DENIAL OF THE SHERWIN -WILLIAMS COMPANY'S REQUEST FOR VARIANCE FROM VOLATILE ORGANIC COMPOUND CONTENT LIMITS FOR ARCHITECTURAL AND INDUSTRIAL MAINTENANCE COATINGS – CLEAR WOOD COATINGS - VARNISHES

On September 29, 2004, The Sherwin-Williams Company (Sherwin-Williams) submitted to the Pennsylvania Department of Environmental Protection (Department) a request for a variance from the volatile organic compound (VOC) content limits for clear wood coatings - varnishes specified in 25 Pa. Code §130.603. On April 20, 2005, Sherwin-Williams submitted a supplement to the request for a variance and responses to comments. The Sherwin-Williams variance request was submitted under 25 *Pa. Code* §130.606. Section 130.606 provides that a person who cannot comply with the VOC content limits in 25 *Pa. Code* §130.603(a) may apply in writing to the Department for a variance.

Section 130.606 (c) states that the Department will not grant a variance unless the applicant demonstrates in writing to the Department's satisfaction that:

> (1) It is technologically infeasible for the applicant to comply with the requirements of §130.603(a).
>
> (2) The public interest in issuing the variance would outweigh the public interest in avoiding increased emissions of air contaminants that would result from issuing the variance.
>
> (3) The compliance program proposed by the applicant can reasonably be implemented and will achieve compliance as expeditiously as possible.

The Department has reviewed information provided by Sherwin-Williams and by the public related to Sherwin-Williams' request for a variance from the VOC content limits for clear wood coatings-varnishes specified in 25 *Pa. Code* §130.603(a). For the reasons discussed below, the Department has determined that the request for a variance from the VOC content limits for clear wood coatings-varnishes does not meet the requirements of 25 *Pa. Code* §130.606 (c). Sherwin-Williams has not demonstrated to the Department's satisfaction that:

> (1) It is technologically infeasible for the applicant to comply with the requirements of §130.603(a);
>
> (2) The public interest in issuing the variance would outweigh the public interest in avoiding increased emissions of air contaminants that would result from issuing the variance; or
>
> (3) The compliance program proposed by the applicant could reasonably be implemented and would achieve compliance as expeditiously as possible.

The Department, therefore, denies Sherwin-Williams' request for a variance for clear wood coatings-varnishes.

Technological Infeasibility

Sherwin-Williams has not demonstrated to the Department's satisfaction that it is technologically infeasible for Sherwin-Williams to comply with the requirements of 25 *Pa. Code* § 130.603(a).

Sherwin-Williams indicated that it is technologically infeasible to formulate certain clear wood finishes - varnishes to comply with the VOC content limits of 25 *Pa. Code* § 130.603(a) "…without creating unacceptable safety hazards; application, handling and performance problems for non-professional users; or substantially decreasing the solids content and thus increasing the number of coats required to achieve equivalent dry film thickness." These are the principal factors upon which Sherwin-Williams relies in claiming technological infeasibility.

As safety hazards, Sherwin-Williams listed flammability and increased inhalation toxicity when exempt solvents are used, and slip and fall risk for waterborne varnishes. With regard to flammability and inhalation toxicity, Sherwin-Williams discussed only two exempt solvents, and has not demonstrated that these two solvents are the only solvents available for Sherwin-Williams to use in reformulation of the coatings. Sherwin-Williams has not demonstrated to the Department's satisfaction that it is technologically infeasible to reformulate clear wood coatings-varnishes to comply with 25 *Pa. Code* § 130.603(a) due to increased toxicity or fire hazard.

With regard to slip and fall risk with waterborne varnishes, Sherwin-Williams provided results of testing said to have been carried out on a competitor's water-based coating as evidence of the slip-and-fall risk. While Sherwin-Williams suggested that products marketed by other manufacturers may not conform to certain "slip-and-fall" guidelines, Sherwin-Williams did not describe this as an issue with complying materials already produced and marketed by Sherwin-Williams. Sherwin-Williams did not provide test data for water-based clear wood floor finish products manufactured by Sherwin-Williams, such as Minwax© Water Based Polyurethane for Floors and Dura Seal™ 1000. Both of these products meet the VOC content limit specified for clear wood coatings – varnishes in 25 *Pa. Code* Section 130.603(a) and are marketed by Sherwin-Williams as suitable for use on floors. Sherwin-Williams has not demonstrated to the Department's satisfaction that it is technologically infeasible to reformulate clear wood coatings-varnishes to comply with 25 *Pa. Code* § 130.603(a) due to the alleged slip-and-fall safety hazards.

Sherwin-Williams indicated in the application for a variance that formulation of high solids compliant products could lead to application and handling problems. According to Sherwin-Williams, these problems include possible over-application of the high solids clear wood coatings-varnishes and long cure times for high solids clear wood coatings-varnishes. The provisions of 25 *Pa. Code* Chapter 130, Subchapter C do not require that a manufacturer achieve compliance through the development of high solids clear wood coatings-varnishes. Other alternatives are available to Sherwin-Williams for production of complying coatings, including waterborne formulations. Sherwin-Williams has not demonstrated to the

Department's satisfaction that it is technologically infeasible to reformulate clear wood coatings-varnishes to comply with 25 *Pa. Code* § 130.603(a) due to the asserted application and handling problems.

