

Annual Environmental Report

March 2008 – February 2009



Environmental Management Policy

Albemarle County Public Schools is committed to protecting human health and the environment. This commitment includes meeting or exceeding Federal, State, Local and other applicable environmental requirements; instituting pollution prevention initiatives where practicable and feasible; developing and implementing an Environmental Management System (EMS); continually improving the EMS by setting environmental objectives and targets; and developing management programs to ensure the environmental objectives and targets are met.

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I. 2008 – 2009 EMS OBJECTIVES PROGRESS

Following are progress reports for the objectives and targets for the 2008 - 2009 EMS cycle.

A. *Safer Chemical Management*

Objective: Implement Safer Chemical Management SOP and Administrative Policy

Target: Phase out all non-approved cleaners by May 2008. Conduct training for custodial and maintenance staff on new cleaners and herbicides by September 2008.

Progress for this objective includes:

- Developed Board Report to include cost of implementation for Safer Chemical Management Procedure
- Board presentation for Safer Chemical Management
- Training provided for custodial staff on new cleaners and procedures
- Training provided to Grounds crew on new procedures
- By implementing the Ultra Chem Floor Care system during the Summer of 2008 as part of the Safer Chemical Management SOP, approximately 19.43 tons of stripper sludge were eliminated.

The Safer Chemical Management SOP is included as Attachment 1.

B. *Medical Waste Management*

Objective: Formalize procedures for Medical Waste Management

Target: Develop SOP for managing medical waste by June 30, 2008

Progress for this objective includes:

- Develop draft SOP and get feedback

Action items that will be carried over to the next EMS cycle include:

- Meet with School Nurses and Custodial Management concerning the current procedure and discuss needs/ideas for improvement
- Provide any training necessary for SOP implementation

C. *Energy Management*

Objective: Reduce natural resource depletion through energy conservation practices

Target: Implement lighting controls at middle schools by August 2008 and conduct after-hours energy inspections at each school by December 2008 to identify consumption problems

A summary of action items for this objective are as follows:

- Release RFQ for energy management software upgrade to allow for cost avoidance calculation
- Implement lighting and motion sensor controls at middle schools
- Conduct after-hours energy inspections at each school to identify consumption problems
- Register the best performing school for the Energy Star Label
- Present annual cost avoidance in Annual Environmental Report

Major advances in energy management include:

- Creating an Energy Management and Conservation Policy (April 2, 2009 School Board agenda)
- Installing centrally-controlled thermostats for 21 mobile classrooms
- Lighting upgrades from T12 to T8 at Scottsville Elementary, Red Hill Elementary, Cale Elementary, Western Albemarle High

The Energy Management and Conservation Draft Policy is included as Attachment 2.

D. Audit, Emergency Preparedness and Nonconformance Procedures

Objective: Virginia Environmental Excellence Program (VEEP) E3 Designation

Target: Add Internal Audit, Emergency Preparedness and Nonconformance Procedures to SOP by November 2008

A summary of action items for this objective are as follows and will be deferred to the next EMS cycle:

- Develop draft procedures
- Elicit feedback from Steering Committee
- Submit SOP to Director of Building Services for approval
- Provide any training necessary for SOP implementation
- Application for VEEP E3 Designation

E. Pesticide Management

Objective: Minimize pesticide use in and around schools

Target: Fully implement Integrated Pest Management Program by August 2008

Progress for this objective includes:

- Complete IPM conversion for all schools
- Opt-in notification sent to parents at the beginning of the school year to receive email if a pesticide application is scheduled
- Monthly IPM inspections are conducted at each school by Intrastate Pest Control. If a pest problem exists at a school, the environmental compliance manager is notified.

F. Recycling

Objective: Improve and expand current recycling program to include recycling more types of materials

Target: Expand commingled recycling to all schools and track amounts of recycled materials

A summary of action items for this objective are as follows:

- Engage a Recycling Coordinator from each school to act as a liaison between the school and Building Services

Recycling Coordinators were solicited in multiple Superintendents' Advisory Bulletins, and the following people are the designees for each school:

Albemarle County Public Schools
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School	Coordinator
Agnor-Hurt	Doug Granger
Albemarle High	Sandy Sutherland, Angela Worley, Daniel Parks, Melissa Brown, Kathleen Burg
Baker-Butler	Debbie Newman
Broadus Wood	Peggy Cooney
Brownsville	Pending
Burley	Mike Barber
Cale	Deborah Riddick
Crozet	Maggie Morris
Greer	Jenny Burrowbridge Michele Yeaton
Henley	Susan Guerrant
Hollymead	Jeff Matriccino Mary Dreyer
Ivy Creek/PREP	Richard Myers
Jouett	Lynn Leardi
Meriwether Lewis	Betsy Bell
Monticello High	Jimmy Green
Murray Elementary	Peggy Morgan
Murray High	Tom Mix
Red Hill	Cindy Payne
Scottsville	Sharon Ayres
Stone-Robinson	Kate Dabney
Stony Point	Diana Amatucci
Sutherland	Jeff Schwalm
Walton	Susan Rigby
Western Albemarle	Catherine Manis
Woodbrook	Ben Williams
Yancey	Bird Dierking
Transportation	Sherry Wilkerson
Bldg Services	Lindsay Snoddy
Food Services	Christina Pitsenberger

- Provide training to Recycling Coordinators on acceptable materials and collection methods for commingled recycling
- Track recycling for calendar year 2008

In 2008, 340.4 tons of materials were recycled, which is approximately 83.7 tons more than amounts recycled in 256.7 tons. The increase in recycling quantities during 2008 was a combination the introduction of commingled recycling at all schools, a commingled compactor at Albemarle High School, and recordkeeping.

The following items were recycled in 2008:

- Oil-water separator debris and waste fuel mixtures
- Used oil and antifreeze
- Frying oil from high schools
- PCB-containing ballasts
- Scrap metal delivered to Coiner's/Cycle Systems
- Fluorescent, HID and sodium bulbs
- Unsold auction materials
- Electronic waste (computers, cell phones, chargers, printers, keyboards, etc.)
- Household batteries

Figure 1: Recycled Quantities for Albemarle County Public Schools in 2008

Material	Amount (tons)	Vendor
Used Oil	19.48	Siemens/FCC Environmental/Safety Kleen
Frying Oil	2.10	Valley Proteins
Used Antifreeze	1.50	FCC Environmental
Chemicals/Waste Fuel	13.90	FCC Environmental/Safety Kleen
Scrap Metal	1.80	Coiner's/Cycle Systems, FCC Environmental
Batteries	0.04	Big Green Box
Electronic waste	21.17	Computer Recycling of Virginia
Commingled Recyclables	263	Allied Waste
PCB Ballasts	2.90	AERC
Auction Waste ¹	9.16	1-800-GOT-JUNK
Fluorescent, Hg, Na Bulbs	5.70	AERC
Total (tons)	340.4	

1. Pickup and recycling conducted by 1-800-GOT-JUNK. Recycling rate reported on 5/2/2008.

Cost savings resulted from avoiding landfill fees for all recycled and reused materials. The electronic waste and materials delivered to Coiner's are recycled at no cost, and therefore the cost of landfill disposal is eliminated.

A commingled recyclable compactor was procured for Albemarle High School. The commingled compactor can accept the following materials in the same container:

- Cardboard
- Newspapers
- Office paper
- Magazines
- Catalogs
- Old forms/files
- Aluminum cans
- Steel/tin cans
- Plastic bottles #1 and #2 (water, soda, juice, milk jugs)

- Glass bottles/jars (brown, clear, green)

The school has effectively advertised the pilot program and designed custom posters for the recycling bins. The goal of the program is to cover the cost of the compactor due to the decreased frequency of trash collection.

The cardboard and paper recycling dumpsters at each applicable school are now able to accept the commingled recyclables listed above. For the schools that do not have access to a recycling dumpster, large recycling totes have been provided and are serviced by Allied Waste/Republic. Recycling bins have been provided for each classroom for every school and have enhanced the visibility and participation in recycling.

A trash audit was conducted by Allied Waste/Republic in February 2009, and the following schools are able to decrease the size of their containers or the frequency of trash service, which could be partially attributed to the diversion of trash to the recycling containers.

- Scottsville Elementary
- Yancey Elementary
- Western Albemarle High
- Hollymead Elementary
- Sutherland Middle
- Baker-Butler Elementary
- Greer Elementary
- Jouett Middle
- Ivy Creek/PREP
- Murray High
- Monticello High

G. Green Building

Objective: Obtain LEED for Schools Certification for Brownsville and AHS additions

Target: Obtain USGBC approval for design credit templates by June 2008 and create webpage to describe green features by December 2008

In 2007, ACPS joined the U.S. Green Building Council (USGBC). The Brownsville Elementary and Albemarle High School additions, beginning construction in summer 2008, have been Leadership in Energy and Environmental Design (LEED)-registered through the USGBC. The LEED Green Building Rating System™ encourages and accelerates global adoption of sustainable green building and development practices through the creation and implementation of universally understood and accepted tools and performance criteria.

The Environmental Compliance Manager recently obtained LEED Accredited Professional (AP) Certification, which will aid the LEED certification process for the additions.

Progress for this objective includes:

- Collaboration with architects to ensure specifications include LEED criteria
- LEED for Schools Design credit templates with Owner responsibility are complete for Brownsville Elementary and Albemarle High School additions

- Track design credit templates by others to ensure they are completed
- Design credit submittal for Brownsville Elementary and Albemarle High School is scheduled before the end of March 2009

A LEED for Schools scorecard for each project is included in Attachment 3.

H. Safety Training

Objective: Ensure employees implement safe work practices

Target: Develop Lockout/Tagout Program for affected school employees and update Hazard Communications Policy

Per OSHA Hazard Communication regulations¹, employers are required to maintain Material Safety Data Sheets (MSDS) for any data sheets that are received with incoming shipments of the sealed containers of hazardous chemicals, and must ensure that the material MSDS are readily accessible during each work shift to employees when they are in their work area.

Because the paper MSDS binders at each school became difficult to maintain, an electronic database was implemented by the County of Albemarle and ACPS. The MSDS electronic database allows access to chemical information at each school. MSDS for each school are categorized by custodial, laboratory, and kitchen chemicals/cleaners.

MSDSOnline training was conducted for science teachers, custodial staff and the general school population. The MSDSOnline database is continually updated to include current MSDS information.

A lockout/tagout training DVD has been purchased, and the draft Lockout/Tagout Standard Operating Procedure is being developed. Training for maintenance personnel is scheduled for April 2009.

¹ 29 Code of Federal Regulations (CFR) Section 1910.1200(b)(4)(ii).

II. ENVIRONMENTAL PROGRESS

A. EMS SOP Development

From March 2008 through February 2009, SOPs to address the following practices were developed:

- Safer Chemical Management (Attachment 1)
- Animals in the Classroom (Attachment 4)
- Well Water Sampling and Maintenance (Attachment 5)
- Medical Waste Management

B. Waterworks Operation

Ground Water Withdrawal permits are currently held for the following schools:

- Stony Point Elementary – Public Water Supply Identification (PWSID) 2003810
- Broadus Wood Elementary – PWSID 2003170
- Murray Elementary – PWSID 2003885
- Red Hill Elementary – PWSID 2003660
- Walton Middle – PWSID 2003880
- Yancey Elementary – PWSID 2003162
- Scottsville Elementary – PWSID 2003680

Red Hill Elementary School will soon be included on the community well operated by Albemarle County Service Authority and will no longer be a Class VI private waterworks operation.

After installing four additional monitoring wells to monitor the extent of a past heating oil spill at Scottsville Elementary, a new well location was selected, and drilling commenced on February 25, 2008. Water quality analyses for the new well were conducted for total coliform, metals, inorganics, nitrate/nitrite, volatile organics, radiologicals, and cyanide. The new well at Scottsville is functional and received Waterworks Operation Permit No. 2003680 with an effective date of December 24, 2008. The operating permit and technical details are included as Attachment 6.

C. Ambient Air Monitoring Station

The Virginia Department of Environmental Quality (DEQ) recently installed an ambient air monitoring station at Albemarle High School (AHS). Electrical service and monitor installation were completed during March 2008. The ambient air quality monitoring station is used as the monitoring station for the entire Charlottesville area. The monitored pollutants will include ozone (O₃), particulate matter less than 2.5 microns (PM_{2.5}), and particulate matter less than 10 microns. Real-time data will be available online at <http://www.airnow.gov/>. Additionally, meteorological data will be collected from the station.

A public tour of the air monitoring station was hosted by VA DEQ on October 28, 2008 to teach citizens about the station and monitored pollutants. The press release for the event follows.

Air Quality Station at Albemarle High School Open for Public Tour Tuesday

WHAT: Representatives from Virginia's Department of Environmental Quality's Air Quality Monitoring Division will host tours of the newly installed Air Quality Monitoring Facility and provide explanations on the instrumentation, data collection and data availability. DEQ will also host demonstrations of the particulate matter 10 micrometers (PM10) monitor.

WHEN: Tuesday, October 28 between 12:00 to 3:00 p.m.

WHERE: Lamb's Road Behind Albemarle High School (park down the access gravel way to the air quality station or overflow to Jouett Middle School visitor parking)

WHO: Any interested members of the public

The Virginia Department of Environmental Quality (DEQ) installed an ambient air monitoring station at Albemarle High School in early 2008. The station measures particulate matter 2.5 micrometers or smaller in size (PM2.5) and ozone for the Charlottesville/Albemarle area. The PM2.5 and ozone data collected at the station is available on <http://www.airnow.gov/> and <http://www.deq.virginia.gov/airquality/>.

Figure 2: Air Monitoring Station (February 2008)



D. Asbestos Floor Tile Removal

During the summer of 2008, the asbestos-containing floor tile from the following areas was removed:

- Brownsville Elementary – Gymnasium and Gymnasium Office
- Hollymead Elementary - Five (5) storage closets
- Henley Middle School - Cafeteria
- Jack Jouett Middle School - Rooms B49, B50, B51, B52 & B53
- Western Albemarle High School - Rooms D-103 and B-108
- Woodbrook Elementary School - Staff Bathroom and Two (2) Closets

E. Digital School Plans

One set of drawings is being scanned each week to add to the Building Services electronic drawing database. The drawings can be accessed by contacting Lindsay Check Snoddy or on the Building Services network at: S:\SHARED FOLDERS\CIP\Drawings\Digital Plans.

