

**ENVIRONMENTAL PROTECTION  
AIR QUALITY REGULATION**

**Used Oil Combustion**

**Proposed Amendment: N.J.A.C. 7:27-8.6**

**Proposed New Rule: N.J.A.C. 7:27-20**

Authorized By: Robert C. Shinn, Jr. Commissioner, Department of Environmental Protection.

Authority: N.J.S.A. 13:1B-3, 13:1D-9, and 26:2C-1 et seq.

DEP Docket Number: 25-98-09/673

Proposal Number:

A **public hearing** concerning this proposal will be held on December 9, 1998 at 10:00 A.M. at:

New Jersey Department of Environmental Protection  
Hearing Room, First Floor  
401 East State Street  
Trenton, New Jersey 08625

Submit written comments by December 16, 1998 to :

Ann Zeloof, Esq.  
Attention: Docket Number: 25-98-09/673  
New Jersey Department of Environmental Protection  
Office of Legal Affairs  
P.O. Box 402  
Trenton, New Jersey 08625-0402

Written comments may also be submitted at the public hearing. As a courtesy to the Department, it is requested (but not required) that anyone submitting written comments also include a diskette containing an electronic version of the written comments with the submission. Also, as a courtesy to the hearing stenographer, it is requested (but not required) that anyone submitting oral testimony at the public hearing provide a copy of any prepared statements to the stenographer at the hearing.

Copies of this proposal can be downloaded electronically from the Department's Electronic Bulletin Board System or from the World Wide Web. The compressed file, USED OILP.ZIP, contains the proposal in both WordPerfect® v.6.1 format and Adobe® Acrobat® Portable Document Format and is located in file area #35 (Air: Props, Adopts, & Notices). The data line number for the Bulletin Board is (609) 292-2006 (Data bit:8; Parity: N; Stop bit: 1) . On the World Wide Web, this document can be accessed at <http://www.state.nj.us/dep/aqm/usedoilp.htm>. Copies of this proposal may also be requested by calling the Department's Air Quality Permitting Program at 609-984-0491.

The proposed rules will become operative 60 days after adoption by the Commissioner (see N.J.S.A. 26:2C-8).

The agency proposal follows:

### SUMMARY

On October 21, 1996, the New Jersey Department of Environmental Protection (Department) began a two-step process to regulate the management of used oil in a manner consistent with the Federal Used Oil Standards at 40 C.F.R. Part 279, by delisting used oil as a hazardous waste. By adopting its own used oil standards at N.J.A.C. 7:26A-6, which mirrors 40 C.F.R. Part 279 with limited differences, the Department completed this process on December 16, 1996 (See 28 N.J.R. 5360(a)). Combustion of used oil continued to require an Air Pollution Control (APC) permit developed on a case-by-case basis to ensure protection of air quality. The proposed new rule establishes specific requirements for the combustion of used oil and replaces the permit requirement with a registration requirement for conforming space heaters.

The Department is proposing a new subchapter at N.J.A.C. 7:27-20, Used Oil Combustion, and an amendment to N.J.A.C. 7:27-8.6, Service Fees. The proposed rule is intended to dramatically decrease the disposal of used oil, and ensure that used oil will be burned without significant harm to the environment or public health and welfare, and in a manner that is consistent with the Federal regulations. The proposal limits used oil combustion to those units best able to burn it in an environmentally sound manner. Required safeguards would minimize the impact to public health and the environment by providing more specific requirements for combustion of used oil. These requirements largely eliminate the case-by-case technical review procedure currently utilized for used oil combustion evaluation by the Department, thereby streamlining the approval process.

Pursuant to current N.J.A.C. 7:27-8, Permit and Certificates, used oil is considered to be a non-commercial fuel. Consequently, all operators of new and existing combustion units who burn used oil are required to submit a source-specific Air Pollution Control (APC) permit application. This could result in a lengthy technical review period. The proposed new rule establishes specific requirements for used oil combustion in large boilers, as well as a registration process for space heaters, which eliminate the need for almost all case-by-case permit reviews for space heaters. This reduces uncertainty and paperwork for the regulated community.

The impetus for the proposed rule arose when the Department delisted used oil as a hazardous waste in its recycling rules (see N.J.A.C. 7:26A). As a result of this delisting, burning used oil is no longer subject to the standards established for burning hazardous waste. However, in accordance with N.J.A.C. 7:26A-6.2(b), an APC permit is required for burning all used oil, including on-specification used oil. On-specification used oil is used oil which has all of the characteristics outlined in the following Table, which is set forth in the Department's recycling rules at N.J.A.C. 7:26A-6.2(a):

<u>Constituent/Parameter</u>	<u>Limitation*</u>
Arsenic	5 ppmw maximum
Cadmium	2 ppmw maximum

Chromium	10 ppmw maximum
Lead	100 ppmw maximum
Flash point	100 degrees Fahrenheit minimum
Total halogens	1000 ppmw maximum

\* ppmw is parts per million by weight

New Jersey's recycling rules do not specifically address air contaminant emissions in the context of used oil standards.

The proposed new rule will allow the following:

1. Small, on-site used oil space heaters would require a registration to burn on-specification used oil in lieu of an APC Permit;
2. Industrial and commercial boilers currently capable of and authorized to combust Number 6 Fuel Oil would be allowed to burn on-specification used oil, or a blend of on-specification used oil with commercial fuel oil, without having to obtain a permit approval from the Department;
3. Other kinds of fuel-burning equipment, such as furnaces, could also burn on-specification used oil after obtaining an APC permit. This is a current requirement, pursuant to N.J.A.C. 7:27-8 or 7:27-22, as applicable;
4. Industrial furnaces, boilers, and hazardous waste incinerators with appropriate air pollution control devices would continue to be able to burn off-specification used oil after obtaining an APC permit.

Items 1 and 2 above change the case-by-case permit review process for the types of combustion units indicated, while Items 3 and 4 maintain the case-by-case permit review process for the types of combustion units indicated.

A brief background of this rule making follows: On July 30, 1997, the Department conducted a Used Oil Workshop. The following stakeholders were represented at the Workshop: 1) used oil space heater manufacturers; 2) used oil processors; 3) environmental groups; 4) car dealerships; and 5) fuel oil merchants. Strategies for used oil combustion were distributed and discussed. These strategies were based on information previously obtained from the groups listed above, health risk calculations performed by the Department, existing Department and the United States Environmental Protection Agency (USEPA) rules, and studies conducted by other States. Based on the comments received from the Workshop participants, the following modifications were made to the strategies and were subsequently incorporated into the proposed rule:

1. A registration procedure was developed for used oil space heaters which meet the requirements outlined in N.J.A.C. 7:27-20.3;
2. Any combination of on-specification used oil and any commercial fuel oil may be burned in any boiler currently capable of burning and permitted to combust Number 6 Fuel Oil without necessitating a permit modification. The initial strategy limited this policy to blends of on-specification used oil and Number 6 Fuel Oil only. The proposed rule provides greater flexibility. Currently, N.J.A.C. 7:27-8.21 provides that a boiler authorized to burn only Number 6 Fuel Oil requires an amendment to the permit in order to combust commercial Numbers 1 through 5 Fuel Oils.

3. The initial rule strategy for confirming that a batch or shipment of used oil meets the on-specification criteria has been modified to be consistent with the requirements listed at N.J.A.C. 7:26A-6.9(c); and
4. Proposed N.J.A.C. 7:27-20.9 sets forth an exemption to Subchapter 20 requirements. This exemption clarifies that used oil which is charged to a catalytic cracker is not considered used oil after refining.

The provisions of the proposed rule are discussed in detail below:

### **N.J.A.C. 7:27-8.6 Service Fees**

This proposed amendment adds a new Table 4b, which is entitled Used Oil Space Heater Registration Fees, to the current Base Fee Tables. Current Table 4 will be designated as Registration Fees, and the current material in Table 4 will be designated as Table 4a, General Permit Registration Fees. In accordance with the proposed new rule at N.J.A.C. 7:27-20.3(b)16, the proposed amendment provides that the registration fee for qualifying used oil space heaters is \$250. The fee for each five year registration renewal is also \$250.

### **N.J.A.C. 7:27-20.1 Definitions**

The proposed rule defines the terms Do-it-yourselfer used oil collection center, Household do-it-yourselfer used oil, Household do-it-yourselfer Used oil generator, and Used oil. These terms are identical to those used in the Department's recycling rules at N.J.A.C. 7:26A.

The following terms have the same definitions which are used elsewhere in N.J.A.C. 7:27-1 et seq.: Air quality impact analysis, Air quality simulation model, Commercial fuel, Fuel, Fuel oil, Person, Risk assessment, and Visible smoke.

The following terms are newly defined for the purpose of this subchapter: Ash, Brake fluid, Combustion unit, Crankcase oil, Energy recovery, Fluid catalytic cracking unit, Number 1 Fuel Oil, Number 2 Fuel Oil, Number 6 Fuel Oil, Off-specification used oil, On-specification used oil, Permit, Petroleum refinery, Power steering fluid, Registration, Shipment, Space heater, and Transmission fluid.

The definition of Non-commercial fuel has been modified from its definition in current N.J.A.C. 7:27-8, by the addition of the following sentence. "This shall include fuels which are derived from used oil or other waste materials." This addition clarifies that used oil is a non-commercial fuel.

### **N.J.A.C. 7:27-20.2 General Provisions**

This authorizes the combustion of used oil if the requirements of proposed Subchapter 20 are met. A person who wishes to burn used oil must either file a registration or obtain a permit, as applicable. Used oil combustion is prohibited at sensitive receptor locations, which are considered to be the following: a multi-family residence (such as an apartment building or a dormitory), a day care facility, a pre-school, a school, a hospital, a residence for the elderly, or a nursing home. The sale of used oil for burning is also prohibited at the following locations: a single-family dwelling, two-family dwelling, or a dwelling of six or less family units, one of which is owner-occupied. Sensitive receptor locations are places where children, the elderly, and persons with illnesses, who would be more susceptible to

the adverse effects of air contaminants, are present. Additionally, the permit or registration would require the owner or operator to install, operate and monitor the operation of the combustion unit in compliance with the applicable requirements. Moreover, the proposed rule provides that no person shall combust used oil containing hazardous waste as defined under N.J.A.C. 7:26G-5.

