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Clean Air Act

A small San Diego company is playing a big role in reducing air pollution in Beijing as China clears the air for the 2008 Olympics

By Larry M. Edwards

IN THREE YEARS, when athletes from around the world descend on Beijing for the 2008 Olympics, they can thank a San Diego company for the cleaner air filling their lungs. The same holds true for Shanghai, host of soccer's World Cup in 2010.



The cleaner air will be due in large part to a fuel additive produced by Ethos Environmental Inc., near the Mexico border in San Diego.

Dubbed Ethos Fuel Reformulator, or EthosFR, the additive is an ester-based product that significantly reduces vehicle exhaust emissions by lubricating and cleaning engines that burn gasoline, diesel fuel or gasohol (a blend of gasoline and ethanol similar to that now required in Southern California).

"With the Olympics coming to Beijing, we want to show the world we are doing something to help the environment," says Yi Li Wang, who, as chairman of human resources, is the highest-ranking woman in the Chinese government. She is also executive chairman of Globalization Economic Cooperation & Promotion Network Ltd., a company half-owned by the Chinese government.

"We are spending a lot of money on the Olympics," says Wang, who was in San Diego in February to meet with Ethos executives. "We are confident that EthosFR will improve air quality for the event."

But before they tackle Beijing's infamous air pollution, the highly polluted Yangtze River region will benefit first. Emission standards have been adopted for the small container ships that ply the Yangtze and other rivers in China. Previously, the ships were unregulated and belched plumes of hydrocarbon-laden smoke, polluting the surrounding air. Although the use of EthosFR has not been mandated, so far it's the only additive the government has approved for use, and a production facility in China is in the works.

About a dozen products were tested, but only Ethos passed muster. "Ethos is a natural, nontoxic product," Wang says, "and has no afterburn"—meaning it does not create any additional emissions, as do petrochemical-based additives and ethanol. What's more, it's been found to reduce fuel consumption enough to pay for itself.

"The air-quality regulations in China were comparable to the 1950s in the United States, so we are a solution for them," says Ethos president Enrique De Vilmorin. "If you take 15 percent off the emission rolls in any city, you're going to make a difference."

He expects to reduce emissions by much more, however. The product is formulated to reduce exhaust emissions 30 to 40 percent, and at least one company in San Diego has achieved emission reductions of nearly 80 percent in some of its equipment.

The ester-based EthosFR cleans and lubricates an engine's internal parts without using petroleum-derived solvents. It acts like soap, removing carbon deposits and reducing friction.

This improves engine performance, reducing fuel consumption as well as harmful emissions. One ounce treats 10 gallons of fuel.

"It's ashless," De Vilmorin says, explaining that 99.99 percent of the patented product is consumed during engine combustion. In fact, emission tests show a significant increase in oxygen levels from engines with EthosFR in the fuel, further improving air quality.

Of the company's name, De Vilmorin explains, "We're an ethical company that has ethical customers, and we sell ethical products."

In addition to China, EthosFR is used in Thailand. In South America, Ecuador will begin adding it to fuel supplies in June to reduce air pollution in Quito. Peru and Chile are expected to follow suit later in the year, and a pilot program is under way in Mexico City.

ETHOS ENVIRONMENTAL is not only cleaning the air, it's cleaning up. The company, which was slated to go public in March, reported \$9 million in sales in 2004. This year, the company expects revenue of \$100 million from China and Ecuador alone.

Sales in the company's home country will only be a fraction of total revenue, however. A number of commercial truck fleet operators use the fuel additive, the U.S. Marine Corps adds the product to the fuel burned in its hovercraft, and the U.S. State Department ordered EthosFR for its Humvees in Iraq earlier this year.

But cracking the U.S. market has been difficult. De Vilmorin approached the U.S. Environmental Protection Agency more than a decade ago, hoping to convince federal officials that a product like his would do more to reduce air pollution than adding oxygenates to gasoline, a requirement in some regions since 1990. But he got the cold shoulder.

De Vilmorin says then-EPA chief Carol Browning told him, "You're never going to get the U.S. government to mandate a product from one single company. It must be market-driven."

Never mind that it's environmentally safe, unlike the oxygenate MTBE (methyl tertiary butyl ether), which has since been banned, and ethanol, which reduces hydrocarbons but has been shown to increase the level of ozone, a primary component of smog.