F. Environmental Program Website and EMS Access

The website includes all SOPs that are part of the EMS and program information. The website for the environmental program can be accessed at:

<http://schoolcenter.k12albemarle.org/environmental>

Environmental Compliance Manager: Lindsay Check Snoddy

Contact Information:

Building Services

(434) 975-9340

lcsnoddy@k12albemarle.org

III. 2009 – 2010 Goals and Objectives

The following are the updated objectives and targets for the 2009-2010 EMS cycle:

A. *Safer Chemical Management*

Objective: Audit Safer Chemical Management SOP

Target: Conduct the first annual audit of the Safer Chemical Management SOP by June 2009

B. *Energy Management*

Objective: Reduce natural resource depletion through energy conservation practices

Target: Implement Energy Management and Conservation Policy and utility tracking software

C. *Reduce, Reuse and Recycle*

Objective: Improve tracking of current recycling program

Target: Track commingled recycled materials through the utility tracking software and send monthly updates to the Recycling Coordinators

D. *Water Conservation*

Objective: Minimize stormwater runoff from school sites

Target: Complete a cistern and natural grass project to minimize the stormwater runoff and irrigate from rainwater when possible

E. *Green Building*

Objective: All school new construction and major renovations should be LEED for Schools certified and smaller projects must follow the Green Project SOP

Target: Obtain LEED for Schools Certification for Brownsville and AHS additions and Greer's Phase II construction

F. *LEED for Existing Buildings*

Objective: Promote energy and resource conservation in existing buildings

Target: Obtain LEED for Existing Buildings Certification for a top-performing existing school

G. *Lockout/Tagout Program*

Objective: Ensure safe practices are used for lockout of energy sources that can cause injury to personnel

Target: Create Lockout/Tagout SOP with general shutdown instructions for types of equipment and train personnel

H. *Medical Waste Management*

Objective: Formalize procedures for Medical Waste Management

Target: Develop SOP for managing medical waste by April 30, 2009

IV. Public Outreach and Best Practices


A. Public Outreach and Recognition

- ACPS is a member of Rivanna Regional Stormwater Education Partnership (RRSEP). As a member of this group, ACPS conducted an automotive food industry initiative, which involved educating restaurants throughout Albemarle County about waste streams and proper disposal and reduction. Please refer to Attachment 4 for additional details.
- ACPS currently has the Virginia Environmental Excellence Program's (VEEP) Environmental Enterprise (E2) designation.
- ACPS became a member of the US Green Building Council in March 2008. Membership allows a subscription to the award-winning GreenSource magazine, access to USGBC Credit Interpretation Rulings (CIRs), and members-only access to a number of online resources and green building data.
- Presentation about energy to UVa Sustainability Class
- Presentation about LEED for Schools at CVCSI Conference
- Presentation about LEED for Schools at JRGC Meeting

B. Best Practices

ACPS has segregated the light ballast waste streams into "PCB-containing" ballasts, "No PCB" ballasts, and electronic ballasts. ACPS has recently found a company that recycles non-leaking PCB ballasts, and portions of this waste stream have been recovered. Additionally, a recycling company has been identified for "No PCB" ballasts and electronic ballasts.

ATTACHMENT 1
Safer Chemical Management SOP


 Albemarle County Public Schools			Subject: Safer Chemical Management		
Document No.: SOP-CHEM-01	Issue Date: 04-03-2009	Last Revised: 05-20-2008	Page: 1 of 4	Prepared By: LCS	Approved By: CH, JPL, GS, JCL

1.0 PURPOSE

The purpose of this procedure is to ensure a safer approach to the selection and application of custodial, grounds and pest control operations within the County of Albemarle, as the County aims to minimize chemical usage to the greatest extent practicable in its day-to-day operations and activities. This procedure is intended to be implemented as part of the County's and Schools' respective Environmental Management Policies.

2.0 DEFINITIONS

- A. *Carcinogens* refer to any substance or agent that can cause cancer. Compound listed in the latest edition of the Annual Report on Carcinogens, U.S. Department of Health and Human Services, National Toxicology Program as known or reasonably anticipated to be carcinogenic.
- B. A *disinfectant* is used on hard inanimate surfaces and its objective is to destroy or irreversibly inactivate infectious fungi and bacteria but not necessarily their spores. Disinfectant products are divided into two major types: hospital and general use. Hospital type disinfectants are the most critical to infection control and are used on medical and dental instruments, floors, walls, bed linens, toilet seats, and other surfaces. General disinfectants are the major source of products used in households, swimming pools, and water purifiers. (EPA: Pesticides – Antimicrobial Pesticide Products Factsheet; <http://www.epa.gov/pesticides/factsheets/antimic.htm>)
- C. *Endocrine disruptors* are exogenous substances that act like hormones in the endocrine system and disrupt the physiologic function of endogenous hormones.
- D. *Integrated Pest Management (IPM)* is a pest control strategy that promotes the use of a variety of tactics including pest-resistant cultivars and biological, cultural, and physical controls. Pesticides are a control tactic employed in IPM, but are only used when needed. When a pest problem is identified and non-chemical means are exhausted, only the least toxic and most effective pesticide is used.
- E. A *mutagen* is a physical or chemical agent that changes the genetic information (usually DNA) of an organism and thus increases the frequency of mutations above the natural background level.
- F. A *neurotoxin* is a substance that is poisonous to nerve tissue (i.e., lead, mercury).
- G. A *teratogen* is any medication, chemical, infectious disease, or environmental agent that might interfere with the normal development of a fetus and result in the loss of a pregnancy, a birth defect, or a pregnancy complication.
- H. A *sanitizer* is used to reduce, but not necessarily eliminate, microorganisms from the inanimate environment to levels considered safe as determined by public health codes or regulations. Sanitizers include food contact and non-food contact products. Sanitizing rinses for surfaces such as dishes and cooking utensils, as well as equipment and utensils found in dairies, food-processing plants, and eating and drinking establishments comprise the food contact Sanitizers. These products are important because they are used on sites where consumable food products are placed and stored. Non-food contact surface sanitizers include carpet sanitizers, air sanitizers, laundry additives, and in-tank toilet bowl sanitizers. (EPA: Pesticides – Antimicrobial Pesticide Products Factsheet; <http://www.epa.gov/pesticides/factsheets/antimic.htm>)

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- I. *Volatile organic compounds (VOCs)* are gases emitted from certain solids or liquids, which may have adverse health effects (i.e., paints, varnishes, pesticides, cleaning supplies). (<http://www.epa.gov/iaq/voc.html>)

3.0 PROCEDURES

A. Custodial Operations

Custodial categories include multipurpose cleaners (e.g. surface cleaners, floor cleaners), specialty cleaners (e.g., floor strippers, floor finishes and glass cleaners) and disinfectants.

1. Multipurpose and Specialty Cleaners

- Products used shall be certified by Green Seal, Green Guard or Environmental Choice
- If a product does not have such certification, the product shall not contain carcinogens, mutagens, teratogens, endocrine disruptors, or neurotoxins, and contain low or no volatile organic compounds (VOC).


2. Sanitization and Disinfection

- High-touch areas (e.g. bathrooms, first aid/nurse stations and kitchens) will be routinely sanitized or disinfected as deemed appropriate by the manager overseeing custodial operations for the facility.
- Disinfectants shall be used in response to blood borne pathogen or bodily fluid incidents, in response to viral outbreaks, or as directed by the Virginia Department of Health (VDH).

B. Grounds Care

"Grounds care" includes both the management of grounds and outdoor pests.

- Grounds care departments will continually evaluate the feasibility of changing traditional practices in the interest of eliminating chemical usage (e.g., manually pulling weeds).
- If it is determined that a chemical application is necessary, then organic or biologically-based alternatives shall be used, with the following exceptions:
 - Treatment of stumps of woody invasive species and poison ivy
 - Use of non-selective herbicides for spot-treatments of skinned areas of baseball infields and warning tracks as needed
 - One-time application of broad-leaf pre-emergent herbicide to reduce broadleaf weeds, so that Bermuda grass can compete with crabgrass for establishment of a new field
 - Emergency spot treatment for grub worms
 - Spot treatment of parking lots, along rip-rap and in ditches
- Any County employee or contractor applying pesticides on County or School Board-owned property must hold a current Registered Technician or Commercial Applicator License as issued by Virginia Department of Agriculture and Consumer Services (VDACS).
- Each application of pesticide or herbicide must be documented on the "Pesticide/Herbicide Tracking Log" (Appendix A), including the amount applied, active ingredient and application location. Tracking logs will be maintained by the Environmental Compliance Managers.

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C. Indoor Pest Management

A formal Integrated Pest Management (IPM) program for each school and local government building will be completed by August 2008. IPM procedures will be incorporated as a separate procedure of the Environmental Management Policy. Until a separate IPM Procedure is completed, the following steps will be used to make a decision regarding each indoor pest management need:

1. Physical means of preventing pests will be implemented first.
2. When pesticides are used, only the least toxic with the most effective outcome shall be used.
3. Records of all pesticide applications indicating the amount of pesticide, active ingredient and affected area will be maintained by the Environmental Compliance Managers.

D. Employee Safety

1. County employees will have access to Material Safety Data Sheets (MSDS) for all products used. Employees shall follow all guidelines and instructions listed on MSDS, including personal protective equipment (PPE) recommendations.
2. Hazard Communication (HAZCOM) training shall be provided to all employees before use of any product requiring a MSDS.

E. Annual Audit

An annual audit of this procedure will be conducted by the Environmental Compliance Managers. An audit report will be presented to the Board annually for review.

F. Waiver Process

If a situation arises requiring the use of a product that does not meet the above specifications (e.g., not Green Seal certified), then a waiver must be applied for and approved before a product may be purchased or used:


1. The Waiver Request (Appendix B) shall be submitted to the Environmental Compliance Manager for the schools or local government, as appropriate, and shall include: the purpose of the requested chemical, the MSDS, the area where the chemical will be used, the anticipated frequency and duration of use, application technique, and anticipated usage amount.
2. If a waiver is granted, the written waiver will include an expiration date, and alternatives consistent with the procedure must be explored when the waiver expires. All granted waivers will be presented with the annual audit results to the Board.

G. Exemptions

Exemptions to the waiver process include (1) emergency situations that could impact human health or safety, and (2) practices required in order to maintain insurance policies. If an emergency situation requiring chemical use arises that is not identified in this section, the request for use of a product or practice must go through the Waiver Process, as described in Section F. The following are exemptions to Sections A, B, and C of this procedure:

1. Treatment of bees, wasps or hornets
2. Periodic termite treatment or other insurance-related pest control requirements

Attachment A: Safer Chemical Management Procedure

 EMS ALBEMARLE COUNTY PUBLIC SCHOOLS Ensuring a bright future for every child			Subject: Safer Chemical Management		
Document No.: SOP-CHEM-01	Issue Date: 04-03-2009	Last Revised: 05-20-2008	Page: 4 of 4	Prepared By: LCS	Approved By: CH, JPL, GS, JCL

Appendix A

Pesticide / Herbicide / Fertilizer Application Records

Date	Time of Application (Indicate AM or PM)	Site	Pesticide/ Herbicide/ Fertilizer?	Brand Name (Be as Specific as Possible)	Amount Applied (gallons - otherwise indicate units)	Type of Area Treated	Size Area Treated	Treating For?	Re-entry Time? (N/A if not applicable)	Name of Applicator

Waiver Request Form

Safer Chemical Management Procedure
County of Albemarle, VA

Please attach MSDS for all requested products.

General Information:

Date: _____

Name of Requester: _____

Department: _____

Details of Request:

Purpose of Application (be specific about what is being treated): _____

Name of Product(s): _____

Name of Manufacturer(s): _____

Active Ingredient(s): _____

Anticipated Amount (provide units): _____

Anticipated Duration and Frequency of Application: _____

Application Technique: _____

Waiver Request Reviewer(s):

☐

Local Government ECM

☐

School Division ECM

Request Granted:

☐

Yes

☐

No

If No, Reason: _____

Date Granted: _____ EM Signature(s): _____

ATTACHMENT 2
Energy Management and Conservation Policy

ENERGY MANAGEMENT AND CONSERVATION POLICY

Albemarle County Public Schools is committed to the efficient, cost effective, and environmentally responsible use of energy throughout its facilities. This policy is intended to support the reduction of energy consumption in Albemarle County Public Schools and sustain the commitment to environmental improvement. The fulfillment of this policy is the joint responsibility of support personnel, administrators, teachers, and students. The Building Services Department will maintain accurate records of energy consumption and cost of energy on a monthly basis and conduct energy audits to ensure policy implementation.

This energy management and conservation policy shall be communicated to all employees of Albemarle County Public Schools, and shall be made available to the public upon request.

Approved: _____

Energy Management and Conservation Procedure

A. Heating, Ventilation, and Air Conditioning (HVAC)

1. During occupied hours, the buildings will be cooled or heated to a pre-determined temperature range:
 - Heating Season – 68°F to 72°F
 - Cooling Season – 74°F to 78°F

During unoccupied building hours (weekday evenings, weekends, and holidays), the heating season temperature will be set back to approximately 58°F to allow Albemarle County Public Schools (ACPS) to efficiently and economically conserve energy. During the cooling season, unoccupied cooling only occurs for dehumidification purposes.

2. Building occupants and staff are required to keep windows and outside doors closed while HVAC systems are operational.
3. Personal space heaters are prohibited unless approved by Principal or Director and supplied by Building Services. These heaters use an inordinate amount of energy, can be a fire hazard, and also work against the pre-settings of the thermostat. Employees are encouraged to dress for their personal thermal comfort.
4. Every opportunity to decrease HVAC system operating times should be considered by Building Services staff and building occupants. HVAC and lighting systems will be set in unoccupied modes during weekends, holidays and inclement weather events resulting in school cancellation.
5. Kitchen staff is responsible for turning off any manual supply, exhaust fans, warming ovens, any additional equipment and lighting in the kitchen area when cooking is completed.
6. Unit ventilators and registers must be free of all obstructions.
7. Until trailer system settings are centrally controlled by Building Services, the Lead Custodian is responsible for manually turning off the systems before holidays, spring break and winter break.

