



Project Summary

Identification and Characterization of Five Non-traditional Source Categories: Catastrophic/Accidental Releases, Vehicle Repair Facilities, Recycling, Pesticide Applications, and Agricultural Operations

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This report presents the results of work that is part of EPA's program to identify and characterize emissions sources not currently accounted for by either the existing Aerometric Information Retrieval System (AIRS) or State Implementation Plan (SIP) area source methodologies and to develop appropriate emissions estimation methodologies and emission factors for a group of these source categories. Based on the results of the identification and characterization portions of this research, five source categories were selected for methodology and emission factor development: catastrophic/accidental releases, vehicle repair facilities, recycling, pesticide application, and agricultural operations. This report presents emissions estimation methodologies and emission factor data for these source categories.

The discussions of each category include general background information, emissions generation activities, pollutants emitted, sources of activity and pollutant data, emissions estimation methodologies, issues to be considered, and recommendations. The information used in these discussions was derived from various sources including available literature, industrial and trade association publications and con-

tracts, experts on the category and activity, and knowledgeable federal and state personnel.

This Project Summary was developed by EPA's Air and Energy Engineering Research Laboratory, Research Triangle Park, NC, to announce key findings of the research project that is fully documented in a separate report of the same title (see Project Report ordering information at back).

Introduction

Area source emissions of particulate matter (PM or TSP), sulfur dioxide (SO₂), oxides of nitrogen (NO_x), reactive volatile organic compounds (VOCs) and carbon monoxide (CO) are estimated annually by the National Air Data Branch (NADB) of the U.S. Environmental Protection Agency (EPA). Area sources are typically aggregations of individual sources that are too small to be defined as point sources in a specific geographic area. Area sources usually include all mobile sources and any stationary sources that are too small, difficult, or numerous to be inventoried as point sources. The National Emissions Data System (NEDS) is the data management and processing system that has historically been used to maintain these annual emissions data. The statutory requirement for annual inventories defines an area source as an anthropogenic mo-



bile or stationary source that emits less than 100 tons* per year (TPY) of TSP, SO₂, NO_x, or VOCs, or 1,000 TPY of CO.

The original NEDS area source methodology and algorithms were developed in 1973 and 1974 using 1960 census data (e.g., population, housing, manufacturing). The NEDS methodology, relatively unchanged over the past 17 years, forms the basis for the AIRS' Area and Mobile Source Subsystem (AMS) methods. The Joint Emissions Inventory Oversight Group (JEIOG) is currently updating and revising estimation and allocation methods, using more recent data.

While emissions sources included in current inventory methodologies do cover a large portion of anthropogenic emissions, many small source categories are not included in the inventory. Identification, characterization, and inclusion of these categories and their emissions in the inventory will result in a more thorough and complete emissions inventory.

This report more fully characterizes five source categories not currently accounted for in the NEDS area source and AIRS/AMS methodologies: Catastrophic/Accidental Releases, Vehicle Repair Facilities, Recycling Processes, Farming Operations, and Crop Dusting/Pesticide Application. To the extent that data and information are available, the following topics are included in the categorization:

- Definition and description of the category and activity
- Process identification and definition
- Pollutants emitted from each identified process
- Estimate of the pollutant levels
- Source activity data availability
- Level of detail required by user
- Emission factors available/required for each identified process
- Regional, seasonal, or other temporal characteristics
- Potential methodology
- Additional data requirements critical to methodology development

Catastrophic/Accidental Releases—Rail Car, Tank Truck, and Industrial Accidents

Catastrophic releases, which often involve the release of large quantities of substances over a very short period of time, potentially represent a significant portion of an area's total emissions. However, these emissions are not represented in the current area source emissions inventory methodology.

For this discussion, catastrophic/accidental releases refer to the unintentional

and unexpected, sudden release of pollutants to the atmosphere from rail cars, tank trucks, and industrial facilities. Naturally occurring releases like the Mount St. Helens volcanic eruption in 1980 are not covered in this definition. The accident or catastrophe may be caused by equipment failure, roadway conditions, human error, or by natural conditions (i.e., hurricane, lightning, earthquake, or flash flood). These two types of releases differ in their severity. Because accidental releases are considered not as severe as catastrophic releases, minor accidental releases often go unreported, whereas catastrophic releases are reported. Examples of accidental releases are the overloading of an underground storage tank and chemical spill resulting from a highway truck accident. A catastrophic release would be the Chernobyl disaster.

