

Historic Pesticides and Pesticide Application

Topic: Historic Pesticides and Pesticide Application Issues

Issue:

The historical use of pesticides in New Jersey for agricultural and pest control reasons has resulted in residual pesticides of certain persistent compounds in soil at concentrations that exceed the Department's residential soil cleanup criteria. Application rates, duration of use and their persistence in soil are the major factors that contribute to the likelihood that residual pesticides will be present in soil at concentrations above the Department's cleanup criteria. As long as the land remains as farmland, the presence of historic pesticides represents minimal risk. It is when farmland is developed for other uses, such as residential or schools, that unacceptable exposure pathways may be created. Residuals from historically applied pesticides may be present on properties in New Jersey including school/child care grounds or at sites proposed for schools and child care facilities. Currently, all child care facilities have to evaluate the need to test soils in order to get licensed or re-licensed. In addition, environmental assessments are required for any school or child care facility that is undergoing construction and requires a certificate of occupancy. There is no statutory requirement, however, for all existing schools to sample soils on their grounds. Additionally, there is no statutory requirement for soil sampling when there is a conversion of use from farmland to uses such as educational, child care, recreational, or residential. Should mandatory environmental sampling be required at all schools and for all developments involving farmland?

DEP's Current Authority:

The Spill Compensation and Control Act, N.J.S.A. 58:20-23.11 et seq., provides that the Department may allow a responsible party to remediate a contaminated site. The Brownfield and Contaminated Site Remediation Act, N.J.S.A. 58:10B-1 et seq., provides that the Department may issue a No Further Action (NFA) letter to a person responsible for conducting the remediation upon a finding that based upon Department evaluation of the historical use of a particular site or any other investigation or remediation performed by the person that the Department deems necessary, or if the contamination has been remediated in accordance with applicable Department remediation regulations. Currently, farm sites come into the Voluntary Cleanup Program only when the farm will be sold and lenders or potential buyers want a NFA from the Department. The Pesticide Control Program is responsible for the certification and licensing of agricultural and commercial users of pesticides and pesticide dealers pursuant to the Pesticide Control Act, N.J.S.A. 7:13-1F. The program promotes pollution prevention and pesticide use reduction through the use of Integrated Pest Management (IPM). The program encourages the use of IPM practices in general, and at schools in particular.

Background:

Historically applied pesticides may be present on properties used for residential, educational and child care purposes at levels exceeding establish health-based soil criteria. These pesticides most often include dieldrin, DDT and metabolites, chlordane, and in lesser instances other organochlorine pesticides and arsenicals. High concentrations of pesticides may have been applied as termiticides to building foundations resulting in soils immediately surrounding these structures to contain

Historic Pesticides and Pesticide Application

unacceptable levels of pesticides. Termiticide applications usually occurred at high levels and even after long periods of time residual concentrations may continue to exceed applicable soil cleanup criteria. Recently, the finding of historic pesticide residues in soil has effected the siting of new school facilities and caused a school closing.

The Department established the Historic Pesticide Contamination Task Force (HPCTF) in 1997 after residual pesticide contamination was found in soil at a housing development built on a former orchard. The HPCTF final report released in March 1999 provided recommendations for the investigation and remediation of farmlands undergoing development. (A more detailed summary of the historic pesticide issue can be found in, "Findings and Recommendations for the Remediation of Historic Pesticide Contamination," NJDEP March 1999.) Since then, several municipalities have enacted local ordinances requiring testing of farmlands proposed for development and many developers and lenders require that sites proposed for development first undergo an evaluation of environmental conditions.

The Task Force made the following recommendations:

- Sampling of former agricultural areas, and any necessary remediation, should be conducted prior to site development.
- Sampling of former agricultural areas, and any necessary remediation, should be conducted for areas with exposed soil that are intensively used by children, such as schools, child care facilities and playgrounds.
- Sampling and remediation at sites that have already been developed, except as noted above, should be conducted whenever the current or potential future occupant desires. The Department should provide guidance concerning sampling methods and exposure control alternatives to any person concerned with historic pesticide contamination.
- The Department should provide an appropriate sampling methodology specifically designed for the investigation of pesticide residues in soil at agricultural properties.
- The Department should authorize a remedial alternative involving soil blending for pesticide residue impacted soil in former agricultural areas when it is protective of human health.

As noted, several municipalities have enacted local ordinances requiring soil investigations at properties undergoing development. While these ordinances may not specifically address historic pesticide residues in soil, they do typically require soil analysis and a comparison of results to NJDEP Soil Cleanup Criteria, including pesticides and metals. Any detection of historic pesticide constituents requires remediation prior to municipal approval. Additionally, the Department has provided guidance on appropriate

Historic Pesticides and Pesticide Application

sampling methods and methodology and currently authorizes the use of soil blending for the remediation of pesticide residuals in soil.

