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Federal agencies must dispose of about 18 million gallons of used lubricating oil annually, most of it from Defense installations. The Department of Defense (DOD) has recognized the value of recycling used oil and has assumed the lead role in the Government's procurement, use, and disposal of this resource. Findings/Conclusions: Federal agencies with large automotive fleets are not achieving maximum recovery of the 18 million gallons of used lubricating oil each year, and some disposal practices damage the environment. There is neither a focal point among Federal agencies to provide guidance to Federal installations nor a management structure with specific levels of authority and responsibility to deal with the problems of used oil conservation and disposal. Because of this, no one knows the total amount generated and its ultimate disposition. Such information is vital to properly manage used oil. Meanwhile, DOD could take several actions to improve oil recycling by the military services. Recommendations: The Secretary of Defense should: institute standard requirements for segregating and collecting or storing used oil by physical characteristics; and investigate the feasibility of making regional agreements with re-refiners to re-refine used lubricating oil into lubricants which have no prohibition against re-refined materials, with a view toward including automotive engine oil as soon as such oil can meet the Department's specifications. (Author/SW)

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# *REPORT TO THE CONGRESS*

*BY THE COMPTROLLER GENERAL  
OF THE UNITED STATES*

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## **Ways The Department Of Defense Can Improve Oil Recycling**

Federal agencies with large automotive fleets are not achieving maximum recovery of about 18 million gallons of used lubricating oil each year, and some disposal practices damage the environment.

It would be helpful to designate one Federal agency to provide leadership in managing used oil. Meanwhile, the Department of Defense--the largest oil user--could take several actions to improve oil recycling by the military services.



COMPTROLLER GENERAL OF THE UNITED STATES  
WASHINGTON, D.C. 20548

B-166506

To the President of the Senate and the  
Speaker of the House of Representatives

This report discusses Federal agencies' disposal of used lubricating oil, the leadership needed to manage this resource, and actions the Department of Defense could take to improve oil recycling. We made the review to evaluate Federal agencies' progress toward meeting the oil recycling requirements of the Energy Policy and Conservation Act of 1975 (42 U.S.C. 6363 (Supp. V 1975)).

Our review was made pursuant to the Budget and Accounting Act, 1921 (31 U.S.C. 53), and the Accounting and Auditing Act of 1950 (31 U.S.C. 67).

We are sending copies of the report to the Director, Office of Management and Budget; the Secretaries of Commerce, Defense, and the Treasury; the Administrators of General Services, the Environmental Protection Agency, and the Federal Energy Administration; and the Postmaster General.

  
Comptroller General  
of the United States

D I G E S T

About 18 million gallons of used oil is generated annually by Federal agencies. This oil may be re-refined for lubricating or reprocessed for fuel. However:

- There is no central point among the departments or agencies to provide guidance to Federal installations on how to deal with used oil conservation or disposal.
- There is no provision for management with specific authority and responsibility to see that this is done.
- No one knows the quantities of used oil available or its ultimate disposition.

The Congress included a section in the Energy Policy and Conservation Act promoting increased use of recycled oil in order to reduce consumption of new oil and to reduce environmental hazards and wasteful practices associated with disposal of used oil. (See p. 3.)

Military and civilian installations were aware of the economic value of this resource and its potential for environmental damage. Their practices, however, are not achieving the greatest possible recovery, and some are contributing to environmental pollution. (See pp. 5 and 9.)

To help meet the aims of the Energy Policy and Conservation Act affecting lubricating oil in the entire Federal sector, GAO proposed that the Director, Office of Management and Budget, designate one Federal agency to oversee the management of used oil.

The Office said that this action would be premature until the President's energy advisor completes a plan for improving all Federal energy activities. In a related action, the

Congress recently passed an act establishing a Department of Energy. Pending the decisions on the role the Department of Energy will have in overseeing management of used oil, the Department of Defense could start to structure a used oil management system. (See p. 11.)

Because the Department of Defense is responsible for the specifications and procurement of lubricating oil for all agencies and is the largest Government user, the Secretary of Defense should:

- Create a system to develop policies and procedures for recovering used oil.
- Classify used oil as an asset, rather than as scrap.
- Define requirements for segregating, collecting, or storing used oil by physical characteristics, when practicable.
- Determine the feasibility of entering into agreements with re-refiners to refine used lubricating oil back to reusable lubricants.

DOD agreed that it can improve management of used oil and that the first three recommendations are desirable. But it cannot use recycled oil as an automotive engine oil until evaluations of re-refining processes are completed. Although this deferment seems reasonable, it should not prevent the Department from investigating the feasibility of re-refining used oil into lubricants which have no prohibition against re-refined materials. (See pp. 11 to 15.)

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#### ABBREVIATIONS

|     |                                 |
|-----|---------------------------------|
| DOD | Department of Defense           |
| EPA | Environmental Protection Agency |
| GAO | General Accounting Office       |
| GSA | General Services Administration |

#### GLOSSARY

|                    |  |
|--------------------|--|
| Lube fraction      | That part of a barrel (only 3 to 6 percent) of crude oil that can be converted into a lubricant.                 |
| Lubricating oil    | Made from lube fractions. It usually contains various additives and is primarily used in engines and gear boxes. |
| Petroleum products | Fuels, lubricants, solvents, and other petroleum-based products.   |
| Reprocessing       | Removing contaminants from used lubricating oil so it may be burned safely as fuel.                              |
| Re-refining        | Converting used lubricants to reusable lubricants rather than, for example, heating oil.                         |

## CHAPTER 1

### INTRODUCTION

Federal agencies must dispose of about 18 million gallons of used lubricating oil annually, most of it from Defense installations. Lubricating oil is made from "lube fractions," which constitute only 3 to 6 percent of a barrel of crude oil. It is used primarily to reduce friction in engines and gear transfer or reduction boxes. The value of this recoverable resource can be viewed in terms of:

- Boiler fuel oil at 30 cents a gallon: \$5.4 million.
- Repeated reuses as lubricating oil, although a variable percentage of the product is lost in re-refining, depending on the process.

The Department of Defense (DOD) has recognized the value of recycling used oil and has had the lead role in the Government's procurement, use, and disposal of this resource. DOD's 1972 Waste Oil Recycling Study concluded that the Department should demonstrate leadership in reducing pollution by implementing an aggressive program to develop and encourage environmentally sound methods of waste oil disposal. The study indicated that:

- The vast quantities of used oil generated annually (nearly a billion gallons nationwide) are a potentially rich energy source.
- Used oil can be reprocessed and reused as a lubricating oil, or it can be used in other ways, such as conversion to a burner fuel, in order to extract its inherent energy.
- The crucial point is that this valuable resource is being wasted. What is even more unfortunate is that while wasting this resource, our environment is being seriously polluted.

### NEW LEGISLATION

Since 1972, when the Federal Water Pollution Control Act amendments (Public Law 92-500) were passed, the Congress has shown a strong interest in conserving used oil and reducing pollution. Several agencies have sponsored studies on the problems and progress of used oil conservation. The Environmental Protection Agency (EPA), for example, was directed by

the Congress to explore this area. EPA sent a comprehensive report to the Congress in April 1974. This report, along with other agencies' studies, formed the basis for several bills to conserve used oil. This effort culminated in title III, section 383, of the Energy Policy and Conservation Act of 1975 (42 U.S.C. 6363 (Supp. V 1975)). This section is directed specifically at promoting conservation of used oil by Federal agencies.

