SOLVENT-CONTAMINATED SHOP TOWELS AND WIPERS

STATUS OF EPA REGULATORY EFFORTS

JULY 29, 1998

MEETING OF STATE AGENCY OFFICIALS

OUTLINE

I. Purpose

II. Background

III. Issues

IV. Findings to Date

V. Overview of State Regulations and Policies

VI. Potential Solutions for Resolving Issues

VII. Regulatory Options

VIII. Next Steps

I. PURPOSE

1. Provide an Overview of EPA's On-going Efforts and Findings to Date

2. Identify and Discuss Issues of Concern

3. Discuss State Regulatory Programs and Policies

4. Review and Discuss Potential Regulatory Options

5. Discuss Next Steps and Proposed Schedule

II. BACKGROUND

- Under RCRA, a solid waste is a hazardous waste if the material exhibits a hazardous characteristic, or if the material has been listed as a hazardous waste by EPA.

- Similarly, a solid waste mixed with a listed waste is a hazardous waste; except in cases where the listed hazardous waste is listed based upon the fact that it exhibits a characteristic, in which case the mixture remains a hazardous waste only if the resultant mixture exhibits any characteristic of hazardous waste.

➜ Many solvents used by industry can pose unacceptable risks to human health and the environment if improperly managed.

➜ Many industries use solvents in conjunction with either disposable wipers or reusable shop towels, and therefore possibly generate a hazardous waste upon completion of the wiper/shop towel's functional use.

II. BACKGROUND (cont.)

- For several years, EPA has deferred the interpretation of the regulation of these materials to the regions and states until Headquarters makes a more comprehensive interpretation. In most cases, regions and states:

  ➜ exempt *reusable* shop towels from hazardous waste regulation if specified conditions are met (e.g., no "free liquids").

  ➜ regulate *disposable* shop towels as hazardous waste.

III. ISSUES

- The disposable wiper industry has complained to EPA that the mixture rule may over-regulate solvent-contaminated wipers; particularly when only small amounts of solvent are used on each wiper.

  ➜ EPA has agreed to address this issue as part of regulatory reform efforts and also in response to printing industry participants in the Agency's Common Sense Initiative.

- Is EPA properly regulating disposable wipers and reusable shop towels?

  ➜ Do situations exist where EPA may be *over*-regulating *disposable* wipers?

  ➜ Does the current level of regulation accurately reflect the level risk imposed by the management of solvent-contaminated shop towels and wipers?

  ➜ Do situations exist where current EPA and state regulations and policies affecting solvent-contaminated shop towels and wipers can be improved?

III. ISSUES (cont.)

- What environmental policies do we want to pursue for solvent-contaminated industrial shop towels/wipers that may result in better waste management practices and improved environmental protection?

  ➜ Are there situations where the disposal or mismanagement of solvent-contaminated shop towels and wipers could pose unacceptable risks to human health and the environment?

- Any regulatory modification may impose additional burdens.

  ➜ The potentially affected universe is primarily small businesses.
  ➜ Any proposed changes may increase paperwork burdens.
  ➜ Proposed changes may raise the issue of requiring industrial laundries to obtain RCRA permits for "treatment" activities.

- A regulatory modification that provides a conditional exemption from the hazardous waste management standards for disposal wipers, may result in some generators shifting use patterns toward disposable wipers.

IV. FINDINGS TO DATE

- Tremendous variability exists in the use and management practices of industry regarding solvent-contaminated shop towels and wipers; including:

  - ➔ regulatory status of generators.
  - ➔ types of solvent used.
  - ➔ type and numbers of wipers/shop towels used daily.
  - ➔ amount of solvent placed on individual wipers and shop towels.
  - ➔ on-site and off-site management practices.

- Compliance with Federal and state rules and policies appear to be inconsistent.

  ➔ Some disposable wipers were managed in municipal waste stream when they should have been managed as hazardous waste.

  ➔ Saturated reusable shop towels should be managed differently; i.e., wrung out, use of screen-bottom drum to meet state conditions for exemption (e.g., no "free" liquids).

- Some generators are using small amounts of solvent and small numbers of disposable wipers. These generators probably do not pose an adverse risk to human health and the environment, but additional analyses may be necessary to confirm the specific constituents, and the quantities and

concentrations of no concern.

IV. FINDINGS TO DATE (CONT.)

- EPA conducted a risk screening analysis.

➜ Findings to date indicate that solvent-contaminated shop towels and wipers do **not** pose *air emissions* problems when managed in a municipal solid waste landfill (MSWLF), or municipal waste combustor in compliance with MACT standards. (Additional research is necessary to determine if air emissions from industrial laundries pose a problem.)

