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FLORIDA KEYS
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Marathon Bio-Diesel founder Jeff Lillie, who makes biodiesel fuel by refining recycled vegetable oil from area restaurants, said he needs more oil like this to meet his growing demand. His website promotes the two dozen Florida Keys restaurants and entities who supply him.



Photos by ROBERT SILK/The Citizen

Lillie explains the refining process, in which the oil is filtered, heated to separate the water, filtered again, then placed in holding tanks, where it is treated with a lime methane solution to break down the fatty acids. The oil is then cleaned and filtered to remove any remaining impurities. With the glycerin by-product, Lillie makes soap that he gives to his donor restaurants. Right, Lillie tests the purity of his fuel, which is certified under international standards from the American Society for Testing and Materials.

BY ROBERT SILK
Citizen Staff

Eight years ago, commercial fisherman Jeff Lillie envisioned helping the local environment by selling 100 percent biodiesel fuel, all of it refined locally using recycled vegetable oil from area restaurants.

Today, at great cost to Lillie's life savings, that vision has become a reality. His Marathon Bio-Diesel is now selling clean fuel to a couple dozen regular customers, both boaters and motorists.

But success can also breed problems, and Lillie has a major one. He has plenty of spare production capacity and more interested customers than he can handle, but not enough fuel.

So far, 22 food-servers have signed up to donate their waste vegetable oil to Marathon Bio-Diesel.

"Someday I would like to have all of the restaurants in the Florida Keys and be able to provide biodiesel to most of the cars and boats in the county," Lillie said. "My goal is to make this a centralized hub where the whole community is involved."

Lillie said locals from Key West to Key Largo and even vacationers have brought him oil — anywhere from 1 quart to a couple of gallons — and commented they "wish there was something like this back home."

Pure biodiesel produces 78.5 percent less carbon dioxide emissions than petroleum diesel, according to the U.S. Department of Energy, and at his small refinery on Coco Plum Drive in north Marathon, Lillie makes the good stuff. Marathon Bio-Diesel's fuel has been cer-

Biodiesel demand outpaces cooking oil supply

Marathon Bio-Diesel
2 Coco Plum Drive, Marathon
marathonbiodiesel.com

tified under international standards from the American Society for Testing and Materials (ASTM).

The product begins as simple fryer fat. But before Lillie is done with that fat, it is filtered, heated to separate the water and filtered again. After that, the emerging fuel is placed in holding tanks, where it is treated with a lime methane solution to break down the fatty acids from the cooking oil. Those acids separate out as glycerin, a by-product that can be used as soap. In fact, Lillie has already begun supplying some of his restaurant donors with the product.

With the fats nearly gone, the oil is tested for purity, then combined again with water for further cleaning. After the water evaporates, the fuel is polished to remove any remaining impurities by being run through 6-foot-tall tubes filled with sawdust. Finally, it is filtered again and ready for sale as 100 percent biodiesel.

Marathon Bio-Diesel sells the product for \$3.75 per gallon, a price that Lillie promises won't fluctuate as petro-

WASTE NOT



Biodiesel

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leum diesel goes up and down.

The Chevron station across the street from his refinery one recent day showed a diesel price of \$3.93 while Lillie displayed a little science experiment he says he created nine months ago.

In one jar he had poured traditional diesel. Its black impurities floated through the product while a permanent ring of filth marked the pour line.

"Kind of nasty, isn't it?" Lillie said.

A second jar, containing Lillie's golden-colored but transparent biodiesel, held no visible impurities.

"As you can see, there's nothing. No line. Nothing," Lillie said.

Customers say they notice the difference.

"Once you start running this stuff, you just hate to put diesel back in," said Steve Adams, general manager of SeaTow for the Islamorada and Marathon areas, who uses Lillie's biodiesel in his Ford truck and in his 55-foot Viking boat. "I'll run with my fuel light on as long as I can until he gets more. I'd rather get my teeth pulled than put diesel fuel back in."

Adams said the biodiesel has improved his gas mileage as well as the quality of his exhaust. Plus, it's good for the environment.

