

Environmental Health Operational Guidelines

Published: 8/2021

This manual is designed to aid Local Public Health Agencies in the routine decision making process associated with various environmental health programs within the Bureau of Environmental Health Services.

Missouri Department of Health and Senior Services

Protecting health and keeping people safe.

The Missouri Department of Health and Senior Services provides health promotion, protection, and prevention services to all the people of Missouri by assessing health status and needs, developing policies and priorities, and assuring that the state is responding appropriately to maximize the health of all individuals.



Bureau of Environmental Health Services

AN EQUAL OPPORTUNITY/AFFIRMATIVE ACTION EMPLOYER
Services provided on a nondiscriminatory basis

Bureau of Environmental Health Services

The Bureau of Environmental Health Services is a component of the Missouri Department of Health and Senior Services encompassing environmental risk assessment, surveillance, education, and enforcement. We strive to prevent illness, injury, and death related to environmental causes. In carrying out our daily duties, we further strive to uphold several values that we feel are important to our clients as well as to our staff. We believe:

ACCOUNTABILITY

We accept responsibility for how we plan and perform our work, and we recognize the critical importance of using state resources wisely as stewards of the public trust.

COLLABORATION

We partner with public and private entities to improve health for all Missourians and protect seniors and persons with disabilities.

COMMITMENT

We maintain a workforce composed of highly skilled and motivated individuals, and we celebrate the enormously positive differences they make in the lives of Missourians every day.

COMMUNICATION

We remain closely connected to the citizens we serve through responsive and timely communication, and we deeply value our role as a trusted source of information regarding health and senior issues.

DIVERSITY

We recognize and respect the benefits of diversity among staff and those we serve, and we work to make our department a reflection of the richly diverse community that is the state of Missouri.

EXCELLENCE

We strive to deliver high quality services through continuous quality improvement efforts in order to exceed customer expectations.

INTEGRITY

We perform our job responsibilities in a highly principled manner by honoring our commitments, maintaining our ethics, and always putting the public good above personal gain.

RESPECT

We deliver services to Missourians in a manner that is sensitive to their unique needs and circumstances.

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Preface

The Environmental Health Operational Guidelines (EHOG) manual was developed as a tool to aid Bureau of Environmental Health Services and Local Public Health Agency staff in the routine decision making processes associated with the various environmental public health programs and functions within the Bureau. The EHOG addresses both policies and best practices that should be followed by state and local public health environmental specialist staff when performing activities under the jurisdiction of the Department of Health and Senior Services (DHSS) as authorized by law. In addition, BEHS maintains internal program policies that provide additional instruction and guidance for BEHS staff for matters that are specific to BEHS actions and concerns and these policies will be utilized where appropriate. In the event of a conflict between EHOG polices, statutes, and/or regulations; statutes and regulations supersede policy.

Ultimately, compliance with the policies and best practices outlined in this manual will result in consistent and uniform interpretation and implementation of environmental public health program activities statewide.

Using the EHOG

This manual is designed to provide information necessary in the day-to-day operations of an environmental health program and is subdivided into each program or discipline/activity. Information on each of these areas can be found under the appropriate chapter.

This manual is under continued review. In an effort to maintain the most up to date material in this manual, each chapter will contain a subsection that will be updated, as needed, for ongoing support information, technical bulletins, and informational releases.

Fundamentals of Environmental Public Health

The profession of the ‘sanitarian’ continues to evolve, but at its core remains a science-based approach to improving community health by preventing illness and injury from environmental exposures. As new challenges emerge, environmental public health continues to adapt to improve and protect public health.

Environmental health, as defined by the National Environmental Health Association, is the science and practice of preventing human injury and illness and promoting well-being by identifying and evaluating environmental sources and hazardous agents and limiting exposures to hazardous physical, chemical, and biological agents in air, water, soil, food, and other environmental media or settings that may adversely affect human health.

To remain true to the public health mission, the Bureau of Environmental Health Services (BEHS) encourages all jurisdictions to develop comprehensive risk-based environmental public health programs. Focusing on risk generates the greatest return for investment and assures the community that public agencies remain vigilant to their needs. BEHS employs the public health principles of Assessment, Policy Development, and Assurance to the Ten Essential Environmental Health Services, as outlined by the US Department of Health and Human Services, to fulfill its environmental public health objectives.

Assessment

1. Monitor environmental and health status to identify and solve community environmental public health problems.
2. Diagnose and investigate environmental public health problems and health hazards in the community.

Policy Development

1. Inform, educate, and empower people about environmental public health issues.
2. Mobilize community partnerships and actions to identify and solve environmental health problems.
3. Develop policies and plans that support individual and community environmental public health efforts.

Assurance

1. Enforce laws and regulations that protect environmental public health and ensure safety.
2. Link people to needed environmental public health services and assure the provision of environmental public health services when otherwise unavailable.
3. Assure a competent environmental public health workforce.
4. Evaluate effectiveness, accessibility, and quality of personal and population-based environmental public health services.
5. Research for new insights and innovative solutions to environmental public health problems.



**Missouri Department of Health and Senior Services
Bureau of Environmental Health Services**

Main Telephone Line: (573) 751-6095

The Bureau of Environmental Health Services (BEHS) is involved in the administration of environmental sanitation programs in accordance with Missouri statutes.

Duties of the Bureau include:

Environmental Public Health (EPH) Evaluation and Development

- Provide guidance and assistance to Local Public Health Agencies (LPHAs) in assessing EPH program status.
- Conduct county and city surveys related to EPH needs, such as private well water, onsite wastewater, nuisance matters, as needed.
- Provide strategic planning consultations focused on community EPH needs; including evaluating demographics, land-use trends, and environmentally linked disease patterns and frequencies.
- Provide consultation and guidance on policy development, including ordinance development and review and associated fee structures.
- Evaluate EPH workforce needs and training and provide guidance on work assignments and strategies.
- Provide state perspective and guidance in meeting with county and city officials concerning EPH concerns and program development.

Universal Programmatic Duties

- Develop statewide program plans and guidelines and assess the needs of the program.
- Provide uniform interpretations of guidelines, policies, regulations, and statutes to LPHAs, regional staff, and industry.
- Develop and conduct training opportunities for LPHAs, regional staff, and industry.
- Serve as a liaison with LPHAs, county and city officials, civic groups, community leaders, other state and federal agencies, and industry representatives.
- Provide technical assistance and guidance to LPHA environmental staff of the proper inspection techniques of regulated establishments.
- Provide consultation and technical assistance to LPHA programs to ensure compliance with state standards, when applicable.
- Conduct assessments and reviews of LPHA programs to ensure compliance with state standards on a routine and reoccurring basis.
- Coordinate and participate in statewide, regional, or jurisdiction specific program surveys and/or assessments, provide copies of the final report to LPHA Administrator, and provide technical assistance to LPHA as follow-up to the findings of the survey/assessment.
- Assess and provide recovery needs in response to an emergency, perform sanitation and safety inspections, and provide technical assistance/education to those facilities/communities impacted.

Food Safety Program (Retail and Food Processing)

- Review special process plans, including HACCP plans on an as-needed basis.

- Provide process, direction, and decision for the issuance of variances to the Food Code for those LPHAs operating without a local food ordinance. *May provide technical assistance, as requested, for the issuance of variances in jurisdictions with local food protection ordinances.*
- Review progress toward the Voluntary National Retail Food Regulatory Program Standards, on a routine and recurring basis.
- Take appropriate enforcement actions, as outlined in this manual, against non-compliant food facilities in jurisdictions without local food protection ordinances, review inspection/investigative records, and prepare work orders and closing orders when necessary. *May provide technical assistance, as requested, on enforcement issues in jurisdictions with local food protection ordinances.*
- Maintain statewide inventory of food processing plants and frozen dessert establishments.
- Conduct current Good Manufacturing Practices (GMP) inspections on food processing plants under contractual agreement with the Food and Drug Administration (FDA).
- Conduct retail food safety inspections with LPHA staff to standardize inspector's skills and code interpretation.
- Embargo food, drugs, medical devices, and cosmetics when suspected or found to be adulterated and/or misbranded.
- Notify LPHA, Division Director's Office, Center for Local Public Health, and Bureau of Communicable Disease Control and Prevention of the occurrence of recall(s) and the desired actions to be taken.
- Contact product distributors to determine the amount and presence of recalled product within Missouri.
- Assist in developing press releases, respond to consumer inquiries regarding the adverse health effects of consuming recalled product, and serve on a recall team, if assembled by the Department of Health and Senior Services (DHSS).
- Provide certificates of free sale and supervise all activities which involve drugs. These certificates are signed by the BEHS Chief and used by the company to export its product to a foreign country.
- Issue annual frozen dessert licenses and conduct sanitation inspections of frozen dessert manufacturing plants.

Onsite Wastewater Treatment Program

- Promote improved management of onsite decentralized (individual and cluster) wastewater treatment systems.
- Review construction permit applications, permit and inspect new construction and repairs of onsite wastewater treatment systems (OWTSs) and cluster systems for compliance with state standards where a local ordinance or a contract for application review is not in place.
- Contract with LPHAs to review and permit new construction and repairs of OWTSs and cluster systems in compliance with state standards.
- Review variance requests related to OWTS and cluster system construction permit applications under DHSS jurisdiction.
- Provide technical assistance and guidance to LPHAs and other local regulatory agencies in the proper review and inspection of permit applications and new construction and repairs of OWTS and cluster systems.
- Provide technical assistance and guidance to LPHAs and other local regulatory agencies in the proper investigation of complaints and reports of malfunctioning OWTSs and cluster systems and improper actions of unregistered individuals and registered OWTS professionals.

- Review applications and qualifications for OWTS professionals to determine compliance with rules and issue registration and licenses. There are currently five categories of OWTS registration and licenses: basic OWTS installers, advanced OWTS installers, onsite soil evaluators, percolation testers, and private OWTS inspectors/evaluators (real estate related).
- Provide training courses for basic OWTS installers, advanced installers, inspectors/evaluators, and LPHA and other local regulatory agency staff.
- Administer examinations for onsite soil evaluators.
- Maintain and provide list of registered and licensed individuals to the public.
- Review OWTS professional training provider applications and curricula to determine compliance with certification requirements and approve OWTS training courses.
- Monitor OWTS training courses and providers to determine compliance with certification requirements.
- Receive and investigate complaints on unregistered or unlicensed individuals conducting OWTS installations, onsite soil evaluations, percolation tests and private inspections/evaluations, and on registered or licensed OWTS professionals improperly conducting OWTS activities. Take appropriate enforcement actions.
- Track received complaints and Violation Notices regarding OWTS malfunctions.
- Facilitate legal hearings when hearings are requested by the subject of a Violation Notice issued according to 701.037 under DHSS authority.
- Review new/innovative OWTS technology for compliance with standards and for effectiveness in protecting health and the environment.
- Collaborate with the Department of Natural Resources on wastewater issues including residential developments, questions of jurisdiction, and an inventory of “large capacity septic systems” as Class V underground injection wells for the EPA Underground Injection Control (UIC) Program.

Environmental Child Care Program

- Conduct initial inspections of proposed child care providers, except if otherwise provided through special agreements with select LPHAs.
- Review blue prints to determine compliance with sanitation guidelines.
- Provide technical assistance to child care providers and LPHA Public Health Environmental Specialist (PHES’) on environmental child care issues.
- Conduct Special Circumstance inspections of regulated child care facilities when there is a change of service, such as: a provider wants to change the capacity of the facility or age range within a room; when a complaint is received; and when additional re-inspections are necessary.
- Provide training to LPHA PHES’ and regulated child care providers.
- Conduct annual/renewal inspections in counties without a child care sanitation participation agreement.
- Ensure annual child care sanitation inspections are completed in their respective jurisdiction according to the participation agreement, which may include, assessments and reviews of inspection work on a routine and recurring basis.
- Receive and investigate sanitation complaints and disease investigations on regulated child care facilities.
- Provide lead hazard evaluations for regulated and proposed child care facilities.

Commercial Lodging

- Take appropriate enforcement actions against lodging establishments operating without a valid, state-issued license and maintain inspection/investigative records.
- Review applications and inspection reports to monitor program performance and to determine compliance with lodging rules and issue annual licenses.
- Conduct sanitation and safety inspections of lodging establishment in areas not covered by LPHA personnel.
- Conduct initial/pre-opening inspections of all new lodging establishments, except if otherwise provided through special agreements with select LPHAs.
- Maintain statewide inventory of lodging establishments.

Emergency and Foodborne Outbreak Response

- Develop statewide emergency response plans and guidelines.
- Provide 24/7/365 on-call duty officer to screen and direct all emergency calls.
- Provide training and technical assistance to LPHAs on disease outbreak investigations, disease investigation control activities, food sanitation, and analysis of data.
- Provide rapid response to public health emergencies and natural disasters, including bioterrorism events.
- Provide direction and control for multi-jurisdictional events, as needed.
- Provide direction and guidance with State Public Health Laboratory on product sampling; deploy sampling teams as needed.
- Provide resources for communication and coordination including the Rapid Response Team.

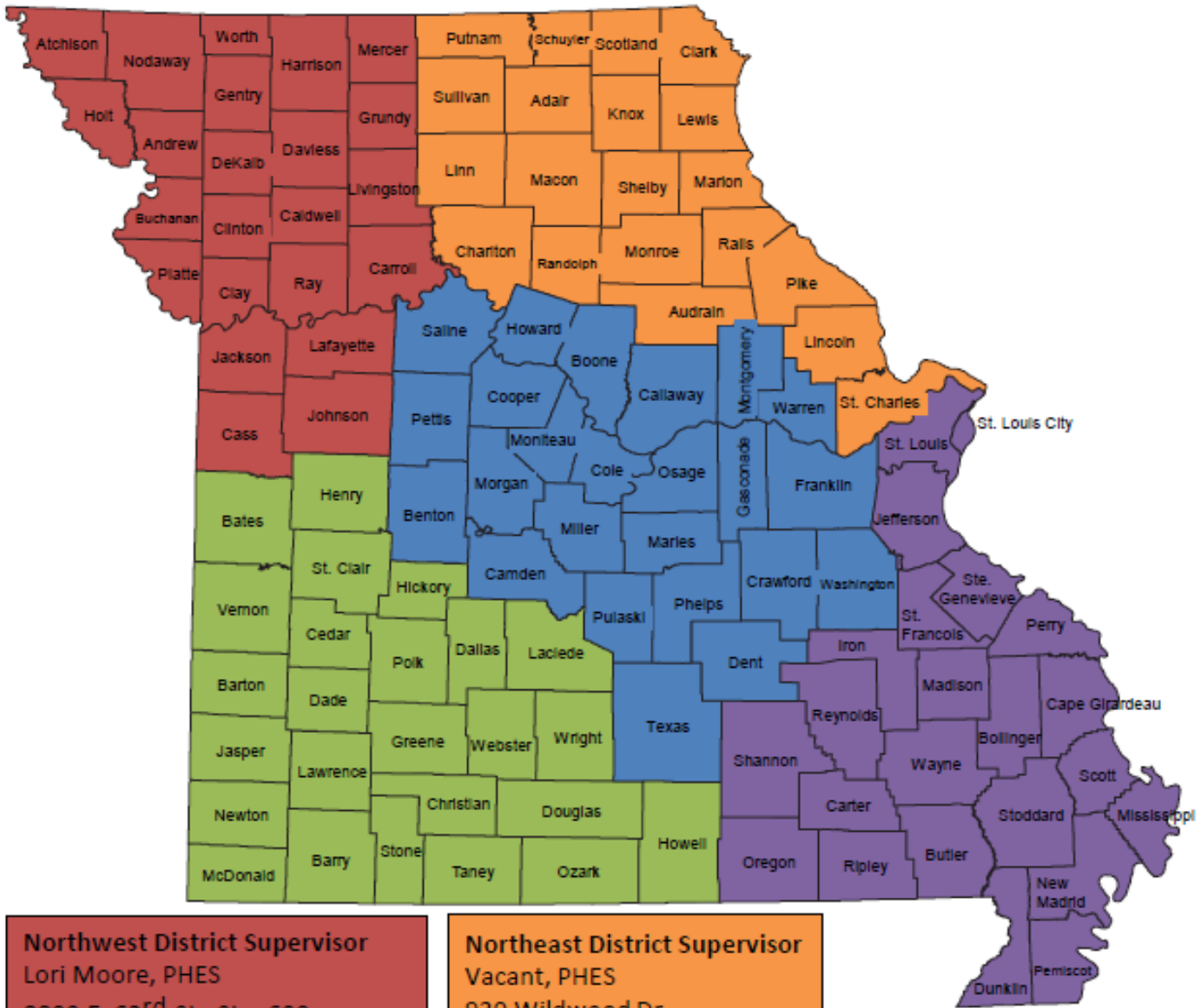
Emergency Response Center

Emergency Response Center (ERC)/Missouri Information Analysis Center (MIAC)
After Hour Emergencies (800) 392-0272

Bureau of Environmental Health Services Public Health Environmental Supervisor (PHES)

District Map

Aaron Winslow, Field Services Supervisor
149 Park Central Square Suite 116 Springfield, MO 65806
Phone: 417-895-6915



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Northwest District Supervisor
Lori Moore, PHES
8800 E. 63rd St., Ste. 600
Raytown, MO 64133

Northeast District Supervisor
Vacant, PHES
930 Wildwood Dr.
Jefferson City, MO 65109

Southwest District Supervisor
Vacant, PHES
149 Park Central Square Ste.
116 Springfield, MO 65806

Southeast District Supervisor
Ann Winkler, PHES
471 Siemers Dr., Ste. H
Cape Girardeau, MO 63701

Central District Supervisor
Rachelle Kuster, PHES
930 Wildwood Dr.
Jefferson City, MO 65102

Department of Health and Senior Services

Frequent Contacts

Bureau of Environmental Health Services (BEHS) protects the health of all Missourians and visitors to the state by ensuring healthy environments. Numerous unique environmental programs contribute to this goal—the Food Safety Program; the Environmental Child Care Program; the Lodging Program; Onsite Wastewater Treatment Program, and Emergency Response.

Main Telephone Line: (573) 751-6095
Main Fax Line: (573) 526-7377

Food Safety Program
Food Recalls
Frozen Dessert/Summer Feeding Program
Manufactured Food Program
Onsite Wastewater Treatment Program
Commercial Lodging Program
Environmental Childcare Program

Bureau of Environmental Epidemiology (BEE) is involved in the investigation and prevention of illnesses and medical conditions related to the environment. The bureau's efforts focus on illnesses and medical conditions associated with exposure to chemical, bacteriological and physical agents in our environment and in water we consume.

