

US EPA ARCHIVE DOCUMENT

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 266

[SWH-FRL 2680-4]

Hazardous Waste Management System: Standards for the Management of Specific Wastes and Specific Types of Facilities

AGENCY: Environmental Protection Agency.

ACTION: Proposed rule and request for comment.

SUMMARY: Under this proposal, the Environmental Protection Agency (EPA) would begin to regulate hazardous waste and used oil burned for energy recovery in boilers and industrial furnaces. The proposal contains both substantive controls on actual burning, and administrative controls on persons who market and burn hazardous waste and used oil for energy recovery. The substantive controls on burning would prohibit nonindustrial boilers from burning hazardous waste and off-specification used oil (i.e., used oil that did not meet particular specifications for toxic contaminants and for flash point). The administrative requirements include notification, use of a manifest or invoice system, and recordkeeping. This proposal would also expand coverage of existing storage standards to include storage of processed or blended hazardous waste fuels.

DATE: EPA will accept public comments on this proposed amendment until March 12, 1985.

Public Hearings: Public hearings will be held on the following dates to obtain comments on the issues summarized in Section XIII of the preamble: February 15, 1985, February 21, 1985, and February 26, 1985.

The hearings will begin at 9:30 a.m. (registration at 9:00 a.m.) and will end at 4:30 p.m., unless concluded earlier.

ADDRESSES: The hearings will be held at the following locations:

February 15—U.S. EPA, 26 Federal Plaza, Conference Room 305, New York, New York 10278

February 21, 1985—Ramada Inn Hobby Airport West,* 7777 Airport

* Hotel rooms have been blocked for the convenience of attendees requiring overnight accommodations. When making reservations, please indicate you are attending the U.S. EPA public hearing.

Boulevard, Houston, Texas 77061, (713) 644-1261
February 26, 1985—Torrance Marriott,* 3625 Fashion Way, Torrance, California 90503, (213) 316-3636

Comments on this proposal should be mailed to the Docket Clerk (Docket No. 3004, Burning of Waste as Fuel), Office of Solid Waste (WH-562), U.S. Environmental Protection Agency, 401 M Street, S.W., Washington, D.C. 20460. Comments received by EPA may be inspected in Room S-212, U.S. Environmental Protection Agency, 401 M Street, S.W., Washington, D.C. from 9:00 A.M. to 4:00 P.M., Monday through Friday, excluding holidays. EPA encourages all interested persons to attend the public hearings. If you would like to present an oral statement at one of the hearings, please notify in writing Ms. Geraldine Wyer, Office of Solid Waste (WH-562), U.S. EPA, Washington, D.C. 20460.

FOR FURTHER INFORMATION CONTACT: RCRA Hotline, toll free, at (800) 424-9346 or at (202) 382-300. For technical information, contact David Sussman, Manager, Waste Combustion Program, Waste Management and Economics Division, Office of Solid Waste, WH-565A, U.S. Environmental Protection Agency, 401 M Street, S.W., Washington, D.C. 20460, Telephone: (202) 382-7917. Single copies of the proposed rule are available by calling the RCRA Hotline at the number above.

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I. Authority

These regulations are proposed under the authority of Sections 1006, 2002(a), 3001, 3002, 3003, 3004, 3005, 3007, 3010, and 3014 of the Solid Waste Disposal Act as amended by the Resource Conservation and Recovery Act of 1976.

the Quiet Communities Act of 1978, the Solid Waste Disposal Act Amendments of 1980, the Used Oil Recycling Act of 1980, and the Hazardous and Solid Waste Amendments of 1984, 42 U.S.C. 6905, 6912(a), 6921, 6922, 6923, 6924, 6925, 6927, 6930, and 6932.

II. Overview of Today's Proposal

EPA is proposing today to extend the hazardous waste management regulations to apply to marketing and burning for energy recovery of hazardous wastes and used oils. The proposal would prohibit burning of hazardous wastes in nonindustrial boilers. Used oil could be burned in these boilers only if it conformed to specifications for certain toxic constituents and for flash point. For the time being, burning hazardous waste in industrial boilers and furnaces for legitimate energy recovery would continue to be exempt from regulation pending further study by the Agency of what type of regulation is needed to protect human health and the environment.

To enforce the prohibitions on burning these materials, EPA also is proposing administrative requirements that create a tracking system from initial waste fuel marketers, through distributors, to burners. These requirements include notification, receipt of identification number, compliance with manifest or (for used oil) invoice system, and recordkeeping.

Finally, this proposal would also expand coverage of existing storage standards to include storage of processed or blended hazardous waste fuel.

III. Existing Regulations Control Burning in Incinerators but Exempt Burning in Boilers and Industrial Furnaces

The Resource Conservation and Recovery Act ("RCRA" or "the Act") provides for the development and implementation of a comprehensive program to protect human health and the environment from the improper management of hazardous waste. The Act also requires EPA to develop standards to protect the public from hazards associated with recycled oil. The Environmental Protection Agency has, under RCRA, promulgated regulations for determining which wastes are hazardous (Section 3001); standards for generators (Section 3002) and transporters (Section 3003) of hazardous waste; requirements for the treatment, storage, and disposal of hazardous waste (Section 3004); procedures for obtaining a hazardous waste permit (Section 3005); procedures for the authorization of state programs

(Section 3006); and requirements for notifying EPA of hazardous waste activity (Section 3010).

One area in which EPA has not yet completed regulatory action involves the burning of hazardous waste for energy recovery. Current regulations provide control for treatment of hazardous waste by incineration (40 CFR Parts 264 and 265, Subpart O), but there are as yet no Federal requirements for burning of hazardous waste for energy recovery in other types of combustion devices (e.g., boilers and industrial furnaces). Burning of used oil for energy recovery is likewise unregulated by Federal rules at the present time. (It should be noted, however, that EPA's regulations do regulate storage and transportation of hazardous waste destined for use as a fuel if the waste is listed in 40 CFR 261.31 or 261.32 or is a sludge (see 40 CFR 261.6(b)).¹ The distinction exists because the Agency needed time to determine whether regulations for burning for energy recovery should differ from those for incineration, in light of the different scope of the practices and the different combustion units and wastes involved.

As a result, burning hazardous waste and used oil as fuel remains a source of potentially hazardous emissions that may adversely affect human health and the environment. The Agency recognizes the need to regulate this burning of hazardous waste and used oil. See 48 FR at 14481-482. Moreover, the recent Hazardous and Solid Waste Amendments of 1984 require the Agency to develop these standards within two years of enactment. (See RCRA amended Section 3004(q)). Today's proposal would begin this process.

¹ EPA has proposed to revise 40 CFR 261.6. (See 48 FR 14472 (April 4, 1983).) Under that proposal, storage and transportation of certain spent materials prior to use to produce a fuel would also be subject to regulation. In addition, the Agency proposed to retain (in § 261.6(b)(2)(v)) the exemption from the hazardous waste incinerator standards for listed wastes, sludges and certain spent materials—and for any fuels produced from these wastes—that are burned for energy recovery. Burning for energy recovery in devices that are not permitted hazardous waste incinerators, however, could be regulated immediately on a case-by-case basis. See generally, proposed §§ 260.10, 261.2(e)(2)(ii), 261.6(b)(v), 261.6(b)(vi), 261.6(g)(2); 48 FR 14507-511. Note: This footnote and all other references in this preamble to the Agency's intent to amend § 261.6 assumes the amendments have not yet been promulgated. However, given that those amendments and today's notice of proposed rulemaking are moving through the Agency's clearance procedures at the same time, the amendments to § 261.6 may be promulgated before today's rulemaking is proposed.

IV. Regulations Are Needed To Control Burning in Boilers and Industrial Furnaces

EPA today is proposing regulations to control the burning of hazardous waste and used oil for energy recovery because of the potential for substantial harm to human health and the environment from burning and handling these materials. Damage incidents involving these practices confirm this potential for harm. This potential likewise is corroborated by comments of diverse groups including some state officials, the Congress, and various industry and environmental groups, all of whom have strongly urged Agency action to halt a growing environmental problem.

A. Burning Hazardous Waste and Used Oil in Boilers Can Pose Substantial Hazards

Hazardous wastes and used oils pose the potential to cause substantial harm from the time they leave a generator or fuel processor or blender until and including the time they are burned. Used oils frequently arrive at fuel processing or blending facilities heavily contaminated with organic and inorganic toxic materials. These contaminants may be present as a result of use of the oil, or may have been added as a result of deliberate adulteration with hazardous wastes. Some fuel blenders also receive hazardous wastes that they then mix with used oil and sell as a fuel.

These contaminants rarely are removed when the used oils or hazardous wastes are processed to make fuels.² The methods of processing hazardous waste or used oil most commonly employed to make a fuel include filtering, settling, and sometimes dehydration. Processing is performed only to meet customer specifications, which are almost always related to the ASTM specifications for various grades of fuel oil (e.g., numbers 2, 4, 5 and 6). Such specifications provide limits on parameters including bottom sediment and water, heat value, flash point, and viscosity. These parameters are related mainly to how well a fuel burns or how easily it can be pumped from storage tanks and fired into the combustion device. The ASTM specifications do not limit toxic metals, chlorine, or any organic contaminants. This is significant because EPA has established that used oil commonly contains high levels of toxic metals and chlorinated organics.

² National Enforcement Investigations Center, U.S. EPA, *Summary of Waste Oil Recycling Facility Investigations*, October 1983.

Table 1 shows the composition of typical used oil and represents analyses of crankcase oils from cars and trucks, and industrial oils sampled prior to processing or blending. Hazardous wastes used as fuel may contain these same contaminants, plus many others as well.

Currently, processors and blenders of used oil or hazardous waste have no incentive to remove these potentially harmful contaminants. Product price is typically related only to whether a fuel meets a minimum BTU specification and how easily it can be pumped.

Technologies such as distillation or chemical treatment that remove metals and other contaminants do exist, but processors who use these technologies often find themselves at a competitive disadvantage to those who only filter, settle, and blend. This has led the Agency to conclude that the marketplace cannot adequately control the composition of waste fuels and, therefore, that regulatory controls are necessary.

TABLE 1.—CONCENTRATION OF USED OIL CONTAMINANTS

	Number of samples	"Median" concentration at 50th percentile ¹ (ppm)	Concentration at 75th percentile ² (ppm)	Concentration at 90th percentile ³ (ppm)
Metals:				
Arsenic.....	527	5	5	18
Barium.....	752	48	120	250
Cadmium.....	744	3	8	10
Chromium.....	756	6.5	12	35
Lead ⁴	835	240	740	1,200
Zinc.....	810	480	872	1,130
Chlorinated solvents:				
Dichlorodifluoromethane.....	87	20	160	640
Trichlorotrifluoroethane, 1,1,1-.....	28	160	1,300	100,000
Trichloroethylene.....	616	200	1,300	3,500
Trichloroethylene.....	608	100	200	800
Tetrachloroethylene.....	599	106	600	1,600
Total chlorine.....	590	1,600	4,000	9,510
Other organics:				
Benzene.....	236	20	110	300
Toluene.....	242	380	2,400	4,500
Xylene.....	235	550	2,400	3,200
Benzo(a)anthracene.....	27	12	30	40
Benzo(a)pyrene.....	65	10	13	16
Naphthalene.....	25	330	580	800
PCB's.....	753	5	15	50

¹ At the median, 50 percent of the analyzed used oil samples had contaminant concentrations below the given value.

² Seventy-five percent of the analyzed used oil samples had contaminant concentrations below the given value.

³ Ninety percent of the analyzed used oil samples had contaminant concentrations below the given value.

⁴ Values for lead were taken from 1979-83 data only.

Source: Franklin Associates, Ltd., *Composition and Management of Used Oil Generated in the United States*, September 1984, p. 1-12.

Estimates of the quantities of waste fuels burned vary greatly. EPA's best

estimate is that about 1-2 million tons of hazardous wastes and about 2.4 million tons of used oils are burned annually as fuel.^{3, 4} It is known that such burning occurs in every conceivable circumstance—in utility, industrial commercial, institutional, and residential sectors, and throughout the country.

The major risk attributable to burning waste fuels is from exposure to emissions of toxic chemicals and toxic metals that are constituents of the fuel. These risks are described in more detail in Section VII-D of this preamble, where we discuss how certain contaminants were selected for the used oil fuel specification. This is by no means the only risk posed, however. Lack of proper labelling leaves burners unprotected, because they are without notice that they are storing and burning a potentially dangerous fuel. Waste fuels also can cause harm if transported without tracking, since they could be misdirected, or even dumped illicitly.

Harm resulting from improper storage or spills of waste fuels also is possible. If the waste fuel has a low flash point, there is risk of fire and explosion.

Emissions of volatilized organic constituents could also pose a health hazard to exposed persons.

The residue from burning waste fuels could be heavily contaminated with hazardous wastes, toxic metals, or toxic combustion by-products that were neither destroyed during combustion nor emitted from the boiler.⁵ It is unlikely that this residue would be handled as a hazardous waste, and its disposal in a sanitary landfill, rather than in a hazardous waste landfill, has potential for harm to those handling the residue as well as to the public and the environment.

Actual damage incidents involving waste fuels have been reported.⁶ The best known of these incidents involves the Quanta facility, a used oil fuel blending facility located in New Jersey. This facility accepted contaminated used oil, including PCB-contaminated transformer oil, as well as hazardous wastes such as spent chlorinated solvents. Treatment of the oil was typical of that used in the industry and consisted only of settling out bulk solids

and water; contaminants were not removed or neutralized. The blended mixture was marketed as a fuel, sometimes to retail fuel distributors, and in some cases directly to ultimate users, including both residential and industrial users. Investigators of ABC News in fact filmed trucks taking contaminated commercial fuel oil from Quanta to apartment buildings in New York City. Residents of those buildings began complaining of respiratory problems, headaches, nausea, and digestive problems shortly after these fuels began to be burned. Boiler residues at these buildings, when sampled, showed presence of PCBs and chlorinated solvents.⁷

B. States and Congress are Concerned About the Problem

EPA's concern about the potential for harm from burning waste fuels has been echoed by states, the Congress, and some industry and environmental groups. Many of these entities have direct experience in trying to control waste fuels. They are unanimous in urging a strong and immediate Federal regulatory presence to control a serious problem.

Officials of the States of New York, New Jersey, Michigan, California, Alaska, and Wisconsin have voiced special concern to EPA about this problem because of related illegal activities and damage incidents within their jurisdictions. At this time, New York, New Jersey, and Rhode Island have undertaken regulation of the composition of waste fuels.

Legislation to compel EPA action on this problem was introduced in both Houses of Congress in the 1982 session. The recent Hazardous and Solid Waste Amendments of 1984 adopted this legislation and require EPA to develop standards controlling production, distribution, and burning of hazardous waste fuels within two years of enactment. See RCRA amended Section 3004(q).

V. Congress Has Authorized the Agency to Regulate Burning in Boilers and Furnaces

In this proposal, the Agency would regulate the burning of used oil and hazardous wastes used as fuels. Authority to establish a fuel specification for hazardous constituents and fuel properties is contained in both the User Oil Recycling Act of 1980 and in the other provisions of RCRA itself.

³ Based on data in: WESTAT, Inc., *Survey of Burners of Used or Waste Oil and Waste-Derived Fuel Material*, October 1984 (Draft report).

⁴ Franklin Associates, Ltd., *Composition and Management of Used Oil Generated in the United States*, September 1984, p. 1-9.

⁵ GCA Corp., *Environmental Characterization of Disposal of Waste Oils in Small Combustors*, May 1984, pp. 14 and 15.

⁶ Hazardous Waste Treatment Council, *Damage Cases*, 1983 (Unpublished data).

⁷ Transcript of ABC 20/20 Broadcast on Dec. 17, 1981; EPA Staff Interview with Kenneth Mansfield, Manager, Quanta facility, February 25, 1983.

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Section 3014 of RCRA, added by the Used Oil Recycling Act, requires the Agency to promulgate "performance standards and other requirements" necessary to protect against hazards associated with "recycled oil". "Recycled oil" (Section 1004 (37)) means contaminated oil which is reused for any purpose, including burning. Thus, the Agency has express authority to control burning of used oil by means of performance standards. (See also S. Rep. No. 96-879, 96th Cong. 2nd Sess. 1, Stressing that the purpose of the Used Oil Recycling Act is to discourage improper burning of used oils; see also H. Rep. No. 98-198, 98th Cong. 1st Sess. 68, stating that EPA has authority to specify toxicant concentration levels for used oil being recycled.) The Agency also notes that this authority does not depend on whether used oil or used oil fuels are identified or listed as hazardous wastes. The authority granted in Section 3014 is over used oil being recycled.

Authority to regulate burning of hazardous waste fuels is provided explicitly by the Hazardous and Solid Waste Amendments of 1984. See RCRA amended Section 3004(q).

VI. Discussion of Major Regulatory Options

The Agency considered several nonregulatory approaches to address the hazards that can be posed by burning waste fuels in boilers and industrial furnaces and determined that they would be ineffective and impractical. Therefore, we are proposing regulatory controls that include substantive controls on burning, administrative controls for all marketers and burners, and storage controls for hazardous waste fuels. The controls on burning would, for the time being, focus on nonindustrial boilers—boilers that are used in residential, commercial, and institutional settings. The problems with nonregulatory approaches and the basis for proposing to control burning at this time only in nonindustrial boilers are discussed below.

A. Nonregulatory Alternatives are Ineffective and Impractical

The Agency has evaluated nonregulatory alternatives for managing recycled used oil (Sobotka & Company, Inc., *An Assessment of Nonregulatory Approaches for Encouraging the Recycling and Proper Use of Waste Lube Oil*, December 1981). We considered whether economic incentives would be preferable to regulatory controls in channeling used oil to desirable users such as refiners or "acceptable" burners. Given the large

number of generators, collectors, processors, blenders, distributors, and burners, incentives could be preferable to regulatory controls. Regulatory controls aimed at all handlers could be very expensive to implement and could leave generators and collectors with little incentive to recycle (or properly dispose of) their used oil.

The Sobotka Study concluded that the most promising incentive approach of several studied would be a tax-rebate system. Producers of virgin lube oils would pay a tax for every gallon of lube oil they produce, and preferred used oil users (e.g., refiners, "acceptable" burners) would receive a rebate on their taxes for every gallon of used oil they use. The total revenues received by the U.S. Treasury from the tax ideally would match tax rebates.

The agency believes that this approach would be ineffective in protecting human health and the environment and impractical to implement. The system would be ineffective in that it would create an incentive for any used oil, no matter how contaminated, to be channeled to preferred users without any pretense of assurance or any mechanism to determine that the incentive is adequate in fact to ensure that no used oil goes to unacceptable users. Used oil marketers may find it profitable to discount their used oil fuel by an amount equivalent to the rebate and continue to sell it to unacceptable users. Moreover, we do not believe that there are "acceptable" burners of used oil, without regard for the level of contamination of the oil. Used oil may be intentionally adulterated with hazardous waste or may contain high concentration of metals that were added to the oil during use. Such used oil may not be acceptable for burning in boilers without adequate controls. However, any burner who burns used oil fuel that meets the specification contained in the proposed rule would be considered "acceptable".

The tax/rebate system would be impractical for a number of reasons: (1) Many acceptable burners (of specification used oil) do not pay taxes; (2) Congress must set and periodically adjust the tax on virgin lube oil; (3) IRS must implement and enforce the rebate system; and (4) the administrative costs to the federal government for a tax/rebate system to "control" burning in boilers and industrial furnaces may be far greater than the costs of a regulatory system.

B. Basis for Regulating Boilers by Boiler Use

The proposed regulation singles out nonindustrial boilers because EPA

believes that burning hazardous waste and highly contaminated used oils in these boilers can frequently pose a severe and immediate hazard. Although burning of these materials in industrial boilers and furnaces (and utility boilers) can also pose substantial hazards, EPA believes that there are situations where many hazardous wastes and used oils can be burned without significant risk. We are not ready to propose controls for industrial boilers and furnaces, however, because we have not completed ongoing investigations to determine under that conditions such burning may be appropriate.

1. *Need for Immediate Controls for Nonindustrial Boilers.* The burning of hazardous wastes and contaminated used oils in nonindustrial boilers can pose substantial and unnecessary risks to human health and the environment for a number of reasons. First, nonindustrial establishments typically have very small boilers that are used for space heating or cooling. The small size of these boilers may increase the probability of incomplete combustion of toxic materials. Approximately 98% of commercial and institution boilers and virtually all residential boilers have a heat input capacity of less than 10 million BTU/hr—about the size of a boiler servicing a large hospital or large apartment or office building with a total floor area of approximately 190,000 ft.² EPA believes that these very small boilers may not achieve the combustion and destruction efficiencies that large boiler can provide. Combustion controls on small boilers are much less sophisticated than those for large boilers. Larger boilers can be operated at peak combustion efficiency by maintaining optimum fuel and air flow rates under a wide range of boiler loads, and are usually equipped with devices to measure and control fuel firing rate, combustion temperature, and oxygen content in the flue gas. (Larger boilers also typically have trained operators in attendance.) The limited combustion controls on very small boilers make it very difficult to maintain maximum combustion efficiency as variations in fuel viscosity, heat value, and other properties typical of waste fuels affect fuel feed rate, flame temperature, and combustion air requirements.

In addition, very small boilers have a shorter residence time—the time that combustion gases are exposed to high temperatures in the combustion zone of the boiler. Thus, toxic organic

⁶ Based on data in FEDCo Environmental, Inc., *A Risk Assessment of Waste Oil Burning in Boilers and Space Heaters*, August 1984, p. 3-3.

compounds are exposed to the highest temperatures in the firebox for a shorter period of time.

The risks posed by nonindustrial boilers from emissions of incompletely combusted toxic organic constituents in waste fuels and from emissions of toxic metal constituents in waste fuels is compounded because of the typical location of nonindustrial boilers. The number of nonindustrial boilers located in a given area can be expected to increase as population density and commercial activity increases. This can result in a series of compounding factors that can pose a severe hazard to public health. Stack emission plumes from multiple sources can overlap, increasing the ambient concentrations of toxic compounds. In addition, exposed individuals are frequently located above ground in apartment and office buildings (e.g., exposure through open windows or from building air in-take systems located on the roof) which can expose them to higher concentrations than if they were at ground level. In urban areas, some exposed individuals will also be located extremely close to the source, perhaps as close as 25 meters to smaller sources such as a boiler in a small apartment building, church, or school (i.e., less than 10 million BTU/hr sources). Finally, even in situations where a small boiler may have a tall stack simply because the stack projects from the roof of a multi-story apartment or office building, any dispersion that would have been provided by a tall stack may be negated by the "down-wash" typically associated with emissions from stacks that have tall structures nearby, as would be expected in most urban areas. Turbulence created by nearby structure that are as tall or taller than the stack can cause stack emissions to drop to near ground level immediately downwind from the stack.

The fact that most nonindustrial boilers are located in densely populated urban areas also increases the risk from spills, fires, and explosions during transportation storage and handling. These boilers are not subject to the same degree of zoning control as industrial boilers, increasing the possibility of large numbers of facilities storing and handling waste fuels containing toxic and highly ignitable materials in densely populated areas. This risk is compounded by the fact that nonindustrial boiler owners or operators rarely know that they are obtaining waste fuels and do not realize that a potential hazard exists.

Finally, nonindustrial boilers, because of their small size, are typically not controlled by federal, state and local

point source air pollution standards. Even when the larger units are subject to a state or local standard, those standards do not specifically address the organic compounds and metals found in hazardous waste and used oil. Although ambient air pollution standards potentially cover all sources, regardless of size, the implementation by state and local governments of source controls to meet these ambient standards usually focuses on larger sources for reasons of regulatory efficiency. Furthermore, existing ambient standards do not address most of the organic compounds and metals found in hazardous waste and used oil.

2. *Schedule for Regulating Industrial Boilers and Furnaces.* The Agency began an investigation of burning wastes in industrial boilers and industrial furnaces in fall 1982. The investigation includes emissions testing of various waste/boiler scenarios to determine under what conditions such burning does not pose significant risk to human health and the environment. That investigation and the subsequent analyses of control alternatives are not yet complete. The Agency intends to complete those analyses and propose technical controls (called "Phase II" controls in this preamble) for these units in 1985. In the interim, the Agency is today proposing administrative and storage controls for industrial boilers and furnaces. Today's proposed rules for nonindustrial boilers would in no way adversely affect the consideration of options under study to control burning in industrial burners.

B. Consideration of Other Approaches

The Agency considered other approaches to identify those high risk boilers that should be subject to immediate controls. Boiler size is one factor that is likely to affect the risk posed from emissions for reasons discussed above. The Agency is specifically asking for comments on extending the proposed prohibitions to include very small industrial boilers (see discussion in Section VII-G-1 of this preamble). However, we do not believe that boiler size is the single determinant of risk posed and, thus, do not believe that large nonindustrial boilers should be exempt from the prohibitions in the absence of any assurance that particular boilers achieve suitable destruction of toxic organics (e.g., 99.99% destruction) and that metal emissions are controlled (e.g., by a particulate emissions standard). Even though large boilers can generally achieve better destruction efficiencies (for reasons discussed above), not all large boilers will be operated and maintained to achieve the

99.99% destruction and removal efficiency of toxic organic compounds required for hazardous waste incinerators. Given that nonindustrial boilers (both large and small) are typically located in densely populated areas, emissions of toxic organic compounds and metals can pose a significant and immediate hazard.

In addition to size of boiler, factors that can affect destruction efficiency include waste firing method, ratio of waste fuel to fossil fuel fired, heat value of waste fuel, boiler load, and too little or too much combustion air. The Agency is considering these factors in developing the Phase II controls for burning hazardous waste in boilers and industrial furnaces scheduled to be proposed in late 1985. That proposed rule is likely to include a range of controls on boilers depending on the factors listed above and irrespective of whether the boiler is a nonindustrial boiler or industrial boiler or whether the waste is burned for purposes of energy recovery or destruction. The proposed controls may range from controls virtually identical to those required for hazardous waste incinerators to controls that allow waiver of a trial burn for particular hazardous wastes when certain boiler design and operating conditions are met. In the interim, an owner or operator of a nonindustrial boiler who wants to burn hazardous waste may elect to consider his boiler an incinerator for regulatory purposes and comply with the hazardous waste incinerator standards of 40 CFR Parts 264 265.

VII. Proposed Substantive Controls on Burning

A. An Overview of the Proposed Controls on Burning

This proposed regulation would prohibit the burning of hazardous waste and used oil that does not meet certain specifications (hereafter referred to as "offspecification used oil") in nonindustrial boilers unless the boiler is permitted as a hazardous waste incinerator. The specification being proposed for used oil fuel sets allowable levels for lead, arsenic, chromium, cadmium, and flash point.⁹ Used oil fuel that meets the specification and is not mixed with hazardous waste can be marketed and burned without restriction in any boiler. Used oil fuel that is mixed with hazardous waste would generally be subject to regulation as hazardous

⁹ The specification also references the *de minimis* PCB concentration for waste PCBs established in 40 CFR Part 761 under authority of the Toxic Substances Control Act (TSCA).

waste.¹⁰ To provide an objective test for determining whether mixing has occurred, a rebuttable presumption of mixing with chlorinated hazardous waste is proposed where used oil containing more than 4,000 ppm total chlorine is found. We are also proposing administrative controls to provide a tracking system to enforce the prohibitions and hazardous waste fuel storage controls. Those proposed controls are discussed in Sections VIII and IX, respectively, of this preamble.

The rules proposed today do not provide technical controls on burning waste fuels for energy recovery in industrial boilers and industrial furnaces. As stated above, the Agency intends to propose such controls for these units in late 1985.

Finally, we are specifically requesting comments on several issues including the following: (1) A lead specification for used oil fuel; (2) extending the universe of boilers prohibited from burning hazardous waste and off-specification used oil fuels to include industrial boilers with a heat input capacity of less than 5-10 million BTU/hr; and (3) conditionally exempting ignitable-only hazardous waste fuels with a flash point of 100°F or more from the prohibition on burning in nonindustrial boilers.

B. A Summary of the Prohibitions

This rule proposes to prohibit a person from burning hazardous waste and off-specification used oil in a nonindustrial boiler.¹¹ With certain exceptions, it would also require marketers such as processors, blenders, and distributors to market such fuels only to persons who have notified the Agency of their waste-as-fuel activities and obtained an EPA identification number (e.g., to other processors, blenders, distributors, or to burners).

These proposed rules would require fuel marketers to manage as a hazardous waste any fuel that is or contains a hazardous waste, with

limited exceptions discussed below. Not only are fuel marketers naturally situated to exert control, but they are far less numerous than subsequent burners, and are dealing with materials not yet so widely commingled as to be difficult to identify and track.

It should be noted that these prohibitions (and the related administrative standards) ordinarily have no applicability to generators because generators usually do not produce waste fuels; rather, they generate a waste which is sent to another person (i.e., a processor or blender) who determines to market the waste as a fuel. The initial generator thus would be subject to regulation under 40 CFR Part 262 like other generators. Generators would be affected by the new requirements in these regulations only when they deal directly with the persons who burn their hazardous waste or used oil, or when they burn these materials themselves. In these cases, they not only are generators, but also are fuel marketers or burners. (See H.R. Rep. 98-198 at 40, supporting this view).