### **N.J.A.C. 7:27-20.3 Burning of On-Specification Used Oil in Space Heaters Covered by a Registration**

This section includes the registration requirements for used oil space heaters. The registration may cover one or more used oil space heaters at a facility provided the total heat input capacity is less than or equal to 500,000 British Thermal Units per hour (about 3.5 gallons of used oil per hour). However, if the combined total gross heat input of all space heaters is in excess of 500,000 BTU/hr, then each space heater will require the submission of a permit application. The permit applications are necessary in order to conduct a site-specific risk assessment. The registration certifies that the space heater will be installed, operated and maintained in accordance with N.J.A.C. 7:27-20.3(b). Space heaters for which registrations have been filed can be used for the purpose of energy recovery only. Used oil which is permitted to be combusted in registered space heaters includes used oil generated on-site, generated by a household do-it-yourselfer used oil generator, or generated from a do-it-yourselfer used oil collection center. The requirements of on-specification used oil are identified with a list of maximum contaminant concentration levels. The owner or operator of the registered space heater shall conform to operational, testing, installation, record keeping, and fee submission requirements. Off-specification used oil may not be burned in space heaters covered by a registration. The registration will be enforced consistently with N.J.A.C. 7:27A-3.9, Civil Administrative Penalty For Failure to Provide Information. Proposed N.J.A.C. 7:27-20.3(b) does not specify a required minimum distance that a registered used oil space heater stack must be from the facility's property line. The Department welcomes any input from the public on this issue.

### **N.J.A.C. 7:27-20.4 Burning of On-Specification Used Oil in Space Heaters Covered by a Permit**

This section provides the requirements for the permitting and health risk assessment procedures for installing and operating a space heater that does not meet the provisions of N.J.A.C. 7:27-20.3. It sets forth the minimum requirements for a permit application including a protocol for conducting air quality impact analysis and risk assessment, certifications, a description of equipment and control apparatus, maintenance of instrumentation, sensing devices, record keeping, and reporting. This section would be applicable to any space heater with a gross heat input in excess of 500,000 BTU/hr, or two or more space heaters at any one facility with a combined gross heat input in excess of 500,000 BTU/hr.

### **N.J.A.C. 7:27-20.5 Demonstration That Used Oil is On-Specification**

This section provides the basis for documenting compliance with the standards for on-specification used oil. The proposed rule is consistent with the procedures outlined in N.J.A.C. 7:26A, the Department's recycling rules, which address confirmation that used oil meets the on-specification criteria. Both the Department's recycling rule and the proposed rule require the used oil generator, transporter, processor, re-refiner, or burner to confirm that the on-specification criteria have been met. The proposed new rule requires that persons who burn used oil confirm through an analysis that the on-specification criteria are complied with. The analysis may be conducted by either the supplier or the burner. The permittee is required to keep copies of the analysis of used oil

or other information used to make the determination. Suppliers shall provide a copy of the analysis to the permit upon the delivery of each shipment of used oil, documenting that the used oil is on-specification.

#### **N.J.A.C. 7:27-20.6 Burning of On-Specification Oil in Other Combustion Units**

The proposed new rule provides that any combustion unit which has a minimum gross heat input of 20 million BTU/hr and is capable of burning and is permitted to burn Number 6 Fuel Oil may burn on-specification used oil by itself or blended with any commercial fuel oil if the requirements of this section are complied with. The 20 million BTU/hr threshold is set forth at current N.J.A.C. 7:26-16.8 and 7:26-19.7. In addition, any person who sells commercial fuel blended with used oil is required to provide the Department with a certification that the used oil blended with commercial fuel is on-specification oil.

#### **N.J.A.C. 7:27-20.7 Burning of Off-Specification Used Oil**

This section sets forth the circumstances in which off-specification used oil can be combusted in qualifying industrial furnaces, boilers, or hazardous waste incinerators. Air pollution control devices must be installed on these combustion units to control the constituents which are off-specification. Case-by-case air pollution control permits must therefore be obtained. The proposed new rule is consistent with current

N.J.A.C. 7:26A-6.3(c), which addresses the burning of off-specification used oil. As previously stated, the New Jersey used oil standards (including the provisions at N.J.A.C. 7:26A-6.3) do not set specific air pollution standards, except to state that an APC is required.

#### **N.J.A.C. 7:27-20.8 Ash Standard**

This section limits the ash content for on-specification used oil. The proposed standard is a maximum ash content of 0.1 percent by weight. The proposed new rule would help to ensure that used oil combustion will not cause the particulate emission limit for large boilers to be exceeded (0.1 pounds of particles per million British Thermal Unit fuel input-lb/MMBTU). This is the most stringent particulate emission limit in N.J.A.C. 7:27-4, Control and Prohibition of Particles From Combustion of Fuel, and is the limit applicable to large, Number 6 fuel oil fired combustion units. Any person may request a different ash content limit if the combustion device incorporates air pollution control for particulates.

The Department shall approve this request if compliance with all applicable air pollution control regulations is demonstrated in a permit application pursuant to N.J.A.C. 7:27-8 or N.J.A.C. 7:27-22. A provision is included for the permittee or vendor to verify the ash content standard through sampling and analysis.

#### **N.J.A.C. 7:27-20.9 Exemption**

This section provides that the proposed rule does not regulate the finished product from petroleum refineries where used oil is charged to a catalytic cracking unit for refining. The Department is proposing the exemption since catalytic crackers and the subsequent distillation processes at a petroleum refinery will convert the used oil to a commercial fuel product.

## **SOCIAL IMPACT**

The proposed rules will have a positive impact on the quality of life in New Jersey by directing on-specification used oil to those combustion sources best able to burn it with minimal adverse impact. These sources include small used oil space heaters at the site of used oil generation, and large boilers which currently burn Number 6 Fuel Oil.

Installation and operation of used oil space heaters provides benefits for their owners and the general public. The space heaters provide a resource recovery mechanism for the used oil generated on-site. This also provides an alternate fuel source.

Installation of used oil space heaters is also advantageous for the general public. Operators of space heaters will be allowed to accept the used oils generated by “do-it-yourselfers”, who are people who perform their own maintenance on their vehicles. This provides additional places for “do-it-yourselfers” to take used oil.

The proposal will also allow used oil to be combusted in large industrial boilers by allowing those permitted boilers, with a gross heat input of at least 20 million British Thermal Units per hour or greater, which are currently capable of combusting and permitted to combust Number 6 Fuel Oil, to also combust on-specification used oil.

No permit modification is necessary to burn the on-specification used oil in these large boilers. Burning on-specification used oil in other types of combustion units is also possible with a case-by-case Departmental evaluation and permit review. These mechanisms provide a means for industry to use on-specification used oil as an alternate energy supply.

Fossil fuels are a finite resource. New Jersey’s industries and population as a whole are highly dependent on a readily available, economical energy source. Properly utilizing on-specification used oil contributes to the goals of energy conservation and reuse of resources. Encouraging the use of this energy source reduces the amount of commercial fuel that has to be burned.

One possible negative social impact of encouraging the combustion of used oil is that this may discourage the recycling of used oil into lubrication oils. While the Department believes that rerefining used oil into lubricating oils is a better use of used oil than burning it, rerefining is not performed in New Jersey at this time. The economics of rerefining make this unlikely for the near future. Therefore, combustion of used oil in certain kinds of units is the most socially acceptable use of used oil at this time.

## **ECONOMIC IMPACT**

The Department anticipates that the proposed rule will have a positive economic impact. The amount of used oil combusted depends in part on its costs compared with other energy sources, such as natural gas and electricity generated by utilities. Used oil is less expensive than commercial fuel oil. The used oil processor obtains used oil at no cost, and in some cases, is paid to remove it from the generator. As a result, the costs of the used oil are directly related to the costs involved in collecting and processing the used oils. Since the used oil space heater operators obtain their used

oil at no cost, the financial analysis is primarily related to the costs of installing and operating the space heater. The worth of used oil is directly proportional to the current price of commercial fuel oil.

The cost of used oil space heaters varies by the size of the unit purchased. The noninstalled cost ranges from \$3,000 to \$7,000. A used oil storage tank costs approximately \$900. Installation costs between \$1500 to \$2500, depending on the local cost of labor and the existing layout of the facility. The economic incentive for installing an used oil space heater comes from the money saved from the combustion of the used oil instead of commercially purchased fuel. A typical unit has a gross heat input of 250,000 British Thermal units per hour (BTU/hr), which equates to the burning of approximately 1.75 gallons per hour. Assuming a heating season of 2,000 hours and a price per gallon of Number 2 Fuel Oil of ninety cents, the owner of the space heater can save about \$3,000 per year in fuel costs. An additional annual savings of about \$200 can be realized since the used oil does not have to be collected. A total annual savings of \$3,200 can pay for the space heater in three to four years.

There is a cost incentive for burning on-specification used oil with Number 6 Fuel Oil. The cost of the on-specification used oil from a used oil processor ranges from \$0.35 to \$0.60 per gallon, based on the quality and heating value of the oil. The current price of Number 6 Fuel Oil is about \$0.75 per gallon.

Combustion units, other than space heaters and those that process Number 6 Fuel Oil, may also benefit economically from the utilization of used oil. This can occur if on-specification used oil can be purchased at lower cost than commercial fuel oil or if the facility generates its own stream of used oils. For example, the Department has permitted an asphalt plant to burn the used motor oil generated from its fleet of trucks. The used motor oil was blended at up to a five percent ratio with commercial Number 2 Fuel Oil. This allowed the asphalt facility to reduce its purchases of Number 2 Fuel Oil. Additionally, the asphalt facility saved an additional nine to eleven cents per gallon, which was charged by the used oil collector during the summer months. During the winter months, the used motor oil was picked up free of charge. Other such facilities could take advantage of combustion of the on-specification used oil. It should be noted that proposals for this type of use of used oil would be subject to case-specific reviews by the Department to ensure low risk.

Allowing on-specification used oil generated on-site to be combusted on-site may reduce the volume of used oil collected and processed. This could reduce the revenues of those entities which are engaged in those businesses. However, the proposed rule may serve to increase the number of places that actively seek used oil, which may encourage more used oil generators to direct their used oil for reprocessing, as well as space heating. Additionally, allowing on-specification used oil to be combusted in Number 6 Fuel Oil boilers with a gross heat input greater than 20 Million British Thermal Units per hour and allowing both on- and off-specification used oil to be used on a case specific basis, expands the potential customer base and makes it easier for the processors to sell their on-specification used oil.

The Department shall charge an initial \$250 registration fee and a \$250 five year registration renewal fee for used oil space heaters. This is in accordance with N.J.A.C. 7:27-20.3(b) 16, which proposes the registration fee and registration renewal fee. A registration fee of \$250 instead of the

current permit fee of \$1,000 would be charged since registrants would no longer need to submit emission calculations, risk assessments, or diagrams to the Department. The proposed registration procedure therefore simplifies the approval process for space heater operation. The \$250 fee is consistent with that charged for Category I Permits, pursuant to N.J.A.C. 7:27-8, which are processed in a similar manner to the Used Oil Space Heater Registrations.

Any APC Permit Application for the combustion of used oil in a new burning unit would be subject to the fee schedule outlined in N.J.A.C. 7:27-8.6 "Service Fees".

### **ENVIRONMENTAL IMPACT**

The proposed rule provides a positive environmental impact by directing the combustion of on-specification used oil to those combustion units best able to efficiently burn it. This practice will promote the proper burning of used oil, which avoids the pollution of New Jersey's lands and waterways resulting from improper management of used oil by generators and collection centers. The proposed rule also includes measures to minimize impacts on sensitive populations located in hospitals, schools, and residences.