The California Air Resources Board (CARB) contends that gasoline oxygenates are unnecessary with today's emission-control technology. The state has been requesting an oxygenate waiver since 1999 — including an effort last year by U.S. Senator Dianne Feinstein—but the EPA says it needs to conduct more tests, says CARB spokesman Jerry Martin.

Martin says the Air Resources Board would prefer not to have any fuel additives, but it must consider all alternatives available to reduce air pollution, most of which now comes from diesel-powered vehicles. Meanwhile, the Midwest ethanol lobby, funded by Archer Daniels Midland Company and a handful of other large ethanol producers, continues to push Congress to mandate increased use of ethanol, the production of which is subsidized by the federal government and some states.

Ethanol, which typically costs about 50 cents a gallon more than gasoline at the wholesale level, adds about 4 cents to the cost of a gallon of gasoline to California drivers, and that's after deducting the roughly nickel-per-gallon federal excise tax credit to oil companies that add ethanol to their gasoline, a de facto requirement since January 1.

DE VILMORIN SAYS he doesn't expect to be granted a monopoly by the EPA. He's willing to compete in the marketplace, although to his knowledge he has the only such ester-based product. But he's convinced that this type of product will go further toward meeting federal and state air-quality standards—which will tighten again in 2010—than do current policies.

Ethos has a growing cadre of U.S. supporters. Among them is Jerry Schnitzius, general manager of Pacific Waste Services, the San Diego division of Houston-based Allied Waste Industries, the second-largest trash collection company in the nation. Locally, the company operates a fleet of trucks as well as the heavy equipment at the region's landfills. It's been using EthosFR for four years. Other Allied operations around the country also use the product. It pays for itself not only in lower fuel costs but reduced maintenance by extending engine life and increasing the likelihood of a vehicle passing state-mandated smog tests, Schnitzius says.

"It's like gold," he adds. "By combining it with biodiesel, it reduced emissions from our trucks by 64 to 66 percent, and after we added it to the crankcase oil, it improved another 12 percent." The company's cars have shown a 10 percent improvement in gas mileage. "It saves us money. It's also the right thing to do," Schnitzius says, noting that neither he nor the company has any financial interest in Ethos Environmental.

With more operating capital available through foreign sales, De Vilmorin plans to ramp up domestic marketing by partnering with national retailers, such as auto parts stores and supermarket chains. Consumers will save money at the pump, and it will help their vehicles pass smog tests, he says.

The irony does not escape De Vilmorin: "We had to go to China to open up the U.S. market.

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The Latest...

Local Firm Cleaning the Air for Beijing Olympics

In Brief ... Titan lands \$460M NavAir contract

03/10/2004

by Larry M Edwards

SAN DIEGO -- Four years from now, when athletes from around the world descend on Beijing, China, for the 2008 Olympics, the air quality will be noticeably better due to reduced emissions from the city's buses and other vehicles. The same will be true in Shanghai for soccer's World Cup in 2010.

The cleaner air will be due in large part to a local manufacturer of a fuel additive that reduces exhaust emissions 30 to 40 percent or more.

The additive is an ester-based product dubbed Ethos Fuel Reformulator and is produced by **Ethos Environmental Inc.** in South San Diego.

"The air quality regulations there are comparative to the 1950s here, so we are a solution for them," said Ethos President Enrique De Vilmorin. "If you take 15 percent off the emission rolls in any city, you're going to make a difference."

And with the price of gas at record levels in this country, Americans can also benefit from using the product, its proponents say.

In some cars, the addition of Ethos FR has improved gas mileage 50 percent or more, but the company's official line calls for a 7 to 19 percent improvement, depending on a number of factors, De Vilmorin said.

He stresses that a person's driving habits have a huge effect on gas mileage, so someone who drives with a lead foot on the accelerator is not going to see the improvement that someone driving more conservatively will.

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But it's the reduced emissions he really wants to talk about, not improved mileage.

"That's really the only fair way to do a test, because there are a lot of variables that affect gas mileage," he said. However, because reduced emissions means that more of the fuel is converted into energy rather than going out the exhaust pipe, that also translates to reduced fuel consumption and improved gas mileage.

It pays for itself not only in lower fuel costs, he said, but because it will extend the life of the engine, and it will increase the likelihood of a vehicle passing the state-mandated smog test.