C. Materials and Combustion Units to Which the Regulation Applies

The regulations proposed today would apply to "hazardous waste fuel" and "used oil fuel". These terms are explained in the following sections.

1. *Definition of Hazardous Waste Fuel.* These rules would apply to hazardous waste, and fuels produced by processing, blending, or other treatment of hazardous waste, that are burned for energy recovery in a boiler or industrial furnace that does not have a permit under the RCRA incinerator regulations. In this rule, such waste is termed "hazardous waste fuel".

On April 4, 1983, EPA proposed that all spent materials and sludges and listed by-products, burned for energy recovery were solid wastes, and if hazardous, hazardous wastes. (Proposed § 261.2(a)(2)(ii), 48 FR at 14508.) Based on public comment and further analysis, the Agency is considering asserting RCRA jurisdiction over *all* hazardous waste by-products, spent materials, and sludges that are burned for energy recovery. Accordingly, today's proposal should be read to include all such materials as hazardous waste fuels when so recycled.

The April 4 proposal also stated that a fuel that is produced from hazardous waste is itself a hazardous waste. (*Id.*) Such fuel is likewise included as hazardous waste fuel under today's proposal.

The Agency is aware that certain petroleum refineries reintroduce hazardous wastes generated during petroleum refining (such as EPA Hazardous Waste K048-K052) back into the refining process in order to recover the oil contained in the wastes. Fuels from the process are hazardous waste fuels for purposes of this regulation because they contain hazardous wastes as ingredients. We have had several discussions with American Petroleum Institute (API) representatives regarding recycling practices within the industry and the effect of recycling on levels of toxic constituents in commercial fuel oils. We understand that API is gathering data for our consideration that they believe will show that contaminants in the recycled waste do not add significant concentrations of contaminants to the fuel product. This is because the contaminants are either substantially removed by the refining process, or (when wastes are reintroduced at a point in the process where contaminants are not removed) do not significantly increase the level of contaminants in the fuels (i.e., the contaminants in the recycled waste are so diluted by the relatively large volumes of fuel oils produced that the concentrations of contaminants already present in the oil (originally present in the crude oil or added by other refinery operations) do not increase significantly). If the Agency obtains data during the comment period for this proposed rule that substantiates this premise, we intend to exempt in the final promulgation of this rule petroleum fuel products produced at refineries under the conditions discussed below. The Agency will notice in the *Federal Register* the availability of such data for public review and comment.

If granted, the exemption would be conditioned narrowly. It would apply only to petroleum fuel products containing hazardous waste that is generated by the refining process itself. It would not apply to fuels containing other wastes generated at a refinery such as spent solvents or discarded pesticides. These refining process wastes also would have to be reintroduced into the refining process and converted into petroleum fuel products along with normal process streams. Finally, the exemption would apply only to the hazardous waste fuel. It would *not* apply to the wastes before they are reintroduced into the refining process. Thus, generators would have to store these wastes in compliance with either 40 CFR 262.34 or the facility standards in 40 CFR Parts 265 and 265. Hazardous wastes sent off site for

¹⁰Used oil mixed with hazardous waste generated by a small quantity generator and exempt from regulation as hazardous waste under 40 CFR 261.5 would be regulated as used oil fuel when so recycled.

¹¹The Agency considered developing a specification that would apply to all or certain nonindustrial boilers to identify hazardous waste that could be burned in these units without significant risk. We rejected this option because any such specification would be quite unwieldy, potentially addressing many of the constituents in 40 CFR Part 261, Appendix VIII. Not only are many of these compounds insufficiently characterized to develop toxic specification levels, but the burden of analyzing for these constituents would be expensive and time consuming. Given these difficulties, we have rejected the idea of a hazardous waste fuel specification.

reintroduction to another refining process would still need to be manifested and carried by a Part 263 transporter.

A similar situation exists in the iron and steel industry, where some plants take decanter tank tar sludge (EPA Hazardous Waste K067) and mix it with coal before charging to a coke oven, which produces coke. The coke, in turn, is used as a fuel in steel blast furnaces. The coke, so produced, is a hazardous waste fuel under this proposal. EPA will consider exempting it under the same circumstances as the hazardous waste fuels from petroleum refining.

2. *Determining When a Waste is Burned for Energy Recovery and Applicability of the Proposed Rules to Burning for Materials Recovery.* Today's regulations apply to hazardous waste burned for "energy recovery." This limitation raises two issues: how to distinguish burning for energy recovery from burning for destruction, and determining how to regulate if burning is conducted to recover materials.

The Agency has already addressed in part what is meant by burning for legitimate energy recovery. In a statement of Enforcement Policy issued January 18, 1983 (printed at 48 FR 11157 (March 16, 1983)), EPA stated that as a general matter, subject to individualized consideration of particular circumstances, burning of low energy hazardous waste as alleged fuel is not considered to be burning for legitimate energy recovery. This is the case even if the low energy hazardous waste is blended with high energy materials and then burned. Thus, under these principles, boilers and industrial furnaces burning low energy wastes could be considered to be incinerating them, and so be subject to regulation as hazardous waste incinerators. (See 48 FR at 11158 and 11159.)

Today's proposal leaves the principles of the statement in force. In the statement, EPA, however, indicated that sham burning was easiest to determine when burning occurs in nonindustrial boiler. We also said that larger industrial boilers are more efficient at recovering energy and so could be deemed, somewhat more often, to be burning lower energy wastes legitimately. (*Id.* at 11159.) Today's proposal would prohibit burning of hazardous wastes in nonindustrial boilers and thus supercedes the enforcement policy in that instance. If we were to apply the Enforcement Policy Statement to industrial boilers and furnaces, we would seek to enforce in situations where low energy hazardous waste adulteration was deliberate and massive. (We note,

however, that the Policy Statement does not address burning for material recovery, or situations where a waste is burned for both material and energy recovery. In this situation, the fact that low energy wastes are involved would not necessarily indicate that legitimate recycling is not occurring, because material recovery also is involved.)

There also are other indicators of whether or not burning is for legitimate energy recovery. Obvious sham situations are when no usable heat is recovered from the combustion unit, or when the heat recovered is used only to preheat combustion air. Since no meaningful energy recovery ever occurs, we would maintain that these situations involve waste destruction.¹²

A second question is the scope of these regulations when burning involves material recovery. We address this question separately with respect to burning in boilers and burning in industrial furnaces. The Agency views today's regulations as applying whenever hazardous wastes are burned in boilers (unless the boilers are regulated as incinerators, in accordance with the discussion above). Boilers, by definition, recover energy. If materials are also recovered, this recovery is ancillary to the purpose of the unit, and so does not alter the regulatory status of the activity. (See proposed § 260.10—definition of "boiler" in 48 FR at 14507 (April 4, 1983).) Today's regulations also would apply when an industrial furnace burns hazardous wastes for energy recovery. The newly enacted Hazardous and Solid Waste Amendments of 1984 in fact require the Agency to regulate industrial furnaces burning hazardous waste fuels. See RCRA amended section 3004(q) and H.R. Rep. 98-198 at 40. Although the actual burning in the furnace is not addressed by today's regulations, hazardous waste fuel sent to an industrial furnace would be subject to notification, manifest, and interim status storage requirements.

The regulations also would apply when an industrial furnace burns the same material for both energy and

material recovery. Examples are when blast furnaces burn organic wastes to recover both energy and carbon values, or when a cement kiln burns chlorinated wastes as a source of energy and chlorine. In general, EPA believes that RCRA expresses a strong mandate to take an expansive view of what constitutes hazardous waste management activities, and to regulate as necessary to protect human health and the environment.¹³ See RCRA sections 1004(2), 1004(22), 1004(23), and 1004(24) (statutory definitions stating that secondary materials burned for energy recovery are solid wastes, and therefore, if hazardous, hazardous wastes); H.R. Rep. No. 94-1491, 94th Cong. 2d Sess. at 4 (Congress's concern in promulgating subtitle C of RCRA was to "eliminat(e) that last remaining loophole in environmental law", not to create new loopholes). The newly enacted RCRA reauthorization legislation likewise directs the Agency to regulate burning of hazardous waste fuels within a mandated time frame—by November 1986. We believe this mandate applies to industrial furnaces burning to recover energy and materials.

Burning solely for material recovery in industrial furnaces (as defined in 48 FR at 14507), however, raises different kinds of issues, principally the question of whether the purpose of burning affects either the Agency's jurisdiction or the Agency's regulatory strategy. The Agency will address this issue further as part of the Definition of Solid Waste rulemaking and the Phase II boiler and industrial furnace rulemaking. We note, however, that if the secondary material being burned is a hazardous waste, the purpose for which it is burned is not a factor in determining whether and how to regulate its burning. The issue is whether the burning needs to be regulated to protect human health and the environment, not whether the purpose of burning is destruction, energy recovery, or material recovery. We thus intend to develop regulations for industrial furnaces burning hazardous wastes—regardless of purpose—as part of the Phase II regulations for boilers and industrial furnaces discussed above.

3. *Identification of Used Oil Fuel Subject to Regulation.* Used oil would be subject to regulation under the proposed rules if the used oil, including any material produced from it by processing, blending or other treatment, is used as

¹² The Phase II controls for boilers and industrial furnaces scheduled to be proposed in late 1985 would regulate burning in these units irrespective of whether the waste is burned for energy recovery or destruction. However, our current thinking is to propose to regulate industrial furnaces and those boilers that burn low energy wastes (as well as other boilers that do not meet certain design and operating conditions) much like incinerators. For example, owners and operators could be required to demonstrate 99.99% destruction and removal efficiency of toxic organics. Thus, the enforcement policy (i.e., burning low energy waste is subject to the hazardous waste incinerator standards) is still consistent in outcome with current thinking on the technical controls for burning in boilers and industrial furnaces.

¹³ EPA realizes that some of this discussion is inconsistent with a footnote in the preamble to the redefinition of solid waste. See 48 FR at 14485 n.19 (April 4, 1983). EPA withdraws the earlier footnote, to the extent it is inconsistent.

fuel for energy recovery in a boiler or industrial furnace that does not have a permit under RCRA incinerator regulations.

"Used oil" means any oil that has been refined from crude oil, used, and as a result of such use, contaminated by physical or chemical impurities. (See RCRA section 1004(36).) Used oils include the following: (1) Spent automotive lubricating oils (including car and truck engine oil), transmission fluid, brake fluid and off-road engine oil; (2) spent industrial oils, including compressor, turbine, and bearing oils, hydraulic oils, metal-working oils, gear oils, electrical oils, refrigeration oils, and railroad draining and (3) spent industrial process oils.

These proposed rules would apply only to used oil and not necessarily to "oily waste." An oily waste, such as bottom clean-out waste from commercial fuel oil storage tanks, is not used oil because the oil was never "used" and, thus, would not be subject to these proposed rules (provided it is not mixed with used oil and that it is not a hazardous waste).

Today's proposal marks the first time the Agency has used the regulatory authorities created by the Used Oil Recycling Act of 1980 (UORA). (UORA is codified substantially as sections 1004 (36)-(39) and 3014 of RCRA.) UORA requires the Agency to establish "performance standards and other requirements as may be necessary to protect the public health and the environment from hazards associated with recycled oil." (See RCRA section 3014.) Burning used oil for energy recovery—the subject of this proposal—is an example or recycling. (See RCRA, section 1004 (37).)

The regulation of used oil fuels raises the legal question of how the provisions of UORA are to be integrated with other RCRA provisions. EPA believes that UORA authorities may be used independent of or as a supplement to Subtitle C of RCRA. If recycled used oil (called "recycled oil" under RCRA section 1004 (37)) is not also a hazardous waste, it is subject to regulation under the provisions of Section 3014 rather than sections 3001-3006, 3008, and 3010. This has certain significant implications. For example, permits are not necessarily required to manage recycled oil, the criminal enforcement provisions of section 3008 (d) do not apply, and the regulatory program may not be delegable to states under section 3006. (See Section XI of this preamble for a discussion of the impact of this rule on authorization of state programs.)

If recycled oil is also a hazardous waste, many of the Subtitle C

regulations for other hazardous wastes (40 CFR parts 262-266 may apply. Section 3014, as amended the Hazardous and Solid Waste Amendments of 1984, provides detailed guidance on regulating recycled oil that is a hazardous waste.

4. *Distinguishing Between Hazardous Waste and Used Oil.* It is important to determine whether a waste fuel is a hazardous waste fuel or a used oil fuel because they would be regulated differently under today's rule. For example, hazardous waste fuel could not be burned in nonindustrial boilers under the proposed rules even if it were processed or blended to meet the specifications for used oil fuel.¹⁴ Off-specification used oil could be processed or blended to meet the specification and then burned in nonindustrial boilers.

There are situations where it is difficult to tell if a waste is used oil or hazardous waste, particularly when a used oil contains toxic constituents. The Agency believes that it has discretion to determine whether a waste is to be classified as hazardous waste or as used oil.¹⁵ See Rep. No. 98-284, 98th Cong. 1st Sess. at 38. In exercising this discretion, we are guided by three principles:

(1) Where possible, clear, objective tests are needed for classifying hazardous waste and used oil;

(2) The Agency should not adopt a scheme whereby most used oil would be classified as a hazardous waste ineligible for regulation under the section 3014 standards;¹⁶ and

¹⁴ Although the used oil fuel specification (particularly flash point) in conjunction with the rebuttable presumption on mixing with chlorinated hazardous wastes address contaminants that we believe are frequently added to used oil by mixing with hazardous waste, the specification by no means comprehensively addresses the hazardous constituents that could be added if mixing were condoned. A specification that identified hazardous waste suitable for burning in nonindustrial boilers would need to consider the risks posed by burning the hundreds of toxic constituents listed in Appendix VIII of 40 CFR Part 261, an extremely difficult task given. For example, it would be difficult to set *de minimis* concentration levels for many constituents given limited dose-response health effects data at extremely low levels of exposure. Even if such a comprehensive specification could be developed, analytical costs to demonstrate compliance would likely discourage its use.

¹⁵ Were used oil to be listed as a hazardous waste, we would have discretion to determine whether a waste is hazardous used oil or some other hazardous waste ineligible for the possibly special standards for recycled oil developed after consideration of section 3014 of RCRA.

¹⁶ We think this principle evident because otherwise the Used Oil Recycling Act would have little meaning.

(3) Any objective test should ensure that massive adulteration of used oil with hazardous waste results in the mixture being defined as a hazardous waste not eligible for the special standards for recycled oil.¹⁷

We discuss below how we apply these principles to used oil containing chlorinated wastes, to used oil generated by small quantity generators, and to used oil that exhibits a characteristic of hazardous waste.

Used Oil Containing Chlorinated Wastes. Today's rule reiterates the principle found in § 261.3(a)(2) of the existing regulations that a hazardous waste mixed with a solid waste is a hazardous waste. Thus, under the proposed rule, mixtures of hazardous waste and used oil ordinarily are classified as hazardous waste. It is not always possible, however, to prove (or to be sure) that mixing has occurred, particularly when no one has observed the act of mixing. Used oil containing small amounts of chlorinated compounds is an example where there may be uncertainty.

Since chlorinated compounds—many of them hazardous wastes—are frequently found in used oil (see Table 1 above), the Agency believes that a simple, objective test is needed to determine when used oil has been mixed with hazardous spent halogenated solvents (or other chlorinated hazardous waste) to avoid case-by-case confusion as to when mixing has occurred, and to aid in consistent enforcement of the regulation. The Agency is proposing a rebuttable presumption that used oil containing more than 4,000 ppm total chlorine has been mixed with hazardous spent halogenated solvents (i.e., EPA Hazardous Waste No's. F001 and F002) or other hazardous chlorinated wastes and, therefore, is a hazardous waste under provision of the "mixture rule" of 40 CFR 261.3 (i.e., a mixture of a listed hazardous waste and other material is a hazardous waste unless delisted under provisions of 40 CFR 260.20). The presumption can be rebutted by demonstrating to enforcement officials that the chlorine content is inorganic or

¹⁷ The legislative history to the Used Oil Recycling Act indicates that Congress was especially concerned with environmental hazards created when toxic wastes are added to used oil, and was concerned that these mixtures were not identified or listed as RCRA hazardous wastes. (See, e.g., H.R. Rep. No. 96-1415, 96th Cong. 2d Sess., at 4-5.) The principle in the text also effectuates the objectives of RCRA to promote the protection of human health and the environment by regulating hazardous waste management. (See, e.g., RCRA Section 1003(4).)

that the chlorinated organics were not constituents of hazardous wastes.

We are proposing a total chlorine level of 4,000 ppm for the presumption because we are virtually certain that used oil with higher levels of chlorine has been massively adulterated with chlorinated solvents or other chlorinated hazardous waste. Such fuel would be ineligible for regulation under the potentially special standards under section 3014 (unless the presumption were rebutted) scheduled to be proposed in 1985 (i.e., the used oil listing/management proposed rule). Although used automotive oils can contain on the order of 3,000 ppm inorganic chlorine (from leaded gasoline blowby), higher chlorine levels would almost certainly indicate mixing with chlorinated solvents.¹⁸ Used industrial oils, other than certain metalworking oils,¹⁹ are not known to contain chlorinated compounds unless chlorinated wastes are added. In addition, sampling data from hundreds of samples of all types of used oil indicated that both total hazardous spent solvent concentrations and total chlorine concentrations exceed 4,000 ppm 25% of the time.²⁰ Based on these data, the Agency believes that the level of 4,000 ppm is within the range or reasonable levels it could have selected to indicate hazardous waste adulteration. In addition, burning used oil with less than 4,000 ppm of chlorinated solvents will not pose a significant risk from emissions of either incompletely burned solvents (i.e., boilers will destroy from 99% to 99.99% of the solvent) or hydrochloric acid.²¹

The Agency solicits comments as to whether alternate chlorine levels are a more appropriate indicator of hazardous waste adulteration.²²

Used Oil Generated by Small Quantity Generators. A large percentage, probably a majority, of used oil is generated by small quantity generators.²³ Some of this used oil is a hazardous waste under present regulations, either because it is mixed with hazardous waste or because it exhibits a characteristic of hazardous waste. The Agency believes that Congress ordinarily intended used oil from small quantity generators to be classified as used oil subject to regulation under section 3014, not as hazardous waste ineligible for regulations under that section. See, e.g., H.R. Rep. No. 96-1415 at 6 assuming that automotive oil is used oil. Section 241 of the Hazardous and Solid Waste Amendments of 1984 likewise requires the Agency to deal with small quantity generators as a class in promulgating regulations for recycled used oil, and further states that recycled oil is not subject to otherwise applicable rules for small quantity generators. See RCRA amended section 3014(c); see also H.R. Rep. 98-198, *supra*, at 65-66 mandating special administrative rules for small quantity generators of used oil.

Relying on both the Used Oil Recycling Act and the new legislation, we are stating in the rule in proposed § 266.40(c) that used oil generated by a small quantity generator is subject to regulation as used oil fuel (when so recycled). This is true even if the used oil exhibits a characteristic of hazardous waste, or is mixed with a small quantity generator's hazardous waste.²⁴

²² Used oil containing less than 4,000 ppm total chlorine could still be found to contain hazardous waste. The Agency, however, is not presuming that it is a hazardous waste in every case.

²³ Roughly 60% of used oil burned as fuel (the principle means of recycling used oil) is automotive oil, most of which is generated by automotive service and repair shops who are small quantity generators. (See Franklin Associates Ltd., *Composition of Used Oil*, p. 1-4.)

²⁴ The Agency notes that there are alternative approaches to classification of used oil from small quantity generators. One alternative—based on the legislative history of the 1980 Act cited above—would be to classify all automotive oil as used oil, even if it is adulterated with hazardous waste. Other used oil generated by small quantity generators would be classified as hazardous waste ineligible for regulation under Section 3014 standards. A second approach would be to classify small quantity generators used oil as a hazardous waste if it is massively adulterated with small quantity generator hazardous waste. This would be based on the principle, noted above, that massive, deliberate adulteration should result in used oil/hazardous waste mixtures being classified as hazardous waste ineligible for regulation under Section 3014 special standards. The Agency solicits comments on these alternative approaches.

We do not think that this reading is inconsistent with the principle that used oil not be massively adulterated with hazardous waste because, as a factual matter, used oil from small quantity generators is generally not massively adulterated. Metals in the waste are present from use of the oil, not from adulteration. Analyses also indicate that small quantity generators—particularly automotive service and repair shops—are unlikely to generate used oil that contains more than on the order of 1000 ppm of halogenated solvents.²⁵

As stated in the previous section, used oils containing greater than 4000 ppm chlorine are presumed under the regulation to be hazardous waste subject to full regulation. A marketer, blender or user might argue that the material is exempt from the hazardous waste regulations and remains a used oil because it was generated by a small quantity generator. They would have the burden of proof on this issue. See, e.g., *SEC v. Ralston Purina Co.*, 346 U.S. 119, 126 (1953) (party claiming the benefits of an exception to a broadly remedial statutory or regulatory scheme has the burden of proof to show that they meet the terms of the exception). As part of this burden, they would have to show that the used oil has never been commingled with hazardous waste (including used oil containing greater than 4000 ppm chlorine) from large quantity generators. Since used oil from small quantity generators is not typically adulterated at these levels, we do not think this burden can be satisfied other than in exceptional cases.²⁶

Used Oil That Exhibits a Characteristic of Hazardous Waste. Used oil itself might be hazardous waste if it exhibits a characteristic of hazardous waste. The most likely

²⁵ Analysis of 26 samples of used oil generated by automotive service and repair shops reveals that none contained more than a total of 1000 ppm of chlorinated solvents such as trichloroethane, trichloroethylene, tetrachloroethylene, carbon tetrachloride, and methylene chloride and 50% contained less than a total of 5 ppm chlorinated solvents (40% did not contain any of the chlorinated solvents analyzed). See Franklin Associates, Ltd., *Composition of Used Oil*, pp. 3-33.

²⁶ The Agency solicits comments on the extent to which small quantity generators may, in fact, generate used oil containing more than 4000 ppm total chlorine because of mixing with chlorinated hazardous waste. Further, given that such mixtures would be regulated as used oil fuel rather than hazardous waste fuel (unless mixed with large quantity generator hazardous waste), the Agency solicits comments on whether an allowable level for chlorine (e.g., 4000 ppm) as an indicator of mixing with chlorinated wastes should be included in the used oil fuel specification to ensure that such adulterated oil—like such mixtures generated by large quantity generators—is not burned in nonindustrial boilers.

¹⁸ Based on 26 samples of used oil taken from automotive service and repair shops (and, thus, known not to be adulterated with hazardous waste by collectors or processors/blenders). See Franklin Associates, Ltd., *Composition of Used Oil*, Appendix A. Also see NBS Technical Note 1130—*Test Procedures for Recycled Oil Used as Burner Fuel*, August 1980, p. 51.

¹⁹ Some metalworking oils contain extreme pressure additives that are paraffinic compounds with high chlorine levels. Thus, used metalworking oils may contain chlorine levels higher than 4,000 ppm even though they are not mixed with hazardous halogenated solvents. However, these oils comprise less than 3% of recycled used oil and are typically disposed of because of their high water, sulfur, and chlorine content. (See Richard J. Bigda & Assoc., *Review of all Lubricants Used in the U.S. and Their Re-Refining Potential*, June 1980, pp. 63-70 and Franklin Associates, Ltd., *Composition of Used Oil*, p. 3-11 through 3-15.) Nevertheless, if a used oil processor were to manage such oil, he could rebut the presumption that it was a hazardous waste by showing that the chlorine was not attributable to hazardous solvents or other hazardous wastes.

²⁰ Franklin Associates, Ltd., *Composition of Used Oil*, p. 1-12.

²¹ PEDCo, *Risk Assessment of Waste Oil Burning*, pp. 5-1 through 5-8.

possibility is EPA toxicity for lead, arsenic, cadmium, or chromium. These metals are present in used oil almost invariably as a result of the oil's use.

EPA intends that used oil that is hazardous waste solely because it exhibits a characteristic of hazardous waste be regulated as used oil fuel (where so recycled), provided that it is not mixed with a hazardous waste.²⁷ The legislative history of the Used Oil Recycling Act indicates clearly that used oil that is contaminated during use is to be classified as used oil and, if recycled, be subject to regulation under section 3014. See H.R. Rep. 96-1415 at 6. The specification for used oil fuel suitable for burning in nonindustrial boilers addresses these contaminants by setting specific levels for them.

Used oil also may exhibit the characteristic of ignitability, either through contamination during use or through adulteration with ignitable wastes (such as ignitable spent solvents or discarded gasoline). We are proposing that ignitable used oil be regulated as used oil, and be prohibited from burning in nonindustrial boilers when its flashpoint is less than that of commercial fuel. We are considering whether a flashpoint this low serves as a presumptive indication of mixing with hazardous waste, and therefore, that such mixtures should be regulated as hazardous wastes ineligible for regulation under section 3014 standards.

Used oil exhibiting a hazardous waste characteristic is a hazardous waste under existing EPA regulations. We note that the proposed regulations for burning used oil fuels would provide a level of environmental protection analogous to that provided by the proposed regulations for burning hazardous waste fuels. Neither hazardous waste fuel nor off-specification used oil fuel could be burned in nonindustrial boilers. Although used oil fuel meeting the specification could be burned in nonindustrial boilers, the specification ensures that such burning would not pose significantly greater risk than burning virgin fuel oil. Use of a specification to identify used oil fuel that may be safely burned in nonindustrial boilers is possible because of the relatively small number of significant toxic contaminants typically found in used oil (i.e., used oil not mixed with hazardous waste). A specification is not practicable for hazardous waste fuel because a large number of toxic

contaminants—virtually any of the hundreds of hazardous constituents listed in Appendix VIII of 40 CFR Part 261—may be found in concentrations that could pose significant hazard.

5. *Definition of Nonindustrial Boiler or Furnace.* The regulation proposed today would prohibit burning hazardous waste fuel and off-specification used oil fuel in nonindustrial boilers. The term "nonindustrial" boiler or furnace is used to refer to units such as those located at: (1) Single or multifamily residences; (2) commercial establishments such as hotels, office buildings, laundries, or service stations; and (3) institutional establishments such as colleges, hospitals, and prisons.

For convenience, the proposed regulation identifies the boilers and industrial furnaces that may burn hazardous waste fuel and off-specification used oil fuel and prohibits the burning of these fuels in other boilers or furnaces. These waste fuels may be burned for energy recovery in only the following stationary combustion devices: (1) Industrial furnaces; (2) industrial boilers; or (3) utility boilers. (Off-specification used oil fuel may also be burned by the generator in a used oil-fired space heater.) The term "industrial furnace" is defined in the proposed amendment to 40 CFR 260.10 (see 48 FR 14507 (April 4, 1983)) and means those devices that are integral components of manufacturing processes and that use flame combustion or elevated temperature to accomplish recovery of energy or materials. The Administrator would identify and list devices considered to be industrial furnaces. Devices to be listed include cement kilns, lime kilns, aggregate kilns, phosphate kilns, coke ovens, blast furnaces, and smelting furnaces.

The term "industrial boiler" means any boiler that produces electric power, steam, or heated or cooled air or other gases or fluids for use in a manufacturing process. The term "boiler" is defined in the proposed amendment to § 260.10 (see 48 FR 14507 (April 4, 1983)). (In response to comments, the Agency is considering modifying the proposal to use quantified levels of heat transfer to implement the integral design standard, rather than the radiant heat transfer test of the proposed rule. The Agency also is considering including process heaters and fluidized bed combustion units as boilers. Today's proposal should be read to include these changes.) The term "manufacturing process" means the mechanical or chemical transformation of substances into new products,

including the component parts of products. Manufacturing processes are generally limited to those operations classified under SIC 20 through 39 of the Office of Management and Budget Standard Industrial Classification Manual. To qualify, a boiler must actually be used to provide energy to operate equipment or drive chemical or other reactions to affect the transformation of substances into products. Boilers that produce energy for use *solely* for space heating or cooling in a manufacturing plant, or for space heating or cooling or other purposes in an administrative office or auxiliary unit at a manufacturing establishment or other facility owned or occupied by a manufacturing business, are *not* used in a manufacturing process for purposes of this regulation.

Such boilers are virtually identical in operation and use as those located at commercial and institutional establishments. Thus, boilers used solely to heat or cool a building in which a manufacturing business conducts supporting services (including research, development, testing laboratories, warehouses, and garages), rather than actual manufacturing, are nonindustrial boilers for purposes of this regulation, and could not burn hazardous waste fuel or off-specification used oil fuel. Boilers used to provide energy for a manufacturing process as well as for space heating or other nonmanufacturing purposes are considered to be industrial boilers.