Federal agencies have not followed a uniform practice in disposing of used oil. The Energy Policy and Conservation Act and other legislation, market pressures, and increasing environmental concern are providing the impetus for more intensive management of what has been considered as a messy waste product. The Energy Policy and Conservation Act emphasizes the need to manage this resource carefully.

The Resource Conservation and Recovery Act of 1976 (90 Stat. 2795) brings management of hazardous wastes under Federal-State regulatory control. A hazardous waste is defined in the act as any waste that "because of its quantity, concentration, or physical, chemical, or infectious characteristics" may seriously threaten public health or the environment. EPA is required to identify these wastes, set standards for their management, and issue guidelines for State programs by April 1978. The standards go into effect 6 months later.

States may establish hazardous waste control programs that will meet Federal requirements and issue permits for treatment, storage, and disposal of such wastes. In those States that choose not to do so, Federal regulations will apply. Hazardous waste generators, including Federal facilities, are required to keep records and submit reports to EPA (or the State agency) on the quantities of hazardous wastes generated and the disposition of such wastes.

We understand that EPA is considering classifying some types of used oil as hazardous wastes.

The 95th Congress has passed an act (P.L. 95-91) to establish a Department of Energy. Although the act does not specifically mention recycled oil, one of its purposes is to place major emphasis on the development and commercial use of solar, geothermal, recycling, and other technologies that use renewable energy resources.

## MANAGEMENT INCENTIVES IN RECENT ACTS

The purposes of title III, section 383, of the Energy Policy and Conservation Act are to encourage used oil recycling, promote the use of recycled oil, reduce consumption of new oil, and reduce environmental hazards and wasteful practices associated with the disposal of used oil.

The Energy Policy and Conservation Act places urgent requirements on (1) the National Bureau of Standards to develop test procedures for determining end-use equivalency of re-refined oil with virgin oil and (2) the Federal Trade Commission to develop labeling for such products. The act further directs all Federal officials to carry out the purposes of section 383 by:

"(1) revising procurement policies to encourage procurement of recycled oil for military and non-military Federal uses whenever such recycled oil is available at prices competitive with new oil procured for the same end use; and

"(2) educating persons employed by Federal and State governments and private sectors of the economy of the merits of recycled oil, the need for its use in order to reduce the drain on the Nation's oil reserves, and proper disposal of used oil to avoid waste of such oil and to minimize environmental hazards associated with improper disposal."

The Resource Conservation and Recovery Act of 1976 adds further incentives for Federal managers to use recycled materials as much as possible. The act requires agencies that generate heat, mechanical, or electrical energy from fossil fuel in systems that have the technical capability of using recovered material and recovered-material-derived fuel as a primary or supplementary fuel to use such capability as much as practicable.

## RECYCLING OPTIONS AND PROBLEMS

Basically, two options are available for recycling used oil. If used oil is re-refined to its basic lubricating characteristics, it can be reused repeatedly. It can be used once as a fuel or fuel supplement with minimal reprocessing, but this use destroys the valuable lube fractions. Thus, re-refining seems to be the more energy-wise practice.

DOD noted (see app. III), however, that the energy consumed in collecting and transporting the waste oil to the refinery and in re-refining must also be considered before finally determining whether to re-refine used oil or burn it as heating fuel.

The West Virginia Department of Highways (with a 4,600-vehicle fleet) has an oil recycling program. In a letter to the Federal Energy Administration on July 29, 1976, it reported savings of 5 cents a gallon by having its used oil re-refined for \$1 a gallon (80 cents for re-refining plus 20 cents for collecting and transporting) compared with its usual contract price of \$1.05 a gallon.

A number of problems work against broad-scale re-refining and consumer acceptance. Presently, since quality assurance tests are not economical, most potential consumers are unaware of the suitability of the re-refined product. The Department of Commerce said (see app. VI) that, at the present funding level, the National Bureau of Standards recycled oil program to develop equivalency test procedures will probably take over 5 years to complete.

There is also a Federal tax rule that allows an excise tax rebate on virgin stocks used in nonhighway vehicles but disallows the rebate on virgin stocks blended with recycled lubricating oil for such vehicles. The Department of the Treasury said (see app. VII) that it had been asked to rescind the ruling, but that it saw no basis in existing statutory language for doing so. Rather than favoring a tax refund on the new oil mixed with recycled oil for nonhighway vehicles, the Department favors repeal of the provision for tax refund on virgin stocks used in such vehicles to provide a greater incentive for recycled oil use. Treasury also questioned whether re-refiners could benefit from a tax change because of competition from other users for the limited supply of waste oil.

## CHAPTER 2

### OIL DISPOSAL PRACTICES

#### GUIDANCE

The Department of Defense is in a unique position to provide leadership and guidance in recovering and recycling used oils and derivative products. The Defense Fuel Supply Center buys petroleum products for all Federal agencies. The military is the largest Federal user of petroleum products, and each military service establishes specifications for petroleum products for which it has responsibility. Moreover, the Defense Property Disposal Office is authorized to dispose of used oil for DOD installations.

DOD has shown interest in the problems of used oil disposal. It placed primary importance on reducing pollution resulting from improper disposal. Secondly, DOD was interested in conserving this resource. In its Waste Oil Recycling Study, for example, it sought ways to increase used oil conservation and stop pollution. Even before procurement requirements were specifically established by the Energy Policy and Conservation Act, DOD was searching for ways to increase Federal markets for products made from used oil. Each military service had made studies or developed guidance for its installations on proper ways to conserve and dispose of oil.

Although DOD and the military services have been concerned with the problems of conserving used oil and reducing pollution, this concern is not always reflected in operations at the installations. Many installations either have not received guidance from DOD or their respective headquarters or have not implemented the guidance. There is no systematic method of reporting information to DOD or to the service headquarters on volumes, types, and methods of disposal of used oil. Nor is there a focal point to receive such information, devise strategies and policies, and issue guidance to agencies. All the services have made tests of burning used oil as fuel, but no formal DOD policy has been issued regarding the disposition of used oil.

#### Army

The Army is responsible for military automotive oil specifications and is the lead agency for used automotive engine oil recycling. Its specification, which has been in effect many years and is mandatory throughout DOD, prohibits

use of any re-refined materials in engine lubricating oils. DOD said (see app. III) that the re-refining industry has not produced an oil that meets military specifications. The Army is working (1) with the Environmental Protection Agency to evaluate re-refining processes that can produce a better recycled oil and (2) with the National Bureau of Standards to develop equivalency standards and bench tests for economically determining the ability of recycled oils to meet military specifications. EPA believes that its study will provide the data necessary to re-evaluate current Federal policy prohibiting the use of re-refined products, which is based primarily on tests made 20 years ago. The Army's project officer expects the report to be issued late this year. The National Bureau of Standards program is expected to take about 5 years. DOD said that, until these efforts are completed, the recycling of used oil as an automotive engine oil is not feasible for DOD.

After enactment of the Federal Water Pollution Control Act Amendments of 1972, the Army banned the use of oil for dust control and the dumping of oil in or on the ground. To relieve the resulting buildup of used oil, installations were informed of the locations of nearby re-refiners. The Army also kept abreast of developments in the private sector. Its memorandum of June 6, 1973 (see pp. 18 and 19), informed major commands about burning experiments.