Catastrophic releases from rail car, tank truck, and industrial accidents are usually chemical spills, with or without combustion. The types and quantities of emissions depend on factors such as the material released, remediation efforts, and weather conditions.

The nature of catastrophic releases makes precisely describing the released materials difficult. A material may be in one form for storage or transportation but may form a different substance when released. A compilation of common hazardous materials from the U.S. Department of Transportation's (DOT's) National Response Center (NRC) that could be subject to accidental release is also included in EPA's List of Hazardous Substances, Section 302.4(a) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). VOC species emitted are dependent on the material released. VOC, NO_x, and CO emissions are possible if combustion takes place. Air toxics may also be emitted.

Levels of pollutants vary widely from year to year and from area to area. Due to the nature of catastrophic/accidental releases, it is very difficult to estimate annual emissions for any particular hazardous material. Using national hazardous material databases, information on various spills can be collected. For instance, using information from the Emergency Response Notification System (ERNS)—a database run by EPA and supported by the U.S. Coast Guard (USCG)—estimates for the reported quantities of released hazardous substances were obtained. In 1989, an estimated 219.8 million lb* of hazardous substances were

catastrophically/accidentally released in the U.S. and its territories. This number is probably low because it covers only reported occurrences.

40 CFR Part 302.6 requires that releases of hazardous chemicals be reported to the NRC. The NRC maintains a database on oil spills, hazardous materials, and other releases. Data reported for each accident include, but are not restricted to,

- Date of release
- Material released
- Media affected (water, air, etc.)
- Mode (train, ship, truck, etc.)
- Location
- Quantity released

Another source of information on catastrophic emissions is ERNS. ERNS is a national computer database and retrieval system that is run by the EPA and supported by the USCG. ERNS stores information on releases of oil and hazardous substances, and provides a direct source of easily accessible data that can be used to analyze spills and to support emergency planning efforts by federal, state, and local governments. The database contains the following types of information:

- Material released
- Amount released
- Source of release
- Incident location
- Response actions taken
- Environmental medium into which the release occurred

Information from ERNS is made available to the public in periodic reports published by EPA's Emergency Response Division. These reports can be obtained by calling the Resource Conservation and Recovery Act (RCRA)/Superfund Hotline at 1-800-424-9346 (in the Washington, D.C. metropolitan area, call 1-202-382-3000).

A future source of information on accidental releases will be the Toxic Chemical Release Inventory (TRI). TRI contains files on the annual estimated releases of toxic chemicals to the environment from point sources complying with Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986. EPA collects the information, and it becomes accessible through the National Library of Medicine's (NLM) Toxicology Data Network (TOXNET). Data submitted to EPA include names and addresses of facilities that manufacture, process, or otherwise use these chemicals, as well as amounts released to the environment or transferred to waste sites.

Vehicle Repair Facilities

Vehicle repair facilities are defined as locations that service or repair light-duty

* 1 TPY = 0.907 metric ton (tonne)

* 1 lb = 0.454 kg

vehicles with predominantly gasoline engines. This category includes the general service station or garage, as well as facilities offering more specialized services (e.g., oil change, tune-up, muffler/exhaust repair, radiator repair). This category does not include exterior-related services such as car washing/detailing shops and paint and body repair shops. Many repair activities that generate emissions are also performed by individual vehicle owners. These do-it-yourselfers (DIYers) could account for a large percentage of the emissions related to this category. Due to the broad scope of this category, several subcategories were identified. The following subcategories represent the fluids or classes of fluids identified as sources of emissions:

Maintenance

- Antifreeze/engine coolants
- Brake fluids
- Crankcase oils
- Lubricants & silicones
- Steering fluids
- Transmission fluids
- Windshield washer fluids

Cleaning

- Brake cleaners
- Carburetor and choke cleaners
- Engine/parts cleaners/degreasers

Specialty

- Belt dressings
- Engine starting fluids
- Tire repair products
- Windshield deicers

Additives

- Crankcase
- Fuel system
- Radiator
- Transmission

Automotive repair products are used by professional mechanics and vehicle owners. VOC emissions from automotive fluids are associated with draining, refilling, overfilling, or replacing fluids and from running and standing losses. Vehicle repair facilities generate emissions through the use of products containing solvents and aerosol propellants. Propellants are used to propel aerosol products from containers, solubilize active ingredients, and serve as part of the diluting system. Solvents solubilize the product ingredients and affect the evaporation rate of the product. Many of these products are composed of VOCs. In addition, some of the compounds in automotive fluids are considered hazardous, composed of toxic and ignitable chemicals.