Main Telephone Line: (573) 751-6102 or (866) 628-9891

State Public Health Laboratory (SPHL), located in Jefferson City, provides laboratory testing for infectious diseases, genetic disorders and environmental concerns, both in support of public health programs and as a reference laboratory performing confirmatory or specialized procedures. The MSPHL provides scientific expertise and managerial leadership to meet the challenges in clinical and environmental laboratory disciplines and in the development of public health policy.

Main Telephone Line: (573) 751-3334 or (866) 628-9891

Bureau of Communicable Disease Control and Prevention (BCDCP) provides comprehensive prevention, intervention and surveillance programs related to over 90 reportable communicable or infectious diseases and conditions of public health significance in Missouri.

Main Telephone Line: (573) 751-6113 or (866) 628-9891

DHSS Emergency Response Center and the DPS State Emergency Management Agency coordinates and provides direction for statewide public health emergency response activities throughout the department and coordinates with other local/state/federal agencies on emergency response activities. During non-threatening times, the ERC staff maintains situational awareness on a national, state, and local level by monitoring Web-based systems and media and through communications with emergency response partner agencies.

Main Telephone Line (573) 751-6272
ERC (800) 392-0272
MIAC (866) 362-6422
SEMA (573) 526-9100

Office of Childhood (formerly the Section for Child Care Regulation (SCCR)) ensures children and families across the state have better access to more consistent, quality programs and services. As of August 28,

2021, DESE will house the new office, which will provide a comprehensive approach to early childhood care and education, including all programs related to child care, home visiting, early learning, and early intervention.

Main Telephone Line (573) 522-8762

Section for Long Term Care (SLTC) is responsible for conducting state inspections and federal surveys, and for investigating complaints regarding long-term care facilities.

Main Telephone Line (573) 526-8524

Department of Natural Resources (DNR) protects our air, land, water, and mineral resources; preserves our unique natural and historic places; and provides recreational and learning opportunities, while promoting environmentally sound operations of businesses, communities, agriculture, and industry for the benefit of all Missourians.

Main Number (573) 751-3443

[Missouri Geological Survey](#) (573) 368-2100

[Air Pollution Control Program](#) (573) 751-4817

[Environmental Services Program](#) (573) 526-3315

[Hazardous Waste Program](#) (573) 751-3176

[Minerals and Mining](#) (573) 368-2100

[Regional Offices](#) (573) 751-0763

[Solid Waste Management Program](#) (573) 751-5401

[Water Protection Program](#) (573) 751-1300

Missouri Department of Agriculture (MDA) sets agriculture policy and provides assistance to farmers throughout the state. While the department maintains its regulatory functions, its expanded duties include consumer protection, public health roles, environmental advocacy, agricultural marketing, public information and awareness, and promoting new technology and new uses for Missouri's agricultural goods.

Main Telephone Line (573) 751-4211

[Meat and Poultry Inspection Program](#) (573) 751-3377

[Egg Licensing and Inspection](#) (573) 751-5639

[Milk and Dairy](#) (573) 751-3830

[Plants and Pests](#) (573) 751-2462

Department of Public Safety (DPS) is committed to ensuring the safety of the citizens of Missouri.

Main Phone Number: (573) 751-4905

Missouri Department of Natural Resources

The Missouri Department of Natural Resources (DNR) has a wide range of environmental programs with which they have regulatory oversight. A [Regional Map](#) and [Site Directory](#) are published on their website as a resource that provides contact information for many of its programs.

The DNR [Air Pollution Control Program](#) answers questions regarding air quality standards, open burning, emissions, asbestos removal and other air pollution control issues.

The DNR [Hazardous Waste Program](#) administers regulations involving the treatment, storage, disposal and transportation of wastes that are classified as hazardous. The program answers questions regarding the management of hazardous waste, cleanup of contamination, removal and cleanup of petroleum storage tanks in the state, illegal disposal of hazardous waste and other hazardous waste issue.

The DNR [Solid Waste Management Program](#) publishes and administers laws and regulations concerning the management of solid wastes, including disposal and alternatives to disposal. The program answers questions regarding illegal dumping of trash, waste tire disposal, landfills, recycling and other solid waste issues.

The DNR [Water Protection Program](#) includes drinking water and wastewater-related issues.

The [Public Drinking Water Branch](#) administers regulations that help ensure public sources of drinking water are safe. The program answers questions regarding public drinking water supplies, classification of drinking water supplies, boil water orders, drinking water standards for community and non-community supplies, well head protection including, construction of private water wells (this includes domestic and multiple family class wells), irrigation wells, monitoring wells and heat pump wells and how to properly plug all types of wells including cisterns, drilled wells, etc. and other public drinking water issues.

The [Water Pollution Control Branch](#) administers regulations to help ensure water quality throughout the state. The program answers questions regarding animal waste disposal, land application of waste (septic tank haulers), public wastewater disposal system, state operating and construction permits for wastewater systems (NPDES), non-discharging lagoons serving commercial facilities like restaurants, convenience stores, and other commercial facilities, review the proposed method of wastewater treatment in residential housing developments, and other water quality issues.

Legal Authority

Statutes and rules form the framework that supports and grants the Department of Health and Senior Services (DHSS) and Local Public Health Agencies (LPHAs) authority to perform the daily activities necessary to protect and promote environmental public health.

- A **statute** is the formal law of the state; it is written and enacted by the state's legislative authority. Typically statutes command, prohibit or declare. Missouri statutes can be found at <https://www.revisor.mo.gov/main/Home.aspx>
- An administrative **rule** or **regulation** is a codified guideline; it is written and enacted by a given department. Rules are promulgated through a formalized process outlined in statute that includes a department and public comment period, as well as, legislative review. Typically rules describe how a statute will be administered and enforced. Missouri rules can be found at <http://www.sos.mo.gov/adrules/csr/csr.asp>
- A local **ordinance** is a formal legislative enactment that must be equal to or more stringent than state statutes and rules. Local ordinances shall not be in conflict with state statutes and/or rules. Local ordinances have the full force and effect as a law within the boundaries of the county, city, or town to which it applies. Ordinances can be found at the applicable county courthouse or city hall.
- A **policy** is a document written by the program that delineates the general goals and acceptable procedures of conducting a given activity. Typically policies do not have the legal authority of an ordinance, rule, or statute.

DHSS was created under 192.005 RSMo to supervise and manage all public health functions and programs; while 192.020 RSMo charged DHSS with safeguarding the health of the people in the state and all its subdivisions. In addition, numerous enabling laws charge DHSS with authority over food, lodging, and other environmental programs.

The authority and responsibility of ensuring the environmental public health protection of the citizens and guest of Missouri rests with the State. DHSS has elected to provide services and fulfill its obligations through a partnership with local subdivisions. County and city health officers under County Health Boards or Commissions are charged with enforcing the regulations of DHSS.

Provided there are no conflicts with DHSS laws and/or regulations, 192.300, RSMo, grants authority to County Boards of Health to draft and promulgate orders, ordinances, or regulations to enhance public health and prevent the entrance of infectious, contagious, communicable or dangerous diseases into its county. The Bureau of Environmental Health Services (BEHS) encourages ordinances to be agreed to and passed by both County Board of Trustees and County Commissioners. Local ordinances should be reviewed by BEHS Regional and programmatic staff to ensure there are no conflicts with state statutes and/or regulations.

Benefits of local ordinances, include but are not limited to, more localized control of programmatic activities and can include more stringent requirements such as the collection of fees and licensing even when DHSS has no authority to do so.

Forms

As a Public Health Environmental Specialist with multiple programs or areas of responsibility, there is a large quantity of paperwork to use and track. This subsection outlines the forms used by the environmental health programs and how to obtain them and other program related educational materials.

Most environmental health programs in Missouri include retail food safety inspections, environmental health emergency response functions, general environmental health complaint response, onsite wastewater treatment system construction permitting and complaint response, private drinking water consultation, and sanitation and safety inspections of lodging establishments and childcare facilities.

A Participation Agreement established between the Missouri Department of Health and Senior Services (DHSS) and Local Public Health Agencies (LPHAs) enables LPHA personnel to conduct inspections under state laws and rules. However, in some cases, a county or municipality has enacted its own ordinance that governs the inspection and regulation of these facilities. If this is the case, the LPHA must develop its own forms for documenting inspections and enforcement actions. A LPHA may not use DHSS forms to enforce its own ordinances. Forms created by a LPHA may be similar to or based upon those used by DHSS, but must clearly identify the LPHA as the administrative authority.

LPHAs that regulate food, child care, onsite wastewater, and lodging under state authority must use the forms provided by DHSS. All of these forms can be ordered from the [DHSS warehouse](#) or through the program manager. The warehouse website lists for each available form: the catalog number, name of the document, quantity on hand, associated program, and any ordering restrictions. The forms are listed alphabetically and numerically. To order forms from the warehouse, a [DH-48](#) must be submitted to the warehouse.

Retail Food Program. The following list provides the forms necessary to perform routine food safety inspections, as well as, those needed to respond to product complaints and emergency incidents where food product may be compromised.

E6.37	FOOD ESTABLISHMENT INSPECTION REPORT
E6.37A	FOOD ESTABLISHMENT INSPECTION REPORT COMMENT SHEET
E6.07	SANITATION OBSERVATION
E1.24	WORK ORDER
E6.37C	FOOD PRODUCT COMPLAINT RECORD
E1.17	EMERGENCY RESPONSE INFORMATION
E19.0	GOODS EMBARGOED
E6.11	FINAL DISPOSITION OF EMBARGOED GOODS

Commercial Lodging Program. The lodging program has three forms that are necessary to perform sanitation and safety inspections. Program approval is required to order these forms.

E9.02	LODGING ESTABLISHMENT INSPECTION REPORT
E9.02A	LODGING ESTABLISHMENT INSPECTION REPORT (COMMENT PAGE)
E6.07	SANITATION OBSERVATION

Environmental Childcare Program. The following list provides the forms necessary to perform child care sanitation and safety inspections.

BCC-34-1 SANITATION INSPECTION REPORT, FAMILY CHILD CARE HOME
BCC-34-2 SANITATION INSPECTION REPORT, FAMILY CHILD CARE HOME
BCC-35-1 SANITATION INSPECTION REPORT (PG.1)
BCC-35-2 SANITATION INSPECTION REPORT (PG.2)
BCC-35-3 SANITATION INSPECTION REPORT (PG.3)

Onsite Wastewater Treatment Program. The onsite wastewater treatment program has forms available on the program's website and on the DHSS intranet, as well as, directly from the program. Forms are available in either a PDF or Word format.

E3.01 ONSITE SYSTEM CONSTRUCTION PERMIT APPLICATION FEE FORM
E3.05 ONSITE WASTEWATER TREATMENT SYSTEM CONSTRUCTION PERMIT APPLICATION
E3.05B CONSTRUCTION PERMIT APPLICATION, INSTRUCTIONS AND CHECK OFF LIST
E3.05A ONSITE WASTEWATER TREATMENT SYSTEM CONSTRUCTION PERMIT/FINAL INSPECTION
E3.10 NOTICE OF VIOLATION
E3.04 NOTICE (OWTS CONSTRUCTION STOP ORDER)
E6.07 SANITATION OBSERVATION
E15.12 COMPLAINT FORM

Laboratory Sampling Forms. As part of some inspections it may be necessary to collect [laboratory samples](#) of either food or water.

Change Order Form, DH-50. In an effort to maintain current, up-to-date records, a DH-50 Change Order form should be completed to document such changes as new ownership, address, number of sleeping rooms, a new business or a closed business.

Educational Materials and Literature. In addition to the forms needed to conduct the day-to-day activities of a comprehensive environmental health program, DHSS has numerous [educational materials](#) that can be beneficial, including pamphlets, stickers, posters, and handouts. Educational materials for the environmental child care program are available through the Regional Offices.

Program Record Filing and Retention

Keeping accurate and up-to-date records is vital to the success of any organization, as it captures and maintains evidence of and information about the organization's and/or an individual's activities. A record can be tangible or digital including, but not limited to, an inspection report, notice of violation, e-mail, or photograph.

Document retrieval is an important function of record management. Records should be filed and maintained in a manner that facilitates easy retrieval, indexing for uniformity in program administration, and security for confidential material. It is essential to file records by name, address, or other permanent facility trait. Onsite wastewater treatment system projects are often filed by the name of the owner and location, such as mailing address, city, or zip code. Confusion may result if projects are filed by the name of the installer or engineer.

LPHAs are encouraged to adopt record retention policies similar to the Bureau of Environmental Health Services (BEHS). Nearly all programmatic records maintained by BEHS are retained for a maximum of three (3) years, with the following exceptions:

- Contractual agreements 10 years
- Onsite wastewater loan evaluation reports 10 years
- Onsite wastewater permit applications/plans, engineering reports, variance requests, percolation test or soil evaluation reports, and inspection reports 100 years

In addition to active files, managing 'closed' files on regulated facilities is also essential. These records can be used for preliminary information for prospective owners or to refresh your memory of the facility's operations and deficiencies if or when the facility reopens.

Requests to review facility files and records are common. For Department of Health and Senior Services staff, the [Code of Conduct - Confidential Information](#) policy must be followed. The [Sunshine Law – Public Records Disclosure](#), which all governmental bodies must adhere to, is addressed on the DHSS Administrative Policies webpage.

Documentation Guidelines

Inspection records, including but not limited to, your personal notes and findings are public health records. They are legal documents that should reflect accurate and timely documentation of the environmental public health activities and/or services delivered. The following should be adhered to:

- Contents of the public health record must meet all regulatory, accrediting and professional organization laws, rules, and/or guidelines. Common requirements specific to environment public health activities include, but are not limited to, filling out required forms and documentation of consultation and education provided to an individual, agency or associated parties. Such documentation should include evaluation of or responses to services and activities.
- Use permanent ink for all recordings. Date, sign, and include title on all documented items; include time if it is of significant importance. Full signature and title must be on file at your agency.
- Entries must be legible. If space is left on a line or in a space on a form, draw a line through the space. For large areas not used on a form or page, use diagonal lines to mark through the area.
- If errors are made, draw a line through the error. Write error, initial, and date the error. Do not attempt to erase, obliterate or “white out” an error.
- All documentation should be factual, complete, accurate, contain observations made by the professional, client quotes when applicable, interventions carried out, and response to the interventions. Do not give opinions, make assumptions, or enter vague, meaningless statements (e.g. the client cares about doing the work correctly.)
- Documentation should be thorough enough so that environmental personnel/co-worker could read, understand and continue to carry-out the necessary actions, such as a follow-up inspection, if you were not available.
- Use correct grammar, spelling, and punctuation.
- Use only abbreviations approved by your agency.
- Never document another person’s work or sign another co-worker’s name in any portion of the record. Record only your own observations and actions. If you receive information from another Public Health Environmental Specialist, state the source of the information.
- Documentation of service should occur as soon after the service has been given as possible. Note problems as they occur, resolutions used, and any changes in the situation.
- When leaving messages, document date, time, name of person taking the message and the telephone number called. If faxing information or a message, retain a copy of fax in the record.
- Include in the record the status of the situation before and after service has been given.
- Document any discussion of controversial situations and the direction given by a superior or expert you have consulted. Include the date and time of the discussion and your actions as a result of the discussion, as well as, the consequences of the directions given.
- Record an omission as a new item in the record. Do not backdate or add to previous written documentation.
- Record date, time, and content of all telephone client/agency related communications.
- **Remember, if you don’t document it, it did not occur.**

Public Health Environmental Specialist

The Bureau of Environmental Health Services employs several Public Health Environmental Specialists (PHESs) to perform technical and programmatic work. Although local public health agency employees are not regulated by Missouri personnel law; 205.110 RSMo, mandates that “the qualifications of all persons employed in the operation of said health center shall be at least equal to the minimum standard of qualifications as set forward by the department of health or its successors for positions of like importance and responsibilities.” A complete listing of [job classifications](#) and descriptions can be found on the Office of Administration’s webpage.

What is a Public Health Environmental Specialist?

A Public Health Environmental Specialist (PHES) is a multi-leveled position that consists of professional and technical work in promoting community environmental public health and implementing environmentally influenced public health laws and regulations.

What does an PHES do?

1. Performs a variety of inspections relating to environmental health programs, including the following:
 - A. Individual water and onsite wastewater treatment systems;
 - B. Food and facility sanitation;
 - C. Food and waterborne disease prevention and outbreak investigation;
 - D. Child care facility sanitation and safety;
 - E. Commercial lodging sanitation and safety;
 - F. Recreational water sanitation and safety;
 - G. Industrial hygiene;
 - H. Vector control;
 - I. Zoonotic disease control;
 - J. Environmental public health factors related to disaster response and/or transportation accidents;
 - K. Environmental epidemiology programs concerning toxic and hazardous chemicals and their risk assessment; and
 - L. Building related illnesses.
2. Conducts field inspections and evaluations concerning the application of public health practices designed to prevent disease and promote environmental health, life safety, and consumer protection;
3. Conducts field investigations and epidemiological studies of food or waterborne disease outbreaks or environmental health hazards;
4. Inspects construction and maintenance of individual water well construction and onsite wastewater treatment systems;
5. Collects food samples, water, or wastewater for bacteriological or chemical analysis; collects other samples (e.g., asbestos) for analysis as needed;
6. Inspects food service establishments, retail food stores, food manufacturers, and distributors to determine compliance with environmental public health laws, rules, and regulations pertaining to their operation;
7. Investigates complaints involving possible environmental public health law violations; prepares reports with recommendations for corrective measures and conducts follow-up investigations;
8. Inspects public and private facilities, such as child care and lodging facilities, with respect to food protection; water supply; wastewater treatment; waste disposal; vector control; life safety; hazards in

electrical, venting or plumbing installations; swimming pool operation and other related environmental hazards; and

9. Provides technical advice to officials, property owners, and operators of plants and business establishments with regard to environmental public health regulations, requirements, policies, and programs.

What Keys Skills are needed to be an PHES?

1. Knowledge of the principles, practices, and terminology of environmental health;
2. Knowledge of bacteriology, chemistry, physics, and other sciences as applied to environmental health;
3. Knowledge of relationships of environmental conditions to the general level of public and occupational health;
4. Knowledge of environmental public health laws, regulations, requirements, and policies;
5. Ability to establish and maintain effective working relationships with the public, staff, and governmental agencies; and
6. Ability to communicate effectively and possess public speaking skills.

What Experience and Education is needed as an Entry Level PHES I?

A Bachelor's degree from an accredited college or university with a minimum of thirty (30) earned credit hours in one or a combination of the following: Biology, Chemistry, Bacteriology, Animal Science, Food Science, Soil Science, Sanitary Science, Environmental Health, or in closely related physical or natural sciences.

