



## Lotus Lightweight Structures Ltd

**Lotus Lightweight Structures Ltd (a wholly owned subsidiary of Lotus Cars Ltd) are recognised leaders in the supply of lightweight niche volume vehicle structures based on bonded aluminium technologies. When the anodising facility in Wellingborough struggled to consistently achieve wastewater discharge consent limits the Site Manager at that time decided to ask AllWater Technologies Ltd to assist in coming up with a solution.**



It was apparent that most of the problems were associated with the inability of the two, small, existing filter presses to cope with the level of solids being produced as a result of effluent treatment which included pH correction and settlement. In addition, the poor settlement rate of solids resulting from pH correction were also leading to carry over to drain.

Lotus had purchased a refurbished filter press in the past but it had never been installed and commissioned and at the time had been standing in a yard for some years. It was agreed that the press would be installed on a gantry in a redundant loading bay area, providing good access for removal of filter cake by skip to the front of the building. Unfortunately the existing effluent treatment plant was installed to the rear of the building.

As the loading bay area was the obvious choice for installation of the press it was agreed that pipework should be installed to transfer settled solids from the rear of the factory to the front. To prevent solids build-up in pipes it was made as free draining as possible and "rodding points" were built in at strategic points to enable pipe cleaning without the requirement for removal. As much of the pipework was run outdoors trace heating and lagging was also used to help prevent freezing.

In order to assist in settlement of solids and aid in dewatering a Polymore Mini 5-0.69 automatic polymer make-up and dosing system was installed to aid flocculation. The Polymore is a compact, wall mounted unit which draws concentrated polymer directly from a drum and delivers on demand. The unique multi zone system ensures effective mixing and activation of liquid polymer without creating inactive polymer solution in the form of "fish-eyes" or "angel-hair". Once wetted the polymer is mixed in a large chamber made from non-transparent material to guarantee that none of the activated solution is destroyed by UV light prior to dosing. The activated polymer is then dosed in-line prior to a static mixer which provides dynamic mixing whenever the upstream pump is running transferring pH corrected effluent to the first of two settlement tank stages.



With the increased capacity in filter cake production Lotus are now able to bleed waste process solutions containing high levels of Aluminium into their waste stream preventing the regular need transportation associated with off-site disposal. Current Site Manager Andy Wilson said "We consider the reduction in off-site disposal of considerable importance in reducing our environmental impact. There is no longer the requirement to transport potentially hazardous waste process solutions and we are currently exploring the possibility of disposing of the resultant non-hazardous filter cake as landfill stabiliser or for production in building materials."

AllWater Technologies Ltd delivered the project on budget and Andy Wilson is pleased with the result and quality of workmanship involved. He adds "I am more than happy with the results we have achieved and would gladly work with AllWater on future projects". Derek Spriggs, MD of AllWater commented "We are proud to be linked with such a prestigious company and are pleased to have received the continuing support from site."

**AllWater Technologies Ltd**

T: 01934 751333

E: [enquiries@allwatertech.co.uk](mailto:enquiries@allwatertech.co.uk)

W: [www.allwatertreatment.co.uk](http://www.allwatertreatment.co.uk)