D. Selection of Parameters and Levels for the Specification

The Agency has developed a specification for use oil fuel that may be burned without regulation in nonindustrial boilers and other boiler or furnace. As an alternative to the specification, EPA considered banning all used oil burning in non-industrial boilers, just as the Agency is proposing to ban burning of hazardous waste. It could be argued that a ban may be more protective because: (1) A specification necessarily limited in scope to be practicable may not ensure that, in fact, hazardous waste is not mixed with used oil sold to nonindustrial boilers;²⁸ and

²⁸ We believe, however, the specification and rebuttable presumption will detect and control hazardous wastes mixed with used oil at levels that could pose significant risk when the oil is burned. Metals would be controlled directly by specification levels. Adulteration with nonhalogenated, ignitable solvents would be controlled by the flash point specification. Adulteration with halogenated solvents would be controlled by the rebuttable presumption. The Agency also has examined whether other hazardous wastes are typically

Continued

²⁷ Except that mixtures of small quantities of generators exempt hazardous waste and used oil are subject to regulation as used oil, as discussed above.

(2) a ban would not allow an increase in emissions of metals and organic compounds over those from burning virgin fuel oils (as discussed below, the specification could allow higher lead levels than found in virgin fuel oils, levels of arsenic, cadmium and chromium levels comparable to the 95th percentile levels found in virgin fuel oils, and low concentrations of chlorinated spent solvents and PCBs, neither of which are found in virgin fuel oils). The ban approach was rejected because we believe that the used oil fuel specification in conjunction with the rebuttable presumption of mixing with chlorinated wastes would adequately prevent the burning of used oils that the Agency believes pose significant risk when burned for energy recovery, as discussed below. Given that some used oils can either meet the specification as generated or can be economically blended to meet the specification,²⁹ the Agency believes that a ban on burning these oils would be an unnecessary impediment to recycling of used oil in a manner that poses no greater risk to human health and the environment than burning virgin fuel oils. The Agency specifically solicits comments on whether all used oil burning in nonindustrial boilers should be banned as an alternative to using a specification (in conjunction with the rebuttable presumption of mixing with chlorinated hazardous waste) to identify used oil fuel acceptable for burning in nonindustrial boilers.

The used oil fuel specification includes limits for certain metals, PCBs, and flash point and the rebuttable presumption on mixing chlorinated wastes limits total chlorine. EPA relied mainly on three studies in selecting the specification parameters and levels: (1) Reviews of available data on the composition of used oils being used as fuel [Franklin Associates, Ltd., *Composition and Management of Used Oil Generated in the United States*,

added to used oil, and has not found such evidence. Preliminary screening of approximately 50 used oil samples for a wide range of hazardous constituents (other than solvents and metals already known to be found in used oil), including 8 pesticides, 2 herbicides and approximately 80 other organic compounds, did not reveal appreciable levels of compounds other than those typically found in virgin fuels. See Franklin Associates, Ltd., *Composition of Used Oil*, pp. 3-44 through 3-53.

²⁹ Preliminary analysis indicates that from 8 to 19% of 132 used oil samples that were burned for fuel could meet a lead specification at either end of the proposed range, 10 and 100 ppm, respectively. In addition, from 30 to 88% of the samples could meet a specification of 10 or 100 ppm, respectively, after blending with 90% virgin fuel oil with mean metals content. Source: Franklin Associates, Ltd., (unpublished data), April 27, 1984 memorandum to EPA.

September 1984]; (2) a review of used oil combustion testing data [Draft report by GCA Corp., *Environmental Characterization of Disposal of Waste Oil by Combustion in Small Commercial Boilers*, August 1983]; and (3) an air modeling and risk assessment study of used oil burning sources to evaluate the potential environmental impacts of certain used oil burning practices [Draft report by PEDCo Environmental, Inc., *A Risk Assessment of Used Oil Burning in Boilers and Space Heaters*, September 1983].

Used oil fuel meeting the proposed specification would be unregulated and could be burned in any boiler including residential, institutional, and commercial boilers. EPA, therefore, is proposing a specification that is intended to be protective under virtually all circumstances (provided that used oil is not illegally adulterated with hazardous waste that would not be detected and controlled by the specification or the chlorine limit of the rebuttable presumption). What follows is an explanation of how EPA selected parameters for inclusion in the specification, and then how actual levels for those parameters were determined.

1. *Selection of Parameters.* EPA has reviewed analytical data from over 1000 used oil samples, many of which were being used as, or to produce, used oil fuels. These data, along with other published sources on composition of new and used lubricants, have allowed EPA to characterize the physical and chemical properties of used oils. Used oils contain a variety of contaminants picked up through use, as well as certain constituents present in the petroleum basestocks and additive packages of the lubricants themselves. Analytical data also confirmed that other materials, in particular chlorinated degreasing solvents, are frequently added to used oil after it is generated. EPA considered the typical concentrations of these contaminants in used oil as well as the toxicity and other chemical properties of the constituents, and thereby identified several constituents that are typically present in used oil as being potentially hazardous pollutants when used oil is burned as a fuel.

EPA reviewed available used oil combustion testing data to determine the amounts of these constituents that are released during used oil combustion. In some areas, EPA found available data to be insufficient and sponsored a series of test burns in late 1982 and early 1983 to obtain additional data. EPA determined that when used oil is burned in boilers, 30-75% of the metals present in the used oil fuel are emitted to the

air.³⁰ However, EPA also determined that organic contaminants, such as chlorinated degreasing solvents (including even hard-to-burn compounds such as carbon tetrachloride) are destroyed at 99-99.9% efficiency even when the units are not operated at peak combustion efficiency as evidenced by occasional flue gas smoke episodes. Thus, less than 1% of the organic compounds present in the used oil may be emitted to the atmosphere.³¹

EPA also conducted air modeling and risk assessment studies to estimate ambient concentrations of pollutants that may be associated with used oil burning. EPA made certain assumptions in the modeling intended to reasonably simulate certain used oil burning practices. The risk studies that have been conducted modeled emissions from used oil fuel usage in hypothetical situations to determine two types of impacts: (1) Area-wide impacts where many small, uncontrolled sources with short stacks are located in an urban area; and (2) "hot-spot" impacts in the vicinity of single sources and clusters of sources. The area-wide analysis assumed the sources were located throughout the urban area, with their locations and density approximating population and fuel use patterns. This scenario simulates a fairly common used oil burning practice, as documented by investigations conducted by EPA, New York City, and New Jersey. The modeling study provided a general indication of the ambient ground level impacts that could potentially be associated with the widespread use of used oil fuel in residential, institutional, and commercial boilers in an urban area. The "hot-spot" impacts analysis modeled emissions from boilers burning 100% used oil. Boiler sizes and stack heights were varied to represent the range of boilers located in urban areas. Emissions from clusters of 4 and 16 sources evenly spaced 50 or 100 meters apart in a square were also modeled to simulated conditions in highly urbanized and commercialized areas. Ground level impacts of burning used oil with various concentrations of pollutants were determined. (For lead, ambient levels were also modeled for elevated and close-in receptors.)

Finally, EPA considered available data on the composition of virgin, commercial fuel oil, which used oil fuel replaces. EPA made comparisons of the

³⁰ GCA Corp., *Environmental Characterization of Waste Oil Combustion*, p. 9, and PEDCo, *Risk Assessment of Waste Oil Burning*, p. 3-20.

³¹ GCA Corp., *Environmental Characterization of Waste Oil Combustion*, pp. 14-20.

types and levels of contaminants found in used oil fuel versus other fuel oils. For some contaminants, EPA has found used oil fuel to be very similar to other fuel oils. In general, however, significant differences exist. EPA determined that used oil fuel typically contains certain contaminants, such as chlorinated degreasing solvents, not found at all in commercial fuel oils. Also, used oil fuel typically contains certain toxic metals, (such as lead) at levels higher than typically found in commercial fuel oils.

After considering information provided by all of the studies described above, EPA has determined that certain contaminants present in used oil fuel are released during combustion in amounts high enough to present potential health hazards, while other contaminants do not appear to present such hazards. In general, EPA considered establishing a specification for any toxic contaminant that is typically present in used oil fuel at concentrations higher than typical for virgin fuel oils. EPA determined that regulation of toxicants at the same or lower levels than found in virgin oil would not result in protection of human health and the environment since virgin oil would be substituted for used oil as a fuel.

EPA then evaluated the potential harm to human health that could result from burning used oil containing these contaminants. In making this determination, the Agency assessed whether burning used oil fuel under reasonably typical conditions could significantly increase the ambient concentration of the pollutant, and whether the increment that would be added to the ambient air by burning used oil fuel could be associated with adverse health impacts. What follows is a discussion of several parameters considered for inclusion in the proposed specification, and the rationale for including or not including each parameter. EPA requests comments on the rationale for selecting parameters, as well as on those actually selected.

(a) *Barium and Zinc.* EPA considered setting specification levels for barium and zinc. These metals are typically present in used oil at 50-300 and 500-1100 ppm, respectively. These levels are 10-100 times greater than would be found in virgin fuel oils. In workplace settings, exposure to high ambient levels of barium has been associated with irritability and baritosis, while zinc has caused metal fume fever. EPA has determined that in the case of zinc, emissions from the widespread burning of used oil in urban areas would significantly add to ambient levels of zinc; however, these ambient levels are

still nowhere near the threshold response level that triggers metal fume fever.³² In the case of barium EPA has determined that emissions from the widespread burning of used oil fuel in urban areas could also significantly increase ambient levels of barium. Ambient levels attributable to burning used oil under reasonable worst case conditions could be on the order of 0.35 micrograms per cubic meter.³³ However, EPA again has concluded that the health effects resulting from exposure to such concentrations and by the airborne route are not likely to be significant. Chronic exposure to low levels of airborne barium compounds does not appear to be a serious health hazard. Dusts of barium oxide are considered potential agents of dermal and nasal irritation.³⁴ However, occupational exposure to barium sulfate dust and barium carbonate can result in baritosis, a benign pneumoconiosis that is not incapacitating. Although it does produce radiologic changes in the lungs, the changes are reversible with cessation of exposure.³⁵ Thus, EPA has proposed no specification for either barium or zinc. However, the Agency specifically solicits comments on the health risks from low ambient levels of zinc and barium and whether either should be included in the specification.

(b) *Polynuclear Aromatic Hydrocarbons.* EPA evaluated the hazards posed by benzo(a)pyrene and other polynuclear aromatic hydrocarbons (PAH's). Benzo(a)pyrene, as well as other PAH's, have been identified as carcinogens by EPA. Comparable levels of benzo(a)pyrene and other PAH's are normally present in used oil and virgin fuel oil. (Residual, or "number 6" oil often has higher levels of benzo(a)pyrene than does used oil.) EPA also reviewed data on emissions from used oil and virgin fuel oil burning. The levels of PAH's are comparable.³⁶ EPA has determined that the burning of any fuel oil is associated with the emissions of small amounts of PHA's. Thus, the burning of used oil fuel is not associated with significantly greater incremental amounts of PAH emissions than if virgin fuel oil were burned, and should not lead to a significant increase over background levels of benzo(a)pyrene or

any other PAH. EPA, therefore, has not proposed a specification for any polynuclear aromatic hydrocarbon.

(c) *Lead, Arsenic, Cadmium, and Chromium.* Existing data show that used oil fuel typically contains higher concentrations of lead, arsenic, cadmium, and chromium than levels typically found in virgin fuel oils. Table 2 compares levels of these metals in used oil versus other virgin fuel oils. EPA's test burns have confirmed that a large percentage of the metals present in used oil (as much as 75%) are emitted when used oil is burned in uncontrolled boilers.

TABLE 2.—CONCENTRATIONS OF SELECTED METALS IN USED OIL AND FUEL OILS

(Values in ppm)

Contaminant	Used oil	Fuel oils
Arsenic.....	5-18	2-5
Cadmium.....	3-10	ND-2
Chromium.....	7-35	1-10
Lead.....	240-1,200	2-10

Median and 50th Percentile values are shown for used oil. Median and 95th Percentile values are shown for fuel oil. Source: Franklin Associates, Ltd., *Composition and Management of Used Oil Generated in the United States*, September 1984, p. 5-11.

EPA conducted a modeling study of a hypothetical urban area where used oil fuel was being burned across the city in residential, institutional, and commercial boilers.³⁷ The results of this study show that lead emissions from burning used oil fuel result in ambient concentrations of lead that are of potential public health concern. For example, EPA assumed that used oil being burned contained 1000 ppm of lead. Ambient concentrations of lead associated with the used oil burning were estimated to be over 0.7 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) in certain sections of the urban study area. Thus, this source would contribute nearly 50% of the National Ambient Air Quality Standard for lead ($1.5 \mu\text{g}/\text{m}^3$) established by EPA under the Clean Air Act. In combination with the background levels present in most urban areas (which are typically $0.5-1 \mu\text{g}/\text{m}^3$ but exceed $1 \mu\text{g}/\text{m}^3$ for several urban areas),³⁸ used oil emissions could cause the ambient standard to be exceeded. (However, it is not clear to what extent current background levels already include lead attributable to used oil burning.) Moreover, ambient lead levels in the vicinity of large single sources and clusters of small sources (i.e., sources spaced close enough (50 m) so

³² PEDCo Environmental, Inc., *A Risk Assessment of Waste Oil Burning*, pp. 43-10, 4-24, 4-33, 4-51.

³³ PEDCo Environmental, Inc., *A Risk Assessment of Waste Oil Burning*, p. 5-2.

³⁴ American Conference of Governmental Industrial Hygienists, *Documentation of the Threshold Limit Values*, 1982.

³⁵ Casarett and Doull's *Toxicology. The Basic Science of Poisons*, 1980, p. 438.

³⁶ PEDCo Environmental, Inc., *Risk Assessment of Waste Oil Burning*, pp. D-5 through D-15.

³⁷ PEDCo Environmental, Inc., *Risk Assessment of Waste Oil Burning*.

³⁸ Office of Air Quality Planning and Standards, US EPA, 1982 (Unpublished data).

that their emission plumes overlap) can exceed the NAAQS considering only used oil burning emissions.³⁹

The Agency believes that a specification for lead in used oil burned in nonindustrial boilers is needed notwithstanding the State Implementation Plan (SIP) program for implementing the lead National Ambient Air Quality Standard (NAAQS). This is because the great majority of these boilers are not major sources of lead emission (i.e., individually) and so are not ordinarily subject to review under the SIP process to ensure attainment and maintenance of the lead standard in the vicinity of the boiler. Further, urban air monitoring required under the SIPs may not control these units because the "hot spots" that they can create (i.e., areas in the vicinity of single sources or clusters of sources where ambient levels exceed the NAAQS) may not be detected under the SIP monitoring program.⁴⁰

EPA also studied three other toxic metals. In the first instance, EPA assumed used oil contaminated with 28 ppm of chromium (the 90th percentile concentration of data available at the time of the study) was being burned across the city and that the chromium was emitted in its hexavalent state.⁴¹ Under this scenario, used oil burning would be associated with an increased risk of cancer. The portion of the population within 5 km of the center of the urban area would be exposed to nearly 0.01 $\mu\text{g}/\text{m}^3$ of chromium, which is associated with a cancer risk of roughly 1 in 10,000.

EPA's modeling study also shows that under certain conditions, used oil burning could be associated with significantly increased cancer risk due to the presence of cadmium and arsenic. The incremental cancer risk associated with increased levels of these metals when burning used oil containing 4 ppm cadmium and 16 ppm arsenic (the 90th percentile concentrations of data available at the time of the study) could be about 1 in 500,000 for cadmium and 1 in 50,000 for arsenic.⁴²

³⁹ PEDCo Environmental, Inc., *Risk Assessment of Waste Oil Burning*.

⁴⁰ The SIP urban air monitoring program focuses on lead emissions from automobiles. Thus, monitoring stations are generally located close to major traffic corridors. These stations may not detect emissions from burning used oil.

⁴¹ The Agency believes it is reasonable to assume under conservative conditions that chromium will be emitted in its hexavalent state since burning is an oxidizing environment. However, we specifically solicit comments on this assumption and the risk posed by burning chromium-bearing fuels.

⁴² PEDCo Environmental, Inc., *Risk Assessment of Waste Oil Burning*, p. 5-7.

The scenarios employed by EPA in its modeling study were based on conservative, but reasonable assumptions. Although modeling and risk assessment do not provide precise results, such studies do provide a general indication of the extent of hazard a practice may pose. In this case, EPA has determined that the widespread, uncontrolled burning of used oil in residential, institutional, and commercial boilers can be associated with an increase in ambient levels of arsenic, cadmium, chromium, and lead. For the first three metals, these increased ambient levels may lead to an increased risk of cancer for exposed individuals to levels that are cause for concern. Given the large number of exposed persons located in urban areas, the Agency believes that emissions of these metals should be controlled. In the case of lead, ambient lead levels could exceed the National Ambient Air Quality Standard in the vicinity of large single sources and clusters of smaller sources. Therefore, specifications have been proposed for each of these metals. The setting of acceptable concentrations for these metals is discussed below.

(d) *Chlorinated Solvents.* Analyses of over 600 samples of used oil from various sources revealed that more than 60% were contaminated with chlorinated solvents listed as EPA Hazardous Waste No's. F001 and F002 (e.g., trichloroethane, trichloroethylene, and tetrachloroethylene).⁴³ Such used oil/solvent mixtures are hazardous waste under provisions of the "mixture rule" of 40 CFR 261.3. Thus, such mixtures would be regulated as hazardous waste fuel when burned for energy recovery, unless the spent solvent was generated by a small quantity generator and exempt from regulation as hazardous waste under provisions of 40 CFR 261.5.⁴⁴

As discussed previously in Section VII-C-4 of this preamble, the Agency is proposing a rebuttable presumption of mixing with hazardous wastes to avoid case-by-case confusion of when mixing has occurred. Under the presumption, used oil with more than 4,000 ppm total chlorine is presumed to be mixed with hazardous wastes. The person accumulating the used oil could rebut the presumption by demonstrating to enforcement officials that the oil has not been mixed with hazardous waste.

Chlorinated solvent levels in used oil fuel suitable for burning in nonindustrial

⁴³ Franklin Associates, Ltd., *Oil Composition of Used Oil*, p. 1-12.

⁴⁴ Used oil mixed with exempted small generator hazardous waste is subject to regulation as used oil fuel. See Section VII-C-4 of this preamble for rationale.

boilers need not be restricted to levels below 4,000 ppm (e.g., by chlorine specification). As stated previously, air emissions modeling has shown that used oil containing 4,000 ppm of hazardous chlorinated solvent will not pose a significant risk when burned in nonindustrial boilers either from emissions of unburned solvent or hydrochloric acid.

(e) *Benzene, Naphthalene and Toluene.* Used oil may contain higher levels of benzene, naphthalene and toluene than virgin fuel oils. Benzene and naphthalene are picked up from gasoline or diesel fuel through use and are typically found in used oil in concentrations of 100-200 ppm and 300-100 ppm, respectively. Toluene is a widely used nonhalogenated solvent and can also be picked up from gasoline through use. Toluene concentrations in used oil may range from 1000-5000 ppm. EPA assumed in its modeling study that only 97 percent of these compounds were destroyed during combustion. (This is a worst case assumption, since EPA has established that organic contaminants are typically destroyed at 99-99.9 percent efficiency, even in very small boilers.) EPA has concluded that emissions from burning used oil containing benzene, naphthalene, and toluene at the levels typically found would not significantly increase ambient levels of these compounds, and that the small increments that would be added do not present serious health hazards.⁴⁵ Therefore, specification levels have not been proposed for these compounds.

(f) *Ignitability.* Although specifications for benzene, naphthalene, and toluene have not been proposed to address the toxicity of these compounds, these compounds have a low flash point (less than 50° F) and are highly ignitable. Gasoline, which often contaminates used motor oils during or after their use, and the nonhalogenated solvent xylene, which is also frequently mixed with used oil, also have a very low flash point. Used oil fuel contaminated by these materials may have a flash point less than 100° F. This is a lower flash point than any commercial fuel oil would have.⁴⁶ A material with such a low flash point may present significant hazards during handling and storage. Most importantly, such materials may readily volatilize and ignite, or even explode, unless special precautions are taken beyond the precautions normally

⁴⁵ PEDCo Environmental, Inc., *Risk Assessment of Waste Oil Burning*, pp. 5-2, 5-6, 5-7.

⁴⁶ The American Society for Testing and Materials' Standard Specification for Fuel Oils (D 396-76) calls for a minimum flash point of 100° F.

taken when handling any fuel oil. Consequently, EPA has proposed a minimum flash point, discussed below as a part of its specification for used oil fuel.⁴⁷

(g) *Sulfur.* Used oil fuel may contain as much as 1% sulfur, through 0.1–0.5% is more typical. No specification has been proposed for sulfur because residual fuel oils (e.g., fuel oil number 6 and heavy number 4) frequently contain 1–3% sulfur. Several states and many urban areas, however, already have established sulfur limits for fuel oils; used fuel usually meets these limits and in fact is sometimes blended with residual fuel oil to allow the residual fuel to meet local sulfur limits.

(h) *PCBs.* EPA has included a specification for PCBs of 50 ppm. Used oil fuel with PCBs exceeding these level is subject to the existing waste PCB rules in 40 CFR Part 761 promulgated under authority of the Toxic Substances Control Act (TSCA). EPA is not proposing this limit for used oil, but is including the PCB limit in this rule for the reader's convenience.⁴⁸ Thus, used oil fuel that is off-specification solely because it contains more than 50 ppm PCBs remains subject to the existing rules in Part 761, and is not subject to today's proposal. Although the Part 761 rules do not provide the administrative controls included in today's proposal, Part 761 includes stringent requirements on burning waste PCBs.⁴⁹

The Agency has indicated its intent to integrate the TSCA waste PCB rules under Part 761 with the RCRA Subtitle C rules to avoid overlap of regulatory control (e.g., for used oil fuel that is both a waste PCB and off-specification for other reasons). (See 45 FR at 33086 and 33173 (May 19, 1980).)

2. *Determination of Specification Levels.* As indicated above, EPA is proposing specification levels for the

following parameters in used oil fuels: Arsenic, cadmium, chromium, lead, and flash point. This section explains how levels were selected for each parameter in the proposed specification.⁵⁰

Under today's proposal, a used oil fuel would have to meet all of the specifications in order to be burned in a nonindustrial boiler. EPA has determined, as discussed earlier in this preamble, that these boilers are generally not suited for burning contaminated waste fuels. In general, EPA agrees with the House Committee on Energy and Commerce, which reported the finding that operators of facilities with nonindustrial boilers expect to receive and are equipped to handle only commercial grade fuel oil (See H.R. Rep. No. 98–198 at 39, 42.) However, EPA does not believe it is necessary for used oil fuel to be physically and chemically identical to virgin fuel oils in every respect.

As discussed previously, EPA has determined that certain used oil contaminants can pose a serious risk when the oil is burned in nonindustrial boilers in urban areas. EPA has determined that the concentrations of some of these contaminants should be limited to levels found in commercial fuel oils. However, the health risk from other contaminants would not be serious if used oil concentrations are limited to levels higher than found in commercial fuel oil. The basis for these determinations are discussed below.

(a) *Arsenic, Cadmium, and Chromium.* As described earlier, emissions from the widespread burning of used oil fuel in an urban area, (such as when residential, institutional, and commercial boilers burn used oil fuel) can be associated with increases in ambient levels of arsenic, cadmium, and chromium. These metals are carcinogens, with no known threshold or "safe" level of exposure. Any increased or incremental emissions of these metals would lead to an increased risk of cancer to exposed individuals. As described above, EPA has concluded that the increased risks associated with emissions of these metals are cause for concern and can lead to an increased risk of cancer in large numbers of exposed individuals. Therefore, the Agency has proposed stringent limitations on these metals, intended to correspond to concentrations typically found in commercial fuel oils. (See Table 3.) The Agency's theory is that there is no protection to human health and the environment if recycled

products are replaced by virgin products that are identical in terms of toxicant concentration, and therefore that specification levels should ordinarily be no more stringent than levels found in the commercial products that would be used in place of the recycled product. See 46 FR at 44971 (August 8, 1981) (exemption of spent pickle liquor used as a wastewater conditioner).

TABLE 3.—PROPOSED USED OIL FUEL SPECIFICATIONS FOR METALS THAT ARE NON-THRESHOLD POLLUTANTS

Contaminant	Maximum allowable level (ppm)
Arsenic	5.0
Cadmium	2.0
Chromium	10

The proposed levels for arsenic, cadmium, and chromium represent the 95th percentile concentrations based on 40–50 analyses of commercial fuel oils.⁵¹ Thus, 95 percent of the commercial fuel oil sampled meets the specification. We are proposing to base the specification on the 95th percentile virgin fuel oil levels to ensure that most virgin oils would meet the specification but that abnormally high virgin oil levels (i.e., "outliers") would not unduly bias the specification. EPA specifically requests comments on whether the 95th percentile concentrations are appropriate for setting specification levels.

Another benefit from setting stringent limits is to prevent contamination of boiler ash with toxic metals. Although this ash may exhibit EP toxicity and, if so, should ordinarily be managed as hazardous waste, operators of nonindustrial boilers such as those in apartment and office buildings and hospitals may not be aware of their obligations and may not manage the residues as hazardous wastes.⁵² The fuel specification for these metals should help assure that the ash is in fact nonhazardous.

(b) *Lead.* Lead is a pollutant associated with nervous system damage and renal damage. The Agency established the NAAQS for lead of 1.5 µg/m³ to prevent exposure of most members of the sensitive population (young children) to ambient lead levels that can cause interference with development of red blood cells.⁵³

⁵¹ Franklin Associates, Ltd., *Composition of Used Oil*, p. 5–11.

⁵² GCA Corp., *Environmental Characterization of Waste Oil Combustion*, p. 14.

⁵³ The NAAQS is intended to prevent young children from exceeding a blood lead level of 30

Continued

⁵⁰ The basis for including PCBs and for the PCB limit is discussed above.

⁴⁷ As noted above, we solicit comments on whether used oil with a flash point lower than 100° F should be subject to regulation as hazardous waste fuel rather than off-specification used oil fuel. The reasons could be that the oil was mixed with hazardous ignitable wastes (e.g., ignitable solvents), and that the flash point is an indication of massive adulteration that did not occur during use of the oil.

⁴⁸ PCB concentrations in used oil typically range from 7 to 50 ppm. Emissions modeling has shown that ambient PCB levels resulting from burning used oil with these PCB levels in nonindustrial boilers is not likely to pose a serious health hazard. Lifetime cancer risk would increase less than 1 X 10⁻⁶ (i.e., 1 in 1,000,000). See PEDCo Environmental Inc., *Risk Assessment of Waste Oil Burning*, pp. 5–8 and 5–7.

⁴⁹ Under provisions of 40 CFR Part 761, waste PCBs may be burned in a fossil fuel fired boiler provided that the unit has a capacity of at least 50 million Btu/hr and is monitored to ensure it is operating at peak combustion efficiency. In addition, prior approval is required from the Administrator to burn certain waste PCBs in a boiler.

EPA has estimated ambient levels under various scenarios of boiler size and location, receptor location, and used oil concentration to determine a concentration that would provide reasonable assurance that ambient lead levels would not exceed the NAAQS under realistic, worst-case conditions.⁵⁴ Lead emissions were modeled from single boilers with capacities varying from less than 1 million Btu/hr to 250 million Btu/hr. In addition, to simulate some of the realistic, worst-case conditions typical of highly urbanized and commercialized areas where most nonindustrial boilers are located, emissions from clusters of four and sixteen units equally spaced at 50 or 100 meters in a square were modeled for units with capacities up to 50 million Btu/hr. In some scenarios, receptors (i.e., exposed individuals) were assumed to be exposed to ambient air that is above ground level as occurs with windows or air intake systems in multi-story structures (i.e., "elevated receptors") and to be close to the source (25 to 50 meters) (i.e., "close receptors"). The boilers were assumed to be burning 100% used oil with lead concentrations ranging from 10 to 1000 ppm and to be operating at 50% capacity to simulate worst-case conditions during the winter heating season. Wind conditions modeled were historical conditions for January at a point in a major urban area.

Modeling results indicate that burning used oil with a lead concentration of 1000 ppm (the 90th percentile concentration of data available at the time of the study) in nonindustrial boilers in urban areas can cause "hot spots" (areas where ambient levels exceed the NAAQS) under a number of typical scenarios: (1) Single large boilers (250 million Btu/hr) with short stacks; (2) small clusters of medium size boilers (50 million Btu/hr) in situations where persons are exposed to ambient air above ground level through windows or air intake systems of multistory buildings (i.e., elevated receptors); (3) single small boilers (10 million Btu/hr), again considering elevated receptors; and (4) large clusters of very small boilers (1 million Btu/hr), again considering elevated receptors. At a lead concentration of 250 ppm (roughly

the 50th percentile value), several scenarios that are not typical but probably not infrequent can still create "hot spots": (1) Small clusters of medium size boilers considering both elevated and close receptors (i.e., persons are exposed to ambient air above ground level and at a distance of 25 to 50 meters from the stack); (2) small clusters of small boilers considering both elevated and close receptors; and (3) large clusters of small boilers considering only elevated receptors. A lead concentration of 100 ppm would prevent "hot spots" in all but a few conceivable but exceptional scenarios where small or medium boilers are clustered together and where receptors are down wind, elevated (at the height of the stack) and extremely close to the source (within 25 meters). A lead concentration of 10 ppm (the 95th percentile virgin fuel oil lead concentration) results in ambient levels well below the NAAQS in virtually all situations.