The proposed rule contains new provisions for combusting used oil in the following combustion units, provided that certain requirements are met:

1. Used oil space heaters which are properly registered with the Department; and
2. Boilers which are currently permitted to burn Number 6 Fuel Oil, are capable of burning Number 6 Fuel Oil, and have a rated gross heat input of greater than 20 million British Thermal Units per hour (MMBTU/hr).

A health risk assessment conducted by the Department demonstrated that if a 500,000 British Thermal Units per hour space heater were operated consistently within specifications reflected in the proposed registration procedure, the resulting health risk from the air contaminant emissions would be minimal. These specifications include a stack height of at least 20 feet to provide dispersion of contaminants, and annual tune-ups with emission monitoring to minimize emissions of carbon monoxide, unburned hydrocarbons, and particulates through efficient combustion.

The proposed rule would also allow on-specification used oil, or blends of on-specification used oil and commercial fuel, to be burned in heating units with a rated gross heat input greater than 20 MMBTU/hr which are currently capable of combusting and authorized to combust Number 6 Fuel Oil. No modification to the unit's APC Permit would be required. Directing on-specification used oil to Number 6 fuel oil units will result in a positive environmental impact for the following reasons:

1. Heating units that are capable of burning Number 6 Fuel Oil are normally located in industrial areas, and away from locations, such as residences and schools, where children, the elderly, and people with sensitive health conditions would be present;
2. Trained operators with boiler operator licenses operate boilers over 20 MMBTU/hr. The operators can maximize combustion efficiency. This diminishes the emissions of air contaminants which are products of incomplete combustion, such as carbon monoxide, hydrocarbons, and organic particulates;

3. Boilers that burn Number 6 Fuel Oil normally have higher stacks than other boiler types. This results in greater dispersion of the stack emissions, lower concentrations of air contaminants in ambient air, and decreased environmental and human health impacts;
4. Large Number 6 Fuel Oil combustion units represent significant capital investments. Operators are therefore more likely to be careful about what is burned and the manner in which it is burned; and
5. Illnesses, that are more susceptible to the adverse effects of air contaminants, may be present. These locations include the following: multifamily residences (such as apartment buildings or a dormitories), day care facilities, pre-schools, schools, hospitals, residences for the elderly, and nursing homes. This prohibition is proposed as a result of health risk assessments performed by the Department.

The first risk assessment, which supports this prohibition, dated January 9, 1995, examined the health risks from the combustion of used oil from residential, small industrial, and large industrial boilers. In each case, a significant health risk was found from the combustion of used oil, and the risks were much higher than those posed by combustion of Number 2 Fuel Oil. The study also showed that the health risk for on-specification used oil is approximately the same as for burning Number 6 Fuel Oil.

The second risk assessment, which supports the residential/institutional prohibition, dated March 21, 1996, is summarized in a report entitled, "Risk Assessment Study of Hypothetical Used Oil Combustion at Public Schools in New Jersey". In this study, the modeling used emission rates that could occur if used oil was combusted in three boilers installed in New Jersey schools in different parts of the State. Each boiler is currently authorized to combust Number 4 Fuel Oil, not used oil. The results of the study showed that at each of the schools, the emissions from used oil firing could result in increased cancer risks greater than one in a million and exposure to non-carcinogenic substances in excess of the relevant reference concentrations. Cancer risks of one hundred in a million and non-carcinogenic risks more than sixty times above reference concentrations were predicted for one of the schools. The other three schools has cancer risks as high as ten in a million, and noncarcinogens were as much as seven times the reference concentration.

A third risk assessment, previously discussed, was conducted to examine the health risk potential from used oil space heaters, which are much smaller than the units in the first two studies. The results of this study are outlined in a May 7, 1996 Memorandum from the Bureau of Air Quality Evaluation, "Determination of Possible Health Risks from Used Oil Combustion Space Heaters Limited to 500,000 British Thermal Units per hour" and a May 17, 1997 addendum to the Memorandum. For average used oil contamination levels and a 20 foot stack height, risks were predicted to be minimal.

When calculating the risk of contracting cancer from the air contaminants emitted from a source operation, such as a boiler, it is assumed that there is constant exposure for a lifetime (seventy years) at the location of maximum impact of the source operation. The predicted risk is then the product of the exposure and a unit risk factor for the air contaminant. The unit risk factor is an upper bound estimate of the risk, which incorporates, at a minimum, a 95 percent confidence interval.

The reference concentrations and unit risk factors for contaminants are toxicity estimates developed primarily by the USEPA based on the best human or animal exposure studies. For carcinogens, an upper bound estimate assures that the actual risk of contracting cancer from a source will probably not be higher than estimated and should be less. The reference concentration is an estimate of the daily exposure to humans (including sensitive subgroups) that is likely to be without an appreciable risk of harmful effects during a lifetime of exposure.

The benefit of not combusting used oil at the specified locations is a decrease in health risks to the general public and, in particular, to children, the elderly, and people with illnesses. The proposed rule thereby protects those members of the State's population who are most sensitive to the harmful effects of such exposure.

## **FEDERAL STANDARDS ANALYSIS**

### **Introduction**

Executive Order Number 27 (1994) and P.L. 1995, c.65 require State agencies that adopt, readopt, or amend State regulations that exceed any Federal standard or requirements to include a comparison with Federal law in the rulemaking document. The proposed new used oil combustion rule is broader in scope than the Federal hazardous waste management rules which deal exclusively with the management of used oil at 40 CFR Part 279, Standards for the Management of Used Oil. However, it should be noted that there are other Federal rules, such as 40 CFR Part 52, Approval and Promulgation of Implementation Plans, 40 CFR Part 60, Subpart D, Standard for the Performance for Fossil-Fuel Fired Steam Generators for Which Construction is Commenced After August 17, 1971, and Title V of the Federal Clean Air Act, which address air contaminant emissions from the combustion of all fuels, including used oil. The primary difference between 40 CFR Part 279 and the other Federal requirements cited is that the latter involve limitations on air contaminant emissions. With regard to used oil, the proposed rule is more comprehensive than 40 CFR Part 279, since compliance with Federal and state laws and rules concerning air pollution must also be demonstrated. The proposed rule covers more aspects of used oil combustion than does 40 CFR Part 279 because of New Jersey's unique characteristics, including high population density, and the potential increased health risk from used oil combustion in some situations.

It is anticipated that used oil will continue to be generated for the foreseeable future, which is assumed to be at least the next thirty years. The compliance costs of the proposed rule will be primarily borne by firms who choose to combust used oil. Firms that burn used oil should enjoy cost savings because used oil is less expensive than commercial fuel oil. Currently, there is very little authorized used oil combustion in New Jersey. By clarifying and streamlining the current air pollution control requirements, the proposed rule may increase used oil combustion in New Jersey and decrease overall costs, when the resulting lower costs of used oil are compared with the costs of utilizing commercial fuel oil.

## **40 CFR PART 279**

40 CFR Part 279 provides that on-specification used oil may be burned as a waste management measure and allows for the installation and operation of used oil space heaters. 40 CFR Part 279.1 Definitions, defines used oil as “any oil that has been refined from crude oil, or any synthetic oil, that has been used and as a result of such use is contaminated by physical or chemical impurities”. If the used oil meets the on-specification parameters outlined in 40 CFR Part 279.11, the on-specification used oil is no longer subject to 40 CFR Part 279 (Standards for the Management of Used Oil) as long as the following three criteria are met:

1. The used oil meets the specification parameters pursuant to 40 CFR Part 279.72 and the documentation is retained for at least three years;
2. Proper notification is made to the USEPA pursuant to 40 CFR Part 279.73; and
3. The used oil shipment is tracked pursuant to 40 CFR Part 279.74(b).

40 CFR Part 279.12 allows off-specification used oil to be combusted in the following units: industrial furnaces, industrial boilers, and utility boilers. Additionally, 40 CFR Part 279.12 allows used oil space heaters to burn on- and off-specification used oil, without being subject to hazardous waste management rules, as long as they meet the following restrictions listed at 40 CFR Part 279.23:

1. The heater burns only used oil that the owner or operator generates or used oil received from household do-it-yourself used oil generators;
2. The heater is designed to have a maximum capacity of not more than 0.5 million British Thermal Units (BTU) per hour; and
3. The combustion gases from the heater are vented to the ambient air.

## **N.J.A.C. 7:27-20 IN RELATION TO 40 CFR PART 279**

N.J.A.C. 7:27-20 includes several provisions which are not specifically addressed in by 40 CFR Part 279. These provisions, which are discussed below, have been developed in order to ensure that used oil combustion is protective of public health and is consistent with all other Federal and State requirements concerning air pollution.

Proposed N.J.A.C. 7:27-20 implements new rules concerning used oil combustion that would supersede current provisions of N.J.A.C. 7:27. Currently, all source operations which need Air Pollution Control (APC) permits, including those involving used oil combustion, are examined individually to determine whether they require a case-by-case evaluation of the nature and quantity of air contaminant emissions and impacts on human health and the environment. The proposed rule streamlines the current procedures under which used oil combustion can be authorized by the Department and also clarifies the compliance requirements. The potential health risks were considered when developing the streamlined procedures. The proposed rule additionally reduces the delays and costs for gaining authorization for used oil combustion.

The proposed procedure should not significantly impact the positive economic advantages that businesses will obtain from combusting used oil for the following reasons:

1. The used oil sampling and analytical requirements for industrial and commercial boilers are consistent with those required by current N.J.A.C. 7:26A. (See N.J.A.C. 7:26A-6.9(c));

2. The registration process for space heaters is less costly than the current case-by-case permitting process;
3. The permitting fees, which currently range from \$250 to \$1,000, for a term of five years, only represent one to three percent of the total cost savings, when prorated over the life of the permit. Moreover, fees for registered space heaters would be reduced from \$1,000 to \$250 for five years;
4. The proposed stack sampling requirements are consistent with those currently required for existing combustion units (See N.J.A.C. 7:27-8.13 and 7:27-16.8). Additionally, periodic, rather than continuous, monitoring will be required for small space heaters; and
5. If on-specification used oil will be combusted in a unit with a rated gross heat input greater than 20 million British Thermal Units per hour and which is capable of and authorized to burn Number 6 Fuel Oil, the proposed procedures would not result in incremental costs.