B. Lighting

1. Lights are to be turned off in unused areas, with the exception of emergency lighting.
 - When an employee leaves his/her office, he/she should turn all lights off.
 - Custodial staff must only turn lights on in classrooms and common areas while actively cleaning.

2. If personal desk lamps are utilized, compact fluorescent lamps (CFLs) must be used, in place of halogen or incandescent bulbs.
3. Occupancy sensors are to be installed where feasible, and shall be specified in all construction and renovation projects.
4. All outside lights will be turned off during daylight hours.
5. Lighting in gymnasiums, multi-purpose rooms and cafeterias should not be left on unless the areas are being utilized, or going to be used within 30 minutes. The space occupant is responsible for lighting control.

C. Plug Load Plan

1. All electrical devices (e.g., computers, printers, fax machines, televisions, Smart Boards, projectors, copiers, etc.) shall be turned off at the end of each work day by the space occupant.
2. Program copiers to go into "sleep mode" after the minimum program period of inactivity during work hours.
3. During work hours, all capable PCs should be programmed for the highest energy saving mode appropriate for the particular PCs using the power options feature.
4. Task and decorative lighting must be turned off when it is not being utilized.
5. Any additional or replacement vending machines must be ENERGY STAR® qualified.
6. Personal appliances for non-instructional purposes are restricted to break rooms or teacher lounge areas.

D. After-Hours Event Scheduling

1. Cooling, heating and lighting for scheduled meetings, events, and athletic competitions outside of routine school hours will be provided based on need and a scheduled request. Weekly scheduling should be submitted by the school's Lead Secretary through the Building Services work order system. The weekly schedule will be due by the preceding Thursday at 4:00 pm for events scheduled during the following week.
2. For after-hour activities, space usage will be optimized to minimize the number of operational HVAC zones.

3. Overrides are to be used only in an emergency situation and only in the portion of the building being utilized. Overrides are currently set for a period of 2 hours. If a school abuses overrides, the override capability may be turned off.

E. Procurement

1. Products carrying the ENERGY STAR® label shall be preferred for purchases when available and permitted by procurement laws and policies..
2. If ENERGY STAR® labeled products are not available, the purchase of energy efficient equipment should be pursued.

F. Building Envelope

1. Window, door, roofing and other insulation materials will be annually inspected for efficiency (e.g. air-tightness, etc.) by the Building Services Department (or certified contractor) in order to evaluate any need for replacement or updating.
2. If applicable, window blinds are to be closed at the end of each day.

G. Energy Efficiency Audits and Building Shutdown

To ensure this policy is successfully implemented, the Environmental Compliance Manager and/or designee(s) will conduct energy audits. Energy Audit Reports will be shared with the school principal and the Director of Building Services.

H. Training

Energy management training for Building Services and school staff will be conducted by the Environmental Compliance Manager and/or designee(s).

I. Energy Goals for New Construction and Major Renovations

New construction and major renovations must establish an Energy Performance Rating goal for the facility design using EPA's Target Finder rating tool to establish aggressive, realistic energy targets and rate a building design's estimated energy use.

ATTACHMENT 3
LEED for Schools Scorecards – AHS and Brownsville



LEED for Schools 2007

Registered Project Checklist

Project Name: Albemarle High School Renewal Project

Project Address: 2775 Hydraulic Road; Charlottesville, VA 22901

Yes	?	No		
39			Project Totals (Pre-Certification Estimates)	
SILVER			Certified: 29-36 points Silver: 37-43 points Gold: 44-57 points Platinum: 58-79 points	

Yes	?	No			
8			Sustainable Sites		
			16 Points		
Yes			Prereq 1	Construction Activity Pollution Prevention	Required
Yes			Prereq 2	Environmental Site Assessment	Required
1			Credit 1	Site Selection	1
1			Credit 2	Development Density & Community Connectivity	1
			Credit 3	Brownfield Redevelopment	1
1			Credit 4.1	Alternative Transportation, Public Transportation	1
1			Credit 4.2	Alternative Transportation, Bicycle Use	1
1			Credit 4.3	Alternative Transportation, Low-Emitting & Fuel Efficient Vehicles	1
			Credit 4.4	Alternative Transportation, Parking Capacity	1
			Credit 5.1	Site Development, Protect or Restore Habitat	1
1			Credit 5.2	Site Development, Maximize Open Space	1
			Credit 6.1	Stormwater Design, Quantity Control	1
			Credit 6.2	Stormwater Design, Quality Control	1
			Credit 7.1	Heat Island Effect, Non-Roof	1
1			Credit 7.2	Heat Island Effect, Roof	1
			Credit 8	Light Pollution Reduction	1
			Credit 9	Site Master Plan	1
1			Credit 10	Joint Use of Facilities	1



LEED for Schools 2007

Registered Project Checklist

Yes	?	No		
3			Water Efficiency	7 Points
1			Credit 1.1 Water Efficient Landscaping , Reduce by 50%	1
			Credit 1.2 Water Efficient Landscaping , No Potable Use or No Irrigation	1
			Credit 2 Innovative Wastewater Technologies	1
2			Credit 3 Water Use Reduction	1 to 3
			+ Credit 3.1 20% Reduction	1
			--> Credit 3.2 30% Reduction	2
			+ Credit 3.3 40% Reduction	3
			Credit 4 Process Water Use Reduction , 20% Reduction	1

Yes	?	No		
4			Energy & Atmosphere	17 Points
Yes			Prereq 1 Fundamental Commissioning of the Building Energy Systems	Required
Yes			Prereq 2 Minimum Energy Performance	Required
Yes			Prereq 3 Fundamental Refrigerant Management	Required

***Note for EAc1:** All LEED for Schools projects registered after June 26, 2007 are required to achieve at least two (2) points.

2			Credit 1 Optimize Energy Performance	2 to 10
			--> Credit 1.2 14% New Buildings / 7% Existing Building Renovations	2
			+ Credit 1.3 17.5% New Buildings / 10.5% Existing Building Renovations	3
			+ Credit 1.4 21% New Buildings / 14% Existing Building Renovations	4
			+ Credit 1.5 24.5% New Buildings / 17.5% Existing Building Renovations	5
			+ Credit 1.6 28% New Buildings / 21% Existing Building Renovations	6
			+ Credit 1.7 31.5% New Buildings / 24.5% Existing Building Renovations	7
			+ Credit 1.8 35% New Buildings / 28% Existing Building Renovations	8
			+ Credit 1.9 38.5% New Buildings / 31.5% Existing Building Renovations	9
			+ Credit 1.10 42% New Buildings / 35% Existing Building Renovations	10
			Credit 2 On-Site Renewable Energy	1 to 3
			+ Credit 2.1 2.5% Renewable Energy	1
			+ Credit 2.2 7.5% Renewable Energy	2
			+ Credit 2.3 12.5% Renewable Energy	3
			Credit 3 Enhanced Commissioning	1
1			Credit 4 Enhanced Refrigerant Management	1
1			Credit 5 Measurement & Verification	1
			Credit 6 Green Power	1



LEED for Schools 2007 Registered Project Checklist

Yes ? No

5			Materials & Resources	13 Points
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Yes			Prereq 1 Storage & Collection of Recyclables	Required
			Credit 1.1 Building Reuse , Maintain 75% of Existing Walls, Floors & Roof	1
			Credit 1.2 Building Reuse , Maintain 95% of Existing Walls, Floors & Roof	1
			Credit 1.3 Building Reuse , Maintain 50% of Interior Non-Structural Elements	1
			Credit 2.1 Construction Waste Management , Divert 50% from Disposal	1
			Credit 2.2 Construction Waste Management , Divert 75% from Disposal	1
			Credit 3.1 Materials Reuse , 5%	1
			Credit 3.2 Materials Reuse , 10%	1
1			Credit 4.1 Recycled Content , 10% (post-consumer + 1/2 pre-consumer)	1
1			Credit 4.2 Recycled Content , 20% (post-consumer + 1/2 pre-consumer)	1
1			Credit 5.1 Regional Materials , 10% Extracted, Processed & Manufactured	1
1			Credit 5.2 Regional Materials , 20% Extracted, Processed & Manufactured	1
			Credit 6 Rapidly Renewable Materials	1
1			Credit 7 Certified Wood	1



LEED for Schools 2007 Registered Project Checklist

Yes	?	No		
13			Indoor Environmental Quality	20 Points

Yes			Prereq 1	Minimum IAQ Performance	Required
Yes			Prereq 2	Environmental Tobacco Smoke (ETS) Control	Required
Yes			Prereq 3	Minimum Acoustical Performance	Required
1			Credit 1	Outdoor Air Delivery Monitoring	1
			Credit 2	Increased Ventilation	1
1			Credit 3.1	Construction IAQ Management Plan , During Construction	1
1			Credit 3.2	Construction IAQ Management Plan , Before Occupancy	1
4			Credit 4	Low-Emitting Materials	1 to 4
1			Credit 5	Indoor Chemical & Pollutant Source Control	1
0			Credit 6.1	Controllability of Systems , Lighting	1
1			Credit 6.2	Controllability of Systems , Thermal Comfort	1
1			Credit 7.1	Thermal Comfort , Design	1
1			Credit 7.2	Thermal Comfort , Verification	1
1			Credit 8.1	Daylight & Views , Daylight 75% of Spaces	1 to 3
			-->	75% of classrooms (Required for either points below)	1
			+	90% of classrooms	2
			+	75% of other spaces	3
			Credit 8.2	Daylight & Views , Views for 90% of Spaces	1
			Credit 9	Enhanced Acoustical Performance , 40 dBA / RC level of 32	1
				Enhanced Acoustical Performance , 35 dBA / RC level of 27	1
1			Credit 10	Mold Prevention	1

Yes	?	No		
6			Innovation & Design Process	6 Points

1			Credit 1.1	Innovation in Design: Provide Specific Title	1
1			Credit 1.2	Innovation in Design: Provide Specific Title	1
1			Credit 1.3	Innovation in Design: Provide Specific Title	1
1			Credit 1.4	Innovation in Design: Provide Specific Title	1
1			Credit 2	LEED® Accredited Professional	1
1			Credit 3	School as a Teaching Tool	1



LEED for Schools 2007

Registered Project Checklist

Project Name: Brownsville Elementary School Additions

Project Address: 5870 Rockfish Gap Turnpike; Crozet, VA 22932

Yes	?	No					
44			Project Totals (Pre-Certification Estimates)				79 Points
GOLD			Certified: 29-36 points	Silver: 37-43 points	Gold: 44-57 points	Platinum: 58-79 points	

Yes	?	No		
9			Sustainable Sites	
			16 Points	

Yes			Prereq 1	Construction Activity Pollution Prevention	Required
Yes			Prereq 2	Environmental Site Assessment	Required
1			Credit 1	Site Selection	1
1			Credit 2	Development Density & Community Connectivity	1
0			Credit 3	Brownfield Redevelopment	1
			Credit 4.1	Alternative Transportation, Public Transportation	1
1			Credit 4.2	Alternative Transportation, Bicycle Use	1
1			Credit 4.3	Alternative Transportation, Low-Emitting & Fuel Efficient Vehicles	1
1			Credit 4.4	Alternative Transportation, Parking Capacity	1
			Credit 5.1	Site Development, Protect or Restore Habitat	1
			Credit 5.2	Site Development, Maximize Open Space	1
1			Credit 6.1	Stormwater Design, Quantity Control	1
			Credit 6.2	Stormwater Design, Quality Control	1
			Credit 7.1	Heat Island Effect, Non-Roof	1
1			Credit 7.2	Heat Island Effect, Roof	1
1			Credit 8	Light Pollution Reduction	1
			Credit 9	Site Master Plan	1
1			Credit 10	Joint Use of Facilities	1



LEED for Schools 2007

Registered Project Checklist

Yes	?	No		
4			Water Efficiency	
			7 Points	
1			Credit 1.1	Water Efficient Landscaping , Reduce by 50% 1
			Credit 1.2	Water Efficient Landscaping , No Potable Use or No Irrigation 1
			Credit 2	Innovative Wastewater Technologies 1
3			Credit 3	Water Use Reduction 1 to 3
			+ Credit 3.1	20% Reduction 1
			+ Credit 3.2	30% Reduction 2
			--> Credit 3.3	40% Reduction 3
			Credit 4	Process Water Use Reduction , 20% Reduction 1

Yes	?	No		
6			Energy & Atmosphere	
			17 Points	
Yes			Prereq 1	Fundamental Commissioning of the Building Energy Systems Required
Yes			Prereq 2	Minimum Energy Performance Required
Yes			Prereq 3	Fundamental Refrigerant Management Required

***Note for EAc1:** All LEED for Schools projects registered after June 26, 2007 are required to achieve at least two (2) points.