The product works because it is a super lubricator, explains Jerry Schnitzius, the general manager of **Pacific Waste Services**, the San Diego division of Allied Waste Industries, the second-largest trash collection company in the nation.

For three years, Allied has been adding Ethos FR to its truck fuel, reducing exhaust emissions, fuel consumption and maintenance costs. The product is also added to the power steering and transmission fluids.

"We're absolutely sold on it," Schnitzius said. "It reduced emissions from our trucks by 65 percent.

"It saves us money," he added. "It's also the right thing to do."

Two years ago, Allied received the Earth Day Corporate Award for making a difference to the environment and saving valuable resources, including money, crediting Ethos FR.

The company's cars have benefitted from about a 10 percent improvement in gas mileage, Schnitzius said.

The ester-based Ethos FR removes carbon deposits and cleans and lubricates an engine's internal parts without using petroleum-derived solvents.

An ester is a tiny molecule that is smaller than a hydrocarbon, so it penetrates hydrocarbon residue and breaks it up, sending it out the exhaust pipe.

"It's a cleaning process; it gets between the carbon and the metal and the carbon falls away," De Vilmorin, adding that it's good for environment because 99.999 percent of the product is consumed during engine combustion.

Esters occur in nature, and the primary one used by Ethos Environmental originated in palm oil, although the company develops its esters synthetically.

"Otherwise, we'd have to cut down all the palm production in Central and South America," he chuckled.

However, even being in an environmentally conscious country and state that have mandated clear-air policies, most of Ethos Environmental's business is with foreign customers.

"Our sales are 10 times greater outside the United States," De Vilmorin said. "We have huge sales in China, Taiwan, South America and Europe."

The company has strategic partnerships with Thai and Chinese governments, as well as deals with the national oil companies in Peru, Ecuador and Mexico. It has production plants in Malaga, Spain, and Bangkok, Thailand.

That's not to say Ethos is not gaining recognition in the United States. The U.S. Marine Corps at Camp Pendleton is using the additive in the jet fuel that powers the huge LCAC air-cushion landing craft that transport equipment from ship to shore.

The Air Force is also initiating a product evaluation later this year.

De Vilmorin would not disclose the company's annual sales, citing the "quiet period" preceding the company's initial public offering, slated for sometime in the next few months.

However, the company is "fine financially," he said. "We're not in search for monies. We just need to take care of the private investors. It's time they see some of the rewards."

Ethos is also developing new engine technology, power sources that will significantly change the century-old internal combustion engine. "It's very futuristic, and we probably won't be around to make them, but the basis for the technology is already here," he said.

The company, which has 40 employees, settled in San Diego in 1997 and began commercial production of the fuel reformulator after being snubbed by the Environmental Protection Agency.

The product was patented in 1992, and De Vilmorin approached the EPA with the notion that the fuel reformulator could be used as an oxygenate added to fuels to reduce emissions. It would have replaced MTBE, which is now being phased out and replaced by ethanol.

But he got the cold shoulder in the nation's capital. "We spent time chasing politicians down, but we found out they don't spend much money. All they want is your money," he said, pointing out that Archer Daniels Midland Co. spent more than \$50 million getting bio-diesel approved for use.

AMD also just happens to be the largest producer of ethanol, a product whose value as a fuel additive is being scrutinized and has been described by some researchers as a "hoax."

In July, Senator Dianne Feinstein asked the state and federal EPAs to investigate the use of ethanol-blended gasoline after smog levels in Los Angeles increased following the switch from MTBE-blended gasoline.

"Ethos does the same thing, and it's better for the environment," De Vilmorin said. "Technologies from 1980s were included in Clear Air Act of 1990, but today we're 20 years down the road, and there other ways of making things more efficient."

So why hasn't this miracle product taken California by storm, especially in light of the record gas prices?

Ethos FR is offered sale to the public on the Ethos website for \$19.95 a pint, but the company is not actively promoting it. The ratio is 1 to 1280, or one ounce per 10 gallons of fuel.

"It is packaged for consumer use, but marketing is too expensive. Sometime in the future I would suspect it's going to be readily available to everybody, especially with the price of gas going up," he said.

"We're a quiet company," he added. "We have a slogan, we're an ethical company that has ethical customers, and we sell ethical products."

Related story: **Record Gas Prices Have Consumer Advocates Fuming**

* * * * *

In Brief ...

