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FOR IMMEDIATE RELEASE
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RESORT'S NEW FUEL HERALDS CLEANER CHOICE FOR THE EASTERN SIERRA

MAMMOTH MOUNTAIN, CA – Other than the very clean, shiny truck, it looked like any ordinary fuel delivery. But Tuesday, April 26th, was different. In fact, it marked a new point for Mammoth Mountain Ski Area and California's Eastern Sierra region as a whole.

The fuel on board MMSA's tanker truck was the resort's maiden load of 'B10' biodiesel (ten percent refined vegetable oil and 90 percent regular diesel) picked up from Eastern Sierra Oil, a Bishop fuel supply company. While the resort has been testing and using the vegetable oil/diesel blend for two winters now, it had relied mainly on deliveries brought into Mammoth because the supply infrastructure hadn't yet been established. That changed recently, with interesting lessons learned along the way.

For two years, Kenny Lloyd, General Manager of Eastern Sierra Oil (a division of Haycock Petroleum) has been working to install a biodiesel supply tank in Bishop, about 50 miles south of Mammoth. Previously, he was bringing the new, environmentally 'friendly' fuel into Bishop in 55-gallon drums, then blending and delivering specific loads upon request. His accounts include Mammoth Mountain and the Town of Mammoth Lakes, which has been running its entire diesel fleet on Lloyd's B5 blend for the past year. "Our Las Vegas operation is a large supplier of biodiesel products in the southwest," noted Lloyd. "With the knowledge and experience Haycock gained by supplying Las Vegas agencies with biodiesel, we have been able to extrapolate the proper methods for handling biodiesel in the extreme weather conditions."

Eastern Sierra Oil's new supply tank is now up and running, dispensing pure biodiesel (100 percent refined vegetable oil) to commercial customers, allowing MMSA to mix it in with the on-board diesel loads it hauls up from the south to fuel the resort's large diesel fleet. In any blend, biodiesel noticeably cuts down on diesel engines' noxious fumes and sooty, particulate emissions tied to cancer and other health concerns. Additionally, with the state's new air quality regulations cutting the polluting, but lubricating sulfur component from diesel fuel, biodiesel adds engine lubricity back in while still decreasing targeted emissions. "The fuel requirements of our country will never be met by just biodiesel," noted Lloyd, "but supplementing the demand [with biodiesel] is a great way to lessen our dependence on foreign oil and a great way to help our farmers and the environment."

This new, cleaner fuel option hasn't evolved locally without challenges to its testers, though. Notably, pure biodiesel is very temperature sensitive, like saturated cooking oil or grease in a refrigerator. It needs to be kept relatively warm (above 50 degrees F) and handled carefully before blending with regular diesel and winterizing products to depress its "cloud point," or the temperature at which it starts to crystallize and plug fuel filters. Once the crystals form, they never completely go away, but diminish when warmed, so proper handling is critical.

The first load of biodiesel transported into Mammoth by Lloyd in 2003 was a B20 blend used to test in MMSA's loaders and snowcats at Tamarack Cross Country Ski Center. Before being blended, however, the pure biodiesel sat overnight in cooling autumn temperatures in southern California. Once blended and delivered, tests conducted by Mammoth Mountain showed clouding just below zero degrees Fahrenheit. Choosing to play safe when it comes to vehicle reliability, especially considering the impending holidays, the 900-gallon blend was dumped into a larger diesel supply at Mammoth Mountain's garage, where the diluted blend was used without incident. Tamarack's test supply was replenished with properly handled B20 and used throughout the 03-04 winter season without any related problems. The engines did burn noticeably cleaner, however.

Cold weather challenges arose again in the 04-05 season, ruining a large amount of June Mountain's winter diesel supply. Pure biodiesel from Bakersfield was hauled into the area by MMSA and unloaded into several large, above ground tanks at June. It was not blended immediately and sat overnight as the first cold autumn weekend descended. The tanks were mixed to a B10 blend, but the damage was done. Samples showed threatening layers of thick, crystallized biodiesel and rust on the tank bottoms. One 10,000 gallon tank was bad enough to warrant sucking 500 gallons off the bottom and disposing of as hazardous waste.