### Navy

The Navy also began to look for ways to better manage its used oil when the Federal Water Pollution Control Act amendments were passed. In 1972 it awarded a contract to the Exxon Research and Engineering Company to develop ways to dispose of used oil at nine of its major terminal complexes. Several military construction projects resulted from these studies, some of which will involve reprocessing used oil. As did the Army, the Navy sent its installations information on blending used oil with virgin heating oil. (See p. 17.)

### Air Force

A study prepared for the Air Force concluded that, to save millions of dollars a year through re-refining or reprocessing, used lubricating oil must be segregated and kept free of contaminants before many re-refiners will accept it. Under another study, three Air Force installations successfully tested systems for burning used oil blended with fuel oil. The Air Force estimated that the \$10,000 average cost of the systems would be recovered in the first year.

## General Services Administration

In December 1973 the General Services Administration (GSA) issued a bulletin urging each Federal agency to establish a program for the proper disposal of waste oil. It recommended that the program:

- Prohibit the disposal of waste oil by dumping into landfills, sewer systems, streams, rivers, or lakes.
- Ban the use of waste oil for insect and dust control.
- Ban the disposal of waste oil by open burning.
- Encourage the disposal of waste oil through companies engaged in re-refining, recycling, and reprocessing of used oil. Companies that reprocess the waste oil for further use as fuels and lubricants, without generating harmful by-products in the reprocessing operation, were to be used.

### POTENTIAL ENVIRONMENTAL DAMAGE IN SOME DISPOSAL PRACTICES

According to 1972 data (latest available) in EPA's Waste Oil Study, issued to the Congress in April 1974, Federal agencies disposed of 18 million gallons of used oil in the following ways.

| <u>Disposition</u><br><u>(note a)</u> | <u>Gallons</u><br><br>(millions) | <u>Percent</u> |
|---------------------------------------|----------------------------------|----------------|
| To reprocessors                       | 4                                | 22             |
| To re-refiners                        | 3                                | 17             |
| Road oils, asphalts                   | 4                                | 22             |
| Fuel                                  | 4                                | 22             |
| Other                                 | <u>3</u>                         | <u>17</u>      |
| Total                                 | <u>18</u>                        | <u>100</u>     |

a/Since 1972, there has been increased emphasis on burning used oil as fuel.

In its study, however, EPA noted that these figures are only estimates based on amounts purchased by the Government. It also pointed out that better estimates of the fate of used oil are not possible because of a lack of accountability across the fragmented collection, re-refining, and disposal systems.

Careless disposal of used oil can greatly damage the environment. Sometimes used oil enters sewers, waterways, and landfills, and is used to spray roads and parking lots for dust control. Some of this recoverable resource fouls sewage treatment plants, contaminates drinking water (only 1 part per 1,000 affects the odor and taste of water), and destroys plant and animal life. If burned full strength as fuel, for every 10 gallons burned, used oil emits as much as 1 pound of harmful metal oxides, such as lead.

EPA has no restriction against oiling roads. The Agency made a limited study of the effects of oiling sections of two rural roads in New Jersey over a 12-year period. The results suggest that as little as 30 percent of the sprayed oil is decomposed or vaporized. Much of the rest is washed away by rain, entering waterways and spreading over adjacent lands.

An important characteristic of used oil is that it can be repeatedly re-refined into reusable lubricating oil. As stated in the Defense Logistics Agency's Waste Oil Recycling Study, dated September 1972: the basic lubricating characteristics of the oil are not destroyed during service; the oil merely becomes contaminated. As a last conservation alternative, it can be burned safely--under controlled conditions--as a heating fuel.

#### PROBLEMS IN RECOVERING USED OIL

Some of the more important recovery and reuse problems are:

- The many types of used oil: for example, multigrade or quality engine oils, oil contaminated with lead, gear oils, diesel engine oil, hydraulic fluids, cutting oil, and many other petroleum-based wastes. Agencies often commingle these.
- The variation in the volumes generated by installations annually, which range from a few hundred to many thousands of gallons.
- The wide dispersion of used oil sources. Military bases, postal facilities, and GSA motor pools--the three largest used-lubricating-oil generators in the Federal sector--are scattered throughout the country.

--The general lack of records and information systems to provide data to policymakers on types and volumes of used oil, capacities for segregated collection, transportation and storage, and disposal.

DOD said that commingling used nonpetroleum lubricants and fluids makes re-refining more difficult and that the variation in chemical/physical processing techniques and capability among re-refiners is also a problem.

Federal installations, however, generally treat used oil as waste--a nuisance to be disposed of conveniently. The Defense Property Disposal Office informed us that 2.9 million gallons of used oil were sold at scrap value during the 9 months ended September 1974 (latest readily available data).

#### COLLECTION AND DISPOSAL PRACTICES

The 23 installations we visited used almost every conceivable disposal method. Some installations needed guidance on the proper ways to recycle or dispose of used oils because improper uses, such as oiling roads and burning full strength, can pollute the environment. Also, 16 installations did not segregate used oils by physical characteristics.

The following table shows the number of installations using the various methods of disposal.

|                              |             |
|------------------------------|-------------|
| Sold                         | 12          |
| Burned as fuel               | 5           |
| Burned to train firefighters | 2           |
| Given away                   | 8           |
| Used for dust control        | <u>3</u>    |
|                              | <u>a/30</u> |

a/The total is greater than the number of installations visited because some installations disposed of their used oil in more than one way.

The following table summarizes collection and disposal practices at the 23 military and civilian agency installations. Appendix I contains a detailed description of circumstances at selected installations to illustrate the problems and achievements in recycling oil.

Collection and Disposal Practices at Selected Installations

| <u>Field installation</u>                                      | <u>Estimated annual gallons of waste petroleum products</u> | <u>Description of normal disposal methods</u>                 | <u>Lube oil segregated</u> | <u>Management records or reports</u> |
|--|---|---|----------------------------|--------------------------------------|
| <b>Army:</b>   |   |   |                            |                                      |
| Ft. Benjamin Harrison, Ind.                                    | 550   | Given to a nearby naval facility for use as fuel (note a)     | N/A                        | Local                                |
| Ft. Bragg, N.C.  | 200,000   | Burned as fuel  | Yes                        | Local                                |
| Ft. Eustis, Va.  | b/30,000  | Burned as fuel  | No                         | Local                                |
| Ft. Lewis, Wash.   | b/60,000  | Sold (note c)   | Yes                        | Local                                |
| <b>Navy:</b>   |   |   |                            |                                      |
| Cecil Field Naval Air Station, Fla.                            | b/45,000  | Sold; given away; burned to train firefighters                | No                         | None                                 |
| Jacksonville Naval Air Station, Fla.                           | b/147,300   | Sold  | No                         | Local                                |
| Keyport Naval Torpedo Station, Wash.                           | Unknown   | Transferred to Manchester Naval Fuel Facility, Wash. (note d) | No                         | None                                 |
| Mayport Naval Station, Fla.                                    | b/393,000   | Sold; used to oil roads                                       | Yes                        | Sales and internal reports           |
| Naval Avionics Facility, Ind.                                  | 4,000   | Burned as fuel  | No                         | None                                 |
| Norfolk Naval Shipyard, Va.                                    | Unknown   | Burned as fuel; sold  | No                         | Sales records                        |
| Oceana Naval Air Station, Va.                                  | b/60,000  | Sold; used to oil roads; burned to train firefighters         | No                         | None                                 |
| Puget Sound Naval Shipyard, Wash.                              | Unknown   | Transferred to Manchester Naval Fuel Facility (note d)        | No                         | None                                 |
| Yorktown Naval Weapons Station, Va.                            | b/4,500   | Burned as fuel  | No                         | None                                 |
| <b>Marine Corps:</b>   |   |   |                            |                                      |
| Camp Lejeune, N.C.   | b/50,000  | Used to oil roads and parking lots                            | No                         | Local                                |
| <b>Air Force:</b>  |   |   |                            |                                      |
| Langley Air Force Base, Va.                                    | b/44,000  | Sold  | No                         | None                                 |
| McCord Air Force Base, Wash.                                   | b/48,000  | Sold  | No                         | None                                 |
| Wallops Air Force Base, Va.                                    | Unknown   | Sold  | Yes                        | Local                                |
| Wright-Patterson Air Force Base, Ohio                          | b/186,400   | Sold  | Some                       | Local                                |
| <b>Civil installations:</b>                                    |   |   |                            |                                      |
| U.S. Postal Service Vehicle Maintenance Facility, Norfolk, Va. | 760   | Sold  | No                         | None                                 |
| OSA Region III, Motor Pool 4, Norfolk, Va.                     | Unknown   | Left at service station                                       | N/A                        | None                                 |
| OSA Region IV, Inter-agency Motor Pool, Atlanta, Ga.           | Unknown   | Given away  | No                         | None                                 |
| OSA Region V, Motor Pool, Indianapolis, Ind.                   | 500   | Sold; given away  | No                         | None                                 |
| OSA Region X Motor Pool, Seattle, Wash.                        | 2,000   | Given away to re-refiner                                      | No                         | None                                 |