Some categories and product types were found to be more fully defined than others, particularly with regard to the specificity of the terminology for various dis-

crete product types and the variability of formulations for a specific type of product. For example, the basic functional fluids used in vehicles (antifreeze, brake fluid, transmission fluid, etc.) tend to have the same basic formulation, and principal ingredients. However, the term "carburetor cleaner" can apply to products designed to be sprayed into the carburetor as well as buckets of solvent used to soak partially disassembled carburetors. There are also numerous other examples of multi-use products, such as dressings, and other product categories such as lubricants, where descriptions and designations may overlap. With the available information on product types and formulations, it can be difficult to distinguish between formulations for distinct product types (i.e., products with different intended applications) and different formulations for products intended for the same basic use. In some cases, varying formulations may be due to differences in product form (e.g., aerosol, liquid, or solid), while some products in the same category may use different ingredients for the same function (e.g., different solvents) or even operate on different basic principles (solvent versus alkaline cleaning).

Almost without exception, the products discussed in the report are designed and labeled for use in general automotive applications, which include cars, trucks, and motorcycles. Specific products for trucks or motorcycles are mentioned where they have been identified.

The EPA report, "Compilation of Air Pollutant Emission Factors," AP-42, contains national evaporative emissions and per capita emission factors for commercial/consumer solvent use. The only automotive product categorized, however, is windshield washing. The windshield washing per capita emission factor listed is 0.63 lb/yr. Use of this factor and assuming an annual growth rate of 1.8% results in a VOC emissions national total of 81,900 TPY. National VOC estimates for solvents used in automotive repair in 1986 are 37,143 TPY. In a study of New York State emissions, the total emissions of VOCs for 49 consumer product categories are estimated as 26,979 TPY. Of this total, 2,766 TPY are attributed to seven automotive categories: auto antifreeze, carburetor and choke cleaners, brake cleaners, engine degreasers, engine starting fluids, lubricants and silicones, and windshield deicers. In addition to these data, the California Air Resources Board (CARB) has an extensive program underway to reduce VOC emission from consumer products. This effort includes data on average an-

nual day VOC emissions from aerosol consumer products in California. For the category automotive and industrial consumer products, CARB estimates a total of 3.96 VOC tons per day (TPD) of propellant emissions and 27.37 TPD of solvent emissions for a combined total of 31.33 TPD.

Recycling

Recycling may be defined as the reclamation of materials from waste. For this report, the definition includes all activities or processes related to the recycling effort, beginning with the removal of material from the waste stream and extending to where recycled material is essentially identical to products derived from virgin materials or may be acceptable as a substitute for virgin materials. This distinction is made to concentrate on the air emissions which are attributable to recycling processes to the identified point. In reporting emissions, however, care is needed to ensure that emissions associated with a recycling process are not double counted. For example vehicle emissions resulting from the collection of recyclable materials should be reported as part of a mobile source inventory and not as part of a recycling emissions inventory. Air emissions data are currently available from several information sources, such as AP-42 and EPA's AIRS, for a number of manufacturing processes which incorporate recycled materials. Presented in the report are findings from research on the air emissions generated during recycling processes involving five materials: paper, plastic, glass, metals from Municipal Solid Waste (MSW), and solvents. Recycling of the first four materials involves one or more energy-intensive steps. Emissions resulting from associated energy production, however, are not addressed as part of this section. This section focuses on emissions from actual recycling processes.

The fifth category of materials researched for air emissions resulting from recycling was solvents. Unlike the other four recyclable material categories in this study which originate in homes or commercial establishments, spent solvents are generated primarily by industry. As the point of origination and the recycling path of spent solvents are significantly different from the other materials, the findings on this subject are presented separately.

