

City of Chattanooga
Stormwater Management
Department of Public Works

**Municipal Pesticides-Herbicides-Fertilizers
(PHF)
Best Management Practices
(BMPs)
Guidance Document**

December 31, 2004

<u>Authorized By:</u>	<u>Revision</u>	<u>Date</u>
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PURPOSE

The purpose of this document is to develop guidance for City of Chattanooga personnel for Pesticide, Herbicide and Fertilizer usage and management. Also, this document is part of the City of Chattanooga's National Pollutant Discharge Elimination System (NPDES) Permit requirements (Part II Section C.6.d). The Stormwater Management Section encourages the integrated pest management by phasing out the use of the most hazardous pesticides and reducing overall pesticide, herbicide and fertilizer use while preserving landscaping assets and protecting the health and safety of the public and our employees and protecting the environment. The following document describes how the City will achieve these goals and establishes usage guidelines.

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DISCLAIMER

The Municipal PHF BMP Guidance Document was developed to assist City employees that use and handles PHFs. Stormwater Management has taken every effort to ensure the accuracy and completeness of this Document. This Document should not be considered the final word on the areas of PHF regulations. You should refer to appropriate sources for complete guidance. The Department of Public Works specifically disclaims any liability as a result of the information contained in this Document.

SECTION I: OVERVIEW

A. DEFINITIONS

A pesticide is any substance or mixture of substances or chemicals intended for defoliating or desiccating plants or for preventing, destroying, repelling or mitigating any insects, rodents, fungi, bacteria, weeds or other forms of plant or animal life declared to be a pest. The definition of a pesticide includes, but is not limited to the following chemicals: insecticides, fungicides, bactericides, herbicides, miticides, defoliants, plant regulators and nematocides. The word “pesticide” is used in this document to refer to all the previously described chemicals.

Fertilizers are used to provide supplemental nutrient for plant growth. Fertilizers are either granular or liquid applied. Fertilizers can be inorganic (fast release or slow release) or organic. Nutrients in inorganic fertilizers are released following land application and are immediately available to plants. Since they are not immediately fully consumed by plants, inorganic fertilizers have the tendency to leach into the ground and runoff into the storm water, thus contributing to storm water pollution. Organic fertilizer such as animal manure or compost contains some readily available nutrients but mostly slowly available nutrients that are released over a long period of time. Slow release inorganic fertilizers contains binding materials that slowly release the nutrient.

Best Management Practices (BMPs) are methods that have been determined to be the most effective, practical means of preventing or reducing pollution from non-point sources, such as Pesticide Herbicide Fertilizer (PHF) carried by urban runoff. BMPs include structural (i.e. buffer zones) and non-structural (i.e. training) activities.

B. CURRENT MUNICIPAL PHF USAGE AND MANAGEMENT ACTIVITIES

City of Chattanooga current PHF usage is through the Department of Public Works – Division of City Wide Services and the Department of Parks and Recreation.

Department of Public Works – The Division of City Wide Services is involved in street and storm water structures maintenance. Also, under this division is the Urban Forestry Section that uses various chemicals. Below is a summary of activities that involve the use of PHF by the Division of City Wide Services:

- Street Maintenance uses the herbicide glyphosate to control grass in sidewalks and weeds around guardrails and sidewalks. The Superintendent of Street Construction and Maintenance supervises the spraying program.
- For storm water structures maintenance, the Division contracts with Spraymax, Inc. for the control of vegetation along ten miles of ditch banks in Chattanooga. Spraymax is a professional pesticide application company that is licensed, bonded, and insured. The Division's Superintendent of Sewer Construction and Maintenance administers this contract.
- The Urban Forestry Section applies a wide range of insecticides and fertilizers on trees as directed by the Municipal Forester, Gene Hyde. Mr. Hyde is a graduate forester, an ISA Certified Arborist, and possesses a Commercial Pesticide Applicator's card.

Department of Parks and Recreation – The Parks Division is responsible for the installation and maintenance of landscaping of turf grass within the parks throughout the City and in a limited number of Right-Of-Way. The Municipal Parks group is charged with turf management in City parks and uses fertilizer and herbicide to carry out this assignment. The Landscaping group has responsibility for planting beds and planters and some high

maintenance turf grass areas. The Athletic Facilities group maintains football, soccer and softball fields and is the prime user of chemicals in the Division. The Landscape division contracts with the Greenscapes Landscaping Company for the application of chemicals to turf grass areas. Greenscapes Landscaping is a licensed, bonded and insured professional landscaping company. Mr. Jeremy Kaylor possesses a Commercial Pesticide Applicator's card and oversees all chemical applications within the Division. Appendix A contains a list of chemicals, application form and application method used within the Department.

