

September 9, 2011

Gene Pettingill
State of Delaware
Department of Natural Resources and Environmental Control
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RE: **Comments, Stakeholder Review Draft 081711B GMP, OTC Model Rule for Solvent Degreasing 2011**

Dear Mr. Pettingill:

Summary

The revised draft can be strengthened to provide more broad-based environmental protection while providing more options for users.

There are possible modifications, noted below, which can put the OTC in the forefront of environmental management of current and future VOC issues.

My Background

I am an independent professional consultant in industrial cleaning, with nearly twenty years experience in consulting and five years experience with Du Pont's cleaning alternatives program. You will find my biography, customer list, and more than 150 technical articles written in the last five years on my web site, <http://www.precisioncleaning.com>. As an independent person, neither living nor working in the U.S. areas of the OTC's jurisdiction, I have no vested stake in the outcome of the proposed model rule. I have commented on the earlier draft, reflecting that it would confer acceptance by omission on use of two toxic chemicals for vapor degreasing – perchloroethylene and methylene chloride.

Observations for Discussion

My observations are based on studying the proposed draft 081711B GMP, and participation within an industry where solvents are used for parts cleaning. My summary statement (above) and recommendations (below) are based on these seven observations:

1. The proposed draft 081711B GMP basically ratifies a regulation passed nearly two decades earlier – the 1994 Halogenated Solvents NESHAP – and limits its

impact to only one solvent: trichloroethylene¹.

2. The proposed draft 081711B GMP does not require, or induce, a user to take any action to reduce their emissions of VOCs – if they are in compliance with the 1994 NESHAP.
3. Two popular halogenated VOC solvents (trans 1,2-dichloroethylene and n-propyl bromide) are neither covered nor noted in the proposed draft 081711B GMP². Both solvents raise legitimate concerns for users and regulators about SHE issues: safety (flammability), health (toxicity), and environmental (VOC).
4. Also not covered in the proposed draft 081711B GMP are oxygenated VOC solvents such as alcohols and glycols, glycol ethers and esters, glymes, and esters, which raise different and probably less significant SHE issues.
5. Also not covered in the proposed draft 081711B GMP are emissive cleaning operations, such as wipe cleaning, from which VOC is emitted.
6. The proposed draft 081711B GMP notes that only future exemption from VOC status by a Federal or regional regulator offers additional options for users.
7. Users face concern about all three SHE issues. Regulators often face but one; in this case, reduction of smog produced by emissions of VOCs.

Additional and Specific Comments About Proposed Rule

Acceptance of the 1994 NESHAP endorses regulation of outcomes, not methods for achieving them, thus giving the user options. That is an excellent approach, incorporated in the draft 081711B GMP.

So also is extension of coverage to non-metallic substrates.

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1. That NESHAP regulated solvent cleaning with only six solvents: perchloroethylene and methylene chloride which are exempt from VOC status in the U.S. because of their low reactivity with UV light; carbon tetrachloride and chloroform which haven't been used in a generation for cleaning operations because of their established toxicity profile; and 1,1,1-trichloroethane whose manufacture is banned because it is an ozone-depleting compound.
 2. They are not included in the 1994 NESHAP because they aren't classified by EPA as Hazardous Air Pollutants (HAPs). A third VOC solvent, benzotrifluoride, is not included in the proposed draft 081711B GMP, but it currently does not generate significant commercial interest.

Inclusion of the SCAQMD “Clean Air Solvent³” in the draft 081711B GMP may add confusion.

Current and Future Regulatory Dilemma

Regulation by exemption limits options for both regulators and users. Only “perfect” solvents are exempted, so options are few.

This will lead to loss of the ability to make substantial reductions of pollution by conventional regulation such as the draft 081711B GMP proposal. I believe the draft 081711B GMP offers limited benefit to the OTC and users of solvents within its jurisdiction. It mandates no major future reductions in VOC chemicals, and enables no future operating opportunities.

In other words, the key current and future environmental issue is there are too few options – to reduce VOC emissions, to minimize SHE concerns, and to select and use cleaning solvents.

Specific Considerations for the Revised Model Rule

Consider the following options, which are not mutually inclusive⁴:

1. For ALL solvent cleaning operations, with halogenated or non-halogenated solvents, require the equipment options specified in the 1994 Halogenated Solvents NESHAP to be adopted by users. In other words, treat ALL vapor degreasing solvents (halogenated, oxygenated, whatever) the same in a VOC management regulation. One might extend this proposal to inclusion of cold cleaning operations in which boiling (vapor degreasing) is not done.
2. Recognize that not all solvents have the same propensity to produce smog. Dr. William P. Carter of the University California, Riverside, has quantified these propensities under the metric MIR (Maximum Incremental Reactivity). Regulate emission and use of ALL solvents in the regions governed by the OTC based on their reactivity to produce ozone in the troposphere.

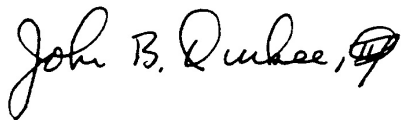
3. The underlying basis of draft 081711B GMP, vapor degreasing with VOC solvents, is not really compatible with SCAQMD’s Rules –1122 Solvent Degreasers and / or Rule 1171 Solvent Cleaning Operations. The latter is about cleaning with solvents diluted in water where nothing is intentionally evaporated. The former is about cleaning without water where all solvent materials are intentionally evaporated. They are different cleaning processes, likely cleaning different parts of different soils, and rarely substitute for one another. Yes, emissions from either cleaning process can produce smog and should be regulated. Consider separate regulations.

4. A minor option is to increase the required freeboard ratio for batch cold cleaning machines from 0.75 to 1.0.

3. Regulate VOC emissions indirectly. Use the current work being done by EPA, NIH, California's ARB, and other organizations to set exposure limits which are based on risk – probably of cancer. That will curtail use of methylene chloride, perchloroethylene, trichloroethylene, and n-propyl bromide in open-top vapor degreasers. If firms wish to use these solvents, let them; to do so they will have had to make great reductions in emissions, and they get to choose how to do that. Consider also regulating VOC emissions from emissive cleaning (wipe cleaning) indirectly as above.
4. Adopt the European (German) approach: accept ANY solvents for cleaning work, as long as they are used in completely enclosed apparatuses, so that VOC emissions are curtailed and workers are protected.

Thank you for giving my comments due consideration. Please contact me with any additional questions or comments.

Best regards,



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