



Environment Agency & Waterwise

uk water efficiency awards 2012

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Greenvale AP – Project Cascade



Sand extraction from waste water

GREENVALE, AS A POTATO PROCESSOR, faced the huge challenges of reducing its high water and effluent costs and solving the environmental issues associated with high slurry production. Another challenge was to improve appearance and bacteriological integrity of the finished product.

To overcome these challenges a unique water recycling system was designed using existing technologies from many industries and combining them with a state of the art computer control system to create a fully automatic continual circulation and treatment system. A company called Mobile Separation Equipment agreed to build and install the concept. No one could prove or disprove the theory, even eminent experts would not commit to a decision on the outcome. “I cannot say that it won’t work” was a quote from a professor in fluid dynamics. Even so, the Greenvale main board passed the capital of £1 million to deliver the project and Cascade was born.

An 85% reduction in water use and a remarkably improved appearance of the finished product has enhanced shelf life

ate a constant loop of water, circulating at very high volume and being filtered, purified and chilled on each cycle, some eight times per day. All the soil and solids are removed by several separation systems and are collected in a semi-dry state for recycling. This removes the enormous cost and environmental issue of high slurry waste. The plant was commissioned in October 2009 and immediately surpassed the expectations on water saving and waste controls. An 85% reduction in water use, almost zero effluent (and the little there is, is clean water), recycling of the semi-dry soil, sand and peel filtrates and a remarkably improved appearance of the finished product which, due to the high bacteriological integrity of the wash water, has enhanced shelf life.

Another aspect of Cascade is the potential for chilling the washed prod-

uct, another element of bacterial control, which was facilitated by ‘the closed loop’ being insulated, making chilling super-efficient and reducing energy costs by 50%. The absence of dirty water from the wash lines enhanced plant hygiene and the wash area was transformed from a very difficult area to keep clean into one to be proud of. “If I hadn’t seen it I wouldn’t have believed it possible,” said our dedicated wash area hygiene operative who has worked at Greenvale for over 20 years.

Customer reaction to Cascade has been extremely positive on both product enhancement and environmental excellence.

The groundbreaking methodology was to cre-

In order to benchmark the Cascade system a



third-party expert on food processing was commissioned to make an in depth study of the new washing process. The extensive report concludes “In my opinion in the future all root crop vegetables should be washed with the Cascade system.”

Payback on the £1million investment is 3.5 years, but non-tangible benefits are instantly seen in both employee morale and visible site environmental standards.

Cascade is a major breakthrough in an established industry where age-old issues have remained unchallenged and become the accepted norm. Modern technology, innovative thinking and wise investment have taken us into a new era of process and environmental control.

Cascade is protected by a non-disclosure agreement but is available to third parties who may be interested. Already keen interest has been shown by UK companies as well as companies from the USA, Canada, South Africa, Australia and Europe. The future looks very bright for both Cascade and the environment.



The old method of washing, pre-Cascade