Proposed N.J.A.C. 7:27-20 incorporates the following measures, which are not required by the Federal Standards for the Management of Used Oil at 40 CFR Part 279:

1. The proposed rule incorporates the current definition of used oil which is set forth at N.J.A.C. 7:26A-1.3. New Jersey's definition specifically includes unused oil which has been contaminated by physical or chemical impurities through storage and handling. This part of New Jersey's definition is not included in the Federal definition;
2. A total halogen limit of 1,000 parts per million (ppm) has been incorporated into the on-specification criteria. This is lower than the 40 CFR Part 279 limit of 4,000 ppm;
3. The registration procedure for used oil space heaters which combust on-specification used oil is not an explicit Federal waste management requirement. Permitting or registering used oil space heaters is consistent with USEPA's State Implementation Plan for New Jersey (SIP) which mandates that an APC permitting and regulation program be established for combustion sources which may emit air contaminants. Moreover, establishing a registration process to replace the existing permit process for used oil space heaters adds flexibility to the current process.
4. The proposed rule prohibits used oil combustion in locations such as residences and schools, where children, the elderly, and people with sensitive health conditions would be present;
5. All other used oil combustion will continue to be evaluated case-by-case permit reviews. This reflects a current Departmental requirement (See N.J.A.C. 7:27-8.2); and
6. Incorporation of an ash standard of a maximum 0.1 percent by weight in on-specification used oil to ensure that used oil combustion will comply with current N.J.A.C. 7:27-4, "Control and Prohibition of Particles from Combustion of Fuels" (This would not apply to small space heaters with a gross heat input of less than one million British Thermal Units per hour).

According to 1990 census data, New Jersey has the greatest population density of any state. Consequently, New Jersey's population is more likely to be adversely affected by air contaminant discharges than are residents of most other states. In addition, the Department has conducted risk assessment studies, using USEPA air quality models, which predict significant health risks in some cases when used oil is burned consistently with the provisions of 40 CFR Part 279. Therefore, because of New Jersey's unique characteristics, additional measures beyond the Federal requirements are necessary to ensure protection of public health for New Jersey's population.

The proposed definition of used oil in N.J.A.C. 7:20-1 states that:

“Used oil” means any oil that has been refined from crude oil, or any synthetic oil, that has been used and as a result of such use, is contaminated by physical or chemical impurities, or unused oil that is contaminated by physical or chemical impurities through storage or handling.

This is not more restrictive than the Federal definition because it affords unused oil which has been contaminated the same management, recycling, and disposal options which are available to used oil. The Department believes this is appropriate since this type of oil would have similar characteristics to used oil generated from utilization in a given process. It is also consistent with the definition of used oil in N.J.A.C. 7:26A. Additionally, the total halogen limit for on-specification used oil of 1,000 ppm is listed at N.J.A.C. 7:26A-6.2(a) and was justified by the Department’s Division of Solid and Hazardous Waste in the May 6, 1996 proposal concerning the recycling rules (See the Federal Standards Analysis of the proposal at 28 New Jersey Register 2260, May 6, 1996).

The Department is establishing a registration program for used oil space heaters. This allows certain categories of space heaters to be registered, rather than having to obtain an air pollution control permit that involves a case-by-case review. A case-by-case permit review consists of evaluating the used oil to be combusted, the emission rates of each contaminant, and the site-specific health risk. The overall review time for this type of permit typically ranges from two to twelve months, depending on the size and type of source. In order to qualify for a registration, the owner of a space heater must comply with the specifications of 40 CFR 279, as well as the following restrictions:

1. Only used oil from conveyances which are powered by an internal combustion engine which consist of any combination of the following substances can be combusted: used crankcase oil, used brake fluid, used transmission fluid, and used power steering fluid;
2. The stack discharge height must be at least 20 feet;
3. The space heater must meet an industry standard, such as the Underwriter Laboratory 296A Standard for Safety;
4. Only on-specification used oil may be burned; and
5. Registrants must conduct annual tuneups with carbon monoxide and oxygen testing.

The above restrictions are justified by New Jersey’s population density, background air quality, and health risk assessments. A health risk assessment conducted by the Department demonstrated that on-specification used oil combusted at a heat input rate of 500,000 British Thermal Units per hour (BTU/hr) operating under certain operating parameters posed an acceptable health risk. The minimum stack height used in the assessment was 20 feet. A more detailed rationale for these restrictions is outlined below in item 2 of the discussion entitled “Four Aspects of the Proposed Rule That Are Not Part of 40 CFR Part 279”.

The proposed rule provides that on-specification used oil that is blended with commercial fuel oil or unblended on-specification used oil may be charged to those heating units with a rated gross heat input greater than 20 million British Thermal Units per hour (MMBTU/hr) and which are capable of and allowed to combust Commercial Number 6 Fuel Oil. No change to the permit is required to authorize burning on-specification used oil or on-specification blends in such heating units. This is a relaxation of the current permitting rules, which require a permit modification for all combustion units in order to be allowed to burn used oil. The Department is proposing this provision since Number 6 Fuel Oil burners are typically large units with tall stacks, which are located in industrial areas, and on-specification used oil has similar inorganic content to Number 6 Fuel Oil. Hence,

combusting on-specification used oil in Number 6 Fuel Oil fired units should not degrade air quality. Additionally, the location and stack height of such units also tends to minimize impacts to public health. Moreover, such units usually have full time operators and a high capital investment; thereby promoting efficient operation, which tends to minimize emissions.

The proposed rule allows qualified Number 6 Fuel Oil units to combust on-specification used oil without a permit modification; other types of units will require approved permit modifications before the used oil can be combusted. This site-specific, case-by-case review is not required by 40 CFR Part 279, but is necessary since these units do not have parallel characteristics to the Number 6 Fuel Oil Boilers and have the potential to cause increased health risks should used oil be burned.

### **Other Federal Requirements Which Regulate Used Oil Combustion**

Any other use of on-specification used oil, except as outlined for space heaters and large Number 6 Fuel Oil combustion units, is subject to permit approval by the Department. This is implemented through the APC permit application review procedures. There are several other Federal provisions which are relevant to used oil emissions since they regulate the emissions of the combustion of fuel in general. These include the following: 40 CFR Part 52, Approval and Promulgation of Implementation Plans, 40 CFR Part 60, Subpart D, Standards for the Performance for Fossil-Fuel Fired Steam Generators for Which Construction Is Commenced After August 17, 1971, and Title V of the Federal Clean Air Act, 42 U.S.C. Section 401 et. seq. The Federal government has not exempted used oil combustion in these rules and, as a result, air contaminant emissions from used oil combustion need to be examined by the Department. The emissions will be evaluated through the analysis of the type and amount of air contaminants listed in the applications submitted. A brief discussion of the above three Federal regulations follows:

1. 40 CFR Part 52, Approval and Promulgation of Implementation Plans, requires that State Implementation Plans (SIPs) be filed for those pollutants which do not meet the National Ambient Air Quality Standards. New Jersey currently has SIP plans for volatile organic compounds and nitrogen oxides since these are precursors to ozone formation. The USEPA has designated the entire state “non-attainment” for ozone. Non-attainment means that the National Ambient Air Quality Standard for ozone has been exceeded in New Jersey. All forms of used oil combustion emit both volatile organic compounds and nitrogen oxides. 40 CFR Part 52.21 “Prevention of Significant Deterioration of Air Quality” regulates new and modified sources, such as fossil fuel boilers, which may burn used oil, and several pollutants, including nitrogen oxides, sulfur dioxide, lead, and particulates, which are emitted as a result of used oil combustion. Emissions from both used oil space heaters, and small and large industrial boilers that burn used oil, may be regulated by 40 CFR Part 52.21, since this provision evaluates the air contaminant emissions from an entire facility. This furnishes another reason why the Department must conduct the appropriate evaluation of emissions from used oil combustion.
2. 40 CFR Part 60, Subpart D, Standards for the Performance for Fossil-Fuel Fired Steam Generators for Which Construction Is Commenced After August 17, 1971, regulates the emissions of sulfur dioxide, particulates, and nitrogen oxides from applicable steam generators with a gross heat input of 10 million British Thermal Units per hour or greater. These steam

generators would have to meet the same emission standards whether they burn used oil or commercial fuel oil. Since fossil fuel fired steam generators can burn used oil, their emissions must be evaluated by the Department to confirm compliance with 40 CFR Part 60, Subpart D.

3. Title V of the Federal Clean Air Act, 42 U.S.C. Section 7401 et. seq. requires that an operating permit be submitted for certain facilities based on facility wide emissions. If the appropriate case-by-case permits are not filed, applicability of and compliance with the Federal Clean Air Act cannot be verified.

The preceding items illustrate that there are several Federal requirements concerning used oil combustion, in addition to 40 CFR Part 279. The Department's rules and policies must be consistent with these Federal requirements. This is a factor in requiring permit reviews for the applicable used oil combustion sources and for requiring a registration procedure for conforming space heaters. The proposed procedures will help the Department to continue to confirm compliance with all Federal and State requirements.

### **Parties Affected By the Proposed Rule**

Regulated industries and professional groups which will be directly impacted by the rule are as follows: used oil space heater manufacturers, used oil processors, fuel oil blenders, refineries, boiler operators, car dealerships, gas stations, and other car maintenance facilities.

Related industries which will be indirectly, but positively affected, by the rule include: Analytical laboratories, oil burner maintenance firms, emission testing firms, and firms which generate used oil.

The proposed rule has been designed to make it easier for people who change their own motor oil (do-it-yourselfers) to properly dispose of it, since space heaters which meet the registration requirement can combust do-it-yourselfer used lubricating oil. This should provide additional outlets for the used oil if maintenance facilities with space heaters accept do-it-yourselfer used oil as an inexpensive source of fuel.

Operators of wastewater treatment plants will be positively affected, since improperly disposed of used oil can often reach their facilities. The proposed rule should promote increased combustion of used oil and less disposal of this substance on land and in water.

It is anticipated that employment would increase at the following businesses: used oil space heater manufacturers, analytical laboratories which test the used oil, and oil burner maintenance firms which maintain the space heaters. There is a potential for decreased employment at used oil processing facilities. These facilities may receive less used oil if many space heaters are installed. No change in employment is anticipated for the following businesses: boiler operators, refineries, car maintenance facilities, and fuel oil merchants.

The proposed rule will have a negligible impact on the taxpayers of the State since no new government programs will be implemented, and there will be relatively little change in the number of

employees regulating used oil combustion. The Department's Air Quality Permitting Program will continue to review some APC permit applications for case-by-case combustion of used oil. The registration process for used oil space heaters will simplify regulation of this source category. The Department's Air and Environmental Quality Compliance and Enforcement program and New Jersey's County Health Agencies will be involved in enforcing the rule, instead of enforcing the prohibitions on used oil combustion and the few case-by-case permits for used oil combustion currently in place.

Individual consumers should not be affected by the rule for the following reasons: 1) The prohibition against burning used oil in residences should not affect the price of home heating oil (most commonly Number 2 Fuel Oil) because of the relatively low volume of used oil compared to commercial heating oil; and 2) The price of an oil change should not increase because the used oil space heaters that are purchased and installed at the car maintenance facilities should result in an overall cost saving for these facilities.

The proposed rule is protective of the health of New Jersey's citizens. Sensitive receptors (i.e. schools, hospitals etc.) are specifically addressed in the rule.

