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CENTRAL AMERICA: MANAGEMENT OF USED LUBRICANTS IN CENTRAL AMERICA



Final Report

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Glossary & Acronyms

ACEA- Association des Constructeurs Europeens d' Automobile

API – American Petroleum Institute

ASTM – American Society for Testing of Materials

CAM – Central American countries

CFR – Code of Federal Regulations

CIWMB - California Integrated Waste Management Board

EPA – Environmental Protection Agency

DEO – Diesel Engine Oils

DGH – Directores Generales de Hidrocarburos (General Directors of Hydrocarbon agencies)

DIFM – Do it For Me

DIY – Do it yourself

ISO – International Standards Organization

Mezclas Oleosas – Oily mixtures

MM – Million

MSDS – Material Data Safety Data Sheets

NFPA – National Fire Protection Association

PCB- Polychlorinated biphenyls

PCMO – Passenger car Motor Oils

SAE – Society of Automotive Engineers

Used Oil - any oil that has been refined from crude oil or any synthetic oil that has been used, and as a result of such use is contaminated by physical or chemical impurities

WTO – World Trade Organization

1. Introduction

Each year, over 100 million barrels of used lubricating oils (billions of Liters of waste oil) are dumped onto the global world environment. In 1995, it was estimated that only 44% of available waste lubricants was collected worldwide (Reference 1). Therefore, 56% of used oils are NOT collected and, thus, they are either misused or discarded by the end user into the world environment. Considering that the worldwide lubricant yearly demand is ca. 40 billion Liters (~10.5 Billion Gallons), this implies that over 22 billion Liters of used oils are being disposed of in garbage cans, sewers, rivers, and backyards – harmful practices that will likely contaminate our drinking water, river streams, lakes, etc. For example, only one pint of oil can produce a one-acre slick on surface water, harming fish, aquatic animals, waterfowl, insects, and the base of the aquatic food web: floating plankton and algae.

The above highlights the importance of sound, comprehensive, and proactive environmental laws and regulations for collecting, handling, transporting, storing, and recycling used oils. An effective Used Oil Management and Recycling Program is needed in all countries to protect, conserve, and save our environment. Accordingly, the current CAM project's goals were:

- a) Review the current environmental laws and regulations for used lubricants
- b) Evaluate the current market, business, and consumption of lubricants
- c) Survey the current practices of used lubricants handling
- d) Compare vs. used oil handling and recycling programs in leading western countries
- e) Provide business recommendations for follow up work and future studies

2. Environmental Regulations and Legislation

2.1 Environmental, Safety, and Health (ESH) Legislation and regulations for chemical products and lubricating oils

The Central American countries have many common features. These include “small countries” with high proportions of urban populations, high ethnic diversity, rapidly expanding economies with increasing potential for the private sector. In CAM, environmental legislation and/or regulations recommendations have been derived and published. In most cases, however, the Environmental Regulations & Legislation have not been followed by practical applications with rigorous compliance laws. This is combined with the lack of awareness from the end user of the harmful effects of used oil, lack of training programs for fleet owners and operators, and lack of economic/business incentives for proper handling, collection, transport, storage, and recycling.

2.2 Legislation, regulatory, and environment audits to assess possible pollution of soil, water, groundwater, streams, and rivers

Before this report was prepared, a Questionnaire was provided to CAM countries to supply the most relevant information on Used Oils and their potential Recycling. The Questionnaire is provided in Appendix 1. The list of Environmental Agencies in CAM countries is given in Appendix 2.

As stated in Section 1.1 (above), there are some environmental laws and/or proposals for assessing the possible pollution of soil, groundwater, streams, and rivers. These are typical legislation and/or regulations recommendations for protecting, conserving, and saving the environmental resources (References 2, 3). The legislation encourages the public municipalities, the private sector, and the consumers to properly handle used oils. However, the lack of proactive and comprehensive compliance laws makes it very difficult to ensure proper disposal of used oils. The compliance audits can be set up to by the government agencies and local entities to follow up with used oil generators and users.