Big deal: The Titan Corp. has been awarded a five-year contract with a ceiling value of up to \$460 million to provide Naval Air Systems Command support services for all phases of naval aircraft and aviation weapon systems. The news buoyed the defense contractor's sagging stock price, which nosedived on Monday after it was announced that the U.S. Justice Department had launched a criminal inquiry into allegations that Titan's consultants or its subsidiaries bribed foreign officials. On March 16, Titan stockholders are scheduled vote on whether to be acquired by **Lockheed Martin Corp.** for \$22 a share. Titan shares (NYSE: TTN) gained 37 cents, or 1.9 percent, to close at \$19.52 in active trading. The firm has a market cap of \$1.59 billion.

Related story: **Titan Downplays SEC Probe, Merger on Schedule**

Low power: Qualcomm Inc. Taiwan Semiconductor Manufacturing Co. Ltd., the world's largest dedicated semiconductor foundry, announced the 2004 delivery of Qualcomm's first 90 nanometer low-power Mobile Station Modem chipset using TSMC's low-power process technology. The new technology greatly reduces power consumption, improves processor performance, and enables the integration of more features onto a single chip, the company said. Qualcomm shares (Nasdaq: QCOM) fell 25 cents, or less than 1 percent, to close at \$63.50 today. The firm has a market cap of \$51.12 billion.

Related story: **Qualcomm Raises Q2 Forecast, Stock at 2-Year High**

Mobiles on the move: Strong replacement demand in mature markets, coupled with higher than expected growth in emerging markets, combined to deliver a record number of units sold in the mobile phone industry in 2003, according to the research firm **Gartner Inc.** Worldwide mobile phone sales totalled 520 million units, a 20.5 percent increase from 2002 sales, Gartner reported. Nokia continued to lead the worldwide mobile phone industry, and it became the market leader in North America. However, on a worldwide basis, it suffered a decline in market share.

Movie making: Production on the made-for-TV movie "The Last Ride" -- starring Dennis Hopper and Fred Ward -- is set to begin mid-March in San Diego. The movie will air in the second quarter of 2004 on **USA Network**.

Larry Edwards is a long-time San Diego business reporter. He also writes the monthly Business Insights column for **San Diego Magazine**.

Have a hot news tip? Contact Larry at: **larry@larryedwards.com**.

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Opinion

Alternative Fuels And The Marketplace

(Source: John S. Hawkins, *The San Diego Union-Tribune*, November 20, 2001)

Virtually everything you did this morning — the cereal and milk you had for breakfast, clothes you decided to wear, the car you drove to work and even how you sent your kids off to school — involved a diesel-powered truck or bus. A truck has at some point shipped most consumer goods in the US, while buses remain critical to transporting students to and from school.

San Diego is growing and so are threats to our health and air quality? Are we soon to become like Los Angeles? What do we do about smog and global warming? Which fuel is the right choice for heavy trucks and buses?

In an effort to reduce emissions that contribute to smog, California regulators have been partial toward natural gas. But according to the Harvard Risk Analysis Center, methane gas escapes from natural gas are 20 times more potent as a greenhouse gas than diesel emissions that may cause global warming, disruptions in the agriculture and ecological harm.

European regulators favor diesel fuel in order to stabilize greenhouse gas emissions.

Natural gas also reduces particulates to "ultra-fine" size, making it easier to penetrate deeper into the respiratory system. Plus, a 100 percent natural gas fleet conversion requires significant capital costs, running in the millions of dollars, which delays implementation.

European regulators favor diesel fuel in order to stabilize greenhouse gas emissions. They are using cleaner-burning diesel fuels and using "green" diesel technology that captures significant amounts of particulates. Clearly the answer isn't simply to choose one over the other, either fuel is a choice that requires an environmental trade off.

A few years ago we at Cloud 9 Shuttle invested a great deal of money and time in converting our fleet to natural gas with poor results. Our fleet, mostly gasoline-powered vans and limousines, now runs cleaner and smoother with Ethos FR, an ester blend that cleans and lubricates any fuel. When added to fuels it makes engines burn fuel more completely without the use of petroleum-based solvents.

We reduced emissions and gained a 7.5 percent fuel economy. Everyone from the employees here at Cloud 9 to the San Diego community has cleaner air to breathe.

Another San Diego company is setting precedent for California diesel-powered fleets with the use of a new alternative fuel program that not only exceeds state clean air standards, but also does so without the cost-prohibitive engine conversions required by alternative fuels like natural gas. The solid-waste hauling truck fleet of Pacific Waste Services is using ethos FR in combination with an alternative fuel.

