CITY OF GLENDALE, ARIZONA

and

Success in Substantially Reducing Costly Hazardous Waste Streams and Cleanup Expenses

Overview

In 1988, the City of Glendale Environmental Resources Department undertook a study to identify areas of the City where substantial cost outlays were occurring for cleanup of Spilled Hydraulic Oils from City trucks and equipment.

These spills occurred whenever there was an accidental or unavoidable breakage of hydraulic lines or leakage in hydraulic systems on sanitation trucks and on heavy equipment at the City landfill.

Following the study, it was estimated that the costs of spill cleanup and waste disposal on spills of less than 30 gallons was in excess of $60,000 annually.

Since these spills were considered “hazardous”, they had to be properly documented in accordance with EPA and the Arizona Department of Environmental Quality Regulations. The spill cleanup had to be handled through a TDS facility for disposal. All this was very costly and time consuming.

A decision was made to search for remedies that could better utilize City resources, substantially reduce costs and reduce the chain of custody for hazardous materials; clearly stating to the community that an environmentally friendly approach was and is a high priority and is routinely in the forefront to reduce costs while cleaning up the environment.

Situations and Solutions

The City of Glendale Environmental Resources Department has an ongoing program to specifically identify environmental issues throughout the City. They constantly work on a daily basis to determine where those areas of concern might be modified, improved, minimized or eliminated through programs, projects, employee and community awareness, new processes or technologies, alternative solutions, products or equipment.

Hydraulic Oil Spills

Not satisfied that the situation as it was in 1998 was the best solution, they became determined to identify a remedy.
A member of the City of Glendale Environmental Resources Department 's staff attended the Luke Air Force Base "Partnership for Pollution Prevention", an environmental conference for waste minimization. The conference was sponsored jointly by the ADEQ and various military facilities throughout Arizona.

While at the conference, it was noted that in the mini trade show and product display (local vendor were displaying their products), one of the exhibitors was an Arizona based manufacturer demonstrating a fully biodegradable product called Oil Sponge Remedial™. The product contained very high populations of hydrocarbon eating (digesting) microbial cultures.

Their presentation exhibited the product rapidly absorbing spilled oil. The presentation went on to thoroughly discuss how the populations of the "HC" (Hydrocarbon) Microbes eat and digest the hydrocarbons, leaving only the biodegradable cotton and pecan pith based product, and waste by-product from the microbes, Carbon Dioxide and Water.

Following the conference, a decision was made to begin testing "Oil Sponge Remedial™" to determine if it was a viable alternative product to:

1. Eliminate or reduce a waste stream.
2. Reduce or eliminate the non-biodegradable absorbents presently being used.
3. Provide a means to substantially reduce hydrocarbon contamination, cleanup and disposal.

Initial tests successfully determined the "Oil Sponge Remedial™" does readily and rapidly absorb spilled hydrocarbons. The next question was: "would "Oil Sponge Remedial™" significantly reduce the presents of hydrocarbon contaminants to a point that the absorbent materials could be disposed of in and economical manner?"

A decision was made to "establish a profile". Hydrocarbon testing was done on samples of spilled hydraulic oil encapsulated in "Oil Sponge Remedial™" (now considered a "Waste Media") that had been placed in a 55-gallon drum following a spill.
Refer to Note #1

The samples were sent to a local laboratory for testing for petroleum characteristics.

The laboratory performed either an 8010 or an 8020 test for TPH (Total Petroleum Hydrocarbons) as well as the Arizona test for TRH (Total Renewable Hydrocarbons), the 418.1 test. On these initial tests, the TPH showed "892 PPM."

Following the initial test and after a 30-day wait, more samples of "waste media" were tested at the laboratory using an identical protocol to the initial test.

The results were spectacular; TPH levels had been reduced to 137PPM in a little over 30 days. This is significant in that the results indicated a "non-detect" or below detection levels or ND "non-detected" and therefore non-hazardous.

A "Profile" had been established specifically for this type of oil (hydraulic fluid), this type of spill and thoroughly documented.

The completed information package was submitted to ADEQ Solid Waste Division for a "Waste Review". It was determined that this procedure satisfied all requirements as a "non-hazardous waste".

Procedure:

- Absorb hydraulic oil spill using "Oil Sponge Remedial™"
- Pick up oil spill
- Place in drum(s)
- Wait approximately 30 days
- Assure that the procedure has been thoroughly followed and specifically falls within the waste profile guidelines
- Send to landfill for disposal as "Non-Hazardous"

Spill Requirements

ADEQ must still be notifies if spills and the cleanup and disposal methods are being used. The spill must fall within the guidelines of the waste profile; meet all profiled processes and criteria for non-hazardous disposal after approximately 30 days or more on occasion. If any part of the profile changes, a new profile must be submitted. A new profile must be submitted if the liquid (contaminant) being addressed changes as well.

CONCLUSIONS AND RESULTS

The City of Glendale has dramatically reduced disposal costs by over $50,000 annually in the first year of the program.

This program now allows City personnel to be highly selective on any hydrocarbon spills, to determine how spills should be addressed or if too large, whether or not to assign the cleanup to an outside firm.

At the present, experience has shown that the majority of the spills are small enough that they can be completely addressed and handled by the City of Glendale personnel.

Note #1

The manufacturer of Oil Sponge Remedial™ recommends the addition of water to the waste oil mixture to accelerate the multiplication and effectiveness of the microbes in the Oil Sponge Remedial™. It is further recommended that the contents in a bag of Oil Sponge Remedial™ be homogenized to insure an even distribution of the microbes prior to using,