SECTION II: PHF BEST MANAGEMENT PRACTICES (BMPs)

A. APPLICATION TECHNIQUES

General Practice Guidelines

1. Ensure that chemical applicators receive thorough training and proper certification prior to applying any chemical product. Individuals within the City of Chattanooga must either possess a Commercial Pesticide Applicator Certification or work under the direction of an individual possessing this certification. Companies hired to apply pesticides must possess a Commercial Applicator's License and be licensed, bonded and insured. The Tennessee Department of Agriculture (TDA) handles Testing and issuance of Certifications in appropriate pesticide categories. Details on exams and study materials can be obtained through the: Hamilton County Agriculture Extension Service

6183 Adamson Circle

Chattanooga, TN 37416

Phone (423) 855-6113

2. Apply all PHFs according to label directions – IT'S THE LAW!
3. Apply a pesticide ONLY when needed and use in a manner to minimize "off target" effects.

To do this appropriately applicators should take into account the following conditions:

- Wind direction and speed.
- Spreading capabilities of the pesticide.
- Residual nature of the pesticide.
- Application method. Example: a high pressure spray rig that produces a small droplet mist will be more likely to produce a "pesticide drift" than a low pressure sprayer that

emits a steady stream of material.

- Weather forecast. Example: Applying before a rain will result in the necessity of another application or having the pesticide be carried into non-target areas by storm water.
4. Know the characteristics of the application site including the soil type and depth to groundwater. Be aware of any ground recharge areas into which PHF could percolate.
 5. Select pesticides best suited to the characteristics of the target site and the particular pest or weed. Half-life, solubility and absorption should be compared to site characteristics to determine the safest chemical. Choose the least toxic and the least persistent sprays wherever possible based on comparison of labels and associated Material Safety Data Sheets (MSDS).
 6. Employ application techniques that increase efficiency and allow the lowest effective application rates. Carefully calibrate application equipment and follow all label instructions.
 7. Recognize that no landscape should be completely weed-free or pest-free.
 8. Accurately diagnose the pest. Disease and insect symptoms can mimic each other in many plants. A fungicide will not control an insect, and an insecticide will not control a disease.
 9. Accurately diagnose the primary problem. For example, compacted soil around an ornamental sidewalk shrub will cause the shrub to become stressed and make it susceptible to aphids. To solve the problem it would be necessary to loosen the soil and not to continue endlessly spray insecticides.

Application and Handling Practices

1. Treat for and control target weeds prior to landscaping by using an herbicide targeted to

the weeds that are present and applied with the instructions on the product label.

2. Be aware that some pesticide formulations are not compatible with other pesticides and combining them may result in increased potency and phyto-toxicity.
3. Apply all PHFs according to the manufacturer's Instructions. The label is law for pesticide usage.
4. Keep PHF equipment properly calibrated and in good repair according to the manufacturer's instructions. Recalibrate equipment periodically to compensate for wear in pumps, nozzles, and metering systems. Calibrate sprayers when new nozzles are installed.
5. All mixing and loading operations must occur on impervious surfaces.
6. To prevent possible backflow and contamination of a water supply, never submerge a water supply hose in a chemical tank or container. Provide proper backflow prevention devices as required by the Chattanooga City Plumbing Code.
7. Keep records of PHF application and provide signage as required.

Weather Restrictions

Do not apply PHF during periods of high temperatures (above 95 degrees F.) or during windy conditions (wind velocities greater than 6-8 mph) that could result in PHF "drift". Also do not apply immediately prior to heavy rainfall or irrigation.

B. STORAGE, SPILLS RESPONSE AND DISPOSAL PROCEDURES

Storage of PHFs

1. Locate chemical storage and maintenance areas away from wells and surface water bodies in accordance with the Storm Water Management Section guidelines.
2. Ensure that storage areas are secure and covered, preventing exposure to rain and

access by unauthorized individuals.