EPA believes that a lead specification of 100 ppm ensure that ambient lead levels in the vicinity of both large and small single and clustered sources would be well below the NAAQS, on the order of 50% of the standard. Only in unique and truly extreme scenarios would ambient levels be expected to exceed the standard.⁵⁵

Although background ambient lead levels in urban areas are considered to range from 0.5 to 1.0 $\mu\text{g}/\text{m}^3$ and are above 1 $\mu\text{g}/\text{m}^3$ for several urban areas, only those used oil burning scenarios that are likely to cause ambient levels to approach or exceed the standard were considered for a number of reasons: (1) It is not clear to what extent the ambient air monitoring stations typically located next to traffic corridors are measuring lead levels from used oil burning as well as from automobiles; (2) urban air lead levels are thought to be decreasing as more automobiles burn unleaded fuel; and (3) many of the high lead levels resulting from modeling used oil burning were found at elevated locations where background levels from automotive exhausts should be minimal.

Although limiting lead levels to 100 ppm should ensure that nonindustrial boilers would not cause ambient lead levels to exceed the NAAQS, the

Agency is, nonetheless, concerned that such a 100 ppm lead specification for used oil fuel would not be a protective as is reasonable. The document the Agency used to develop the NAAQS, *Air Quality Criteria for Lead*, and the NAAQS itself are currently under review as required by Sections 108 and 109 of the Clean Air Act (42 U.S.C. 7408 and 7409). Any amendments to the NAAQS are scheduled to be proposed in 1986.

The existing NAAQS is based on findings by EPA and the Centers for Disease Control (CDC) that 30 $\mu\text{g}/\text{dl}$ blood lead levels should be prevented in children. At this time, EPA and other federal agencies, including CDC, are reviewing new data that report IQ effects in children exposed to lead levels below 30 $\mu\text{g}/\text{dl}$. In addition, there are other effects below 30 $\mu\text{g}/\text{dl}$, including changes in heme synthesis, changes in brain wave patterns, reduced nerve conductive velocity, and reduced Vitamin D levels in children. Should the peer review process find that these data are persuasive, the ambient standard may be revised accordingly.

In addition, the Agency is requiring the phase-down of lead in gasoline—the primary source of ambient lead in urban areas. Because sources of lead are additive, and exposure to lead among the general population is widespread, constituting a national health problem, the Agency believes that it is reasonable that efforts be made to reduce preventable sources of lead exposure.⁵⁶

In light of these concerns, the Agency has considered proposing a used oil fuel specification for lead at the level found in virgin fuel oil, 10 ppm (i.e., 95% or 50 samples of virgin fuel oil contained less than 10 ppm lead). This would address our health concerns and would ensure that there would not be a significant increase in lead emissions when used oil fuels displace commercial fuel oil. However, we are concerned that a lead specification as low as 10 ppm would effectively preclude most burning of used oil as fuel because: (1) Only about 30% of used oil could meet the specification, either as generated or after blending with 90% virgin fuel oil containing mean metal concentrations (blending with more than 90% virgin fuel oil is not considered to be generally economical); (2) most used oil would, thus, be precluded from burning in

$\mu\text{g}/\text{dl}$. Blood levels above 30 $\mu\text{g}/\text{dl}$ are associated with impairment of heme synthesis in cells indicated by elevated erythrocyte protoporphyrin. In addition, there are other adverse effects associated with blood levels above 30 $\mu\text{g}/\text{dl}$ which can result from exposure to concentrations well above the NAAQS, including encephalopathy and renal damage. (See 43 FR 46246-261 (October 5, 1978)).

⁵⁴ PEDCo Environmental, Inc., *Risk Assessment of Waste Oil Burning*.

⁵⁵ For example, the standard could be exceeded in a situation where several 50 million Btu/hr, medium sized boilers serving very large high-rise structures with about 800,000 ft² of floor space are spaced about 100 meters apart, where all of the boilers burn used oil with 100 ppm lead concentration, and where an individual is exposed to air through a window or air intake system that is located close to the stack (about 50 meters), and at a height equal to the boiler stack height, and directly down wind from at least two of the stacks.

⁵⁶ See 47 FR 38070-38078 (August 27, 1982) where the Agency discusses the bases for the gasoline lead phasedown regulation and the lead NAAQS, the relationship between gasoline lead phasedown and ambient air levels, and studies of the effects of low level lead exposure on intelligence or behavior of children.

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nonindustrial boilers; and (3) industrial boilers and furnaces may also be largely precluded from burning used oil fuel under the Phase II technical controls on boilers and industrial furnaces. (Under the Phase II rules for boilers and industrial furnaces, the Agency is considering applying the used oil fuel metals specification proposed today—to one regulatory option—to boilers and industrial furnaces that do not have air pollution control equipment because the units can pose risks similar to nonindustrial boilers. Boilers and industrial furnaces with air pollution control equipment may be allowed to burn used oil fuel that contains higher levels of metals provided that the control equipment has a collection efficiency such that controlled emissions are not greater than if specification used oil fuel were burned.) In comparison, the amount of used oil that could meet a specification with other allowable lead levels is as follows:

	Lead specification			
	10 ppm	50 ppm	100 ppm	200 ppm
Percent of used oil that can meet specification.....	30	50	66	87

At allowable lead levels greater than 100 ppm, the amount the used oil that can meet the specification does not increase substantially.

At a lead specification level of 10 ppm, 70% of used oil, about 350 million gallons per year, could be diverted from burning. Even if the amount of used oil that is re-refined is doubled, only about 100 million gallons of used oil million gallons per year of used oil burned as fuel could be diverted to that use. Thus, large quantities of used oil heretofore recycled could be diverted to disposal. Not only would this waste a valuable resource, but it could result in health risks if generators or collectors disposed of their used oil improperly rather than incur the cost of proper management under existing and pending rules.⁵⁷ See H.R. Rep. No. 98-198 at 65. Given the huge number of generators and collectors, enforcement efforts may be limited and illicit activities may go undetected until serious problems are caused.

The Agency had decided to propose a lead specification range of 10 to 100 ppm

⁵⁷ Used oil that exhibits a characteristic of hazardous waste or that is mixed with hazardous waste is subject to regulation as hazardous waste when disposed under existing rules. In addition, the Agency is developing controls for recycled used oil under authority of the Used Oil Recycling Act amendments to RCRA, and is considering whether used oil should be listed as hazardous waste. These rules are scheduled to be proposed in 1985.

to encourage public comment on the issues presented here and to allow final promulgation of a lead level that represents: (1) A level of 100 ppm based on ensuring that nonindustrial boilers do not cause ambient lead levels to exceed the NAAQS; (2) a level of 10 ppm based on commercial fuel oil levels that would limit lead emissions as much as possible; or (3) an intermediate level that balances the concerns of whether the NAAQS-based level is as protective of public health as is reasonable and whether a level lower than 100 ppm would severely disrupt used oil recycling and result in dumping.

The Agency also specifically requests comments on the following issues: (1) Whether other factors or scenarios should be considered that might suggest that another limit would be required to ensure ambient lead levels do not exceed the NAAQS; (2) whether a two-tiered specification would be more appropriate where a very low limit (e.g., 10 ppm) is required (or used oil burning is banned) for boilers within highly urbanized and commercialized areas (which could, perhaps, be identified by using the Bureau of Census list of cities with more than 25,000 population) and a higher limit (e.g. 100 ppm) is allowed for other areas where sources and receptors are more widely spaced and, thus, where individuals are likely to be exposed to lower ambient levels attributable to the source.

The Agency also considered whether specifications for arsenic, cadmium, and chromium would be needed if a lead level at the low end of the range were selected for promulgation. At a very low lead limit, used oil would be much more likely to fail the specification (even after 90% blending with virgin fuel oil) because of lead rather than arsenic, cadmium, and chromium as follows:

Lead specification	Per-cent ¹
10 ppm.....	95
50 ppm.....	80
100 ppm.....	50

¹ Percent of used oil failing specification (after 90% blending with virgin fuel oil) because of lead content.

Source: Based on data in Franklin Associates, Ltd., *Composition of Used Oil*, Appendix.

The Agency believes that specifications for arsenic, cadmium, and chromium are needed even if a lead limit as low as 10 ppm were promulgated for a number of reasons. Used oil lead levels are expected to decrease over the next several years as a result of the Agency's leaded gasoline phasedown program. (Lead in used oil is largely attributable to contamination of crankcase oil with lead from leaded gasoline "blow-by".) Thus, although less and less used oil

would fail the specification for lead over time, that oil could have high arsenic, cadmium, or chromium levels. In addition, as discussed above, the Agency is considering in the Phase II technical controls for boilers and industrial furnaces applying the used oil fuel specification proposed today to used oil burned in those units as well. However, under one regulatory option being considered, burning of off-specification used oil fuel would be allowed in units with air pollution control equipment that controls emissions to levels that would occur if specification used oil were burned. Thus, controls are needed for all constituents in used oil that can pose a health hazard when the oil is burned—arsenic, cadmium, and chromium as well as lead. The Agency specifically requests comments on whether arsenic, cadmium, and chromium specifications are needed if a low lead specification level is selected for promulgation.

(d) *Flash Point.* EPA is proposing that used oil fuel with a flash point over 100 °F be exempt from regulation, provided that it meets the specification levels for metals and PCBs. Such fuel could, therefore, be burned in residential, institutional, and commercial boilers. The basis for this is that fuels with flash points as low as 100 °F—the ASTM specification for Number 2 distillate fuel—are routinely handled by fuel transporters and users, including residential, institutional, and commercial boiler owners. EPA believes that used oil fuel that otherwise meets the proposed specification is essentially equivalent to commercial fuel oil with respect to hazards posed during handling (and risks posed by burning) and that it will be handled with the same care as commercial fuel oil.

Used oil with a flash point of less than 100 °F would be subject to regulation as off-specification used oil fuel. Fuels with a flash point below 100 °F are not routinely handled by fuel transporters or users and are inherently very hazardous. (According to ASTM specifications, no commercial grade fuel oil should have a flash point below 100 °F.) Thus, such fuels would be regulated as off-specification used oil fuel and would be subject to the notification, invoice and certification requirements and could be burned only in industrial boilers and furnaces.⁵⁸ As discussed previously in

⁵⁸ At first glance, setting the specification at 100 °F may appear inconsistent with the current definition for the characteristic of ignitability found in 40 CFR 261.21, which states that a liquid having a flash point below 140 °F is an ignitable hazardous waste. However, the Agency has determined that

Continued

footnote 47, we are also soliciting comments on whether used oil with a flash point lower than 100 °F should be regulated as hazardous waste. If the final rule for used oil fuel is promulgated with such low flash point oils regulated as off-specification oil rather than hazardous waste fuel, the Agency will propose to control the handling hazards such oil poses during storage and transportation in the used oil listing/management rules scheduled to be proposed in late 1985.

E. Basis for Deferring Regulation of Used Oil Space Heaters

The prohibition on burning off-specification used oil fuel in nonindustrial boilers does not apply at this time to used oil-fired space heaters. We are deferring regulation of these units until we better understand the hazards they may pose and evaluate options to address any such hazards. In the interim, EPA is proposing a conditional exemption for these units.

The Agency believes that roughly 35,000 used oil space heaters have been sold nationwide to automotive service shops and other generators of crankcase oil.⁵⁹ These units are designed to burn 100% crankcase oil and are very small. They burn 0.1 to 4 gallons per hour of used oil and the largest units have a maximum heat input capacity of 0.5 million BTU per hour. Approximately 90% of used oil space heaters are the vaporization type where volatile organics in the oil are vaporized and ignited, while metals, sediment and heavy organic compounds remain in a pan at the base of the unit. Vaporization units appear to have low metals emissions rates—5 to 15% of the metals in the used oil are emitted from the stack.⁶⁰ Other used oil space heaters are

regulation of used oil fuels having a flash point between 100–140 °F is not necessary (provided they meet the specification) for the reasons discussed in the text. In addition, the "ignitability" characteristic for hazardous waste was intended mainly to identify "wastes capable of causing fires during routine transportation, storage, and disposal and wastes capable of severely exacerbating a fire once started." (See 45 FR 33108 (May 19, 1980).) The 140 °F limit was selected because such an ambient temperature is regularly encountered during landfill disposal, and in such environments, liquid wastes with flash points lower than 140 °F will readily volatilize and can easily be ignited by the numerous ignition sources to which wastes are exposed during management.

⁵⁹ Development Planning and Research Associates, Inc., *Selected Characteristics of the Waste Oil Space Heater Industry*, July 1983.

⁶⁰ GCA Corporation, *The Fate of Hazardous and Nonhazardous Wastes in Used Oil Recycling*, April 1983, p. VI-16, Draft Report.

the atomization type where the oil is "sprayed" into the combustion zone. Atomization units appear to have relatively high metals emission rates—75 to 95%.

Preliminary assessments indicate that vaporization units may not pose a significant health hazard. However, it is not clear whether atomization units pose a significant health risk with respect to metals emissions. In a situation where four atomization units may be spaced in a square 50 meters apart (as around an intersection) and emission plumes overlap, it appears that ambient lead levels would increase by about 10 percent of the National Ambient Air Quality Standard. In addition, emissions of arsenic, cadmium, and chromium from atomization units may pose a cancer risk to the most exposed individual on the order of 1 in 100,000.⁶¹

The Agency is considering whether these risk levels are significant and, if so, what approaches could be used to reduce the risk. If the atomization units alone are considered to pose a significant risk, the burning of off-specification used oil in those units could be banned. Under this approach, EPA must determine how to handle the atomization units currently in operation and how to clearly differentiate between atomization and vaporization units. Alternatively, EPA could prohibit burning of off-specification used oil in space heaters that cannot meet an emissions performance standard (e.g., requirement that heaters emit less than 10% of the metals in the fuel). Finally, the Agency could determine that the risk posed by these units is not significant or only marginally significant and thus not worth the Agency and state resources that would be required to implement and enforce a regulatory system to effectively reduce the risk.

The Agency will address the regulation of used oil space heaters beyond the requirement for outside venting proposed today in the used oil listing/management rule scheduled to be proposed in 1985. In the interim, the Agency encourages comments on whether the risks of burning used oil in space heaters are significant, and, if so, on approaches to reduce risks.

To be excluded (at this time) from the prohibition on burning off-specification used oil, owners and operators of used oil-fired space heaters would have to

⁶¹ Metals emissions, ambient levels, and risks are about an order of magnitude lower for vaporization units. In addition, the cancer risk from emissions of unburned chlorinated solvents does not appear to exceed 1 in 1,000,000 for either vaporization or atomization units. See PEDCo, Environmental Inc., *Risk Assessment of Waste Oil Burning*, pp. 4–22 through 4–24 and 5–5 through 5–8.

meet three conditions: (1) the heater must have a maximum heat capacity of less than 0.5 million BTU/hr; (2) the heater must burn only used oil that the owner or operator generates on-site or receives used oil from individuals who change the oil in their automobiles or other equipment (i.e., "household waste" generated by "do-it-yourself" oil changers); and (3) the heater must be vented to the outside atmosphere. The capacity restriction is imposed to limit the exemption to legitimate used oil-fired space heaters used by automotive service shops. An upper size limit of 0.5 million BTU/hr heat input encompasses all used oil space heaters in use today and prevents operators of larger boilers from claiming they are operating used oil-fired space heaters. The second condition is imposed to ensure that only facilities that generate used oil, such as automotive service shops, and that might normally purchase such heaters are eligible for the exemption. This will preclude the possibility, albeit remote, that persons who are not used oil generator might purchase these units and purchase off-specification used oil from processors or blenders. Finally, we are requiring that the heaters be vented outside to avoid high indoor concentrations of lead and other toxic compounds.⁶²

F. Prohibition on Cement Kilns in Urban Areas Burning Hazardous Waste Fuel

The Hazardous and Solid Waste Amendments of 1984 prohibit cement kilns located in cities with populations greater than 500,000 from burning hazardous waste fuels unless they comply with the standards applicable to hazardous waste incinerators. See RCRA amended Section 3004(1). This requirement takes effect by operation of law, and so applies although EPA is not presently proposing to restrict burning of hazardous waste fuels in other types of industrial furnaces. (EPA is in the process of adopting regulatory language adding the bill's requirements for such cement kilns to the Subtitle C regulations.) Since this prohibition takes effect by operation of law, it is not part of today's proposal.

G. Request for Comments on Issues Pertaining to the Prohibition

EPA specifically requests comments on the two issues discussed below.

1. Request for Comments on Prohibiting the Burning of Waste Fuels

⁶² EPA also plans to issue an advisory under authority of the Toxic Substances Control Act (TSCA) to alert automotive service and repair shops of the hazards posed by indoor venting and the requirements of this proposed rule.

in *Small Industrial Boilers*. There are some common characteristics shared by many very small industrial and nonindustrial boilers that can tend to make their hazard potential similar. Many industrial boilers are similar in size, operation, and location to most of the nonindustrial boilers.⁶³ Nearly 90% of the approximately 125,000 industrial oil fired boilers, like more than 98% of the approximately 265,000 commercial and institutional oil fired boilers (and virtually all residential boilers), are very small units with a heat input capacity of less than 5-10 million BTU/hr.⁶⁴ These small industrial boilers are identical in type and operation to most nonindustrial boilers. They are mostly firetube or cast iron boilers with unsophisticated combustion controls. In addition, from 50 to 75 percent of industrial boilers are located in urban areas like nearly all nonindustrial boilers.⁶⁵ Further, the smaller industrial boilers are likely to be disproportionately located in urban areas given that "heavy" industries can be expected to use the larger units and to have a disproportionately large percentage of establishments located in nonurban areas.

Given these factors, the Agency is requesting comments on whether the prohibitions included in the regulations proposed today should be extended to include very small industrial boilers. A size cut-off in the range of 5 to 10 million BTU/hr heat capacity seems reasonable because boilers smaller than that range typically have relatively crude combustion controls (e.g., on-off controls and fixed linkage between fuel firing rate and combustion air flow rate) and may not be able to maintain peak combustion efficiency (and, thus, destruction efficiency) when burning hazardous waste.⁶⁶ Although nearly 90

percent of all industrial boilers that burn fuel oil are smaller than that size and would be restricted, the approximately 15,000 unrestricted boilers represent 80.90% of the industrial boiler oil burning capacity.⁶⁷ These unrestricted industrial boilers would have more than enough capacity to burn all of the used oil and hazardous waste currently used as fuel (even assuming no used oil meets, or is blended to meet, the specification and thus, no used oil is burned in nonindustrial or restricted industrial boilers). Only approximately 10% of the unrestricted industrial boiler capacity (i.e., boilers larger than 5-10 million BTU/hr) would be required to burn all used oil fuel and hazardous waste fuel assuming boiler load factors averaged 25 to 50% (i.e., on a yearly average, the boiler operates at 25 to 50% of its capacity).

The Agency is currently conducting tests of industrial boilers burning hazardous wastes and intends to propose technical controls on burning hazardous waste and used oil in these boilers (as well as industrial furnaces) in late 1985 (i.e., the Phase II controls discussed previously). Nonetheless, we are requesting comments on whether small industrial boilers should be included in the prohibition proposed in today's rule, or whether regulation should be deferred until a more definitive determination of their impacts, and appropriate regulatory controls, is completed.

2. Request for Comments on Exempting Ignitable Wastes from the Prohibition on Burning in Nonindustrial Boilers. The Agency is considering and exemption from the prohibition on burning in nonindustrial boilers for hazardous waste that is hazardous solely because it ignitable. Such wastes would pose no greater fire or explosion hazard during handling than commercial fuel oils if the minimum flash point allowed for the exemption was 100° F, the minimum flash point for commercial fuel oils. In addition, stack emissions should not pose a hazard if the waste is hazardous solely because it exhibits the characteristic of ignitability in Subpart D of 40 CFR Part 261. However, given that the Agency has not completed its efforts to list waste that are hazardous because they contain toxic compounds, wastes that are *currently* hazardous solely because they exhibit the

regulations for the composition and use of waste fuels (Subpart 225-2). Those regulations essentially ban burning of hazardous waste and used oil in a boiler with a capacity less than 20 million BTU/hr.

⁶⁷ Estimates based on data in PEDCo Environmental Inc., *Risk Assessment of Waste Oil Burning*, pp. A-6 and A-7.

characteristic of ignitability may, in fact, contain toxic compounds. See 46 FR at 7673 (January 23, 1981). If so, these wastes can pose a hazard during handling (e.g., from spills, fires), and emissions from the combustion of these wastes could expose the public to toxic compounds. To ensure that "ignitable-only" wastes do not contain significant concentrations of toxic compounds, those toxic compounds of concern must be identified, acceptable concentrations must be determined, analysis procedures must be prescribed, and recordkeeping procedures must be required. Further, to make the exemption cost-effective to the burner, it probably should be self-implementing.

The toxic compounds of concern are the hazardous constituents the Agency has listed for toxicity in Appendix VIII of 40 CFR Part 261. A maximum concentration of 100 ppm appears to be protective for most organic constituents given that, at that concentration, stack gas concentrations of the constituent are likely to be just at the detectable limits given destruction efficiencies of 99 to 99.99 percent typically found in nonindustrial boilers. However, lower allowable concentrations may be needed for highly toxic compounds. In addition, the fuel should meet the used oil fuel specification for metals to ensure that it poses no greater hazard than exempted used oil fuel (i.e., on-specification used oil).

It is not clear what levels would be appropriate for other metals and inorganic constituents. In addition, it is not clear whether a self-implementing exemption would be enforced adequately. Yet requirements for interaction by regulatory officials would amount to a permitting or approval system and probably would not be cost-effective for burners.

The Agency is specifically requesting comments on the need for an exemption for "ignitable-only" fuels and how a self-implementing, yet effective, exemption can be structured.

Finally, the Agency has considered whether such "ignitable-only" wastes with a flash point not less than 100° F should be exempted from all of the requirements proposed today or just the prohibition on burning in nonindustrial boilers. Such wastes could require different types of handling and burning than commercial fuel oils even though they are ignitable with a flash point similar to No. 2 and No. 4 commercial fuel oil. Thus, boiler operators may need to be put on notice that the fuel is not commercial fuel oil but rather a hazardous waste fuel that may not handle and burn like a commercial fuel.

⁶³ As discussed in Section VI-B-1 of this preamble, nonindustrial boilers can pose significant health risks because: (1) They are typically very small and may not achieve complete combustion of toxic organics (e.g., 99.99% destruction) because of inadequate controls to maintain optimum combustion conditions when firing hazardous waste and because of short residence time of toxic organics in the combustion zone; and (2) the risk from incomplete combustion is compounded because non-industrial boilers are typically located in urban areas where sources are frequently clustered together which causes emissions plumes to overlap and increases ambient concentrations of toxic compounds, and where individuals can be exposed to high ambient levels of emitted toxicants because they can be located close to the source and exposed to above-ground level ambient air (e.g., through windows or building air intake systems).

⁶⁴ PEDCo Environmental, Inc., *Risk Assessment of Waste Oil Burning*, pp. A-6, A-18.

⁶⁵ PEDCo Environmental, Inc., *Risk Assessment of Waste Oil Burning*, pp. A-2 through A-17.

⁶⁶ The New York State Department of Environmental Conservation has developed

To provide this notice to boiler operators, we might subject the waste to the manifest and other administrative controls applicable to hazardous waste fuels.

VIII. Proposed Administrative Controls

A. An Overview of the Proposed Administrative Controls

In addition to the substantive controls on burning discussed above and the controls on storage discussed in Section IX of this preamble, EPA today is proposing that hazardous waste fuel and off-specification used oil fuel be subject to certain administrative requirements. These requirements include one-time notification to identify waste-as-fuel activities and to obtain an EPA identification number (notification of waste-as-fuel activities is required even if a person has previously notified the Agency and obtained an EPA identification number), compliance with a manifest system (a new requirement for blended hazardous waste fuels), or an invoice system (for off-specification used oil fuel), and recordkeeping. In addition, persons receiving a shipment of hazardous waste fuel or off-specification used oil fuel would have to certify to the person initiating the shipment that they have notified EPA of their activities and that they may lawfully burn the waste fuel.

In general, these proposed controls serve two purposes. They make it possible to administer and enforce the prohibitions against burning in nonindustrial boilers and provide for proper tracking of the materials.

These administrative requirements would apply to hazardous waste fuel and off-specification used oil fuel marketers and burners. Hazardous waste and used oil generators who send their wastes directly to a person who burns them for energy recovery act as marketers and would be subject to the proposed controls.⁶⁸ Generators who send their hazardous waste or used oil to a person who does not burn them for energy recovery would not be subject to the proposed controls for marketers even though the wastes may subsequently be burned for energy

⁶⁸ Many used oil processors burn used oil as fuel to provide heat for purposes of treatment (e.g., enhance settling or separation of water, evaporation of volatiles). Such burning is incidental to the primary function of the facility: processing and market of used oil. Thus, such processors are not considered "ultimate burners" and generators and transporters who sell oil to such processors are not subject to regulation as marketers. These processors are considered to be manufacturers and their boilers are considered to be industrial boilers eligible to burn off-specification used oil see Section VII-C-1 above.

recovery by another person. The hazardous waste generator, however, would be subject to the 40 CFR Part 262 regulations ordinarily applicable to generators.⁶⁹

Hazardous waste fuel transporters would be subject to the full set of Part 263 requirements. This proposal would regulate for the first time transporters of hazardous waste fuel that is neither listed waste nor a sludge. These hazardous wastes are currently exempt from regulation under provision of 40 CFR 261.6(a), a provision that would be superseded by the new Part 266 standards proposed today.

Used oil fuel transportation would be exempt from these proposed controls to avoid piecemeal regulation of used oil transporters.⁷⁰ If used oil fuel transporters were regulated while other used oil transporters were not, transporters could avoid complying by claiming that the used oil is intended for other purposes. The Agency plans to propose comprehensive controls for used oil management in 1985, and will address regulation of transporters at that time.

The following table (Table 4) summarizes the controls that would be required under today's proposal:

TABLE 4.—PROPOSED CONTROLS FOR WASTE FUELS

	Hazardous waste fuel ¹	Off-specification used oil fuel
Generators ²	Part 262 ³	Exempt.
Marketers ⁴	N,RN,P,M,C,R,S.....	N,RN,P,I,C,R.
Transporters.....	Part 263 ⁵	Exempt.
Burners.....	N,RN,P,M,C,R,S.....	N,RN,P,I,C,R

¹Hazardous wastes that are listed wastes or sludge are subject to storage and transportation requirements under existing rules (40 CFR 261.6) prior to use as fuel or used to produce a fuel. Today's rules would extend storage and transportation requirements as well as the waste fuel requirements indicated here to all hazardous wastes used as fuel or used to produce a fuel and to all hazardous waste-derived fuels produced from hazardous waste by processing, blending or other treatment.

²Hazardous waste and used oil generators would not be regulated as marketers unless they market directly to a burner.

⁶⁹ Hazardous wastes that are listed wastes or sludges are currently subject to storage and transportation controls prior to use to produce a fuel and prior to marketing as a fuel. (See 40 CFR 261.6(a)). Today's proposal would extend regulation to all hazardous wastes and so would include unlisted by-products and spent materials as well as any fuel containing any of these wastes as an ingredient. See Section VII-C-1 above.

⁷⁰ Many used transporters (collectors) pick up used oil from several small generators and aggregate the oil at satellite storage facilities prior to shipment in larger tankers to used oil processors or refineries. Such transporters are not considered marketers for purposes of today's proposed rules unless: (1) They ship used oil directly to a person who burns the oil for energy recovery; or (2) they process used oil at the storage facility. Any blending of used oils resulting from accumulation in the transporters's storage tanks is incidental to the primary function of accumulation and is not considered blending or processing for purposes of producing used oil fuel.

³Generators who send their hazardous waste to waste fuel marketers would be subject to Part 262 standards as ordinary generators. See proposed §266.32(a). Generators who market their hazardous waste (i.e., hazardous waste fuel) to burners would be subject to the Part 262 generator standards as well as to the waste fuel marketer requirements indicated here. See proposed §266.32(b).

⁴Hazardous waste fuel transporters would be subject to regulation as ordinary transporters. Thus, they would not be required to notify or renotify for waste-as-fuel activities. However, they would notify for their hazardous waste transportation activities if they have not notified already.

Key
 N—Notification and identification number.
 RN—Renotify for waste-as-fuel activities.
 P—Prohibitions on marketing to, or burning in, nonindustrial boiler.
 M,I—Compliance with manifest (M) or invoice, (I).
 C—Provide or receive certification of compliance with standards for burning.
 R—Recordkeeping.
 S—Storage standards

B. Discussion of the Proposed Notification Requirements

1. Purpose of the Notification Requirement. To ensure that waste fuels are managed properly and not routed to nonindustrial markets, EPA must be able to identify those persons who engage in waste-as-fuel activities. The notification requirement proposed here serves this purpose. This type of notification is mandated under the recently-enacted RCRA reauthorization legislation and is authorized under the provisions of Sections 3010 and 3014.⁷¹

The notification process will identify the people subject to regulation. It also will serve to inform these persons that these fuels are no longer exempt from RCRA requirements. In addition, for persons and facilities that are not now part of the RCRA system, notification will result in the assignment of an EPA identification number. An identification number is needed for compliance with various requirements of this package.

