ascaris juvenile and an egg, an adult can produce 200,000 per year.**



Items	Existing Values	Required Value
TSS (mg/l)	100	<10

Turbidity (NTU)	Up to 50	< 5
Helminths (parasites)	High	None

## Helminth Life Cycle:






## Technical Solution:

- AFM® - Activated Media filtration with coagulation, implementing a filter with 1600mm diameter.
- AFM® filter auto-cleaning with a combination of backwash water and air scouring.





## Results:

Items	Existing Values	Required Values	After Treatment	
TSS	100	<10	<1	
NTU	Up to 50	<5	<2	
Helminths	High	None	NIL	

During the period no nematode eggs were detected in the product water from the AFM filters.