

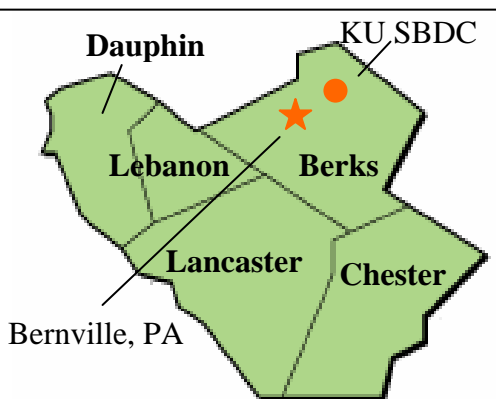
KUTZTOWN UNIVERSITY

SBDC
PENNSYLVANIA

SUCCESS CONNECTION

Helping Businesses Start, Grow & Prosper

Recycling Oil Filters and Feeding Calves- All in a Day's Work at Lucas Lane



*Lucas Lane Inc. is located in
Bernville, northwest of Reading*

David Lucas
Lucas Lane Inc.
2Hhowdoyourecycleoilfilters.com

Industry: Oil Filter Recycling

Year Founded: 2004

SBDC Assistance: Business and
Financial planning, Government
Contracts

Kutztown University SBDC
Ernie Post, Director
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July 2008 Success Story Kutztown SBDC Success Connection

Your car rolls over the gravel path of the Lucas family homestead and you take in the scenery of the 75 acre Berks County farm. The light speckles through the tree lined drive, horses graze in the meadows and a 55-gallon barrel full of used oil filters quietly stands in front of the barn at the end of the drive. Wait, oil filters on a farm? Not only is Lucas Lane Inc. a working veal farm, but also an oil filter recycling facility. Oil filters of all sizes, from lawnmowers to locomotives find their way to this pastoral setting, where David Lucas and his family recycle them for scrap steel and waste oil.

With help from the KU SBDC, Lucas Lane Inc. has grown to servicing a 60-mile radius of Reading, and has landed a contract with the National Guard.

After moving to their farm in Bernville, PA in 1994, Lucas and his family have engaged in several agricultural ventures, including raising Holstein bulls and various other stocker animals. Now, half of the Lucas' land is rented to neighboring farmers for crop fields and the rest is used for grazing the Lucas' animals. Lucas' wife owns two milk cows and the children have several riding horses.



Dave Lucas, standing in-between his thermal processing unit (left) and a pallet of crushed filters (right)

The green-roof barn at the end of the driveway houses 200 head of veal calves on one side and an oil filter recycling operation on the other.

The calves are fed every 12 hours, leaving Lucas with extra time in-between feedings. As Lucas puts it, “As a farmer, I had more time than money.” With that in mind, Lucas looked outside the world of agriculture for a second source of income, hoping to make a profit in less time than within the avenues of farming.

Lucas’ father, a semi-retired engineer, helped design the original version of the thermal processing unit, basically a large-scale oven, now stationed in Lucas’ veal barn. To keep his family’s farm, Lucas began planning and creating what would become Lucas Lane Inc.

About half of the 500 million oil filters manufactured in the US each year end up in landfills. These filters account for 75,000 tons of usable scrap steel and more than nine million gallons of reclaimable waste oil, representing over one and a half trillion BTU’s

(British Thermal Unit- the amount of energy required to raise one pound of water by one degree Fahrenheit) of energy being thrown away. Not only are we knowingly discarding usable oil, but also are setting ourselves up for the possibility of polluting the soil and ground water. According to the Environmental Protection Agency (EPA), one gallon of waste oil can contaminate one million gallons of groundwater.

At Lucas Lane Inc., Lucas reclaims approximately 700 gallons of waste oil per load of filters processed, of which not one drop ends up in a landfill. During the processing, 100 percent of the materials are reclaimed. How does Lucas do it? Using his giant oven of course.

The process starts where new filters replace the used ones at “generators” sites, such as auto shops, which collect the used filters for Lucas. Once the generators accumulate a barrel-full, or 250-300 filters, Lucas picks them up and brings them to his farm.



There, the used filters are stored in a concrete bin with specially made drainage pits which collect any dripping oil from the waiting filters. The filters are then placed in a machine which crushes them into eight-inch cubes weighing roughly 35 pounds each. At this stage, 10 percent of their weight is still waste oil.