a/Where our inquiry, this installation paid about 1.5 cents per gallon to have it hauled away.

b/Includes all types of used petroleum products.

c/Plans have been made to use the oil as fuel.

d/Later transferred to U.S. Forest Service, which used it to oil roads.

**CONCLUSIONS, EVALUATION OF AGENCY  
COMMENTS; AND RECOMMENDATIONS**

There is neither a focal point among Federal agencies to provide guidance to Federal installations nor a management structure with specific levels of authority and responsibility to deal with the problems of used oil conservation and disposal. Because of this, no one knows the total amount generated and its ultimate disposition. Such information is vital to properly manage used oil.

To obtain the best use of used oil for the entire Federal sector, we proposed that the Director, Office of Management and Budget, designate one Federal agency to oversee the management of used oil. We proposed that such a central agency perform such functions as:

- Serving as a clearinghouse for Federal agencies concerning volumes, types, locations, storage capabilities, and availability of used oils.
- Devising broad conservation priorities for used oils. In this regard, we proposed that policies be formulated to clarify whether re-refining (which appears to be more energy conservative) is the best long-range use versus the short-range use of reprocessing as fuel (which appears more economical).
- Monitoring other developments stemming from the Energy Policy and Conservation Act in connection with used oil use and management.

The Office of Management and Budget said (see app. II) that it would be premature to designate a lead agency to oversee the management of used oil for the Federal sector. The Office said that, after the President's energy advisor completes a plan for improving all Federal energy activities, it will be in a better position to comment on the need to designate a lead agency as policymaker and information center.

We believe that, pending the decisions on the role the Department of Energy will have in overseeing management of used oil, DOD could initiate steps to structure a used oil management system.

Although the Department of Defense has been active in recovering these resources and stopping pollution from im-

proper disposal, we believe that better coordination will result in an improved system. Some military installations and civil agencies are still wasting this resource and polluting the environment.

Since DOD is by far the largest Federal generator of used oil and has the foremost responsibility for setting lubrication oil specifications, buying and using new petroleum products, and disposing of used oil, we recommend that the Secretary of Defense work within the Department's present authority to:

- Institute an information system to provide a basis for developing policies and procedures for recovering used oil.
- Classify used oil as an accountable asset to better control its use and disposition.

DOD agreed that management of used oil can be improved. It will (1) review the kinds of management information available, current segregation storage and collection practices, and methods of recovering and using waste oil that have been developed and successfully used by DOD installations and (2) begin improving policies and procedures where feasible. DOD also agreed that used oil should be considered an asset which should be recycled as a lubricating oil whenever feasible.

We proposed that DOD institute a used oil segregation and collection system and investigate the feasibility of regional agreements for having its used oil re-refined or reprocessed.

DOD agreed that, where practical, implementation of a system to collect and segregate used oil by physical characteristics, as is now being done at some installations, is desirable for local disposal purposes. However, DOD does not believe that it is economically feasible to develop a centralized DOD-wide used oil collection and segregation system because its activities that generate used oil are widely dispersed and many of them generate relatively small quantities of used oil.

We believe that a segregation and collection system is a practical and necessary link between the initial steps of classifying used oil as an asset and instituting an information system and the final step of re-refining or reprocessing

the oil. We did not envision that DOD would develop a physically centralized collection system. We intended that DOD institute standard requirements for segregating and collecting oils by type at its installations. A standardized system would enhance the resale and reuse value of used oils, deter improper disposal, and improve the prospects for regional re-refining agreements by keeping the different types of oils uncontaminated and by enabling nearby installations to share collection and storage facilities.

The Treasury Department said (see app. VII) that it would be desirable to compare the value of the used oil with DOD's administrative costs. We agree that a cost-benefit study would be useful, not only for comparing the value of recycled oils with DOD's administrative costs but also for evaluating the benefits of environmentally safe disposal.

GSA said (see app. IV) that, if its source of new oil (the Defense Fuel Supply Center) makes recycled oil available to its motor pools, it does not envision any problem in converting to this lubricant; however, it questioned whether using recycled oil in a new vehicle would void the warranty.

The Department of Commerce said (see app. VI) that a re-refined oil which met the current quality assurance standard (engine sequence tests) could be eligible for use in all automobiles without voiding the manufacturer's warranty. It said that the high cost of this method of quality assurance, however, effectively bars re-refined products from the high-quality lubricating oil market.

A 1973 waste oil recovery study prepared for EPA also discussed the high cost of quality assurance tests on re-refined oil. In order to qualify an oil for Government purchase, both laboratory bench scale tests of an oil's physical and chemical properties and engine sequence tests of performance properties of the lube oil-additive blend must be made. The study indicates that the laboratory tests are neither prohibitively expensive nor excessively time consuming but that the engine sequence tests can amount to \$80,000 to qualify a single lube oil product.

Military specifications further require that once an oil is qualified for procurement, no changes may be made in the feedstock from which the lube oil is manufactured without the product being requalified. To resolve the question of the quality of re-refined oil, the study proposed the following experiment as the first phase of a program to remove the

barriers that have kept re-refined oils off the high-quality lubricating oil market.

An activity with a large demand for lube oil, such as a military base, would agree to supply used crankcase oils to a re-refiner. The oils would be segregated from other fluids and dirt to assure constant feedstock quality. The re-refiner would agree to process this oil separately from other oils so that the quality of the lube oil product would not be affected by feedstocks of unknown origin. The re-refined oil would then be returned to the activity which provided the waste lube stock. Under such a "closed-cycle" system, the performance of re-refined oil could be proved or disproved on the basis of day-to-day usage under a variety of set conditions.

The study noted that the most important advantage of the closed-cycle system is that it avoids the dilemma of choosing between prohibitively expensive testing and the possibility of a fluctuating response from the additive. Such a system would assure the re-refiners a continuing supply of waste oil of known quality. If the recycling process is closely controlled, the user of recycled oil is responsible for any batch-to-batch variations since he is also the waste oil supplier.