6			Credit 1	Optimize Energy Performance 2 to 10
			+ Credit 1.2	14% New Buildings / 7% Existing Building Renovations 2
			+ Credit 1.3	17.5% New Buildings / 10.5% Existing Building Renovations 3
			+ Credit 1.4	21% New Buildings / 14% Existing Building Renovations 4
			+ Credit 1.5	24.5% New Buildings / 17.5% Existing Building Renovations 5
			--> Credit 1.6	28% New Buildings / 21% Existing Building Renovations 6
			+ Credit 1.7	31.5% New Buildings / 24.5% Existing Building Renovations 7
			+ Credit 1.8	35% New Buildings / 28% Existing Building Renovations 8
			+ Credit 1.9	38.5% New Buildings / 31.5% Existing Building Renovations 9
			+ Credit 1.10	42% New Buildings / 35% Existing Building Renovations 10
			Credit 2	On-Site Renewable Energy 1 to 3
			+ Credit 2.1	2.5% Renewable Energy 1
			+ Credit 2.2	7.5% Renewable Energy 2
			+ Credit 2.3	12.5% Renewable Energy 3
			Credit 3	Enhanced Commissioning 1
			Credit 4	Enhanced Refrigerant Management 1
			Credit 5	Measurement & Verification 1
			Credit 6	Green Power 1



LEED for Schools 2007 Registered Project Checklist

Yes ? No

4			Materials & Resources	13 Points
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Yes			Prereq 1 Storage & Collection of Recyclables	Required
			Credit 1.1 Building Reuse , Maintain 75% of Existing Walls, Floors & Roof	1
			Credit 1.2 Building Reuse , Maintain 95% of Existing Walls, Floors & Roof	1
			Credit 1.3 Building Reuse , Maintain 50% of Interior Non-Structural Elements	1
			Credit 2.1 Construction Waste Management , Divert 50% from Disposal	1
			Credit 2.2 Construction Waste Management , Divert 75% from Disposal	1
			Credit 3.1 Materials Reuse , 5%	1
			Credit 3.2 Materials Reuse , 10%	1
1			Credit 4.1 Recycled Content , 10% (post-consumer + 1/2 pre-consumer)	1
1			Credit 4.2 Recycled Content , 20% (post-consumer + 1/2 pre-consumer)	1
1			Credit 5.1 Regional Materials , 10% Extracted, Processed & Manufactured	1
1			Credit 5.2 Regional Materials , 20% Extracted, Processed & Manufactured	1
			Credit 6 Rapidly Renewable Materials	1
			Credit 7 Certified Wood	1



LEED for Schools 2007 Registered Project Checklist


Yes	?	No		
15			Indoor Environmental Quality	20 Points

Yes			Prereq 1	Minimum IAQ Performance	Required
Yes			Prereq 2	Environmental Tobacco Smoke (ETS) Control	Required
Yes			Prereq 3	Minimum Acoustical Performance	Required
			Credit 1	Outdoor Air Delivery Monitoring	1
			Credit 2	Increased Ventilation	1
1			Credit 3.1	Construction IAQ Management Plan , During Construction	1
1			Credit 3.2	Construction IAQ Management Plan , Before Occupancy	1
4			Credit 4	Low-Emitting Materials	1 to 4
			Credit 5	Indoor Chemical & Pollutant Source Control	1
1			Credit 6.1	Controllability of Systems , Lighting	1
1			Credit 6.2	Controllability of Systems , Thermal Comfort	1
1			Credit 7.1	Thermal Comfort , Design	1
1			Credit 7.2	Thermal Comfort , Verification	1
3			Credit 8.1	Daylight & Views , Daylight 75% of Spaces	1 to 3
			-->	75% of classrooms (Required for either points below)	1
			+	90% of classrooms	2
			-->	75% of other spaces	3
1			Credit 8.2	Daylight & Views , Views for 90% of Spaces	1
			Credit 9	Enhanced Acoustical Performance , 40 dBA / RC level of 32	1
				Enhanced Acoustical Performance , 35 dBA / RC level of 27	1
1			Credit 10	Mold Prevention	1

Yes	?	No		
6			Innovation & Design Process	6 Points

1			Credit 1.1	Innovation in Design: Provide Specific Title	1
1			Credit 1.2	Innovation in Design: Provide Specific Title	1
1			Credit 1.3	Innovation in Design: Provide Specific Title	1
1			Credit 1.4	Innovation in Design: Provide Specific Title	1
1			Credit 2	LEED® Accredited Professional	1
1			Credit 3	School as a Teaching Tool	1

ATTACHMENT 4
Animals in the Classroom SOP

 Albemarle County Public Schools			Subject: Animals in the Classrooms SOP		
Document No.: SOP-ANIM-01	Issue Date: 4/3/2009	Last Revised: 4/3/2009	Page: 1 of 6	Prepared By: LCS	Approved By: CH, JPL, GS, JCL

1.0 PURPOSE

The purpose of this Standard Operating Procedure (SOP) is to:

- Ensure the greatest possible level of safety for students and staff regarding animals on school property
- Ensure the adequate care and appropriate environment for animals in the schools
- Help teachers with the decision-making process regarding bringing animals into the classroom
- Provide a specific protocol for teachers considering bringing animals into the classroom

Note: The following procedures are intended to be minimum guidelines to be followed for Albemarle County Public Schools. Principals of schools may administer more stringent rules, limitations or guidelines concerning animals in the schools.

2.0 PROCEDURE

2.1 Resident and Visiting Animals in School

The same guidelines apply for resident and visiting animals except where specified.

2.1.1 Allergy Survey

- Teacher must examine all student health records to ensure students do not have a specific allergy to animal(s)
- If this information is not readily available in health records, teachers should elicit this information from parents of student(s) prior to animal entering classroom
- Teachers should also survey any custodial or instructional staff that will come into contact with the animal(s)

2.1.2 Approval and Consideration

- Requesting teacher must fill out "Animal Request Form" (Appendix A) and present this form to the Principal.
- If the animal is approved, this form should be kept for at least 2 years as a record of the approval and existence of the animal in the school
- The Principal, school nurse, and requesting teacher will make a final decision regarding the approval of the resident animal after considering allergy surveys

2.1.3 Care of Resident Animal

- Requesting teacher must assume responsibility for care of animal



Albemarle County Public Schools

Subject:
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- A. Animals must be properly housed
 - B. Animals must have adequate food and water at all times
 - C. Habitats must be kept thoroughly clean on a regular basis
 - If further cleaning/sanitizing instructions are needed for any specific animal/situation, contact the Environmental Manager at 975-9340
 - D. Remember that care of resident animals is not a custodial function
- Teacher must have plan for adequate care of animal over weekends, holiday breaks, summer break, or emergency school evacuations
 - All student contact with animals must be organized and supervised by teacher
 - All students who handle animals should wash hands with soap and warm water immediately afterwards
 - Animals should never be allowed to freely roam the classroom
 - Animals should never be allowed near/in food preparation areas
 - Students should be discouraged from “kissing” animals or having them in close contact with their faces
 - No student or staff member with a known allergy to an animal should be allowed to care for that particular animal

2.2 Selecting Resident and Visiting Animals


Please See Appendix B (attached) for a summary and explanation of the animals allowed, conditionally allowed, and not allowed. The same guidelines apply for resident and visiting animals except where specified.

2.2.1 All Animals Must be Disease-free

- Teacher must ensure animal is free of transmissible diseases
 - A. Animal should be examined by a licensed veterinarian prior to entering classroom
 - B. If animal is from pet store or warehouse, obtain vaccination or health records

2.2.2 Unacceptable Animals

- **Wild Animals** –For the purpose of this procedure, a wild animal is ANY mammal that is **NOT** one of the following:
 - A. Domestic dog
 - B. Domestic cat
 - C. Domestic ungulate (e.g. cow, sheep, goat, pig)
 - D. Pet rabbit

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E. Pet rodent (e.g. mice, rats, hamsters, gerbils, guinea pigs, chinchillas)

Wild animals tend to exhibit unpredictable behavior and are carriers of rabies and other *zoonotic diseases* (i.e., diseases that can be transmitted from animals to humans). Examples of wild animals not allowed are **skunks, raccoons, bats, foxes, deer and wild carnivores.**

➤ **Poisonous Animals**

- A. Poisonous spiders
- B. Venomous insects
- C. Poisonous reptiles (including snakes)
- D. Poisonous amphibians

➤ **Wolf-dog Hybrids** – These animals have displayed a propensity for aggression towards young children

➤ **Stray Animals** – The vaccination status and general health of these animals is unknown

➤ **Aggressive Animals**


- A. Animals displaying unprovoked, threatening behavior should be immediately removed from the classroom
- B. Animals known to have a propensity towards aggression should not be allowed to enter the classroom (i.e. pit bulls)

2.2.3 Conditions for Specific Animals

The following animals are conditionally allowed as resident or visiting animals in the school, due to zoonotic diseases they may carry or certain behavioral tendencies. Please observe the following guidelines.

➤ **Psittacine Birds** (parrots, lorries, cockatiels & parakeets) – These birds can transmit *Chlamydia psittaci* to humans

- A. Before entering the school, psittacine birds should be treated by a licensed veterinarian for 45 days prior with appropriate medication for psittacosis. Responsible teachers should keep records of this treatment.
- B. The birds' cages must be kept clean and their wastes must be contained within the cage until disposed of (See Section 2.4 for proper waste disposal guidelines)

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- **Reptiles and Amphibians** (including non-poisonous snakes, lizards, turtles and iguanas) – These animals can transmit salmonella to humans.
 - A. These animals should only be handled by teachers and professionals who have experience and training doing so
 - B. These animals should be kept and displayed in cases that provide an adequate physical barrier between the animal and students (e.g. sturdy glass or plastic)

- **Baby Chicks and Hatchlings** – These animals can easily transmit salmonella and campylobacter to humans. Transmission of these diseases to children is well documented in medical literature.
 - A. Procurement of eggs and egg hatching program should be performed through the Virginia Cooperative Extension's (VCE) "Beginning of Life" 4-H program. See Science Instructional Coordinator for program details.
 - B. Student contact with baby chicks/egg hatching should be closely monitored and supervised.
 - C. Students must wash hands with warm soap and water after any contact with baby chicks or hatching eggs.
 - D. Chicks must be removed from classroom once hatched (they may not become resident animals)

- **Ferrets** – Ferrets can transmit rabies, and also have a propensity to bite when startled.
 - A. Ferrets must be vaccinated for rabies before entering school as resident or visitor. Responsible teacher should keep records of this vaccination.
 - B. Ferrets should only be handled by teacher/professional responsible for them.
 - C. A health certificate signed by a licensed veterinarian showing proof of vaccination against canine distemper should be available and kept
 - D. Ferrets should have had a negative fecal exam or proof of successful treatment for internal parasites in the past year
 - E. Ferrets should be free of external parasites such as fleas, ticks and mites, and free of skin lesions

- **Dogs** – Dogs can transmit various diseases if not appropriately vaccinated
 - A. Current rabies vaccination by a licensed veterinarian should be procured and kept



Albemarle County Public Schools

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Animals in the Classrooms SOP

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- B. A health certificate signed by a license veterinarian showing proof of vaccination against canine distemper and canine hepatitis should be available for visiting dogs, and kept on file for residential dogs.
- C. Dogs should have had a negative fecal exam or proof of successful treatment for internal parasites in the past year
- D. Dogs should be free of external parasites such as fleas, ticks and mites, and free of skin lesions

- **Cats** – Cats can transmit various diseases if not appropriately vaccinated
 - A. Current rabies vaccination by a licensed veterinarian should be procured and kept
 - B. A health certificate signed by a licensed veterinarian showing proof of vaccination against feline distemper and feline leukemia should be available and kept
 - C. Cats should have had a negative fecal exam or proof of successful treatment for internal parasites in the past year
 - D. Cats should be free of external parasites such as fleas, ticks and mites, and free of skin lesions

2.2.4 Suggested Animals for Residence or Visitation

- Small pet rodents (e.g. mice, rats, hamsters, gerbils, guinea pigs, chinchillas)
- Pet rabbits
- Aquarium fish (fresh or salt water)
- Non-psittacine cage and aviary birds (e.g. canaries, finches, doves, mynahs)

2.2.5 Animals Supervised by Virginia Cooperative Extension or 4-H Program

Animals temporarily brought to school and supervised by a Virginia Cooperative Extension or 4-H Program are allowed.

NOTICE: If you are unsure as to whether a certain animal is allowed / acceptable, please consult the Environmental Manager (975-9340) and/or the Science Instructional Coordinator (296-5820) for further guidance and information.

2.3 **Collecting Live Species in the Classroom**

Virginia State Law [4 VAC 15-360-10] stipulates the number and type of wild animals one can legally accrue or possess at any given time. Please familiarize yourself with *Educators and Virginia's Wildlife Laws* (Appendix E). This document, issued by the Virginia Department of Game and Inland Fisheries, sets "personal possession limits" on the number of each type of species that can be legally collected at one time. Please keep this document in an easily accessible location for future reference.



Albemarle County Public Schools

Subject:
Animals in the Classrooms SOP

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2.4 Animal Waste Disposal

- Animal wastes should be disposed of frequently as to avoid contamination
- Students should never handle, clean, or dispose of any form of animal waste (feces, blood, urine, etc.)
- Animal waste should be disposed of where students will not readily come into contact with it, such as in a sealed plastic bag, container with a well-fitted lid, or via the sewage waste system for feces
- Food handlers should never be involved in the clean-up or disposal of animal waste
- Animal waste disposal is not a custodial function, and if waste is not properly taken care of, it is grounds for removal of the animal

2.5 Injuries from Animals

If a student is bitten, scratched, or otherwise injured by an animal on school property:

- Notify the school nurse immediately, or call 911 if bite or injury appears serious
- Inform the Principal, including the student's name, type of animal, and type of injury
- The Principal and/or teacher should notify the student's parents of the injury
- The Principal and/or teacher should notify the Animal Control Center and follow procedures recommended by Center officials

2.6 Humane Treatment

In order to avoid abuse, mistreatment, or neglect of resident or visiting animals, the humane care recommendations of the National Association of Biology Teachers (NABT) and the National Science Teachers Association (NSTA) should be upheld. (See Appendix C).

