



## **Environmental Stewardship Has Its Rewards: 2014 Annual Environmental Award Winners**



Since 2009, GEO Specialty Chemicals has honored its employees who go the distance to make environmental stewardship an ongoing priority. The Annual Environmental Awards ceremony is held during the company's annual Safe Award for Excellence (SAFE) conference. The four R's for sustainability in manufacturing – reduction, reuse, recycle and recovery – are key strategies applied to pollution and waste when they are eliminated at any of GEO's plant locations.

### **2014 Environmental Award Recipients**

In 2014, there were six GEO entries for the Environmental Awards competition. The following four were named finalists:

**1<sup>st</sup> Place (Large Plant):**                      **Paints & Coatings**                      **Division: Hythe, England**

The final stage of this facility's wastewater treatment process involves dissolved air floatation (DAF) to reduce solids prior to discharging treated water to the estuary. The resulting solids/sludges are dewatered by use of a centrifuge prior to offsite waste disposal. To facilitate these processes, addition of coagulant and flocculent chemicals is required.

**Project:**

The employees at the facility sought to improve resource efficiency in wastewater treatment. Since June 2013, the facility has been working with a new chemicals supplier with the following goals:

- To reduce chemical usage and costs
- To improve DAF reliability, measured by diversion of treated water to a holding lagoon
- To reduce waste sludge generation and annual disposal costs

**Environmental Benefit:**

The results were as follows:

- a) Thirty-three percent reduction in chemical cost.
- b) Improved DAF reliability. Annual lagoon diversion was reduced by 66% compared to the previous 12 month period, significantly reducing the risk of regulatory compliance issues.
- c) Reduction in waste sludge generated. In addition to reduced chemical usage, centrifuge cake dryness was increased by 4%, which has resulted in an approximate 17% decrease in sludge volume for disposal.
- d) Lowered utilities cost (reduced water usage and energy).

**1<sup>st</sup> Place (Small Plant):****Water Treatment****Division: Baltimore, MD**

PAC storage tanks naturally accumulate solids in the bottom and most facilities clean tanks with some routine frequency. The current operation had inherited three full tanks of solids. This was taking away floor space and causing overcrowding in the blending operation. In order to clean up the area, the facility would typically dispose the material as waste.

**Project:**

Instead of disposing of the solids as waste the facility opted to mix the PAC solids with HCl in one of the plant's glass-lined reactors, in order to convert it into ACS (Aluminum Chloride Solution) for reuse. In the last nine months, the facility has cleaned two out of the three tanks. The facility is currently working on the third tank.

**Environmental Benefit:**

- a) Environmental: Avoided putting 60 tons of chemical waste into a landfill.
- b) Productivity: Freed up about 400 sq. ft of floor space in the Blending Area, which is the most congested part of the plant. The facility has plans to re-configure scale, pump and acid tanks for better safety and productivity.

**2<sup>nd</sup> Place:****Specialty & Construction****Division: Cedartown, GA**

The facility had various materials on hand from several different projects:

- 15 totes of ferric sulfate at the WWTP
- 3,350 gallons of Therminol heat transfer fluid from the hot oil system
- 14 totes of obsolete unusable product
- 21,000 pounds of yellow grease
- 57 drums of 1-Hexene/1-Octene

**Project:**

The option for the above materials was to either dispose of it or find a user for the materials. The teamwork at the facility paid off with alternative reuse strategy. All of these materials were arranged to be reused by other companies and there was no transportation, disposal, nor any other payment incurred by GEO to get rid of the materials.

**Environmental Benefit:**

Avoided disposal such as incineration or solidification/landfill

**3<sup>rd</sup> Place:****Water Treatment****Division: Deer Park, TX**

The facility had to take a storage tank out of service for inspection. The tank had built up a significant heel of solids. The solids were put back into solution and the solution put into totes for disposal.

**Project:**

Instead of having the material sent to disposal, the facility looked at an alternate solution. A facility was located that was able to rework the material back into production, thus saving disposal and eliminating waste.

**Environmental Benefit:**

- a) Eliminated the disposal of about 40,000 lbs of weak formaldehyde solution were filled.

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