This innovative program demonstrates the creativity and resourcefulness of the marketplace to use cleaner fuel

Ethos FR cleans and lubricates an 80 percent to 20 percent mixture of diesel fuel and soybean-based fuel called biodiesel, which is an EPA registered alternative fuel. The combination has resulted in a dramatic drop in emissions by 46 percent while increasing fuel mileage by more than 10 percent.

This innovative program demonstrates the creativity and resourcefulness of the marketplace to use cleaner

fuel, reduce the adverse health effects from the use of diesel fuel alone, and use fuel produced in the United States. All around it seems to be a uniquely viable choice for any size fleet. It doesn't require state subsidies or significant capital costs and is compatible with "green" diesel technologies.

In addition to the environmental advantages, this alternative fuel program offers flexibility. The biodiesel and the Ethos FR are used separately or in combination. It runs in existing unmodified diesel engines, integrates with existing fueling infrastructure, allows better performance, realizes substantial fuel and maintenance cost savings and is safe to handle.

This type of technology has tremendous applicability throughout the San Diego region. Let's not stall emissions reduction due to expensive, burdensome and potentially unsafe policies. Let's press forward with market-driven and not regulations-driven solutions.

John S. Hawkins is president of Cloud 9 Shuttle, the largest airport shuttle service in San Diego, California. Cloud 9 Shuttle provides limousines, sedans, buses, shuttles and extended vans for service in San Diego County.

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New fuel

Waste fleet burns biodiesel blend

By Jim Johnson

CHULA VISTA, CALIF. — Pacific Waste Services is taking a two-step approach to convert its fleet to reduce pollution emissions by more than 500 tons per year.

Pacific Waste, based in Chula Vista, is operating 62 vehicles on a mixture of biodiesel — a diesel replacement made from vegetable oil — and standard diesel fuel. The company is using 20 percent biodiesel in the mixture and 80 percent standard fuel.

The company also is using a fuel additive called Ethos FR to increase fuel economy and reduce emissions. The resulting savings will help the firm recover the higher cost of biodiesel. Officials estimate that biodiesel would cost the firm about \$50,000 per year more than the fuel it had been using.

"This alternative fuel source will allow us to play a role in preserving our quality of life for the next generation," said Jerry Schnitzius, general manager of Pacific Waste. "In addition to the environmental advantages, this alternative fuel source runs in existing, unmodified diesel engines, will integrate with our existing fueling infrastructure, is safer to handle than petroleum diesel, allows for better engine performance, and realizes substantial fuel and maintenance cost savings."

Pacific Waste conducted a two-month trial before deciding to switch to the new fuel formulation. Emissions fell by 46 percent for the company's Chula Vista Division fleet.

The company is now operating 62 vehicles with the new approach. They include trash, recycling, yard waste and container trucks.

The firm, which also operates a division in San Diego, expects to begin a similar fuel program in that area this month. Pacific Waste, owned by Allied Waste Industries Inc., operates a similar number of vehicles in its San Diego division.

World Energy, based in Chelsea, Mass., is providing the vegetable oil-based biodiesel. The firm has production sites in California, Florida, Iowa, Ohio and Texas. ■

Contact Waste News reporter Jim Johnson at (330) 865-8171 or jjohnson@crain.com

Let's talk trash and cleaner air

You can't keep Steve Miesen from talking trash. That's part of his job. As facility manager for Pacific Waste Services in Chula Vista, he's responsible for keeping the trash-hauling company running smoothly and — particularly in this day and age — as cleanly as possible.

Last week, Miesen was not only talking trash, but spouting a great deal of information about biodiesel, soybeans and something called "ester" to explain Pacific Waste Services' commitment to cleaner air. The company's entire fleet of 62 vehicles, those massive trucks that pick up and transport trash, yard waste and recyclable material, have been switched to a new fuel mixture that is expected to reduce pollutants by more than 500 tons annually, far exceeding state emission standards.

Miesen and other company officials explained that the trash-hauling company, which also services areas in the city and county of San Diego, decided to go with the alternative fuel source after conducting a two-month pilot program in which the alternative fuel reduced emissions by 46 percent for the Chula Vista division's fleet.