Professional or technical environmental public health work experience involving one or more of the areas of special qualifying experience may substitute on a year-for-year basis for a maximum of two years for deficiencies in the required college education. Environmental public health work experience involving one or more of the area of special qualifying experience in the United States military may substitute on a year-for-year basis for deficiencies in the required college education.

Special Qualifying Experience – food sanitation and protection; milk sanitation; meat and poultry inspection; sewage disposal; solid waste disposal; lodging sanitation; institutional or child care facility sanitation; community environmental sanitation; water supply; general vector control; occupations health; consumer product safety; fire safety; hazardous substance risk assessment; recreational waters; and building related illnesses.

Fundamentals of an Inspection

Most Public Health Environmental Specialists (PHESs) have several areas of technical responsibilities including food safety, private water, onsite wastewater, environmental child care, and commercial lodging. Many times these programs overlap. Fortunately, there are many general inspection skills that can be applied whether conducting a motel, convenience store or child care facility inspection. All inspections and communications should be conducted in an atmosphere of respect.

To successfully inspect a facility, a PHES must be knowledgeable of the statutes and rules regarding the programs enforced. A PHES does not need to memorize these statutes and rules, but it is essential to have a good, strong working knowledge of what constitutes a violation of public health law and to ensure inspections conducted maintain a minimum level of consistency statewide.

A PHES should have a clear understanding from where their authority to conduct environmental activities comes; local ordinances, the participation agreement, or other programmatic contracts. Local ordinances may be more stringent than state law, but may not be in conflict with or be more lenient than state law; except for commercial lodging. In cases where local ordinances do not address a topic found in the state rule, the PHES must still be familiar enough with those state laws and rules to enforce public health measures appropriately.

When there is no local ordinance to enforce, the Local Public Health Agency (LPHA) is granted the authority to conduct inspections of regulated facilities under state laws and rules through a participation agreement between the Department of Health and Senior Services (DHSS) and LPHA.

Inspection Policy

Each LPHA needs a quality comprehensive environmental health program to serve its citizens. This system, which provides guidance for environmental health activities, should incorporate routine inspections of regulated facilities and provide for appropriate follow-up activities. As part of this system, an inventory list of regulated facilities, including food establishments; lodging establishments; and child care facilities should be maintained.

Inspection Fundamentals

The files and records for regulated facilities are a wealth of information and the first place you should go for information about an upcoming inspection. Before any field visit or inspection, review the files.

The PHES will need to know general facility information such as the name of the owner or manager, the facility street address, hours of operation, the menu, or number of children the facility is licensed to care for, etc. Knowing the hours of operation of an establishment is critical, as inspections should be conducted when the facility is open for business, for example: while preparing food, caring for children, or in operation during the tourist season.

Also, during your file review, note the date and time of the last inspection and the establishment's inspection history. Inspections should be conducted according to the frequency required by policy or participation agreement. A copy of the most recent inspection report is essential to determine which violations have been corrected and which are ongoing issues.

Part of field preparation is gathering the appropriate paperwork and equipment. The equipment necessary for inspections vary depending on the type of inspection, but in general will include a clipboard, flashlight, pens, programmatic forms, and copy of applicable rules for reference. A camera can be a useful tool for all types of inspections. Lab forms and water sample bottles are necessary if the facility is served by a non-community water supply.

As more agencies use computers for inspections, the necessary equipment list may evolve to include computer and printer, extra printer cartridges, blank paper, as well as, power supply cords or car chargers.

Food Inspection Equipment

Specific equipment needed for a food inspection include alcohol prep pads or sanitizing wipes, dial-stem thermometers, a thermocouple, dish machine testing equipment (heat-strips, dish machine thermometer, or Thermo labels), test strips for sanitizers, and hat or hair restraint. If conducting a Hazard Analysis Critical Control Point (HACCP) inspection, a data-logger is essential.

Lodging Inspection Equipment

Specific equipment needed for a lodging inspection include a circuit tester to check wiring, a dowel rod or some other rod to test smoke detectors, a tape measure, and water chemistry test kit for swimming pools and spas, if applicable.

Onsite Wastewater Treatment System (OWTS) Inspection Equipment

Specific equipment needed for an OWTS inspection include boots, raingear, measuring wheel or tape measure, and/or a laser range finder for measuring long distances and a laser level, rod and tripod.

Environmental Child Care Inspection Equipment

Specific equipment needed for an environmental child care inspection include alcohol prep pads or sanitizing wipes, dial-stem thermometers, dish machine testing equipment (heat-strips, dish machine thermometer, or Thermo labels), test strips for sanitizers, LeadCheck® Swabs and a water chemistry test kit for swimming pools, if applicable.

Emergency Response Equipment

Specific equipment needed for an emergency response kit include many of the items already mentioned as well as personal items, like clothing and toiletries. Since emergency response may happen under disaster conditions, consider keeping protective gear, like steel-toed shoes, a helmet, and reflective vests with the kit as well. For additional information, DHSS supports a [Ready-in-3](#) program to assist Missourians in preparing for an emergency.

Inspections and Investigations Conducted by PHESS

Routine Inspections

A routine inspection is a comprehensive, unannounced inspection of the facility conducted according to a pre-determined schedule. Child care and lodging facilities receive annual inspections. Routine food service inspections are made at a frequency determined by the risk that the facility poses to the public. This

determination is based on the facility type, population served, foods prepared, and past history of the establishment.

Unless imminent health hazards are observed, follow-up or re-inspections are scheduled when an inspector notes violations that cannot be corrected while on-site and/or do not comply with a specific regulation. Noted imminent health hazards require immediate corrective actions; the PHES may need to follow-up with appropriate enforcement actions should a facility operator fail to immediately resolve an imminent health hazard. Generally, any violation noted during a lodging or child care inspection requires a follow-up inspection. Follow-up inspections, for food establishments, are determined based on the number of priority items and/or total number of violations noted during a routine inspection.

Follow-up Inspections

Follow-up inspections only check the violations noted from the routine inspection. The date for the follow-up inspection can be determined and discussed with the establishment manager at the time of the routine inspection. Once a date has been established, it is essential to return for the follow-up inspection on that date to convey the significance of correcting the noted violations.

Complaint Investigations/Inspections

Inspections can also be made in response to a complaint. Complaints can come from customers, the public, employees of the inspected facility, other public health professionals, and/or health care providers. BEHS strongly discourages local agencies from actively seeking out code violations and generating “complaints” by trolling traditional or social media. Such “complaints” do not have an aggrieved person behind them and run a greater risk of being perceived as unfair, or that particular entities, groups, or segments of the community are being targeted by the local agency. Enforcement actions in these situations run a greater risk of pushback and political involvement. If public knowledge is high of some particular violation, front page of newspaper or widespread social media action, and the violation presents imminent or significant public health risk then action may have to be taken from an ethical position to protect public health and safety. Local agencies should have a comprehensive complaint management tracking system to encourage the public to report complaints through multiple means, including on-line, and log and track complaint status to provide feedback to the public. Social media monitoring could be utilized to observe community trends and guide updates to the general public about allowable activities and complaint reporting guidelines. Some complaints may need to be referred to another agency which has regulatory authority with no further action required by the LPHA.

The type of response is dependent upon the complaint. At a minimum, receipt of a complaint involving a regulated facility should result in a visit to that facility to establish the validity of the complaint. Before investigating a complaint, it is important to do a file review to see when the last inspection was made and what violations were recorded. If the complaint alleges conditions noted in the previous inspection, and they could pose an imminent health hazard, a full inspection may be warranted. Of course, inspectors are not required to respond to complaints about non-regulatory issues at a facility, such as poor customer service.

Complaint inspections should be initiated within the timeframes suggested below:

- Imminent health hazard complaints should be investigated upon receipt, at least within 24 hours;
- Potential health hazard complaints should be investigated with five (5) working days of receipt; and
- Nuisance complaints should be investigated with fifteen (15) working days of receipt.

All complaints received involving regulated facilities or products should be documented, including the nature of the complaint, investigation results, action taken and final outcome. A database to record or log received complaints is a convenient method to file this information.

Outbreak/Disease Specific Investigations

Foodborne disease outbreaks are investigated to prevent both ongoing transmission of disease and similar outbreaks from occurring in the future. Environmental investigations are conducted in parallel with epidemiological and laboratory investigations to find out how and why an outbreak occurred and, most importantly, to institute corrective actions to avoid similar occurrences in the future. An environmental investigation performed in the context of a foodborne disease outbreak differs significantly from a routine regulatory inspection carried out to identify regulatory violations. Outbreak related environmental investigation should be guided by data as it becomes available from other components of a multi-disciplinary investigation.

The specific objectives of an environmental investigation during a foodborne disease outbreak include:

- Identifying the source, mode and extent of the food contamination;
- Assessing the likelihood that pathogens survived processes designed to kill them or to reduce their numbers;
- Assessing the potential for growth of pathogens during food processing, handling, or storage; and
- Identifying and implementing corrective interventions.

Conducting an Inspection

Being properly prepared is the key to a successful inspection; review the establishment's past history and take the appropriate forms and equipment. Within reason, respect the needs of the establishment when choosing the time and date of the inspection. Consideration of the needs of establishment's customers and staff, such as, inspecting a buffet or chef's station before or after a lunch rush, still allows the inspector to observe the practices of the establishment while allowing employees to assist customers.

When beginning an inspection, contact the facility manager upon arrival, introduce yourself, and explain the reason for your visit. Invite the owner or manager to accompany you during the inspection. Generally, someone from management will escort you through the facility during a lodging inspection.

Conducting the inspection with the manager is a good way to determine if the manager is aware of environmental health laws and regulations. In addition, having the manager with you also allows corrections of violations/problems to be made during the inspection.

During the inspection, be observant, ask open ended questions, listen, don't rush, and try not to obstruct the flow of work within the regulated facility. Clearly describe the violations observed on the inspection report. Follow a logical path or route through the facility. For instance, by following the flow of product through a food facility from receiving through storage, preparation and service, the inspector can think about environmental health concerns every step of the way. Devising a standardized system for each type of establishment will help to perform thorough and complete inspections. During the exit interview, openly communicate with the manager or owner the inspection findings, discuss the noted violation(s) and provide reasonable corrective measures.

Inspection Reports

While conducting the inspection, it is preferable to write violations and/or observations directly onto the final inspection report; however, you may take notes which can later be transferred to the report. Be mindful that any notes taken during an inspection become a legal document and should be professional in content and tone as with any other report.

When writing a violation, an appropriate corrective measure should also be given. Noting “Gravy, green beans, and roast pork on the steam table at 120 °F degrees” as a violation is correct. However, this describes the violation but provides little information about how to correct the problem. With the addition of “These items need to be reheated to 165 °F degrees. Foods held hot for service shall be held at 135 °F degrees or above” the manager or owner has a clear understanding of the violation and expectations for hot holding. This same technique can be used for child care inspections or lodging inspections. For example, the violation: “Room 130 sleeping room door doesn’t close” would provide more information if written, “Room 130 sleeping room door doesn’t self-close; all sleeping room doors leading to interior corridors must be fitted with self-closing device.” If possible, imminent health hazards and other less severe violations should be corrected during the inspection. These violations still need to be noted on the inspection, with a “corrected-on-site” beside it.

Opinions are always inappropriate on a legal document. Observations about the facility that do not fall under the jurisdiction of the inspector should not be recorded on the inspection report. For instance, lack of smoke detectors is not a violation of the food code and should not be written on the inspection report for a restaurant.

Process for the Issuance of Technical Bulletins/Informational Releases

The Environmental Health Operational Guidelines (EHOG) manual, is a resource developed to address both policies and best practices that should be followed by field staff when performing activities under the jurisdiction of the Department of Health and Senior Services (DHSS).

Information contained within this manual is arranged by program in individual chapters. The majority of text will not be updated within the Participation Agreement for State Investment in Local Public Health Services contract period. However, to provide up-to-date information each chapter contains a subsection that will be updated in the form of technical bulletins and informational releases.

Technical bulletins differ from informational releases. Although neither imposes additional expectations, information within a technical bulletin is programmatic in nature and once incorporated into the EHOG becomes policy; while an informational release is used simply to disseminate newly acquired information. Examples of information that may be incorporated, includes the confidentiality agreement for specialized process materials (technical bulletin) and an onsite wastewater treatment system product approval (informational release).

When a technical bulletin or informational release is drafted, Local Public Health Agencies (LPHAs) will be notified via the Bureau ListServe. The technical bulletin or informational release will then be posted on the DHSS internet site alongside the EHOG. Once posted, LPHAs should begin utilizing the information from the technical bulletin and/or informational release, as needed, in their daily environmental health activities.

As the EHOG is updated, previously issued technical bulletins will be incorporated into the EHOGs main text. Therefore, technical bulletin issued prior to the current version of this EHOG should no longer be used as a reference.

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Introduction to Food Protection Program

Throughout Missouri, the Department of Health and Senior Services (DHSS) and Local Public Health Agencies (LPHAs) regulate food establishments and food processing plants to assure these facilities are preparing, handling, serving, storing, and transporting food that is safe for consumption. In addition to inspections, DHSS and LPHAs provide technical assistance and training on food safety issues to the foodservice industry. Personnel from these agencies also provide information to consumers on safe food handling practices, including personal hygiene, food preparation, and food storage. It is through education and regulation that DHSS and LPHAs decrease the incidence of foodborne illness.

Governmental Agencies

A wide array of governmental entities in the state conduct food safety activities, as outlined below:

Federal:

FDA –United States Food and Drug Administration

Regulates:

- Imported food;
- All food in interstate commerce (moving between states); and
- Shell egg production facilities.

Provides:

- Staff to inspect food processing plants within Missouri;
- Technical assistance and support to state food safety programs;
- Surveys and evaluations of state food safety programs;
- Funding in support of state food safety programs; and
- Oversight of the Conference for Food Protection. During this conference changes to the FDA model food code and development of guidance documents for food safety programs are recommended.

USDA- United States Department of Agriculture

Regulates:

- The sale of meat and poultry products in interstate commerce;
- Meat production facilities; and
- Egg and egg product processing facilities.

CDC- Centers for Disease Control and Prevention

Provides:

- Coordination and assistance with multistate foodborne disease investigations;
- Analyzes of foodborne disease data; and
- Recommendations to prevent foodborne disease based on data analysis.

State:

DHSS - Department of Health and Senior Services

BEHS - Bureau of Environmental Health Services

- Regulates food produced and sold in Missouri for human consumption;
- Assists FDA, USDA and other State agencies with enforcement of interstate food related regulations;

- In conjunction with LPHAs, conducts enforcement activities in jurisdictions without local food ordinances;
- Provides technical assistance and support to LPHAs;
- Assists LPHAs with food safety activities after a major disaster or event;
- Develops food safety policies and standards, including the Missouri Food Code and EHOG;
- Has staff whom routinely inspect food processing plants;
- Provides food safety training to LPHAs, industry, and the public;
- Conducts surveys of LPHAs food safety programs;
- Provides funding in support of LPHA environmental health programs;
- Provides and collects information related to recall activities;
- Coordinates environmental aspects of foodborne illness investigations; and
- Coordinates Rapid Response Team activities.

BCDCP-Bureau of Communicable Disease Control and Prevention

- Assists BEHS/LPHAs with foodborne disease investigations;
- Compiles data about foodborne disease occurrence; and
- Coordinates foodborne illness investigation activities with CDC.

SPHL-State Public Health Laboratory

- Conducts analysis of food samples during foodborne illness outbreaks and for NARMS and Manufactured Food Program sampling;
- Provides technical assistance regarding food sampling; and
- Assists with laboratory activities when Rapid Response Team is activated.

MDA-Missouri Department of Agriculture

- Participates in the activation of the Rapid Response Team when agricultural programs are impacted.

Meat Inspection Program

- Conducts inspections and licenses firms processing meat distributed within Missouri; and
- Conducts inspection and licenses Grade A and manufacturing grade dairy farms and milk plants.

Egg Licensure Program

- Licenses egg producers who sell eggs (exception: farm sales).

Local:

LPHAs- Local Public Health Agencies (cities and counties)

PHES- Public Health Environmental Specialist

- Works with Administration and BEHS staff to provide a comprehensive food safety program in their jurisdiction;
- Maintains an inventory and develops a work plan for food establishments that includes inspection frequency and criteria for re-inspections. This plan must meet EHOG minimums;
- Conducts inspections of food establishments according to plan;
- Conducts inspections of temporary food establishments according to agency policies;
- Conducts appropriate follow-up of complaints against food establishments;
- Assures food safety after disasters and other significant events;
- Conducts environmental aspects of foodborne illness investigations, including but not limited to, food sampling and inspections;

- Performs enforcement activities according to local ordinance or EHOG;
- Collects food samples for analysis when appropriate;
- Conducts food safety training for industry and the public; and
- Assists BEHS with Rapid Response Team activities when appropriate.

Communicable Disease Staff

- Coordinates foodborne illness investigation activities with BEHS and BCDCP;
- Monitors illness trends related to reportable foodborne pathogens; and
- Assists BEHS and LPHA staff with Rapid Response Team activities when appropriate.

Authority

DHSS is assigned the responsibility for assuring food safety in Chapters 192 and 196, RSMo. The minimum sanitation standards for retail food facilities are specified in 19 CSR 20-1.040 Good Manufacturing Practices and 19 CSR 20-1.025 Missouri Food Code. DHSS works with LPHAs to assure these standards are met throughout the state and reserves the right to exercise regulatory discretion when enforcing its own statutes and regulations.

In Chapter 192, RSMo, counties are granted the authority to adopt local food ordinances that are equal to or more stringent than current state regulations. When using an ordinance, the local agency should develop and use their own inspection report forms and enforcement policies and procedures. BEHS staff will provide technical assistance and consultation to agencies with ordinances when requested.

Jurisdictions with food protection ordinances are expected to manage their programs to be in compliance with this EHOG. Food safety programs in jurisdictions without local ordinances must incorporate the standards outlined in this EHOG.

Retail Food Protection Guidelines

19 CSR 20-1.025, the [Missouri Food Code](#), is derived from the U.S. Food and Drug Administration's model food code and specifies the minimum sanitation standards in which retail food establishments must comply. State statute allows local jurisdictions to adopt their own food ordinance and inspect under its authority if it is equal to or more stringent than state requirements.

The definition for a food establishment is lengthy and begins; an operation that stores, prepares, packages, serves, vends, or otherwise provides food for human consumption directly to the consumer. Facilities inspected as food establishments include but are not limited to restaurants, catering operations, mobile food service, meat markets, retail grocery, senior citizens centers, school cafeterias, taverns, summer feeding (preparation and service sites), bakeries, delicatessens, farmer's markets, temporary food vendors, and food pantries.