2. Who Must Notify. Under this proposal, the following persons must notify the Agency of their waste-as-fuel activities: (1) Marketers of hazardous waste fuel or off-specification used oil fuel (e.g. third-party processors, blenders, and distributors, and those generators who market directly to burners); (2) burners of hazardous waste fuel or off-specification used oil fuel⁷²;

⁷¹ EPA interprets notifications to be required under Section 3010 whenever the Agency amends a Part 261 regulation to bring additional persons into the hazardous waste management system, not just when additional characteristics or listings are promulgated. See 48 FR at 14496 n.51 (April 4, 1983). Since EPA is proposing to increase the coverage of the system by amending Part 261 requirements, authority lies under Section 3010 to require notifications for hazardous waste fuels. The Agency also believes the plenary authority over recycled used oil contained in Section 3014 provides authority to obtain notifications. EPA's information collection authority in Section 3007, requiring persons handling wastes that may be hazardous to "furnish information relating to such wastes" to EPA, and general rule-making authority in Section 2002(a)(1) likewise justify obtaining notifications pertaining to used oil.

⁷² Except generator who burn their oil in space heaters under provisions of proposed § 261.41(b)(4).

(3) marketers of used oil fuel that meets the specification but who receive off-specification used oil fuel and treat it to produce used oil fuel that meets the specification; and (4) marketers of used oil fuel that meets the specification and who receive used oil from a generator (or from a transporter who receives used oil from generators) irrespective of whether the used oil they receive meets the specification.⁷³ If any of these persons has previously notified the Agency of any hazardous waste management activities and obtained an EPA identification number, they must nonetheless renotify and may use the amended notification form (see discussion below) to identify their waste-as-fuel activities. Notification must be provided concurrently to all States whose hazardous waste programs have received final authorization. See Section 204(a)(1) of the Hazardous and Solid Waste Amendments of 1984 (RCRA amended Section 3010).

Certain persons are not affected by the proposed special notification requirement for waste-as-fuel activities: (1) Hazardous waste generators who neither burn nor market their waste fuels directly to a burner are not required to notify regarding their waste-as-fuel activities because these generators need not and may not know the end use of the hazardous waste; however, they must notify regarding their generation activities if they have not notified already; (2) hazardous waste fuel transporters (transporters must notify only regarding their transportation activities (assuming they have not notified already) but not regarding waste-as-fuel activities for the same reason given above for generators); and (3) used oil generators and transporters (unless they also market directly to a burner).

The notification requirement also does not apply to owners and operators of nonindustrial boilers (e.g., residential, institutional, and commercial boilers) who burn used oil that meets the specification. Since EPA is today proposing to restrict the composition of fuels being burned in these types of combustion units to fuels that pose no greater risk than virgin fuel oil, there is

⁷³ Although the used oil fuel marketed by such persons meets the specification and is exempt from regulation either because the used oil, as generated, meets the specification or because of processing or blending, such marketers must nonetheless notify EPA of their waste-as-fuel activities. These marketers would be required to analyze their used oil fuel to document that it meets the specification. See proposed § 268.43(a)(2) and (b)(1). Such notification, analysis, and retention of analysis records is required in an effort to ensure that EPA can monitor persons who first claim that used oil fuel meets the specification.

no need to receive notifications from these entities.

3. *Use of the Amended Hazardous Waste Notification Form.* Persons who must file notifications with EPA (or renotify) because of their waste-as-fuel activities may use revised EPA form 8700-12: "Notification to EPA of RCRA Subtitle C Activity" (see the Appendix to the proposed rule). This form, a revised version of the existing hazardous waste notification form, has been amended to accommodate the requirements for a waste-as-fuel notification as well as notification of hazardous waste activity. The Agency intends to use this revised form for all future notifications.

Use of this form offers a standardized approach for persons required to file notifications and assists EPA in the orderly input of data into its data management system. While use of the form is encouraged, it is not mandatory. Notifiers who do not use the form must include all required information, including the certification in Item XI of the form, signed by the person notifying or by his authorized representative.

The amended notification form will provide the Agency with two types of additional information: (1) The number and location of facilities engaged in the marketing of hazardous waste fuel and used oil fuel, including the processing, blending and distribution of these fuels; and (2) the number, type, and location of facilities that burn hazardous waste fuel and off-specification used oil fuel. This information will be used to develop a general profile of the nature and scope of the waste fuel industry and to identify those persons who must comply with the other requirements proposed today or in the future.

Such information cannot be derived from data already submitted to the Agency because many persons that would be required to notify because of their waste-as-fuel activities were not previously subject to the notification requirements. In addition, the information available on those persons required to notify previously is inadequate because neither the original notification form, nor the Part A Permit Application, include questions that are specifically relevant to waste-as-fuel activities.

4. *Notification Procedures and Implementation.* EPA estimates that there are, at most, 20,000-30,000 persons that may be required to file notifications. While EPA does not intend to carry out a mass mailing to potentially affected parties, the Agency will widely announce the notification

requirements of these rules through the press and trade journals.

EPA is today soliciting public comments on the waste-as-fuel notification process and revised form concurrently with the proposed waste-as-fuel rules. After the Agency has reviewed public comments on the proposed rules and notification form we will issue a final notice in the **Federal Register** requiring persons subject to the waste-as-fuel notification to submit a notification to EPA. Due to possible statutory time requirements, this final notice requiring notification may be issued before promulgation of final waste-as-fuel regulations.⁷⁴

The Agency plans to distribute the notification forms through the RCRA/SUPERFUND Industry Assistance Hotline. Each requestor will receive a complete notification package, including a form and accompanying instructions, to assist him in filing his notification.

EPA will return to each notifier an acknowledgement of receipt of the notification, and will issue an EPA identification number if one was not previously assigned. This acknowledgement in no way constitutes an endorsement by EPA of the adequacy of the notification or of the notifier's business practices; rather it serves as a confirmation that EPA received the notification.

5. *Legal Significance of Notification.* EPA is promulgating the notification requirement for hazardous waste fuels and used oil fuels under the authority of Sections 3010 and 3014 of RCRA, respectively. The notification is a prerequisite for RCRA interim status (see RCRA Section 3005(e)(2)) for owners and operators of hazardous waste fuel storage facilities. (See H.R. Rep. No. 98-198 *supra* at 41, likewise specifying that notification of management of hazardous waste fuels serves as a prerequisite for interim status.)

C. Proposed Transportation Controls

EPA is proposing today to adopt a system to track movement of hazardous waste fuel and off-specification used oil fuels from the initial marketer (e.g., generators who market to burners; processors; blenders) through intermediaries (e.g., transporters, distributors) to the industrial users who burn the fuel for energy recovery.⁷⁵ This

⁷⁴ As noted above, the Hazardous and Solid Waste Amendments of 1984 amend RCRA to require waste-as-fuel notifications within 15 months. Conceivably, notification could be required before the final waste-as-fuel regulations are promulgated.

⁷⁵ The system is already in place for certain hazardous waste fuels—namely listed wastes and

Continued

tracking system would create a paper trail allowing regulatory officials to track a hazardous waste fuel or off-specification used oil fuel from point of processing, blending, or other treatment to point of burning, thus making the prohibition on burning in nonindustrial boilers enforceable. Equally important, the tracking document (either a manifest or an invoice) would put persons who handle these materials on notice that they are receiving a hazardous waste or off-specification used oil fuel.

Consequently, EPA today is proposing that all shipments of hazardous waste fuel be accompanied by a manifest. Hazardous waste fuel marketers would be subject to the transportation (and pre-transport) requirements of 40 CFR Part 262 and transporters would be subject to the requirements of 40 CFR Part 263.

We are proposing a slightly different system for off-specification used oil, whereby marketers (e.g., processors, blenders, distributors) offering off-specification used oil fuel for sale would have to prepare and send an invoice to the fuel buyer, but would not have to have the invoice physically accompany each shipment. This distinction (i.e., invoice in lieu of a manifest) is needed to avoid piecemeal regulation of used oil transporters.⁷⁶

Information to be included on invoices includes the shipment date, the shipment initiator's name, address and identification number, the receiving facility's name, address, and identification number and the quantity of used oil fuel shipped. All of this information is currently required to be included in the standard EPA hazardous waste manifest.

In a situation where an off-specification used oil fuel goes from a processor or blender to an intermediate distributor, the Agency intends that the distributor must reinstitute a new invoice to accompany any fuel it sells that is produced from or otherwise contains the used oil (unless the used oil fuel now meets the specification). This requirement is consistent with those found in other parts of the RCRA

sludges when sent directly from the generator to a burner. See 40 CFR 261.8(a). Today's proposal would expand the system to *all* hazardous waste fuels managed by *all* marketers and burners (i.e., to all hazardous wastes burned directly and to all fuels produced from hazardous waste by processors/blenders).

⁷⁶ Regulation of used oil fuel transporters at this time probably would not be enforceable as a practical matter, even if considered desirable, given that only one group of used oil transporters would be subject to the requirements—those that transport oil destined not only for recycling rather than disposal, but only for one particular type of recycling (i.e., used as fuel for energy recovery).

regulations whereby intermediate storage facilities must reinitiate a manifest. See, e.g., 40 CFR 264.71(c) and 262.10(f).

The Hazardous and Solid Waste Amendments of 1984 amended RCRA to require producers, distributors, and marketers of hazardous waste fuels to include a warning label on the invoice or bill of sale for the fuel. See RCRA amended Section 3004(r). The requirement takes effect within 90 days of enactment, and remains in effect until EPA promulgates superseding regulations. *Id.* The Agency believes that the proposed requirement of a manifest achieves the same purpose as the warning label—to put the user or distributor on notice that he is receiving hazardous waste fuel. Receipt of a fuel accompanied by a hazardous waste manifest achieves this result. Further, the manifest would also put the transporter on notice that he is handling hazardous waste because the manifest must accompany the shipment. The invoice or bill of sale with the warning label may not accompany the shipment. Consequently, the Agency views the proposed requirement of a manifest as superseding the warning label requirement. Should this proposal be adopted, therefore, warning labels will no longer be required for hazardous waste fuels.

D. Proposed Notice and Certification Requirement

To enforce the prohibition on burning hazardous waste fuel and off-specification used oil fuel in nonindustrial boilers, the prohibition applies not only to the boiler owner and operator, but also to the waste fuel marketer. Thus, a marketer such as a processor, blender, or distributor (or a generator marketing directly to a burner) may not sell hazardous waste fuels or off-specification used oil fuel to a person who burns it in a nonindustrial boiler. Marketers must also ensure that they market these fuels only to persons in (and, thus, aware of) the regulatory system: persons who have notified EPA of their waste-as-fuel activities. In addition, marketers are responsible for determining whether their waste fuel is subject to regulation (i.e., whether their product fuel contains hazardous waste or is off-specification used oil).

To comply with these requirements, marketers need to know whether the person receiving a shipment of hazardous waste fuel or off-specification used oil fuel has notified EPA of his waste-as-fuel activities and whether he intends to burn the fuel only in a utility boiler or industrial boiler or furnace.

Thus, the proposed rules include a provision requiring that a marketer of hazardous waste fuel or off-specification used oil fuel receive a certification from the fuel purchaser stating that the purchaser has notified EPA of his waste-as-fuel activities and will burn the fuel only in unrestricted boilers or furnaces. This certification is a one-time notice and would be required before sending the initial shipment (after the effective date of this rule). Similarly, the purchaser would be required to send the certification before receiving the first shipment from a marketer. This will ensure that the recipient is aware of the regulations applicable to waste fuels and of his responsibilities as a burner (or intermediary).⁷⁷

Hazardous waste and used oil generators (and transporters receiving waste from generators) who market their waste to a person who is not a burner would not be subject to this (or any other) requirement for marketers. Consequently, such a recipient of the generator's hazardous waste or used oil would not be required to provide the generator with a certification notice.

E. Proposed Recordkeeping Requirements

The recordkeeping requirements that the Agency is proposing are limited requirements that are designed primarily to keep track of the movement of hazardous waste fuels and off-specification used oil fuels. The substantive prohibitions proposed today, as well as the various administrative requirements would not be enforceable without these recordkeeping requirements. These requirements would require each person who would be subject to these proposed rules as a marketer (i.e., producers, distributors and certain generators) or burner to keep a copy of the manifest or invoice (for used oil) that accompanies or that applies to each fuel shipment.⁷⁸ In addition, marketers and burners would be required to retain copies of certification notices that they initiate or receive.

Finally, marketers of used oil fuel who first claim the oil meets the specification are required to obtain analysis of their used oil fuel product to document that it

⁷⁷ Incidentally, simply requiring a recipient only to have an EPA identification number is not adequate to ensure that he has notified the Agency of his waste-as-fuel activities, and is, therefore, aware of applicable regulatory controls. This is because EPA identification numbers are assigned for reasons other than waste-as-fuel activities.

⁷⁸ Transporters of hazardous waste fuel must keep copies of manifests under provisions of 40 CFR Part 263. Transporters of off-specification used oil fuel are not subject to regulation.

meets the specification. Copies of the analyses must be retained for three years. Marketers required to obtain analyses of their used oil fuel product include: (1) Processors and blenders who treat off-specification used oil to produce specification used oil fuel; and (2) generators and collectors (i.e., transporters who receive used oil directly from generators) who market specification used oil fuel directly to burners. Such analyses and recordkeeping are required to enable the Agency to enforce the prohibitions on those persons who first claim that used oil fuel meets the specification. Marketers must obtain analyses of representative samples of the fuel to ensure that the fuel meets the specification. (Guidance on sampling and analysis is provided in: EPA, *Test Methods for Evaluating Solid Waste*, July 1982, SW-846.)⁷⁹

All records must be retained at the facility for three years, except that certification notices that a person is required to send or receive must be kept for three years from the date a person last engages in a waste fuel marketing transaction with the person who sent or received the certification notice. These records must be available for inspection by any officer, employee, or representative of EPA (see RCRA Section 3007).

IX. Storage Requirements for Hazardous Waste Fuel

Today's proposal would expand existing requirements for storage so that all storage of all hazardous waste fuels is subject to regulation.⁸⁰ Under existing provisions of 40 CFR 261.6, hazardous wastes that are listed wastes or sludges are subject to the storage standards of Parts 262, 264, and 265, when stored prior to use as a fuel and prior to use to produce a fuel. Hazardous waste fuel produced by a marketer by processing, blending, or other treatment of hazardous waste presently is exempt from regulation. (Such hazardous waste fuel is termed "hazardous waste-derived fuel" for purposes of this discussion.)

⁷⁹ The Agency is revising digestion procedures for organic liquids prior to analysis for metals. Revised procedures will be available before these rules are promulgated.

⁸⁰ No permit presently is required to store used oil. EPA is not proposing storage requirements for used oil fuel at this time because the Agency wishes to avoid the piecemeal regulation of used oil storage which would result were we to regulate used oil fuel storage in advance of other types of used oil storage. Storage requirements may be proposed when the Agency proposes comprehensive regulations for used oil in 1985. Storage of mixtures of hazardous waste and used oil, however, would be subject to regulation as hazardous waste under today's proposed rule unless the hazardous waste is generated by a small quantity generator.

We are proposing to require that all hazardous waste used to produce fuel and all hazardous waste fuel (including hazardous waste-derived fuel) be subject to storage requirements for the reasons given below.

A. Which Hazardous Wastes Should Be Subject to Storage Requirements

The Agency is proposing today to regulate the storage (and transportation) of *any* hazardous waste used to produce a fuel and of any hazardous waste fuel (both hazardous waste used directly as fuel and hazardous waste-derived fuel). We, thus, are proposing to eliminate the current distinction between listed wastes and sludges on the one hand and unlisted spent materials and unlisted by-products on the other. These distinctions are not environmentally justifiable, and exist only because of the Agency's initial uncertainty (in 1980) about an appropriate regulatory regime for recycled wastes. See 48 FR at 14475 (April 4, 1983). It is now our view that a hazardous waste classification as sludge, by-product, or spent material, or listed vs unlisted (characteristic) hazardous waste has no relation to the type of hazard the waste poses when stored, and therefore, that storage of all of these wastes should be regulated uniformly. (*Id.*)

The Agency in fact has already proposed that all hazardous wastes going from a generator to a fuel processor be subject to regulation. See proposed § 261.6(b)(v), 48 FR at 14510 (April 4, 1983). We did not propose a parallel change for unlisted, non-sludge hazardous wastes going from a generator directly to a burner. See 48 FR at 14485. However, we have now decided to expand applicability of the storage standards uniformly, and so are proposing in today's rules to eliminate the distinctions between listed wastes and sludges and other hazardous wastes.

B. Eliminating the Exemption for Storage of Hazardous Waste-Derived Fuels

The rules proposed today would subject hazardous waste-derived fuels to storage (and other) controls. This includes storage by the initial marketer (e.g., processors, blenders), storage by subsequent marketers (e.g., distributors), and storage by burners.

The present regulatory regime provided by 40 CFR 261.6 whereby hazardous waste-derived fuel is exempt from regulation exists for historical reasons and is not environmentally justifiable. (See 448 FR at 14475.) The argument that hazardous waste fuels

function as valuable inventory in a burner's hands and so will be stored safely does not appear tenable. Hazardous waste fuels in many cases do not command substantial economic value; in some situations, burners are even paid to accept these materials. In addition, the fact that a hazardous waste fuel is being stored as a commodity is sufficient to prevent substantial risk. There have been many damage incidents from product and raw material storage, examples being spills from underground and above-ground product storage tanks, including fuel storage tanks. See 49 FR 29418 (July 20, 1984). See also Section 601 of the Hazardous and Solid Waste Amendments of 1984 requiring EPA to regulate underground storage tanks storing products. The Agency also has been told by State regulatory officials and used oil fuel dealers that hazardous waste fuels are suspected of causing a number of fires in the New York City and New Jersey areas. The agency, thus, does not see any reason to regulate this type of hazardous waste storage differently from other hazardous waste storage.

Today's proposed rule would subject all storage of all hazardous waste fuels to the standards provided by 40 CFR Parts 262 (for short-term accumulation of fuels by a generator who burns his waste on site or who markets directly to a burner), 264, and 265, with one exception. We are not proposing to subject hazardous waste fuel storage by an existing burner to the final permitting standards of 40 CFR Part 264 at this time for several reasons.⁸¹ Given that we intend to regulate burning of hazardous waste fuels in a manner that would require some form of permitting, we do not want to issue a permit to a burner for storage and then have to issue a second permit in the near future for burning. We thus plan to delay adopting final permitting storage standards for existing burners until a single permit proceeding can address both burning and storage.

⁸¹ On-site storage by burners of any hazardous waste fuel would be subject only to the interim status standards of 40 CFR Parts 265 and 270 (Part A permit application). This applies to hazardous waste fuels newly regulated by today's proposal as well as to listed wastes and sludges marketed by a generator to a burner which are currently subject to interim status as well as final permitting (i.e., Part 264) standards under provisions of 40 CFR 261.6. Thus, this proposal would temporarily reduce storage controls for those burner storage facilities (storing listed waste or sludges) currently subject to final permitting standards (i.e., Part 264). Such storage facilities would become subject to final permit standards along with other burner storage facilities when controls on burning are promulgated.

We note that hazardous waste fuels stored by a marketer would be subject to regulation under the proposal. Thus, storage of both incoming hazardous waste and outgoing hazardous waste fuels would be regulated. Many marketers are already subject to regulation as storage facilities because they store listed wastes and sluges (used as feedstock to produce hazardous waste fuel), and may be operating under interim status standards. These marketers would need to seek an authorization to expand their interim status operations to include the waste fuel storage area.

X. Examples of How These Regulations Would Operate

The following hypothetical examples illustrate how the proposed rules would operate:

1. Generator G generates a hazardous waste and sends it to burner B who stores it in a tank prior to burning in an industrial boiler for energy recovery.

G is a hazardous waste fuel marketer because he markets directly to a burner. Assuming that G is a large quantity generator (and EPA is unaware of situations where small quantity generators sends hazardous wastes directly to burners), he must comply with the requirements for marketers, including the manifest and storage requirements of Part 262, and notification as a hazardous waste fuel marketer. Prior to sending the first shipment (after the effective date of this rule), he must also obtain a certification from B that B has notified EPA of his waste-as-fuel activities and that he will burn the fuel only in unrestricted units (i.e., industrial boilers, industrial furnaces and utility boilers). B is a hazardous waste fuel burner and a RCRA storage facility. He must comply with interim status standards for storage (including submitting a Part A permit application). He must also notify EPA of his waste-as-fuel activities and provide G with the certification discussed above prior to receiving the first shipment. B will have one identification number for storage and burning.

2.A. Generator G, a large quantity generator, generates a hazardous waste but sends it to an intermediate processor P, who mixes it with other wastes and sells the mixture to a burner B who stores it in a tank prior to burning in an industrial boiler for energy recovery.

G is subject to regulation under Part 262 as a generator and must comply with the manifest system and applicable storage requirements. He is not subject to the requirements for marketers. P is a marketer. He must obtain a storage

permit to store the hazardous wastes received from the generator. The blended mixture is hazardous waste fuel and is subject to the storage controls under Parts 264 and 265. P and B must notify EPA of their waste-as-fuel activities, and must comply with the certification requirements. B is a hazardous waste fuel burner who has a RCRA storage facility subject to the interim status controls of Part 265.

2.B. G, a large quantity generator, generates a hazardous waste and mixes it with used oil. The mixture is sent to P, who does further blending with used oil, and then sends the mixture to B where it is burned as in the previous example.

The controls would operate in this situation just as in the previous example. A mixture of hazardous waste and used oil is subject to regulation as hazardous waste (unless the hazardous waste is generated by a small quantity generator).

2.C. G is a small quantity generator who generates a hazardous waste and mixes it with used oil, as in example 2.B. G sends the mixture to processor P, who processes the material further and sells the processed oil as fuel. The fuel meets the specification for used oil fuel. It then is sold to retail fuel dealers and to industrial and nonindustrial users.

In this situation (i.e., where a small quantity generator mixes hazardous waste with used oil), the mixture is exempt from regulation as hazardous waste under the provisions of 40 CFR 261.5 but is subject to regulation as used oil when obtained by a used fuel marketer, P. Thus, G (who incidentally is not a marketer) may send the used oil to P without a manifest) or an invoice). P is a marketer of used oil fuel. He must notify EPA of his waste-as-fuel activities and obtain an EPA identification number. He also must document with analyses that the used oil fuel he markets meets the specification since he receives used oil from a generator (or from a transporter who receives oil from a generator) and markets used oil fuel as specification used oil fuel. The used oil fuel is exempt from regulation and may be sent to burners or retail fuel dealers (i.e., distributors) who do not have EPA identification numbers, and who may sell the fuel on an unrestricted basis.

If, as is more likely, P determines that the used oil fuel does not meet the specification, P could only send it to persons who have certified to him that they have notified EPA of their waste-as-fuel activities and will burn the fuel only in industrial boilers, utility boilers, or industrial furnaces. P would have to prepare and send invoices for the used oil fuel. The retail fuel dealers (i.e., distributors) who receive the off-

specification used oil fuel are marketers and could not send the fuel to nonindustrial users unless it was processed further to meet the fuel specification (and they documented with analyses that the fuel meets the specification). Marketers and burners must keep records of invoices and certifications sent and received and fuel analyses documenting compliance with the fuel specification (where required).

3.A. P is a used oil processor who receives used oil from a variety of sources and blends them to make fuels. The blended fuel that P produces is off-specification for lead. P sends this fuel to R, a retail fuel dealer. R blends the fuel further so that it meets the lead specification. R then sells the fuel to industrial and nonindustrial users.

P is a marketer of used oil fuel. Because the used oil fuel is off-specification, it can be sent only to a person (e.g., R) who has certified to P that he has notified EPA of his waste-as-fuel activities (and obtained an EPA identification number), and P must send an invoice to that person. R is also a marketer because he receives off-specification used oil fuel. Since R markets the used oil fuel as specification fuel (by marketing to nonindustrial boilers, or by marketing to industrial boilers without complying with the invoice, notification, and other requirements), he must document with analyses that the fuel meets the specification. Marketers and burners must keep records as discussed previously.

3.B. Processor P receives used oil from different generators, and also receives spent halogenated solvents that are listed as hazardous waste. P blends the hazardous solvents with the used oil. Some of the spent halogenated solvents were generated by large quantity generators. The blended used oil fuel contains less than 4000 ppm chlorine and meets the specification. P sells this blended fuel to R, as in example 3A.

P is a marketer of hazardous waste fuel because he has mixed hazardous waste (generated by a large quantity generator) with used oil. There is no need to invoke the presumption of mixing with hazardous waste (based on total chlorine levels) because it is known on these facts that hazardous waste has been mixed. (As explained in Section VII-C-4, it is not always certain when used oil is mixed with hazardous waste. In those situations, EPA is employing a rebuttable presumption of mixing with chlorinated hazardous waste when chlorine levels exceed 4000 ppm because this level is a very strong indication of mixing.) The used oil fuel

specification does not apply to the mixture.

XI. State Authority

A. Applicability of Rules in Authorized States

Under Section 3006 of RCRA, EPA may authorize qualified States to administer and enforce the RCRA program within their States. (See 40 CFR Part 271 for the standards and requirements for authorization.)

Authorization, either interim or final, may be granted to State programs that regulate the identification, generation, and transportation of hazardous wastes and the operation of facilities that treat, store, or dispose of hazardous waste. Interim authorization is granted to States with programs that are "substantially equivalent" to the Federal program (Section 3006(c)). Final authorization is granted to States with programs that are equivalent to the Federal program, consistent with the Federal program and other State programs, and that provide for adequate enforcement (Section 3006(b)).

Under RCRA, prior to the Hazardous and Solid Waste Amendments of 1984, once EPA authorizes a State program, EPA suspends administration and enforcement within the State of those parts of the Federal program for which the State is authorized. In authorized States, EPA does retain enforcement authority under Sections 3008, 7003, and 3013 of RCRA, although authorized States have primary enforcement responsibility. However, under Section 3006(g) of the Hazardous and Solid Waste Amendments of 1984, any requirement pertaining to hazardous wastes promulgated pursuant to the Amendments is effective in authorized States at the same time it is effective in other States. EPA will administer and enforce the requirements in each State until the State is authorized with respect to such requirement.

When ultimately promulgated, the hazardous waste fuel standards proposed today would be applicable in all States since the requirements are imposed pursuant to the Amendments. Thus EPA will implement the hazardous waste fuel standards until authorized States revise their programs to adopt these rules.

The used oil fuel standards proposed today would also be applicable in all States when promulgated. Section 3014 provides for the regulations on used oil fuel to take effect in all States. Section 3006 does not bear on the used oil fuel standards since used oil fuel, by itself, is not currently a hazardous waste covered by the Subtitle C program. However, as

discussed previously, the Agency plans to propose to list used oil as a hazardous waste in 1985. If used oil were, in fact, listed as hazardous waste in a subsequent promulgation, the used oil fuel rules—amended as necessary to conform with the listing—would be applicable in all States, by virtue of Section 3006(g) as well as Section 3014. At the point, authorized States would be required to revise their programs to adopt these rules.

B. Effect on State Authorizations

The hazardous waste fuel rules ultimately promulgated under this rulemaking will apply in authorized States under Federal law until the State receives interim or final authorization under Section 3006(g)(2) of 3006(b), respectively, on the basis of providing controls for hazardous waste fuels that are substantially equivalent or equivalent to EPA's. The procedures and schedule for State adoption of these regulations is described in 40 CFR 271.21. See 49 FR at 21678 (May 22, 1984).

Applying § 271.21(e)(2), States that have final authorization must revise their programs within a year of promulgation of EPA's hazardous waste fuel regulations if only regulatory changes are necessary, or within two years of promulgation if statutory changes are necessary. These deadlines can be extended in exceptional cases. See 40 CFR 271.21(e)(3).

States that submit official applications for final authorization less than 12 months after promulgation of EPA's regulations for hazardous waste fuels may be approved without including standards equivalent to those promulgated. However, once authorized, a State must revise its program to include hazardous waste fuel standards substantially equivalent or equivalent to EPA's within the time period discussed above.

XII. Regulatory Impacts

A. EPA Regulatory Impacts Studies

As a result of the impacts analysis conducted to accompany today's proposed rules, EPA has reached four key conclusions. First, today's proposal is not a "major rule" within the meaning of Executive Order 12291, and, therefore, no Regulatory Impacts Analysis is required. EPA reached this conclusion in part after determining that the rules proposed today will not have an annual impact on the national economy in excess of \$100 million. The estimated maximum costs of today's proposal are an initial (one-time) cost of \$6 million and annual costs of \$20.9 million.

Maximum estimated annualized costs are \$21.3 million per year. In addition, the proposal will not lead to major increases in costs; no facility affected by today's proposal should incur more than \$7000 per year in annualized costs to comply with the proposed rules. In fact, the great majority of facilities affected by the proposal would incur less than \$1000 per year in additional costs. Finally, today's rules do not affect competition, employment, productivity, or innovation to any significant extent. These proposed rules have been submitted to the Office of Management and Budget (OMB) for review per Section 6 of Executive Order 12291. Any comments from OMB to EPA and any response to those comments are available for viewing at the Office of Solid Waste Docket, Room S-212, U.S. E.P.A., 401 M St., SW, Washington, D.C. 20460.

