CASE STUDIES – DIAGEO GLENLOSSIE DISTILLERY

Type of Application – Dam water purification for use as cooling tower water

Summary of Client Needs

The client wished to use loch water for cooling in order to save on mains water charges, but the cooling tower had become fouled after several months of use. This had led to increased use of biocides and a drop in performance of the tower.

The peaty nature of the water which showed suspended solids levels between 30-50mg/l were the main causes of the fouling.

Solution

A fully automated duty/standby system was designed and installed filtering the water before sending it to the cooling tower. This was set the target of < 5mg/l suspended solids.

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CASE STUDIES – DIAGEO GLENLOSSIE DISTILLERY

Results: As a result of the installation of the Spruce Filter, the use of biocides to control biological activity has dramatically decreased. Before the installation daily dosing was required. Since the installation, this has been reduced to weekly.

Conclusion: The installation of a low cost/ small footprint Spruce Filter enabled the distillery to continue to use loch water whilst reducing chemical costs. These savings on water bills and chemicals provided an ROI in less than two years.

Client Comments:

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CASE STUDIES - LUSS

Type of Application - Pre UV filtration tertiary waste water

Summary of Client Needs

Sewage works is subjected to large fluctuation on loading during the peak holiday periods resulting in final effluent quality being inconsistent particular with respect to suspended solids which effects the efficiency of the UV disinfection. The works last year failed to meet the requirements for the bathing water directive on a number of occasions.

Solution

- Spruce filter as a tertiary system for the removal of suspended solids in an attempt to improve the efficiency of the UV disinfection at the site.
- A 1.2m diameter Spruce filter was installed at the site inline, between the final settlement tanks and the UV equipment. A temporary sump was constructed with a small submersible pump delivering formula A flow of 14 l/s through the filter and gravitating back through the UV disinfection system.
- Unit fully operational within 7 weeks of ordering.

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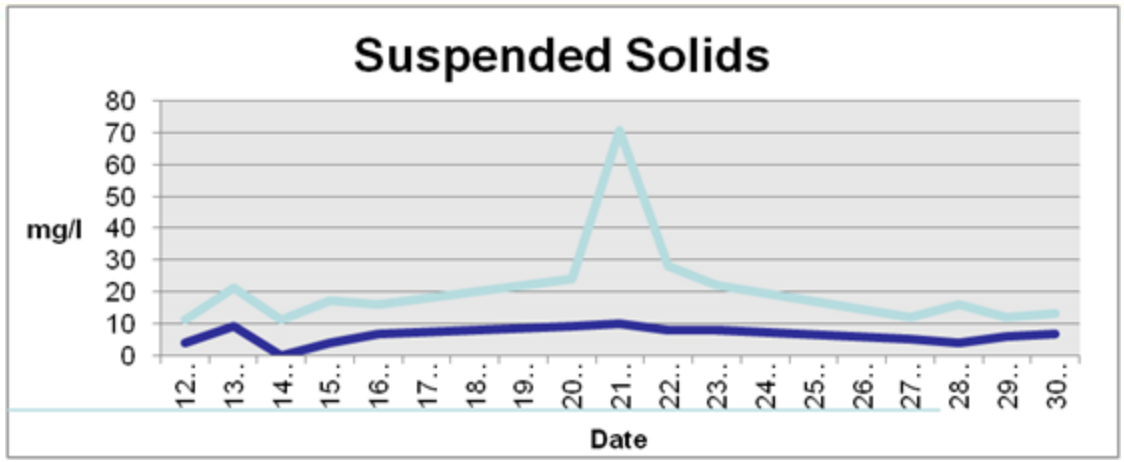
CASE STUDIES - LUSS

Results



- Average pre filter SS 21mg/l — Average post filter SS 6.4mg/l
- **Overall SS reduction SS 70%**
- Average Pre filter BOD 6.3mg/l — Average Post filter BOD 2.9mg/l
- **Overall BOD reduction 54%**
- After UV E Coli/ coliform - c 100% reduction
- **Source of Results : Scottish Water**

Conclusion: The efficiency of the Spruce Filter as a tertiary treatment unit has transformed this once failing works, which is now producing a quality of effluent previously not thought possible through the use of a simple, cost effective filtration, which has dramatically improved the performance and efficiency of the UV.