Pacific Waste Services is partnering with three other companies — World Energy Alternative, Supreme Oil Company and Ethos Environmental — in the use of this alternative fuel source.

Without getting too technical, let's just say the new program consists of using B20, a mixture of 20 percent of World Energy's "biodiesel" with 80 percent standard diesel, in combination with Ethos FR, a patented formula that works with any fuel to increase fuel economy and reduce emissions caused by internal combustion engines. This formula includes esters, which act to clean and lubricate the internal parts of the engine. They eliminate the need to use petroleum-derived solvents that are commonly found in fuel additives.

Biodiesel is a diesel replacement that is derived from vegetable oils and fats such as soybean, canola and recycled restaurant greases. If you think a trash truck near you smells like a McDonald's burger, jokes Miesen, you know it's running on this new alternative fuel.

Seriously, though, Pacific Waste Services says its fleet is the first in the nation to use the alternative fuel source. The fuel runs in unmodified diesel engines so no expensive modifications were needed. It's also safer to handle than petroleum diesel and results in better engine performance. Although the new fuel costs more — \$1.51 per gallon compared to about 94 cents per gallon for regular diesel — the company expects to benefit in the long run because of substantial fuel and maintenance cost savings.

Pacific Waste Services, which employs 85 people in Chula Vista, collects about 6,000 tons of trash, yard waste and recycling material a month. It serves more than 39,000 single-family homes and more than 5,000 commercial accounts in Chula Vista.

You know it's campaign season when political candidates start popping up in places you don't usually see them at. Last Friday, I counted six of them at the monthly mayor's breakfast at the San Diego Country Club. John McCann was there, wearing his McCann for Chula Vista City Council button. So were council members Mary Salas and Steve Padilla, candidates for mayor of Chula Vista. Also in the audience were Vince Hall, a candidate for the 78th Assembly District; Arturo Moreno, candidate for Chula Vista City Council; and Chula Vista Councilwoman Patty Davis, who is running for re-election.

Tony Innocentes, a director of the Otay Water District, and his son, Tony, 22, who is campaign manager for Moreno, attended the breakfast meeting as well.

Although the elder Innocentes is not running for anything right now, he rose briefly to complain about the recent vacation of the water board seat held by Fred Cardenas, claiming it was a violation of Cardenas' constitutional rights. A water board majority declared the seat vacant on indications that Cardenas did not live in the division that he represented. Innocentes.



From the
Editor

Vol. 120 No. 45

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November 9, 2001

THE STAR-NEWS



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Barons, Crusaders
clinch league titles

THURSDAY, NOVEMBER 1, 2001

Exotic concoction cuts diesel pollution

By Steve LaRue
STAFF WRITER

November 1, 2001

Mixing a soybean-based fuel and a nonpetroleum supplement with the diesel burned by 62 Chula Vista trash trucks has resulted in a dramatic drop in air pollution, cutting toxic diesel emissions nearly in half.

The California Air Resources Board has said diesel emissions are toxic air contaminants, and they are believed to pose more cancer risks than any other air pollutant.

The 62 trucks, operated by Pacific Waste Services, have been running on an 80-to 20 percent mixture of diesel fuel and a soybean-based oil fuel called biodiesel during a 10-week test. Ethos, a synthetic, nonpetroleum fuel supplement, was added to the mixture to increase engine efficiency and improve mileage.

The 62 trucks had already complied with state emissions standards, but the test showed an additional 46 percent reduction in the trucks' tailpipe emissions.

"This is 500 fewer tons per year of diesel pollutants that are getting into the air," says Jerry Schnitzius, general manager of Pacific Waste Services.

Because of the test results, Schnitzius said Pacific Waste soon will convert an additional 62 trash trucks it operates in San Diego to the same fuel mixture.

Diesel emissions are measured by their opacity, or darkness. Blacker diesel exhaust contains more breathable airborne particles that have been linked to cancer and other heart and lung diseases.

"Everyone, from the employees here (at Pacific Waste) to the Chula Vista community will have cleaner air to breathe," said Gregory Newhouse, area coordinator for the federal Clean Cities Campaign, which promotes use of alternate fuels.

The soybean-based biofuel and the Ethos fuel treatment added about 15 cents to the cost of a gallon of fuel for the trash trucks. However, the combination increased fuel efficiency by 9 percent, Schnitzius said. "The extra costs will be more than made up for by the higher mileage the trucks will get," he said.