3. Make sure that basic safety equipment such as fire extinguishers, warning signs (e.g. “No Smoking”), adequate lighting and ventilation has been factored in the design of the storage area.
4. Floors, walls and shelving should be made of non-porous materials such as metal and concrete to prevent the absorption of chemical spills.
5. If possible, temperature controls should be provided to avoid excessive heat or cold.
6. Storage areas should be kept clear of combustible materials and debris.
7. Store nitrate-based and other oxidizing fertilizers separately from solvents, fuels and pesticides to reduce the fire risk. Follow the general principle of storing like chemicals together.
8. Store chemicals in their original containers, tightly closed with their labels intact. Also inspect these containers regularly for leaks.
9. Store dry chemicals above liquids and on pallets to ensure that they do not get wet.
10. Make available Material Safety Data Sheets (MSDSs) in a readily accessible area. A list of all hazardous chemicals in the work place must be made available and periodically reviewed to ensure that all MSDSs are readily available.
11. Do not store large quantities of PHFs for long periods of time. Adopt the “first in – first out” principle, using the oldest products first to ensure that the shelf life does not expire. If practical, buy smaller quantities of pesticides and fertilizers, thereby reducing storage issues.

Spills and Disposal Procedures

1. Keep chemical spill cleanup equipment, personal protective equipment, and emergency

phone numbers available when handling chemicals and their containers. Emergency phone numbers include:

- Fire Department (423) 697-1417
- Stormwater Management (423) 668-2530
- Tennessee Department of Environment and Conservation (888) 891-8332

2. Properly manage chemical spills by cleaning them up as soon as possible, controlling actively spilling or leaking materials, containing the spilled material (e.g., with absorbents, sand), collecting the spilled material, storing or disposing of the spilled material, and following relevant spill reporting requirements.

Call and report the following information:

- Name, address, and phone number of person reporting the spill
- The name of the person responsible for the spill
- Date and time of the spill
- Name and amount of the substance released
- Location/address of the spilled substance
- Size/description of the affected area
- Containment/cleanup actions taken
- Any other agencies/persons contacted

("Washing down" a spill with water is not always the appropriate cleanup approach).

3. Never pour lawn and garden chemicals or tank "rinse water" down storm drains or sanitary drains. Unused chemicals should be kept in original containers and dropped at The Household Hazardous Waste Facility located at 3925 North Hawthorne Street. The Facility is open the 2nd Saturday of each month from 8:00 a.m. to 12:00 noon EST.

4. Keep chemicals off impervious surfaces such as streets and gutters during application. Use the household waste recycling facility located at 3925 N. Hawthorne Street for disposal of chemicals.
5. Always follow label directions for the disposal of chemicals and their containers. This typically involves the triple-rinsing of empty containers followed puncturing and/or crushing. All visible chemicals should be cleaned from the container prior to its disposal.

C. SOILS AND WATER TESTING

“Soil” testing is always a good practice as it relates to:

1. Planning plant communities prior to installation to find out if the existing topsoil has a suitable pH.
2. Determining soil pH as an investigative tool if plants are growing poorly.
3. Determining the level of various macro and micro nutrients to determine the appropriate levels of fertilizers to be applied.
4. Discovering the levels of chemicals that are remaining in the soil following a spill of materials.

It is strongly recommended that a high quality lab with qualified agronomists and chemists be used to analyze samples, make recommendations, and is readily accessible for consultations.

For concerns about chemicals spills or runoff into “surface water”, contact the Storm Water Management Section for testing and analysis. For concerns about chemicals reaching “ground water” supply contact Tennessee Department of Environment and Conservation- Chattanooga Field Office 1-888-891-8332.

D. TRAINING

Training Opportunities for Commercial Pesticide Applicators. Training sessions for Commercial Applicators are held periodically by The University of Tennessee, Agricultural Extension Service for those needing to become certified. Scheduled training sessions include information on both general standards and the particular category. This training is usually offered the first Wednesday of each month at U.T. Knoxville (Rm. 156 & 157 Plant Biotechnology Bldg, U.T. Ag Campus) and down-linked by interactive television (ITV) to Johnson City (East TN State University), Chattanooga (U.T.), Nashville (U.T. Extension Central District Office, Ellington Agricultural Center) and Jackson (U.T. West Tennessee Center). The registration fee for training is \$25 for the "Core" and \$10 for each Commercial Applicator that may be offered. Exam information for commercial applicators is available in Appendix B.

The Storm Water Management Section will be providing training sessions twice a year for all city employees that handle any PHF. Contact the Storm Water Management Section (668-2530) for information regarding training and educational materials.

E. INTEGRATED PEST MANAGEMENT (IPM)

1. Managers are highly encouraged to use an IPM/Plant Health Care (PHC) approach, integrating a variety of management tools: scouting, monitoring, cultural practices, targeted pesticide applications to minimize the amount, frequency, and expense of chemical applications. The pros and cons of various tools should be weighed and used in an integrated manner to achieve pest control objectives in a safe, effective, and cost-effective manner.
2. Consider spot treatments of pests rather than treating the entire surface.