The proposed rule is protective of New Jersey's environment and ecology, since one objective of the rule is to avoid improper disposal of used oil on the land and in the water. This furthers the protection of the State's plant and animal populations. The proposed rule also directs used oil to those combustion units that would have the least impact on the environment regarding the emissions of air contaminants, This will further protect New Jersey's plant and animal resources from air contaminant deposition onto the land and water.

## **Discussion of Four Aspects Of The Proposed Rule That Are Not Part of 40 CFR PART 279**

### **1. Prohibition Of Burning In Locations Near At Risk Populations**

No used oil will be permitted to be combusted at sites where children, the elderly, and people with illness may be present. These locations include the following: multi-family residences, day care facilities, schools, and hospitals. This prohibition is consistent with of health risk assessments performed by the Department. The first risk assessment dated, January 9, 1995, examined the potential health risks from the combustion of used oil in residential, small industrial, and large industrial boilers. In each case, a significant health risk was found from the combustion of used oil, and the risks were significantly higher than those posed by the combustion of commercial Number 2 Fuel Oil. The second risk assessment, dated March 21, 1996, is summarized in a report entitled, "Risk Assessment Study of Hypothetical Used Oil combustion at Public Schools in New Jersey". The modeling in this study used emission rates that could occur if used oil was being combusted in three boilers which are installed in New Jersey schools in different parts of the State. Each boiler is currently authorized to combust Number Four Fuel Oil, not used oil; accordingly, this was a hypothetical scenario. The results of the study showed that at each of the schools, the emissions from used oil firing could result in increased cancer risks greater than one in a million and exposure to non-carcinogenic substances in excess of the relevant reference concentrations. Cancer risks one hundred in a million and non-carcinogenic risks more than sixty times above reference concentrations were predicted for one of the schools. The other three schools had cancer risks as high as ten in a million, and non-carcinogens were as much as seven times the reference concentration.

While the permit review process would likely catch and avoid these situations, the prohibition on burning used oil at these locations provides greater assurance to prevent any increases in risk. This is a prudent course of action for those in the population most at risk for illness. The benefit of not combusting used oil at the specified locations is a decrease in health risks to the children, the elderly, and people with illnesses.

In 1994, approximately 40 million gallons of used oil were generated in New Jersey. The total annual amount of fuel oil burned in the state is approximately 1.05 billion gallons. Consequently, the prohibition of selling used oil to sensitive receptors should not significantly impact the market for non-commercial fuel produced from used oil.

## **2. Regulation Of Used Oil Space Heaters**

The proposed rule imposes design and operating restrictions on used oil space heaters which exceed the Federal used oil management standard requirements at 40 CFR Part 279 in order to minimize the impacts on the environment and human health. Space heaters must either meet the restrictions outlined in the registration procedure or obtain a site-specific APC Permit to Construct and Certificate to Operate. The registration procedure covers space heaters that only burn used oil from conveyances that are powered by an internal combustion engine, consisting of any combination of the following substances: used crankcase oil, used brake fluid, used transmission fluid, and used power steering fluid. This constitutes the majority of space heaters which will be installed. The Department anticipates that site-specific used oil space heater permits, if any, would have operating conditions similar to the specifications for the registration process. The costs and benefits outlined below would be comparable for both space heaters covered under the registration process and those that do not qualify for registration.

The proposed rule requires that tuneups and monitoring for carbon monoxide (CO) and oxygen be conducted on an annual basis. These requirements help ensure that proper combustion efficiency is achieved. This acts as a surrogate for confirming that the organic compounds in the used oil are sufficiently burned and converted to carbon dioxide and water. There are potential health risks if sufficient combustion does not occur. Since some of the organic emissions from incomplete combustion of used oil may be polycyclic aromatic matter, including polycyclic aromatic hydrocarbons, it is important to ensure high efficiency combustion. The Federal regulations at 40 CFR Part 279 do not require this testing, but other Federal regulations, such as 40 CFR Part 52.21 indirectly require the emissions of VOC and CO to be addressed. This would be the case for facilities subject to 40 CFR Part 52.21 where the air contaminant emission rates for all sources would have to be quantified (See N.J.A.C. 7:27-8.14).

The Federal regulations do not currently require health risk studies to be conducted prior to the installation of used oil space heaters (This may be required under Title III of the Clean Air Act in the future). However, the health risk potential from used oil space heaters has been examined in New Jersey. The results of this study are outlined in the May 7, 1996 Memorandum from the Bureau of Air Quality Evaluation "Determination of Possible Health Risks from Used Oil Combustion Space Heaters Limited to 500,000 British Thermal Units per Hour". Based on these results, and a May 17, 1997 addendum to the memorandum, the registration requirements were developed to ensure that there would be a minimal health risk from the emissions of the registered space heaters. These requirements include a minimum 20 foot stack height for the necessary dispersion of the air

contaminants, and limiting the used oil fuel types. The limitation on types of used oil was incorporated because: 1) a large body of data was available on used oil from cars and trucks, which comprise the large majority of used oils that would be authorized; 2) the air contaminant ranges could reasonably be estimated; and 3) it could be generally assumed that such oil is on-specification used oil. This assumption is also based on other studies, such as the March, 1996 Vermont Used Oil Analysis and Waste Oil Furnace Emissions Study. The installation of proposed space heaters which do not meet the Registration requirements of this rule would be subject to permitting.

The industry design standard in the registration requirements (see proposed N.J.A.C. 7:27-20.3(b), is necessary to ensure that home-made burning units or units employing antiquated technologies will not be installed. Combustion units that do not meet the industry standard may emit more air contaminants and be unsafe. One such recognized standard is the Underwriters Laboratories UL296A, Standard for Safety Waste Oil Burning Air-Heating Appliances. Compliance with an industry design standard helps ensure that used oil space heaters will be operated in a safe manner, i.e. not cause fires.

The proposed rule regulates, either through the rule requirements or permit reviews, the type of used oil that can be combusted in space heaters. This will help to ensure that no other air quality regulation will be violated as a result of the nature and makeup of the used oil. The Federal regulations for space heaters do not distinguish between the types of used oil that will be combusted.

The estimated compliance costs of the rule for used oil space heaters are as follows:

1. The used oil space heater registration fee would be \$250. This is a \$750 decrease from the current fee level of \$1,000. The permit application fee for a space heater to be operated outside of the guidelines of the registration procedure will be consistent with N.J.A.C. 7:27-8.11, Service Fees. The typical fee for this type of space heater is \$1,000. Both the registration fee and permit application fee cover five year terms.
2. All space heaters must undergo annual tuneups and CO and oxygen testing. The estimated cost would be \$750 per year, if the services of a consultant are included. This cost can be reduced by contracting it among multiple space heater operators. If a permittee or registrant purchased a CO/oxygen monitor to conduct their own testing, the cost of the monitor would be approximately \$1,300.  
This type of monitoring has financial advantages which should offset a portion of the costs. Higher combustion efficiency results in more useful heat generated per gallon of fuel combusted. In addition, the annual maintenance keeps the space heater in good working order and avoids breakdowns and costly repairs, thereby protecting the initial investment.
3. In following good management practices, the registrant should always inspect do-it-yourselfer used oil for irregularities. There should be no additional cost to the space heater operator. Employees should be instructed as to what could be burned in the space heaters even in the absence of the proposed rule. The reason for this is if substances other than used oil are charged to the space heater, the equipment associated with the space heater such as the nozzles, burning chamber, or stack could be severely damaged and a significant fire hazard would result.
4. The Federal regulations require only that combustion gases be vented to the ambient air, while the APC permit or registration will require a minimum stack height. The stack height requirement should not add a significant amount to the costs.

5. There should be no additional cost for meeting the Underwriters Laboratories UL296A, Standard for Safety Waste Oil Burning Air-Heating Appliances, because all of the space heater manufacturers which commented during the Used Oil Workshop which was conducted by the Department on the registration requirements stated that their units meet this standard. In addition, local fire codes require that the Underwriter Laboratories' standard be met.

The registration procedure should facilitate the sale of used oil space heaters in New Jersey because it eliminates the currently required permitting procedure. The registration provisions clearly specify installation and operation requirements. The space heater owner or operator would only have to certify that the provisions within this rule will be followed. No calculation of emission rates or equipment design details would have to be submitted to the Department. Economies of scale will be achieved since almost all car dealerships and car maintenance facilities will be able to qualify for a space heater registration.

The proposed rule specifically allows do-it-yourselfer used oil to be accepted and combusted at space heater locations. This reduces the potential for illegal dumping of the used oil in the water streams that flow into the waste water treatment facilities.

### **3. Evaluation Of Certain Used Oil Combustion Sources On A Site- Specific Basis**

Permit reviews are necessary for sources other than space heaters which qualify for a registration and large boilers which are able to and permitted to combust Number 6 Fuel Oil. These permit reviews are necessary to evaluate potential health risks and to confirm that operation of the combustion units complies with all applicable Federal and State rules. The costs for the permit reviews would be similar to that for the review of an application for a commercial Number 6 Fuel Oil source.

### **4. Incorporation of an Ash Content Standard**

Combustion units which burn any type of fuel and have a heat input of one million British Thermal Units per hour (BTU/hr) or greater are subject to current N.J.A.C. 7:27-4, Control and Prohibition of Particles from Combustion of Fuel. Limiting the amount of ash in the used oil will help to ensure compliance with the aforementioned rule without requiring stack testing. Therefore, proposed N.J.A.C. limits the ash content for on-specification used oil. The proposed standard has a maximum ash content of 0.1 percent by weight. The proposed rule would help ensure that used oil combustion will not cause the particulate emission limit to be exceeded (0.1 pounds of particles per million British Thermal Unit fuel input-lb/MMBTU). This is the most stringent particulate emission limit in N.J.A.C. 7:27-4 and is the relevant limit for large, Number 6 Fuel Oil fired combustion units. The "0.1 percent by weight ash standard" results in an inorganic particulate emission rate approximately fifty percent of the 0.1 lb/MMBTU standard. It is estimated that the other fifty percent of the particulate emissions from fuel oil combustion is organic resulting from incomplete combustion. This is the result of some carbon in the fuel which is not combusted. Hence, a 0.1 percent ash content correlates directly with 0.1 pounds of particulate emitted per million British Thermal Units, if half the particles are inorganic and half are organic.

### **Conclusion**

The proposed rule is more stringent than 40 CFR Part 279, which governs the management of used oil. However, the proposed rule is consistent with other Federal rules for which compliance

has to be demonstrated. The potential health risks from used oil combustion also result in the need for more oversight in a densely populated state with generally poor air quality. The environmental and health benefits of the rule and New Jersey's unique characteristics justify exceeding the Federal used oil management requirements at 40 CFR Part 279.