2.7 Transportation of Animals

- Animals MAY NOT be transported on school buses at any time
- Animals assisting with a disability are an exception (See Section 2.8)

2.8 Assistance Animals

Animals trained or being trained to assist individuals with disabilities will be allowed in school under the following circumstances:

- The Principal has approved the animal
- The animal has an appropriate health certificate and vaccination on file with the school (See Section 2.2)

Appendix A
Summary of Animals in Schools

ANIMAL	CONTROL	EXPLANATION
Wild Animals (See definition in Section 2.2.2) ➤ e.g., Bats, skunks, raccoon, foxes, wild carnivores, deer	Not allowed	Rabies and other diseases
Poisonous Animals	Not allowed	May bite; could be deadly
Birds		
➤ Finches, doves, mynahs, canaries	Allowed	
➤ Psittacine birds (parrots, macaws, cockatiels, parakeets)	Conditionally allowed. See Section 2.2.3, Psittacine Birds	Large parrots and macaws can inflict serious bites. All may carry psittacosis, a bacterial disease that can remain dormant for long periods of time
➤ Baby chicks, ducks	Conditionally allowed. See Section 2.2.3, Baby chicks, ducks and hatching	Possibly infected with salmonella and campylobacter bacteria; cause many cases of illnesses in children
➤ Predatory birds (hawks, eagles, owls)	Not allowed	May inflict serious bite or injuries associated with talons
Fish (salt water and fresh water)	Allowed	
Reptiles, amphibians (turtles, iguanas, lizards, snakes, frogs, salamanders)	Conditionally allowed. See Section 2.2.3, Reptiles and Amphibians	All carry salmonella bacteria; have caused many cases of illness in children
Mammals		
➤ Rodents (domestic rats, mice, hamsters, gerbils, guinea pigs, chinchillas)	Allowed	
➤ Rabbits	Allowed	
➤ Ferrets	Conditionally Allowed. See Section 2.2.3, Ferrets	May bite when startled; may carry diseases
➤ Cats and dogs	Conditionally Allowed. See Sections 2.3.1 & 2.3.2	May carry diseases when not properly vaccinated
➤ Monkeys	Not Allowed	May bite; may carry diseases
➤ Wolf-dog hybrids	Not Allowed	Propensity for aggression and unprovoked biting
➤ Stray Animals	Not Allowed	Unknown history, health or vaccination status

**Appendix B
Animal Request Form**

1. School _____
2. Teacher _____
3. Classroom _____
4. Type Animal Requested _____
5. Visiting or Resident _____
6. If Visiting, Date(s) of Requested Visitation _____
7. Any student(s) with animal-related allergies in classroom? Yes _____ No _____
8. If so, Names of Student(s)

9. Vaccinations or health records available for animal(s)? Yes _____ No _____

Principal's Signature

Date

*****Keep this record for at least 2 years*****

Appendix C

Including Live Animals in the Classroom

National Science Teachers Association (NSTA) supports including live animals as part of instruction in the K-12 science classroom because observing and working with animals firsthand can spark students' interest in science as well as a general respect for life while reinforcing key concepts as outlined in the NSES.

NSTA recommends that teachers

- Educate themselves about the safe and responsible use of animals in the classroom. Teachers should seek information from reputable sources and familiarize themselves with laws and regulations in their state.
- Become knowledgeable about the acquisition and care of animals appropriate to the species under study so that both students and the animals stay safe and healthy during all activities.
- Follow local, state, and national laws, policies, and regulations when live organisms, particularly native species, are included in the classroom.
- Integrate live animals into the science program based on sound curriculum and pedagogical decisions.
- Develop activities that promote observation and comparison skills that instill in students an appreciation for the value of life and the importance of caring for animals responsibly.
- Instruct students on safety precautions for handling live organisms and establish a plan for addressing such issues as allergies and fear of animals.
- Develop and implement a plan for future care or disposition of animals at the conclusion of the study as well as during school breaks and summer vacations.
- Espouse the importance of not conducting experimental procedures on animals if such procedures are likely to cause pain, induce nutritional deficiencies, or expose animals to parasites, hazardous/toxic chemicals, or radiation.
- Shelter animals when the classroom is being cleaned with chemical cleaners, sprayed with pesticides, and during other times when potentially harmful chemicals are being used.
- Refrain from releasing animals into a non-indigenous environment.



Educators and Virginia's Wildlife Laws

by Carol A. Heiser, Wildlife Division

At teacher workshops, programs, and other educator trainings around the state we are frequently asked questions about wildlife laws. "What kinds of animals can I keep in my classroom?" "Is it O.K. to buy native animals for educational purposes?" "What do I do if one of my students brings a bird nest or an injured animal to school?"

In this article we will try to provide a basic overview of some of the most widely cited wildlife laws to help answer these questions.

However, this article is only a general summary of wildlife laws in Virginia and does not attempt to address all laws, permits, conditions, or exceptions. If you have questions about more specific aspects of the law, please call one of the contacts listed at the end of this article.

Why We Have Wildlife Laws

Between 1700 and 1900, Virginia's landscape changed dramatically. Increasing numbers of settlers

meant a sharp rise in the number of forested acres that were cleared for agriculture, new communities, and transportation for commerce. During the same period, wide-scale and unregulated hunting and trapping of large game and other fur-bearing mammals for the meat market trade put additional pressure on wildlife populations. The demand for feathers in ladies' hats for

the millinery trade also severely impacted wild bird populations.

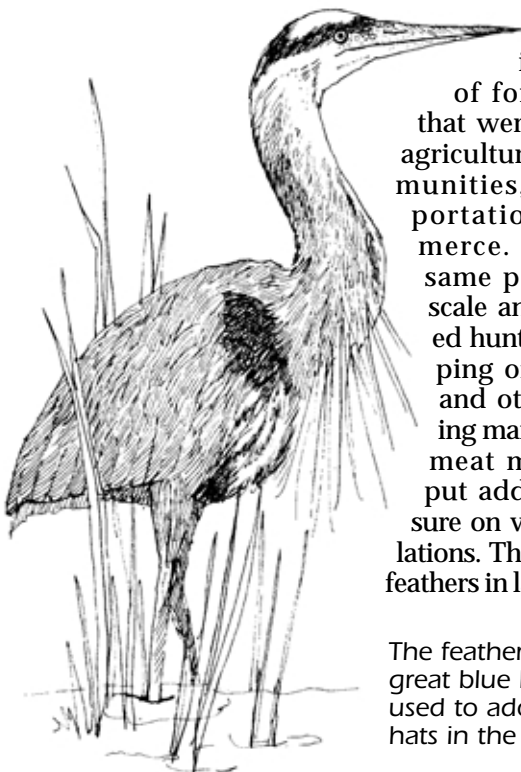
The extensive habitat loss that resulted from clearing large acreages of the eastern deciduous forest was the primary factor that caused sharp reductions in wildlife population numbers. With habitat being reduced at such rapid rates, combined with the effects of unregulated harvesting, many wildlife species could not adapt successfully to survive, and some species were virtually non-existent by the early 1900s.

Few people realize, for example, that by 1911 there were no beaver left in Virginia, white-tailed deer were rare in the western part of the state, Canada geese were infrequently sighted, and the Carolina parakeet, the elk, and the bison had long since disappeared.

Because of this history and a growing realization of the economic value of wildlife, Virginia officially began its wildlife conservation efforts in 1916 with the passage of a law that established the Commission of Game and Inland Fisheries. Today, as then, one of the missions of the DGIF is "to manage Virginia's wildlife and inland fish to maintain optimum populations of all species to serve the needs of the Commonwealth."

Since 1916, many wildlife-related laws have been passed that protect game as well as non-game species. These laws have substantially helped curb declining population numbers such that many species have experienced a successful comeback. For example, the deer population in Virginia is now greater than it was when settlers first came to the continent, and beaver populations have become re-established throughout the state. The great blue heron has also made a tremendous recovery since the turn of the century.

Wildlife laws also serve to control commercial exploitation and illegal trade. Game laws set hunting seasons that do not conflict with breeding seasons and bag limits that regulate animal harvest. Other laws require specific permits to collect, possess, propagate, exhibit, or sell native species. In addition, wildlife laws that restrict importation ensure that non-native species are not introduced from other states or countries that might otherwise out compete native species, dilute the natural gene pool, alter the environment, or introduce diseases.



The feathers of the great blue heron were used to adorn ladies' hats in the 1800s.

How Wildlife Laws Are Made

The complexity of wildlife laws may make you wonder how all those details are actually worked out. The process involves two decision-making bodies: the General Assembly of Virginia, and the Board of the Virginia Department of Game and Inland Fisheries.

A bill that is introduced to the General Assembly must be passed by both houses of that body before it can be sent to the Governor. Once it has been passed, the Governor must sign the bill in order for it to become law. Laws of the Commonwealth established this way are then written into Virginia State Code. The numbers given in parenthesis at the end of each law quoted in this article refer to a section of regulation or Code.

Since most laws cannot cover all of the details that may be needed to effectively carry them out, additional regulations are written to cover the specifics. This “nuts and bolts” part of the process is where the DGIF comes in. The staff and Board of the DGIF spend months and sometimes years developing the basic regulations that govern the way wildlife is managed in the Commonwealth.

A team of biologists, environmental planners and law enforcement officers take all aspects of a particular wildlife species into account when they develop recommendations. These aspects include the biology of the species, such as how they reproduce, as well as their habitat requirements and their population numbers. Once all of the data and analyses are complete, recommendations for a particular regulation are then made to the DGIF Board.

This Board consists of 11 members appointed by the Governor, with one representative selected from each congressional district in the state. The Board meets approximately six times a year to set regulations and policy for the operation of the Department. Proposed regulations are presented at public meetings so that anyone who has an interest in them is able to voice their opinion. Once the discussion is complete, the Board votes on the regulation and sets a date for when it will take effect if it passed.

Laws, regulations and permit conditions are enforced by game wardens in the Law Enforcement Division of the DGIF. Like a state trooper, a warden can write tickets, take people into custody, and can issue summons to appear in court if a person breaks either a law or a regulation.

Laws and regulations are written in the best interests of Virginia’s wildlife and for your safety and well-being. As a citizen, you have the right to participate in this legal process and to comment on laws and regulations both before and after they are enacted.

The Laws in Brief

Being familiar with some basic legal definitions is crucial to a thorough understanding of wildlife laws. [See definitions at right.] The word *take*, for example, legally means *to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, possess or collect, or to attempt to engage in any such*

Definitions: (from §29.1-100 of the Code of Virginia and 4 VAC 15-20-50)

Wild Animal—*any member of the animal kingdom, except domestic animals, including without limitation any native, naturalized, or non-native (exotic) mammal, fish, bird, amphibian, reptile, mollusk, crustacean, arthropod or other invertebrate, and includes any hybrid thereof; except as otherwise specified in regulations of the board, or part, product, egg, or offspring thereof; or the dead body or parts of them.* (4 VAC 15-20-50)

Naturalized Animal—*those species and subspecies of animals not originally native to Virginia which have established wild, self-sustaining populations, as included in the department’s 1991 official listing of “Native and Naturalized Fauna of Virginia.”* (4 VAC 15-20-50)

Game Animal—*Game means wild animals and wild birds that are commonly hunted for sport or food. Game animal means deer, bear, rabbit, fox, squirrel, bobcat and raccoon.* (§29.1-100 of the Code of Virginia)

Native Animal—*those species and subspecies of animals naturally occurring in Virginia, as included in the department’s 1991 official listing of “Native and Naturalized Fauna of Virginia.”* (4 VAC 15-20-50)

Domestic Animal—*This term is commonly accepted to mean animals which humans have tamed in captivity or bred for particular genetic traits. Although all domestic animals at one time had their origin in wild species, they no longer share those distinguishing “wild” traits. The following animals are defined as domestic animals* (4 VAC 15-20-50):

Domestic - dog (including wolf hybrids); cat (including hybrids with wild felines); horse (including hybrids with Equus asinus); ass/burro/donkey; cattle; sheep; goat; swine (including pot-bellied pig).

Domesticated races of - hamsters; mink; red fox (where their coat color can be distinguished from wild red fox); guinea pigs; gerbils; chinchillas; rats; mice; European rabbit; chickens; turkeys; ducks and geese distinguishable morphologically from wild birds; pigeons (and feral pigeons); guinea fowl; peafowl.

Also, llama, alpaca, and camels are designated domestic under this law.

Exotic Animal—*The term non-native (exotic) animal means those species and subspecies of animals not naturally occurring in Virginia, excluding domestic and naturalized species.* (4 VAC 15-20-50)

Game Fish—*means trout (including all Salmonidae), all of the sunfish family (including largemouth bass, smallmouth bass and spotted bass, rock bass, bream, bluegill and crappie), walleye or pike perch, white bass, chain pickerel or jackfish, muskellunge, and northern pike, wherever such fish are found in the waters of this Commonwealth and rockfish or striped bass where found above tidewaters or in streams which are blocked from access from tidewaters by dams (§ 29.1-100) except those species that may be listed as Threatened or Endangered.*

Fur-Bearing Animals—*includes beaver, bobcat, fox, mink, muskrat, opossum, otter, raccoon, skunk, and weasel* (§29.1-100 of the Code of Virginia).

conduct (4 VAC 15-20-140). The word *person* means any individual, firm, corporation, association, or partnership (4 VAC 15-20-140). *Possession is the exercise of control of any wild animal, wild bird, fish or fur-bearing animal, or any part of the carcass thereof* (29.1-100).

Such definitions are very specific so as to minimize inaccurate or deliberately misleading interpretations of the law. In this way, the original intent of the law is less likely to be distorted or misconstrued.

Know This Law!

Perhaps the most important regulation to be aware of is fairly short and sweet: *Under authority of 29.1-103 and 29.1-521 of the Code of Virginia it shall be unlawful to take, possess, import, cause to be imported, export, cause to be exported, buy, sell, offer for sale, or liberate within the Commonwealth any wild animal unless otherwise specifically permitted by law or regulation* (4 VAC 15-30-10). In other words, unless a particular wildlife activity, purpose, or use is specifically authorized by law, you can assume it's illegal. It is up to you to find out whether or not the activity is authorized!

Collecting Live Aquatic Invertebrates, Amphibians, Reptiles, and Nongame Fish

Virginia law specifies how many and what type of wild animals you can legally collect and/or have in your possession at any given time. The following *personal possession limits* do not require a permit but instead are purposefully designed to discourage wildlife collecting so that existing levels of wildlife populations will not be jeopardized. According to 4 VAC 15-360-10:

It shall be lawful to capture and possess live for private use and not for sale (excluding threatened and endangered species provided for in 4 VAC 15-20-130)

- no more than five individuals of any single native or naturalized (as defined in 4 VAC 15-20-50) species of amphibian and reptile and

- 20 individuals of any single native or naturalized (as defined in 4 VAC 15-20-50) species of aquatic invertebrate and nongame fish....