3. Consider pest occurrence and history when developing pest management strategies.
4. Time your pesticide applications to minimize hose plant damage and maximize pest control.
5. Clean up plant litter and remove weeds before they go to seed.
6. Remove infested plant residue from landscape settings in the fall so that pests do not over-winter there.
7. Implement cultural controls such as proper plant selection, planting times, and planting methods to reduce susceptibility to insects, pests and diseases, thereby reducing pesticide usage. Example: The appropriate time for tree planting is November through March with the most optimal time occurring in November and December. Planting trees in the warmer months usually results in a higher rate of stress, decline, and tree mortality. The death of the tree is often preceded by an insect or disease infestation.
8. Implement mechanical and physical controls where practical as an alternative to chemical application. Examples include a wide variety of practices such as “collars” around trees, mulching, handpicking, mowing, hoeing, and traps.
9. Use biological controls where appropriate to reduce pesticide usage. For example, introduce natural enemies of pests such as lady bugs.
10. Consider using environmentally friendly chemical alternatives such as insecticidal soaps, horticultural oils and other comparable measures where practical. Alternative chemical controls like neem oil products, active bacillus products, and potassium bicarbonate products are encouraged.
11. Use native plants to minimize watering requirements as well as pesticide use.

F. STREAM BUFFERS

Maintain a buffer zone around streams, ponds, creeks, wet weather conveyance, wetlands, and other bodies of water where PHFs are not to be applied. Consult the Section of Storm Water Management and the product label for distances necessary to keep the chemical from seeping into the water. These distances will vary with each product depending on the type of chemical and sensitivity of the water body.

G. RECORD KEEPING

1. All commercial applicators MUST keep records of all restricted use for two years. Record keeping is also required for exterminator general use. These must be made available on demand to the Commissioner of TDA, or his/her designee upon inspection. The following records must show for each application:

The pesticide used	The percentage of mixed-use dilution
The target pest	The date of service
The crop, plant, house, business, or building the pesticide is applied on or to and the location	The landowner, agent, or other person employing such applicator
The dosage rate	The amount of pesticide used

You may use Form 805 (see Appendix C) available from the Tennessee Agricultural Extension Service to record the above noted information. This form and recordkeeping software and pesticide related materials are available from U.T. Extension Service Entomology and Plant Pathology Department (<http://eppserver.ag.utk.edu/psep/psep.htm>).

Combine and file this information with irrigation data, growth records, and notes on the

effectiveness of alternative pest control measures to help identify and track measures to both save money and reduce pesticide usage.

SECTION III: REGULATIONS

The U.S. Environmental Protection Agency (EPA) is responsible for the registration of pesticides, reviewing labels for accuracy and safety, development of pesticide applicator training materials and enforcement of federal pesticide laws and regulations. Each state has laws governing pesticides and their uses and these laws must be at least as strict as the federal laws. State certification plans are approved and evaluated by EPA. Because pesticide applicators are directly regulated and certified by their state agencies, these applicators must have a thorough knowledge of the state and federal pesticide laws.

Fertilizers are regulated for quality and safety at the federal and state levels. Although regulated primarily at the state level, several federal laws pertain to the manufacturing, distribution and use of fertilizers. State regulation is concerned with consumer protection, labeling, the protection of human health and the environment, and the proper handling and application of fertilizers. Also, biosolids are regulated by 40 CFR Part 503. Fertilizers can be very toxic and hazardous if they are not handled properly.

A. FEDERAL REGULATIONS

Federal Insecticide, Fungicide and Rodenticide Act (FIFRA)

In 1947, Congress passed the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA), which required federal registration of pesticides shipped in interstate commerce. Under the 1947 FIFRA, registered pesticides could be used by almost anyone for any purpose, and in any way, because that law did not address itself to pesticide use.

Federal Environmental Pesticide Control Act (FEPCA)

In 1972, Congress amended the FIFRA to add key regulatory mechanisms. This

legislation is known as the Federal Environmental Pesticide Control Act, FEPCA. Among other things, these regulations (1) prohibit the use of any registered pesticide in a manner inconsistent with label instructions; (2) require that pesticides be classified for general or restricted-use; (3) provide that pesticides in the restricted category be used only by or under the direct supervision of certified applicators, or under such other regulatory restrictions as the EPA administrator may require; (4) establish general categories of certified applicator: private applicator and commercial applicator; (5) provide penalties (fines and jail terms) for violations of FIFRA; and (6) provide states the authority to regulate the sale or use of any federally registered pesticides in that state. The amended FIFRA was fully implemented in October 1977. A discussion of Tennessee certification will be covered under the state law.