### **JOBS IMPACT**

The Department anticipates that the proposed rule will not have a measurable impact on employment in New Jersey. Businesses now have the option of burning used oil in boilers or space heaters. The same number of personnel is required to operate a boiler whether it is burning commercial oil or used oil. Firms that install space heaters are typically maintenance facilities whose personnel are already trained mechanics. As a result, existing employees at work places where the space heaters will be installed should be able to operate the equipment.

Installing used oil space heaters and allowing increased combustion of used oil may affect employment at used oil processors. There are seven used oil processing facilities in the state. The installation of the space heaters may decrease the amount of used oil processed by these facilities, since more used oil will likely be burned at the site at which it is generated and not sent off-site. However, this decrease in volume may be made up by more used oil generators providing their oil for processing. Additionally, allowing for on-specification used oil or blends of on-specification used oil and commercial fuel to be combusted without a permit modification in certain large Number 6 Fuel Oil boilers should expand the used oil processor's customer base by creating more demand for processed used oil.

Analytical laboratories and oil burner maintenance companies will be positively affected by the rule. Analytical laboratories should experience increased business since used oil space heaters may have their used oil periodically sampled and analyzed by the Department. However, it is not anticipated that this would significantly increase the number of persons employed by the laboratories, given the existing volume of environmental testing currently occurring in the State.

Additionally, oil burner maintenance companies may be retained by some used oil space heater operators to conduct annual tune-up and carbon monoxide and oxygen testing. These firms may need to train existing personnel or hire additional personnel in order to conduct the testing and maintenance of the equipment. The number of additional personnel needed would depend upon the number of space heaters installed and the number of operators who choose to perform the maintenance themselves.

Trucking firms should not be affected, given the small volume of used oil generated compared to the overall amount of commercial fuel oil burned in the State. Similarly, employment at fuel oil vendors should not change because the proposed rule would not significantly impact the amount of fuel oil used in the State.

## **AGRICULTURAL INDUSTRY IMPACT STATEMENT**

Pursuant to P.L. 1998, c.48, adopted on July 2, 1998, the Department has evaluated this rule making to determine the nature and extent of the proposed rule's impact on the agricultural industry.

The proposed rule should not have a measurable impact on the State's agricultural industry. Since the proposed rule should result in less contamination of land and water by used oil, this rule will be beneficial to farmers who rely on clean land and water. The proposed rule would only positively affect, or not affect at all, the manner in which the industry disposes of the used oil generated from its vehicles and other machinery.

There is the possibility of a positive effect for some sectors of the agricultural industry since the rule provides additional environmentally sound outlets for the off-site management of used oil generated. Farmers and food processors and distributors would also be able to follow the registration procedure for installing a used oil space heater if all of the specifications in the registration were met. Any farmers who changed their own motor oil would have additional outlets for disposal of their oil since space heater operators could accept "do-it-yourselfer" motor used oil.

The proposed rule does not mandate that any farmers or agriculture-related businesses modify their current used oil disposal procedures. The used oil can still be collected by used oil processors for treatment and utilization in large boilers.

## **REGULATORY FLEXIBILITY ANALYSIS**

In accordance with the New Jersey Regulatory Flexibility Act, N.J.S.A. 52:14B- 16 et. Seq., (the Act), the Department has evaluated the reporting, recordkeeping , and other compliance requirements that the proposed rule imposes upon small businesses. The proposed rule would regulate all facilities that combust used oil. In addition, businesses that process used oil, blend used oil with fuel oil, analyze used oil, or maintain used oil combustion equipment will be affected. As a result, some "small businesses" as defined in the Act, N.J.S.A. 52:19B-16 et. seq., will be affected by the proposed rule. These businesses include, but are not limited to, the following:

1. Car dealerships/oil change facilities/ other automobile maintenance facilities;
2. Used oil processors and blenders;
3. Oil burner maintenance firms; and
4. Analytical laboratories.

The car dealerships, oil change facilities, and other automobile maintenance facilities currently have the option of burning used lubricating oil generated on-site in a space heater or to have the used lubricating oil collected by a used oil processor for off-site management. (See N.J.A.C. 7:27-20.3(b)).

The proposed rule replaces the current permit requirement with a registration procedure for space heaters in certain instances. The registration procedure is specifically designed for these small businesses and offers them the following advantages over the Department's current space heater permitting procedure:

1. A registration fee of \$250 instead of the current permit fee of \$1,000 would be charged;
2. Registrants would no longer need to submit emission calculations, risk assessments, or diagrams to the Department. The proposed registration procedure therefore simplifies the approval process for space heater operation;
3. In most cases, no consultants or outside firms (except the space heater vendor) would be needed to help with the completion of the registration form;
4. All requirements and specifications for installing and operating space heaters will be provided with the registration form. This will provide a clear, easily understandable procedure for identifying compliance requirements; and
5. Once the registrant submits the registration form to the Department, the space heater can be installed and operated upon verification of receipt by the Department. There will be no review period, as currently exists for standard Air Pollution Control (APC) permit applications.

Any space heater with a Registration is subject to reporting and recordkeeping requirements. Any operation of the space heater which will result in non-compliance must be reported to the Department. At these instances, the registrant shall call either the Department Regional Enforcement Office or the Environmental Action Hotline. The types of records which must be maintained include the following: a) the dates and times of the annual combustion adjustment, b) the readings of carbon monoxide and oxygen taken during the adjustment, and c) the presence of visible emissions at the stack. These records shall be kept on-site in a central file in a permanently bound logbook or in readily accessible computer memories and made available for inspection by the Department for a period of three years after the date of each record.

The Department anticipates that some small businesses who may wish to install space heaters will not qualify for the proposed registration procedure. For example, firms that generate other types of used oil not covered by the registration procedure and who wish to burn that used oil in a space heater would require an APC Permit. The proposed rule limits the type of used oil that a space heater may combust under a registration to used oil from conveyances which are powered by an internal combustion engine. This type of used oil consists of any combination of the following substances: used crankcase oil, used brake fluid, used transmission fluid, or used power steering fluid. Submission of a complete APC permit application would allow the Department to evaluate the nature and quantity of air pollutants that would be emitted from other kinds of used oils.

There are seven used oil processors in New Jersey who can be classified as “small businesses”. Overall, their business activity should not be significantly affected by the proposed rule because the positive and negative impacts to their businesses should offset each other. If the used oil processors’ clients install used oil space heaters, the processors may experience a decrease in the volume of used oil collected from automobile maintenance facilities that the processors have traditionally serviced. However, the proposed rule would allow on-specification used oil and blends of commercial fuel with on-specification used oil to be burned in those combustion units with a rated gross heat input greater than 20 million British Thermal Units per hour which are capable of and authorized to combust Number 6 Fuel Oil. No modification of the combustion unit’s APC permit is necessary. Since the proposed procedures facilitate the sale of their product, this should open additional markets for the used oil processors.

Revenues may increase for those analytical laboratories and oil burner maintenance firms which qualify as small businesses. Analytical laboratories would test the used oils to confirm whether or not the on-specification requirements are met and oil burner maintenance firms would test and maintain small used oil space heaters.

Small businesses that burn used oil could be positively affected by the proposed rule because the owners of these businesses may be able to operate their combustion equipment more economically. This is because used oil is cheaper than commercial fuel oil and no cost if generated on-site or from “do-it-yourselfers”.

Any permittee who burns on-specification used oil must maintain copies of the analyses performed to confirm that the used oil meets the on-specification requirements. The records shall be kept on-site in a central file in a permanently bound logbook or in readily accessible computer memories and made available for inspection by the Department for a period of three years after the date of each record.

**Full text** of the proposed new rule and amendment follows (additions indicated in boldface **thus**):

7:27-8.6 Service fees

(a) - (k) (No change.)

#### A. BASE FEE TABLES

Table 1 through Table 3 (No change).

**Table 4A**  
General permit registration fees

<u>Activity</u>	<u>Basis</u>	<u>Amount</u>
Registration for authorization to act under a general permit under N.J.A.C. 7:27-8.8(c)1 through 7	Per Registration	\$250.00
Registration for authorization to act under a general permit under N.J.A.C. 7:27-8.8(c)7	Per Storage Tank	\$250.00

**Table 4B**  
Used oil space heater registration fees

<u>Activity</u>	<u>Basis</u>	<u>Amount</u>
<b>Registration for authorization to operate a used oil space heater under N.J.A.C. 7:27-20.3</b>	<b>Per Registration</b>	<b>\$250.00</b>
<b>Five year renewal for a used oil space heater under N.J.A.C. 7:27-20.3</b>	<b>Per Registration</b>	<b>\$250.00</b>

Table 5 through Table 9 (No change.)

#### B. SUPPLEMENTARY FEE SCHEDULE (No change.)

### SUBCHAPTER 20 USED OIL COMBUSTION

7:27-20.1 Definitions

(a) The following words and terms, when used in this subchapter, have the meanings given below unless the context clearly indicates otherwise:

"Air quality impact analysis" means a procedure, entailing the use of an air quality simulation model, for determining whether air contaminant emissions will result in ambient air concentrations that exceed standards established for the protection of human health and welfare and the environment.

"Air quality simulation model" means a mathematical procedure, taking into account the dispersive capacity of the atmosphere, meteorological data, topography, and other relevant factors, to predict the concentration of an air contaminant in the ambient air. Such procedure may entail use of a mathematical model or a physical model.

"Ash" means the residue remaining after the burning of a material as tested according to ASTM Standard Test Method for Ash from Petroleum Products by ASTM D482-91. This specification can be obtained from the ASTM, 1916 Race Street, Philadelphia, Pennsylvania 19103.

"Brake fluid" means oil drained from the braking system of a conveyance.

"Combustion unit" means a unit into which fuel is charged and heated to the point at which oxidation occurs and energy is generated.

"Commercial fuel" means solid, liquid, or gaseous fuel normally produced or manufactured, and sold for the purpose of creating useful heat.

"Crankcase oil" means oil drained from the crankcase of a conveyance.

"Do-it-yourselfer used oil collection center" means any site or facility that accepts and/or aggregates and stores used oil collected only from household do-it-yourselfer used oil generators.

"Energy recovery" means the use of heat from combustion for a useful purpose.

"Fluid catalytic cracking unit" means a refinery process unit in which petroleum derivatives are continuously charged. The hydrocarbon molecules in the presence of a catalyst suspended in a fluidized bed are fractured into smaller molecules, or react with a contact material suspended in a fluidized bed. This is meant to improve feed stock quality for additional processing, and the catalyst or contact material is continuously regenerated by burning off coke or other deposits.

"Fuel" means combustible material burned in boilers, furnaces, or other machinery to generate heat or other forms of energy. This term includes commercial fuel and non-commercial fuel.

"Fuel oil" means a liquid or liquefiable petroleum product burned for lighting or for the generation of heat or power and derived directly or indirectly from crude oil.

"Household do-it-yourselfer used oil" means oil that is derived from households, such as used oil generated by individuals who generate used oil through the maintenance of their personal motor vehicles.