- ... The following species may be taken in unlimited numbers from inland waters statewide:

carp, bowfin, longnose gar, mullet, bullhead catfish, suckers, gizzard shad, blueback herring, white perch, yellow perch, alewife, stoneroller (hornyhead), fathead minnow, golden shiner and goldfish....

- ... 'fish bait' shall be defined as native or naturalized species of minnows and chubs (Cyprinidae), salamanders, crayfish, and hellgrammites. The possession limit for taking fish bait shall be 50 individuals in aggregate, unless said person has purchased 'fish bait' and has a receipt specifying the number of individuals purchased by species....

- ... The daily limit for bullfrogs and snapping turtles shall be 15....

The above quotations are only excerpts of a lengthy regulation. In addition to the above, this regulation details what methods are allowed for collecting the animals and what areas of the state are restricted from taking mollusks or salamanders.

Albino reptiles and albino amphibians or those domestic animals as defined in 4 VAC 15-20-50 (4 VAC 15-30-30) can be possessed live in any number without a permit.

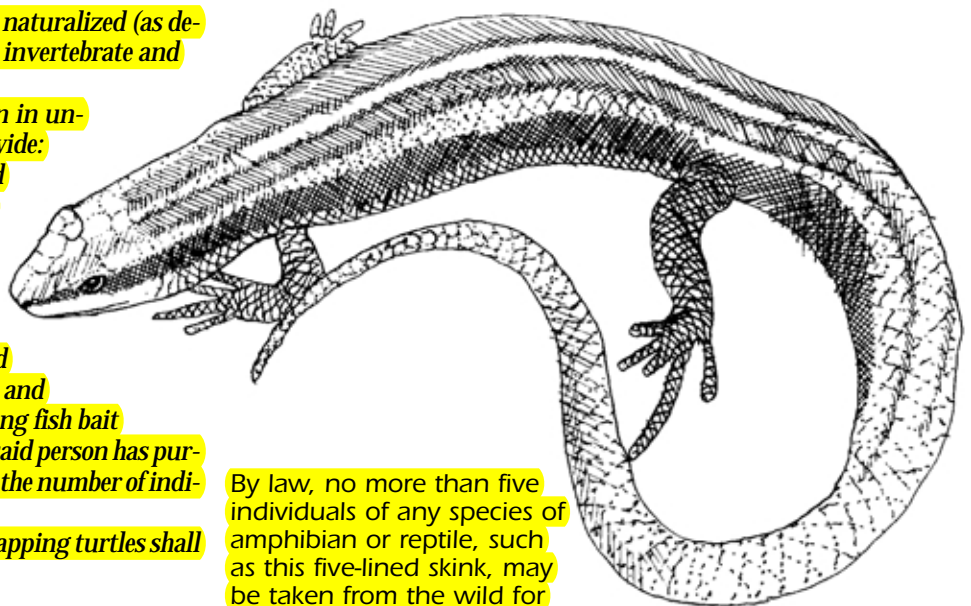
What This Means to the Educator...

Note that the above possession limits are given for *private use*, and they address the collection of *live* animals only (hunting is a completely different issue). The regulation is interpreted by game officials to mean wildlife that you collect live and bring home to keep, either for a short period of time or indefinitely. If you are an educator and choose to bring the live animal(s) into your school or classroom for educational purposes, as an individual you can only have the limit specified by law.

So, for example, a teacher may collect five live tadpoles for "private use" and choose to keep them in his/her possession in a classroom setting. However, each student in the class cannot bring in five tadpoles and leave them with the teacher as a "classroom collection," because the teacher would then be holding or "possessing" more than the five legally allowed to him/her for private use.

To carry this example further, each child in the class could only have five tadpoles apiece if the animals would stay in the children's possession and would be taken back home at the end of the day (i.e. for their "private use").

A prudent educator who understands that the intent of this law is to protect wildlife populations by controlling widespread collection will teach students to leave wildlife in its natural setting. Instilling an ethic of respect that encourages patient observation of wildlife in the environment and discourages collecting animals as neat "pets" is one of the challenges educators face in the 21st century.



By law, no more than five individuals of any species of amphibian or reptile, such as this five-lined skink, may be taken from the wild for one's "private use."

Collecting Live Invertebrates, Mammals, and Birds

Invertebrates

The regulations governing our smaller critters such as insects are much more lenient: *Earthworms may be taken at any time for private or commercial use (4 VAC 15-20-180). Also, except as otherwise provided for in 3.1-1020 through 3.1-1030 and 29.1-418 of the Code of Virginia and in 4 VAC 15-20-130, 4 VAC 15-30-10 et seq. and 4 VAC 15-360-10 invertebrates, other than those listed as endangered or threatened, may be taken for private use (4 VAC 15-20-180).*

Mammals

In general, you cannot capture or collect live mammals or birds in Virginia for any purpose except under limited situations with a special permit. This includes the errant raccoon or squirrel in your attic! Please review the language of 4 VAC 15-30-10 listed under the "Know This Law" section.

Also remember that it is *unlawful to take, possess, transport or sell all other wildlife species not classified as game, furbearer or nuisance, or otherwise specifically permitted by law or regulation (4 VAC 15-20-160).*

Birds, Feathers, and Nests

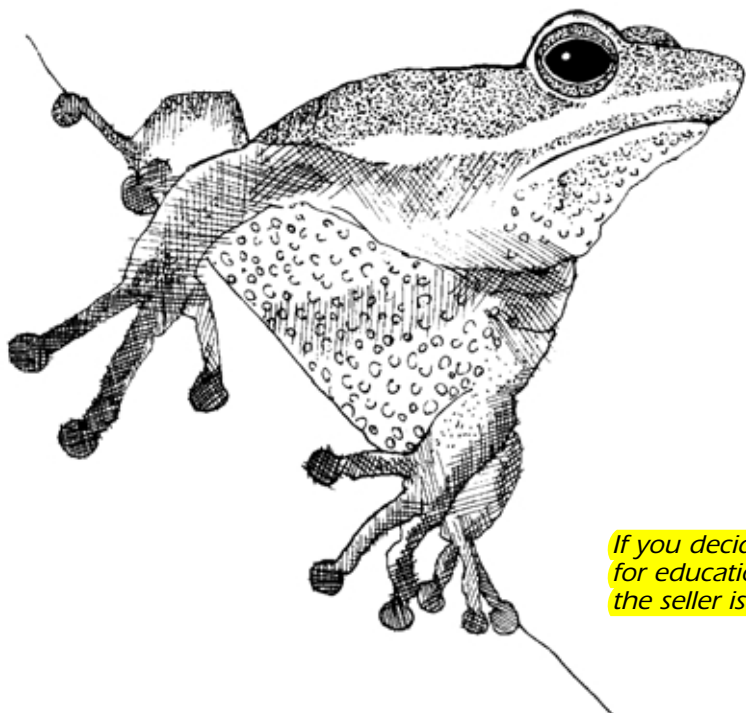
There is no provision in the Code of Virginia to live collect and/or possess wild birds except under an appropriate permit or license or as directly specified by law. *Migratory game birds* (doves, ducks, brant, geese, swan, coot, gallinules, sora and other rails, snipe and woodcock) as defined in § 29.1-100 of the Code of Virginia and *non-migratory game birds* (grouse, pheasant, bobwhite quail, and turkey) as defined in §29.1-100 of the Code of Virginia can only be taken with a valid Virginia hunting license in accordance with wildlife regulations. Also, hunting any waterfowl requires a federal Migratory Waterfowl Stamp ("Duck Stamp") in addition to the hunting license.

Most other birds for which Federal hunting regulations have not been set and which are not officially listed

Things to Remember

Do...

- * Keep records of any animal purchase or any animal specimen donated to your school.
- * Teach our students not to collect wild animals or other wildlife-related specimens such as feathers, nests, bones, etc. Encourage them to observe wildlife in its natural setting and keep a journal of what they see.
- * Call the Virginia Department of Game and Inland Fisheries for more specific information about wildlife laws that are not covered in this article.

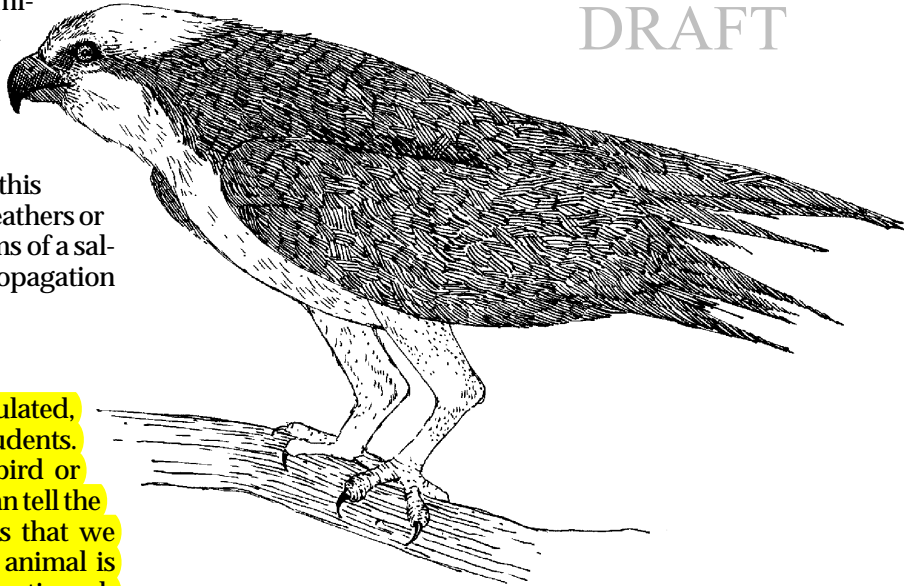


Don't...

- * Collect or buy any animal that occurs naturally in Virginia without knowing the law! Call your county Game Warden.
- * Buy wild animals from other states unless they have been legally collected or propagated according to the laws of that state.
- * Release any captive animals to the wild. This is neither healthy for the individual animals released, nor for the environment they're released to.

If you decide to purchase an animal that is native to Virginia for educational or research purposes, be sure to check that the seller is authorized to do so and has the proper permits.

by state law as a migratory game bird, a non-migratory game bird, a nuisance species, or a threatened or endangered species are federally regulated and protected under the provisions of the Migratory Bird Treaty Act. The U. S. Fish and Wildlife Service is the federal agency which administers the provisions of this Act. The Act also prohibits collecting any bird feathers or nests unless specifically allowed under the terms of a salvage permit, a falconry permit or a raptor propagation permit.



Osprey are but one of the many nongame bird species protected by the Migratory Bird Treaty Act.

What This Means to the Educator...

Since birds and mammals are carefully regulated, it is important to explain these laws to your students. If, for example, a student brings in a baby bird or mammal to school, there are a few things you can tell the student. First, the majority of young animals that we think are orphaned really are not: the parent animal is usually close by or well aware of the young's location, although it is not often apparent to us. Second, let them know that even though they may be "just trying to help," the laws were made for all people to follow and to protect wildlife from improper collection.

Third, as soon as you take in a wild animal, you have interfered with its ability to survive on its own. The longer a wild animal is kept in captivity, the more difficult it will be for that animal to readjust back in its natural setting if it is released.

If a student does bring in an injured bird or animal, instruct the student to take that animal to a *licensed wildlife rehabilitator or veterinarian* who has the proper training and facilities to treat and care for it.

A Note About Releasing Animals

Once an animal has been kept in captivity for any length of time, its chances of surviving when released into the wild are very nominal. This is because the time that it takes for the animal to adjust successfully to its new environment is longer than the time it takes to be preyed upon by a predator, succumb to disease, or die of starvation or thirst.

Also, because of the nature of captivity (close quarters, for example, or inadequate hygiene), captive animals are more likely to contract diseases that their wild counterparts may not have been exposed to. Hence, when the captive animal is released, it may introduce disease to the wild population that could impact the latter's numbers.

There is also a genetic issue when one considers captive-bred animals. Animals which have been crossed and re-crossed with different gene pools and have been bred for new characteristics no longer represent the gene pool of the wild population that they originally came from. There is therefore a concern for the potential negative environmental impacts of a release.

Similarly, picking up a wild animal like a box turtle in

one part of the state while on vacation and releasing it in your backyard in another part of the state introduces new genes to the turtle population that evolved in your area. Although the effect of this example may seem insignificant, it is the cumulative effect of our actions over the centuries that have such a great impact on our wildlife populations, often with irreversible results.

Because of all these reasons, it is unlawful to *liberate within the Commonwealth any wild animal unless otherwise specifically permitted by law or regulation* (4 VAC 15-30-10). Also, although exotic animals not classified as predatory, threatened/endangered, or undesirable may be possessed and sold, they shall not be liberated within the Commonwealth (4 VAC 15-30-40F). In addition, any *birds or animals otherwise classed as predatory or undesirable, may not be imported into the Commonwealth or liberated therein, except under a special permit* (4 VAC 15-30-20).

What This Means to the Educator ...

Since we know from the above law that you cannot legally release any animal into the wild, it should be clear that any animal you buy or legally collect live **must remain in captivity for the rest of its life**. Therefore, you should not acquire any animal unless you are prepared to care for it the rest of its life or to make future arrangements for its care.

If, for example, you have been legally holding a native wild animal in your possession for several months and you decide you no longer wish to keep it, you might give the animal away to another permitted or licensed person or institution who will take care of it, with the understanding that they will not release it. A local veterinarian or the Permits and Lifetime License Section of the Department of Game and Inland Fisheries may also suggest other options (see last page for more information).

Buying and/or Selling Wildlife

Buying and/or selling wildlife in Virginia is also strictly regulated. In general, it is unlawful to buy or sell *any wild bird or wild animal or the carcass or any part thereof; except as specifically permitted by law* (29.1-521). Here are some other regulations and guidelines regarding buying and selling:

- Game fish are only sold under certain conditions, namely for the purpose of *stocking private waters* (such as a pond or lake), *for stocking public waters (but only with approval from the DGIF)*, and *for human consumption* (4 VAC 15-320-40). This regulation is not intended to allow the sale of game fish for display in an aquarium. A school teacher or other individual may possess and display game fish in an aquarium provided that they hold a valid fishing license **and** provided that the fish were legally obtained by an individual possessing a valid fishing license.