By regulation, the EPA set minimum standards of competency for certification of pesticide applicators. This regulation, 40CFR171 "Certification of Pesticide Applicators," allows states and Indian tribes with EPA-approved plans to administer certification programs within their boundaries. Certification is proof that an applicator knows the correct and safe way to apply restricted-use pesticides.

B. FEDERAL REQUIREMENTS AND PENALTIES

Registration and Classification of Pesticides: Manufacturers must register every pesticide with the EPA. All pesticides are classified by EPA either as general- or restricted-use. These are defined under the state law.

Label Directions: An applicator may not use any pesticide in a manner not permitted by the product's label. A pesticide may be applied only on plants, pests or sites specified in the directions for use. You may not use higher dosages, higher concentrations or more

frequent applications. You must follow directions for use, safety, mixing, diluting, storage and disposal.

Penalties:

Civil Penalties - In general, any commercial applicator who violates any provision of FIFRA may be assessed a penalty of not more than \$5,000 for each offense (\$1,000 for private applicators). Before the agency imposes a fine, you have the right to ask for a hearing.

Criminal Penalties - In general, any applicator that knowingly violates any provision of FIFRA shall be fined not more than \$25,000 or one year in prison (\$1,000 and/or 30 days in prison for private applicators).

C. STATE REGULATIONS

Tennessee Application of Pesticide Act (TAPA)

TAPA contains pest control operator regulations and regulations governing the use of restricted pesticides. TAPA is administered by **Tennessee Department of Agriculture (TDA)**. TDA insures that all pesticides are used in accordance with the registered labels and labeling. TDA regulates all pesticide use in Tennessee; issues certification for uses of restricted-use pesticides, and enforces regulations dealing with pesticide safety, handling, application, and disposal. TDA establishes qualifications and administers examinations for individuals to become commercial applicators and licensed applicators (licensed pest control operators) that enable these people to apply restricted-use pesticides and become involved in commercial pest control operations (charge a fee). TDA also certifies people as commercial applicators that do pest control work in residential, industrial or institutional buildings. Such people include building superintendents, caretakers and maintenance workers who are employed by apartments, schools, government agencies, manufacturing

plants, private businesses, hospitals or similar facilities.

Tennessee Insecticide, Fungicide and Rodenticide Act (TIFRA)

This act regulates the sale or transportation of pesticides. It forbids any person to distribute, sell or transport in intrastate or interstate commerce any pesticide:

- If it is not registered according to the law in Tennessee.
- If any claims or directions for use differ from its registration.
- If the composition differs from the composition of registration.
- If it is not in the manufacturer's unbroken, properly labeled container.
- If any highly toxic pesticide that does not have the skull and crossbones, with the signal word "poison" in red on a contrasting background.
- If an antidote for the pesticide is not listed on the label.
- If any pesticide is adulterated or misbranded.

D. STATE REQUIREMENTS AND PENALTIES

Registration and Classification of Pesticides

Registration of Pesticides - Every pesticide, which is distributed or sold within the state, must be registered with TDA and registration fees paid. All pesticide products must be registered annually and their registration expires on June 30 each year.

Classification of Pesticides - Registered pesticides are also classified by state laws as either general-use (unclassified) or restricted-use: (1) General-use pesticides are those that will not ordinarily cause unreasonable adverse effects on the user or the environment when used in accordance with label instructions. These pesticides are available to the general public. Restricted-use pesticides are defined as those that may cause adverse effects on the environment and/or the applicator, unless subject to additional regulatory restrictions. They are generally available only to certified applicators.

Certification and Classification of Applicator

Certification for Applicator - The commissioner of TDA has the authority to authorize one to use, supervise the use, buy or sell restricted-use pesticides, in the process called certification.

Pesticide Applicator Classification - Applicators of restricted-use pesticides must be certified as “private applicators” or commercial applicators”. A “private applicator” is a farmer, rancher, orchardist, nursery producer, greenhouse operator, etc., who uses or supervises the use of restricted pesticides to produce an agricultural commodity on property owned or rented by the applicator or his/her employer or (if applied without compensation other than trading of personal services between producers of agricultural commodities) on the property of another person. “Commercial applicators” are those who use or supervise the use of restricted pesticides on any property other than as provided by the definition of “private applicator”. Commercial pesticide applicators are certified to work in certain categories.