The Postmaster General said (see app. V) that recycling waste oil as a lubricant must be strictly controlled and that the Defense Fuel Supply Center is best equipped to assure this control and to certify the quality.

DOD said that used oil should be recycled whenever feasible but that the use of recycled oil as an automotive engine oil is not feasible for DOD until the Army completes its joint efforts with EPA and with the National Bureau of Standards. We agree with this deferment on Federal agencies' use of recycled oil as automotive oil, but we do not view it as an impediment to investigating the feasibility of regional agreements with re-refiners. DOD's 1972 Waste Oil Recycling Study recognized that, in terms of volume, nearly half the lubricating oils procured by the Defense Fuel Supply Center were restricted to virgin stocks and that many of the 200 other lubricating products which do not prohibit the use of re-refined materials cannot be produced from waste lubricating oil. For these reasons, the study noted, Defense Fuel Supply Center procurement of re-refined products should be viewed as a means of providing immediate, though limited, encouragement to the re-refining industry. The study pointed out that contracts which might appear small in comparison with total Government procurements could be a major source of business to a re-refiner.

Accordingly, we recommend that the Secretary of Defense:

- Institute standard requirements for segregating and collecting or storing used oil by physical characteristics, where practicable.
- Investigate the feasibility of making regional agreements with re-refiners to re-refine used lubricating oil into lubricants which have no prohibition against re-refined materials, with a view toward including automotive engine oil as soon as such oil can meet the Department's specifications.

## CHAPTER 3

### SCOPE

We examined studies and agency publications on conserving used lubricating oil and reducing pollution from its disposal. We visited 18 defense and 5 civil agency field installations (listed on p. 10) and interviewed officials at cognizant agency headquarters. We reviewed the methods field locations used to conserve or dispose of used lubricating oil and the guidance provided to these locations by their headquarters. We discussed the report contents with EPA officials and incorporated their comments where appropriate.

DISPOSAL METHODS AT SELECTED INSTALLATIONSMANCHESTER NAVAL FUEL  
FACILITY, WASHINGTON

This installation receives commingled types of used oil from the Puget Sound Naval Shipyard, the Keyport Naval Torpedo Station, and the Bangor and Trident Navy Bases. All used oil transferred to this facility from around 1973 to 1975 was reportedly given to the U.S. Forest Service, which used it to oil roads. As evidenced by the EPA study (see p. 7), this practice could result in long-lasting environmental damage. In the 2-year period ended December 31, 1975, Manchester transferred over 1.5 million gallons of used oil to the Forest Service, according to the Defense Property Disposal Office. A Forest Service official said that, although he was not familiar with the EPA study, he did not believe that properly spraying roads with oil would damage the environment since there has been no noticeable runoff. He said that used oil penetrates better than the light arcadia dust oil formerly used. He estimated that the Forest Service had previously used about 1,400 tons of the light dust oil a year at a cost of about \$100,000. Had the used oil transferred from Manchester in 1975 been used as a fuel supplement at the Puget Sound Naval Shipyard, for example, about \$400,000 could have been saved at \$13 a barrel for No. 6 fuel oil.

The Puget Sound and Keyport installations neither kept records of volumes generated nor segregated the types of used oil. The public works officer at the Puget Sound Naval Shipyard said used oil is not burned as fuel because burners and controls are set for No. 6 fuel oil. A Navy instruction, however, states that used oil can be blended satisfactorily with No. 6.

A public works official at the Keyport Naval Torpedo Station said burning the station's used oil as a fuel supplement was not feasible because it is mostly water contaminated with oil, sludge, and chemicals. Most of these contaminants can be removed. Sludge can be largely removed by allowing it to settle in holding tanks and by filtering the used oil as it is pumped from holding into storage tanks. Water can be removed by an oil-water separator, and chemicals can be kept out by segregation. The public works official estimated monthly bilge water and used oil at 75,000 and 1,700 gallons, respectively.

FORT BRAGG, NORTH CAROLINA

This major Army installation does not record the amount of used lubricating oil it generates, but it keeps records on the used oil that it burns. It also collects used lubricating oil from non-appropriated-fund activities and a nearby Air Force base.

We were told that, as part of an environmental protection program started in 1971, Fort Bragg bought ninety-two 1,000-gallon tanks and placed them at motor pools to collect waste oil. Until 1974 a private collector was paid 2 cents a gallon to dispose of used lubricating oil from these tanks. In that year officials became aware of the fuel value of used lubricating oil. Local experiments showed that it could be burned full strength in lieu of No. 6 fuel oil or natural gas; consequently, a feed system costing \$30,000 was added to the 82d Airborne Division steam plant.

Sludge was broken up by using a fuel oil activator, and the oil was burned full strength in the steam plant. During a 21-month period, Fort Bragg burned an estimated 153,000 gallons and saved about \$50,000.

Directorate of Facilities Engineering officials at Fort Bragg were impressed with the program's results and informed other installations about it. Information on collection, treatment, and burning techniques was sent to Fort Lee, Fort Devens, Fort Campbell, and Camp Lejeune.

Although Fort Bragg's initiative is certainly commendable, we noted that:

1. Nearly all oil consumed as fuel was lubricating oil.
2. DOD's Waste Oil Recycling Study states that burning used crankcase oil at full strength risks polluting the environment and damaging the boiler.

EPA's Waste Oil Study states that crankcase oil contains high concentrations of lead and when the oil is burned, the lead is emitted to the atmosphere as airborne, breathable particles, which can endanger health.

Moreover, in a June 6, 1973, memorandum from the Army's Office of the Chief of Engineers to major commands, the following instructions were issued:

"Burn the 'treated' waste oil only after mixing with fuel oil in No. 5 or No. 6 (residual) fuel oil tanks. It is recommended that a maximum of 25% of the actual quantity of oil burned in a heating plant at one time be composed of waste oil. Initially, it may be advisable to restrict the waste oil/fuel proportion to 10%, in view of the possibility of added maintenance to keep fuel oil burners clean and unclogged; \* \* \*. If significant operating problems have not developed after a month of continuous operation, the proportion of waste oil to fuel oil could gradually be increased to 25%."

Fort Bragg officials were not aware of this memorandum. When we brought it to their attention, they said that used lubricating oil would continue to be burned full strength and that air emission tests will be requested from the Army Environmental Hygiene Agency. In May 1977 DOD said that Fort Bragg was now blending used oil with fuel oil and other contaminated petroleum products instead of burning it full strength and that initial tests indicate that emissions are within standards. DOD confirmed that the Army Environmental Hygiene Agency will survey the emissions.

#### ROBINS AIR FORCE BASE, GEORGIA

Records on the types and volumes of used petroleum products generated are kept, and used lubricating oils are segregated. A Defense Property Disposal Office representative said that, in fiscal years 1976 and 1977, Robins sold 428,000 gallons of used petroleum products for \$38,000, about 9 cents a gallon.

Although none of Robins' used oil was burned as fuel in its heating plants, Air Force officials said that studies were underway to determine the feasibility of such use. Design drawings have been completed for modifying the plants, but the drawings will be examined from a safety standpoint before actual modification. Air Force officials were certain that the modification would be made and that cost savings would be significant.

#### CAMP LEJEUNE, NORTH CAROLINA

This Marine Corps base does not keep formal records of the types and volumes of used oil it generates--only an informal log of estimated amounts collected. Used oil is not segregated by type.