The following facilities meet the definition of a food establishment and shall be inspected by the LPHA:

- Hospitals and long term care facilities that serve food to the general public.
- Colleges and other higher education facilities.
- Food establishments within a state facility. Inspections shall be performed using the Missouri Food Code. These facilities are not subject to local ordinances or required to obtain local licenses and/or permits.
- A facility that sells food directly to consumers is a retail food establishment. Any facility that sells food wholesale is a manufactured food facility. Many food facilities will meet both definitions. If the LPHA is aware of this type of facility they should notify their Regional PHES. When inspected by the LPHA, the establishment will be inspected as a retail establishment using the Missouri Food Code. DHSS staff will inspect the establishment as a food processing plant and require that it meet the standards in the Good Manufacturing Practices, 19 CSR 20-1.040.

Occasionally an individual or organization will meet the definition of both a retail food establishment and food processing plant. For further clarification, go to the [Manufactured Food Program](#) section of this manual.

The definition of Food Establishment also includes what is not a food establishment; a food establishment does not include food-processing plants, private homes where food is prepared, served, delivered or catered for individual family consumption, an establishment that only offers prepackaged foods that are not potentially hazardous, a produce stand that only offers whole, uncut fresh fruit and vegetables, or a bed and breakfast with four rooms or less and breakfast is the only meal served.

In 1-201.10 (B) Food Establishment (3)(h), the sale of non-potentially hazardous foods is allowed without inspection provided the vendor meets the following criteria:

- The foods are non-potentially hazardous. These foods can be breads; cookies; fruit pies; jams; jellies; preserves; fruit butters; honey; sorghum; cracked nuts; packaged spices and spice mixes, dry cookie, cake, bread, and soup mixes. There can be no sale of low acid canned or acidified foods.

- The food is sold at a stand. This means it may be offered for sale at a fair, festival, farmer’s market, roadside stand, fund raising event table etc. Local ordinances may not allow this exemption. The sale of foods from internet sites or business storefronts does not meet the intent of this exemption.
- The seller is the individual producing the food or an immediate family member residing in the producer’s household with extensive knowledge about the food.
- The seller only sells, samples, or serves the food directly to the end consumer.
- The foods must be labeled with the name and address of the manufacturer, common name of the food, all the ingredients and a statement that the foods were made in a kitchen that is not subject to inspection by the Department of Health and Senior Services. An additional label is recommended for honey: “Honey is not recommended for infants less than twelve (12) months of age.”
- At the point of sale, the consumer is informed by a clearly visible placard that the food is prepared in a kitchen that is not subject to inspection by the Department of Health and Senior Services if the foods are sold, sampled or served in unpackaged, individual portions.

In addition to the Food Code definition, several statute changes have further defined what is not a food establishment:

- 196.291, RSMo, states religious, charitable, and non-profit organizations are exempt from all sanitation food inspections delineated in 196.190 to 196.271, RSMo. These entities are exempt provided the food is sold at their religious event, charitable function or activity. Local ordinances may be more stringent than state law and therefore may not permit the sale of these foods from these entities.
- 196.056, RSMo, states nonprofit organizations are allowed to prepare food in a private home or other area for distribution to the end consumer at a charitable fundraising event. This allowance does not apply to nonprofit organizations and their events in Boone, Jackson, Jefferson, St. Charles, and St. Louis counties; and St. Louis City and Kansas City. This statute does not apply to food establishments regulated by DHSS providing food for the event.
- 196.298, RSMo, states baked goods, canned jams or jellies, or dried herbs/mix are included as part of a cottage industry. This statute allows non-potentially hazardous foods produced in these home based cottage food operations to be sold directly from the home to the end consumer; internet sales and third party sales are prohibited. The statute states local health departments shall not regulate the production of food at the cottage food operation.

Occasionally LPHAs are requested to conduct inspections of assisted living group homes and similar facilities. These facilities do not meet the definition of a food establishment and should not receive an official inspection. If workload allows, a site consultation or visit may be performed and food safety recommendations based on best practices can be provided on a Sanitation Observation form.

The Work Plan

Local Public Health Agencies (LPHAs) must have a work plan to guide their food program. Work plans must include a protocol for determining inspection frequencies and policies/procedures for follow-up inspections, complaints, foodborne illness outbreaks, and other emergencies. Each LPHA must maintain an accurate and up-to-date inventory of all food establishments, including temporary events, within their jurisdiction. At a minimum, the name of each establishment, its location, current risk rating and most recent inspection date

should be kept. This inventory should be made available to the Department of Health and Senior Services (DHSS) upon request for monitoring or survey purposes.

The frequency of inspection should be determined by public health priority. This can be determined by using the Risk Based Inspection Assessment worksheet, found in the EHOAG Appendix, or by any other scientifically sound process that determines risk. Studies have shown the types of food served, food preparation processes used, volume of food, and the population served all have a bearing on the occurrence of foodborne illness risk factors in retail food establishments. The three risk categories used, focus inspection resources on food operations with the greatest food safety risk based on the type of food served, food preparation processes conducted, and history of non-compliance.

Food establishments in the high-risk category have more complex operations, serve more customers, and/or have a history of non-compliance. High-risk establishments should be inspected on a more frequent basis than medium-risk establishments. Medium-risk establishments serve fewer customers and prepare and serve foods that require less preparation and handling of foods than a high-risk establishment. In turn, medium risk establishments should be inspected on a more frequent basis than low-risk establishments. Low-risk establishments serve fewer customers and provide pre-packaged potentially hazardous foods or minimally handled non-potentially hazardous foods with no cooling or reheating steps during preparation.

The suggested minimum inspection frequency for high risk food establishments is once every four months; for medium risk establishments is once every six months; and for low risk establishments is once every twelve months. The Risk Based Inspection Assessment worksheet can help delineate these risk categories more clearly. Each jurisdiction is encouraged to develop risk categories tailored to their specific program needs and resources and to reassess the risk categories annually. A similar risk prioritization should be used to determine frequency of inspection of temporary events. For example, an event associated with large numbers of attendees and serving potentially hazardous foods would be of higher risk than a bake sale on a street corner.

Application Process for New Food Establishments

The prerequisites for a new food establishment to operate are specified in section 8-301.11 of the Missouri Food Code. In addition, this section requires that new food establishments or extensively remodeled establishments obtain written approval from the regulatory agency to open. A request for written approval can be made by submitting an [Application for Food Establishments](#) at least thirty (30) calendars before beginning operation as specified in section 8-302.11 of the Missouri Food Code. This requirement does not apply to temporary food establishments or when ownership changes provided the operation remains the same.

Additional information including contact information for the responsible parties, type of facility to be opened, a floor plan including equipment layout, a proposed menu, and a signed statement from the establishment on the accuracy of the information provided must be submitted with the application form.

Once the application has been submitted and reviewed, a PHES will schedule a pre-operational inspection as required by 8-302.20 of the food code. Section 8-303.10 of the food code states that an issuance of approval to open needs to include an approved application, evidence that standard operating procedures are in place, all accompanying materials listed on the application have been submitted and a pre-operational inspection stating that facility is in compliance with the Missouri Food Code has been completed.

Several standard operating procedures must be in place before and during operations. These include cleaning schedules, employee illness policies, procedures for verifying cooling and cooking temperatures and equipment monitoring procedures. A model for an [employee illness policy](#) can be found on FDA's website.

Conducting Inspections

Inspections performed under the Missouri Food Code shall be documented on the DHSS form E6.37 and E6.37A, Food Establishment Inspection Report. A successful inspection program utilizes risk factors and obtains immediate and long term corrective actions for recurring risk factors.

During an inspection an emphasis should be placed on priority items, which relate to risk factors known to lead directly to foodborne illness. These factors include food product temperature controls, cross contamination, sanitation, employee health and personal cleanliness, and management's knowledge of specific operations. Foodborne illness risk factors and interventions are presented on the Food Establishment Inspection Report form E6.37. The importance of documenting the occurrence of other priority item violations such as the presence of plumbing cross-connections or the lack of a hand washing sink, should not be minimized. In addition, core item violations such as missing lights shields, missing floor tiles, and dirty non-food contact surfaces must also be documented on the Food Establishment Inspection Report. Additional core item violations are listed in the good retail practices section of the inspection report.

The appropriate designation for each compliance item in the risk factors and interventions section shall be noted by marking the appropriate answer such as "in", "out", "not observed" or "not applicable". When an item in the good retail practices section does not apply, a single line should be drawn through the item.

Details of each observed priority or core violation and all temperatures taken during the inspection must be properly documented on form E6.37A, page two of the Food Establishment Inspection Report. Proper documentation includes noting the corresponding code reference number for the violation in the code reference block in either the priority items section or the core items section. The code reference block must list the chapter and specific subsection of the chapter that is in violation. Next, a description of the violation must be written in the appropriate section of page two. In order to assure that the proper corrective measure is implemented, the description of the violation must include what the code requires and how the violation can be corrected. The next step is to assign a correct-by-date in the 'correct by' column. If an item is corrected during the inspection it can be denoted by putting a check mark or 'x' in the 'COS' column.

A file review should always be completed prior to conducting an inspection. Uncorrected priority violations from the previous inspection should be marked with a check mark or an 'x' in the 'R' column. If an establishment has had repeat priority violations or repeat non-compliant risk factors on two routine inspections within a twelve (12) month timeframe, the inspector should work with the establishment to develop a [risk control plan](#) to address the ongoing violation(s).

Exit Interview/Corrective Action

An exit interview should be conducted with the person in charge before leaving. As part of this review, the inspector should show the person in charge the priority violations and have them begin on-site corrective actions. Immediate abatement of violation(s) is important.

Examples of on-site corrective actions include, but are not limited to:

- Destruction of foods that have experienced temperature abuse;
- Embargo or destruction of foods from unapproved sources;
- Accelerated cooling of foods when cooling time limits can still be met;
- Continued cooking or reheating of foods when proper cooking/reheating temperatures have not been met;
- Initiate use of gloves, tongs, or utensils to prevent hand contact with ready-to-eat foods; and/or
- Require hand washing when potential contamination is observed.

Immediate correction is preferred. However, when this is not possible the inspector and the person in charge should discuss correction timeframes and set a follow-up inspection date. The correct-by-date should be noted on the inspection form and the person in charge or their designee should initial the inspection form. An actual date is best as it provides the person in charge with a better understanding of when the corrective actions must be completed. Noting either “two weeks” or “next regular inspection” is not clear and may result in the violation(s) going uncorrected. Be sure to record all comments or requested corrective actions on the inspection report form.

After discussing the inspection report, ensure it is complete and obtain the signature of the person in charge. If the person in charge or their designee objects to signing the form, explain that signing the report only acknowledges receipt of the inspection report. If they refuse to sign, note “refused to sign” in the block for their signature. Give one copy of the report to the person in charge.

Follow-Up Inspections

Follow-up inspections must be conducted according to EHOG enforcement guidelines, LPHA written plan and/or local ordinance. The inspector will determine the timeframe in which food establishment management is given to make the necessary corrections to violations found during the inspection. The inspector should include in their decision making process the severity of the noted violations, inspection history of the establishment, and the needs of the person in charge.

When violations that pose a direct imminent health and/or safety hazard are noted, the inspector shall request corrective actions be made prior to the completion of the inspection. If immediate corrective actions cannot be achieved, a correct-by-date shall be set. This correct-by-date shall be within an accelerated timeframe, such as, immediately, 24 hours, but should not exceed the default time for correction of “within 72 hours” unless a specific written corrective action plan is agreed to by the inspector and establishment management.

When violations that pose an indirect health and/or safety hazard are noted, the inspector and the person in charge may set a mutually agreed upon correct-by-date. This correct-by-date should be appropriate for the violation, such as, two weeks, one month, etc.

The follow-up inspection should be conducted on the date specified on the inspection report. If this is not possible, the establishment must be informed and a new follow-up date set.

Follow-up inspections must be documented on a new Food Establishment Inspection Report form, E6.37. Using the violations previously noted, the inspector shall re-evaluate whether these items have been corrected. Corrected violations will be marked “in” compliance and items that were compliant on the initial inspection will be marked as “not observed”.

During the follow-up inspection, violations that remain uncorrected need to be evaluated for severity. The inspector should explain to the establishment management they are responsible for correcting any remaining violations by the next follow-up inspection. Follow-up inspections may continue for a period of time dependent upon both the nature of the violations and willingness of the establishment management to work towards compliance. When food establishments continue to operate out of compliance, the inspector should contact their Regional Public Health Environmental Supervisor. As needed and agreed to by the inspector and Regional PHES, enforcement activities will be initiated.

If, during the course of a follow-up inspection, substantial new violations are identified, the inspector should terminate the inspection. The inspection report shall be identified as “terminated” with a brief description as to why the inspection was terminated, such as “significant additional violations observed.” A new inspection report will be initiated and marked as an “Initial” inspection. All new violations will be noted on the new inspection report as well as any outstanding issues from the terminated inspection report. Assigning a new follow-up date will be done as previously discussed.

If a facility denies the inspector entry to conduct an inspection, complete the inspection report form and note “denied entry”.

A follow-up field visit may not be required for all outstanding violations. In some instances, the inspector may submit a “desk top approval” inspection report, including but not limited to, telephone call records, emails, receipts, and/or pictures to provide proof of the correction. On the inspection report form where the person in charge would sign print: “Desk Top Approval”.

Complaint Investigations

There is discussion and brief guidance on complaint investigations in Chapter 1.0 of this manual and additional guidance is included here.

When speaking with the complainant, it is important to gather enough information to adequately investigate the complaint. Information to collect, includes but is not limited to, the complainant’s name and contact information, where the problem occurred, when the problem occurred, and a description of the problem. Determine the risk level of the complaint, immediate response, within 24-hours, is needed for complaints such as a foodborne illness, sewage backing up, or lack of hot water. Examples of issues that can wait before the investigation begins include an employee not wearing hair restraints, dirty restrooms, or ants around the soda fountain.

Complaint investigations are generally unannounced. However, the inspector must inform the facility of the complaint and reason for the inspection. Information gathered, including the nature of the complaint, investigation results, action taken and outcome, need to be documented on a sanitation observation, complaint investigation, or inspection report form. If the complainant’s claims are found to be accurate, a corrective

action plan should be agreed upon during the investigation. If significant issues are noted during the investigation that are not immediately related to the complaint, but require corrective action, the inspector should conduct a complete inspection and note on the inspection form the complaint and findings. A follow-up visit must be conducted to verify the corrective actions have been completed.

When BEHS receives complaints, a complaint investigation report form will be completed and forwarded to the appropriate LPHA for further investigation. A log, record, or database linked to other establishment records is a convenient method of tracking complaint information. The documentation should be filed and easily retrievable.

A [Food Product Complaint Record](#), E6.37C, should be completed when a complaint is received about a food product. Collecting as much information listed on the form as possible will improve the inspector's ability to investigate the complaint effectively. Identifying information on the label such as UPC codes and the manufacturer/distributor address is important, as it allows the product to be tracked to its manufacturer. Regional BEHS staff will provide technical assistance as necessary to the LPHA on investigating food product related complaints. All complaints related to a foodborne illness should also be shared with communicable disease staff to allow for a complete investigation of the reported incident. BEHS should receive a copy of all food product complaint forms completed by LPHA's for tracking purposes.

When BEHS receives a complaint, a Food Product Complaint Record will be completed and forwarded to the appropriate agency for further investigation. The regulatory agency may be the Missouri Department of Agriculture (MDA) for Missouri meat products or the FDA or USDA for complaints on foods not produced in Missouri. BEHS will work in partnership with MDA on investigating complaints where there is dual jurisdiction.

Working with Other Partners

Missouri Department of Agriculture (MDA). Meat plants and slaughtering processes are under full regulatory control of the MDA. In these establishments, meat is under full inspection and will have a MDA stamp of inspection on the final product package, similar to a USDA mark of inspection.

Custom exempt meat plants are those plants that provide a service to owners that bring in livestock to be slaughtered and processed. These facilities receive an annual inspection by MDA. Custom product is for the owner's use and the product cannot be sold. Venison and wild game processed by these custom exempt operations, however, can be made available through the share the harvest program, used at fundraising events, or provided to food pantries.

Some custom exempt meat plants also have retail meat counters where inspected meat and meat products are sold. These meat markets meet the definition of a retail food establishment. When they meet this definition, the operation will be inspected by the LPHA and must be in compliance with the Missouri Food Code or applicable local ordinance. This would include operations where meat is being packaged or processed in a manner that requires a special process or reduced oxygen packaging process review.

Since eggs offered for sale are regulated by MDA, when locally raised eggs are found or used in a food establishment they must come from a source(s) with a current, valid egg license. MDA should be consulted on the licenses required for egg sales.

Enforcement Guidelines

Enforcement is the last step in bringing a food establishment into compliance. In the vast majority of instances, voluntary compliance is achieved by educating and working with the establishment's management. A Bureau of Environmental Health Services (BEHS) Public Health Environmental Specialist (PHES) should be involved in the process as early as possible when enforcement actions are anticipated or be engaged to assist in gaining voluntary compliance by further impressing upon the person in charge the importance of safe and sanitary operations. This process is to be used where the local PHES operates under the Missouri Food Code. Agencies operating under a local ordinance will have their own enforcement policy, although BEHS will provide technical assistance and guidance to local ordinance jurisdictions as requested. Decisions to proceed with enforcement activities should always be based on mitigating public health threats; not simply achieving compliance with a code.

Except in cases where an imminent health hazard is observed, a clear well-documented trail of routine and follow-up inspections must exist before enforcement activities begin. Flow charts found in the EHOA Appendix graphically represent the work order and closing order processes.

Risk Control Plans

Risk control plans (RCPs) are written agreements developed jointly by the owner/operator and the administrative authority. Local agencies working under state authority must coordinate with their assigned BEHS PHES in the development and delivery of RCPs due to the importance of these plans in maintaining Food Code compliance. The plans are a long-term intervention strategy that describes a management system for the control of specific risk factors.

The RCP can be a useful method to attain compliance with recurrent violations. Occasionally, non-compliance is a result of misunderstanding the corrective measures or how to implement the corrective measures. The RCP achieves control over a specific non-compliant risk factor through behavior changes. The inspector and owner/operator should discuss in depth the risk factor(s) and control measures that can be implemented.

The RCP must address:

- The risk factor to control;
- How the risk factor will be controlled;
- Who is responsible for the control;
- What monitoring, corrective actions, and record keeping are required;
- The agreed timeframe for correction; and
- How the results will be communicated.