- Minnows and chubs can be purchased for any purpose, as well as crayfish and hellgrammites, provided they are purchased from a dealer who is authorized by the Virginia Department of Game and Inland Fisheries to collect, hold, and sell them (4 VAC 15-360-20; 4 VAC 15-360-30).

- The Game Department is now issuing permits to licensed pet stores and captive breeders for them to sell three species of captive-bred snakes (4 VAC 15-360-50): eastern kingsnake, mole kingsnake, and corn snake. **No other snakes native to Virginia can be bought or sold in Virginia, and there are size limits as to what can be sold.**

- No threatened or endangered species may be bought or sold for any purposes at any time, whether dead or alive, including their parts.

- Because the Lacey Act restricts the interstate transport of birds and other animals, federal laws prohibit moving fish and wildlife into the state if they were illegally taken elsewhere. Therefore, if you make a wildlife pur-

chase from an out-of-state supplier, the species must have been legally collected, propagated, and/or sold according to the laws of that state.

- The *bullfrog, green frog, southern leopard frog, and green tree frog* can only be bought for educational or research purposes if they are purchased from a permitted captive breeder in Virginia or from a properly permitted business out-of-state (4 VAC 15-360-50).

- *When taken in accordance with the provisions of law or regulation, muskrat, opossum, rabbits, raccoon and squirrels may be bought and sold during the open hunting season only, but the hides, furs or pelts of fur-bearing animals legally taken and possessed, and the carcass of any fur-bearing animal may be sold at any time....* (29.1- 536)

Nuisance Species

The following 12 animals are officially considered nuisance species in Virginia and may be taken (harvested) at any time without a collector's permit (4 VAC 15-20-160):

House mouse
Norway rat
Black rat
Coyote
Sika deer
Feral hog
Nutria
Woodchuck
European starling
English (house) sparrow
Pigeon (rock dove)
Mute swan

Historically, many of these animals were associated with significant economic concerns or health problems, and over time became viewed as “nuisances.”

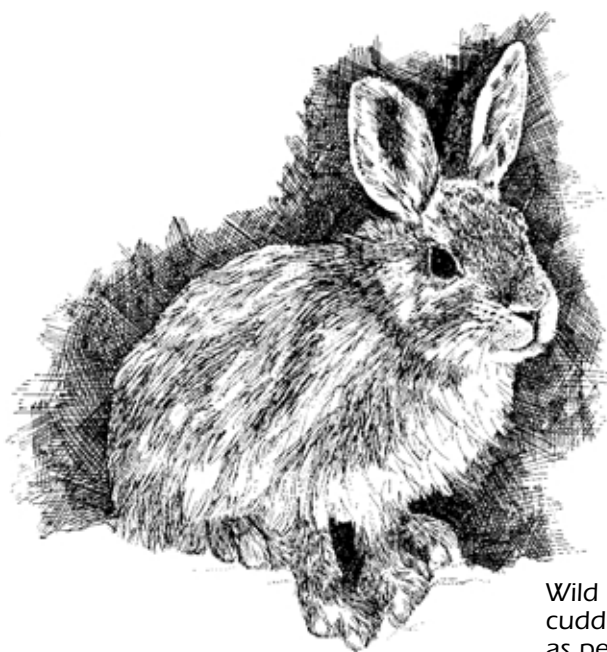
It is also *lawful to take striped skunks* (*Mephitis mephitis*) *at any time* (4 VAC 15-220-10), although this species is not technically part of the nuisance list.

For further information on this topic of what, when and how nuisance animals may be taken, please contact the Permits and Lifetime License Section.

Threatened and Endangered Species

Currently, there are a little over 100 wildlife species that are officially listed as threatened or endangered in Virginia, and over 900 worldwide ranging from millipedes to whales. Some of these species are considered “federal endangered,” while others are “state endangered.”

Over 50 additional species are now being considered as federal candidates for the list. While the list is too long



Wild mammals may appear cute and cuddly, but it is illegal to collect them as pets.

to include here, it is available on request and should be consulted before conducting any wildlife collecting activities. (See the section “Official Listings Available.”) Under the provisions of the law, *it shall be unlawful to take, transport, process, sell or offer for sale within the Commonwealth any threatened or endangered species of fish or wildlife* (4 VAC 15-20-130).

Exotics

There are additional requirements regarding exotic or non-native species which are animals that do not occur naturally in Virginia. Biologists view non-native species with caution because these animals can cause irreparable harm to a habitat and/or an entire population of native species. Some examples of prior introductions that easily come to mind are the English house sparrow, the European starling, the gypsy moth, and more recently, the zebra mussel.

Educators should be particularly aware when ordering lab specimens from mail order catalogs that availability from a catalog does not necessarily mean that you can lawfully possess that animal in Virginia. For example, the marine toad, African clawed frog and piranha may be popular catalog items, but they are included as predatory and undesirable in VAC 15-30-40.

When a non-native or exotic species is introduced to a new environment, it competes with native species that were previously well-adapted to the way things were. The non-native population therefore creates additional pressure on the native wildlife population by introducing new diseases and by competing for suitable nest sites, food, and other habitat requirements.

In addition, the non-native species may now be living in a new ecosystem where its natural predators do not occur to keep its population in check. The net result is often that native species have difficulty adapting and competing, and their numbers subsequently decrease.

Importation laws and multi-state policies protect against such introductions of non-native species. A special permit is required to import, possess, or sell a whole range of exotic species that are classed as *predatory or undesirable within the meaning and intent of Title 29.1-542 of the Code of Virginia, in that their introduction into the Commonwealth will be detrimental to the native fish and wildlife resources of Virginia* (4 VAC 15-30-40).

Using This Information in the Classroom

There are several Project WILD activities you can use to help teach about the legislative process. Project WILD is a supplementary wildlife curriculum for teachers of students in grades K-12. The curriculum guide is only available by attending a free six-hour workshop sponsored by the Department of Game and Inland Fisheries (call the WILD Coordinator for more details at 804/367-0188).

“Wild Bill’s Fate” gives students an opportunity to compare the different viewpoints that people have about pending wildlife legislation. “Know Your Legislation: What’s in it for Wildlife?” carries the process further by guiding students in selecting a piece of current wildlife legislation that they’re interested in and getting in touch with elected officials to express their views.

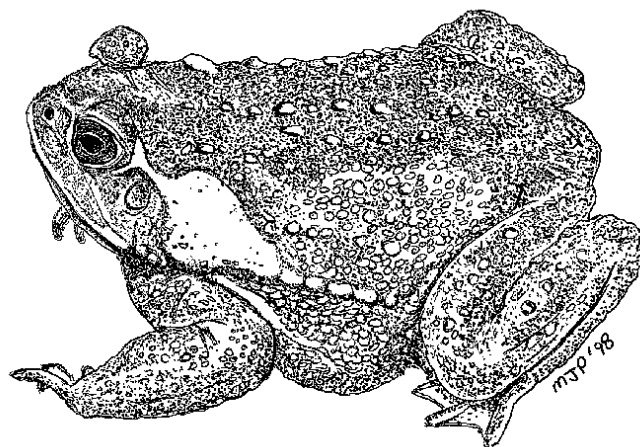
Another approach is to try the “Cabin Conflict” activity in which students set up their classroom as a courtroom and role-play various points of view of a land-use issue that affects wildlife. “To Zone or Not to Zone” is a similar activity that illustrates the complexities of land-use planning and decisions that must consider differing viewpoints.

Students might even be encouraged to write their own proposal or bill about a wildlife issue and submit it to their General Assembly representative. Or, have a local elected official visit your school and talk with the students about a local issue.

Although the above activities are geared towards upper grade level students, lower grade level students might also explore their opinions on a simple issue that concerns their local community, as in the activity “Changing Attitudes.” Students might interview parents and friends and record their different thoughts and views in a journal-writing activity. They could follow this up with some research in local newspapers and the library to find out more about both sides of the issue, then write what their conclusion is about the matter.

Types of Permits

Although the regulations are rigid and all-encompassing, teachers and other educators do have a few avenues open to them if they are serious about wildlife conservation but still want to bring wildlife into their schools for educational purposes. The following permits are those that the Virginia Department of Game and Inland Fisheries may issue. Applications, instructions, and re-



The marine toad is an exotic species that is considered predatory and undesirable; it is illegal to order this species from a catalog and possess it in Virginia. Illustration by Mike Pinder.

porting forms may be downloaded from www.dgif.virginia.gov/wildlife/scp.html.

- **Scientific Collection Permit:** for research or educational purposes. This permit allows you to collect live animals from the wild and possess them for scientific or educational purposes. You will need an **additional federal permit** from the U.S. Fish & Wildlife Service in order to perform research on birds. You will be required to report each year what was collected, where it was collected, etc., or the permit will not be renewed.

- **Salvage Permit:** for research or educational purposes. This permit allows you to collect dead animals or parts and parts for scientific or educational purposes. You will need an additional federal permit from the U.S. Fish & Wildlife Service in order to collect dead birds, bird parts, feathers, or nests. You will be required to report each year what was collected, where it was collected, etc., or the permit will not be renewed.

- **Exhibitor's Permit:** for educational or scientific use to hold and display more than your legal personal use limit. This applies to game fish, birds, mammals, and more than your legal limit of non-game fish, amphibians, reptiles, and aquatic invertebrates. Nature centers and parks which do not charge a fee typically fall under this category, as might a school system which is planning several exhibits in an environmental education facility.

There are fees associated with these permits. Please call the number at the end of this article and ask for the Permits and Lifetime License Section.

Official Listings Available

The Virginia Department of Game and Inland Fisheries has a web-based, computerized system of databases, the Virginia Fish and Wildlife Information System (VAFWIS) that provides users with information about wildlife in the Commonwealth. This may be accessed through the Department web page at www.dgif.virginia.gov by choosing "Wildlife," then "Wildlife Information and Mapping Services," and finally "Virginia Fish and Wildlife Information Services."

Complete listings of all native and naturalized species, threatened and endangered species, and species of special concern are also available from the "Wildlife" page by selecting "Virginia's Wildlife."

For More Information

- Main Agency phone number (804) 367-1000.
- Exhibitor's permit: Permits and Lifetime License Section (804) 367-1076
- Scientific collection, salvage, or threatened and endangered species permits, and issues regarding nongame wildlife: Wildlife Diversity Division, (804) 367-6913.
- Game mammals: Wildlife Division (804) 367-0904
- Game fish: Fisheries Division (804) 367-0509
- Violations, licenses, and the law: Law Enforcement Division (804) 367-0776
- Federal laws and permits: Northeast Region of the U.S. Fish & Wildlife Service (413) 253-8643.
- Wildlife Crime Line: 1-800-237-5712 or e-mail WildlifeCrime@dgif.state.va.us.
- To view the complete wildlife laws in the Code of Virginia, go to the web site of the Virginia General Assembly at www.legis.state.va.us and click on "Code of Virginia." Then click on "Table of Contents" and scroll down to "Title 29.1—Game, Inland Fisheries and Boating."


Originally published April, 1998 with the assistance of
Fred Leckie, Jeff Uerz, Becky Wajda, Bob Ellis, and
Dave Dowling.

Revised March, 2004 with the assistance
of Kathy Graham.



Produced by the Department of Game and Inland Fisheries
P.O. Box 11104
4010 West Broad Street
Richmond, VA 23230-1104
804/367-1000/VTDD
www.dgif.virginia.gov

ATTACHMENT 5
Well Water Sampling and Maintenance SOP

 Albemarle County Public Schools			Subject: Water Well Sampling and Maintenance Procedures SOP		
Document No.: SOP-WAT-01	Issue Date: 4/3/2009	Last Revised: 3/9/2009	Page: 1 of 3	Prepared By: LCS	Approved By: CH, JPL, GS, JCL

1.0 PURPOSE

This Standard Operating Procedure (SOP) outlines the work instructions for **maintaining well systems, testing well water, and mixing treatment chemicals** for the Albemarle County Public Schools on a well system.

This SOP is applicable to the following schools:

Well System Location	PWSID	Override Location
Stony Point Elementary	2003810	Plug pump into "Override" outlet
Broadus Wood Elementary	2003170	Flip switch
Murray Elementary	2003885	Flip switch located on left side of system
Red Hill Elementary	2003660	Turn knob to "Hand"
Walton Middle	2003880	Put pump in plug labeled "Override"
Yancey Elementary	2003162	Flip switch
Scottsville Elementary	2003680	Turn knob to "Hand"

2.0 PROCEDURE


Responsibility: ENVIRONMENTAL COMPLIANCE MANAGER & WELL TECHNICIAN

The Environmental Compliance Manager must hold an active Class VI Waterworks Operator License issued by the Department of Professional and Occupational Regulation. The license must be renewed every 2 years and continuing education units must be completed for renewal. The Class VI Waterworks Operator is responsible for maintaining compliance with the Class VI Waterworks Permits for Albemarle County Public Schools. The Environmental Compliance Manager must also prepare and host the Virginia Department of Health during the annual inspections.

Testing

1. WEEKLY

- A) The well technician must test the water from the kitchen tap for chlorine and phosphate levels using the Chlorine and Phosphate Pocket Colorimeter Test Kits. Follow the Directions for Using Water Testing Kits in F-SOP-WAT-01.
- B) The intern is to record the pH of the kitchen tap water. The Environmental Compliance Manager must calibrate the pH meter weekly.

 Albemarle County Public Schools			Subject: Water Well Sampling and Maintenance Procedures SOP		
Document No.: SOP-WAT-01	Issue Date: 4/3/2009	Last Revised: 3/9/2009	Page: 2 of 3	Prepared By: LCS	Approved By: CH, JPL, GS, JCL

- C) The levels of the chlorine and phosphate (ZPP-9000) tanks must be recorded. If the level is below 50%, follow the chemical mixing guidelines in F-SOP-WAT-02.
- D) Results of the sampling must be recorded on F-SOP-WAT-03.
- E) The well technician must ensure the OVERRIDE switch is turned OFF before leaving well house.

