Title: Transforming Hazardous Waste into Fuel

Category: Comprehensive Energy and/or Fleet Management

Description:

In FY09, Sandia National Laboratories, New Mexico (SNL/NM) Fleet Services (Fleet) reduced hazardous waste generation by more than 69% compared to FY08, saving over $19K in waste disposal costs. Fleet accomplished this significant reduction by recycling waste diesel fuel and replacing hazardous chemical substances with bio-based alternatives. By separating diesel from other waste fuels and oil, rather than disposing of these substances in the same container, Fleet transformed their diesel waste into reusable fuel, effectively closing the loop and avoiding 453 Kg of hazardous waste. Additionally, in cooperation with P2, Fleet replaced three hazardous chemicals with bio-based alternatives to reduce their chemical inventory by more than 46%!

Were costs avoided by this project? yes
Was waste generation avoided by this project? yes
Is this activity being nominated for an Estar award? yes

Narrative

Under advisement from an SNL/NM Environmental Compliance Coordinator, Fleet purchased an air pump with a filter and suction/exhaust. Technicians use this pump to reclaim, filter, and reuse the diesel that is drained from vehicle maintenance. This fuel had previously been combined with other drained fuels and oils and sent out as hazardous waste. This new reclaimation process has drastically reduced the volume of hazardous waste generated by Fleet.

The SNL/NM Pollution Prevention Team (P2) worked with Fleet technicians to test a series of biobased products for a period of 1-3 months. Technicians provided feedback via a evaluation forms, which were reviewed by P2 and Fleet management. The best performing biobased products (Bio Penetrating Lubricant, SoyCLean lubricant, and

GreenLogic glass cleaner) are now purchased in lieu of their hazardous conventional counterparts.

The two lubricant products are over 74% plant based and are used in refillable pump sprayers. This reduced hazardous waste disposal of aerosol cans by 10.4Kg, or 19%. The bio-based lubricants do not contain the volatile organic compounds of their conventional counterparts AeroKroil and WD-40. Since the products are non-flamable, they do not require flammable cabinet storage. Flammability was also a primary concern for the alcohol based glass cleaner previously used by Fleet. Management was concerned about being cited for someone leaving a glass cleaner out of a flame cabinet after completing work. This risk is eliminated with the use of GreenLogic.

Fleet's new process of managing diesel fuel has reduced hazardous waste generation by more than 69% and saved over $19K in waste disposal costs. This transformation of hazardous waste into reusable fuel has closed the loop and diverted 453 Kg of hazardous waste from the Hazardous Waste Management Facility. Fleet's replacement of hazardous chemicals with bio-based alternatives has reduced their chemical inventory by more than 46%. These achievements, which are easily transferable to other organizations, have helped to mitigate SNL/NM's impact on the environment and made SNL/NM's Fleet Services a leader among federal fleets.

Attachment

Benefits of Diesel Reclamation		
Hazardous Waste Disposal FY08	649	Kg
Hazardous Waste Disposal FY09	196	Kg
Decrease in Haz Waste Disposal	453	Kg
% Decrease in Haz Waste Disposal	70%	
Haz Waste Disposal Cost	42	$/Kg
Total Waste Cost Avoided	19034	$