After Lucas has crushed 80 barrels worth of filters, he loads the cubes into the main chamber of his thermal processing unit, where the filters are slowly heated up to

1300 degrees Fahrenheit over 20 hours. Waste oil is reclaimed during the first nine hours of the heating. During the remaining time, the thermal oven vaporizes the remaining waste oil and carbonizes the rubber gaskets and paper.

In the secondary chamber, the oil vapor and smoke are heated to 1700 degrees Fahrenheit, burning them up with only heat vapors coming out of the stack. The entire process is 100 percent green. In winter, Lucas uses the radiant heat from the oven to warm the calves on the other side of the barn.

Of the 700 gallons of waste oil Lucas reclaims, he reuses about 200 to fuel the next cycle of thermal processing, and the remaining 500 is sold to a waste oil recycler for use in the production of asphalt. The premium scrap steel, now entirely separated from the oil, is sold to a steel mill where it is reused.

As the world continues feeling strain on its energy resources, Lucas Lane Inc. must receive more and more orders each day, right? Sadly, this is not the case. “I found people are very interested in it [recycling used oil filters], but unfortunately in PA, it’s not required by law to recycle the oil filters,” says Lucas. Right now, generators are only mandated to hot-drain (drain the filter at or near-engine operating temperature, but above 60 degrees Fahrenheit for at least 12 hours) the used filters then they can throw them away. After being hot drained, 40% of a filter’s weight is still waste oil. “One of the biggest excuses I hear when on a sales call is, ‘Not ‘till I have to,’” says Lucas.

According to Lucas, the PA Department of Environmental Protection (PA DEP) and the Solid Waste Advisory Committee (SWAC) are in the process of passing a new ban in landfills, including restrictions on oil filters. Lucas hopes the new ban is passed soon, keeping more waste oil and scrap steel out of the landfills and widening his customer base.

Also helping to grow Lucas Lane Inc. is the Kutztown University Small Business Development Center, and with guidance from consultants Alex Whan and George Boehm Lucas Lane Inc. is still growing today.



Lucas applied for a Pollution Prevention Assistance Account (PPAA) from the state.

Fortunately, he applied at just the right time, and the state doubled the amount of the low-interest loan, through the Department of Community and Economic Development (DCED) office located in Reading.

Whan and Boehm not only assisted Lucas with his business plan and helped in securing a contract servicing the National Guard, they also helped him tackle a logistics dilemma involving the pickup of full barrels at generators’ sites. “There was a problem in the routing. I didn’t have a tracking method,” says Lucas. Lucas had no working system in place telling him when barrels would be full, and what the most efficient driving route was when out doing pickups.

Wanting more creative hands and minds working on the project, the KU SBDC brought in a logistics class of Kutztown students, and Lucas’ routing problem became their project for the semester. The project allowed KU students interaction with a real world business, and also lead Lucas to the system he uses now based in Microsoft Excel.

“Having the class come to the farm and work on the problem was a stepping stone to developing the system I use now,” says Lucas. Lucas now knows when a generator’s barrel should be full according to their history, and he can make the appropriate contact before his customer knows it’s time to give Lucas a call. “It makes me look good to the customers and combines pickup sites in one area for easier routing,” says Lucas.

The KU SBDC also invited Lucas as a featured guest for the Spring 2008 Decision Makers Forum last March. Lucas participated in a video shown at the Forum, along with two other KU SBDC clients. “I haven’t gotten any calls from the exposure, but you never know how it will come into play in the future. It was a great experience.” says Lucas.

Talking from experience, Lucas believes the best advertiser is word of mouth. Print ads usually get tossed he says. “When I’m picking up barrels from generators, I’ll swing by places we don’t service and talk to the people there. I usually knock on their doors several times, and I always bring my laptop with me to show them video clips explaining what we do.”

Lucas hopes with the new passing of the landfill ban, business will pick up even more. And with the continued help and exposure of the KU SBDC, Lucas Lane Inc. will continue making Berks County a cleaner place to live for years to come.



Lucas Lane Inc. is located at 10 Lucas Lane, in Bernville, PA 19506. You can contact Lucas by calling, (610) or (888) 488 – 8087, or write him an email at, LucasLaneInc@gmail.com. Be sure to check out the website by clicking [here](#)!

The Kutztown University Small Business Development Center provides one-on-one consulting, business planning tools, and free online business courses. Information about these free services is available at our interactive website, www.kutztownsbdc.org. Want to contact us by mail? Send correspondence to deFrancesco Building Room 2, Kutztown, PA 19530.

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