2. MONTHLY

- A) The well technician is responsible for collecting bacteriological samples from each well school at the beginning of each month.
- B) The well technician is responsible for collecting the water meter readings at towards the end of each month. The Environmental Compliance Manager is responsible for gathering the weekly and monthly data and submitting a report to the Virginia Department of Health (VDH) before the 10th of each month. The Environmental Compliance Manager must also confirm that VDH has received bacteriological results from the laboratory.
- C) The Environmental Compliance Manager is responsible for maintaining all water quality reports and sampling results.

3. SAMPLING SCHEDULE

The Environmental Manager is responsible for maintaining the sampling schedule for each school.

Responsibility: **BUILDING SERVICES MAINTENANCE CREW**


1. **MAINTENANCE TO BE PERFORMED EVERY 6 MONTHS**

- A) Replace check valve in phosphate and chlorine feed tanks at each well system.
- B) Replace tubing in phosphate and chlorine tanks (tubing from check valve to pump and from pump to piping).
- C) Ensure all pump connections to water storage tank are in tact.
- D) Verify pumps are operating correctly and properly mounted.
- E) Bring any expired chemicals (e.g. hardened or liquefied ZPP-9000) to Building Services to be properly disposed of by the Environmental Compliance Manager.

2. **MAINTENANCE TO BE PERFORMED ANNUALLY**


Clean out chlorine and Virchem tanks.

- Coordinate with Environmental Compliance Manager to bring tank levels to minimal levels.
- Environmental Manager will coordinate disposal of unspent chemicals and addition of new chemicals after tank cleaning.

 Albemarle County Public Schools			Subject: Water Well Sampling and Maintenance Procedures SOP		
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3. CHEMICAL DELIVERY

- A) If ZPP-9000 (used for phosphate feed tank) is delivered by Building Services, the chemical MUST be tightly sealed in a 5-gallon drum.
- B) If chlorine is delivered by Building Services, leave it in the original containers in the well house.
- C) Anyone who may come in contact with chlorine or Virchem in the well houses must use the PPE provided in each well house. The PPE includes goggles and an apron.

 Albemarle County Public Schools			Subject: Water Well Sampling and Maintenance Procedures Directions for Using Water Testing Kits		
Document No.: F-SOP-WAT-01	Issue Date: 4/03/2009	Last Revised: 3/09/2009	Page: 1 of 1	Prepared By: LCS	Approved By: CH, JPL, GS, JCL

DIRECTIONS FOR USING WATER TESTING KITS

USE KITCHEN SINK IN SCHOOL

FOR CHLORINE:

1. Fill vial to 10 mL mark
2. Turn kit "on"
3. Place vial in kit with diamond facing towards inside/screen
4. Zero kit out
5. Remove vial, add packet of chlorine reagent
6. Shake for a few seconds
7. Place vial back in kit with diamond facing inside
8. Press "Read"
9. Record number on form F-SOP-WAT-03

FOR PHOSPHATE:


1. Fill vial to 10 mL mark
2. Turn kit "on"
3. Place vial in kit with diamond facing towards inside/screen
4. Zero (blue button) kit out
5. Remove vial, add packet of phosphate reagent
6. Shake for a few seconds
7. Wait 2 minutes
8. Place vial back in kit with diamond facing inside
9. Press green check mark
10. Record number on form F-SOP-WAT-03

Reorder information

HACH Permachem Reagents

Phosphate – PhosVer 3 Phosphate Reagent for 10 mL sample (Cat. 21060-69)

Chlorine – DPD Total Chlorine Reagent for 10 mL sample (Cat. 21056-69)

 Albemarle County Public Schools			Subject: Water Well Sampling and Maintenance Procedures Filling Chemical Feed Tanks in Well Houses		
Document No.: F-SOP-WAT-02	Issue Date: 4/03/2009	Last Revised: 3/09/2009	Page: 1 of 1	Prepared By: LCS	Approved By: CH, JPL, GS, JCL

FILLING CHEMICAL TANKS IN WELL HOUSES:

Note: Chemical tanks should always be filled 50% or more

Filling Chlorine Feed Tank

- Full chlorine feed tank takes 4 “scoops” of A-1 Austin’s Bleach and 3 scoops of soda ash
- Fill the rest of the container with water from the hose
- Stir tank thoroughly
- If override switch was used, make sure the switch is turned off before leaving the well house

Filling Phosphate Feed Tank

- Add 1 “scoop” of phosphate (ZPP-9000)
- Fill the rest of the container with water from the hose
- Stir tank thoroughly
- Ensure override is turned off

Subject: Water Well Sampling and Maintenance Procedures
Well Sampling Results Form

Document No.: F-SOP-WAT-03	Issue Date: 4/03/2009	Last Revised: 3/09/2009	Page: 1 of 1	Prepared By: LCS	Approved By: CH, JPL, GS, JCL
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Weekly Chemical Testing / Monitoring - 2009

Sampling Date(s):

Tester Name:

Parameter	Stony Point	Broadus Wood	Murray	Red Hill	Walton	Yancey	Scottsville
Chlorine							
Phosphate							
pH							
Tank Level - Chlorine/Soda Ash							
Tank Level - Phosphate							
Meter Reading (Weekly)							
Notes							
PM Checklist							
Sight Level Normal	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Check Valves Normal	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tubing Clear	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Chlorine Needed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Virchem Needed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Soda Ash Needed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Date Printed: 4/3/2009

ATTACHMENT 6
Scottsville Elementary Waterworks Permit



RECEIVED
Building Serv

JAN 05 11

COMMONWEALTH of VIRGINIA

PHONE: (540)463-7136
FAX: (540)463-3892

Department of Health
OFFICE OF DRINKING WATER
Lexington Environmental Engineering Field Office

ROCKBRIDGE SQUARE SHOPPING CENTER
131 WALKER STREET
LEXINGTON, VIRGINIA 24450-2431

December 29, 2008

SUBJECT: Albemarle County
Water – Scottsville Elementary School

Ms. Jennifer Johnston
Albemarle County School Board
401 McIntire Road, Room 345
Charlottesville, VA 22902

Dear Ms. Johnston:

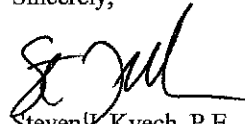
Enclosed please find Waterworks Operation Permit No. 2003680 with an effective date of December 24, 2008 issued by the Commonwealth of Virginia Department of Health, Office of Drinking Water. This permit is your authorization from the State Health Commissioner to operate the subject waterworks located in Albemarle County, in accordance with the *Waterworks Regulations*. This permit is not transferable. This permit does not suspend, minimize, or otherwise alter this owner's obligation to comply with applicable federal, state, or local laws and regulations or permits.

This permit is an amendment of the previously issued permit dated August 14, 1989, due to the addition of a new well source at the school and abandonment of the old well. This revised permit replaces and nullifies the original permit which should be destroyed immediately.

You will note that the permit indicates that this waterworks has a design capacity of 17,600 gpd (gallons per day). This limit is based on the maximum capacity of the system and shall not be exceeded.

We look forward to your cooperation in the maintenance and operation of this public waterworks. If you have any questions concerning the permit, or the contents of your water supply systems, please do not hesitate to contact me at extension 124.

Sincerely,


Steven G. Kvech, P.E.
District Engineer

SJK/kl/081229_1

Enclosure

cc: Albemarle County Schools – Attn: Ms. Lindsay Check Snoddy
Albemarle County Health Department – Attn: Dr. Lilian Peake
VDH – ODW – Richmond Central



Commonwealth of Virginia
Department of Health
Office of Drinking Water

Waterworks Operation Permit

Albemarle County School Board is hereby granted permission to operate a Class VI nontransient noncommunity waterworks having a design capacity of 17,600 gpd at Scottsville Elementary School located in Albemarle County in accordance with Title 32.1 of the Code of Virginia, and the *Waterworks Regulations* of the Virginia Department of Health (12 VAC 5-590). This permit is issued in accordance with previously issued Operation Permit 2003680 issued August 14, 1989 and Construction Permit 204108 issued August 13, 2008 and with the understanding that this owner will operate the waterworks in accordance with Part II, "Operation Regulations for Waterworks," of the *Waterworks Regulations* of the Virginia Department of Health and any variances or special requirements noted below. This permit does not suspend, minimize, or otherwise alter this owner's obligation to comply with applicable federal, state, or local laws and regulations or permits.


Variances, Exemptions, or Special Permit Requirements issued: (X) None () See Attached

An Engineering Description Sheet is attached dated December 24, 2008

PERMIT NO.: 2003680

EFFECTIVE DATE: December 24, 2008

APPROVED


Director, Office of Drinking Water
for the State Health Commissioner pursuant to VA Code § 2.2-604

P.E.

**VIRGINIA DEPARTMENT OF HEALTH
ENGINEERING DESCRIPTION SHEET**

DATE: December 24, 2008

WATERWORKS NAME: Scottsville Elementary School

WATERWORKS CLASS: VI

COUNTY/CITY: Albemarle County

TYPE: Nontransient
Noncommunity

LOCATION: From I-64 take Exit 121 and follow State Route 20 south for 16 miles. The school is on the west side of Route 20, 2 miles north of downtown Scottsville.

OWNER: Albemarle County School Board
Contact: Ms. Jennifer Johnston, Clerk
401 McIntire Road, Room 345
Charlottesville, VA 22902
Phone: 434-296-5893

OPERATOR: Licensed Class VI Operator Required

PERMIT NUMBER: 2003680 Amended

EFFECTIVE DATE: August 14, 1989; December 24, 2008

TYPE OF TREATMENT: Disinfection, soda ash and corrosion inhibitor addition

SOURCE: One drilled well

DESIGN CAPACITY: 17,600 gpd

DESCRIPTION OF THE WATERWORKS

This waterworks consists of one drilled well, a hydropneumatic storage tank, sodium hypochlorite and soda ash mixture feeder, blended phosphate corrosion inhibitor feeder and the distribution system.

The well pumps water to the boiler room which houses the hydropneumatic tank face and chemical feeders. Sodium hypochlorite/soda ash solution and blended phosphate corrosion inhibitor are injected prior to the tee to the hydropneumatic storage tank. The water is then distributed to the school distribution piping system.

Source Water

Well 1 was permanently disconnected from the waterworks due to the potential for migration of a contaminant plume into the well area.

Well 2 is located approximately 70 feet east of the school bus loop at the front of the school. The well, drilled in February 2008, is 10 inches in diameter to a depth of 50 feet and 6 inches in diameter from 50 feet to 305 feet. The well is cased with steel casing and is cement grouted to a depth of 50 feet. The well head extends 12 inches above a 6 foot by 6 foot concrete slab and is equipped with a pitless adapter unit with integrated screened vent and an airline to measure water depth. A totalizing flow meter and raw sample tap are located inside the boiler room. A 48-hour drawdown test conducted in July/August 2008 determined the well yield to be 22 gpm with the water level dropping

from 56 feet to 143 feet. The well is equipped with a constant pressure 1.5 HP submersible pump capable of delivering up to 15 gpm at 325 feet TDH into the hydropneumatic tank.

Treatment/Chemical Feed

Disinfection and pH/alkalinity adjustment treatment is provided. Disinfection is achieved by chlorination with sodium hypochlorite. Soda ash is added to the chlorine solution to achieve pH adjustment as necessary. The solution is injected directly into the incoming well line prior to the hydropneumatic tank. This treatment is required only from the perspective of corrosion control, since microbial quality is not an issue. Equipment consists of a 30 gpd electronic diaphragm metering pump and a 30 gallon polyethylene solution tank housed in the boiler room.

Corrosion Inhibition is achieved by feeding blended ortho/polyphosphate. Blended phosphate is injected directly into the incoming well line prior to the hydropneumatic tank. This treatment is required for corrosion control. Equipment consists of a 30 gpd electronic diaphragm metering pump and a 30 gallon polyethylene solution tank housed in the boiler room.

Storage

A 4,757 gallon hydropneumatic tank is located at the school boiler room. The working face of the tank penetrates the boiler room wall. The tank is equipped with pressure and vacuum relief valves, sight glass, and air compressor and bypass valve.

CAPACITY EVALUATION OF THE WATERWORKS

Design Basis: Per *Waterworks Regulations*, elementary schools without showers - 10 gpd per person. One ERC = 400 gpd. As of October 2008, the school has 191 staff and students.

1. Estimated Water Demand:

Daily: $(191 \text{ staff and students}) \times (10 \text{ gpd/person}) = 1,190 \text{ gpd}$

Peak Hour: $(4) \times (24 \text{ hr/day}) \div (8 \text{ hr/day use}) = 12 \text{ peak factor}$
 $(12) \times (191 \text{ persons}) \times (10 \text{ gpd/person}) = 22,920 \text{ gpd}$
 $(22,920 \text{ gpd}) \times (1 \text{ hr}) \div 24 \text{ hr/day} = 955 \text{ gal}$

2. Source Capacity:

Well Yield: $(22 \text{ gpm}) \div 0.5 \text{ gpm / ERC} = 44 \text{ ERC's}$
 $44 \text{ ERC's} \times 400 \text{ gpd / ERC} = 17,600 \text{ gpd}$

Pump Capacity: $(15 \text{ gpm}) \times (1,440 \text{ min/day}) = 21,600 \text{ gpd}$

3. Storage Capacity:

Hydropneumatic Tank: $4,757 \text{ gal} \times 1/3 = 1,586 \text{ gal}$

Noncommunity waterworks are required to provide delivery capacity to meet peak hour demand.

Estimated delivery capacity during 1 hour (including pressure storage):

Well = $(15 \text{ gpm}) \times (60 \text{ min}) = 900 \text{ gal}$

Hydropneumatic Tank = 1,586 gal

Total = 2,484 gal

Peak hour demand = 955 gal < 2,486 gallons provided with storage

Conclusion: This waterworks is permitted for a design capacity of 17,600 gpd due to well yield as described above. This permit does not suspend, minimize, or otherwise alter this owner's obligation to comply with applicable federal, state, or local laws and regulations or permits.

SJK/kl