A limited amount of statistical information is provided to describe the extent of recycling activities. Sections of the recycling industry are experiencing rapid change. As evidence of this change, pertinent historical data are provided along with projections. The flow of recyclable

material is traced from the post-consumer waste stream through the production of materials suitable for secondary markets. Descriptions of the various collection and sorting methods are provided, followed by a detailed description of material-specific processing activities. Information which considers potential to emit air contaminants is presented for each of the four materials in the study.

Historically, recycling has been practiced primarily by the manufacturing sector to reduce waste stream volumes, the resulting disposal costs, and also as a means of cost recovery by selling scrap materials. Recycling of post-consumer wastes was primarily limited to paper and rags until the 1970s. The environmental movement was partially responsible for educating the general population on the potential benefits of recycling, but markets for recycled materials remained limited. One of the driving forces behind an increased interest in recycling is the dwindling number of available landfills in the more densely populated areas of the U.S. The MSW Landfill Survey conducted by EPA projects that the number of landfills is expected to decrease from approximately 5500 in 1988 to about 1000 in 2013.

Three disposal methods are used for MSW: landfilling, incineration, and recycling. Incineration and recycling are becoming increasingly popular. In 1984, 85% of MSW was disposed of in landfills, 5% was incinerated, and 10% was recycled. Statistics from 1988 show the incineration and recycling proportions to have grown to 14.2 and 13.1%, respectively, with 72.7% disposed of in landfills.

In 1986, 17 million tons of material was recycled, a 13% increase over the 1984 level. This amount is primarily due to voluntary efforts. However, most states have adopted recycling initiatives with recycling targets of 15% or higher. EPA has set a national recycling goal of 25% of the MSW by 1995. It is estimated that 63% of MSW generated in 1988 was recyclable. Further, disposal of these materials accounted for 68% of landfill volume.

Several criteria pollutants would be released by vehicles involved in the collection and transportation of recyclable materials. CO, NO_x, PM, and VOCs are emitted by vehicles. However, such emissions should not be counted as part of an agency's recycling emissions inventory. Their proper place is the mobile source inventory.

When assessing emissions quantities, factors to be considered would include the type of recycling program and the

extent of public participation. Many curbside recycling programs attempt to minimize additional vehicle (and manpower) requirements by collecting recyclable materials concurrently with non-recyclables. Given that many municipalities collect refuse weekly, vehicle miles travelled (VMT) by refuse collection vehicles should represent a negligible portion of total VMT in most areas.

Programs that require a second pickup would result in additional VMT during collection. Some municipalities have gone from weekly pickup of MSW to biweekly alternating pickups of both MSW and recyclable materials. This approach was designed to minimize additional VMT. For programs resulting in increased VMT, emissions may be estimated by obtaining the VMT attributable to recycling and other vehicle information.

Regardless of the type of recycling program, the result of waste segregation produces one or more reclaimed materials, and remaining wastes which require disposal by landfilling or incineration. Incineration achieves significant waste volume reductions, leading to increased landfill lifetimes. As of 1988, nearly 160 MWC facilities were on-line, accounting for approximately 320 incinerators. Air emissions resulting from waste combustion must be addressed along with potential problems associated with the disposal of incinerator ash. Over 95% of the municipal combustors brought on-line since 1980 have heat recovery boilers. These facilities represent 78% of the total incinerator capacity of 68,000 TPD. Although energy is "recovered" at some facilities, incineration is not considered to be a recycling process for the purposes of this report.

Automated systems are often employed in separating waste types in either of these facility types. A number of different processes may be employed to remove materials from the waste stream. Upon arriving at a processing facility, collection vehicles usually dump their contents on a tipping floor. Equipment, such as a front-end loader, is used to transfer the materials to a conveyor system. The waste moves between one or more stations within the facility where specific components are targeted for removal from the total stream. The waste is treated by a number of processes to achieve material-specific segregation. Some recyclables may also be subjected to compaction and/or baling prior to shipping.

A number of facilities may use manual extraction of specific materials from the waste in place of any or all of the afore-

mentioned mechanical means. This is more common in smaller scale facilities.

The methods of separation used by a given facility depend on a number of factors, including waste stream composition, throughput rates, workers' wages, health and safety considerations, alternate disposal methods, and secondary market material specifications and prices.

After separation and consolidation, paper, plastic, glass, and metals are all subject to a unique series of additional processes in preparation for sale in the secondary market. The path followed by each material is presented separately.

