

### Accra-Fab, Inc.

#### Metal Fabricator Saves Staff Time and Money by Reducing Waste

Accra-Fab, Inc., of Liberty Lake, Washington provides high quality precision custom metal fabrication and assembly for companies throughout the world. They also provide design services that can improve product design while saving money for customers.

#### Situation

In 2009, Accra-Fab management determined they were spending too much staff time and money handling wastewater from the metal treatment lines in their 155,000 square foot facility. They identified wastewater reduction as a priority.

#### Solution

Accra-Fab brought in Impact Washington, the state manufacturing extension partner, who helped them implement Lean in 2008. Lean manufacturing techniques identify and eliminate waste and non-value-added activities. Impact Washington partnered with Washington State Department of Ecology (Ecology) as they had on past Lean and Green projects, and also with Lean Environment Inc., a small engineering firm with wastewater reduction expertise.

Accra-Fab began this phase of Lean work with a focused effort called a “kaizen event” to evaluate the conversion coating process and identify ways to reduce wastewater generation. They looked at a number of specific factors including:

- Lack of adequate standard work
- Solids and biological oxygen demand (BOD) content, and acidity or corrosivity (pH) of rinse system baths over time
- Poor measurement of rinse bath conditions with existing meter
- Different operators' techniques in part handling and bath drag-out

This pinpointed the main problem – relying on a single treatment system for numerous wastes. Lean Environment and Ecology then assisted them to redesign and refurbish the ion exchange system, improve process layout and environmental housekeeping, and update standard work.

#### WHY IT MATTERS

Good environmental management:

- Improves profitability.
- Reduces costs associated with handling waste.
- Saves energy.
- Improves workplace safety.
- Improves competitiveness in the global marketplace.
- Preserves a healthy environment for future generations.

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Impact Washington  
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Lean Environment Incorporated  
[www.LeanEnvironment.com](http://www.LeanEnvironment.com)

Ecology, Lean and Environment  
[www.ecy.wa.gov/programs/hwtr/lean](http://www.ecy.wa.gov/programs/hwtr/lean)

U.S. EPA, Lean and Environment  
[www.epa.gov/lean](http://www.epa.gov/lean)

Pollution Prevention Resource Center  
[www.pprc.org](http://www.pprc.org)

Ross & Associates Environmental Consulting, Ltd. [www.ross-assoc.com/](http://www.ross-assoc.com/)

#### Special accommodations

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Persons with hearing loss, call 711 for Washington Relay Service. Persons with a speech disability, call 877-833-6341.

**Results**

The efforts of this public-private partnership yielded impressive results. Accra-Fab achieved both financial and environmental results, including:

- Saving \$187,000 annually in avoided wastewater management and treatment costs.
- Reducing acidic wastewater generation from 1,500 gallons to 80 gallons per week.
- Reducing chemical use by about 50 percent.
- Freeing up considerable floor space.
- Increasing production capacity with little additional capital investment.

**Before**



"The Swamp" was an uncovered waste collection pan downstream of the original "combined" system. Water was supplied by gravity feed from the storage tank above.

**After**



The new ion exchange system is safer, eliminated the "Swamp" and the raised storage tank, and reduced the use of floor space.

Accra-Fab is now a much safer and greener company. They are sold on the benefits of combining Lean and environmental tools to bring measurable improvement to a business.

**Acknowledgements**

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