➜ Under conservative assumptions, several listed solvent constituents could cause adverse health risks from contaminated ground water; Most constituents, however, do not appear to pose an adverse risk.

➜ Runoff from a MSWLF or from ground water to a *surface water* body also do **not** appear to pose an adverse risk to HH&E; However, discharges from industrial laundries, particularly solvents from printer and shop towels, has resulted in the Office of Water proposing effluent guidelines for these facilities.

IV. FINDINGS TO DATE (CONT.)

- EPA also conducted a preliminary cost analysis.

- In conducting the cost analysis, EPA considered four potential regulatory options, all of which would reduce the current management requirements for *disposable* wipers.

➜ Allow generators to ship solvent-contaminated disposable wipers off-site without a manifest.

➜ Exempt solvent-contaminated disposable wipers from the definition of hazardous waste.

➜ Exempt solvent-contaminated disposable wipers from the definition of hazardous waste with the condition that centrifuging must be conducted prior to shipping the wipers off-site.

➜ Exempt solvent-contaminated disposal wipers from the definition of hazardous waste with the condition that the wipers contain "no free liquids" and require that the wipers be managed at a municipal waste combustor.

- Total cost savings from any of the regulatory options is dependent upon the assumptions made regarding the composition of the affected community in terms of generator categories (i.e., CESQGs, SQGs, LQGs).

IV. FINDINGS TO DATE (CONT.)

- Preliminary results of initial cost analysis indicate that a regulatory modification that includes a conditional exclusion for disposable wipers may result in an annual cost savings to generators of between $0.4 million and $18 million.

  ➜ Total cost savings depends upon the particular option and the particular assumptions made regarding the distribution of generators across generator categories.

  ➜ Results also are dependent upon the accuracy of our assumptions regarding the types of solvents used in conjunction with disposable wipers (e.g., listed, ignitable, non-hazardous).

  ➜ Current estimates show an annual cost savings of between $31 and $820 per SQG and $64 to $3,200 per LQG.

- Providing a full or even partial exclusion from the RCRA hazardous waste management requirements for disposable wipers could reduce compliance costs per wiper; making disposables very competitively priced, if not significantly cheaper (when waste management costs are considered) than reusable shop towels.

IV. FINDINGS TO DATE (CONT.)

•EPA has conducted a preliminary evaluation of the effectiveness of solvent removal technologies.

➜Some combinations of low-end technologies (e.g., hand wringing combined with mechanical wringing; hand-wringing combined with screen-bottom drum) may remove up to 45 percent of solvent content.

➜Centrifuging may remove between 70 and 90 percent of solvent content.

•Using risk estimation models, we can estimate the amounts of solvent-contaminated disposable wipers that can be disposed safely in municipal solid waste landfills.

➜The risk coefficients derived from risk modeling can be used to estimate the amount of solvent, contained in wipers, that can be disposed in a landfill by a generator without exceeding a risk threshold or hazard quotient of one.

V. OVERVIEW OF STATE REGULATIONS AND POLICIES

State	Description of Policy
Alabama	Contaminated wipes bound for laundering and reuse are considered products in use and are not solid wastes, and, therefore not hazardous wastes. The state position is based upon the policy stated by Region IV.
Arkansas	Reusable wipers that contain a listed waste, are mixed with a listed waste, or exhibit a characteristic are regulated as hazardous waste.
Florida	Reusable wipers that are laundered at facilities which discharge to a POTW or are subject to the CWA are not solid wastes and are not regulated under RCRA. Florida also bases their policy on the Region IV position.
Georgia	Laundered wipers are not regulated because they are being recycled and used as effective substitutes for new products according to 40 CFR §261.2(e). Generator storage prior to laundering is subject to the same accumulation requirements as hazardous waste (§262.34).
Massachusetts	Provides a conditional exemption from regulation for non-saturated, solvent-contaminated wipes. The exemption allows for wipes to be sent to laundries without a manifest provided they meet the specified criteria. The "one drop method" is used to determine what is non-saturated (i.e. a wiper is considered saturated if a drop of solvent can be wrung out of it). Saturated wipes must be managed as hazardous waste until they meet the "one drop method".
Minnesota	Disposable rags must be wrung of all free liquids and managed as hazardous if appropriate. Reusable wipes must be wrung to remove free liquids and managed as hazardous waste on-site. If the wipes are sent to an industrial launderer, the shipment does not require a manifest and the laundry does not need to be permitted under RCRA.
Missouri	Contaminated rags used in cleaning and degreasing operations are not regulated as solid or hazardous wastes when laundered. Rags used to clean up spills are regulated as hazardous waste if they contain a listed waste or exhibit a characteristic and laundering may be considered improper treatment. Contaminated rags that are destined for disposal must be managed as hazardous wastes if appropriate.
Nebraska	Wipers used for cleaning that are contaminated with listed or characteristic solvents are not regulated as hazardous waste provided the wipers are being laundered (recycled) and there is no free solvent present in the wipers at the time they are sent for recycling.
New Jersey	Solvent contaminated rags that are sent for disposal are regulated according to the mixture rule and have different standards depending on how the rag came into contact with the solvent and the type of solvent used. If a hazardous contaminated rag is being laundered it is not regulated as hazardous waste provided there are no free liquids. Any storage at generator facilities prior to laundering is regulated in the same manner as hazardous wastes.
New York	Contaminated wipes are not hazardous wastes when sent to industrial laundries provided they are not saturated (i.e., pass the Paint Filter Test). Prior to laundering, all wipes must me managed in accordance with specified accumulation standards. Generators must also file a one-time notice under LDR when sending wipers to be laundered.