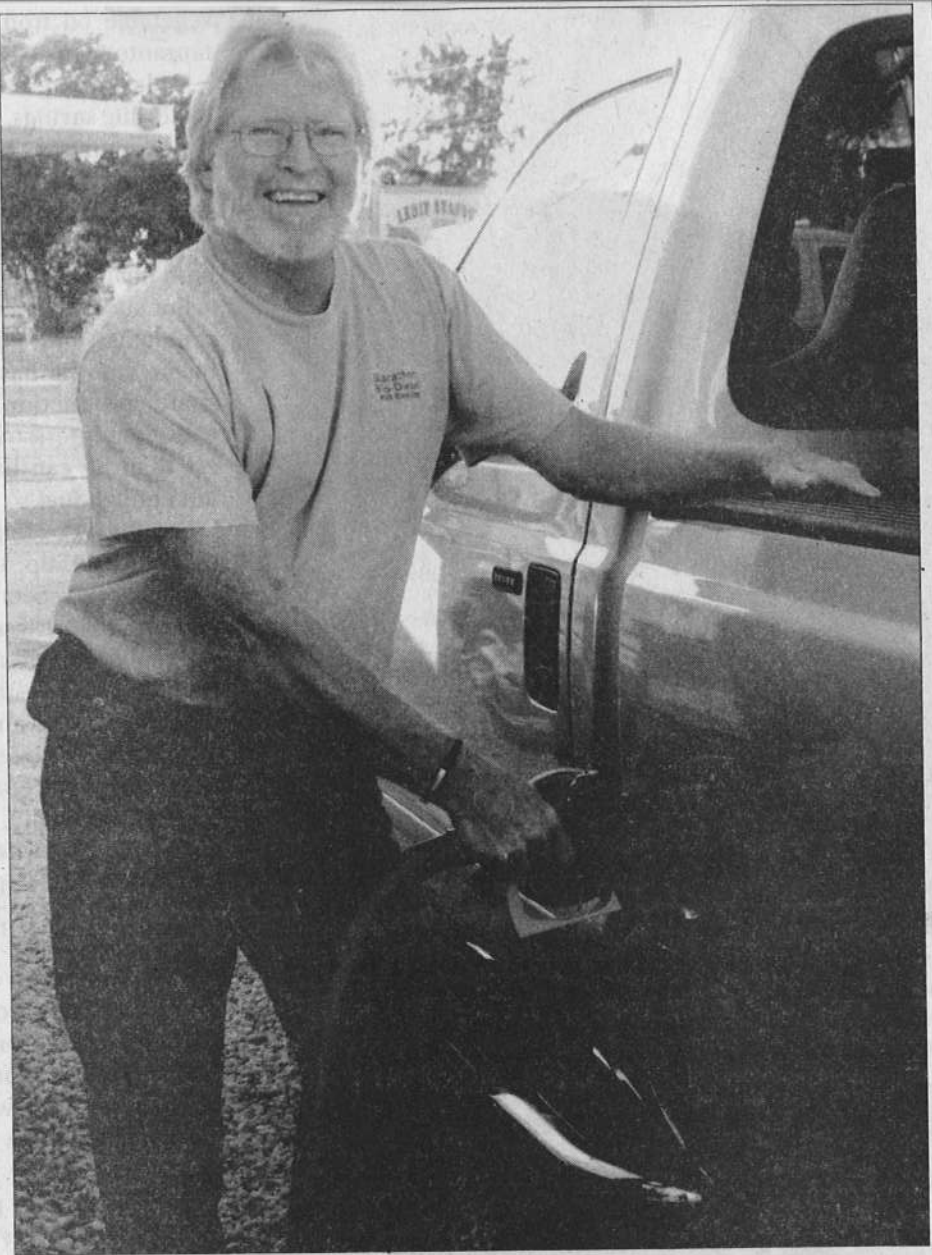
Building contractor Chris Klimas, another Marathon Bio-Diesel customer, agrees. The miles per gallon he gets on his Chevy Silverado improved from 13 to 18 after starting to use the product six months ago.

"There are no negatives about it, to tell you the truth," he said. "I just don't know why anybody wouldn't want to use it."

Lillie recently recruited the help of the Sanctuary Friends Foundation of the Florida Keys. In an effort to encourage restaurants to donate their waste vegetable oil, rather than sell it to companies that typically ship it out of the Keys for any number of industrial uses, the nonprofit has begun working as a middleman between the restaurants and Marathon Bio-Diesel.

Because the foundation is a nonprofit, the arrangement allows restaurants to write off their donations, which they can't do if they donate directly to Lillie.

Meanwhile, some restaurateurs say their donation transcends money. Mel Reger, owner The Wharf Bar and Grill on Summerland Key, said her restaurant produces about 75 gallons per week of waste oil. With cooking oil prices



ROBERT SILK/The Citizen

Lillie fills a customer's truck with fuel that cost \$3.75 per gallon, compared to \$3.93 per gallon for diesel fuel that day at the Chevron station across the street from Lillie's refinery. Customers say the fuel looks cleaner and their gas mileage has improved too.

OIL DONORS

Key Largo

Key Largo Fisheries
DJ's Diner & Seafood Grill

Marathon

Plaza Grill
Frank's Grill
Laurie's Deli
King Seafood
Keys Fisheries
Burdines Waterfront
Salty's Waterfront Grill

The Island Fish Co.
Marathon Seafood Festival
Fishermen's Community
Hospital
Key Colony Beach Fishing Club
American Legion Post 154

Big Pine Key

Vineyard Community Church

Summerland Key

Crab Shack
Slice of Paradise
Galley Grill Restaurant.

The Wharf Bar and Grill

Cudjoe Key

Square Grouper

Sugarloaf Key

Zaza Pizza
Sugarloaf Fire Department
fish fry

Saddlebunch Keys

Kaya Island Eats

Key West

Key West Seafood Festival
American Legion Post 28

ranging from \$1.50 to \$2.20 per gallon, according to the Sanctuary Friends, that equates to donations worth more than \$100 per week.

Reger said the cost is worth it. Lobster and stone crab boats based out of The Wharf purchase fuel from Marathon Bio-Diesel. And the restaurant is using Lillie's glycerin soap.

"That's how the loop is supposed to

work," Reger said.

Lillie, though, said he needs more restaurants to join his effort. His refinery can handle 1,600 gallons of waste vegetable oil a day. Now he's obtaining just 1,500 gallons a month.

"The consumer end of it took off so fast that the restaurants weren't able to keep up with it," he said.

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