Enrique De Vilmorin, president of 2-year-old Ethos Environmental in San Diego, said the supplement is a synthetic super lubricant that penetrates metal surfaces and allows engines to operate with great efficiency.

County Supervisor Greg Cox, a director of the San Diego County Air Pollution Control District, praised the results of the fuel tests but said diesel emissions need to be reduced even more. "This kind of technology has a tremendous applicability throughout the San Diego region," Cox said.



***News*.....from Pacific Waste Services**

For immediate Press Release March 29, 2002

Contact: Enrique De Vilmorin
Ethos Environmental, Inc.
Phone: 619.575.6800
Email: edvil@yahoo.com

Waste-Hauling Company Wins Corporate Earthday Award Reduces Emissions Using Ethos Fuel Reformulator

On behalf of the EarthWorks Organization, San Diego Mayor John Murphy and County Supervisor Pam Slater today honored Pacific Waste Services, an Allied Waste Company, with the Earth Day Corporate Award for making a difference to the environment and saving valuable resources including money.

Ethos Environmental Inc. supported the solid-waste hauling truck fleet of Pacific Waste Services set precedent for California diesel-powered fleets by using *Ethos FR* in combination with an alternative fuel. The fuel used in the fleet of more than 120 trucks is being treated with *Ethos FR*. This treatment will eliminate more than 500 tons of pollution annually—far exceeding State emissions standards without the cost-prohibitive engine conversions required by alternative fuels like natural gas.

Ethos FR, a non-toxic and non-hazardous ester base fuel reformulator, cleans and lubricates an 80 percent to 20 percent mixture of diesel fuel and soybean-based fuel called biodiesel, which is an EPA registered alternative fuel. By treating the fuel combination with *Ethos FR*, Pacific Waste has dramatically dropped its fleet emissions by 63.9 percent while increasing fuel mileage by more than 10 percent that has helped defray the additional cost of the biodiesel. Pacific Waste has been serving San Diego County for over 25 years and employs more than 250 local residents and provides non-hazardous residential and commercial waste collection and recycling services to over 12,000 local businesses and 45,000 local residents.

This innovative program demonstrates the creativity and resourcefulness of the marketplace to use cleaner fuel, reduce the adverse health effects from the use of diesel fuel alone, and use fuel produced in the United States. All around it is a uniquely viable choice for any size

fleet. It doesn't require state subsidies or significant capital costs and is compatible with "green" diesel technologies.

In addition to the environmental advantages, this alternative fuel program offers flexibility. It runs in existing unmodified diesel engines, integrates with existing fueling infrastructure, allows better performance, realizes substantial fuel and maintenance cost savings and is safe to handle. This type of technology has tremendous applicability through a non-toxic and non-hazardous ester base fuel reformulator, out of the San Diego region.





News.....from Pacific Waste Services

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PACIFIC WASTE SERVICES CONVERTS TRUCK FLEET USING NEW ALTERNATIVE FUEL SOURCE - HELPS CLEAN AIR!

SAN DIEGO, CA— Pacific Waste Services announced today that it will reduce more than 500 tons of pollution annually, far exceeding State emissions standards, by becoming the first fleet in the nation to use biodiesel and Ethos Fuel Reformulator (FR) as a new alternative fuel source. Pacific Waste Services made its decision after concluding a two-month pilot program in which the alternative fuel reduced emissions by 46 percent for the Chula Vista Division fleet. Pacific Waste Services also services areas in the City and County of San Diego.

Sixty-two vehicles of the solid waste hauling company—including trash, yard waste, recycling and container transport trucks—now run on the new fuel. This new program, B20-Ethos, consists of using B20, a mixture of 20% of World Energy's Envirodiesel with 80% standard diesel, in combination with Ethos FR, a patented ester formula that works with any fuel to increase fuel economy and reduce emissions caused by internal combustion engines. The fleet is also the first in San Diego to use biodiesel, a diesel replacement derived from vegetable oil. The use of this combination sets a precedent for California fleets since it not only exceeds state clean air standards, but also does so without the cost-prohibitive engine conversions required by other alternative fuels.

"This is an exciting program for the community as it produces significant health benefits from the use of both the biodiesel and Ethos FR. It clearly demonstrates the creativity and resourcefulness of the marketplace to use cleaner fuels, reduce the adverse health effects from the use of diesel fuel alone, and use fuel produced in the United States. As such, it represents a guiding path for other companies in the region to follow," said Greg Newhouse, San Diego Region Clean Cities Coordinator.