It is essential for the owner/operator to develop effective monitoring and control measures to address the risk factors, including but not limited to, implementation of standard operating procedures, buyer specifications, menu modification, HACCP plans, and equipment or facility modifications. An increase in inspection frequency may be necessary to assure implementation of the RCP. As a result, active managerial control is encouraged and the need for additional enforcement actions eliminated.

Work Order Guidelines

All alternative avenues for compliance, including a risk control plan, must be exhausted before a work order is issued. The purpose of the work order is to communicate to the owner/operator the violations observed, the corrective measures required for compliance, the timeframe granted to make the necessary changes, and to clearly state if the violations are not corrected within the allotted timeframe additional enforcement actions will be taken. Local agencies working under state authority need to be working with and communicating with their assigned BEHS PHES on any and all facilities which may require enforcement action as soon as possible, as such actions are treated very seriously by the Department of Health and Senior Services (DHSS) and such orders must be approved by the DHSS Director. Local agencies should anticipate, that unless there is an imminent health hazard, that the work and closing order process will take a few weeks to assure due process is given to Missouri's businesses.

There are situations when an establishment fails to address the noted violations and enforcement is needed to gain compliance. In these cases, the local PHES must contact the BEHS regional Public Health Environmental Supervisor to discuss the history of the establishment and the violations observed during the previous routine and follow-up inspection(s). Follow up/re-inspections should show a clear pattern of marked improvement on the part of the facility. If significant health hazards remain after the first re-inspection and/or the person in charge demonstrates a lack of knowledge and/or cooperation, the local agency shall stop conducting the re-inspection and contact the BEHS PHES to initiate enforcement actions. Under routine circumstances where enforcement is anticipated due to the history of the establishment, the assigned BEHS PHES should have already been involved in the inspection or re-inspection. From this discussion, the best course of action will be determined. This may include a joint inspection and/or the progression to a work order, depending largely on the extent of BEHS involvement up to this point. Agencies with their own ordinances should follow the enforcement process required within their ordinance; technical assistance will be provided by BEHS regional staff upon request.

Before serving a work order, evidence must show:

- The chronology and summary of inspections, follow-up inspections, risk control plan, and other evidence to support the work order;
- The local PHES discussed the specifics of the food establishment with either the BEHS regional Public Health Environmental Supervisor and/or Food Program Manager and been given approval to proceed with additional enforcement;
- Each violation, observed during the initial and follow up inspections, was written clearly and concisely on the Food Establishment Inspection Report, E6.37 form;
- For each violation observed an appropriate corrective measure was written clearly and concisely on the Food Establishment Inspection Report form; and
- For each violation observed an appropriate correct-by-date was written clearly and presented to the owner/operator on the Food Establishment Inspection Report form.

Once approval from BEHS has been granted, the local PHES and BEHS PHES should conduct another inspection to assure the violations noted are still present. If the violations remain uncorrected, a work order will be written. The inspector should use the Work Order form, E1.24, to clearly and concisely document findings:

- The priority violations observed during the inspection that must be corrected;
- The core violations observed during the inspection that must be corrected;

- The appropriate code reference/statute number for each violation;
- The appropriate code citation and/or standard;
- The corrective measure(s) for each violation;
- The correct-by-date for each violation; and
- A written statement outlining the consequences of noncompliance with the work order.

The work order must clearly notify the owner/operator that failure to correct the violations listed on the work order will lead to a closing order. An example: *“Failure to comply with the conditions of this work order will result in you, as the owner of this food establishment, being immediately served with an order to close until such time as the conditions of this work order have been met.”*

Conducting Follow up to Work Order

The severity of the violations noted on the work order will determine the timeframe for establishing a correct-by-date. The date written on the work order must be the date in which the local PHES and regional PHES return to the establishment to assure the owner/operator has made the necessary corrections.

- The owner/operator may be granted the maximum timeframe of seventy-two (72) hours to make the necessary corrections to priority violations that can lead directly to an immediate foodborne illness. However, the correct-by-date may be as short as twenty-four (24) hours depending upon the situation.
- The owner/operator may be granted the maximum timeframe of fifteen (15) days to make the necessary corrections to violations that cannot lead directly to an immediate foodborne illness.

Closing Order Authority

Section 196.240, RSMo states, “It shall be the duty of the director of the department of health and senior services, and he is hereby authorized and empowered, to close any market place, grocery store, general store, bakery, confectionery, butcher shop, slaughterhouse, dining car, refrigerator car, cold storage plant or warehouse, hotel dining room or kitchen, cafe, restaurant, lunch counter, drug store, or any other place, or places, where articles or commodities intended for human food, or for human consumption as medicine, are manufactured, sold, stored or prepared for sale, or wherever food and drink is served, where such places shall, in the judgment of said director, constitute a menace to the public health, by reason of dirt, filth, or other insanitary cause.”

Section 196.245, RSMo states, “Any order issued by the director of the department of health and senior services for the closing of any place or places mentioned in section 196.240, shall specify the cause or causes for which such order was issued, and the time during which same shall be in effect. The director shall revoke such order before the time specified therein for its expiration; provided, that the cause for which such order was issued is removed, and if the director is satisfied that such place or places may be reopened without endangering the public health.”

Criteria for Closing a Food Establishment

Prior to issuance of a closing order under the Department of Health and Senior Services (DHSS) authority, one or more of the following conditions must be present:

- A person operating a food establishment or an employee of a food establishment allows an imminent health hazard to exist within the establishment and refuses to close voluntarily until the imminent health hazard is abated. *An imminent health hazard is any condition which presents an immediate, significant threat or danger to health when there is sufficient evidence to show that a product, practice, or circumstance requires immediate correction based on the number of potential injuries and the nature, severity, and duration of the anticipated injury. Examples include, but are not limited to: fire, flood, onset of an apparent foodborne illness outbreak, sewage backing up into a food establishment or lack of running water or electricity.*
- A person operating a food establishment or an employee of a food establishment fails to comply with the inspecting authority's order concerning an employee suspected of having a disease transmissible through handling food.
- A person operating a food establishment or an employee of a food establishment has not eliminated the cause of the foodborne illness outbreak from the establishment.
- A person operating a food establishment or an employee of a food establishment fails to detain food that is adulterated or misbranded.
- A person operating a food establishment or an employee of a food establishment allows a health menace to exist by permitting violations of a priority item to remain uncorrected beyond the correct-by-date established by the Local Public Health Agency (LPHA) and BEHS regional PHES in a work order.
- A person operating a food establishment or an employee of a food establishment allows a health menace to exist by permitting numerous repeat violations of core items to remain uncorrected beyond the correct-by-date established by the LPHA and Regional PHES in a work order.

Closing Order Guidelines

If it is determined by the BEHS PHES during the re-inspection, that the violation(s) noted on the work order have not been corrected, a closing order will be served. BEHS Management will obtain a proper Closing Order through DHSS to provide to the BEHS PHES on site to be served and take care to inform required persons within the Department of the action. The LPHA should notify the county administrator and possibly county commissioners, members of the board of health, the county prosecuting attorney, or other county officials.

The establishment is to close immediately upon being served the closing order. Patrons who have placed orders or who are already eating may finish, but no new customers will be seated or served. The LPHA should verify that the establishment remains closed until an approval to open has been issued.

When the LPHA is notified by the owner/operator that the necessary corrections have been made, the LPHA and BEHS regional PHES will immediately conduct a re-inspection. This inspection is to verify the corrections have been made and the health hazards abated. If the violations have been corrected, the BEHS regional PHES will notify and provide inspection reports to appropriate person in the chain of command.

If the violations have not been corrected, the closing order remains in effect and the remaining violations shall be documented. Staff will return for a follow-up inspection when the owner/operator corrects the remaining violations and notifies the LPHA that they are ready for a follow-up inspection. Once re-opened, the LPHA will conduct a routine inspection within sixty (60) days to assure continued compliance. In many instances, increased monitoring through more frequent inspections may be warranted.

Technical Points and Rule Interpretations

Raw Agricultural Commodities

Raw Agricultural Commodity is defined in the federal Food, Drug, and Cosmetic Act as “any food in its raw or natural state, including all fruits that are washed, colored, or otherwise treated in their unpeeled natural form prior to marketing.” Raw Agricultural Commodities may be sold directly to consumers without the operation being considered a Food Establishment. Furthermore, food establishments may obtain Raw Agricultural Commodities directly from farms, even if the farm does not provide documentation demonstrating it is subject to regulatory oversight and inspections. Not all farms are subject to inspection and oversight under federal law; therefore it is not possible for many farms to provide documentation that it is an approved source. Example of Raw Agricultural Commodities include unprocessed whole produce (fruits, vegetables, mushrooms), fresh herbs, raw unprocessed fish, grains (e.g., rice, sorghum), saps (e.g., agave, birch, maple, palm), sugarcane, and honey.

FDA allows farms to engage in the on-farm harvesting, holding, and packing of Raw Agricultural Commodities without being subject to current Good Manufacturing Practice (cGMP) inspections. However, when these activities are done off-farm or when an operation engages in processing as defined in federal rules, the farm must register with FDA as a manufactured food facility and is subject to routine inspection under cGMPs by FDA and DHSS.

Pure honey is a Raw Agricultural Commodity. Missouri has a number of small to medium sized apiaries that maintain their own hives and harvest, filter, and package their own raw honey on-farm. These apiaries fall within FDA’s definition of farm. As such, apiary farms are not included in DHSS/FDA inspection inventories. A honey operation that engages in these activities off-farm or engages in additional manufacturing/processing activities on-farm must register with FDA as a manufactured food facility and is subject to routine inspection under cGMPs by FDA and DHSS.

RSMo 261.241 provides an exemption for sellers of honey whose annual sales of honey are fifty thousand dollars or less per domicile from constructing or maintaining separate facilities for the bottling of honey. The exemption allows the person harvesting the honey to bottle it in their home. An operation that meets this exemption requirement is also likely to meet FDA’s definition of a farm and meet the exemption requirements for registering and complying with cGMPs.

Deer Processing Inspections

When a retail food establishment chooses to process deer, they must be approved by the Missouri Department of Conservation (MDC) and obtain approval for a special process from DHSS. The food establishment must keep a complete separation of deer processing and food operations at all times. The facility and equipment must be cleaned and sanitized before normal food operations can resume after processing deer meat.

Donated Wild Game

Hunters can voluntarily donate deer meat to the Share the Harvest Program if it has been processed at an MDC approved facility. Deer and other wild game cannot be sold or used in retail food establishments; however, wild game may be served by a political subdivision, elementary or secondary school, or any charitable, religious, fraternal, or other not-for-profit organization at the organization's meeting, fundraising event, or provided to indigent persons provided there is no charge for the game served. A notice must be posted in the dining area that states: "The wild game served at this facility has not been subject to state or federal inspection" per subsection 3-201.17(C) of the Missouri Food Code.

Edible Insects

Insects must be raised specifically for human food and demonstrate the "wholesomeness" of the product through compliance with 19 CSR 20-1.040 and 19 CSR 20-1.045. Insects raised for animal feed cannot be diverted to human food. The DHSS Manufactured Food Program will conduct inspections of the facility where the insects are raised and processed. Retail food establishments must demonstrate they have purchased the insects from an approved, inspected producer. Facilities wanting to provide edible insects to the end consumer should be aware of the risks involved with these products as there is a growing body of scientific literature indicating that people who are allergic to shrimp, clams, etc. may also be allergic to insects when eaten in or as food.

Sharing Table Service

Share tables are an effort to reduce the amount of food waste and encourage the consumption of food served at schools. Children can place unconsumed food and beverage items they choose not to eat or drink on the table, providing other children the opportunity to take additional helpings of food or beverages at no extra cost.

Allowable products for the sharing table includes:

- Non-potentially hazardous, pre-packaged products like crackers, drinks, and cereal packs;
- Pre-washed, wrapped or packaged fruits and vegetables and fruits with an inedible peel such as bananas and oranges; and
- Temperature-controlled, pre-packaged products, such as string cheese and milk, if placed in a cooler with ice, ice bath, or refrigerator.

Acknowledging US Department of Agriculture's guidance for permitting the use of sharing tables, the DHSS will accept their use with the following parameters:

- The table or cart shall be clearly labeled and placed at the end of the serving line or as close as reasonably possible;
- The share table shall be monitored by an employee who has demonstrated food safety knowledge;
- Food or beverages that are held under temperature control (e.g., milk, string cheese) shall be placed in a small refrigerator, cooler with ice or ice bath at the sharing table;
- Recovered food and beverages shall be labeled (e.g., marked with green sticker) and stored separately from unsold foods;
- The local public health agency shall review the school's plans for the share table or cart prior to implementation; and
- Standard Operating Procedures for the sharing table shall be developed in the school's Food Safety Plan, including but not limited to:

1. Students should place their unwanted food onto the sharing table before sitting down to eat to prevent any potential contamination.
2. Employees shall monitor all food, beverage, or condiment to assure it has not been contaminated and the original packaging is in sound condition. Opened, partially eaten, temperature abused, and/or foods in contact with soiled hands shall be discarded.
3. The length of time a food, beverage, or condiment will be kept for re-service.
4. Students shall not put items brought from home on the share table.
5. Students with allergies are cautioned not to take food from the share table due to unknown ingredients.

Fresh Shrimp Vendors

Retail food service encompasses many settings, including the roadside sales of shrimp. Using the Missouri Food Code to evaluate the vendor requires the inspector to consider the source of the shrimp and the service. There is no objection to these sales if the following guidelines are followed:

1. Source of shrimp and ice. Shrimp fishing is not subject to specific “approved” and “unapproved” harvest areas. Information that the shrimp vendor should have available is:
 - The name and address of the wholesaler from whom they purchased the shrimp.
 - The date of purchase.
 - Receipts for the ice, used to keep the shrimp cool, should be available, current, and from a commercial, sanitary source(s).
2. Freshness and sound condition. The most important public health considerations in a retail shrimp operation are the freshness of the product and maintenance of an adequate ice supply to keep the product cold. Fresh shrimp should be firm with a mild odor; the shells should be translucent without black spots or edges. A typical life expectancy for fresh shrimp is from two to four days. Keeping the shrimp surrounded with continuously drained ice is crucial. Sulfiting agents may not be used on fresh shrimp; these agents are permitted on frozen, packaged shrimp if their presence is disclosed on the package in the list of ingredients.
3. Handwashing. All vendors must have handwashing facilities. This may include a portable handwash station.
4. Labeling. Bulk shrimp sales do not require labeling. Prepackaged shrimp must have the name of the product, net weight, ingredients, and name and address of the processor or manufacturer.
5. Miscellaneous. Reasonable provisions must be made for washing, rinsing and sanitizing coolers and scoops, protecting product from contamination, preventing ice drain water from creating a nuisance, and securing the product when unattended. If the vendor is selling the shrimp by weight, he must have a commercial scale currently certified by the Missouri Department of Agriculture.

Use and Re-Use of Dry Breading Mixtures

Containers of dry breading mixtures (containing flour, cornmeal, spices, etc.) into which raw animal foods such as poultry and fish are repeatedly dipped, may be used for a total period of up to seven (7) days and stored at room temperature, provided that:

- Containers are stored covered in a clean dry area overnight and/or when not in use;
- The breading mixture is sifted at a minimum of every four (4) hours to remove excess moisture and dough balls; and

- Containers are completely emptied and cleaned and the breading mixtures discarded at intervals of no greater than seven (7) days.
- If this procedure is used, the person in charge must have a system in place to indicate the date the breading must be discarded. These recommendations do not apply to the use, handling, and storage of batters and other coatings, which may contain milk, eggs, or other ingredients considered to be PHF.

F'REAL! Shake Machines

DHSS has determined F'REAL Shake machines can clean and sanitize these machines at a frequency of every twenty-four (24) hours rather than every four (4) hours as is required in the Missouri Food Code.

Direct and Indirect Plumbing Connections

In existing facilities, replacement of direct plumbing should be considered on the basis of public health risk. If no public health risks are observed, the facility's plumbing is grandfathered and should not be required to be indirectly plumbed. However, when recurrent issues are observed, plumbing shall be modified to eliminate the public health risk.

Evaluation of Onsite Wastewater Treatment Systems

Food establishments utilizing an onsite wastewater treatment system shall operate the system in compliance with 19 CSR 20-3.060. Food establishments with malfunctioning systems shall be marked out of compliance on the Food Inspection Report form E6.37 and issued a Notice of Violation. Additional enforcement actions may be taken against the owner/operator if the system is not repaired or replaced in accordance with onsite wastewater regulations.

Emergency Action Plan

During times of disasters/incidents causing an interruption of electrical services, it may be beneficial to have temporary alternative processes in place to protect the public's health. The Conference for Food Protection, in response to growing demands, developed a model [Emergency Action Plan](#) (EAP) to assist retail food establishments in preparing for, responding to, and recovering from an emergency. The model EAP provides information that will help guide establishments with determining if they should remain open as well as what items may be prepared, sold, and salvaged during this time. Although an EAP is not a requirement, establishments can develop their own EAP. During routine inspections the PHES should discuss what measures, if any the establishment intends to employ during a disaster.

Farmer's Market Guidelines

There is an increasing demand for locally grown produce and healthier unprocessed foods; this increase has led to a substantial growth in the amount of food being sold at farmer's markets. As public health officials, we want to encourage and facilitate convenient access to these foods. We also recognize that these foods, like those sold in more traditional retail venues can present food safety risks if not handled properly.

The concept of farmer's markets has also evolved in recent years. Formerly, they were a place for farmers to sell the fruits and vegetables they had raised locally. Today many farmer's markets resemble an outdoor bazaar and offer a wide variety of items for sale from fruits and vegetables, to prepared foods, and arts and crafts. The DHSS continues to receive questions requesting clarification about which food items can be sold at farmer's markets and the acceptable conditions or processes necessary to assure food safety for the public.

A key principle is state law 196.015, RSMo, which prohibits the sale of adulterated food. This applies to food from approved inspected sources and food from exempt sources made in individuals' homes. Another important consideration is some jurisdictions have adopted local food safety ordinances that are more stringent than state standards. Some local ordinances require that all food sold to the public come from an inspected approved source.

Fruits and Vegetables

If a vendor sells only unprocessed whole fruits and vegetables, in-shell nuts, and other whole agricultural products, they do not meet the definition of a food establishment as specified in the Missouri Food Code. These vendors do not need to be under routine inspection by a health agency. This applies both to the market where the goods are sold and to the farm where they are produced. However, these vendors should be encouraged to know, understand and apply "good agricultural practices" (GAP). An excellent [online resource](#) is available from Cornell University. The GAP guideline's focus is to assure safe and unadulterated products through best practices and recommendations regarding the use of agricultural chemicals, manure as fertilizer, and on-farm sanitation practices. Another online tool, part of [Family Farmed.org's On-Farm Food Safety Project](#), was developed by a broad coalition of farm and produce industry partners.