Commercial applicator certification may be issued in the following categories: C01 - Agriculture, C02 - Forest Pest Control, C03 - Ornamental and Turf, C04 - Seed Treatment, C05 - Aquatic Pest Control, C06 - Right-Of Way, C07 Industrial, Institutional, Structural & Health Related Pest Control, C08 - Public Health Control, C10 Demonstration, Research and Regulatory Pest Control, C11 - Wood Preservatives, C12 - Pesticide Dealer, C13 Anti-Fouling Marine Paint, C14 - Microbial Pest Control and C16 - Sewer Line Treatment

A licensed applicator (licensed pest control operator) is an individual engaged in commercial pest control with a chartered company and charges a fee for their service.

Law Violations and Penalties

It is unlawful to:

- (A) Detach, alter, deface, or destroy, in whole or in part, any label or labeling.
- (B) For any manufacturer, distributor, dealer, carrier, or other person to refuse TDA representatives to have access to and to copy any records of business transactions that are essential in carrying out the law (TIFRA).
- (C) For any person to give a false guaranty as provided in the law (TIFRA).
- (D) For any person to dispose of, discard or store any pesticide or pesticide containers in a manner that would cause injury to man, vegetation, crops, livestock, wildlife, beneficial insects or to pollute any water supply or waterways.

A violation of the sale or transportation section of TIFRA is a Class C misdemeanor.

E. WORKER PROTECTION STANDARD

The Worker Protection Standard (WPS) is a regulation issued by the EPA. It covers pesticides that are used in the production of agricultural plants on farms, forest, nurseries and greenhouses. The WPS requires an individual to take steps to reduce the risk of pesticide-related illness and injury if they (1) use pesticides, or (2) employ workers or pesticide handlers who are exposed to pesticides.

If one is an agricultural pesticide user and/or an employer of agricultural workers or pesticide handlers, the WPS requires them to provide their employees and, in some cases, to their self and others the following:

- Information about exposure to pesticides.
- Protections against exposures to pesticides.
- Ways to mitigate exposures to pesticides.

To ensure that employees will be informed about exposure to pesticides, the WPS requires:

- Pesticide safety poster – to be displayed for workers and handlers.
- Access to labeling information – for pesticide handlers and early-entry workers.
- Access to specific information – a centrally located application list of pesticide treatments on the establishment.

To ensure that employees will be protected from exposures to pesticides, the WPS requires employers to:

- Prohibit handlers from applying a pesticide in a way that will expose workers or other persons. Exclude workers from areas being treated with pesticides.
- Exclude workers from areas that remain under a restricted-entry interval (REI), with few exceptions.
- Protect early-entry workers who are doing permitted tasks in treated areas during an REI requirements include special instructions and duties related to correct use of personal protective equipment (PPE).
- Notify workers about treated areas so they can avoid inadvertent exposures.
- Protect handlers during tasks – requirements include monitoring while handling highly toxic pesticides and duties related to correct use of PPE.

To mitigate pesticide exposures that employees receive, the WPS requires:

- Decontamination sites – providing handlers and workers an ample supply of water, soap, and towels for routine washing and emergency decontamination.
- Emergency assistance – making transportation available to a medical care facility if an agricultural worker or handler may be poisoned or injured by a

pesticide, and providing information about the pesticide(s) to which the person may have been exposed.

Employer Information Exchange:

Employers of commercial pesticide handlers must make sure that their customer – the operator of the farm, forest, nursery or greenhouse – knows certain information about the pesticide before it is applied on the establishment. Operators of agricultural establishment must have this information to protect their employees (workers and pesticide handlers). The information must include the following:

- The specific location and description of the area(s) on the agricultural establishment that are to be treated with a pesticide.
- The time and date the pesticide is scheduled to be applied.
- The product name, EPA registration number, and active ingredient(s).
- The restricted-entry interval for the pesticide.
- Whether the pesticide labeling requires both treated-area posting and oral notification.
- Any other specific requirements on the pesticide labeling concerning protection of workers and other persons during or after application.