An estimated 50,000 gallons of used petroleum products are generated annually. Officials did not know the disposition of these products but estimated that a few thousand gallons are used annually to oil dirt roads and parking lots on the base. The remainder is kept in a 272,000-gallon storage tank. On December 1, 1975, an estimated 141,000 gallons of used oil was in the tank. In June 1976 a Camp Lejeune official said that there is still a large storage capacity available and no definite decision had been made on the use or disposal of the oil, but that the camp was considering using the oil in its central heating plant.

#### MAYPORT NAVAL STATION, FLORIDA

At this major naval installation, records are kept of only the amounts of used oil sold on contract. Mayport handles bilge oil and lubricating oils, which are kept separate.

Defense Property Disposal Office records showed that, during the 2 years ended June 30, 1975, Mayport sold over 1.2 million gallons of used petroleum products. An undetermined amount of used lubricating oil was used on base for dust control at a landfill and dump.

At the time of our fieldwork, Mayport officials were considering blending the used oil with fuel oil and burning it in the station's steam plant. A Naval Facilities Engineering Command official said later that the station canceled the plan because the used oil could only be blended in small quantities. The station has now designed a solid waste energy recovery system which will burn the used oil. Until the system is operational in 1978, the station will continue to sell its used oil.

#### U.S. POSTAL SERVICE

The Postal Service is also a large user of lubricating oil. It operates a fleet of some 100,000 vehicles and generates an estimated 650,000 gallons of used lubricating oil annually. Most of the used oil is collected by over 300 vehicle maintenance facilities, until it can be sold or given away.

The Postal Service's Norfolk, Virginia, regional fleet consists of 630 vehicles. Although the region does not keep records on the volume of used oil, the manager of fleet operations estimated that about 760 gallons a year are collected and sold to a private dealer. He noted that 5 cents a gallon was the most he had ever been paid for the oil. The Defense Property Disposal Office is not used for these sales. The manager said that he chose this method of disposal and that he had not received any guidance on the disposal of used oil.

#### GENERAL SERVICES ADMINISTRATION

GSA operates one of the largest fleets of vehicles in the Federal Government. Oil in these vehicles is usually changed by private service stations and left there.

Our survey of GSA motor pools in four Federal regions showed that most of the used oil resulting from the little maintenance performed in-house was either given away or sold to used oil dealers. Records of used oil volumes are not kept. GSA does not see any administrative advantage in keeping records of used oil since commercial service stations make most of GSA's oil changes and dispose of the used oil.

EXECUTIVE OFFICE OF THE PRESIDENT  
OFFICE OF MANAGEMENT AND BUDGET  
WASHINGTON, D. C. 20503

February 7, 1977

Mr. F. J. Shafer  
Director, Logistics and  
Communications Division  
U.S. Government Accounting Office  
Washington, D. C. 20548

Dear Mr. Shafer:

This is in response to your letter of January 4, 1977, requesting our comments on the draft report "Ways to Improve Oil Recycling by Federal Agencies."

The draft report reviews Federal agency practices and policies relative to the collection and disposal of used lubricating oils and suggests savings can be obtained by a properly coordinated method of reporting, collection, and recycling of these products.

One recommendation in the draft report is that the Director of the Office of Management and Budget designate a lead agency to oversee the management of used oil for the Federal sector. At this time, it would be premature for this office to designate such a lead agency.

As you know, President Carter tasked his energy advisor to prepare an administration plan for improving all Federal energy activities. After that plan is completed, we will be in a better position to comment on the need to designate a lead agency as policymaker and information center.

Thank you for the opportunity to comment on your draft report.

Sincerely,

David Sitrin  
Deputy Associate Director  
for National Security



ASSISTANT SECRETARY OF DEFENSE  
WASHINGTON, D.C. 20301

MANPOWER, RESERVE  
AFFAIRS AND LOGISTICS

May 5, 1977

Mr. F. J. Shafer  
Director  
Logistics and Communication Division  
U. S. General Accounting Office  
Washington, D. C. 20548

Dear Mr. Shafer:

This is in reply to your letter to the Secretary of Defense regarding your draft report dated January 4, 1977, on "Ways to Improve Oil Recycling by Federal Agencies," OSD Case Number 4502, GAO Code Number 945275.

The GAO report addressed the problem of waste oils generated by Federal Government Agencies and methods used by those agencies to dispose of waste oils. These disposal methods vary from dust and weed control to burning, selling or giving away the used oils. The experiences of various installations with local disposal procedures and their selective benefits were discussed.

The Department of Defense (DoD) has increased its awareness and concern for pollution abatement in the past several years. One item of special concern is waste oil and its disposal in an environmentally sound fashion. The DoD supports the objective of improving the utilization of waste oil through improved segregating, collecting and recycling in the most practicable manner possible.

The DoD agrees that, where practical, implementation by DoD activities of a system to collect and segregate used oil by physical characteristics, as is now being done at some installations, is desirable for local disposal purposes. However, it is not believed to be economically feasible to develop a centralized DoD-wide used oil collection and segregation system due to the wide dispersal of its activities that generate used oil and the relatively small quantities of used oil generated at many of them. DoD does agree that management improvement of used oil can be made. To that end it will review the kinds of management information now available, review current segregation storage and collection practices, and methods of recovering and using waste oil

which have been developed and successfully utilized by DoD installations and begin making improvements in policies and procedures where feasible.

We agree that used oil should be considered an asset which should be recycled as a lubricating oil whenever feasible. To accomplish this reuse in military equipment, however, the oil must be re-refined to comply with military specifications to enable its unrestricted use without damage to military equipment and assimilation throughout the logistics system. The re-refining industry has not produced an oil which meets military specifications. The U.S. Army, the Department responsible for the military automotive oil specifications, is currently working with the Environmental Protection Agency to evaluate re-refining processes which can produce a better recycled oil, and with the National Bureau of Standards to develop equivalency standards and bench tests for economically determining the ability of recycled oils to meet military specifications. Pending completion of these efforts, the recycling of used oil as an automotive engine oil is not feasible for the DoD.

Additional comments concerning specific paragraphs in the report are given in the enclosure.

The DoD appreciates the opportunity of commenting on the draft report for ways to improve oil recycling, a subject which is a matter of importance to both Federal Agencies and the Nation.

Sincerely,

  
PAUL H. RILEY,  
Acting Principal Deputy Assistant  
Secretary of Defense (Logistics)

Enclosure

**Specific Comments on  
GAO Draft Report Code Number 945275  
Ways To Improve Oil Recycling**

**Page 5.** The statement that re-refining seems to be the more energy-wise practice is true, however, the energy consumed in collecting and transporting the waste oil to the refinery and the energy consumed in the re-refining process itself must also be considered before making a final determination as to whether re-refining is more energy-wise than burning used oil as heating fuel.

**Page 6, 1st paragraph.** The report states that the Army establishes specifications for the petroleum products bought by the Defense Fuel Supply Center. This is misleading since all of the Military Departments establish petroleum specifications for products for which they are assigned responsibility. Appropriate modification of the paragraph is requested.

**Page 7, 10th line.** The report erroneously states that the Army is the lead agency within DoD for used oil recycling. The Army is the lead agency for used automotive engine oil recycling rather than recycling in general. The Army is supporting research towards re-use of engine oils and hydraulic fluids for their intended purpose. All Military Departments have conducted tests experimenting with burning used oils as fuel oil.