Pesticide Application

Under the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA), a pesticide (or economic poison) includes any substance or mixture of substances intended for preventing, destroying, repelling, or mitigating any pest, and any substance or mixture of substances intended for use as a plant regulator, defoliant, or desiccant. The general category of pesticide can be further defined by the following terms which identify the *target* of the pesticide:

- *Acaricide (miticide)* - used to control plant-feeding mites (acarids)
- *Algicide* - used to control algae
- *Aphicide* - used to control aphids (plant lice)
- *Avicide* - used to control pest birds
- *Bactericide* - used to control bacteria
- *Biocide* - when absorbed by eating, drinking, breathing, or other means in relatively small quantities, may cause illness or death, or even retardation of growth or shortening of life
- *Fungicide* - used to protect against fungi
- *Gameticide* - used to prevent pollination
- *Herbicide* - used to control weeds
- *Insecticide* - used to control insects
- *Larvicide* - used to kill insect larvae
- *Molluscicide* - used to control slugs and snails (mollusks)
- *Nematicide* - used to control nematodes
- *Ovicide* - used to kill eggs of insects and mites
- *Piscicide* - used to control fish
- *Predicide* - used to control vertebrates
- *Rodenticide* - used to control rodents (rats, mice, etc.) and related animals (such as rabbits)
- *Slimeicide* - used to control slime and molds

Of the total pesticides currently used in the U.S., approximately 60% are herbicides, 25 to 30% are insecticides and 10 to 15% are fungicides.

Several additional terms are used to describe the *actions* or *purposes*, rather than the target, of certain pesticides.

- *Defoliant* - a preparation intended for causing leaves to drop from crop plants such as cotton, soybeans, or tomatoes, usually to facilitate harvest
- *Fumigant* - a substance or mixture of substances which produce gas, vapor, fume, or smoke intended to destroy insects, bacteria, or rodents
- *Plant growth regulator* - a preparation which, in minute amounts, alters the behavior of ornamental or crop plants or the produce thereof through physiological (hormonal) rather than physical action
- *Repellent* - a material used primarily for the control of insects, birds, and other vertebrates

Pesticides fall into three basic chemical categories: synthetics, non-synthetics (petroleum products), and inorganics. Formulations are commonly made by combining synthetic materials with various petroleum products. The synthetic pest-killing compounds in such formulations are labeled *active* ingredients; the petroleum product solvents acting as carriers or diluents for the active ingredients are labeled *inert*. Pesticides are regulated primarily on the basis of active ingredients. (The terms *active* and *inert* in this application refer to toxicological action in pesticides and are not to be confused with the common use of these terms to indicate photochemical activity.)

Carriers are inert materials added to a technical (or economic) poison to facilitate later dilution to field strength in simple blending equipment. (A technical poison or technical material is defined as the pesticide chemical in pure form, usually 95 to 100% active ingredient, as it is manufactured by a chemical company prior to being formulated into wettable powders, dusts, emulsifiable concentrates, granules, etc.) Certain kaolin clays, attapulgites, diatomites, and several highly absorbent synthetic pigments are used as carriers. Diluents are material liquids or solids serving to dilute the technical material to field strength for adequate plant coverage, maximum effectiveness, and economy. They may be used directly with technical materials to dilute to field strength sprays or dusts, but usually are blended with wettable powders and dust concentrates previously prepared with carriers. The

most widely used solid diluents are kaolin clays, pyrophyllites, and talcs, although attapulgites and diatomites, local clays, limestone products, and other minerals are also used. Although solid carriers and diluents are generally considered to be inert, certain attapulgites, kaolin clays, and diatomites aid in increasing toxic effectiveness, probably due to physical properties which induce starvation, desiccation, and abrasion. Most formulations of dusts and sprays contain from 80 to 99% carrier-diluent.

Adjuvants are materials which are added to a pesticide mixture in the spray tank to improve mixing and application or enhance pesticide performance. An adjuvant customizes the formulation to meet specific needs or to compensate for local conditions. By using the proper adjuvant, it is often possible to use certain chemical pesticides in a tank mixture that otherwise would present compatibility problems. (A tank mix is a mixture of two or more pesticides in the spray tank at the time of application. Non-compatibility of the ingredients can be a problem.) The term includes such materials as buffers, defoaming agents, spreaders, stickers, and surfactants. Often, a single adjuvant will accomplish more than one adjuvant function, such as a spreader-sticker or spreader-sticker-drift retardant.