Second, today's proposed rules will not have a significant impact on a substantial number of small entities. Therefore, no Regulatory Flexibility Analysis (RFA) is required under the Regulatory Flexibility Act. EPA has determined that although a substantial number of small entities would be affected by some parts of today's proposed rules, even the maximum costs that could be imposed would not amount to 5% of product price or cause a closure rate of 5% (the criteria used by the Act to define when an RFA is needed.)

Third, today's proposed rules, to the extent they affect the used oil industry, do not discourage the recycling or recovery of used oil. EPA has concluded that today's proposed rules will not discourage recycling because the rules only restrict used oil entering one market, the nonindustrial fuel market, and the Agency has determined that any used oil not sold to this market can be sold as industrial fuel or rerefining feedstock. Therefore, used oil affected by today's proposal will still be recycled, not disposed of.

Fourth, EPA has considered the requirements of the Paperwork Reduction Act of 1980 (PRA), 44 U.S.C. 3501 *et seq.*, in developing these proposed rules. The reporting and recordkeeping requirements are the minimum EPA believes necessary to implement and enforce the controls. Pursuant to provisions of the PRA, the information collection requirements in this proposed rule have been submitted for approval to the Office of Management and Budget (OMB). Submit comments on these requirements to the office of Information and Regulatory Affairs; OMB; 726 Jackson Place, N.W.;

Washington, D.C. 20503 marked "Attention: Desk Officer for EPA". The final rule will respond to any OMB or public comments on the information collection requirements.

What follows are more detailed discussions explaining the data used by EPA to make the determinations summarized above. First, cost data are presented for each control proposed today. Second, the expected impacts of the proposed rules on used oil recycling are described. EPA requests comments on the regulatory impacts studies performed for this proposal, both in terms of the extent of analysis performed, and the conclusions reached through the studies.

B. Cost Data

The cost impacts of these regulations derive primarily from four new requirements. These are: (1) Notification requirements for marketers and burners to identify waste-as-fuel activities; (2) manifest requirements (for hazardous waste fuel) or invoice requirements (for off-specification used oil fuel) for all shipments; (3) certification requirements for marketers and burners that require a recipient to certify to the supplier before he receives the first shipment that he has notified EPA of his waste-as-fuel activities and will burn the waste fuel only in an unrestricted boiler or furnace; and (4) storage requirements for hazardous waste fuel. In addition, marketers who first claim used oil fuel meets the specification and is exempt from regulation (e.g., marketers who process or blend off-specification used oil to produce used oil fuel that meets the specification, and marketers who receive oil from generators or from collectors and who manage the oil as specification used oil fuel) must obtain analyses documenting that the used oil meets the specification. It should be noted that EPA has not attempted to determine the costs of two important impacts of today's proposal: (1) The cost to marketers of treating used oil to meet the used oil fuel specification; and (2) the costs to nonindustrial boiler owners of having to buy specification used oil fuel or commercial fuel oil instead of hazardous waste fuel or off-specification used oil fuel.

EPA has not attempted to determine the cost to marketers of treating used oil to meet the used oil fuel specification because we do not know how much used oil currently meets the specification either as-generated or after processing/blending.⁸⁴ However, it is

clear that processors and blenders who sell to the nonindustrial market will experience increased costs at a minimum for sampling and analysis of their product and to some extent, their used oil feedstock (until assured of its composition). Any blending over current practice that is required to meet the specification would also involve additional costs. However, these costs are discretionary. Processors and blenders have the choice of incurring the additional cost of analyses (and perhaps blending) and continuing to sell to the nonindustrial market or to avoid those costs by selling to the industrial market.⁸⁵

EPA has not determined the cost impacts on nonindustrial fuel users of having to stop using hazardous waste fuel and off-specification used oil fuel for the following reasons. First, EPA is not sure that many of these users are actually receiving price discounts for their purchase of these waste fuels. Investigations by New York City, New Jersey and EPA indicate that, often, nonindustrial buyers are not informed they are buying waste fuel. Without such knowledge, it seems unlikely that fuel buyers would be able to obtain discounts. Second, although some nonindustrial users may be receiving price discounts for waste fuel and, therefore, will bear the cost of buying higher priced fuel due to today's proposal, EPA believes that the fuel displaced from the nonindustrial

all four metals included in the specification, from 8 to 19% of used oil may meet the specification, depending on where the lead specification level will be set within the range of 10-100 ppm. If these samples were blended with 90% virgin fuel oil with a median metals content, from 30 to 86% of the samples would meet the specification, again depending on promulgation of a lead specification within the range of 10-100 ppm. Source: Franklin Associates, Ltd., (Unpublished data), April 27, 1984 memorandum to EPA.

⁸⁵ Although the cost of analyzing for chlorine to determine if used oil will be presumed to be hazardous waste under the rebuttable presumption is not considered a discretionary cost, chlorine analysis costs should not be substantial. We are verifying the accuracy of a simple field test where a copper wire is dipped into the sample and observed for color when passed over a flame (Beilstein's test). In addition, analytical kits for field testing of oil to determine chlorine content at various detection limits are commercially available and cost only about \$3.00 per analysis. Even when a very small tank truck is sampled (e.g., 2000 gallon capacity), this test would cost only about 0.1 cent per gallon. When a more rigorous analytical test is needed, costs could approach 2.5 cents per gallon for a 2000 gallon tanker. However, we believe that after generator and collector credibility has been established, processors/blenders would use the inexpensive tests coupled with spot analytical checks to ensure the 4000 ppm chlorine level is not exceeded. These costs are not considered substantial given that generators are typically paid 15 cents per gallon for their oil.

markets will be channelled to industrial users who can be expected to receive similar price discounts. Therefore, there should be no net increase in costs to society due to these fuel shifts.

1. *Unit Costs.* The unit costs for these proposed regulatory requirements are estimated to be as shown in Table 5.

TABLE 5.— UNIT COST ESTIMATES

Notification to EPA.....	\$50 (a one-time cost)
Manifest system for hazardous waste fuel:	
Start-up.....	\$100 (a one-time cost)
Supervision.....	\$800/year for marketers \$530/year for burners
Recordkeeping.....	\$170/year.
Fuel shipments/deliveries.....	\$6/manifest for marketers \$2/manifest for burners.
Invoice system for off-specification used oil fuel:	
Start-up.....	\$100 (a one-time cost)
Supervision.....	\$360/year.
Recordkeeping.....	\$170/year.
Fuel shipments.....	\$2/invoice for marketers.
Certification to waste fuel supplier of compliance with waste-as-fuel rules:	
Prepare notice.....	\$30 (a one-time cost)
Recordkeeping by initiator and recipient.....	\$10/yr.
Testing for used oil fuel specifications (including total chlorine test):	
Analysis.....	\$150/test.
Supervision.....	\$530/year.
Recordkeeping.....	\$170/year.
Storage tank interim status standards for industrial boilers and furnaces burning hazardous waste fuel: ⁸⁶	
General facility standards.....	\$4,200 one-time and \$900/year.
Preparedness and prevention.....	\$2,800 one-time and \$200/year.
Contingency and emergency procedures.....	\$300 one-time and \$100/year.
Manifest, recordkeeping.....	[See manifest system costs above]
Closure plan.....	\$200 one-time.
Financial requirements.....	\$2,000 one-time and \$2,000/year.
Tank inspection.....	\$2,500 one-time and \$2,000/year.
Part A permit application.....	\$400 one-time.

⁸⁶Based on data in Pope-Reid Assoc., Inc., *Unit Cost Analysis of Part 264 and Part B Tank and Container Storage Standards*, April 1983.

2. Costs for Typical Facilities.

(a) *Marketers of Hazardous Waste Fuel.* Generators who market their waste directly to a burner are subject to most of the proposed requirements under existing rules. (We assume that nearly all hazardous waste fuels contain listed wastes or sludges, and, thus, are subject to storage and transportation controls under existing rules.) The only additional cost to these generator/marketers would be for the waste-as-fuel notification and recordkeeping of burner certifications.

Third-party marketers (i.e., marketers who did not generate the waste) usually market hazardous waste fuel to a single large burner customer (e.g., cement

⁸⁴ We have estimated, however, that based on about 130 used oil samples which were analyzed for

kiln or blast furnace) after processing or blending. These marketers usually receive hazardous waste feedstock directly from generators. Given that virtually all of these marketers most likely accept wastes already subject to storage controls (i.e., listed wastes and sludges), their feedstock storage areas are already subject to regulation. However, these proposed rules would subject hazardous waste fuel product (i.e., hazardous waste-derived fuel) storage areas to regulation for the first time. Thus, the costs of these controls to a third-party marketer of hazardous waste fuel would consist of the costs for renotification, compliance with the manifest system for the fuel marketed, keeping a record of the certifications received from burners, and compliance with storage requirements for product hazardous waste fuel. Each facility would incur a one-time cost of \$50 for notification. Even though these marketers must already comply with the manifest system for hazardous waste they receive from generators (because the wastes are likely to contain listed wastes or sludges), to estimate maximum cost of compliance with the proposed rule we have estimated their manifest system costs as if they are not now in compliance. Thus, manifest system expenses would consist of the costs for start-up (a one-time expense of \$100), and manifest handling, supervision, and record-keeping (\$970 per year). It is assumed that a typical facility originates 24 shipments of hazardous waste fuel per year. Thus, recurring cost for preparing manifests would total \$144 per year (\$6 x 24 manifests). In addition, the facility would incur a recurring cost of \$10 per year to keep a record of the certifications received from burners. The cost of complying with the storage requirements for the hazardous waste fuel produced depends on whether the marketer's hazardous waste feedstock storage facility is still in interim status or has been fully permitted. If it is still in interim status, the cost of including the hazardous waste fuel storage area in the interim status permit should be minimal (e.g., about \$2000 to amend the contingency and closure plans and the Part A application). If the feedstock storage facility has already been fully permitted (under a Part B application), a worst case cost scenario would be where the permit must be amended to such an extent that much of the permitting process must be repeated. Given that the cost of complying with the Part B permit procedures is estimated to be a one-time cost of \$10,000 for a storage tank facility, the

cost to a marketer of complying with the new storage requirements could range from about \$2,000 (where the storage facility is still in interim status) to a one-time cost of \$10,000 (where the storage facility has received a permit and the permit process must be essentially repeated).

The typical facility in this category would incur \$2,150 to \$10,150 in initial costs as well as annual costs of \$1110. (Most marketers would incur the lower initial cost given that only about one-third of storage facilities have been permitted and that only one-third might incur one-time costs on the order of \$10,150.) If one-time costs are annualized over 20 years, total annual costs to these marketers would range from \$1200 to \$1800. If a marketer initiates 24—4,000 gallon shipments per year of hazardous waste fuel, the cost of these regulations would range from about one cent to less than two cents per gallon of fuel.

(b) *Burners of Hazardous Waste Fuel.* All burners of hazardous waste fuel would incur the cost of notification or renotification. For the estimated 1600 generators that burn hazardous waste fuel on site, the only expense to them as burners of such fuel would be a one-time cost of \$50 to renotify the Agency to identify their waste-as-fuel activities (i.e., burning).

For the estimated 200 facilities that burn hazardous waste fuel already subject to storage and transportation controls (virtually all unprocessed, unblended fuels), the cost of these regulations would consist of the cost of the certification to the supplier in addition to the cost of renotifying EPA as a hazardous waste fuel burner. No new manifest or storage costs are incurred because it is assumed that burners invariably receive hazardous waste fuel subject to manifest and storage requirements under existing rules (i.e., listed wastes and sludges). Thus, the costs of these regulations would be a one-time initial cost of \$80 for renotification to EPA and the certification to the supplier and a recurring cost of \$10 per year for keeping a copy of the notice.

For the estimated 200 facilities that burn hazardous waste-derived fuel (i.e., hazardous waste fuel produced by processing, blending, or other treatment of hazardous waste), the costs of these regulations would consist of the expenses of the manifest system, certification to the marketer, notification to EPA, and compliance with storage requirements. Manifest system costs would be those for manifest handling (\$2 per fuel delivery) and for supervision

and recordkeeping (\$700 per year). If it is assumed that a typical burner receives 24 deliveries of hazardous waste fuel annually, manifest handling costs would be \$50 per year. The cost of notifying the fuel marketer would be a one-time cost of \$30, and the cost of keeping a copy of the notice would be a recurring cost of \$10 per year. Storage requirement costs would be a one-time cost of \$12,400 and a recurring cost of \$5,200. Therefore, the typical facility in this category could incur \$12,500 in initial (i.e., one-time) costs as well as annual expenses of \$6,000. Thus, the annualized cost for these facilities could total approximately \$7,000, which represents a cost of 7 cents per gallon of hazardous waste fuel burned.

(c) *Marketers of Used Oil Fuel That Meets the Specification.* This is a summary of the costs of these requirements to a person who markets used oil fuel that meets the specification (and that does not contain more than 4000 ppm total chlorine), and who is: (1) A generator marketing to a burner; (2) a marketer who receives any used oil from a generator or from a collector (who receives used oil from a generator); or (3) a marketer who receives off-specification used oil from another marketer and who produces specification used oil fuel by processing blending, or other treatment. The costs to these marketers would consist of the costs for notification and testing (including supervision and recordkeeping). Notification entails a one-time expense of \$50. The costs for testing for lead, arsenic, chromium, cadmium, PCBs, total chlorine content, and flash point are at most \$150 per sample.⁸⁷ The costs for supervision of testing and recordkeeping are \$700 per year. It is assumed that the typical facility of this kind handles 400,000 gallons of used oil annually and originates 100 shipments of used oil fuel per year, and that the operator would test large batches (e.g., a 30,000 gallon tank) of used fuel oil rather than each shipment, amounting to approximately 12–14 analyses pr year (\$2000/yr). In addition, it is assumed that the marketer would test each truck load of used oil he receives to ensure that it contains less than 4000 ppm chlorine and thus would not be considered (automatically) to be hazardous waste under the rebuttable presumption of mixing. To estimate

⁸⁷ This assumes the sample is analyzed by a contract laboratory. In-house testing would be less costly. Costs for testing for PCBs is not included because existing rules (See 40 CFR Part 761) limit PCBs to 50 ppm (i.e., wastes with more than 50 ppm PCBs are already subject to regulation when burned for energy recovery).

chlorine testing costs, it is assumed that: (1) Individual 2000 tank trucks of incoming used oil are sampled and analyzed; (2) 10% of the oil is analyzed by ASTM analytical methods at \$50 per analysis (or 2.5 cents/gallon of oil); and (3) 90% of the oil is analysed using field kits of prepared indicator solutions at \$3 per analysis (or 0.15 cents/gallon of oil). Under these assumptions, testing of incoming used oil for total chlorine would cost \$1540 annually. Therefore, the typical facility in this category would incur \$50 in initial one-time costs as well as up to \$4240 in annual costs, which would add about 1 cent per gallon to the cost of used oil fuel.⁸⁸

(d) *Marketers of Off-Specification Used Oil Fuel.* The costs of these regulations to a marketer of off-specification used oil fuel would consist of the costs for notification to EPA, the invoice system, keeping copies of certifications from product purchasers (i.e., burners or other marketers), and analyses for total chlorine to ensure the oil is not presumed to be hazardous waste under the rebuttable presumption of mixing. Each facility would thus incur a one-time cost of \$50 for notification. In addition, there would only be an incremental cost for the invoice system required by these regulations because, under current, common practice, invoices are already prepared for shipments of fuel. The incremental costs would consist of costs for start-up (a one-time expense of \$100), invoice preparation (\$2 per fuel shipment or \$200 annually if a typical facility handles 400,000 gallons of used oil annually and originates 100 shipments of used oil fuel annually), and supervision and recordkeeping (\$530 per year). The facility would also incur the \$10 per year cost of keeping a record of the certification from the product purchaser.

Finally, the facility owner/operator may choose to test the used oil he receives and his used oil fuel product to ensure that it contains less than 4000 ppm chlorine and, thus, would not be considered (automatically) to be hazardous waste under the rebuttable presumption of mixing. Although some marketers may choose to test only the oil they receive, others may sample and analyze the used oil fuel product as well to assure purchasers that it does not contain chlorinated hazardous waste. To provide a worst-case cost estimate, it is assumed that: (1) All incoming used oil and product used oil fuel is tested for chlorine; (2) individual 2000 gallon tank trucks of incoming used oil are sampled

and analyzed; (3) 10% of incoming used oil is analyzed by ASTM analytical methods at \$50 per analysis (or 2.5 cents/gallon of oil); (4) 90% of incoming used oil is analyzed using field kits of prepared indicator solutions at \$3 per analysis (or 0.15 cents/gallon of oil); (5) used oil fuel product is sampled from 30,000 gallon tanks and is analyzed by ASTM analytical methods at \$50 per analysis (or 0.17 cents/gallon of fuel); and (6) supervision of testing costs \$530 annually and recordkeeping of analyses costs \$170 annually. Chlorine testing could cost \$2900 annually under these assumptions (\$2200 for analyses plus \$700 for supervision and recordkeeping).

Therefore, a marketer of off-specification used oil fuel could incur \$150 in one-time initial costs plus \$3640 in annual costs, which would add about 0.9 cents to a gallon of used oil fuel.

The costs of these proposed rules to marketers (e.g., distributors) who receive off-specification used oil fuel from other marketers would be the same as presented above, except these marketers would incur the additional one-time expense of \$30 to prepare certifications to suppliers. Thus, the total costs to these marketers could be an initial cost of \$180 plus \$3640 in annual costs. (Given that 80% of the annual cost estimate is for testing for chlorine content, the annual cost estimate may be grossly overstated for distributors because they receive used oil from other marketers who have already tested for chlorine under the assumptions of the previous scenario).

(e) *Burners of Used Oil Fuel that Meets the Specification.* Burners of used oil fuel that meets the specification would not be subject to any new requirements under these regulations. Therefore, they would not incur any new costs.

(f) *Burners of Off-Specification Used Oil Fuel.* All burners of off-specification used oil fuel would incur the one-time cost of notification. For facilities that burn off-specification used oil fuel which is generated on site, the only expense to them as burners of such fuel would be a one-time cost of \$50 for notification to EPA.

For facilities that burn off-specification used oil fuel that is delivered to them, the expenses that would be incurred because of these regulations are the costs of notification, compliance with the invoice system, and providing the certification to the supplier. The incremental costs of the invoice system would be for supervision and recordkeeping (\$530 per year), and the cost of invoice handling (\$50 per year at \$2/invoice and assuming 24

deliveries per year). The one-time cost of the notice (certification) to the supplier would be \$30, and the recordkeeping cost for the notice would be \$10 annually. Therefore, the typical facility in this category would incur an initial one-time cost of \$80 as well as annual expenses of \$590.

3. *Estimated National Costs.* In the absence of complete data on the universe of facilities that market and burn hazardous waste and used oil fuels, it is impossible to estimate with a high degree of precision the national cost impacts of these regulations. The notification process will enable EPA to identify the affected facilities and to estimate more accurately the costs of compliance with the rules proposed today as well as the costs of the technical regulations on burning in industrial boilers and furnaces that will be proposed in 1986.

These cost estimates are based on assumptions that reflect worst-case conditions with respect to number of marketers and burners subject to regulation. For example, we believe that the estimate of the number of off-specification used oil fuel burners is high. The figure estimated (30,000) may approximate the number of burners of used oil fuel but some of that used oil is likely to meet the specification and be exempt from regulation. Thus, the number of burners subject to these rules is probably overstated. *As a result, these estimates are conservative and more closely approximate maximum rather than actual costs.* These costs are summarized in Table 6.

TABLE 6.—Summary of National Cost Estimates
[Dollars in thousands]

Requirement	One-time cost	Recurring cost (yearly)	Annualized cost (1983 dollars)
Notification.....	\$1,658		\$111
Manifest system.....	20	\$372	373
Invoice system.....	76	16,875	16,880
Certification to suppliers.....	882	301	360
Used oil analysis:			
Specification oil.....		322	322
Off-specification oil.....		1,984	1,984
Storage.....	3,408	1,040	1,269
Total.....	6,044	20,894	21,299

(a) *Notification Costs.* Hazardous waste fuel and off-specification used oil fuel marketers and burners would be required to notify (or renotify) to identify their waste-as-fuel activities.

The universe of marketers probably includes persons in the following categories: Hazardous waste processors and blenders, hazardous waste generators who market hazardous waste

⁸⁸ This assumes that the marketer does not incur additional processing and blending costs to bring off-specification oil into specification.

fuel to burners, used oil collectors who sell directly to burners, used oil processors and refiners, and wholesale and retail dealers of virgin fuel oil who continue to handle off-specification used oil fuel. The universe of marketers is estimated to number about 1200.⁸⁹ (See Table 7.)

TABLE 7.—ESTIMATED NUMBER OF MARKETERS AND BURNERS THAT WOULD BE REGULATED

	Number
Hazardous waste	
Marketers.....	400
Generators marketing to burners.....	200
Other marketers (third-party processors, blenders, distributors).....	200
Burners.....	2,000
On site.....	1,600
Off site:	
Receive fuel from generators.....	200
Receive fuel from third-party marketers (processors, blenders, distributors).....	200
	2,400
Off-Specification Used Oil Fuel	
Marketers.....	760
Generators marketing to burners.....	0
Other marketers:	
Third-party processors, blenders, distributors.....	500
Collectors marketing to burners.....	250
Refiners.....	10
Burners.....	30,000
On site.....	1,500
Off site.....	28,500
	30,760
Total: Approximately.....	33,000

The universe of burners that would be subject to the notification requirement consists of all facilities in the utility and industrial sectors that burn hazardous waste or off-specification used oil fuel. (Under these regulations, burning of these fuels would be allowed in utility and industrial boilers and industrial furnaces, but would be prohibited in boilers at residential, institutional, and commercial locations.) To estimate maximum impact, we assume that used oil fuel is burned in a maximum of 30,000 boilers and that all of the boilers burn off-specification used oil fuel.⁹⁰ Finally, we estimate that hazardous waste is burned in 2000 industrial boilers and furnaces. Although many facilities burn waste in more than one burner, only one notification would be required for each facility. Therefore, we estimate the maximum size of the burner universe is about 32,000. The maximum

total number of notifiers (i.e., marketers and burners) is estimated at 33,000. Therefore, the maximum cost of notification, at \$50 per facility, would be \$1,658 million.⁹¹ (This is a one-time cost.)

(b) *Manifest System Costs.* The Agency made a number of assumptions to estimate the cost of complying with the manifest system: (1) 200 facilities burn hazardous waste-derived fuel (i.e., hazardous waste fuel produced by processing, blending, or other treatment of hazardous waste) that is currently exempt from regulation; (2) each burner of hazardous waste-derived fuel receives 24 deliveries of fuel annually; (3) each of the 200 marketers of hazardous waste-derived fuel originates 24 shipments of fuel per year; and (4) there are 4,800 shipments of hazardous waste-derived fuel annually.

Based on these assumptions, the manifest system requirement for shipments of hazardous waste-derived fuel would entail the following costs: (1) Initial one-time start-up costs (\$100 × 200 marketers); and (2) annual costs for manifest handling (\$8 × 4,800 manifests), and for system supervision and recordkeeping by marketers (\$970 × 200 marketers) and by fuel burners (\$700 × 200 burners). Therefore, the estimated (incremental) national costs of the manifest system requirement would be an initial one-time cost of \$20,000 plus annual costs of \$372,000.

(c) *Invoice System Costs.* The Agency made the following assumptions to estimate the incremental costs of complying with the invoice system for off-specification used oil shipments (costs in addition to those already incurred as a result of typical business practice): (1) The number of facilities that burn used oil fuel is the same as the number of boilers that burn used oil (30,000) even though a facility may have several boilers that burn used oil; (2) all 30,000 burners burn off-specification used oil; (3) 95% of the burners (i.e.,

28,500) accept off-specification used oil fuel generated off site (i.e., they are off-site burners); and (4) each burner receives 24 deliveries of used oil annually so that annual shipments total 684,000 nationally.

Based on these assumptions, compliance with the invoice system for shipments of off-specification used oil would entail the following costs: (1) Initial start-up costs (\$100 × 760 marketers); and (2) annual costs for invoice preparation (\$2 × 684,000 shipments of off-specification used oil fuel), and for system supervision and recordkeeping by intermediaries (\$530 × 760 marketers) and burners (\$530 × 28,500 burners). Therefore, the estimated maximum costs of the invoice requirement would be an initial (i.e., one-time) cost of \$76,000 plus annual costs of \$16,875 million

(d) *Cost of Certification to Suppliers.* The Agency made the following assumptions to estimate the cost of providing a certification to suppliers (and for recordkeeping by both parties) indicating that a recipient has notified EPA of his waste-as-fuel activities: (1) 400 burners receive hazardous waste fuel from off site and must comply; (2) 400 hazardous waste fuel marketers sell to off-site burners and must comply; (3) 28,500 burners receive off-specification fuel from off site and must comply; (4) all used oil fuel marketers (except collectors who market to burners) receive off-specification used oil from other marketers at some time during their operations and, therefore, must comply; (5) used oil fuel marketers, except collectors who market to burners, number 510 facilities (see Table 7); and (6) used oil collectors who sell directly to burners number 250 (and must obtain notices from those burners).

Based on these assumptions, the cost of providing certifications and recordkeeping would be an initial (one-time) cost of \$882,000 and a recurring cost of \$301,000 per year. (See Table 8.)

TABLE 8.—COST OF CERTIFICATION REQUIREMENTS

Person	Number of persons	One-time cost/fac. (dollars)	National one-time costs (dollars in thousands)	Annual cost/fac. (dollars)	National annual costs (dollars in thousands)
Burners (offsite).....	28,900	30	867	10	239
Hazardous waste fuel marketers.....	400			10	4
Used oil marketers other than collectors.....	510	30	15	10	5
Used oil collector/marketers.....	250			10	3
Total.....			882		301

⁸⁹ Estimates of used oil marketers (760) are from Franklin Associates, Ltd., *Composition of Used Oil*, pp. 4-4 through 4-20.

⁹⁰ The number of hazardous waste fuel and used oil fuel burners was estimated from preliminary results of the mail questionnaire survey.

⁹¹ This does not include the notification cost that would be incurred by hazardous waste fuel transporters not already subject to regulation—those that transport hazardous waste-derived fuel. We believe that there are fewer than 200 of these

transporters and the cost of complying with the 40 CFR Part 263 requirements is relatively insignificant: national one-time cost of \$10,000 for notification and \$2,000 annual cost for manifest recordkeeping.

(e) *Used Oil Analyses.* The Agency made the following assumptions to develop a worst-case cost estimate for analyzing used oil to determine if it meets the specification and if it contains more than 4000 ppm total chlorine (and would be considered hazardous waste under the rebuttable presumption of mixing): (1) 10% of the estimated 760 used oil fuel marketers market specification used oil fuel and would be required to test for the specification parameters; (2) 90% of the used oil fuel marketers market off-specification used oil fuel and would not be required to test for the specification parameters; and (3) even though analysis of used oil for total chlorine is not required, all used oil fuel marketers test all incoming used oil and all outgoing used oil fuel product for total chlorine because of the consequences of being in possession of used oil with more than 4000 ppm chlorine (i.e., under the rebuttable presumption, such oil is hazardous waste). As discussed above, a marketer of specification used oil fuel could incur the following costs under these assumptions: (1) \$700 annual cost for supervision of testing and recordkeeping; (2) \$2000 annual cost for testing of used oil fuel product for specification parameters as well as for chlorine (assuming facility markets 400,000 gallons of used oil fuel annually, operators sample and analyze 30,000 gallon tank "batches" of fuel, and analytical tests cost \$150/test); and (3) \$1540 annual cost for testing used oil received from others (assuming 2000 gallon tank truck loads are sampled and analyzed, 10% of incoming used oil is analyzed by ASTM analytical procedures at \$50/test, and 90% of incoming used oil is analyzed using field kits of prepared indicator solutions at \$3/test). Thus, marketers of off-specification used oil fuel could incur a national cost for analyses of \$322,000 annually (76 facilities \times \$4240).

Marketers of off-specification used oil fuel could incur the following costs under these assumptions: (1) \$700 annually for testing supervision and recordkeeping; (2) \$667 annually for testing used oil fuel product for chlorine (assuming facility markets 400,000 gallons of used oil fuel annually, operators sample and analyze 30,000 gallon tank "batches" of fuel, and analytical tests cost \$50/test); and (3) \$1540 annually for testing used oil received from others (assuming 2000

gallon tank truck loads are sampled and analyzed, 10% of incoming used oil is analyzed by ASTM analytical procedures at \$50/test, and 90% of incoming used oil is analyzed using field kits of prepared indicator solutions at \$3/test). Thus, marketers of off-specification used oil fuel could incur a national cost for analyses of \$1,984 million annually (684 facilities \times \$2900).