**Page 10, Problems in Recovering Used Oil.** The first problem should be changed to include the comingling of used non-petroleum lubricants and fluids which increase the difficulty of re-refining.

An additional problem should be added which is the variation in chemical/physical processing techniques and capability employed within the existing re-refining industry.

**Page 16, Conclusions, 3rd sentence.** This sentence implies that DoD is awaiting the issue of equivalency test procedures by the National Bureau of Standards before attempting to discharge its responsibilities under the Energy Policy and Conservation Act of 1975 and is not exercising prudent management with respect to used oil conservation and pollution abatement. The Army is actively involved in developing equivalency test procedures for automotive engine oils

in coordination with the EPA which would allow procurement of specific product containing quantities of re-refined oils. Also various installations of the Military Departments have established procedures for burning used oil in an environmentally safe manner.

Page 21, Fort Bragg, North Carolina. Fort Bragg is no longer burning used oil full strength. It is now blended with specification fuel oil and other contaminated petroleum products. Initial tests indicate that emissions are within EPA Air Pollution Standards. A formal survey on emissions will be conducted by the Army Environmental Hygiene Agency.

GAO note: Page references in this appendix may not correspond to page numbers in the final report.

UNITED STATES OF AMERICA  
 GENERAL SERVICES ADMINISTRATION  
 WASHINGTON, DC 20405



March 14, 1977

Honorable Elmer B. Staats  
 Comptroller General of the United States  
 General Accounting Office  
 Washington, DC 20548

Dear Mr. Staats:

Thank you for your letter of January 4, 1977, transmitting your draft report entitled "Ways to Improve Oil Recycling by Federal Agencies" (code 945275).

We believe the Government should promote the use of recycled oil as required by the Energy Policy and Conservation Act and have been working towards this effort. On December 28, 1973, GSA issued the enclosed bulletin, FPMR G-89, subject: "Disposal of motor equipment waste oil" to encourage Federal agencies to properly and economically dispose of motor equipment waste oil. All of GSA's Interagency motor pools, where feasible, use the guidelines contained in this bulletin for oil disposal purposes. The used oil is either sold, given away, or in some cases motor pools pay to have the used oil removed. This last disposal method is usually prevalent in small cities where oil refineries are not available and the need for used oil is nonexistent.

Our interagency motor pools are required to keep inventory records of all new oil stock. Issuance of this oil is documented. However, we have not nor do we foresee any administrative advantage of keeping records of oil disposals since the majority of our oil changes are accomplished at commercial service stations where they dispose of the waste oils.

If our source of supply of new oil (Defense Fuel Supply Center) makes recycled oil available to our motor pools, we do not envision any problem in converting to this lubricant. However, prior to this conversion, some areas will need to be clarified, e.g. would the use of recycled oil in a new vehicle void the new car warranty?

As a minor point on accuracy, the chart entitled "Collection and Disposal Practices at Selected Installations" (page 15), showing the estimated annual gallonage of waste petroleum products for the Seattle Interagency Motor Pool System as 300 gallons, should read 2,000 gallons. Of this, approximately 300 gallons comes from the small sub-pool at the Old Federal Office Building in downtown Seattle. The entire 2,000 gallons is given away to Lidco/Superior Refining Company, 1319 Fourth Avenue, Seattle, for re-refinement.

We will be pleased to support a national program for the recovery and re-refining of used oil.

Sincerely,



Robert T. Griffin  
Acting Administrator

Enclosure

GAO note: Page reference in this appendix may not correspond to page number in the final report.

GENERAL SERVICES ADMINISTRATION  
WASHINGTON, DC 20405

December 23, 1979

GSA BULLETIN FPMR G-89  
TRANSPORTATION AND MOTOR VEHICLES

TO : Heads of Federal agencies

SUBJECT: Disposal of motor equipment waste oil

1. Purpose. This bulletin recommends the establishment by each agency of a program for the proper disposal of motor equipment waste oil.
2. Expiration date. This bulletin contains information of a continuing nature and will remain in effect until revised or canceled.
3. Background. To promote the conservation of our petroleum resources and to preserve the quality of our natural environment, Federal agencies should set an example through the proper disposal of their waste oil.
4. Suggested action. Each Federal agency is urged to establish a program for the proper disposal of waste oil. It is recommended that such a program set forth the following guidelines:
  - a. Prohibit the disposal of waste oil by dumping into landfills, sewer systems, streams, rivers, or lakes.
  - b. Ban the use of waste oil for insect and dust control.
  - c. Ban the disposal of waste oil by open burning.
  - d. Encourage the disposal of waste oil through companies engaged in re-refining, recycling, and reprocessing of used oil. Companies which reprocess the waste oil for further use as fuels and lubricants, without generating harmful by-products in the reprocessing operation, should be used.
5. Assistance. Agencies may request the assistance of the Regional Director, Motor Equipment Division, Federal Supply Service, of the supporting region, in locating companies referenced in 4d, above.



M. J. TIMBERS  
Commissioner, Federal Supply Service



THE POSTMASTER GENERAL  
Washington, DC 20260

February 3, 1977

Mr. Victor L. Lowe  
Director, General Government  
Division  
U. S. General Accounting Office  
Washington, D. C. 20548

Dear Mr. Lowe:

Thank you for the opportunity to comment on your proposed report entitled "Ways to Improve Oil Recycling by Federal Agencies."

The Postal Service concurs with the findings of the report. Past efforts by the Service in recycling oil are summarized below:

A number of years ago oil reclaimers purchased our waste oils at modest prices. During the late 1960's and early 1970's this market became non-existent and, in many cases, the Postal Service paid to have waste oil removed. Since the oil boycott of 1973-4, oil reclaimers have once again entered the market and are buying our waste oil. Lists of our Vehicle Maintenance Facilities have been provided to reclaimers because this type of disposal is handled locally.

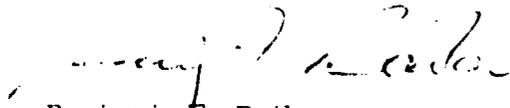
The Service has not used recycled lubricating oils since there is no way of attesting to the quality of the product. All postal lubricating oils are purchased through the Defense Fuel Supply Agency (DFSA) and must meet military specification MIL-L-46152. Anything less than this could jeopardize our vehicle fleet.

Disposal of waste oil or other flammable liquids is covered by Section 314.54 of Postal Handbook M-52 which expressly protects the environment.

Recycling waste oil as a lubricant must be strictly controlled and the DFSA is best equipped to assure this control and to certify the quality.

As indicated by our past efforts, we support an oil recovery system where such conservation can be achieved in a cost effective manner.

Sincerely,



Benjamin F. Bailar



**UNITED STATES DEPARTMENT OF COMMERCE**  
**The Assistant Secretary for Administration**  
Washington, D. C. 20230

February 17, 1977

Mr. Henry Eschwege  
Director, Community and Economic  
Development Division  
U. S. General Accounting Office  
Washington, D. C. 20548

Dear Mr. Eschwege:

This is in reply to your letter of January 6, 1977, requesting comments on the draft report entitled "Ways To Improve Oil Recycling By Federal Agencies."

We have reviewed the enclosed comments of the Assistant Secretary for Science and Technology and believe they are responsive to the matters discussed in the report.

Sincerely,

A handwritten signature in dark ink, appearing to read "Guy W. Chamberlin, Jr.", written over a horizontal line.