The remaining deposits of thick, layered "salad oil" on all the tank bottoms were measured and deemed to be resting low enough as to not be sucked up into the supply stems feeding the fuel pumps. One tank did present a problem, however, and fuel filters on three snowcats plugged at a very inconvenient time during the heavy Christmas holiday storms. The supply line was switched over to the other tanks, fueling the grooming fleet for most of the winter without any more issues. "It was not a good time," said Mike Sprague, June Mountain's Outside Operations General Manager, about the snowcat holiday failures, "but we expect there to be challenges when we're on the cutting edge and this is certainly along those lines."

At Mammoth Mountain, snowcats running off the McCoy Station fuel tanks ran on B10 all winter without any related problems despite the supply coming from the same load as June's blend. "We had no adverse changes in any of the cats, including no loss of power," testified John Walline, Snowcat Maintenance Manager for MMSA. "I would much rather work around a cat running on bio than straight diesel," he continued, "because the exhaust is much easier on the nose. I even ran a B10 blend in my personal pickup and it quit smoking." The Tamarack snowcats and loader ran fine all season as well, burning B10 purchased from Eastern Sierra Oil, while the Town ran B5 throughout its diesel fleet, including buses, snow plows and emergency vehicles. According to the Town's Fleet Maintenance Manager Bob Cashbaugh, there have been no biodiesel-related problems to date.

Currently, biodiesel prices are relatively stable (with tax credits available from the government) under \$2.50 per gallon wholesale. Diesel prices change daily and continue to increase. At press time, wholesale or "rack" prices at the refinery are about \$2.00 per gallon for off-road diesel without California road taxes added. On-road clear diesel is about \$2.40 per gallon. In the recent past, however, the price of 100 percent biodiesel was much higher while regular diesel was considerably less.

Throughout its tests, MMSA has found that if biodiesel is properly handled and blended, it doesn't present additional vehicle maintenance requirements and burns cleaner. In fact, diesel engines were originally designed to run on vegetable oil, so no initial engine preparation or additional maintenance is needed. Biodiesel does act as a mild solvent, however, and if vehicle fuel lines and exhaust pipes are dirty with build-up, it cleans them out when first burned, leading to initial sooty fall-out and filter service recommendations.

Fuel storage tanks are a different issue, however. Before filling them with biodiesel, they must be properly cleaned and prepared, as the vegetable-based fuel will feed existing bacterial growth inside the tanks.

Despite these lessons and associated costs, Mammoth Mountain Ski Area has remained committed to using biodiesel as a cleaner, alternative fuel supply for its diesel fleet. Currently, every off-road MMSA vehicle is running on B10 with plans moving ahead to convert the on-road fleet this summer and increase the percentage blend. Even June Mountain has plans to continue running the blend. "I am still committed to using biodiesel, with assurance it will be properly mixed and handled prior to its arrival at our fuel docks," stated June Mountain General Manager Carl Williams.

Mammoth Mountain's Environmental Programs Director Lisa Isaacs summed up the ongoing effort noting, "Given our world's problems with air pollution, habitat destruction and social upheaval driven by the oil and gas industry, cleaner alternatives are a good thing, especially if they're from renewable resources. And when they're cost competitive and grown in the U.S., it's a no-brainer."

Most U.S. ski areas haven't tested or started using the clean fuel alternative yet, but those who do include Northstar, Alpine Meadows, Buttermilk, Snowmass, Sugarbush and Jackson Hole. For more in-depth biodiesel information, including tax credits and research results, go to: www.biodiesel.org

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accompanying jpg photographs courtesy of Mammoth Mountain Ski Area

bioSnowcatSticker.jpg: *no caption necessary unless you decide otherwise*

truck1.jpg: Mammoth Mountain's commercial truck driver Dave Hicks unloads his April 26th maiden delivery of biodiesel into the resort's fueling station tanks.