(f) *Storage Costs for Burners.* The Agency made the following assumptions to estimate the cost for hazardous waste fuel burners to comply with the interim status storage standards: (1) Of the estimated 400 burners of hazardous waste fuel received from off site, 200 are assumed to be receiving processed or blended fuels (such fuel is exempt from storage (and transportation) standards under existing rules); and (2) none of these 200 burners is currently subject to RCRA storage, treatment or disposal standards for other hazardous waste (and, thus, the facility has not already complied with some of the hazardous waste management facility standards).

Based on these assumptions and the unit costs presented above, the cost of compliance with interim status storage standards for hazardous waste fuel burners (not already subject to storage standards under existing rules) would be an initial (one-time) cost of \$2.48 million (\$12,400 \times 200 burners) and a recurring cost of \$1.04 million per year (\$5,200 \times 200).

The one-time cost can be annualized over 20 years at a real interest rate (i.e., without considering inflation) of 3% to spread out the cost burden. Thus, the resulting annual cost could be \$1.2 million for storage in 1983 dollars (annualized one-time cost of \$167,000 plus annual costs of \$1,040 million).

(g) *Storage Costs for Marketers.* The proposed rule would regulate for the first time the storage of a marketer's hazardous waste fuel produced by processing, blending, or other treatment of hazardous waste. As explained elsewhere, since we believe virtually all marketers use hazardous waste feedstock that contains listed waste or sludges that are subject to storage and transportation controls under existing rules, their feedstock storage areas are already subject to RCRA storage standards. However, these proposed rules would for the first time subject their hazardous waste fuel product storage area to regulation.

The Agency made the following

assumptions to estimate the cost of the new storage controls for these marketers: (1) Hazardous waste feedstock storage areas for one-third of the 200 such marketers have already been fully permitted (under Part B application procedures) and would incur a cost of \$10,000 to repeat the permitting process to include waste fuel product storage areas; and (2) the remaining marketers whose feedstock facilities are still in interim status would incur a cost of \$2000 to amend the Part A application and plans for closure, emergency procedures, financial assurance, training, and inspections to include the waste fuel product storage area. Thus, the national cost of compliance with the proposed storage controls for these marketers would be a one-time cost of \$928,000 (200 \times .33 \times \$10,000 for permitted facilities plus (200 \times .67 \times \$2000 for facilities in interim status). This is equivalent to an annualized national cost (over 20 years) of \$62,380.

C. Impacts on the Used Oil Recycling Industry

EPA is required by Section 3014 of RCRA to: (1) Establish regulations necessary to protect the public health and the environment from hazards associated with recycled oil; and (2) determine the effect of the regulations on environmentally acceptable types of recovery or reuse of used oil. What follows is a summary of EPA's determinations concerning impacts of the rules proposed today on used oil recycling and the oil recycling industry.

1. *Description of the regulated universe.* The rules proposed today pertain to only one market for recycled oil: Use as fuel. Although much used oil is used as fuel (about 520 million of the 1.2 billion gallons generated each year), significant quantities are also used for dust suppression and re-refining to produce lubricants. EPA estimates that approximately 750 marketers have as their primary business the collection, processing, or blending of off-specification used oil that is ultimately burned as fuel. Some data also suggest that a significant (but undetermined) number of establishments whose primary business is the distribution of virgin commercial fuel oil are also buying used oil, blending it with fuel oil, and subsequently reselling the blended fuel. EPA estimates that as much as 200 million gallons of used oil fuel passed

through commercial fuel oil establishments in 1982. EPA does not know how much of this used oil fuel was then sold to industrial versus nonindustrial boiler owners. However, investigations by New Jersey, New York City, Philadelphia, Pennsylvania, and the U.S. Environmental Protection Agency have produced data that confirm the allegation made by several parties that used oil fuel has been sold to residential, institutional, and commercial boiler owners in the northeastern United States. EPA believes that in some cases boiler owners are offered discount prices for the used oil fuel (10% is reportedly the common discount) but that in other cases, the used oil fuel is sold as "fuel oil" at the full market price, often without the knowledge of the buyer.

The previous discussion pertained to the types of marketers and burners that would be affected by today's proposed used oil rules. With respect to the types of used oils that would be affected by the proposed rule, EPA has found that all used oils would be affected to some extent. Both automotive and industrial used oils may contain metals at or above the specification levels, chlorine at or above the level for the presumption of mixing,⁹² and flash point below the specification level. However, used crankcase oil from cars burning leaded gasoline would be affected to a greater extent than other used oils. This is because the lead levels in these oils can exceed the specification level by one or two orders of magnitude (depending on where the lead specification is selected within the range of 10 to 100 ppm for final promulgation), while metals concentrations in other used oils would not generally exceed any of the specification levels by more than half an order of magnitude. Thus, used crankcase oil from leaded gasoline engines would require more blending or treatment to meet the specification.

2. Impacts at the facility level.

(a) *General impacts.* A large percentage of the facilities in the used oil recycling industry would be affected to some degree by today's proposed rules because most of these facilities, at one time or another, handle used oil that is ultimately used as fuel. Nearly all of the estimated 250 used oil processors produce used oil fuel products. Some used oil collectors market used oil fuel directly to burners; rerefiners also

⁹² Although crankcase oils generated by typical automotive service and repair shops do not exceed the 4000 ppm chlorine level for the rebuttable presumption of mixing, crankcase oil is often mixed with spent chlorinated solvents by collectors or used oil processors/blenders.

produce fuel by-products. An estimated 30,000 facilities are currently burning oil fuel. However, the impacts of today's proposed rules on most of these facilities would be minor. As was described earlier, the costs for notification, the invoice system, certifications, and chlorine testing under today's proposal could amount to about \$3650 per year for fuel sellers and \$600 per year for fuel buyers. EPA does not expect these costs to have significant impacts on the used oil fuel market. Used oil fuel would still be an attractive substitute for commercial fuel oil, and in general, sale of used oil fuel would remain a profitable enterprise. However, those establishments that have been selling used oil fuel to residential, commercial, or institutional boiler owners could be affected to a significant extent by portions of today's proposed rules as discussed below. Likewise, facilities that have been supplying used oil to distributors for resale could also be affected by restrictions on sales to nonindustrial fuel users.

(b) *Impacts of restrictions on sale to nonindustrial boilers.* EPA is proposing several restrictions on the sale of used oil fuel to residential, institutional, and commercial boiler owners. First, used oil mixed with hazardous waste (other than exempt hazardous waste generated by small quantity generators) cannot be sold to this market. Second, used oil fuel with a flashpoint of less than 100° F cannot be sold to the restricted market. And third, used oil fuel sold to the restricted market must have less than specified concentrations of arsenic, cadmium, chromium, lead, and PCBs, as defined by the used oil fuel specification. In addition, total chlorine would be limited by the presumption of mixing chlorinated wastes.

The facilities currently selling used oil fuel directly to the restricted market would, under today's proposal, have to undertake special procedures in order to continue these sales. Before selling to the restricted market, the distributor would have to ensure that the used oil fuel met all of the criteria described above. In general, the facilities currently selling to the restricted market have only limited treatment capabilities. These facilities have been blending used oil and virgin fuel oil; this treatment method does not remove contaminants and it is not clear how many operators can economically produce used oil fuel that meets the specification. EPA expects that under today's proposal most of the facilities currently selling used oil/virgin fuel oil blends to the restricted market would follow one of two possible courses: (1) They would

continue to accept off-specification used oil fuel but would resell it only to the industrial boiler market; or (2) they would accept only used oil fuel that already met the specification (or that they could blend down to meet the specification) and would continue sales of blended oils to the restricted market.

Used oil processors would either have to segregate used oils low in metals, or process or blend the used oil to reduce the concentration of these contaminants in order to supply distributors selling to the nonindustrial market. It is not clear how much "clean" (specification) used oil fuel would be produced by these practices. Current used oil collection practice is to pick up used oil from many diverse sources without segregation. Processors with their own vehicles could segregate clean oils to some extent, depending on their fleet and tank capacity. The common treatment methods employed in the used oil recycling industry do not remove the contaminants included in the proposed specification to any significant degree. An exception is that dehydration (the stripping of water and low oiling hydrocarbons through heating), which is practiced by some processors and rerefiners, does produce a light fuel stream which is low in metals. (However, if chlorinated solvents are present in incoming used oil, this fuel stream will be high in chlorine.)⁹³ EPA expects that it may not be economically feasible to blend some used oils to meet the specification for arsenic, cadmium, chromium and, particularly, lead. The only process that removes metals to the degree necessary to meet the proposed specification is distillation. Distillation is currently employed by only a handful of facilities; and these facilities use distillation to produce lubricants, not fuels.

If used oil fuel, either segregated or treated, is to be sold as specification oil, processors will also have to make arrangements for analysis. Neither processors nor distributors typically have laboratory capabilities on site that could show compliance with today's proposed specification; however, contract laboratories do offer services for the parameters in the specification.

⁹³ The used oil fuel produced would be subject to regulation as hazardous waste fuel if it is known that the used oil feedstock contained hazardous waste (other than exempt small quantity generator hazardous waste), or if the used oil fuel itself contained more than 4000 ppm total chlorine and the processor could not demonstrate that the used oil feedstock did not contain hazardous waste (other than exempt small quantity generator hazardous waste).

As indicated in the "Cost Data" section of this preamble, EPA estimates that a facility could incur a cost of about \$4240 per year due to today's proposed rules, which could add about 1 cent per gallon to the cost of used oil fuel (exclusive of costs that may be incurred for additional processing or blending to meet the specification).

Despite the difficulties described above in producing a specification fuel product from some used oils, it can be expected that some processors would produce a specification fuel product and they would still be able to enter into long-term agreements with distributors selling to the nonindustrial markets. Processors who cannot produce such a fuel would either have to market their fuel directly to industrial users, or enter into agreements with distributors servicing the industrial market.

3. National Scale Impacts. Based on the discussions above, EPA has concluded that under today's proposed specification a significant portion of the used oil fuel currently being sold to the residential, institutional, and commercial market would no longer be sold to this market. EPA estimates that as much as 100 million gallons of used oil is sold to this market annually. Even if all of this total is no longer sold to the restricted market, EPA believes that alternative uses exist and that no used oil would be disposed of due to today's proposed rules. One alternative use is the industrial fuel market. EPA estimates that about 500 of the 600 million gallons of used oil fuel burned each year is burned in industrial boilers. In 1975, the industrial fuel market consumed over 5 billion gallons of residual fuel oil. The 100 million gallons of used oil fuel potentially displaced by today's proposal could easily be absorbed by the industrial fuel market. The other alternative use for used oil is as a feedstock for rerefining. Used automotive oil, which would be significantly affected by today's proposed lead specification, is a very desirable feedstock for rerefiners. To the extent the used oil fuel market is restricted by today's proposal, rerefiners should be able to obtain more used oil as feedstock. (Rerefiners are currently not operating at full capacity. A major reason for this is that due to the great demand for used oil as fuel, they are unable to obtain sufficient feedstock at prices low enough to produce competitively-priced lubricants.)

In summary, EPA has determined that today's proposed rules would not discourage the recycling or reuse of used oil. Less used oil would be sold to nonindustrial fuel users, but that oil

should be sold to industrial fuel users or to rerefiners.

XIII. Solicitation of Public Comment and Announcement of Public Hearings

The Agency invites comment on any and all aspects of this proposed regulation. EPA specifically requests comment on issues including the following: The used oil fuel specification parameters and allowable levels, including in particular, the lead specification; the total chlorine level selected for the rebuttable presumption of mixing chlorinated hazardous waste with used oil; risks posed by used oil space heaters and the practicality of control options; prohibiting the burning of hazardous waste and off-specification used oil in very small industrial boilers; and, exemption from the prohibition on burning in nonindustrial boilers of "ignitable-only" hazardous waste fuel with a flash point greater than 100° F.

In addition, the Agency requests comments on the following effective dates for the final rule. Given that the final rulemaking is scheduled to be published in the **Federal Register** in late 1985, the Agency intends to expedite implementation of the rule to make the requirements effective for as much of the 1985-86 heating season as possible. Winter is the prime burning season for waste fuels and risks are highest at that time. The following effective dates will expedite implementation while allowing time for the regulated community to comply with the requirements and the Agency and the States to administer the rule.

1. Prohibitions. The following prohibitions would be effective 10 days after publication of the final rule in the **Federal Register**: (a) Prohibition on marketing hazardous waste fuel and off-specification used oil fuel to owners and operators of nonindustrial boilers (see §§ 266.31(a)(2) and 266.41(a)(2)); and (b) prohibition on burning hazardous waste fuel and off-specification used oil fuel in nonindustrial boilers (see §§ 266.31(b) and 266.41(b)).

2. Notification. Hazardous waste fuel and off-specification used oil fuel marketers and burners would have 30 days after publication of the final rule in the **Federal Register** to notify regarding their waste-as-fuel activities (see §§ 266.34(b), 266.35(b), 266.42(b)(2), 266.43(b)(3) and 266.44(b)).

3. Storage Controls. The storage controls for hazardous waste fuels (see §§ 266.34(c) and 266.35(c)) would be effective 180 days after publication of the final rule in the **Federal Register**. We believe it is not practical to shorten this effective date given that owners and operators may be required to prepare

permit applications, develop plans and procedures for training, emergency response, etc, and, in some cases, complete physical changes to facilities (e.g., fencing, signs).

4. Other Provisions. All other provisions (e.g., manifest and invoice requirements, used oil analyses, recordkeeping) would be effective 90 days after publication of the final rule in the **Federal Register**.

The Agency will hold the following public hearings:

February 15, 1985

U.S. EPA, 26 Federal Plaza, Conference Room 305, New York, New York 10278

February 21, 1985

Ramada Inn Hobby Airport West,* 7777 Airport Boulevard, Houston, Texas 777061 (713) 644-1261

February 25, 1985

Torrance Marriott,* 3635 Fashion Way, Torrance, California 90503 (213) 316-3636

The hearings will begin at 9:30 a.m. (registration at 9:00 a.m.) and will end at 4:30 p.m., unless concluded earlier. EPA encourages all interested persons to attend the public hearings. If you would like to present an oral statement at one of the hearings, please notify in writing, Ms. Geraldine Wyer, Office of Solid Waste (WH-562), U.S. EPA Washington, D.C. 20460.

Oral and written statements may be submitted at the public hearings. Persons who wish to make oral presentations must restrict their presentations to 10 minutes and are encouraged to have written copies of their complete comments for inclusion in the official record.

XIV. List of subjects in 40 CFR Part 266

Hazardous materials.

Dated: January 2, 1985.

William D. Ruckelshaus,
Administrator.

It is proposed to amend 40 CFR Part 266 by adding Subparts D and E to read as follows. Conforming revisions to 40 CFR 261.6 would also be required but are not presented here given that the Agency is in the process of promulgating extensive revisions to that section. (See proposal to revise § 261.6 in 48 FR 14472 (April 4, 1983).)

*Hotel rooms have been blocked for the convenience of attendees requiring overnight accommodations. When making reservations, please indicate you are attending the U.S. EPA public hearing.

PART 266—STANDARDS FOR THE MANAGEMENT OF SPECIFIC WASTES AND SPECIFIC TYPES OF FACILITIES

* * * * *

Subpart D—Hazardous Waste Burned for Energy Recovery

Sec.

266.30 Applicability.

266.31 Prohibitions.

266.32 Standards applicable to generators who burn or market hazardous waste fuel.

266.33 Standards applicable to transporters of hazardous waste fuel.

266.34 Standards applicable to marketers of hazardous waste fuel.

266.35 Standards applicable to burners of hazardous waste fuel.

Appendix to Subpart D—Form—Notification to EPA of RCRA Subtitle C Activity (EPA Form 8700-12 (Revised))

Subpart E—Used Oil Burned for Energy Recovery

Sec.

266.40 Applicability.

266.41 Prohibitions.

266.42 Standards applicable to generators who burn or market used oil fuel.

266.43 Standards applicable to marketers of used oil fuel.

266.44 Standards applicable to burners of off-specification used oil fuel.

Appendix to Subpart E—Form—Notification to EPA of RCRA Subtitle C Activity (EPA Form 8700-12 (Revised))

Authority: Sections 1006, 2002(a), 3001, 3002, 3003, 3004, 3005, 3007, 3010, and 3014 of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act of 1976 (RCRA); the Quiet Communities Act of 1978; the Solid Waste Disposal Act Amendments of 1980; the Used Oil Recycling Act of 1980; and the Hazardous and Solid Waste Amendments of 1984 (42 U.S.C. 6905, 6912(a), 6921, 6922, 6923, 6924, 6925, 6927, 6930, and 6932).

Subpart D—Hazardous Waste Burned for Energy Recovery

§ 266.30 Applicability.

(a) The regulations of this subpart apply to persons who manage hazardous waste that is burned for energy recovery in any boiler or industrial furnace that is not regulated under Subpart O of Part 264 or 265 of this chapter, except as provided by paragraph (b) of this section. Such hazardous waste is termed "hazardous waste fuel". Hazardous waste fuel includes any fuel produced from hazardous waste by processing, blending, or other treatment.

(b) The following hazardous waste is not subject to regulation under this subpart:

(1) Used oil burned for energy recovery that is also a hazardous waste solely because it exhibits a characteristic of hazardous waste

identified in Subpart C of Part 261 of this chapter, provided it is not mixed with a hazardous waste. Such used oil is subject to regulation under Subpart E of Part 266 rather than this subpart;

(2) Hazardous waste that is exempt from regulation under § 261.4 of this chapter and hazardous waste that is subject to the special requirements for small quantity generators under § 261.5 of this chapter.

§ 266.31 Prohibitions.

(a) A person may market hazardous waste fuel only:

(1) To persons who have notified EPA of their hazardous waste fuel activities under Section 3010 of RCRA and have an EPA identification number; and

(2) If the fuel is burned, to persons who burn the fuel in boilers or furnaces identified in paragraph (b) of this section.

(b) Hazardous waste fuel may be burned for energy recovery in only the following boilers or furnaces:

(1) Industrial furnaces;

(2) Industrial boilers used to produce electric power, steam, or heated or cooled air or other gases or fluids for use in a manufacturing process; or

(3) Utility boilers used to produce electric power, steam, or heated or cooled air or other gases or fluids for sale.

§ 266.32 Standards applicable to generators who burn or market hazardous waste fuel.

(a) Generators who send hazardous waste to a marketer are subject to Part 262 of this chapter.

(b) Generators who market hazardous waste fuel to a burner are subject to Part 262 of this chapter and the requirements for marketers under § 266.34.

(c) Generators who burn hazardous waste fuel on site are subject to Part 262 of this chapter and to the requirements for burners under § 266.35.

§ 266.33 Standards applicable to transporters of hazardous waste fuel.

Transporters of hazardous waste fuel are subject to regulation under Part 263 of this chapter.

§ 266.34 Standards applicable to marketers of hazardous waste fuel.

Persons who market hazardous waste fuel are termed "marketers", and are subject to the following requirements:

(a) *Prohibitions.* The prohibitions under § 266.31(a);

(b) *Notification.* Notification requirements under Section 3010 of RCRA for hazardous waste fuel activities. Upon notification, an EPA identification number will be issued. EPA form 8700-12, as revised, may be

used to notify EPA of waste-as-fuel activities (See the Appendix to this subpart). Even if a marketer has previously notified EPA of his hazardous waste management activities and obtained an EPA identification number, he must renotify to identify his hazardous waste fuel activities;

(c) *Storage.* The applicable provisions of § 262.34, and Subparts A through L of Part 264, Subparts A through L of Part 265, and Part 270 of this chapter;

(d) *Off-site shipment.* The standards for generators in Part 262 of this chapter when a marketer initiates a shipment of hazardous waste fuel;

(e) *Required notices.* (1) Before a marketer initiates the first shipment of hazardous waste fuel to a burner or another marketer, he must obtain a one-time written and signed notice from the burner or marketer certifying that:

(i) The burner or marketer has notified EPA under Section 3010 of RCRA and identified his waste-as-fuel activities; and

(ii) If the recipient is a burner, the burner will burn the hazardous waste fuel only in a boiler or industrial furnace identified in § 266.31(b).

(2) Before a marketer accepts the first shipment of hazardous waste fuel from another marketer, he must provide the other marketer with a one-time written and signed certification that he has notified EPA under Section 3010 of RCRA and identified his hazardous waste fuel activities; and

(f) *Recordkeeping.* In addition to the applicable recordkeeping requirements of Parts 262, 264, and 265 of this chapter, a marketer must keep a copy of each certification notice he receives or sends for three years from the date he last engages in a hazardous waste fuel marketing transaction with the person who sends or receives the certification notice.

§ 266.35 Standards applicable to burners of hazardous waste fuel.

Owners and operators of furnaces and boilers identified in § 266.31(b) that burn hazardous waste fuel are "burners" and are subject to the following requirements:

(a) *Prohibitions.* The prohibitions under § 266.31(b);

(b) *Notification.* Notification requirements under Section 3010 of RCRA for hazardous waste fuel activities. Upon notification, an EPA identification number will be issued. EPA form 8700-12, as revised, may be used to notify EPA of waste-as-fuel activities (see the Appendix to this subpart). Even if a burner has previously notified EPA of his hazardous waste

management activities and obtained an EPA identification number, he must renotify to identify his hazardous waste fuel activities;

(c) *Storage.* (i) For short term accumulation by generators who burn their hazardous waste fuel on site, the applicable provisions of § 262.34 of this chapter;

(ii) For existing storage facilities, the applicable provisions Subparts A through L of Part 265, and Part 270 of this chapter; and

(iii) For new storage facilities, the applicable provisions of Subparts A through L of Part 264, and Part 270 of this chapter;

(c) *Required notices.* Before a burner accepts the first shipment of hazardous waste fuel from a marketer, he must provide the marketer a one-time written and signed notice certifying that:

(i) He has notified EPA under Section 3010 of RCRA and identified his waste-as-fuel activities; and

(ii) He will burn the fuel only in a boiler or furnace identified in § 266.31(b); and

(e) *Recordkeeping.* In addition to the applicable recordkeeping requirements of Parts 264 and 265 of this chapter, a burner must keep a copy of each certification notice that he sends to a marketer for three years from the date he last receives hazardous waste fuel from that marketer.

Appendix to Subpart D—Form— Notification to EPA of RCRA Subtitle C Activity (EPA Form 8700-12 (Revised))

Subpart E—Used Oil Burned for Energy Recovery

§ 266.40 Applicability.

(a) The regulations of this subpart apply to persons who manage used oil that is burned for energy recovery in any boiler or industrial furnace that is not regulated under Subpart O of Part 264 or Part 265 of this chapter, except as provided by paragraphs (c) and (e) of this section. Such used oil is termed "used oil fuel". Used oil fuel includes any fuel produced from used oil by processing, blending, or other treatment.

(b) "Used oil" means any oil that has been refined from crude oil, used, and, as a result of such use, is contaminated by physical or chemical impurities.

(c) Except as provided by paragraph (d) of this section, used oil fuel that is mixed with a hazardous waste is subject to regulation as hazardous waste fuel under Subpart D of Part 266. Used oil containing more than 4000 ppm total chlorine is presumed to be a hazardous waste because it is mixed with chlorinated hazardous waste listed in Subpart D of Part 261 of this chapter.

Persons may rebut this presumption by demonstrating that the used oil does not contain hazardous chlorinated spent solvents (EPA Hazardous Wastes F001 and F002) or any other chlorinated hazardous waste.

(d) Used oil fuel is subject to regulation under this subpart rather than as hazardous waste fuel under Subpart D of Part 266 if it is a hazardous waste solely because it:

(1) Exhibits a characteristic of hazardous waste identified in Subpart C of Part 261 of this chapter, provided that it is not mixed with a hazardous waste; or

(2) Contains only hazardous waste generated by a person subject to the special requirements for small quantity generators under § 261.5 of this chapter.

(e) Used oil fuel is subject to regulation under this subpart only if it exceeds any of the allowable levels of the constituents and properties in the specification shown in the following table, and provided that it is not mixed with hazardous waste other than small quantity generator hazardous waste, as provided by paragraph (d)(2) of this section. Used oil fuel that does not meet the specification is termed "off-specification". Used oil fuel that meets the specification is not subject to regulation under this subpart.

USED OIL FUEL SPECIFICATION ¹

Constituent/property	Allowable level
Arsenic.....	5 ppm maximum.
Cadmium.....	2 ppm maximum.
Chromium.....	10 ppm maximum.
Lead.....	10-100 ppm maximum. ²
PCBs.....	50 ppm maximum. ³
Flash Point.....	100° F minimum.

¹ The specification applies only to used oil that is not mixed with a hazardous waste other than small quantity generator hazardous waste exempt from full regulation under § 261.5. Used oil containing more than 4000 ppm total chlorine is considered a hazardous waste. (See § 266.40(c).)

² Level¹ to be selected from range of 10 to 100 ppm for promulgation.

³ Used oil containing 50 ppm or more PCBs is subject to regulation as a waste PCB under Part 761 of this chapter. Used oil containing less than 50 ppm of PCBs because of dilution is also subject to regulation as a waste PCB. (See § 761.1(b).)

§ 266.41 Prohibitions.

(a) A person may market off-specification used oil fuel for energy recovery only:

(1) To persons who have notified EPA of their used oil fuel activities stating the location and general description of such activities, and who have an EPA identification number; and

(2) If the used oil fuel is burned, to persons who burn the used oil in a boiler or furnace identified in paragraph (b) of this section.

(b) Off-specification used oil fuel may be burned for energy recovery in only the following boilers or furnaces;

(1) Industrial furnaces:

(2) Utility boilers used to produce electric power, steam, or heated or cooled air or other gases or fluids for sale;

(3) Industrial boilers used to produce electric power, steam, or heated or cooled air or other gases or fluids for use in a manufacturing process; or

(4) Used oil-fired space heaters provided that:

(i) The heater burns only used oil that the owner or operator generates on site;

(ii) The heater is designed to have a maximum capacity of not more than 0.5 million Btu per hour; and

(iii) The combustion gases from the heater are vented to the ambient air.

§ 266.42 Standards applicable to generators who burn or market used oil fuel.

(a) Generators of used oil are not subject to regulation under this subpart unless they burn the used oil fuel for energy recovery or market the used oil fuel directly to a person who burns the fuel for energy recovery.

(b) Generators who burn off-specification used oil fuel are subject to the following requirements:

(1) *Prohibitions.* The prohibitions under § 266.41(b); and

(2) *Notification.* Notification to EPA stating the location and general description of used oil fuel activities, except that generators who burn their used oil in used oil-fired space heaters under the provisions of § 266.41(b)(4) are exempt from these notification requirements. Upon notification, an EPA identification number will be issued. EPA form 8700-12, as revised, may be used to notify EPA of waste-as-fuel activities (see the Appendix to this subpart). Even if a burner has previously notified EPA of his hazardous waste management activities under Section 3010 of RCRA and obtained an EPA identification number, he must renotify to identify his used oil fuel activities.

(c) Generators who market off-specification used oil fuel directly to the person who burns it are subject to the requirements of § 266.43 for marketers, unless the burner is a used oil fuel marketer who burns some of the used oil for purposes of processing or other treatment to produce used oil fuel, and who markets such used oil fuel.

§ 266.43 Standards applicable to marketers of used oil fuel.

(a) Persons who market used oil fuel are termed "marketers." A marketer is subject to the requirements of this section if:

(1) He is a used oil generator or transporter who markets used oil fuel

directly to a burner, unless the burner is a used oil fuel marketer who burns some of the used oil for purposes of processing or other treatment to produce used oil fuel, and who markets such used oil fuel;

(2) He is the owner or operator of a facility that stores or treats used oil received directly from a generator, or received directly from a transporter who received used oil directly from a generator; or

(3) He receives off-specification used oil fuel from another marketer.

(b) Marketers identified in paragraph (a) of this section are subject to the following requirements:

(1) *Analysis of fuel.* Used oil fuel must be managed as off-specification used oil fuel unless the marketer obtains analyses documenting that the used oil fuel meets the specification provided by § 266.40(e);

(2) *Prohibitions.* The prohibitions under § 266.41(a);

(3) *Notification.* Notification to EPA stating the location and general description of used oil fuel activities. Upon notification, an EPA identification number will be issued. EPA form 8700-12, as revised, may be used to notify EPA of waste-as-fuel activities (see the Appendix to this subpart). Even if a marketer has previously notified EPA of his hazardous waste management activities under Section 3010 of RCRA and obtained an EPA identification number, he must renotify to identify his used oil fuel activities;

(4) *Invoice system.* When a marketer initiates a shipment of off-specification used oil fuel, he must prepare and send the buyer an invoice containing the following information:

- (i) An invoice number;
- (ii) His own EPA identification number and the EPA identification number of the facility to receive the used oil fuel;
- (iii) The names and addresses of the shipping and receiving facilities;
- (iv) The quantity of used oil fuel to be delivered;

(v) The date(s) of shipment or delivery; and

(vi) The following statement: "This used oil does not meet the EPA used oil fuel specification provided in 40 CFR Part 266";

Note to paragraphs (b)(4) (i) through (vi) of this section: Used oil that meets the definition of combustible liquid (flash point below 200°F but at or greater than 100°F) or flammable liquid (flash point below 100°F) is subject to Department of Transportation Hazardous Materials Regulations at 49 CFR Parts 100-177.