Here below is a summary of current legislation and regulations for hydrocarbon mixtures and used oils in CAM: (with main feedback and review by Dr. Hilmar Zeissig).

2.2.1 Costa Rica

The new *Reglamento para la Regulación del Sistema de Almacenamiento y Comercialización de Hidrocarburos* (Decreto No. 28624-MiNAE del 18 de mayo de 2000), which replaces several older regulations, covers “*grasas y aceites lubricantes*” according to the definitions in Art. 4 and provides for the general authority of the *Ministerio del Ambiente y Energía* to establish technical norms for the safe operations of all distribution activities FOR hydrocarbon derivatives. Art. 19 defines the “*servicio de lubricación y engrase*” as a “*servicio complementario*” (Art. 19) which requires authorization under the general provisions for service stations. Art. 37 only mentions the “*recolección de grasas y aceites*” and refers for its control to the general waste water regulations (see below). It does not contain any provisions for the handling of used lubricants.

The *Reglamento para la Regulación del Transporte y Acarreo de lo Derivados del Petróleo* (Decreto No. 24812-MAE) also covers “*lubricantes, grasas y aceites lubricantes*” according to the definitions in Art. 5, but does not establish any specific rules.

Because used lubricants generally contain hazardous at various concentrations, they are considered dangerous substances under the legislation for most CAM countries. However, this is contrary to the US API definition of used oils. In Costa Rica, the *Reglamento para el Transporte Terrestre de Productos Peligrosos* (Decreto No. 2415-MOPT-MEIC-S del 1 de noviembre de 1995) covers used lubricants under its general definition of dangerous substances, but it does not mention them specifically and rather refers to norms to issued by the respective national authority in accordance with the international standards established by the WTO and the United Nations.

The *Reglamento de Reuso y Vertido de Aguas Residuales* (Decreto Ejecutivo No. 26042-S-MINAE del 19 de junio de 1997) establishes general framework for control and treatment of

waste water and defines “*grasas y aceites*” as one of the parameters for the obligatory water analysis (Art. 14) for which frequencies of testing and maximum concentrations are defined in the Anexo.

The *Manual de Instrumentos Técnicos del Proceso de Evaluación del Impacto Ambiental (Resolución No. 588-97-SETENA del 28 de agosto de 1997)* lists the “*Lubricentros*” under the installations which are subjects to obligatory EIAs, but does not contain any provisions for the handling of used lubricants.

2.2.2 El Salvador

As far as we could establish, El Salvador is the only of the six countries, which has a technical standard for “*Productos de Petróleo. Aceites Lubricantes para Motores a Gasolina y Diesel. Especificaciones. Norma Salvadoreña NSO 75.04.09.99*”, issued by the *Consejo Nacional de Ciencia y Tecnología, CONACYT*, in 1999. It is an adaptation of the Official Mexican Norm NOM-L-21-1990, which in turn is based on international standards issued by ASTM, API, IEC, ISO and SAE of 1996 and before, many of which are not the latest versions. Therefore, the Norma Salvadoreña needs to be updated with current standards in practice in the USA and elsewhere.

Also, El Salvador is in the process of drafting a technical standard for used lubricants, the “*Anteproyecto de Norma de Aceites Usados*”. It contains detailed provisions concerning the generation, collection, transport, incineration, processing and re-refining, mainly based on Subpart F- Standards for Used Oil Processors and Re-refiners, 279.50-279 of the US EPA 40 CFR 260-299 of 1996 and subsequent revisions. The draft seems to be partially based on recommendations made by consultants Swiss Contact that has a project concerning used lubricants in Latin America. Likewise, the processes and procedures described in the above need to be updated according to standards used in the USA and Germany but customized to local applications.

Last year, El Salvador issued a series of general technical regulations, based on the *Ley de Medio Ambiente*, which also cover lubricants, such as:

The *Reglamento Especial de Aguas Residuales (Decreto No. 39 del 1 de junio de 2000)*, establishes general framework for control and treatment of waste water and defines “*grasas y aceites*” as one of the parameters for the obligatory water analysis (Art. 15) for which frequencies and parameters for the testing are established in this regulation.

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