Sherwin-Williams listed durability, more or heavier wet coats, and panelization or sidebonding as performance problems relating to waterborne varnishes.

With respect to water-based products, Sherwin-Williams indicated in the application for a variance that, "Waterborne varnishes suitable for use by consumers cannot achieve the durability of solvent-based varnishes." This contention is inconsistent with representations made by Sherwin-Williams regarding its product, Minwax© Water Based Polyurethane for Floors. On the Minwax© website for this product, Sherwin-Williams states:

> "Water Based Polyurethane for Floors provides durability that is comparable to oil-based polyurethanes. It is significantly more durable than most water-based finishes available to consumers. In fact, independent laboratory tests show that Minwax© Water Based Polyurethane for Floors is 2-4 times more durable than leading retail water-based brands."

Sherwin-Williams has not demonstrated to the Department's satisfaction that it is technologically infeasible to reformulate clear wood coatings-varnishes to comply with 25 *Pa. Code* § 130.603(a) due to stated issues related to durability.

Sherwin-Williams indicated in its application for a variance that, "…due to the lower solids in waterborne finishes, more or heavier wet coats are required to achieve the recommended dry film thickness." However, on the Minwax© website for solvent-based Minwax© products recommended for floors, namely Minwax© Fast-Drying Polyurethane and Minwax Super Fast-Drying Polyurethane for Floors, Sherwin-Williams recommends application of 2-3 coats at coverage rates of 600 square feet and 600-700 square feet per gallon, respectively. For the Minwax© Water Based Polyurethane for Floors, Sherwin-Williams recommends applications of 3 coats at an application rate of 500-700 square feet per gallon. These statements of Sherwin-Williams do not support Sherwin-Williams' contention that there is a significant difference between the application rates for waterborne and solvent based floor finishes. Sherwin-Williams has not demonstrated to the Department's satisfaction that it is technologically infeasible to comply with 25 *Pa. Code* § 130.603(a) because the use of complying materials will result in the need for more or heavier application of finish materials.

Sherwin-Williams indicated in the application for a variance that the use of waterborne finishes increases the risk of panelization or sidebonding in strip flooring. Panelization, as defined by ASTM in "Standard Test Methods for Evaluating Side-Bonding Potential of Wood Coatings" (ASTM D 6958-03), is: "adjacent boards acting as a composite panel instead of individual strips when subjected to changes in temperature and humidity as well as other site conditions". Although panelization may occur with water-based floor coatings, it is not always associated with waterborne finishes, and can also occur with solvent-based finishes. Sidebonding is only one cause of panelization. ASTM D-6958-

03 indicates: “Improper installation techniques, inadequate nail spacing, foundation settlement, large changes in moisture content of the wood, improper subfloor materials, and over-drying of the floor are contributing causes of flooring panelization”. Sherwin-Williams has not demonstrated to the Department’s satisfaction that it is technologically infeasible to comply with 25 *Pa. Code* § 130.603(a) because of issues related to claimed panelization and sidebonding.

Sherwin-Williams has not demonstrated to the Department’s satisfaction that it is technologically infeasible for Sherwin-Williams to comply with the requirements of 25 *Pa. Code* § 130.603(a).

Public Interest

Sherwin-Williams has not demonstrated to the Department’s satisfaction that the public interest in issuing the variance would outweigh the public interest in avoiding increased emissions of air contaminants that would result from issuing the variance.

Sherwin-Williams cited potential safety hazards of complying formulations as one justification for the Department’s granting of the variance for clear wood coatings-varnishes. As safety hazards, Sherwin-Williams listed flammability and increased inhalation toxicity when exempt solvents are used, and slip and fall risk for waterborne varnishes. With regard to flammability and inhalation toxicity, Sherwin-Williams discussed only two exempt solvents, and has not demonstrated that these two solvents are the only solvents available for Sherwin-Williams to use in reformulation of the coatings.

Sherwin-Williams cited an additional potential safety hazard resulting from the use of waterborne varnishes: slip-and-fall risk. Sherwin-Williams provided results of testing said to have been carried out on a competitor’s water-based coating as evidence of the slip-and-fall risk. Sherwin-Williams did not provide test data for water-based clear wood floor finish products manufactured by Sherwin-Williams, such as Minwax© Water Based Polyurethane for Floors and Dura Seal™ 1000. Both of these products meet the VOC content limit specified for clear wood coatings–varnishes in 25 *Pa. Code* Section 130.303(a) and are marketed by Sherwin-Williams as suitable for use on floors.