(5) *Required notices.* (i) Before a marketer initiates the first shipment of off-specification used oil fuel to a burner or other marketer, he must obtain a one-time written and signed notice from the burner or marketer certifying that:

(A) The burner or marketer has notified EPA stating the location and general description of his used oil fuel activities; and

(B) if the recipient is a burner, the burner will burn the used oil fuel only in a boiler or furnace identified in § 266.41(b); and

(ii) Before a marketer accepts the first shipment of off-specification used oil from another marketer subject to the requirements of this section, he must provide the marketer with a one-time written and signed notice certifying that he has notified EPA of his used oil fuel activities; and

(6) *Recordkeeping.* A marketer who receives or initiates an invoice under the requirements of this section must keep a copy of each invoice for three years from the date the invoice is received or prepared. Marketers must also keep for three years copies of analyses of fuel required under paragraph (b)(1) of this section. In addition, a marketer must keep a copy of each certification notice that he receives or sends for three years from the date he last engages in a used oil fuel marketing transaction with the person who sends or receives the certification notice.

§ 266.44 Standards applicable to burners of off-specification used oil fuel.

Owners and operators of facilities that burn off-specification used oil fuel are "burners" and are subject to the following requirements:

(a) *Prohibition.* The prohibition under § 266.41(b);

(b) *Notification.* Notification to EPA stating the location and general description of used oil fuel activities, except that owners and operators of used oil-fired space heaters that burn off-specification used oil under the provisions of § 266.41(b)(4) are exempt from these notification requirements. EPA form 8700-12, as revised, may be used to notify EPA of waste-as-fuel activities (see the Appendix to this subpart). Upon notification, the burner will be issued an EPA identification number. Even if a burner has previously notified EPA of his hazardous waste management activities under Section 3010 of RCRA and obtained an EPA identification number, he must renotify to identify his used oil fuel activities;

(c) *Required notices.* Before a burner accepts the first shipment of used oil fuel from a marketer, he must provide the marketer a one-time written and signed notice certifying that:

- (1) He has notified EPA stating the location and general description of his used oil fuel activities; and
- (2) He will burn the used oil fuel only in a boiler or furnace identified in § 266.41(b); and

(d) *Recordkeeping.* A burner who receives an invoice under the requirements of this section must keep a copy of each invoice for three years from the date the invoice is received. In addition, he must keep a copy of each certification notice that he sends to a marketer for three years from the date he last receives used oil fuel from that marketer.

Appendix to Subpart E—Form—Notification To EPA or RCRA Subtitle C Activity (EPA Form 8700-12 (Revised))

BILLING CODE 6560-50-M

I.D. - FOR OFFICIAL USE ONLY													
6											7/A	C	
W											1		
8											13	14	15

VII. MODE OF TRANSPORTATION (transporters only - enter "X" in the appropriate box(es))

61 A. AIR 62 B. RAIL 63 C. HIGHWAY 64 D. WATER 65 E. OTHER (specify):

IX. FIRST OR SUBSEQUENT NOTIFICATION

Mark "X" in the appropriate box to indicate whether this is your installation's first notification of hazardous waste activity or a subsequent notification. If this is not your first notification, enter your installation's EPA I.D. Number in the space provided below.

A. FIRST NOTIFICATION B. SUBSEQUENT NOTIFICATION (complete item C)

C. INSTALLATION'S EPA I.D. NO.												

X. DESCRIPTION OF HAZARDOUS WASTES (continued from front)

A. HAZARDOUS WASTES FROM NON-SPECIFIC SOURCES. Enter the four-digit number from 40 CFR Part 261.31 for each listed hazardous waste from non-specific sources your installation handles. Use additional sheets if necessary.

1	2	3	4	5	6
23 - 26	23 - 26	23 - 26	23 - 26	23 - 26	23 - 26
7	8	9	10	11	12
23 - 26	23 - 26	23 - 26	23 - 26	23 - 26	23 - 26

B. HAZARDOUS WASTES FROM SPECIFIC SOURCES. Enter the four-digit number from 40 CFR Part 261.32 for each listed hazardous waste from specific industrial sources your installation handles. Use additional sheets if necessary.

13	14	15	16	17	18
23 - 26	23 - 26	23 - 26	23 - 26	23 - 26	23 - 26
19	20	21	22	23	24
23 - 26	23 - 26	23 - 26	23 - 26	23 - 26	23 - 26
25	26	27	28	29	30
23 - 26	23 - 26	23 - 26	23 - 26	23 - 26	23 - 26

C. COMMERCIAL CHEMICAL PRODUCT HAZARDOUS WASTES. Enter the four-digit number from 40 CFR Part 261.33 for each chemical substance your installation handles which may be a hazardous waste. Use additional sheets if necessary.

31	32	33	34	35	36
23 - 26	23 - 26	23 - 26	23 - 26	23 - 26	23 - 26
37	38	39	40	41	42
23 - 26	23 - 26	23 - 26	23 - 26	23 - 26	23 - 26
43	44	45	46	47	48
23 - 26	23 - 26	23 - 26	23 - 26	23 - 26	23 - 26

D. LISTED INFECTIOUS WASTES. Enter the four-digit number from 40 CFR Part 261.34 for each listed hazardous waste from hospitals, veterinary hospitals, medical and research laboratories your installation handles. Use additional sheets if necessary.

49	50	51	52	53	54
23 - 26	23 - 26	23 - 26	23 - 26	23 - 26	23 - 26

E. CHARACTERISTICS OF NON-LISTED HAZARDOUS WASTES. Mark "X" in the boxes corresponding to the characteristics of non-listed hazardous wastes your installation handles. (See 40 CFR Parts 261.21 - 261.24.)

1. IGNITABLE (D001) 2. CORROSIVE (D002) 3. REACTIVE (D003) 4. TOXIC (D004 - D017)

XI. CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

SIGNATURE	NAME & OFFICIAL TITLE (type or print)	DATE SIGNED

EPA Form 8700-12 (6-80) REVERSE

BILLING CODE 6560-50-C

PREVIOUS EDITIONS OBSOLETE

Instructions for Filing "Notification to EPA of RCRA Subtitle C Activity" (EPA Form 8700-12)**I. Who Must File**

The Resource Conservation and Recovery Act (RCRA) and regulations implementing the Act as promulgated at 40 CFR Parts 260-266 require persons engaging in the following activities to notify EPA of their activity:

A. Persons who generate, transport, or own or operate facilities that treat, store, or dispose of hazardous waste destined for incineration or disposal;

B. Persons who generate, transport, or store certain hazardous wastes that are destined for use, reuse, or reclamation;

C. Persons who market or burn hazardous waste for use as a fuel for energy recovery; and

D. Persons who market or burn used oil for use as a fuel for energy recovery.

This includes individuals, trusts, firms, joint stock companies, corporations (including government corporations), partnerships, associations, states, municipalities, commissions, interstate bodies and Federal agencies. If you engage in a waste management activity outlined above without filing a notification, you may be subject to civil and criminal penalties.

Persons who own or operate underground injection wells that dispose of hazardous waste and who must notify under RCRA are not required to submit a separate notification under the Safe Drinking Water Act. However, you are still required to fill out inventory and other forms required under the Safe Drinking Water Act. For further information, affected persons should consult the Chief, Water Supply Branch at the nearest EPA Regional Office.

II. How to Determine if You Handle a Subtitle C Regulated Material Subject to the Notification Requirement

Persons who generate, transport, treat, store, dispose of, use, re-use, or reclaim discarded material must determine if the material is solid waste subject to the Subtitle C hazardous waste regulations. In addition, persons who burn used oil or hazardous waste for energy recovery and who market used oil or hazardous waste for use as a fuel for energy recovery must determine if they are subject to the Subtitle C notification requirements for hazardous waste fuel and used oil fuel. These determinations can be made as follows:

A. Determine If You Handle a Hazardous Waste Subject to the Notification Requirements of 40 CFR Parts 260-266.

1. First, determine if you handle a solid waste. A solid waste is defined at 40 CFR 261.2 as any garbage, refuse, sludge or any other waste material (including materials that are used, re-used or reclaimed) which is not excluded under § 261.4(a).

2. Determine if the solid waste is a hazardous waste. A solid waste is hazardous if it is not excluded by § 261.4(b) and it meets the criteria of § 261.3(a)(2).

3. Determine if the hazardous waste is excluded from the notification requirement. The following hazardous wastes are exempt from the notification requirements:

a. *Small quantity generator hazardous wastes.* Hazardous waste generated by small quantity generators may be exempt from notification (and other) requirements under provisions of § 261.5.

b. *Hazardous wastes that are used, re-used, or reclaimed.* Certain hazardous wastes that are used, re-used, or reclaimed are exempt from notification (and other) requirements under provisions of § 261.6.

c. *Other exemptions.* Waste generated within a manufacturing system is exempt from the notification requirements under provisions of § 261.4(c). As explained in § 261.4(d), a sample of solid waste which is collected for the sole purpose of testing to determine its characteristics or composition is exempt from the notification (and other) requirements.

B. Determine If You Must Notify Of Your Waste Fuel Activities Because You Market Or Burn Hazardous Waste Fuel Or Used Oil Fuel For Energy Recovery.

Section 261.6 does not exempt from notification (and other) requirements persons who recycle hazardous waste by marketing or burning hazardous waste fuel for energy recovery. Hazardous waste fuel marketers and burners are required to notify EPA of their waste-as-fuel activities under provisions of Section 3010 of RCRA and rules promulgated under 40 CFR Part 266, Subpart D. In addition, marketers and burners of used oil fuel are required to notify EPA of their waste-as-fuel activities under authority of Section 3014 of RCRA and rules promulgated at 40 CFR Part 266, Subpart E. For notification purposes, hazardous waste fuel and used oil fuel are considered to be burned for energy recovery if they are burned in a boiler or industrial furnace that is not regulated as a hazardous waste incinerator under Subpart O of 40 CFR Parts 264 and 265.

Even if a person has previously notified EPA of his hazardous waste management activity and obtained an EPA identification number, he must re-notify to identify his waste-as-fuel activities. Any person who markets or burns these materials must notify EPA within 30 days of promulgation of final notice requiring notification, unless they are specifically exempted below. (EPA has determined that these exemptions are consistent with the purpose and intent of the Act.)

Persons exempted from the waste-as-fuel notification:

1. *Persons who burn used oil fuel in nonindustrial boilers.* These persons need not notify because rules promulgated at 40 CFR Part 266, Subpart E permit burning of used oil fuel in nonindustrial boilers (with one exception) only if it meets a specification (and is not mixed with hazardous waste other than small quantity generator hazardous waste). Used oil fuel that meets the specification is exempt from regulation. However, off-specification used oil fuel may be burned in used oil-fired space heaters that are vented to the ambient air. Persons who burn used oil fuel in such units are exempt from the notification requirements of Subpart E (provided the used oil is not mixed with hazardous waste).

Subpart D of 40 CFR Part 266 prohibits burning of hazardous waste fuel in nonindustrial boilers.

2. *Persons who generate hazardous waste or used oil and send the material off site to a person who does not burn it for energy recovery.* These generators are exempt from the waste-as-fuel notification requirements because they are not marketing a fuel. (However, all hazardous waste generators are subject to the standard notification requirements for generators.) In such situations, it is the recipient who makes the decision to market the materials as a fuel, typically after processing or blending. (Used oil generators who send their oil to a person who processes or blends it to produce used oil fuel and who incidentally burns used oil to provide energy for the processing or blending are also exempt from the notification requirement. This is because such recipients are considered to be primarily fuel producers and marketers, and only incidental burners).

III. What Information Must Be Filed

When filing a notification, you must identify the type of regulated wastes that you handle and give a general description of your activity, including its location. You may submit all this information by completing the enclosed EPA Form 8700-12, "Notification to EPA of RCRA Subtitle C Activity".

IV. How Many Forms Should Be Filed

You need submit only one Notification Form per site or location, provided that you describe all the activities at that site or location. If you conduct a waste activity (see Section I) at more than one site or location, you must submit a *separate* form for each site or location.

If you transport waste as discussed in Section I, and do not generate, treat, store or dispose of these wastes, you may submit one form which covers all transportation activities your company conducts. This form should be submitted to the EPA Regional Office that serves the area where your company has its headquarters or principal place of business. However, if you are a transporter who also generates, treats, stores or disposes of these regulated wastes, you must complete and submit separate Notification Forms to cover each installation.

V. When To File

1. *Within 90 days of Regulating a Waste You Manage:* From time to time EPA may subject additional hazardous wastes to the notification requirement by expanding the list or characteristics of hazardous waste, or by deleting an existing exemption from the notification requirement. These changes will be codified in 40 CFR Part 261. If as a generator or transporter you were not required to notify previously, but you handle wastes that are newly subject to the notification requirement, you must file a notification covering those wastes within 90 days after the amendment is published. Ordinarily, facility owners/operators may submit Part A of the RCRA Permit obligations. However, hazardous waste fuel and used oil fuel marketers and burners must notify of their waste-as-fuel activities within 90 days of promulgation of final notice requiring notification of waste-as-fuel activities.

2. *New Generators and Transporters:* As discussed in 40 CFR Part 262, a generator must not treat, store, dispose of, transport, or offer for transportation, hazardous waste without having received an EPA Identification Number from the Administrator. Similarly, if you desire to transport hazardous waste and have not previously filed a notification as a transporter, you must comply with the regulations published under 40 CFR Part 263 before you move any hazardous waste. Transporters need not complete the reverse side of the Notification Form as they may not know which wastes they will be handling.

3. *New Treatment, Storage or Disposal Facilities:* If you are an owner or operator of a hazardous waste treatment, storage, or disposal facility (subject to the permit requirements of Parts 264, 265, or 266) that was not in existence on November 19, 1980, you will not be allowed to begin hazardous waste activity until you obtain a RCRA Permit. (To obtain a permit you must file Parts A and B of the RCRA Permit Application).

VI. Confidential Business Information

All information you submit in a notification can be disclosed to the public, according to the Freedom of Information Act and EPA Freedom of Information Regulations. Because notification information is very general, EPA believes it is unlikely that any information in your notification could qualify to be protected confidentiality by printing the word "confidential" on both sides of the Notification Form and on any attachments. In addition, at the time of notification, you must submit written answers to each of the following questions:

1. Which portions of the information do you claim are entitled to confidential treatment?
2. How long do you want this information treated as confidential?

3. What measures have you taken to guard against undesired disclosure of the information to others?

- 4. To what extent has the information been disclosed to others, and what precautions have you taken in connection with that disclosure?

5. Has EPA or any other Federal Agency made a pertinent confidentiality determination? (If so, include a copy of this determination or reference to it, if available).

6. Will disclosure of the information be likely to substantially harm your competitive position? If so, what would the harm be, and why should it be viewed as substantial? What is the relationship between disclosure and the harm?

VII. Where To File

Notifications should be mailed to the EPA Regional Office that serves the area where your regulated waste activity is located. The mailing addresses for the EPA Regional Offices are listed below:

EPA region	Area served	Mailing address
I.....	CT, ME, MA, RI, VT, NH.	EPA Region I, State Programs Branch, P.O. Box 8748, Boston, MA 02203.
II.....	NJ, NY, VI, PR.....	EPA Region II, Permits Administration Branch, 26 Federal Plaza, New York, NY 10278.
III.....	DE, DC, MD, PA, VA, WV.	EPA Region III, Permits Branch, 6th and Walnut Streets, Philadelphia, PA 19106.
IV.....	AL, FL, GA, KY, MI, NC, SC, TN.	EPA Region IV, Waste Management Branch, 345 Courtland, N.E., Atlanta, GA 30365.

EPA region	Area served	Mailing address
V.....	IL, IN, MI, MN, OH, WI..	EPA Region V, Waste Management Branch, 230 S. Dearborn St. NE., Chicago, IL 60604.
VI.....	AR, LA, NM, OK, TX.....	EPA Region VI, Waste Programs Branch, 1203 Elm Street, First International Bldg., Dallas, TX 75270.
VII.....	IA, KS, MO, NE.....	EPA Region VII, Waste Management Branch, 324 E. 11th St., Kansas City, MO 64106.
VIII.....	CO, MT, ND, SD, UT, WY.	EPA Region VIII, Waste Management Branch, 1860 Lincoln Street, Denver, CO 80295.
IX.....	AZ, CA, HI, NV, GU, American Samoa, Commonwealth of the Northern Marianas.	EPA Region IX (T-2-2), Waste Management Branch, 215 Fremont Street, San Francisco, CA 94105.
X.....	AL, ID, OR, WA.....	EPA Region X (M.S. 533), Waste Management Branch, 1200 6th Avenue, Seattle, WA 98101.

Line-By-Line Instructions For EPA Forms 8700-12

How To Complete This Form

Type using ELITE type or print in ink all terms except X(A), "Signature", leaving a blank box between words. When typing (with elite type), hit the space bar once between characters and three times between words. If you must use additional sheets, indicate clearly the number of the item on the form to which the information on the separate sheet applies.

Example:

I. NAME OF INSTALLATION																											
S	M	I	T	H		M	A	N	U	F	A	C	T	U	R	I	N	G		C	O	M	P	A	N	Y	
II. INSTALLATION MAILING ADDRESS																											
STREET OR P.O. BOX																											
P	O		B	O	X		8	7	1	9																	
CITY OR TOWN																				ST.		ZIP CODE					
U	r	b	a	n	a																I	L	6	1	8	0	1
III. LOCATION OF INSTALLATION																											
STREET OR ROUTE NUMBER																											
1	2	0	1			6	t	h		S	t	r	e	e	t												
CITY OR TOWN																				ST.		ZIP CODE					
U	r	b	a	n	a																I	L	6	1	8	0	1

US EPA ARCHIVE DOCUMENT

Items I Through III

NAME, MAILING ADDRESS, AND LOCATION OF INSTALLATION: Complete each line following directions above. If the mailing address and location of the installation are the same, print "SAME" in the "Street or Route No." boxes of item III.

Item IV

INSTALLATION CONTACT: Enter the title and business telephone number of the person who should be contacted regarding information submitted on this form.

Item V

OWNERSHIP: (A) Enter the name of the legal owner of the installation. Use additional sheets if necessary to list more than one owner. (B) Enter an "F" in the box if the installation is owned by a Federal Agency. Enter an "M" if the installation is not owned by a Federal Agency. An installation is Federally owned if the owner is the Federal Government, even if it is operated by a private contractor.

Item VI

TYPE OF WASTE ACTIVITY: HAZARDOUS WASTE ACTIVITY

Mark "X" in the appropriate box(es) to indicate the hazardous waste activity or activities at the installation. Hazardous waste generators and owners and operators of facilities for treating, storing or disposing of hazardous waste must mark item D if an injection well is located at their installation. An injection well is defined as any hole in the ground that is deeper than it is wide and that is used for the subsurface placement of fluids, INCLUDING SEPTIC TANKS. Persons who market or burn hazardous waste fuel must mark box #5 in this section, and the appropriate boxes in the Waste-As-Fuel section.

TYPE OF WASTE ACTIVITY: WASTE-AS-FUEL ACTIVITY

Mark an "X" in the appropriate box(es) to indicate whether you are (1) a generator who markets waste fuel directly to a burner; (2) a marketer other than a generator marketing directly to a burner; or (3) a burner of waste fuels. A person may be both a marketer and a burner. If you market or burn waste fuels, mark "X" in the appropriate box(es) to indicate the type of waste fuel handled.

Item VII

TYPE OF WASTE FUEL BURNING DEVICE: If you burn waste fuel for energy recovery in a device that is not regulated as a RCRA permitted hazardous waste incinerator (i.e., under Subpart O of 40 CFR Parts 264 or 265), mark "X" in the appropriate box(es) to identify the device(s).

Item VIII

MODE OF TRANSPORTATION: Complete this item only if you are a transporter of hazardous waste to indicate the mode(s) of transportation you use.

Item IX

FIRST OR SUBSEQUENT NOTIFICATION: A person is required to notify for each regulated waste management activity. Place an "X" in the appropriate box to indicate whether this is your first or a subsequent notification. If you have filed a previous notification, enter your EPA Identification Number in the boxes provided.

Item X

DESCRIPTION OF HAZARDOUS WASTE: You must read Title 40 CFR Part 261 in order to complete this item (see Appendix I). Part 261 identifies those solid wastes that EPA defines to be hazardous wastes. Part 261 identifies hazardous wastes in two ways:

(1) A number of hazardous wastes are listed by name in various tables and appendices. EPA has assigned a four-digit number to each waste that is listed to make it easier to identify the wastes.

(2) Part 261 also lists the general characteristics of hazardous wastes. EPA has also assigned a four-digit number to these characteristics.

As you will note, Item X on the form is divided into five sections. You should use Sections A through D to identify any listed hazardous wastes which you handle; use Section 3 to identify those characteristics of the nonlisted hazardous wastes which you handle. Hazardous waste fuel is a generic type of Hazardous waste. Thus, if you manage hazardous waste fuel, you must complete this section to identify the individual hazardous wastes that the fuel contains.

You should include in Sections A through E all hazardous wastes you handled during the three month period preceding the date of notification. If you occasionally handle a hazardous waste, but did not handle that waste during the three month period preceding the date of notification, you may also include that waste (or wastes) in Sections A through E.

If you are a new generator applying for an EPA Identification Number under the provisions of 40 CFR Part 262, you should describe the wastes which you believe you will be generating.

If you are a new transporter applying for an EPA Identification Number under the provisions of 40 CFR Part 263, you are not required to complete Item X.

The specific instructions for Sections A through E are:

SECTION A: If you handle hazardous wastes from the non-specific sources listed in

Part 261.31, enter the appropriate four-digit numbers in the boxes provided.

SECTION B: If you handle hazardous wastes from the specific industrial sources listed in Part 261.32, enter the appropriate four-digit numbers in the boxes provided.

SECTION C: If you handle any of the commercial chemical products or manufacturing intermediate or material listed in Part 261.33 as wastes, enter the appropriate four-digit numbers in the boxes provided.

Manufacturers may include the products or raw materials that can be reasonably anticipated to require treatment, storage or disposal as wastes from time to time even though you may not have handled them in the past three months.

SECTION D: If you handle any of the hazardous wastes from hospitals, veterinary hospitals, or medical and research laboratories listed in Part 261.34, enter the appropriate four-digit numbers in the boxes provided.

SECTION E: If you handle hazardous wastes which are not listed in Subpart D of Part 261, you should describe these wastes by the characteristics in Subpart C of Part 261. For purposes of notification, it is not necessary to use the four-digit numbers for each characteristic. Rather, you should place an "X" in the box next to the characteristic of those non-listed wastes which you handle.

Item XI

CERTIFICATION: This certification must be signed by the owner or operator or an authorized representative of your installation. An "authorized representative" is a person responsible for the overall operation of the facility—for example—a plant manager or superintendent, or a person of equivalent responsibility.

Definitions

The following definitions are provided to help clarify the notification requirements and to assist you in completing the Notification Form. If you need a more detailed discussion of the definitions you should obtain a copy of 40 CFR Part 260 from the EPA Regional Office serving your area.

ACT or RCRA means the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act of 1976, as amended, 42 U.S.C. Section 6901 et seq.

AUTHORIZED REPRESENTATIVE means the person responsible for the overall operation of the facility or an operational unit (i.e. part of a facility), e.g., the plant manager, superintendent or person of equivalent responsibility.

BOILER means an enclosed device using controlled flame combustion and having the following characteristics: (1) the unit has physical provisions for recovering and exporting energy in the form of steam, heated fluids, or heated gases; (2) the unit's combustion chamber and primary energy recovery section(s) are of integral design (i.e., they are physically formed into one manufactured or assembled unit); (3) the unit continuously maintains an energy recovery efficiency of at least 60 percent, calculated in terms of the recovered energy compared with the thermal value of the fuel; and (4) the unit exports and utilizes at least 75 percent of the

recovered energy, calculated on an annual basis (excluding recovered heat used internally in the same unit to, for example, preheat fuel or combustion air or drive fans or feedwater pumps).

BURNER means the owner or operator of a utility boiler, industrial boiler or industrial furnace that burns waste fuel for energy recovery and that is not regulated as an RCRA hazardous waste incinerator.

DISPOSAL means the discharge, deposit, injection, dumping, spilling, leaking, or placing of any solid waste or hazardous waste into or on any land or water so that such solid waste or hazardous waste or any constituent thereof may enter the environment or be emitted into the air or discharged into any waters, including ground waters.

DISPOSAL FACILITY means a facility or part of a facility at which hazardous waste is intentionally placed into or on any land or water, and at which waste will remain after closure.

EPA IDENTIFICATION (I.D.) NUMBER means the number assigned by EPA to each generator, transporter, and treatment, storage, or disposal facility.

EXISTING HAZARDOUS WASTE MANAGEMENT FACILITY or EXISTING FACILITY means a facility which was in operation or for which construction had commenced, as of November 19, 1980.

Construction had commenced if:

(1) The owner or operator had obtained all necessary Federal, State, and local preconstruction approvals or permits; and

(2)(i) A continuous physical, on-site construction program had begun; or

(ii) The owner or operator had entered into contractual obligations which cannot be cancelled or modified without substantial loss for construction of the facility to be completed within a reasonable time.

FACILITY Means all contiguous land, and structures, other appurtenances, and improvements on the land, used for treating, storing, or disposing of hazardous waste. A facility may consist of several treatment, storage, or disposal operational units (e.g., one or more landfills, surface impoundments, or combinations of them).

GENERATOR means any person, by site, whose act or process produces hazardous waste identified or listed in Part 261 of this chapter or whose act first causes a hazardous waste to become subject to regulation.

HAZARDOUS WASTE means a hazardous waste as defined in 40 CFR Part 261.

HAZARDOUS WASTE FUEL means hazardous waste, and any fuel produced by processing, blending, or other treatment of hazardous waste, that is burned for energy recovery in a boiler or industrial furnace that is not subject to regulation as a RCRA hazardous waste incinerator. However, the following hazardous waste fuels are subject to regulation as used oil fuels and should be considered used oil fuels for purposes of notification:

(1) Used oil fuel that is also a hazardous waste solely because it exhibits a characteristic of hazardous waste identified in Subpart C of 40 CFR Part 261, provided it is not mixed with hazardous waste; and

(2) Used oil fuel mixed with hazardous wastes generated by a small quantity

generator subject to the exemption provided by 40 CFR 261.5.

INDUSTRIAL BOILER means a boiler used to produce electric power, steam or heated or cooled air (or other fluids or gases) for use to operate equipment or drive chemical or other reactions in a manufacturing process where substances are transformed into products. A boiler used to provide space heating as well as energy for a manufacturing process is considered to be an industrial boiler.

INDUSTRIAL FURNANCE means any of the following enclosed devices that are integral components of manufacturing processes and that use controlled flame combustion to accomplish recovery of materials or energy: cement kilns, lime kilns, aggregate kilns, phosphate kilns, coke ovens, blast furnaces, smelting furnaces, refining furnaces, titanium dioxide chloride process oxidation reactors, and methane reforming furnaces (and other devices as the Administrator may add to this list).

MARKETER means a person who markets hazardous waste fuel or used oil fuel. However, generators and initial transporters (i.e., transporters who receive hazardous waste or used oil directly from generators) are considered marketers only if they market directly to a burner. Off-site waste fuel processors, blenders and distributors are also marketers.

NEW HAZARDOUS WASTE MANAGEMENT FACILITY means a facility which began operation, or for which construction commenced after October 21, 1976.

OPERATOR means the person responsible for the overall operation of a facility.

OWNER means a person who owns a facility or part of a facility.

STORAGE means the holding of hazardous waste for a temporary period, at the end of which the hazardous waste is treated, disposed of, or stored elsewhere.

TRANSPORTATION means the movement of hazardous waste by air, rail, highway, or water.

TRANSPORTER means a person engaged in the off-site transportation of hazardous waste by air, rail, highway, or water.

TREATMENT means any method, technique, or process, including neutralization, designed to change the physical, chemical, or biological character or composition of any hazardous waste so as to neutralize such waste, or so as to recover energy or material resources from the waste, or so as to render such waste nonhazardous, or less hazardous; safer to transport, store or dispose of; or amenable for recovery, amenable for storage, or reduced in volume.

USED OIL means any oil that has been refined from crude oil, used, and as a result of such use, is contaminated by physical or chemical impurities. Wastes that contain oils that have not been used (e.g., virgin fuel oil storage tank bottom clean-out wastes) are not used oil unless they are mixed with used oil.

USED OIL FUEL means any used oil burned for energy recovery, including any fuel produced from used oil by processing, blending or other treatment, and that does not contain hazardous waste other than that generated by a small quantity generator and

exempt from regulation as hazardous waste under provisions of 40 CFR 261.5. Used oil fuel may itself exhibit a characteristic of hazardous waste and remain subject to regulation as used oil fuel provided it is not mixed with hazardous waste (other than exempt small quantity generator hazardous waste).

UTILITY BOILER means a boiler that is used to produce electricity, steam or heated or cooled air or other gases or fluids for sale.

WASTE FUEL means hazardous waste fuel or used oil fuel.

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