"Household do-it-yourselfer used oil generator" means an individual who generates household do-it-yourselfer used oil.

“No. 1 Fuel Oil” means fuel oil of the grade that is classified as No. 1, according to ASTM Standard Specification for Classification of Fuel Oils by ASTM D396-84. This specification can be obtained from the ASTM, 1916 Race Street, Philadelphia, Pennsylvania 19103.

“No. 2 Fuel Oil” means fuel oil of the grade that is classified as No. 2, according to ASTM Standard Specification for Classification of Fuel Oils by ASTM D396-84. This specification can be obtained from the ASTM, 1916 Race Street, Philadelphia, Pennsylvania 19103.

“No. 6 Fuel Oil” means fuel oil of the grade that is classified as No. 6, according to ASTM Standard Specification for Classification of Fuel Oils by ASTM D396-84. This specification can be obtained from the ASTM, 1916 Race Street, Philadelphia, Pennsylvania 19103.

"Non-commercial fuel" means solid, liquid or gaseous fuel which is not ordinarily produced, manufactured, or sold for the purpose of creating heat or other forms of energy. This includes fuels which are derived from used oil or other waste materials.

“Off-specification used oil” means used oil which is not on-specification used oil.

“On-specification used oil” means used oil which meets the specifications, established in the solid waste rules at N.J.A.C. 7:26A-6.2(a) and any amendments thereto. These specifications are currently as follows:

CONSTITUENT/PROPERTY	ALLOWABLE LEVEL
Arsenic	5 ppmw maximum
Cadmium	2 ppmw maximum
Chromium	10 ppmw maximum
Lead	100 ppmw maximum
Flash point	100 degrees Fahrenheit minimum
Total halogens	1000 ppmw maximum

“Permit” means a permit to Construct, Install or Alter Control Apparatus or Equipment issued under N.J.S.A. 26:2C-9.1 et seq. and N.J.A.C. 7:27-8, an operating permit issued under N.J.S.A. 26:2C-9.1 et seq. and N.J.A.C. 7:27-22, or a facility-wide permit issued under N.J.S.A. 13:1D-35 et seq. and N.J.A.C. 7:1K-1.5, as applicable.

"Person" means an individual, public or private corporation, company, partnership, firm, association, society, joint stock company, international entity, institution, county, municipality, state, interstate body, the United States of America, or any agency, board, commission, employee, agent, officer, or political subdivision of a state, an interstate body, or the United States of America.

“Petroleum refinery” means any facility engaged in producing gasoline, kerosene, distillate fuel oils, residual fuel oils, lubricants, or other products through distillation of petroleum.

“Power steering fluid” means oil drained from the power steering system of a conveyance.

“Registration” means the registering of a space heater with the Department on forms provided by the Department and containing such information as may be required in accordance to N.J.A.C. 7:27-20.3(a)2. and (b).

"Risk assessment" means a procedure for characterizing the probability that potential exposure to air contaminants will result in adverse effects on human health, or welfare or the environment.

“Shipment” means, in reference to used oil, used oil delivered in a single truckload, railroad tank car, barge, or other delivery vessel.

“Space heater” for the purpose of this rule means an used oil fired space heater that is self-contained, automatically controlled, indirectly fired air heating appliance for warming of a non-residential area.

“Transmission fluid” means oil drained from a transmission of a conveyance.

“Used oil” means any oil that has been refined from crude oil, or any synthetic oil, that has been used and as a result of such use, is contaminated by physical or chemical impurities, or unused oil that is contaminated by physical or chemical impurities through storage or handling.

“Visible smoke” means smoke which obscures light to a degree readily discernible by visual observation.

(b) The following acronyms, when used in this subchapter, have the meanings given below:

“ASTM” means the American Society for Testing and Materials.

“BTU” means British Thermal Unit.

“CFR” means Code of Federal Regulations.

“CO” means carbon monoxide.

“EPA” means the United States Environmental Protection Agency.

“ppmw” means parts per million by weight.

“ppmvd” means parts per million by volume, dry basis.

#### 7:27-20.2 General provisions

(a) No person shall combust used oil except as authorized pursuant to this subchapter.

(b) No person shall burn fuel oil, allow the burning of fuel oil, or sell fuel oil for burning, in a space heater, boiler, or other combustion unit located in a multi-family residence (such as an

apartment building or a dormitory), a day care facility, a pre-school, a school, a hospital, a residence for the elderly, or a nursing home, if the fuel oil consists of used oil or has been blended with used oil.

- (c) No person shall sell fuel oil for burning in a space heater, boiler, or other combustion unit located in a single-family dwelling, two-family dwelling, or a dwelling of six or less family units, one of which is owner occupied, if the fuel oil consists of used oil, or has been blended with used oil.
- (d) No person shall combust used oil or any mixtures containing used oil in a space heater without first registering with the Department pursuant to N.J.A.C. 7:27-20.3, or combust used oil in any space heater or combustion unit without a permit issued by the Department pursuant to N.J.A.C. 7:27-8 or N.J.A.C. 7:27-22, whichever is applicable. The owner or operator of the space heater shall:
  - 1. Construct, install, and operate the space heater in conformance with all applicable requirements in this subchapter and all other provisions of the New Jersey Administrative Code; and
  - 2. Monitor the operation of the space heater and record and report the findings, as required in N.J.A.C. 7:27-20.3(b) below or in the permit issued pursuant to N.J.A.C. 7:27-8 or N.J.A.C. 7:27-22, as applicable.
- (e) No person shall combust used oil which has been blended with any hazardous waste, as defined pursuant to N.J.A.C. 7:26G-5, except as allowed under N.J.A.C. 7:26A-6, N.J.A.C. 7:26G-8 and 9, and N.J.A.C. 7:27-8 or N.J.A.C. 7:27-22, as applicable.

#### 7:27-20.3 Burning of on-specification used oil in space heaters covered by a registration

- (a) A person may burn used oil in a space heater pursuant to a registration provided that:
  - 1. The total combined gross heat input of all space heaters at any one facility does not exceed 500,000 BTUs per hour. If any additional used oil space heater(s) at the facility result in the combined total gross heat input of all space heaters exceeding 500,000 BTUs per hour, then all of the space heaters shall require permits pursuant to N.J.A.C. 7:27-20.4;
  - 2. The used oil space heater(s) covered by a registration shall be installed, operated, and maintained consistently with N.J.A.C. 7:27-20.3(b) and the person submitting the registration shall certify that the space heater(s) is installed, operated, and maintained consistently with N.J.A.C. 7:27-20.3(b);
  - 3. The registration shall be executed on forms prescribed by the Department. The registration form shall require information identifying Full Business Name, Mailing Address, Facility Location, Location of Equipment on Premises, Facility Contact, and

Maximum Heat Input Rate; and confirming that the space heater meets the criteria for the registration, and operates in accordance with the registration. Registration forms may be obtained by submitting a written request to the Department at the following address:

New Jersey Department of Environmental Protection  
Air Quality Permitting Program  
P.O. Box 27  
Trenton, New Jersey 08625;

4. The registration form referenced in N.J.A.C. 7:27-20.3(a)3 shall require the registrant to certify the truth and accuracy of the information on the form. The certification shall meet the requirements of N.J.A.C. 7:27-1.39;
  5. The registration shall include certifications consistent with N.J.A.C. 7:27-1.39 Certification of Information.
- (b) The space heater for which a registration has been filed with the Department shall conform to the following requirements:
1. The space heater shall be used for the purpose of energy recovery only;
  2. Any used oil burned in the space heater shall be:
    - i. Generated on-site by the owner or operator of the space heater, or by an agent of such person, or
    - ii. Generated by a household do-it-yourselfer used oil generator, or
    - iii. Collected by do-it-yourselfer used oil collection centers, such as those organized by a municipality;
  3. The on-specification used oil to be burned in the space heater shall conform to the following requirements:
    - i. The used oil shall only be from conveyances that are powered by an internal combustion engine, consisting of any combination of the following substances: used crankcase oil, used brake fluid, used transmission fluid, or used power steering fluid;
    - ii. None of the following shall be blended with the used oil:
      - (A) Anti-freeze;
      - (B) Carburetor cleaner;

- (C) Paint thinner;
  - (D) Paint;
  - (E) Part degreaser solvents;
  - (F) Oil additives;
  - (G) Gasoline;
  - (H) Chlorinated solvents;
  - (I) Battery acid;
  - (J) A hazardous waste as defined pursuant to N.J.A.C. 7:26G-5;
4. The maximum gross heat input of any one space heater at a facility shall not exceed 500,000 BTUs per hour;
  5. The discharge point of the stack serving the space heater is higher than the peak of the roof of the building in which the space heater is located and that discharge point is at least 20 feet above grade;
  6. The space heater shall be listed and tested by a nationally recognized laboratory in accordance with standards equivalent to the Underwriter Laboratory, Incorporated 296A Standard for Safety UL296A “Waste Oil-Burning Air Heating Appliances”. This listing shall be documented by the manufacturer of the used oil space heater and provided to the Registrant;
  7. The space heater shall be constructed, installed, and operated in conformance with all applicable requirements in this subchapter and all other provisions of the New Jersey Administrative Code;
  8. The owner or operator shall adjust the combustion process of the used oil space heater within 24 operating hours after startup and annually thereafter. The adjustment shall consist of the following:
    - i. Adjusting the air-to-fuel ratio to the manufacturer’s recommended standards and ensuring that it is correctly calibrated and functioning properly;
    - ii. Inspecting the space heater and cleaning or replacing any components of the space heater as necessary to minimize total emissions of carbon monoxide (CO);

- iii. Taking an exhaust stream sample and analyzing it for CO and oxygen. This sampling and analysis may be done with a portable monitor. The results of the sampling and analysis shall ensure that CO emissions after adjustment pursuant to 8i and 8ii, above, are no more than 100 parts per million by volume, dry basis, hourly average, corrected to seven percent oxygen. Testing for less than one hour is permitted if the CO reading is no more than 100 parts per million by volume, dry basis, corrected to seven percent oxygen for five consecutive minutes of operation;
    - (A) Record the manufacturer and model number of the portable monitor used for the CO and oxygen measurements. The CO testing equipment shall be capable of measuring and recording the in-stack concentrations of CO, over a range of 0 to 500 parts per million by volume, with an accuracy of plus/minus five percent of the reading when measuring 100 parts per million by volume.
    - (B) If an exhaust stream sample exceeds the CO standard of 100 ppmvd, one hour average, corrected to seven percent oxygen, the used oil space heater shall not be operated, except for adjustment purposes, until the owner or operator corrects any mechanical problems, readjusts the space heater, and the space heater has been demonstrated to meet the carbon monoxide standard of no more than 100 ppmvd, one hour average, corrected to seven percent oxygen;
  - iv. Ensuring the exhaust emissions at the stack do not contain visible particulate emissions; and
  - v. Recording all adjustments made to the space heater, all carbon monoxide and oxygen readings, the determination of the presence of visible emissions, and the dates of each adjustment, as outlined in i, iii, and iv, respectively;
9. If the sample taken in 8.iii, above, exceeds the CO standard of 100 parts per million by volume, dry basis, corrected to seven percent oxygen, one hour average, no violation shall occur if the space heater continues to be operated only as is outlined in 8.iii, above;
  10. The space heater shall not be operated in a manner which will cause visible emissions, exclusive of visible condensed water vapor, except for a period of no more than three minutes in any consecutive 30 minute period. If visible emissions are observed, the following measures shall be implemented:
    - i. The operator manual shall be referred to for corrective measures, and the corrective actions taken shall be recorded;
    - ii. Except for adjustment purposes, the used oil space heater shall not be operated after visible emissions are observed, until the owner or operator

corrects any mechanical problems, readjusts the air-to-fuel ratio, if necessary, and the space heater has been demonstrated to meet the no visible emission standard;