Guy W. Chamberlin, Jr.  
Acting Assistant Secretary  
for Administration

Enclosure





**UNITED STATES DEPARTMENT OF COMMERCE**  
**The Assistant Secretary for Science and Technology**  
 Washington, D.C. 20230

February 7, 1977

Mr. Henry Eschwege  
 Director, Community and Economic  
 Development Division  
 United States General Accounting  
 Office  
 Washington, D.C. 20548

Dear Mr. Eschwege:

This letter is in reply to your letter of January 6, 1977, to Secretary Richardson, which requested comments on the draft GAO report to the Congress on ways to improve oil recycling by Federal agencies. The National Bureau of Standards (NBS) is mentioned three times in this draft report (pp. 3, 5, and 16) with regards to its responsibilities towards recycled oil test procedures under The Energy Policy and Conservation Act of 1975 (P.L. 94-163, Section 383).

We have comments in only one of these areas, the first paragraph on page 5 of the draft report. This paragraph contains two statements which may be somewhat misleading. First, we feel that the statement "...there are no standards of quality assurance..." is too strong. All types of re-refined oils need to be considered here, including those intended for use as industrial oil, cutting oil, hydraulic oil, etc., as well as engine oil. In some cases, quality assurance tests do exist. For engine oils, the current standard for quality assurance is embodied in the "engine sequence tests," a complicated and very expensive series of tests costing approximately \$18,000. A re-refined oil which passed these tests could be marketed under the SE classification of the American Petroleum Institute, and thus be eligible for full use in all automobiles without voiding the manufacturer's warranty. However, the high cost of this mode of quality assurance effectively bars re-refined products from the high-quality lubricating oil market.

Our second comment concerns the estimate of time required for completion of the NBS equivalency test procedures. Since the referenced legislation contains no funding or authorizations provisions, the NBS Recycled Oil Program has been financed entirely by internally reprogrammed funds. At the present level of resources, this program will most likely require more than five years to complete.

Finally, it may be useful to mention that some of the recommendations contained in this draft report have been addressed in the Resource Conservation and Recovery Act of 1976 (P.L. 94-580). Therefore, we feel that this Act should also have been considered in the report.

In conclusion, we feel this report is both timely and useful in evaluation of Federal policies on the used oil situation. We look forward to continued interaction between the various Federal agencies in support of oil recycling.

Sincerely,



Betsy Ancker-Johnson, Ph.D.

GAO note: Page references in this appendix may not correspond to page numbers in the final report.



ASSISTANT SECRETARY

## THE DEPARTMENT OF THE TREASURY

WASHINGTON, D.C. 20220

March 1, 1977

Dear Mr. Lowe:

After a review of the draft report entitled "Ways to Improve Oil Recycling by Federal Agencies" which you sent to the Secretary on January 6, 1977, I recommend deletion of the last sentence on page 5. You might also want to consider modifying the last sentence of the first paragraph on page 5 in the light of the apparent supply/demand situation for used oil.

The Treasury Department previously has been asked to rescind the ruling referred to on page 5, but have no plans to do so because we see no basis in existing statutory language for any change. Apparently there was some confusion on this point when your staff members interviewed a member of the Treasury staff some time ago.

By way of further background on the revenue ruling, I would like to mention that there was an attempt to provide for tax exemption for new oil combined with recycled oil in the last Congress as one of the provisions of H.R. 6860, the "Energy Conservation and Production Revenue Act." This bill was not enacted but got as far as being reported out by the Senate Finance Committee. The Treasury Department at that time opposed this provision of the bill, despite its energy-saving features, because it was contrary to the general rule used in excises as to treatment of taxable items used in further manufacture and because there was a preferable way to achieve the energy conservation. Instead of the policy in that provision, the Treasury Department suggested repeal of the provision which provides for a refund of tax on new oil used otherwise than in a highway motor vehicle. This would provide a greater incentive to use recycled oil than the provision in H.R. 6860.

There still remains a question as to whether recyclers could benefit currently from a tax change. About a year ago, we saw a proposed report by the Federal Energy Administration which stated that recyclers could not meet current demand for their product because of competition from other users of waste oil for the limited supply.

Finally, the study recommendations on pages 16-17 do not show that there was any cost and benefit calculations for the recommendation. Presumably, the institution of a DOD-wide used oil accounting system, along with physical storage facilities will not be costless. In view of this it would seem to be desirable to compare the value of the used oil with DOD's administrative costs.

Sincerely yours,

  
Laurence N. Woodworth  
Assistant Secretary

Mr. Victor L. Lowe  
Director, General  
Government Division  
United States General  
Accounting Office  
Washington, D.C. 20548

GAO note: Page references in this appendix may not correspond to page numbers in the final report.

PRINCIPAL OFFICIALS RESPONSIBLEFOR ACTIVITIESDISCUSSED IN THIS REPORT

| <u>Tenure of office</u> |             |           |
|-------------------------|-------------|-----------|
|                         | <u>From</u> | <u>To</u> |

DEPARTMENT OF DEFENSE

## SECRETARY OF DEFENSE:

|                      |           |           |
|----------------------|-----------|-----------|
| Harold Brown         | Jan. 1977 | Present   |
| Donald H. Rumsfeld   | Nov. 1975 | Jan. 1977 |
| James R. Schlesinger | July 1973 | Nov. 1975 |

## SECRETARY OF THE ARMY:

|                              |           |           |
|------------------------------|-----------|-----------|
| Clifford L. Alexander        | Feb. 1977 | Present   |
| Martin R. Hoffmann           | Aug. 1975 | Feb. 1977 |
| Norman R. Augustine (acting) | July 1975 | Aug. 1975 |
| Howard H. Callaway           | May 1973  | July 1975 |

## SECRETARY OF THE NAVY:

|                          |           |           |
|--------------------------|-----------|-----------|
| W. Graham Claytor, Jr.   | Jan. 1977 | Present   |
| J. William Middendorf II | Apr. 1974 | Jan. 1977 |

## SECRETARY OF THE AIR FORCE:

|                 |           |           |
|-----------------|-----------|-----------|
| John C. Stetson | Mar. 1977 | Present   |
| Thomas C. Reed  | Dec. 1975 | Mar. 1977 |
| John L. McLucas | May 1973  | Dec. 1975 |

## DIRECTOR OF THE DEFENSE

## LOGISTICS AGENCY:

|                              |           |           |
|------------------------------|-----------|-----------|
| Lt. Gen. W. W. Vaughan       | Jan. 1976 | Present   |
| Lt. Gen. Wallace H. Robinson | Aug. 1971 | Jan. 1976 |

GENERAL SERVICES ADMINISTRATION

## ADMINISTRATOR OF GENERAL SERVICES:

|                            |           |           |
|----------------------------|-----------|-----------|
| Joel W. Solomon            | Apr. 1977 | Present   |
| Robert T. Griffin (acting) | Feb. 1977 | Apr. 1977 |
| Jack Eckerd                | Nov. 1975 | Feb. 1977 |
| Dwight A. Ink (acting)     | Oct. 1975 | Nov. 1975 |
| Arthur F. Sampson          | June 1972 | Oct. 1975 |

UNITED STATES POSTAL SERVICE

## POSTMASTER GENERAL:

|                    |           |         |
|--------------------|-----------|---------|
| Benjamin F. Bailar | Feb. 1975 | Present |
|--------------------|-----------|---------|

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