Processing

Generally, an inspected and approved facility must be used if processing of fruits and vegetables occurs. Removing the outer husks from an ear of corn, the outer leaves from a head of cabbage, and cutting the tops off of carrots or beets are not processing steps. Processing changes the fruit or vegetable from its harvested state. Examples of processing include blanching corn kernels after cutting them from the ear, slicing tomatoes, and chopping lettuce. If a vendor processes fruits and vegetables, proper food safety practices must be followed. Since the food code allows the production of non-potentially hazardous processed foods from a home kitchen, sold by the processor or their immediate family member to the end consumer when properly labeled, some fruits and vegetables can be "processed" without inspection. For example, snapping peas or cutting corn kernels from the ear and bagging the peas and corn kernels is allowed if the bags are labeled that the food was prepared in a kitchen not subject to inspection. This is allowable because both peas and corn are non-potentially hazardous foods. However, tomatoes can't be sliced or lettuce cut because both are potentially hazardous foods and not subject to the exemption. Tomatoes and lettuce would need to be processed in a facility with the required physical facilities such as hand washing sinks, warewashing sinks, mop sinks, shielded lights, etc.

Offering Samples

Often vendors want to give prospective customers a sample of their products. This may involve processing steps such as washing and cutting. Small items, such as blueberries or strawberries, should be washed before being given as samples. Larger items, such as, cantaloupe or watermelon must be washed and cut in order to offer a small portion as a sample. This may be done off-site at an approved and inspected location or on-site if the vendor has hand washing facilities and an approved facility to wash, rinse, and sanitize the utensils and cutting board. Equipment for washing the produce prior to processing is also needed. The sampling itself should be done in a sanitary manner using toothpicks or individual cups to dispense the food. The public should never reach into a bulk container to get a sample. Fruits or vegetables that meet the definition of potentially hazardous food, such as tomatoes, watermelon and cantaloupe, must be kept at a proper temperature or the vendor must use a process where time is used as the public health control.

As part of the stand inspection, the inspector will need to determine where these products are processed and assure that the foods are presented for sampling or on display safely.

Meat, Fish, Poultry, Eggs, Milk, and Other Dairy Products

Beef, Pork and Other USDA Amenable Species

The livestock must be slaughtered and processed under United States Department of Agriculture (USDA) or Missouri Department of Agriculture (MDA) inspections. Each individual package of meat is required to have a mark of inspection from USDA or MDA. Meat labeled “not for sale” may not be sold at a farmer’s market.

The inspector must assure that meat offered at the farmer’s market is kept at proper temperature. In an effort to assure proper temperatures, many local jurisdictions will only allow meat sold at a farmer’s market to be held frozen in a freezer, while others will allow the frozen product to be kept in a cooler with ice. The inspector should assure that the meat is stored or displayed in a manner that is safe and sanitary and that cross-contamination or adulteration will not occur.

Fish

The sale of either fish caught from State waters or raised is allowed based on point of sale and volume. BEHS has taken a similar position with fish that it has with the poultry/rabbit exemption. Provided fish sales are small in number and limited to the end consumer, fish may be sold with limited “processing” and no inspection where processed.

Commercially harvested fish may be offered for sale provided the vendor complies with the Missouri Department of Conservation (MDC) rules, has a commercial fishing license, and the fish is kept cold (41°F or below). Limited processing of the fish, the removal of the head, tail, and viscera, is allowed in order to limit the deterioration of the flesh. If the vendor intends to fillet the fish, they must process the fish in a properly equipped facility and be inspected.

With respect to the aquaculture, raising, and selling the fish, again the sale is allowed provided the fish is kept cold (41°F or below), it is sold to the end consumer, and no more than the head, tail and viscera are removed. If the vendor intends to fillet the fish, they must process this fish in a properly equipped facility and be inspected.

To maintain fish at the proper cold holding temperature, it is highly recommended the vendor use drained ice to pack around the fish. If using ice is not an option, freezing the fish is the next best option. There are no labeling requirements if the vendor only packages fish when the customer places their order. However, if the fish is pre-packaged, then the vendor must comply with the labeling requirements in 3-602.11 of the Missouri Food Code. If a processor intends to use a reduced oxygen packaging (ROP) method, the vendor must comply with 3-502.11 and 3-502.12 of the Missouri Food Code and be inspected.

Poultry and Rabbits

The [federal poultry law](#) exempts producers who slaughter fewer than 1,000 birds a year from USDA inspection. The Missouri meat inspection law was changed in 2006, to allow rabbit producers to slaughter up to 1,000 rabbits a year without inspection. Vendors who process fewer than 1,000 chickens and rabbits may sell them at farmer's markets. These products must be unadulterated and kept at proper temperature until sold.

Unpasteurized Dairy Products

The state milk law, 196.935 RSMo allows a producer to sell unpasteurized or raw milk at their farm or to deliver it directly to a customer; this includes unregulated and ungraded milk. Unpasteurized milk cannot be sold in retail food establishments; therefore unpasteurized milk cannot be sold at a farmer's market.

The above raw milk discussion applies to fluid milk and cream. Other dairy products including cheese, yogurt, cottage cheese, butter, sour cream and the like must be produced in facilities licensed and regulated by the State Milk Board. Packaging of these items must be intact and be held at a temperature below 45° F.

Eggs

Vendors selling eggs at farmer's markets must have the proper [egg licenses](#) from the MDA. The vendor may qualify for either a limited retailer's license or a retailer's license. The inspector should determine that the vendor possesses the required license, eggs appear clean, and egg cartons have the name and address of the producer. Eggs must be held at a temperature below 45 ° F at the farmer's market.

Sale of Manufactured Foods

Non-potentially hazardous foods manufactured in approved, inspected facilities may be sold at farmer's markets. This includes food from small Missouri manufacturers but also allows someone to retail Oreo® cookies, jars of Vlasic® pickles, cans of Star Kist® Tuna, etc. Although, not common or typical of a farmer's market from a regulatory standpoint, if only prepackaged non-potentially hazardous foods are sold they are not a food establishment and would not be subject to routine inspection.

Pickles, Salsa, Sauces and Other Acidified Foods

An acidified food is a food with a relatively neutral pH and an acid is added to lower the pH below 4.6. The purpose of the acidification is preservation of the food and the public health benefit is the prevention of the outgrowth of *Clostridium botulinum* spores. If not properly prepared, *C. botulinum* can grow and produce botulism toxin. If consumed, this can result in severe illness or death. To that end, there are federal regulations for the manufacture of acidified foods. The manufacturer must submit their recipe and procedures to a process authority, and if needed, attend a "better process control school". In addition, the manufacturer must assure the safety of the food produced by testing the pH of each batch of product and maintain records. All acidified foods must be manufactured in approved inspected facilities and comply with labeling regulations.

When acidified foods are found at a farmer’s market, the inspector should inquire in general terms about the recipe and the procedures in an effort to determine if a review was done by a process authority and if the manufacturer has attended process control training. The inspector should also assure that the product is stored and displayed properly and the product is labeled according to the Missouri Food Code. These products will be processed off site so an inspection by the regulatory agency is necessary.

Exemptions

Jams and Jellies

In general, jams and jellies are considered to be a low risk food product because they have both low pH and low water activity which inhibits the growth of microorganisms. In 2014, 196.298 RSMo became state law, which allows manufacturers of jams and jellies that generate less than \$50,000 per year to process these products in their home kitchens. The product must be sold by the manufacturer directly to the end consumer and must comply with the labeling requirements found in the Missouri Food Code, including the name and address of the person manufacturing the food; common name of the food; name of all ingredients in the food; and statement that the product has not been inspected by the Department of Health and Senior Services.

In addition, at the point of sale, there should be a placard that says “This product has not been inspected by the Department of Health and Senior Services.” The inspector is responsible for determining that the vendor has displayed the placard and the product is labeled appropriately. If the inspector suspects that sales may exceed the \$50,000 per year, contact your regional PHES or Food Program for further assistance.

Sugar free jams and jellies or “no sugar added” are an exception. These products should be labeled “no sugar added.” They should never be labeled “sugar free” because the fruit has natural sugars present. Typically, jams and jellies have enough sugar content to bind the available water that supports bacterial growth. If fruit with a pH above 4.0 and artificial sweeteners are used then *Clostridium botulinum* growth is a potential hazard. Products that contain artificial sweeteners in the finished product need to be sent to a laboratory and have the pH tested. Since there are not large quantities of sugar in these products to bind water available for bacterial growth, pH is the only barrier against microbial growth.

- Jam or jelly with a final pH below 4.0 should be allowed to be made in home kitchens under the statutory exemption. The manufacturer should be told they must always follow the recipe or formulation used in the tested sample. Even a slight change in formulation would require re-testing.
- “No sugar added” jelly that has a pH between 4.0 and 4.6 should be inspected and made in a regulated facility. The pH should be tested on every batch with a quality pH meter and a log kept of the results.
- “No sugar added” jelly with a pH above 4.6 should not be allowed under any circumstance.
- Jellies made with juices (with a pH above 4.6) should also be tested.
 - If the pH is below 4.0 DHSS will consider that the primary control point and allow them to proceed.
 - If the pH is above 4.0, water activity becomes the primary control and the water activity of the jelly must be tested in a laboratory. If the water activity is below .80, allow the jelly to be made under the food code exemption.
 - For both of the above methods the processor should be warned not to change the formulation or process.

- If the water activity is between .80 and .85 it must be manufactured in a regulated facility and the water activity monitored.

Baked Goods

Shortly after the passage of 261.241, RSMo, DHSS revised the definition of a food establishment to allow individuals to make other kinds of non-potentially hazardous foods in their home kitchens for sale to the public. These foods include breads, cookies, fruit pies, cracked nuts and similar foods. There are specific requirements for the manufacture and sale of these foods. The inspector must be familiar with the definition of “food establishment” found in the Missouri Food Code.

During the inspection the inspector must determine that the vendor is the manufacturer or an immediate family member and that the food is sold to the end user. The inspector must also assure that the food bears a label stating the name and address of the manufacturer/processor preparing the food, common name of the food, name of all the ingredients in the food and a statement that the product is prepared in a kitchen that is not subject to inspection by the Department of Health and Senior Services. When the food items are in unpackaged, individual portions, the inspector needs to assure that the consumer is informed by a clearly visible placard at the sales or service location that the food is prepared in a kitchen that is not subject to inspection by the Department of Health and Senior Services.

Sale of Live Animals

Markets that permit the sale of pets and farm animals must implement control measures to prevent the contamination of food products by those animals. A minimum distance of fifty (50’) feet between animals and food products is recommended for all farmer’s markets. If excessive flies or other pests are present, additional control measures may be needed to minimize their presence.

The inspector should discuss transportation of food products when they note that vendors are selling both food and live animals. Cross-contamination of food is easily prevented if the proper precautions are utilized.

At events where live animals are available, the inspector may use this as an opportunity to promote hand washing. If there is a primary point of contact or sponsor for the farmer’s market, it is beneficial to encourage them to consider portable hand washing stations. Offering customers and vendors the ability to wash their hands promotes good hygiene and public health.

Foodservice Operations

Some farmer’s markets allow food vendors to sell prepared foods. While these may not meet the Missouri Food Code definition of “temporary food event” (fourteen days or less in conjunction with an event) they do meet the definition of a “food establishment.” Therefore, they must have the ability to protect food from environmental contaminants and pests, hot and cold running water, hand washing facilities, a three compartment sink set-up, capability for hot and cold holding (if applicable), safe and adequate water supply, sanitary wastewater disposal, and convenient access to a toilet. Normally, these are not permanent fixed facilities, so a smoker/grill would require overhead protection but not a screened enclosure.

Fairs, Festivals, and Temporary Events

A food establishment that operates for a period of no more than fourteen (14) consecutive days in conjunction with a single event or celebration is the focus of this section. Fairs, festivals and similar celebrations, as well as, dinners and other events sponsored by organizations serving food and open to the public are all examples of temporary events.

Temporary operations often require the food service to be set up out-of-doors or in locations where keeping food safe and sanitary is challenging. The popularity of mobile food operations has increased in recent years. A mobile food establishment refers to a food service operation that is operated from a movable motor driven or propelled vehicle, portable structure, or watercraft and that can change location. They vary in size and complexity, from large modular units to pushcarts.

Recommended guidance for mobile food establishments can be found [here](#). These guidelines should not be mistaken for or used in place of regulations that exist for permanent food establishments or food processing plants. In addition, many Local Public Health Agencies (LPHAs) require temporary event vendors to obtain a permit and/or inspection prior to opening/operating at an event.

The following actions and equipment are intended to be required for all temporary food operations including mobile food establishments:

Booth

The stand or booth should have overhead protection and in most cases, be fully enclosed. There may be openings for a serving window and a door for entry; however, the door is to be kept closed during operation. All food preparation, food storage, and service are to be done within this enclosed area. Screening material may be used for the walls, doors and serving window. However, screening may not be necessary if flying insects or other pests are absent due to the location of the food stand, the weather, or other limiting factors.

The floor of the stand should be hard, smooth, and constructed of easily cleanable materials. Asphalt, concrete, or plywood may be acceptable floor surfaces in temporary food stands.

Hand Sink

Adequate hand washing facilities consist of a hand-sink equipped with hot and cold running water, soap, and paper towels. A temporary sink set up can be made that consists of a vessel full of water with a spigot type dispenser, soap, paper towels, a wastebasket and a bucket to collect wastewater. The use of gloves or hand sanitizers is not a substitute for handwashing.

Bare Hand Contact

A food employee's bare hands may not touch ready-to-eat foods. Tongs, spatulas, deli tissues, or gloves must be used.

Food

All foods and beverages are to be from approved sources and prepared on-site or at a food establishment currently under inspection.

Non-profit organizations may prepare food in a private home or other area for distribution to the end consumer as a charitable fundraising event. This exemption does not apply in Boone, Jackson, Jefferson, St. Charles, and St. Louis counties; and St. Louis City and Kansas City.

Cooking

An essential part of food safety is assuring that proper final cooking temperatures are met. The reuse of leftover foods from one day to the next is strongly discouraged since proper cooling, cold holding and reheating can be challenging to accomplish in small temporary stands. Leftover foods held over twenty-four (24) hours shall be date marked.

Hot and Cold Holding

Sufficient equipment capable of keeping foods hot and/or cold must be provided. Mechanical refrigeration or ice is needed for cold foods. Refrigerators and freezers should be clean and contain thermometers. Coolers must be cleanable and have a drain. Hot holding units must be clean and contain a thermometer. Hot foods are to be kept at or above 135°F and cold foods are to be kept at or below 41°F.

Thermometers

A metal-stemmed thermometer should be available for employees to monitor cooking and holding temperatures. The temperature must range from 0-220°F with increments no greater than 2°F. Glass-stemmed thermometers or mercury filled thermometers are prohibited.

Ice

Ice shall be protected during transit and storage from contamination and shall be received clean from an approved commercial source. Ice used for beverages and/or as an ingredient shall be kept in a separate, clean cooler with no other food items. An ice scoop with a handle should be used to scoop ice to prevent bare hand contact. Ice used as a coolant for foods and/or beverages is to be drained or have a chlorine residual of 10 ppm.

Warewashing

Warewashing may be done in a three-bin sink or temporary set-up using bus tubs; wash, rinse, sanitize and air dry. Gray water shall be disposed of in a sanitary manner.

Water

Sufficient potable water from an approved source needs to be on hand. If the unit is a mobile temporary stand the tank is to be constructed of a durable, corrosion resistant material that is easily cleanable. Vents, inlets and outlets should be screened or positioned so that they are protected from contaminants. The tank and system shall be flushed and sanitized prior to use and after any repairs.

Recall Procedures

A recall is a firm's voluntary removal of a product from commerce or consumer channels to protect the public from consuming adulterated or misbranded products. Generally, recalls are conducted on a firm's own initiative while some are initiated at the request of governmental agencies. A large number of the recalls are required at the request of the Food and Drug Administration (FDA) or by the U.S. Department of Agriculture (USDA) Food Safety and Inspection Service (FSIS) in the case of meat and poultry products. Withdrawals of products produced and sold only in Missouri often occur due to a request by DHSS or the Missouri Department of Agriculture.

DHSS is responsible for disseminating information to Local Public Health Agencies and other entities within the state on recalled products distributed or sold in Missouri. DHSS will not announce a recall until the announcement appears on the FDA or USDA website; or until the recall is received through verifiable means of notification by the recalling agency or firm. Once DHSS receives official information regarding a recall the Bureau of Environmental Health Services (BEHS) will begin researching the distribution of these products. When distribution to Missouri has been verified BEHS will provide recall information and recommended activities to the LPHAs.

Communication and information sharing with other state agencies involved with regulating recalled product within the state is critical to the health of the public. DHSS will work cooperatively with these agencies when there is a recalled product within the state. DHSS staff will assist in recall investigations at the request of other agencies or when the recall is statewide.

Three Classifications of Recalls

There are three general classes of recalls that are recognized by federal agencies with jurisdiction over the nation's food supply.

Class I – Dangerous or defective products that predictably could cause serious health problems or death. Examples include: food found to contain botulism toxin, the presence of the bacteria *Listeria monocytogenes* in cantaloupe, ready-to-eat meats and cheeses, food with undeclared allergens, or a label mix-up on a lifesaving drug.

Class II – Products that might cause temporary health problems or pose only a slight threat of a serious nature. Examples include: a drug that is under-strength but that is not used to treat life-threatening conditions, the presence of FD&C Yellow #5 dye in candy, inadequate records, or foreign material in ground meat.

Class III – Products that are unlikely to cause any adverse health reaction but that violate FDA labeling or manufacturing laws. Examples include: a minor container defect and lack of English labeling in a retail food or the addition of water to a processed meat without listing the water on the label as required by federal regulations.

Response Activities

Food product recalls in Missouri will follow the above classification system with further delineation as described below for Class I recalls. Recalls initiated voluntarily by a Missouri firm or at the request of DHSS due to results of an epidemiologic investigation, consumer complaint, or laboratory-sampling results will also be placed in one of the above classes based on the hazard level associated with the food.

When BEHS receives a recall notification, appropriate action will be taken to protect the health of consumers in Missouri. Response activities for each recall may be different. However, the most common recall activity requested of the LPHAs is a recall effectiveness check. These effectiveness checks should be documented on the DHSS Recall Follow-up Report Form, Recall Summary Form, LPHA report form or email. These checks are to be performed by a site visit to the facility or by telephone to assure that potentially adulterated products have been removed from commerce. If, during an effectiveness check, a recalled product is available on the shelf for sale and the firm does not take immediate corrective action, the product should be embargoed and stored in a secured location at the facility. The BEHS Regional Public Health Environmental Supervisor or the Recall Coordinator should be contacted. LPHAs will only be asked to complete federal effectiveness check reports when DHSS requests assistance in performing these checks for FDA or FSIS.