11. Commercial Number 1 Fuel Oil, commonly known as kerosene, and commercial Number 2 Fuel Oil, commonly known as home heating oil, can be blended with the used oil and charged to the used oil space heater;

12. The used oil in the storage tank for the space heater shall not exceed the following limits. The Department may obtain an oil sample to verify that the used oil is within these limits:

CONSTITUENT/PROPERTY	ALLOWABLE LEVEL
Arsenic	5 ppmw maximum
Cadmium	2 ppmw maximum
Chromium	10 ppmw maximum
Lead	100 ppmw maximum
Flash point	100 degrees Fahrenheit minimum
Total halogens	1000 ppmw maximum
Sulfur	5000 ppmw maximum

13. The owner or operator of the used oil space heater shall maintain the oil filtering equipment in accordance with manufacturer's specifications and shall not operate the used oil space heater without an installed and operational filter.

14. Any operation of the space heater which may cause a release of air contaminants which might result in citizen complaints shall be reported by the Registrant as required by the Air Pollution Control Act. The Registrant shall immediately notify the Department of any non-compliance, including visible emissions, by calling the Department Regional Enforcement Office or the Environmental Action Hotline at (609) 292-7172.

15. All records which shall be maintained pursuant to this section shall be kept on-site in a central file in a permanently bound logbook or in readily accessible computer memories and made available for inspection by the Department for a period of three years after the date of each record. These records shall include the following:

- i. Pursuant to N.J.A.C. 7:27-20.3(b)8, the dates of each adjustment, carbon monoxide and oxygen readings, and presence of visible emissions, if any; and
- ii. Pursuant to N.J.A.C. 7:27-20.3(b)10, instances of when the used oil space heater caused visible emissions;

16. Consistent with Table 4b of the Base Fee Schedule at N.J.A.C. 7:27-8.6, a \$250 fee, which includes registration for operating a space heater, shall be submitted with each registration statement. The registration shall be renewed every five years on forms

prescribed by and furnished by the Department and shall be signed by the person engaging in the operation of a used oil space heater. In the registration renewal form, it shall be certified by the registrant that the information initially submitted and certified, pursuant to N.J.A.C. 7:27-20.3(a)3, is still valid for the space heater that had been registered. The certification shall meet the requirements of N.J.A.C. 7:27-1.39. Registration renewal forms may be obtained by submitting a written request to the Department at the following address:

New Jersey Department of Environmental Protection  
Air Quality Permitting Program  
P.O. Box 27  
Trenton, New Jersey 08625

The renewal fee shall be \$250, consistent with Table 4b of the Base Fee Schedule of N.J.A.C. 7:27-8.6;

17. Visually inspect the used oil brought to the facility by household do-it-yourselfer used oil generators prior to it being charged to the used oil storage tank.
- (c) Once the registration has been forwarded to the Department by United States Postal Service by registered mail and a registered receipt is obtained, the space heater may be installed and operated. The Department shall send an acknowledgment to the registrant that it has received the registration. If the registration is incomplete or deficient, the Department shall notify the registrant.

#### 7:27-20.4 Burning of on-specification used oil in space heaters covered by a Permit

- (a) Used oil may be burned in a space heater other than as outlined in N.J.A.C. 7:27-20.3 if a permit to combust used oil is issued by the Department pursuant to N.J.A.C. 7:27-8 or N.J.A.C. 7:27-22. Such space heaters include, but are not limited to, those at a facility in which the cumulative gross heat input of all space heaters exceeds 500,000 BTU/hr, the gross heat input of one space heater is in excess of 500,000 BTU/hr, or where any space heaters would combust used oil other than the used oils listed in N.J.A.C. 7:27-20.3(b)3.i. In accordance with N.J.A.C. 7:27-8 or N.J.A.C. 7:27-22, as applicable, the application for a permit shall include the following at a minimum:
1. A protocol for conducting an air quality impact analysis, including a risk assessment;
  2. Such details regarding the equipment and control apparatus as necessary to determine that the equipment and control apparatus is designed to operate without causing a violation of any provisions of relevant State or Federal laws or regulations and the equipment or control apparatus incorporates advances in the art of air pollution control for the kind and amount of air contaminant emitted by the applicant's equipment;

3. The appropriate completed forms which are obtained from the Department by submitting to written request to the following address:

New Jersey Department of Environmental Protection  
Air Quality Permitting Program  
P.O. Box 27  
Trenton, New Jersey 08625; and

4. Certifications complying with N.J.A.C. 7:27-1.39.
  - (b) Upon request by the Department, any person to whom the Department has issued a permit to burn used oil in a space heater pursuant to N.J.A.C. 7:27-8 or N.J.A.C. 7:27-22, as applicable, shall submit to the Department information relevant to the operation of the equipment and control apparatus including, but not limited to, the following: diagram of the facility, records documenting any use of any equipment, and records documenting any construction, installation, or alteration;
  - (c) The Department may include, as a condition of approval for a permit to burn used oil in a space heater pursuant to N.J.A.C. 7:27-8 or N.J.A.C. 7:27-22, as applicable, that a person whom the Department has issued a permit provide verification that the equipment and control apparatus is being used in compliance with the provisions and conditions of its permit. Such verification may include periodic testing; installation, operation, and maintenance of instrumentation and sensing devices; recordkeeping; and reporting.
  - (d) After an application for permit is filed with the Department, the space heater(s) shall not be installed and operated until an approved permit is issued by the Department pursuant to N.J.A.C. 7:27-8 or N.J.A.C. 7:27-22.

7:27-20.5 Demonstration that used oil is on-specification

- (a) A permittee subject to N.J.A.C. 7:27-20.6(a) shall confirm that the used oil to be combusted is on-specification used oil, as defined in N.J.A.C. 7:27-20.1. This confirmation shall be done by either performing an analysis or obtaining copies of the analysis from the supplier, documenting that each shipment received from off-site or batch generated on-site of used oil meets the on-specification standards;
- (b) The permittee shall keep copies of the analysis of used oil or other information, as required by N.J.A.C. 7:27-20.5(a), on-site in a central file in a permanently bound logbook or in readily accessible computer memories and make these copies available for inspection by the Department for a period of three years after the date of each record, which is consistent with N.J.A.C. 7:26A-6.9(c)2;
- (c) Suppliers of used oil shall provide a copy of the analysis to the permittee upon delivery of each shipment of used oil, documenting that the used oil is on-specification.

#### 7:27-20.6 Burning of on-specification oil in other combustion units

- (a) Except as prohibited by N.J.A.C. 7:27-20.2(b) or (c), a permittee may burn on-specification used oil in a combustion unit without having to modify the permit, provided that:
  - 1. The rated gross heat input is greater than 20 million BTU per hour; and
  - 2. The combustion device is capable of burning Number 6 Fuel oil; and
  - 3. The Department has issued a permit which authorizes the unit to burn Number 6 Fuel Oil; and
  - 4. The permittee confirms, prior to burning, and pursuant to N.J.A.C. 7:27-20.5, that the used oil combusted is on-specification used oil; and
  - 5. The permittee confirms, prior to burning, that the used oil combusted meets the ash standard outlined in N.J.A.C. 7:27-20.8.
- (b) Any combustion unit which meets the provisions of (a), above, may also combust a blend of on-specification used oil and a commercial fuel oil.
- (c) Any person who sells or conveys to another party commercial fuel blended with used oil to be burned in New Jersey in a combustion unit pursuant to (a) above shall provide certification that only on-specification used oil is in the blend,, consistent with N.J.A.C. 7:27-20.5.
- (d) Any blends of off-specification used oil with commercial fuel oil or with on-specification used oil shall be subject to the provisions of N.J.A.C. 7:27-20.7 below.

#### 7:27-20.7 Burning of off-specification used oil

- (a) A person wishing to burn off-specification used oil shall apply to the Department for a permit pursuant to N.J.A.C. 7:27-8 or N.J.A.C. 7:27-22, as applicable, provided that:
  - 1. The combustion device for which the permit is sought has air pollution control devices which control the emissions of the off-specification contaminants; and
  - 2. The combustion device for which the permit is sought is one of the following:
    - i. An industrial furnace, as defined at N.J.A.C. 7:26-1.4; or
    - ii. A boiler, as defined at N.J.A.C. 7:26-1.4, which is any of the following:
      - (A) An industrial boiler located on the site of a facility engaged in a manufacturing process where substances are transformed into new

products, including the component parts of products, by mechanical or chemical process; or

(B) A utility boiler used to produce electric power, steam, heated or cooled air, or other gases or fluids for sale; or

iii. A hazardous waste incinerator subject to regulation under 40 C.F.R. Parts 264 or 265, as incorporated by reference at N.J.A.C. 7:26G-8 or 9; and

3. The combustion device for which the permit is sought complies with all applicable air pollution control regulations at N.J.A.C. 7:27.

7:27-20.8 Ash Standard

- (a) Except as provided in (b) below, the ash content of on-specification used oil shall not exceed 0.1 percent by weight.
- (b) Any person may request a different ash content limit if the combustion device incorporates air pollution control for particulates. The Department shall approve such request if compliance with all applicable air pollution control regulations is demonstrated in a permit application pursuant to N.J.A.C. 7:27-8 or N.J.A.C. 7:27-22.
- (c) The ash content limit in (a) and (b) above shall be measured with ASTM Standard Test Method for Ash from Petroleum Products by ASTM D 482-91. This specification can be obtained from the ASTM, 1916 Race Street, Philadelphia, Pennsylvania 19103.
- (d) The vendor or permittee shall verify the ash content standard in (a) and (b) above for on-specification used oil or blend of any on-specification used oil with commercial fuel by sampling and analysis.

7:27-20.9 Exception

- (a) The provisions of this Subchapter shall not apply to any used oil charged to a fluid catalytic cracking unit at a petroleum refinery.

October 13, 1998  
Date

/s/ ROBERT C. SHINN, Jr.  
Robert C. Shinn, Jr., Commissioner