Stakeholder Comments:

In general, most stakeholders encouraged continued implementation of the recommendations of the Pesticide Task Force. However, the stakeholders discussed requiring environmental sampling at all schools. All agreed that protection of children should be a priority. Some stakeholders strongly supported the requirement for soil and indoor air sampling for a wider range of potential contaminants in addition to historic pesticides at all schools and child care facilities. Such sampling, however, would result in substantial costs being incurred by school districts and child care facilities. The detection of any level of pesticides or other contaminants in soils or indoor air, even those below health-based risk standards, may necessitate remediation due to public perception of risk exposure. Such actions could result in substantial remediation costs. In some cases, suitable sites for the location of schools may be difficult to find, school construction may be delayed and the value of the pesticide contaminated farmland may be diminished.

Some stakeholders recommended that an environmental investigation and analysis should no longer be voluntary but rather become a mandatory requirement whenever there is a change of use for a former farmland. A stakeholder suggested that existing requirements associated with testing for environmental problems when a site is undergoing construction or a “transaction” is too limited and unacceptable. It was noted that children attending a school that was built years ago are equally exposed to risk as children attending a school that is under construction today. As such, any standards associated with testing of schools should be applied to both new and existing schools and homes.

Some stakeholders suggested it may not be the best approach to require every school district to conduct environmental testing. It was suggested that a better approach would be for the Department to develop guidance/rules on when and where testing is needed at schools. Further, it was suggested that it was important to increase public awareness of associated health risks. One stakeholder commented that risk communication is very important component in accurately informing the public about contamination issues at schools.

Some stakeholders were concerned about “who” would be responsible to ensure testing was conducted at schools. The cost of testing and remediation could be significant and have a major impact on school board budgets.

One stakeholder suggested that any future legislation should address potential disparities between inner city and more affluent schools. A concern was expressed that, unlike the more affluent schools, the inner city schools do not have the financial ability to identify and effectively address contamination in a timely manner. One stakeholder suggested use of the Hazardous Discharge Site Remediation Fund (HDSRF) be expanded to include remediation for some of these districts. It was noted that inner city schools may not be as likely to have pesticide contamination problems, but are probably more likely to have

Historic Pesticides and Pesticide Application

problems with exposure to lead, asbestos and vapor intrusion from underground storage tanks or neighboring contaminated sites.

One stakeholder noted that soil blending on sites could be an acceptable solution for some pesticide contamination provided it is within the confines of the area of concern and consistent with the outcome of normal farming practices. That is, pesticide contamination is usually contained within the top six inches of soil. Therefore, deep tilling with clean soil below the pesticide contamination would be acceptable. (Note – HPCTF final report also recommends a remedial option of blending soils outside the area of concern.) The stakeholder did not support the use of a cap with a deed notice due to a concern that the cap will be altered at a later date. Another stakeholder noted the need for practical solutions and supported the use of blending outside the area of concern.

Concern was expressed about chlordane exposure in and around schools and other structures that are treated for termites. Unlike other pesticide applications, chlordane was usually applied as a concentrated solution with a deliberate drenching of soil for the depth of the foundation. A stakeholder stated she does not believe that the existing historic pesticide protocol addresses this type of contamination. There was also concern expressed about the possible effects on indoor air quality from historic chlordane application. One stakeholder commented that issues related to the presence of insecticides applied in high concentrations should be reassessed with a focus on risk exposure rather than comparison to the soil criteria without context to relative risk.

Some stakeholders discussed whether a residential standard would be appropriate for schools or if a separate standard should be developed for schools. The Department noted that a residential standard is based on a chronic 30-year exposure scenario. A school standard based on an exposure scenario that modeled the time a child attends a school could possibly result in a higher (less restrictive) standard. Therefore, existing residential standards may be more protective.

One stakeholder stated that all New Jersey schools are required by law to have Integrated Pesticide Management Plans and must use low impact pesticide control methods as a first choice. It was recommended that pesticide applicators certified by the Department's Pesticide Control Program be required under the certification process to use integrated pesticide management practices.

One of the stakeholders noted that it is common practice for developers to remove the first six inches of soil from farmland and sell it as topsoil. It was noted that there is no requirement to sample the soil before it is sold or redistributed.

Other States:

A cursory review of other state regulatory programs addressing residual historic pesticides and more specifically, residual historic pesticides at schools was conducted. No other state was found to directly regulate either historic pesticide in general or on school grounds. Several states, including New Jersey, have Integrated Pest Management programs that regulate the current application of pesticides at schools, but these

Historic Pesticides and Pesticide Application

regulations do not address historic applications. Several states have exempted pesticides from being considered discharges or from requiring cleanup if the pesticides were applied using standard agricultural practices or when applied to soil in a manner consistent with the product label and manufacturer's instructions.