Class I Recall Response Guidance

This class of recall has been further categorized into three potential levels of risk and their appropriate response activities.

1. Class I Recall – HIGH Priority

This type of Class I recall is the highest priority recall and requires immediate attention and response. There must be a comprehensive, prompt response to the recall assuring the product is removed from distribution. It is strongly recommended that the LPHA take every step necessary to assure the effected food product/drug is removed from commerce. The LPHA should perform the following actions:

- Within 24 hours assure press releases, if available, are disseminated to local media channels.
- Notify all retail food establishments including restaurants, grocers, institutions, food pantries, salvage stores, child care facilities, and other facilities that could have the product by site visit or telephone, fax or email.
- Within two (2) working days of receiving the recall notification, conduct onsite effectiveness checks at affected establishments to assure recalled product is removed from commerce.
- If recalled product is found and is still available for the public to purchase, the retailer may remove the product from commerce voluntarily or the recalled product will be embargoed, which effectively removes it from commerce. Follow procedures on disposition of embargoed products discussed in the enforcement section of this document.
- Document findings on the DHSS Food Recall Follow-up Form or the Recall Follow-up Summary Form and send a copy of the completed form to BEHS. Other means of reporting such as email reports are acceptable as long as the necessary details are included.

2. Class I Recall – MEDIUM Priority

This type of Class I can have a significant health impact but is less urgent than the High Priority; prompt attention is strongly recommended. The LPHA should perform the actions outlined in Class I Recall – HIGH Priority with the following exception:

- Within three (3) working days of receiving the recall notification, conduct effectiveness checks at the affected establishments to assure recalled product is removed from commerce. The majority of recall effectiveness checks should be on-site, however, in some instances; a phone call may be acceptable.

3. Class I Recall – LOW Priority

The LPHA should perform the actions outlined in Class I Recall – HIGH Priority with the following exceptions:

- Assure press releases are disseminated to local media channels.
- Conduct effectiveness checks during routine inspections, and as time allows, at potentially affected establishments. Often, the effectiveness checks may be completed by telephone. Firms with a poor track record of complying with recall notifications should have an on-site effectiveness check.

Class II and Class III Recall Response Guidance

These recalls have less of a public health impact; however, it is important to provide the public and food establishments with information related to these recalls. Examples include a drug that is under-strength but that is not used to treat life-threatening conditions; inadequate records; or an industry initiated product withdrawal of items such as baby wipes. Also included in this class are recalls involving pet foods due to the risk of cross-contamination when people handle contaminated pet foods and do not wash their hands prior to preparing food for themselves and their families. Unless otherwise notified, the recall information will be provided to the LPHA primarily for informational purposes with the recommendation that LPHA perform effectiveness checks during routine inspections if a regulated facility is involved. The recall information will be posted to the DHSS website.

Drug Recall Response Guidance

The DHSS has authority and the responsibility to assure that adulterated and misbranded drugs and medical devices are removed from commerce. Recalls of prescription drugs will be handled through the Board of Pharmacy instead of BEHS and LPHAs. Support will be provided when requested by the Board of Pharmacy. Over the counter drug recalls will be evaluated on a case by case basis and information provided when appropriate. Because prescription drugs are issued by licensed professionals effectiveness checks of these products are not routinely requested.

Resources

1. [DHSS Recall Web Address](#)
2. [FDA Recall Web Address](#)
3. [USDA Recall Web Address](#)

Foodborne Illness Investigations

While epidemiologists and other communicable disease specialists fulfill lead roles in assessing communicable disease outbreaks, a Public Health Environmental Specialist (PHES) who is responsible for food safety inspections will inevitably participate in a foodborne illness outbreak investigation.

Missouri has a Rapid Response Team (MRRT) which provides greater coordination, shared communications and a unified incident command structure to combine experts from different technical disciplines and agencies into a single team. The Missouri Department of Agriculture (MDA), Department of Health and Senior Services (DHSS), and the United States Food and Drug Administration (FDA) all contribute experts, resources, and capabilities to the MRRT.

Inspection/Investigation

The number, type, and severity of illnesses determine the response and resources needed to investigate an outbreak. A typical foodborne illness response consists of planning; interviewing the person in charge and employees; a walkthrough of the facility; observing operations; food sampling, if necessary; documenting, and follow-up. [Guidelines for Foodborne Disease Outbreak Response](#) is a good reference for foodborne illness investigations.

1. The inspection process begins in the office with planning, including a review of available epidemiologic information, facility information, and information concerning the causative agent(s). As with any inspection, the PHES should ensure they has the appropriate equipment necessary for the inspection. This may include equipment for taking samples. It will also likely include forms and instructions from the epidemiologist leading the investigation on what they need to further the investigation.
2. Once background information is obtained the PHES needs to make a visit to the facility. Because of the illnesses associated with this type of complaint and the need to collect food samples, a foodborne illness investigation is a priority. A field visit must occur within 24 hours of notification. The inspection should begin by establishing a dialogue with the person in charge. The initial dialogue should:
 - Take place in as private an environment as possible such as their office. Customers, staff, or other individuals overhearing the conversation may take portions of the conversation out of context which might delay the inspection and add confusion to the situation. In addition the PHES needs to be conscious of the HIPPA regulations that restrict what information can be shared during the visit.
 - Explain the circumstances. The PHES should advise the person in charge of the reported illnesses and any potential associations between ill persons and the facility.
 - Explain the purpose of the inspection. This type of inspection is not intended to “prove” an establishment is responsible for the illness; rather it is to determine if there are any conditions or practices present that may promote the spread of illness. If so, the operator can quickly eliminate those conditions to prevent the spread to future customers. Explain to the person in charge that the inspection is limited to an evaluation of the conditions and practices related to the spread of illness.
 - Inquire about recently ill employees and recent complaints received by the facility.
 - Review the facility’s relevant employee illness policies and provide recommendations for improvement as necessary.
 - Verify that the person(s) in charge is knowledgeable in food safety.
3. An initial walkthrough of the facility is conducted to provide an initial survey of the flow of food through the facility, identify persons working with specific foods, and otherwise measure critical operations before they are modified. The walkthrough gives the PHES an idea of which areas of the facility should be

prioritized for further observation.

4. During the investigation it is important to gather information on the suspect food's preparation, storage, or handling.
5. Further observation of foodservice operations allows the PHES to spend additional time observing employee hygiene, evaluating cleaning and sanitizing procedures, taking food temperatures, watching for potential cross contamination, and otherwise learning about food preparation processes (no cook, same day service, and complex food processes). Record reviews, including HACCP records, standard operating procedures, maintenance logs and similar records will be helpful in pinpointing variations for normal practices. Additional information may need to be collected on the facility's suppliers to assist in traceback investigations in determining the source of the outbreak.
6. When interviewing employee(s), the PHES should ask about any unusual circumstances that may have occurred within the relevant time period—equipment that wasn't working, short-staffing, someone ill, etc. When food employees cannot remember specific details, the PHES should ask for information in chronological order and inquire about typical work practices and routines.
7. When specific foods are implicated, it may be necessary to take food samples for laboratory analysis. Coordination with the State Public Health Laboratory and Communicable Disease staff in the Regional Office must take place prior to collecting and submitting food samples for laboratory analysis.
8. If the PHES suspects that the illnesses were the result of intentional contamination, the PHES needs to contact the appropriate law enforcement agency.
9. If the investigation results in information that the complaint involves a product that originated outside Missouri the PHES should contact the retail food program so the information can be shared with the appropriate federal or state agency.
10. Documentation of the inspection and the exit interview should be conducted in accordance with subsection [Fundamentals of an Inspection](#) within this manual.
11. Depending on the investigation and inspection, it may be necessary to conduct a follow-up inspection. If unresolved priority violations are documented, food samples are needed for laboratory analysis, food product is embargoed, or ill food employees are identified, it will be necessary to follow-up with the facility to seek resolution. Multiple visits may be necessary as additional information is provided by the epidemiologists on the illness investigation, on specific foods, or timeframes change.

Reporting

Investigation findings are documented on inspection forms, E6.37. These documents may be used to develop a final illness investigation report in conjunction with the illness investigation team. The information collected about the investigation should be logged on a complaint log. Promptly submit a complete narrative of the investigation to the illness investigation team. As noted above, the report may include the inspection report, sanitation observation form, and/or complaint investigation form, as well as, references to exhibits, samples,

medical records, and laboratory reports. There is no prescribed reporting format, but it should be in a logical order. Environmental investigation findings should be provided to communicable disease staff who will prepare and submit final reports of the investigations to the state epidemiologist and to the Centers for Disease Control and Prevention (CDC) when appropriate.

Trace-back

Trace-back activities are generally guided by either federal or state authorities. The local PHES may be called on to participate in collecting information to assist in the trace-back functions of the investigation. Trace-back investigations are used to determine the source of an implicated food. This type of investigation begins at the retail establishment(s) implicated in the outbreak. Information on their suppliers is used to trace implicated foods through the distribution system back to the producer/processor that made/grew the product. This process often includes the local PHES supplying documentation to the appropriate state and federal agencies involved in the investigation. These agencies then coordinate and analyze the data. This will help to assure that identified products are removed from distribution. LPHAs will also assist in trace-forward activities by performing effectiveness checks as advised by a recall. Not all illness investigations result in foods or products being recalled. The process of a recall is a decision made by the federal agency with regulatory authority and the manufacturer. The information obtained during the trace-back or trace-forward activities must be documented and shared with the illness investigation team.

Resources

Missouri Department of Health and Senior Services [Communicable Disease Investigation Reference Manual](#)

The American Public Health Association's (APHA) [Control of Communicable Diseases Manual](#)

The International Association for Food Protection [Procedures to Investigate Foodborne Illness](#)

Specialized Process Approval

The specialized process approval is designed to assure operational processes for certain foods is conducted safely. These types of operations may require the person in charge and food employees to identify specific hazards, demonstrate specific competencies, utilize complex equipment, and document results.

Listed below are specialized processes that require submission of an application and related materials for review by BEHS. A separate checklist for each specialized process must be completed.

- Smoking food as a method of food preservation rather than as a method of flavor enhancement;
- Curing food;
- Using food additives or adding components such as vinegar:
 - As a method of food preservation rather than as a method of flavor enhancement, or
 - To render a food so that it is not potentially hazardous or time/temperature control for food safety;
- Packaging food using a reduced oxygen packaging method except where the growth of and toxin formation by *Clostridium botulinum* and the growth of *Listeria monocytogenes* are controlled as specified under § 3-502.12 of the Food Code. Reduced oxygen packaging may be conducted without having to obtain a specialized process approval from BEHS if the facility has a Hazard Analysis Critical Control (HACCP) plan that has evidence of being reviewed and accepted by the LPHA and/or BEHS. This will include written proof that the barriers utilized are sufficient to prevent growth of the identified pathogens, including but not limited to, scientific documentation, monitoring records, or independent laboratory analysis;
- Operating a molluscan shellfish life-support system display tank used to store and display shellfish that are offered for human consumption;
- Custom processing animals;
- Sprouting seeds or beans; or
- Preparing food by another method that is determined by DHSS to require approval.

Information to be submitted for approval includes:

- A written proposal as to which specialized process is to be used, citing the applicable code reference numbers.
- A written statement why the proposal should be approved and why the proposal will not create a potential public health hazard or nuisance.

Supporting documentation may include any or all of the following:

- Documentation supporting the rationale for the proposal which could include scientific studies, analysis reports, maintenance programs, and HACCP plans.
- A written process review report by a recognized Process Authority for each process being submitted.
- Written prerequisite programs (such as maintenance logs, cleaning schedules and policy manuals) and Standard Sanitation Operating Procedures (SSOP).
- Checklists and/or verification records on the prerequisite programs and procedures; and/or
- Training programs and procedures.

An analysis of the hazards related to the process and/or specific items being reviewed including information on ingredients, materials and equipment to be used.

- For a food establishment that is required to have a HACCP plan, the plan and specifications shall indicate:
 - A list of the potentially hazardous foods that the establishment intends to use the proposed process for; or other foods that are specified by the regulatory authority; and
 - A flow diagram and hazard analysis by specific food or group of foods where the specialized process is to be used that identifies critical control points and provides information on the following:
 - Ingredients, materials and equipment used in the preparation of that food; and
 - Formulations or recipes that delineate methods and procedural control measures that address the food safety concerns involved.
- Food employee and supervisory training plan that addresses the food safety issues/concerns for the specialized process.
- A Critical Control Point plan that includes clearly identifying:
 - Each Critical Control Point (CCP);
 - The critical limits (CL) for each critical control point;
 - The method and frequency for monitoring and controlling each critical control point by the food employee designated by the person in charge;
 - The method and frequency for the person in charge to routinely verify that the food employee is following standard operating procedures and monitoring critical control points;
 - Action to be taken by the food employee or person in charge if the critical limits for each critical control point are not met; and
 - Records to be maintained by the food employee and the person in charge to demonstrate that the HACCP plan is properly operated and managed.

Additional scientific data or other information, as required by the regulatory authority, supporting the determination that food safety is not compromised by the proposal. This may include:

- Examples of the labeling and lot identification system including an explanation of the code and recordkeeping system.
- Layout of the area showing all equipment where the operation will take place and an explanation of the physical/scheduling barriers between this area and other parts of the operation.
- Information on the prerequisite programs to include:
 - Safety of water;
 - Cleaning and maintenance of equipment and facilities;
 - Methods of prevention of cross-contamination;
 - Use, storage and labeling of toxics;
 - Personnel health and hygiene policies;
 - Pest control program;
 - List of job descriptions of personnel involved in the process; and
 - Written use procedures and calibration steps for all measuring devices such as thermometers and pH meters.

When accepting proprietary information, such as HACCP plan materials, the PHES should provide completed copies of the confidentiality statement and chain of custody form. The confidentiality statement assures the submitter that their information will be maintained confidential. The chain of custody form provides tracking of this confidential information to insure that it is not shared inappropriately. A confidentiality agreement and chain of custody form can be found in the EHOOG appendix.

HACCP plans and special process proposals are not transferrable from process to process or place to place. Changes that impact the hazard analysis and/or critical control points will require resubmission of the appropriate information for review.

Validation

Before beginning the evaluation of a HACCP plan and system for the special process, the scientific/technical information should be carefully evaluated to determine whether the process under review results in safe food. It is recommended that the establishment submitting the proposal include a validation from a process authority. For the PHES that is reviewing a plan, they will need to assure that certain information is present in the submission of the special process paperwork. Using the HACCP Plan Validation Checklist provided in the EHOOG appendix, will help to assure all of the necessary information has been provided in a logical organized manner.

Some retail food establishments may not be prepared to submit an appropriate HACCP plan for a special process. The person in charge (PIC) and their personnel may need additional training to understand the seriousness of the hazards that can be associated with special processes and how to control them. The inspector may need to provide information on the Food Code requirements.

Field Verification

Once the HACCP plan is in place for the special process, the local PHES will need to perform field verification reviews at the retail food establishment. This is to assure the plan is being operated as intended to control and prevent identified hazards. When doing field verifications the PHES should review the HACCP plan that was submitted by the establishment. There is a suggested Verification Checklist in the EHOOG appendix to use. The field verification may be documented on this form, a sanitation observation form or an inspection report form.

Reduced Oxygen Packaging

The Missouri Food Code requires submission of a HACCP plan for reduced oxygen packaging (ROP) products that do not require special process approval. Unless approved as specified in § 3-502.11 of the Missouri Food Code, a food establishment that packages potentially hazardous food using ROP methods shall, at a minimum, control the growth and toxin formation of *Clostridium botulinum* and the growth of *Listeria monocytogenes*.

A food establishment that packages potentially hazardous food using ROP methods shall have a HACCP plan that contains the information specified in § 8-201.14 of the Missouri Food Code and the following:

1. Identifies the food to be packaged;
2. Shows the ROP food will be maintained at forty-one degrees Fahrenheit (41°F) or less and will meet at least one (1) of the following criteria:
 - Have an a_w of ninety-one hundredths (0.91) or less;
 - Have a pH of four and six tenths (4.6) or less;
 - Is a meat or poultry product cured at a food processing plant regulated by the US Department of Agriculture using substances specified in 9 CFR 424.21 - Use of Food Ingredients and Sources of Radiation, and is received in an intact package; or
 - Is a food with a high level of competing organisms such as raw meat, raw poultry, or raw vegetables.
3. Describes how the package shall be prominently and conspicuously labeled on the principal display panel in bold type on a contrasting background, with instructions to:
 - Maintain the food at forty-one degrees Fahrenheit (41°F) or below, and
 - Discard the food, if within fourteen (14) * calendar days of its packaging, it is not served for on-premises consumption or consumed if served or sold for off-premises consumption.
4. Limits the refrigerated shelf life to no more than fourteen (14) * calendar days from packaging to consumption, except the time the product is maintained frozen, or the original manufacturer's "sell by" or "use by" date, whichever occurs first;

* *The FDA 2013 model food code allows this time frame to be extended to thirty (30) days unless the manufacturer's sell-by or use-by dates expire first. If submitters want to claim this time frame they need to include with the request a description of their labeling and the discard timeframe and refer to the FDA 2013 model food code as their supporting documentation for this request.*

5. Includes operational procedures that:
 - Prohibits bare hand contact with ready-to-eat food(s);
 - Identifies a designated work area and the method by which:
 - Physical barriers or methods of separation of raw foods and ready-to-eat foods minimize cross contamination. This can include walls and doors and/or scheduling this processing for a time when no other food handling is occurring; and
 - Access to processing equipment is limited to responsible trained personnel familiar with the potential hazards of the operation; and
 - Delineates cleaning and sanitizing procedures for food-contact surfaces; and

- Describes the training program that ensures the individual responsible for the reduced oxygen packaging operation understands the:
 - Concepts required for a safe operation;
 - Equipment and facilities; and
 - Procedures specified under 3-502.12 (B)(5) and § 8-201.14 of the Missouri Food Code.
6. When fish is packaged with ROP methods the HACCP plan needs to show that the fish is frozen before, during, and after packaging.
7. Cook-chill or sous vide process shall:
- Implement a HACCP plan that includes how the food is:
 - Prepared and consumed on the premises, or prepared and consumed off the premises but within the same business entity with no distribution or sale of the packaged product to another business entity or the consumer;
 - Cooked to heat all parts of the food to a temperature and for a time as specified under § 3-401.11 of the Missouri Food Code;
 - Protected from contamination before and after cooking as specified under Parts 3- 3 and 3-4 of the Missouri Food Code;
 - Placed in a package with an oxygen barrier and sealed before cooking, or placed in a package and sealed immediately after cooking and before reaching a temperature below one hundred thirty-five degrees Fahrenheit (135°F);
 - Describes cooking, cooling and cold holding that meets the requirements of the Missouri Food Code. *Note: The FDA 2013 model food code can be used to justify HACCP plans or systems that meet the newer temperature requirements;*
 - Held in a refrigeration unit that is equipped with an electronic system that continuously monitors time and temperature and is visually examined for proper operation twice daily;
 - Held frozen with no shelf life restriction while frozen until consumed or used;
 - If transported off-site to a satellite location of the same business entity, equipped with verifiable electronic monitoring devices to ensure that times and temperatures are monitored during transportation; and
 - Labeled with the product name and the date packaged;
 - Maintain the records required to confirm that cooling and cold holding refrigeration time/temperature parameters are required as part of the HACCP plan and:
 - Make such records available to the regulatory authority upon request; and
 - Hold such records for at least six (6) months; and
 - Implement written operational procedures as specified under 3-502.12 (B)(5) and a training program as specified under 3-502.12 (B)(6) of the Missouri Food Code.
8. A food establishment that packages cheese using a reduced oxygen packaging method shall:
- Limit the cheeses packaged to those that are commercially manufactured in a food processing plant with no ingredients added in the food establishment and that meet the Standards of Identity as specified in 21 CFR 133.150 Hard cheeses, 21 CFR 133.169 Pasteurized process cheese or 21 CFR 133.187 Semisoft cheeses;
 - Have a HACCP plan that contains the information specified under § 8-201.14 and as specified under 3-502.12 (B)(1), (B)(3)(a), (B)(5) and (B)(6) of the Missouri Food Code;
 - Labels the package on the principal display panel with a “use by” date that does not exceed thirty (30) days from its packaging or the original manufacturer’s “sell by” or “use by” date, whichever occurs first; and

- Discards the reduced oxygen packaged cheese if it is not sold for off-premises consumption or consumed within thirty (30) calendar days of its packaging.