Sherwin-Williams indicated that granting of the variance request would result in lower emissions than denial of the variance request. Sherwin-Williams indicated that, “…evidence suggests that waterborne varnishes will result in higher net emissions than solvent-based varnishes.” Sherwin-Williams indicated that this would be the result of the need to prestain some woods; pretreat strip flooring to prevent sidebonding; or apply additional coats to achieve desired film thickness; and the need for more frequent application. Sherwin-Williams has not provided the “evidence” that supports these assertions. Sherwin-Williams has not demonstrated to the Department’s satisfaction that use of complying clear wood coatings-varnishes will result neither in increased use of finish materials, nor in an increase in emissions.

In addition, Sherwin-Williams indicated that there is strong evidence that waterborne varnishes have higher ozone forming potential than solvent-based materials. Sherwin-Williams provided information regarding the ozone formation potential of a number of products manufactured by Sherwin-Williams in Exhibit D in the application for a variance. The information in Exhibit D indicates that the ozone formation potential for a noncomplying Minwax© product is lower than for the other products referenced in Exhibit D. Sherwin-Williams has not provided data with respect to other Sherwin-Williams clear wood coatings-varnishes regarding the ozone formation potential of products that are formulated to comply with the VOC content limits in 25 *Pa. Code* Section 130.603.

Sherwin-Williams indicated that consumers and professional contractors demand quality wood finishes that do not require frequent reapplication and do not cause flooring damage such as sidebonding and panelization. However, Sherwin-Williams has not demonstrated to the Department's satisfaction that use of complying clear wood coatings-varnishes will result in more frequent application or damaged flooring.

Sherwin-Williams produces and markets clear wood coatings-varnishes that meet the VOC content limits in 25 *Pa. Code* Section 130.603. The grant of additional time by the Department, at the expense of the public health and at the expense of manufacturers that have developed complying clear wood coatings-varnishes, to allow Sherwin-Williams to continue to market its existing solvent-based noncomplying clear wood coatings-varnishes is not in the public interest.

Sherwin-Williams has not demonstrated to the Department's satisfaction that the public interest in issuing the variance would outweigh the public interest in avoiding increased emissions of air contaminants that would result from issuing the variance.

Compliance Program

Sherwin-Williams has not demonstrated to the Department's satisfaction that the compliance program proposed by the Sherwin-Williams can reasonably be implemented and will achieve compliance as expeditiously as possible.

Sherwin-Williams indicated in its September 29, 2004 variance request that it was not known when a suitable clear wood coatings-varnish formulation would be identified. The September 29, 2004 variance request indicated that research and development efforts "are directed towards a targeted January 1, 2010 compliance goal."

Sherwin-Williams provided only limited information regarding the scope of their efforts. The information provided was insufficient for the Department to evaluate whether or not the compliance program could reasonably be implemented or would achieve compliance as expeditiously as possible.

Most significant is that Sherwin-Williams, at the time of the application for the variance, produced and marketed and continues to produce and market clear wood coatings-varnishes

that comply with the VOC content limits in 25 *Pa. Code* Section 130.603. This indicates that no additional time is necessary for Sherwin-Williams to comply with the VOC content limits in 25 *Pa. Code* Section 130.603 for clear wood coatings-varnishes.

Sherwin-Williams has not demonstrated to the Department's satisfaction that the compliance program proposed by the Sherwin-Williams can reasonably be implemented and will achieve compliance as expeditiously as possible.

Denial

The information provided to the Department by Sherwin-Williams fails to demonstrate to the Department's satisfaction that it is technologically infeasible for Sherwin-Williams to comply with the requirements of §130.603(a), fails to demonstrate to the Department's satisfaction that the public interest in issuing the variance would outweigh the public interest in avoiding increased emissions of air contaminants that would result from issuing the variance, and fails to demonstrate to the Department's satisfaction that the compliance program proposed by the applicant could reasonably be implemented and would achieve compliance as expeditiously as possible.

The Department, therefore, denies Sherwin-Williams' request for a variance for clear wood coatings-varnishes.

Any person aggrieved by this action may appeal, pursuant to Section 4 of the Environmental Hearing Board Act, 35 P.S. Section 7514, and the Administrative Agency Law, 2 Pa. C.S. Chapter 5A, to the Environmental Hearing Board, Second Floor, Rachel Carson State Office Building, 400 Market Street, P.O. Box 8457, Harrisburg, PA 17105-8457, 717-787-3483. TDD users may contact the Board through the Pennsylvania Relay Service, 800-654-5984.

Appeals must be filed with the Environmental Hearing Board within 30 days of receipt of written notice of this action unless the appropriate statute provides a different time period. Copies of the appeal form, and the Board's Rules of Practice and Procedure, may be obtained from the Board. The appeal form and the Board's Rules and Practice and Procedure are also available in Braille or on audiotape from the Secretary to the Board at 717-787-3483. This paragraph does not, in and of itself, create any right of appeal beyond that permitted by applicable statutes and decisional law.

Dated: February 24, 2006

Joyce E. Epps
Director
Bureau of Air Quality
Pennsylvania Department of
Environmental Protection