Client Comments: ***" Best £80k we have ever spent" – Alan Jenkins, Scottish Water***

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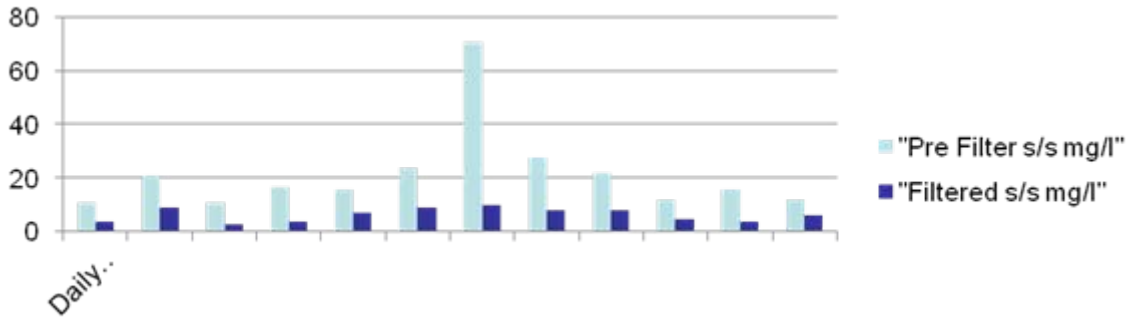
CASE STUDIES - LUSS

Results



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CASE STUDIES – LOCH ASCOG

Type of Application - Drinking Water

Summary of Client Needs

Loch Ascog water treatment works is subjected to large fluctuation of algal loading during the summer periods resulting in issues with quality of water being inconsistent due overloading causing algal breakthrough of the slow sand filters. Various technologies had been tried before to address issues which had not succeeded.

Solution

- Spruce filter as a primary system for the removal of suspended solids and algae in an attempt to improve the efficiency of the slow sand filters at the site.
- A 2m diameter Spruce filter was installed at the site inline, pre filtering raw water prior to the slow sand filter.

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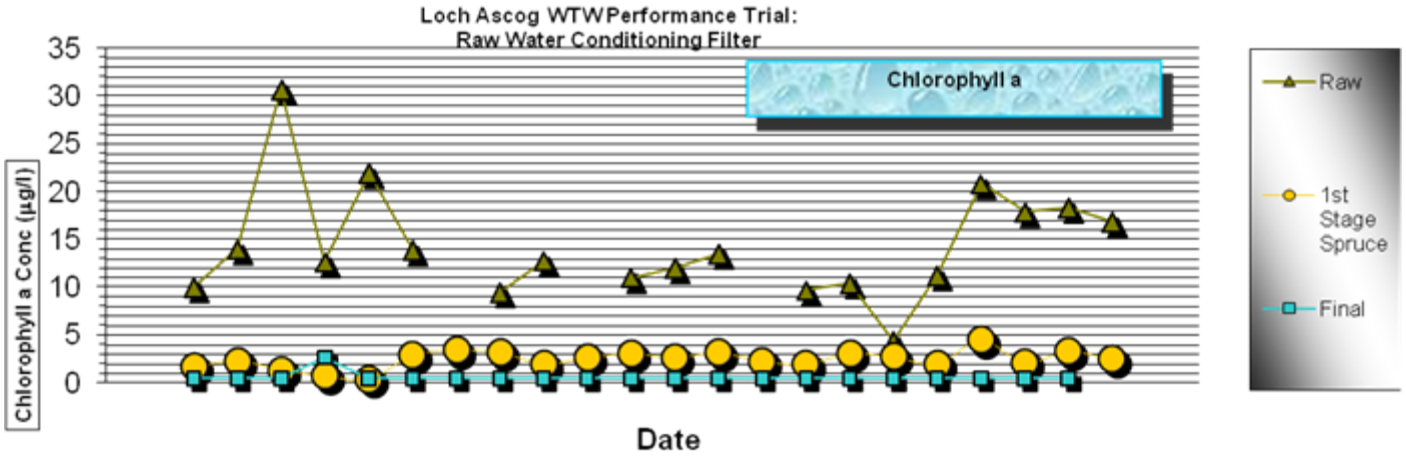
CASE STUDIES – LOCH ASCOG

Results :



- Average pre filter turbidity 22µg/l :Average post filter SS 1mg/l : **Overall Turbidity reduction SS > 94%**
- Average Pre filter Chlorophyll 22.3mg/l :Average Post filter Chlorophyll 3.4mg/l : **Overall Chlorophyll reduction 80%**
- Average pre filter Iron 324µg/l : Average post filter Iron 60µg/l : **Overall Iron reduction 80%**
- Average pre filter Manganese 256µg/l Average post filter Manganese19µg/l :**Overall Manganese reduction 94%**

Source of Results: Scottish Water

Microscopic analysis of filtered water showed no trace of algal species identified in raw water – **Filter Clear Lab.**

Conclusions

Required removal of algae achieved, along with extensive filtration of manganese which at time of testing was brought into consent as well.

Client Quote*: "Cleanest water we have ever had on site" – Stephen ..... Scottish Water*

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APPLICATIONS

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APPLICATIONS - INTERNATIONAL

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