APPENDICES

APPENDIX A**List of Current Landscape and Turf Management Chemicals Use**

<u>Chemicals</u>	<u>Form</u>	<u>Application Method</u>
Amdro	Granular	Broadcast
Balan	Granular	Broadcast
Barricade	Granular	Broadcast
Basagran	Liquid	Spray
Bayleton	Granular	Broadcast
Bordeaux Mixture	Dry Powder	Spray
Cygon	Liquid	Spray
Daconil	Liquid	Spray
Diazinon	Liquid	Spray
Dimension	Liquid	Spray
Dormant Oil	Liquid	Spray
Fertilizer, 0-0-26 w/ Barricade	Granular	Broadcast
Fertilizer, 14-14-14 Osmocote	Granular	Broadcast
Fertilizer, 19-26-5 Starter	Granular	Broadcast
Fertilizer, 20-20-20	Water Soluble	Spray/Drench
Fertilizer, 28-4-4	Granular	Broadcast
Fertilizer, 32-2-5 w/ Barricade	Granular	Broadcast
Fertilizer, 38-0-0 slow release	Granular	Broadcast
Fertilizer, 5-5-25 w/ Ronstar	Granular	Broadcast
Fertilizer, 8-2-34 w/ Barricade	Granular	Broadcast
Fertilizer, 9-13-7 Starter	Granular	Broadcast
Fertilizer, Milorganite	Granular	Broadcast
Fertilizer, Tree Shrub 19-8-10	Granular	Broadcast
Image	Dry Granular	Spray
Kelthane	Liquid	Spray
Lindane	Liquid	Spray
Liquid Iron	Liquid	Spray/Drench
Malathion	Liquid	Spray
Manage	Dry Granular	Spray
Mancozeb	Flowable Water Dispesible	Spray
Manicure	Granules	Spray
Merit	Granular	Broadcast
MSMA	Liquid	Spray
Ornamec	Liquid	Spray
Ronstar	Granular	Broadcast
Roundup (Glyphosate)	Liquid	Spray
Sevin	Liquid	Spray
Snapshot	Granular	Broadcast
Subdue	Liquid	Spray/Drench
Surflan	Liquid	Spray
Talstar	Granular	Broadcast
Trimec	Liquid	Spray
Triple Action	Liquid	Spray
Varsity	Granular	Broadcast

APPENDIX B

Exam Opportunities for Commercial Applicators. Written examinations are used to determine the competence of commercial applicators. Part of the test includes general standards, which all commercial applicators must know. These standards include a practical knowledge of the principles and practices of pest control and the safe use of pesticides. The remainder of the test is related to the particular category. The certification exams are given by the Tennessee Department of Agriculture. The exam fee for a commercial category is \$15, and must be prepaid two weeks in advance of the exam date. Send your check or money order to the following address:

Tennessee Department of Agriculture

Certification and Licensing Section

Box 40627

Melrose Station

Nashville, TN 37204

Phone: 615-837-5148

*E-Mail: **maryborthick** @state.tn.us*

TDA will then notify the applicant of the date and location to take the exam(s). TDA offers the certification exams in Nashville every Tuesday, Wednesday and Thursday at 8:30 and 1 :30 pm at the Bruer Building, Ellington Agricultural Center. Phone 615-837-5148.

Recertification of Commercial Applicators - A commercial applicator's certification period only lasts for three years. Everyone's certification expires on the same date, October 21,2005.

Recertification may be obtained by acquiring a specified number of points during the current certification period. Points may be awarded for attending conferences, programs,

seminars, etc., that present information in the following areas in the individual's certification categories:

- Pest control
- Worker Protection Standards (WPS)
- Pesticides
- Pesticide safety
- Integrated Pest Management (IPM)
- Environmental issues (water quality, endangered species, etc.)

Study Materials. Study materials have been developed by the faculty at The University of Tennessee and are available for purchase to study for an exam. An order form, Form 818 and study materials are available from the Pesticide Coordinator's office at U. T. or at the U. T. PSEP web site <http://eppserver.ag.utk.edu/pat/pat.htm>. Study materials may also be ordered at <http://ecommerce.cas.utk.edu/agstore>. The registration fee may be paid and study material purchased at the following address:

University of TN Dept. of Entomology & Plant Pathology

Attn.: Pesticide Coordinator

2431 Joe Johnson Drive

Ellington Plant Sciences – Room 205

Knoxville, TN 37996-4560

Phone: 865-974-7138

E-Mail: gburgess1ra1utk.edu

APPENDIX C

Form 805
(Rev. 4/19/95)

UNIVERSITY OF TENNESSEE
AGRICULTURAL EXTENSION SERVICE



- Commercial Applicator -

Pesticide Recordkeeping Form for RUP's¹ and Includes Requirements for WPS²

This is a sample recordkeeping form for commercial applicators.¹ Maintain records of RUPS for a period of two years.² For WPS, display during and 30 days after application or REI has been in effect.