V. OVERVIEW OF STATE REGULATIONS AND POLICIES (CONT.)

Virginia	Contaminated rags that are intended for disposal are regulated as hazardous wastes. Wipers contaminated with hazardous wastes that are sent to launderers are not regulated as solid or hazardous wastes provided there are no free liquids.
Washington	Hazardous wipes are not regulated as hazardous waste if they are managed according to the established best management practices (i.e., no free liquids, closed container, permitted laundry facility, etc.). Disposable wipers contaminated with hazardous waste solvents that are sent for disposal are subject to regulation as a hazardous waste.
West Virginia	Wipers contaminated with a listed hazardous waste and wipers that exhibit a characteristic of hazardous waste are subject to regulation as solid wastes. Contaminated wipers are regulated as spent materials and as such are solid wastes when reclaimed.

V. OVERVIEW OF STATE REGULATIONS AND POLICIES (CONT.)

VI. POTENTIAL SOLUTIONS FOR RESOLVING ISSUES

- Storage standards for all towels and wipers (worker health and safety).

  ➜ Closed containers.
  ➜ Clearly label containers.

- Establish a "no free liquids standard."

  ➜ Requirement may be met through wringing, screen bottom drums, centrifuging, best professional judgement.
  ➜ Reduces potential for self-ignition.
  ➜ Consistent with DOT standards.

- Require that solvent-contaminated disposable wipers be managed at only particular types of off-site facilities.

  ➜ Municipal waste combustor.
  ➜ MSWLF (in cases of certain solvent constituents).
  ➜ RCRA-permitted TSDFs.

V. OVERVIEW OF STATE REGULATIONS AND POLICIES (CONT.)

- Record keeping requirements.

  - ➜ Validate compliance with off-site management requirements.
  - ➜ Track quantities of solvents sent to MSWLFs.

V. OVERVIEW OF STATE REGULATIONS AND POLICIES (CONT.)

VII. REGULATORY OPTIONS

EPA currently is evaluating two regulation options.

- **OPTION 1:** Any solvent-contaminated industrial shop towel, wipe or rag is exempt from hazardous waste regulations if, when transferred off-site to either an industrial laundry, municipal solid waste landfill (MSWLF), or municipal waste combustor (MWC) in compliance with MACT standards, the solvent portion of the weight of the materials disposed is "no greater than" X percent of the total weight of the total quantity of the materials disposed (i.e., require a solvent removal efficiency). These materials must be stored on-site in closed containers prior to removing any solvent.

➔ Compliance with this option would probably require centrifuging to achieve to solvent content condition, or conversely very little use of solvent on the wipe.

➔ Example: Assume X = 10 percent.
Weight of wipe = 10 grams.

V. OVERVIEW OF STATE REGULATIONS AND POLICIES (CONT.)

Weight of solvent applied to wipe = 5 grams.

Therefore, at least 4 grams of solvent would have to be removed to obtain "no greater than" 10 percent threshold.

VII. REGULATORY OPTIONS (cont.)

- **OPTION 2:** Any solvent-contaminated industrial shop towel, wipe or rag sent to an industrial laundry, MSWLF or MWC in compliance with MACT standards, is no longer a hazardous waste if:

➜ The material is stored in a closed container at the point of generation, and
➜ The material contains "no free liquid" when shipped off-site, and
➜ In the case of a solvent-contaminated shop towel, wipe or rag sent to a MSWLF, the material is no longer a hazardous waste if the amount of listed solvent contained in the material does not exceed an average of "X" grams per day (set a standard for the total allowable solvent content).