The "process breakdown" depends on several factors including the user, the pesticide formulation, the type of equipment, the crop or area to be treated, the application, and treatment. These factors are often closely interrelated and not easily separated from one another. For example, while the formulation of the pesticide helps to determine the type of equipment to be used, the type of equipment available determines the type of formulation that can be used. The specific pest to be controlled determines the type of pesticides used. Particular pesticides may not be available in all formulations.

Pesticide application may be broken down into several user categories: consumer, agricultural, commercial, municipal, and industrial. Consumer application refers to individual home and garden pesticide use. These products are generally applied as sprays or baits and include disinfectants, fungicides, insecticides, molluscicides, rodenticides, herbicides, and repellents. Agricultural pesticide application refers to farm chemical usage, other than fertilizers, for soil and site preparation, pest control, and harvesting aids. Agricultural pesticides can be applied in a variety of formulations (sprays, dusts, pel-

lets, fogs, etc.) from the ground or from the air (aerial application).

Commercial pesticide application includes professional treatment of homes, buildings, and lawns for fleas, cockroaches, termites, nematodes, crabgrass, etc. Municipal pesticide application refers to governmental use of pesticides for mosquito control, roadsides, aquatic pests, etc., and includes both ground and aerial applications. Industrial application refers to use for power line and gas line right-of-ways, etc.

Approximately 68 to 75% of pesticides used in the U.S. are applied to agricultural lands, both cropland and pasture. Between 8 and 17% of pesticides are used privately for home and garden pests, and the remainder, 8 to 24%, are used for industrial, commercial, and governmental purposes.

Agricultural Operations

Agricultural (farming) operations include plowing, disking, fertilizing, applying pesticides, preparing seed beds, planting, cultivating, and harvesting. All these operations can be generically classified as soil preparation, soil maintenance, and crop harvesting. For the purposes of this discussion, agricultural operations have been divided into two major categories: tilling and harvesting. Tilling includes plowing, disking, fertilizing, pesticide application, seed bed preparation, planting, and cultivating, (i.e., soil/site preparation and soil maintenance). (Cultivation is defined as shallow tillage operations performed to create soil conditions conducive to improved aeration, infiltration, and water conservation, or to control weeds.)

Tilling and harvesting can result in emissions of PM, as well as VOCs and air toxics from the disturbed soil and organic matter (weeds, crop residue). Dust emissions from tilling are greatest during periods of dry soil and during final seedbed preparation, and depend on surface soil texture, surface soil moisture content, and other conditions of a particular field being tilled. In addition, PM emissions are also generated by wind erosion of bare or partially vegetated soil.

Tilling and harvesting activities can be broken down by crop (e.g., sugar cane, cotton, wheat), soil type (e.g., clay, silt, loam), site characteristics, and activity type (e.g., manual versus machine harvesting).

All tilling and harvesting operations can result in PM, VOC, and air toxics emissions. The type of tilling operation affects the rate of emissions. In addition, the crop being harvested and the crop residue that is tilled under after harvest can also add

organic particles to the dust emissions. PM emissions also result from wind erosion of the tilled soil.

The National Acid Precipitation Assessment Program (NAPAP) developed estimates of wind erosion from natural and agricultural lands. National TSP emissions from this category for 1985 were estimated at 4,711,540 tons. PM-10 emissions were estimated to be 1,130,769 tons. No estimates of VOC or air toxics emissions from tilling and harvesting operations are available.

Most emissions from agricultural operations occur in rural areas. Seasonally, tilling emissions will occur primarily in the spring, especially around final seedbed preparation time. Harvesting emissions occur primarily at the end of the growing season, in the fall. Wind erosion emissions occur primarily when soils are dry and not protected by a vegetative cover, primarily during the winter and spring.



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The complete report, entitled "Identification and Characterization of Five Non-traditional Source Categories: Catastrophic/Accidental Releases, Vehicle Repair Facilities, Recycling, Pesticide Applications, and Agricultural Operations," (Order No. PB93-166973; Cost: \$36.50), will be available only from:

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