REQUIRED				NON-REQUIRED						
1	2	3	4	5	6	7	8	9	10	11
Landowner, Agent or Other Person Employing Applicator	Date and Time of Application	Site (Crop, Plant, Animal, House or Bldg.), Address or Location	Target Pest	Pesticide Trade Name	Dosage Rate (per Acre, per 100 gals., per sq. linear ft.)	Percentage of Mixed Use Dilution Total Amt. Pesticide Used	*Common or Chemical Name Pesticide Formulation *EPA Reg. No. TI Treated Area	*REI (Hours/Days) Do Not Enter Until Mo/Day/Time	Weather Conditions Fertilizer Used	Name (M) of Certified Applicator (A) or Certified Supervisor (S), Social Security No. (SSN)
										N: A: () or S: () SSN:
										N: A: () or S: () SSN:

- ¹ RUP - Restricted Use Pesticide
 - ² WPS - Worker Protection Standards for farmers, forests, greenhouses and nurseries.
 - 1992 Federal Worker Protection Standard (WPS) requirement for information that must be displayed at a central location to inform workers and handlers about specific pesticide application.
- 1 - Landowner or Producer
 - 2 - Date and Time of Application
 - 3 - Site
 - 4 - Target Pest
 - 5 - Pesticide Trade Name
 - 6 - Dosage Rate
 - 7 - Percentage of Mixed Use Dilution and Total Amount Pesticide Used
 - 8 - Common Name, Pesticide Formulation, EPA Reg. No., etc.
 - 9 - REI (Restricted Entry Interval)
 - 10 - Weather and Fertilizer Used
 - 11 - Name of Certified Pesticide Applicator (A) or Certified Supervisor (S) and Soc. Sec. No.
- Landowner or producer for whom pesticides are being applied or owner of crop and address or location of application.
Date and time pesticide was applied.
Name of crop, plant, animal, house, business or building pesticide is applied on or to and location of treatment.
The name of the pest you are trying to control.
Trade or brand name of pesticide.
Amount of pesticide formulation applied per unit basis (per acre, 100 gals. water, 100 sq. ft., 1000 sq. ft. or 550 lb. cattle, etc.)
Percentage of pesticide active ingredient in dilution to be used and total amount pesticide used.
Common name, formulation such as ZEC, 5D, 50WP, etc., EPA registration number and total treated area.
Time immediately after a pesticide application when entry into the treated area is limited and "Do Not Enter Until" - month, day and time.
Weather conditions at the time of pesticide applications (sunny, cloudy, rainy, etc.)
Name of certified person applying or supervising application of material, Soc. Sec. No. (certification No.), if applicable, (if using restricted use chemical). This information needs to be entered only once in a permanent record book as long as the information is clearly associated with each record.

Form 805

AGRICULTURAL EXTENSION SERVICE

- Commercial Applicator -

Pesticide Recordkeeping Form for RUP's¹ and Includes Requirements for WPS²

This is a sample recordkeeping form for commercial applicators. ¹ Maintain records of RUPs for a period of two years. ² For WPS, display during and 30 days after application or REI has been in effect.

REQUIRED				NON-REQUIRED						
1 Landowner, Agent or Other Person Employing Applicator	2 Date and Time of Application	3 Site (Crop, Plant, Animal, House or Bldg.), Address or Location	4 Target Pest	5 Pesticide Trade Name	6 Dosage Rate (per Acre, per 100 gals., per sq. linear ft.)	7 Percentage of Mixed Use Dilution Total Amt. Pesticide Used	8 Common or Chemical Name Pesticide Formulation EPA Reg. No. TI Treated Area	9 REI (Hours/Days) Do Not Enter Until Mon/Day/Time	10 Weather Conditions Fertilizer Used	11 Name (N) of Certified Applicator (A) or Certified Supervisor (S), Social Security No. (SSN)
										N: A: () or S: () SSN:
										N: A: () or S: () SSN:
										N: A: () or S: () SSN:

Use of trade or brand names in this publication is for clarity and information; it does not imply approval of the product to the exclusion of others which may be of similar, suitable composition, nor does it guarantee or warrant the standard of the product.

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SPECIAL THANKS

The City of Chattanooga Stormwater Management would like to express its sincere thanks to Mr. Gene Hyde (City of Chattanooga Forester) for drafting this guidance document.