V. OVERVIEW OF STATE REGULATIONS AND POLICIES (CONT.)

➔ Note: Certain listed solvents would probably be banned from disposal in a MSWLF under both options (based upon the results of risk analyses).

V. OVERVIEW OF STATE REGULATIONS AND POLICIES (CONT.)

VII. REGULATORY OPTIONS (cont.)

- Other Potential Requirements:

➜ Storage of materials in closed containers from "cradle to grave" with respect to OPTION 2 for industrial laundries and MWCs.

➜ Record keeping to validate landfill of "banned" constituents, and identification of receiving facility.

➜ Labeling of containers to signify storage of "solvent-contaminated materials."

V. OVERVIEW OF STATE REGULATIONS AND POLICIES (CONT.)

VII. REGULATORY OPTIONS (cont.)

- Variables influencing "X," or the amount of solvent contained in wipes that can be disposed safely (Option 2).

1. Number of large and small quantity generators sending their materials to MSWLF.
2. Number of wipes used daily by large and small quantity generators.
3. Average amount of solvent applied to each wipe.
4. Type of solvent; i.e., constituents applied to wipes.
5. Risk coefficient of solvent constituents.

➜ Other variables to consider:

6. Extent of evaporation prior to wipers leaving generator site.
7. Hazard quotient; i.e., the level of risk that derives risk coefficient.
8. Risk modeling assumptions: exposure to child or adult; location and size of landfill; distance from landfill boundaries, etc.
9. Solvent mixture being used in conjunction with disposal wipers (i.e., constituents of concern).

V. OVERVIEW OF STATE REGULATIONS AND POLICIES (CONT.)

10. Wipes going to landfill may be displaced by wipes previously sent to MWC.
11. Shifts from reusables to disposables.

V. OVERVIEW OF STATE REGULATIONS AND POLICIES (CONT.)

VII. REGULATORY OPTIONS (cont.)

Issues Associated with Regulatory Options:

- Regulatory Issues:

➜ How conservative should we be in allowing the disposal of solvent-contaminated wipers in a municipal landfill?

-- Should the disposal of particular constituents in MSWLFs be banned?

-- What quantity threshold or removal efficiency rate should be established for disposable wipes sent to MSWLF to ensure protection of HH&E?

➜ What record keeping and/or testing requirements may be necessary to ensure compliance, particularly with respect to disposal in a landfill?

➜ Should special handling requirements be proposed for disposables and reusables managed off-site?

V. OVERVIEW OF STATE REGULATIONS AND POLICIES (CONT.)

➜ Should EPA require solvent-contaminated shop towels that are managed off-site at industrial laundries to be accumulated at generator sites and stored at laundries in closed containers?

VII. REGULATORY OPTIONS (cont.)

➜ How to define "no free liquids."
- -- performance standard.
- -- technology-based standard.
- -- guidance.

➜ Definition of "closed container."

➜ How to make proposed requirements straightforward and user-friendly?

V. OVERVIEW OF STATE REGULATIONS AND POLICIES (CONT.)

VII. REGULATORY OPTIONS.(cont.)

- How closely should any proposed rule be linked to OW's effluent guidelines rule?
  - -- complementary or independent from substantive viewpoint?
  - -- timing?

- EPA proposed effluent guidelines for industrial laundries covering Pretreatment Standards for Existing Sources (PSES) on December 17, 1997.

  ➜ Numerical effluent limitations are based on chemical precipitation technology treatment of industrial laundry wastewater for 11 priority and nonconventional pollutants.

  ➜ The possible F-list solvent contaminants included in the proposed standards are: ethyl benzene, tetrachloroethane, toluene, *m*-Xylene, and *o*-&*p*-Xylene.

  ➜ The proposal allows for a facility to be excluded from the effluent guidelines provided it launders less than 1 million pounds of incoming laundry per calendar year and less than 255,000 pounds of shop and/or printer towels per year.

V. OVERVIEW OF STATE REGULATIONS AND POLICIES (CONT.)

➔ Approximately 167 facilities out of the 1,747 total number of industrial laundries launder less than 1 million lbs/yr, while the majority of facilities (629) handle 3-6 million lbs/yr.

VIII. NEXT STEPS

- Resolve regulatory approach and outstanding issues
- Hold SBREFA meeting (August 10)
- Propose rule in late 1998/early 1999