



## Independent Water Treatment Ltd

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### **REPORT OF ELYSATOR (Chemical-free Boiler Water Treatment) UNIT**

#### **fitted to Independent Fisheries Limited 149HP Scott Boiler.**

The Scott boiler was opened up on 26<sup>th</sup> May 2005 and photographs taken of the inside of the boiler.

The Elysator was fitted and the boiler and the hot well were filled up with raw water taken from the town supply. The water treatment chemical and the water softener were both disconnected from the boiler.

The automatic blow-down was left connected to the boiler.

Boiler blow-downs were increased from two, 10 second blow-downs per day to three, 10 second blow-downs per day. The Elysator was blown-down every day for 10 seconds.

The water conductivity and the pH was checked every day.

A complete water test was done once a month.

Listed below are the individual test criteria:

- ◆ pH
- ◆ Conductivity
- ◆ Iron
- ◆ Copper
- ◆ Sulphate
- ◆ Chloride
- ◆ Hardness
- ◆ Silica

All readings taken in the first two months fell, in some cases up to 80%. It was then decided to decrease the boiler blow-downs to two per day, 10 seconds on each occasion.

After the water test in the 3rd month, as it was found that all the test levels had started to rise, the blow-downs were increased again to three per day - 10 seconds each blow-down.

The results of the 4<sup>th</sup> water test indicated test levels had dropped again. (The water test report is available for perusal should anyone wish to do so).

The Elysator was stripped down every month and the anodes cleaned. It was found that for the first two months there was a buildup of sludge in the Elysator tank and this was hosed out when the anodes were cleaned.

On each occasion until the 3<sup>rd</sup> month, the condensate sight glasses had to be removed every week for cleaning. After the 3<sup>rd</sup> month the condensate sight glasses were running clear.

On September 24<sup>th</sup>, the Scott boiler was switched off and left to cool down. On September 26<sup>th</sup> the boiler was opened up, the water drained out and the inside of the boiler washed with a pressure washer.

On inspection of the boiler it was found that the scale had flaked off the stay tubes and off the side walls of the boiler although scale remained on the main boiler tubes and on the boiler back plate. There was an indication though that the scale in these areas had commenced flaking off.

When the bottom doors were removed from the boiler there was no sign of sludge build-up on the bottom or the sides of the boiler. There was evidence though of flaked off scale around the bottom doors where it had dropped to the bottom of the boiler.

Photographs were again taken of the inside of the boiler at the same angle and position as was done on 26<sup>th</sup> May. This provided an excellent comparison between the two dates over a four month period.

The boiler was inspected by a S.G.S. (M & I) Boiler Inspector who indicated he was most impressed with the condition of the boiler and would be prepared to give *Independent Water Treatment* a written reference for the performance of the Elysator.

The boiler was also inspected by Tim Donaldson, the owner of Ace Water Treatment. He was also impressed with the performance of the Elysator and stated he would be prepared to recommend it to anyone who is interested in installing an Elysator unit in their plant.

## SUMMARY

The Elysator has been fitted to Independent Fisheries Limited boiler for four months. During this time there has been no chemical water treatment added to the feed water and the boiler make-up water has been taken directly from the town supply. No water softener has been used.

The results of the four month trial of the Elystator were excellent and it is encouraging to see that boiler feed water can be treated without using chemicals.

*Independent Water Treatment* is offering a 'lease to buy' option for the Elysator over a three year period.

If further information is required please contact;

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6<sup>th</sup> October 2005.