"As a leader in the solid waste industry, we are proud to participate in a program that will significantly reduce the toxic emissions and pollutants in the atmosphere," said Jerry Schnitzius, General Manager of Pacific Waste Services. "The use of biodiesel and Ethos fits right into our philosophy of managing today's waste while protecting tomorrow's environment," said Schnitzius.

"This alternative fuel source will allow us to play a role in preserving our quality of life for the next generation. In addition to the environmental advantages, this alternative fuel source runs in existing, unmodified diesel engines, will integrate with our existing fueling infrastructure, is safer to handle than petroleum diesel, allows for better engine performance and realizes substantial fuel and maintenance cost savings," added Schnitzius.





Biodiesel and *Ethos FR* are biodegradable and non-toxic to plants, animals and humans. Biodiesel has passed Tier I and Tier II Health Effects testing required by the Clean Air Act, and is a registered alternative fuel with the Environmental Protection Agency. Pure biodiesel is the most effective greenhouse gas reduction technology for existing engines. *Ethos (FR)* is not derived from petrochemicals and is non-toxic, non-hazardous. The blend of esters in *Ethos (FR)* cleans and lubricates the internal parts of the engine without the use of petroleum-derived solvents commonly found in fuel additives. The main objective is to make fuels self-cleaning and self-lubricating without increasing toxic emissions. Thereby using the fuel more efficiently and with fewer emissions. Removing water from an alcohol derives an ester. More common esters are beer, soap and polyester used in clothing.

With the *B20-Ethos* program Pacific Waste Services today has achieved a 100% fleet conversion to the alternative fuel in the Chula Vista Division, instead of a phase-in plan over the next few years. The company introduced *B20* to all of its diesel engine vehicles without modifications or retrofitting, with an investment of about \$50,000 a year in fuel. Management expects to recover the added cost for the biodiesel in fuel economy savings using *Ethos FR*. This innovative program through its simple implementation and cost savings can help any size vehicle fleet reduce its emissions beyond government-mandated levels. Plans exist to implement the *B20-Ethos* program in the San Diego Division of Pacific Waste Services by the end of November.

"As a San Diego-based company we're pleased to be part of the solution to keep our hometown's air clean," said Enrique de Vilmorin, President of Ethos Environmental Inc. "Pacific Waste services my neighborhood, it's personally rewarding to see a cleaner truck drive down our neighborhood street."

"Because Pacific Waste services thousands of homes and hundreds of hotels, restaurants and commercial properties and apartments, it's adoption of biodiesel will give the fuel broad exposure in San Diego County. Pacific's show of faith in our fuel is a real bellwether because it impacts so many people's lives on a daily basis," said Gene Gebolys, President and Founder of World Energy. "Organization and municipalities are starting to see biodiesel as an affordable and environmentally friendly choice."

About Pacific Waste Services: Pacific Waste Services provides non-hazardous residential and commercial waste collection and recycling services. Pacific Waste has been serving San Diego County for over 25 years and employs more than 250 local residents and provides services to over 12,000 local businesses and 45,000 local residents.

About Ethos Environmental: Ethos Environmental, Inc. of San Diego, California offers cost effective solutions to help industries meet environmental regulations and relieve skyrocketing fuel prices. Hundreds of millions of miles of road tests has proven that commercial fleets on average increase fuel mileage between 7% and 19% and reduce emissions by more than 30% when using Ethos FR. Commercial vehicle fleets in the United States, Canada, Mexico, Latin America, Asia and Europe use Ethos Fuel Reformulator.

About World Energy: World Energy is the nation's leading provider of alternative fuel including Envirodiesel brand biodiesel and Avail E85 ethanol/gasoline blends. The company is headquartered in Chelsea, Massachusetts with additional sales offices in Florida and California and production facilities in Ohio, Florida, Iowa, Texas and California. World Energy is best known as the nation's largest supplier of biodiesel, America's fastest growing alternative fuel.

About supreme Oil: Supreme Oil is a petroleum marketing and distributing company that markets products in California, Arizona, Nevada, New Mexico and Texas. They are the largest distributor of Biodiesel on the West Coast. With over 60 years in the petroleum industry, Supreme Oil's existing infrastructure and expertise enable them to deliver renewable alternative fuels with unparalleled service.