Note: The FDA model food code does not require a HACCP plan be submitted when the ROP foods are labeled with the production time and date, are held at forty-one (41⁰) degrees F. or less during refrigerated storage and the products are removed from the ROP packaging in the establishment within forty-eight (48) hours after packaging. BEHS will accept proposals that meet these requirements when using ROP packaging in this manner and use the 2013 model food code as their supporting documentation.

When accepting proprietary information such as HACCP plan materials the PHES should also provide completed copies of the confidentiality statement and chain of custody form. The confidentiality statement assures the submitter that their information will be maintained confidential. The chain of custody form provides tracking of this confidential information to insure that it is not shared inappropriately. Copies of examples of these forms are included in the EHOOG Appendix. HACCP plans and proposals are not transferrable from process to process or place to place. Changes that impact the hazard analysis and/or critical control points will require resubmission of the appropriate information for review.

Validation

Before beginning the evaluation of a HACCP plan and system for the reduced oxygen packaging process, the scientific/technical information should be carefully evaluated to determine whether the process under review results in safe food. It is recommended that the establishment submitting the proposal include a validation from a process authority. For the PHES that is reviewing a plan they need to assure that certain information is present in the submission of the ROP paperwork. Using the HACCP Plan Validation Checklist provided in the EHOOG Appendix will help to assure all of the necessary information has been provided in a logical organized manner.

Some retail food establishments may not be prepared to submit an appropriate HACCP plan the ROP process. The person in charge (PIC) and their personnel may need additional training to understand the seriousness of the hazards that can be associated with special processes and how to control them. The inspector may need to provide information on the Food Code requirements.

Field Verification

Once the HACCP plan is in place for the reduced oxygen packaging process local PHES performing inspections of the retail establishment will need to perform field verification reviews. This is to assure the plan is being operated as was intended to prevent the identified hazards. When doing field verifications the PHES should review the HACCP plan that was submitted by the establishment. A suggested Verification Checklist is provided in the EHOOG Appendix for use. The field verification may be documented on this form, a sanitation observation form, or an inspection report form.

Summer Food Service Program

The Summer Food Service Program (SFSP) is a supplemental meal program sponsored by the United States Department of Agriculture (USDA) and managed by Community Food and Nutrition Assistance (CFNA) program within the Department of Health and Senior Services (DHSS). The program provides funding that allows community groups to serve meals from various feeding sites to children who otherwise may go hungry or lack adequate nutrition throughout the summer months when school is not in session. Food safety and sanitation inspections of food preparation sites and meal service locations are conducted by Local Public Health Agency (LPHA) staff. Many of these sites are located at schools, churches, parks, and children camps.

Participation Agreements (PA) to conduct inspections are entered into between DHSS and LPHAs.

Participation agreements contain the required deliverables and scope of work and begin on May 15th and continue through September 15th. Some of the deliverables in the PA are:

- Inspections of schools are limited to those schools sponsored by an organization and the program is not associated with the school or school district;
- The inspection of a feeding site or meal service location is to be conducted within the first half of the dates of operation;
- The menu for the meal served during the inspection should be noted in the comments section of the inspection sheet and corresponding food temperatures should be recorded;
- Inspection reports must be submitted within two weeks of the date of inspection and a copy of the most recent SFSP initial or update notification;
- The correct forms to use for inspections and attempted inspections; and
- The amount of reimbursement for inspections and attempted inspections.

Sponsors are allowed to sign-up new sites or change site information throughout the summer, thus the site information can change daily. The Bureau of Environmental Health Services (BEHS) compiles the site information and sends SFSP Initial Notifications to all participating LPHAs, for all sites that need an inspection. In addition, BEHS sends daily SFSP Update Notification emails that provide any change to the site information. Emails are sent to the designated contacts that each LPHA names at the beginning of the program year.

When inspecting these SFSP sites, inspectors will conduct a routine food safety and sanitation inspection. Staff preparing foods should follow safe food handling practices. Inspectors should focus on items such as cooking and reheating temperatures, cooling procedures, hot and cold-holding temperatures, cross-contamination issues, food handler health, personal hygiene, proper hand-washing practices, and food storage practices. Follow-up inspections shall be performed to verify correction of priority violations that were not corrected on-site during the initial inspection. Follow-up inspections should be conducted as required in the agency's written plan or program policies and procedures.

Completed inspection reports are to be submitted to DHSS within two (2) weeks of the inspection. Mail the inspection report to: DHSS, Bureau of Environmental Health Services (BEHS), Summer Food Service Program, P.O. Box 570, Jefferson City, MO, 65102-0570. BEHS will review the inspection report to assure that it was completed according to the PA. All fields on the inspection report should be completed. Some of the more important fields are the facility name, address, inspection date, "time in-time out", and signature. The inspector should note the food items served and food temperatures must be recorded on the inspection report in

the chart provided. The inspection time shall be a minimum of thirty (30) minutes for food preparation sites and an unobligated timeframe for service sites. Inspections should be completed on the two-page E6.39 Food Safety Inspection Report form for Summer Food and At-Risk Sites. Attempted inspections should be completed on a Sanitation Observation, E6.07, or Food Safety Inspection Report form for Summer Food and At-Risk Sites, E6.39. The forms can be ordered through the [DHSS warehouse](#).

All inspections must meet the criteria in the PA and the Environmental Health Operational Guidelines (EHOG) and be “approved” or accepted by BEHS. For BEHS to reimburse for attempted inspections, the form must clearly show the date and time of the inspection attempt and a copy of the most recent SFSP Initial or Update Notification must be submitted. No more than two (2) attempted inspections for the same site will be reimbursed.

When billing DHSS for services, submit one invoice for all inspections on a Vendor Request for Payment form, DH-38. Program specific, pre-filled DH-38s are emailed to all participating LPHAs at the start of each program year. Do not use any other form to request payment. All invoices must be received by BEHS by October 15th of the billing year.

BEHS has set up a dedicated email address for the SFSP: BEHS.SUMMERFOOD@health.mo.gov

Standardization

Standardization is the process which provides a uniform system of measuring an individual's knowledge and skills related to conducting inspections. This process is based on current food code provisions and focuses on foodborne illness risk factors, interventions, and Hazard Analysis of Critical Control Point (HACCP) principles.

Standardization measures proficiency and provides for consistency in observing violations, documenting violations, and providing guidance and technical assistance during an inspection. The Department of Health and Senior Services (DHSS) has aligned its standardization protocols with the Voluntary National Retail Food Regulatory Program Standards, in particular, Standard 2, Step 4. Eligible candidates must have at least two years of experience and have completed a minimum of 100 retail food inspections within the last two years.

During standardization, the standardization officer and candidate will conduct and complete the following items:

1. Five to eight inspections of high or medium priority facilities; and
2. One HACCP inspection. This inspection will include development of flow charts and risk control plans.
3. All inspections and paperwork are to be completed and submitted to the DHSS standardization officer within a one to two week period.

To learn more about this process, please contact the Retail Food Program Manager at (573) 751-6095.

Food Samples for Laboratory Analysis

The Department of Health and Senior Services (DHSS) State Public Health Laboratory (SPHL) has the capability to analyze and evaluate food samples for microbiological and chemical contamination. All samples of product must be classified as an official sample. An official sample is defined as a sample specimen, that is collected by DHSS or Local Public Health Agency (LPHA) staff, handled, transported, and analyzed by DHSS or LPHA staff with the results of such analysis becoming a permanent record of the DHSS demonstrating compliance or noncompliance with DHSS laws and regulations.

Consumer complaint samples from the general public will not be accepted. Consumers are advised to take the product to the manufacturer or store where it was purchased. Illness resulting from food consumption should be reported to the appropriate LPHA. Suspected food tampering cases should be reported to the local law enforcement agency.

Criteria for Food Sample Submission. The SPHL will only accept food samples for testing under the following scenarios:

1. In support of a foodborne disease outbreak investigation:
 - Investigation shall be coordinated by DHSS, Section for Disease Prevention in conjunction with the Section for Environmental Public Health.
 - Samples must be collected and submitted by DHSS or LPHA staff. Sample collection and submission shall be coordinated through the Regional Epidemiology Specialist.
 - Samples should be non-compromised, unopened containers that are properly transported and submitted with complete documentation. Compromised samples may be tested after consultation with the laboratory and approval by the Epidemiology Specialist.
 - Clinical samples from the affected consumers should be available for testing.
2. In support of a surveillance or enforcement action resulting from a sanitation inspection performed by DHSS or LPHA.
 - Samples must be collected and submitted by DHSS or LPHA staff. Contact Food Program Manager prior to collecting sample(s).
 - Samples should be non-compromised, unopened containers that are properly transported and submitted with complete documentation.
3. In support of state or federal food safety surveillance programs.
 - Surveillance programs administered by state or federal agencies.
 - Samples are collected and submitted by LPHA, DHSS, or federal public health agency.
4. In support of an investigation of a food-related terrorism activity:
 - Samples must be collected and submitted by the FBI or other designated law enforcement personnel.
 - Federal or state law enforcement agency declares event is a possible act of terrorism.
 - Investigation shall be coordinated through the DHSS, Emergency Coordination Center (ERC).

Contact the SPHL Environmental Bacteriology Unit at 573-751-3334 for food sampling kits. A completed food sample information form must accompany each sample submitted.

[Food Test Request Form](#)

[Chain of Custody Form](#)

Additional information regarding the proper collection and submission of food samples may be found in the [DHSS Communicable Disease Investigation Reference Manual](#), Section 4.0, Outbreak Investigation

[Foodborne Disease Handbook](#)

[Foodborne Outbreak Flowchart](#)

Payment of Samples

1. When samples are submitted to the DHSS laboratories, payment for the samples collected shall be made or offered to the owner.
2. DHSS staff should request reimbursement for purchase on the DH-57, Monthly Expense Report. Attach a receipt from the business that clearly identifies the name and address of the establishment, the kind of sample, and the amount paid.
3. LPHA staff should arrange for purchase from a local fund. When this is not possible, purchase of samples should be arranged through the BEHS Chief.

Disposal of Spent Sample

Laboratory analysis often results in excess quantities of sample contents. The remaining contents, if not retained for support reasons, should be disposed of properly. The laboratory shall determine the acceptable method for disposal of the spent sample. In no instance may anyone use the contents for personal use and/or gain or give the contents to anyone else for this purpose.

Manufactured Food Program

A food processor is an individual or organization that takes raw food products and ingredients or pre-processed products, combines or repackages them and distributes the finished product. This distribution can be to restaurants, grocery stores, warehouses, or other distributors. Food processing can be a simple operation, such as repackaging bulk foods, baking bread and distributing it, or a more complicated operation such as canning and preserving. The key difference between a food processor and a food establishment is that the product from a food processor is not sold directly to the end consumer. The term “Food Processing Plant” is included in the definitions section of the Missouri Food Code.

Jurisdiction

It is important to know that in some instances there is an overlap of regulatory jurisdiction between local, state, and federal agencies. This means a food processor may be inspected and regulated by more than one regulatory agency. In Missouri, food processors or food processing plants are inspected by the Department of Health and Senior Services (DHSS). Plants involved in interstate commerce are inspected by DHSS and the U.S. Food and Drug Administration (FDA). Similarly, the Missouri Department of Agriculture regulates and inspects the manufacturing of meat and poultry products for intrastate distribution. Meat/poultry plants involved in interstate commerce are regulated and inspected by the U.S. Department of Agriculture. Table 1 outlines differences in FDA and USDA jurisdiction.

An individual or organization may meet the definition of both a food processing plant and retail food establishment. When this occurs, the retail functions of the establishment will remain subject to Local Public Health Agency (LPHA) inspection under the applicable retail food code. Any identified retailer that wholesales products will be added to DHSS’ inventory of food processors. They will be categorized as a retailer-wholesaler, and subject to inspection as a food processing plant (food manufacturer). Retailer-wholesalers whose primary business (51% or more) is wholesale will be inspected by DHSS under the same rules and frequency as other food manufacturers. Retailer-wholesalers whose primary business is retail sales will be inspected by DHSS under the same rules as other food manufacturers but as a reduced frequency. In both instances, the retail portion of the operation would also be inspected by the appropriate LPHA.

Jurisdiction over commissaries and central kitchens can be complex and should be evaluated on a case-by-case basis. The Food Code includes ‘central preparation facilities’ that supply food to a vending location or satellite feeding location in its definitions of a “Food Establishment.” However, central kitchens engage in activities that also meet the definition of a “Food Processing Plant.” These operations engage in practices more commonly used by food manufacturers than retailers. Furthermore, while food operations that provide food directly to the end consumer are often considered restaurants, many central kitchens are not considered restaurants as defined in federal rules and are required to register with the FDA as a food manufacturer. Because both regulations are inclusive of these types of facilities, DHSS evaluates establishments to determine the most appropriate regulatory approach using guidelines set in DHSS policy. Examples of commissaries and central kitchens currently in DHSS’ inventory as food processing plants include:

- Commissaries/central kitchens that distribute to more than five retail locations;
- Commissaries/central kitchens that distribute interstate or otherwise cross multiple jurisdictional borders;

- Commissaries/central kitchens in which product is packaged with labeling for self-service to the end consumer; and
- Commissaries/central kitchens that package shelf-stable, potentially hazardous food in a hermetically sealed container.

Examples of commissaries and central kitchens that are usually included in an LPHA’s inspection inventory include:

- Commissaries/central kitchens that distribute food to five or less locations owned and operated as part of the same business;
- Commissaries/central kitchens that distribute product within a single local regulatory jurisdiction;
- Commissaries/central kitchens for local school districts; and
- Senior Centers that prepare meals for individual consumption and rely on volunteer organizations for distribution to the end consumer.

Contact your regional DHSS PHES for assistance evaluating a commissary/central kitchen or if you have other jurisdictional questions.

Conducting Inspections

Food processing plants inspected by DHSS must comply with the requirements of 21 CFR Part 117 Good Manufacturing Practices (GMPs). This is a federal regulation that DHSS adopted by reference and is used when inspecting all types of processing, distribution, and warehouse facilities. 21 CFR Part 117 includes a general set of regulations covering personnel, plants and grounds, sanitary operations, sanitary facilities and controls, equipment and utensils, and processes and controls. It also requires most food processors to develop and follow a food safety plan to address identified food safety hazards. Some operations, such as acidified foods, low acid foods, juice, and bottled water have additional regulations to adhere to and require detailed evaluation. Many of the physical facility provisions of the GMPs are similar to those found in the Food Code. A facility approved as a retail food establishment often meets the physical facility requirements of a food processing plant and vice versa.

Inquiries and Complaints

LPHAs receiving calls from an individual interested in starting a food processing operation should refer the caller to the nearest regional DHSS PHES for additional information and assistance. In addition, the individual may be directed to DHSS’ website: <https://health.mo.gov/safety/foodsafety/industryfoods/>.

When a complaint is received about a food product, the LPHA needs to complete the [Food Product Complaint](#) form, E6.37C. This form can be used to collect the necessary information to begin a complaint investigation. Completing as much of the information listed on the form as possible will improve the investigator’s ability to investigate the complaint effectively. If the Bureau of Environmental Health Services (BEHS) receives a food product complaint this form will be completed and forwarded to the appropriate agency for follow-up. BEHS should be sent a copy of all food product complaint forms completed by LPHAs for tracking purposes.

Regional Public Health Environmental Supervisors will provide technical assistance as necessary to the LPHA on investigating food product related complaints.

Table 1: FDA/USDA JURISDICTION

This table, adopted from FDA’s 2018 Investigation Operations Manual, summarizes information concerning jurisdiction overlap for commercial products regulated by either or both FDA and USDA. It does not cover products made for on-site consumption such as pizza parlors, delicatessens, fast food sites, etc.

FDA JURISDICTION	USDA JURISDICTION		
<p>21 USC 392(b) Meats and meat food products shall be exempt from the provisions of this Act to the extent of the application or the extension thereto of the Meat Inspection Act. FDA responsible for all non-specified red meats (bison, rabbits, game animals, zoo animals and all members of the deer family including elk (wapiti) and moose)). FDA responsible for all non-specified birds including wild turkeys, wild ducks, and wild geese.</p>	<p>The Federal Meat Inspection Act regulates the inspection of the following amenable species: cattle, sheep, swine, goats, horses, mules or other equines, including their carcasses and parts. It also covers any additional species of livestock that the Secretary of Agriculture considers appropriate. Mandatory Inspection of Ratites and Squab (including emu) announced by USDA/FSIS April 2001</p>	<p>The Poultry Products Inspection Act (PPIA) defines the term poultry as any domesticated bird. USDA has interpreted this to include domestic chickens, turkeys, ducks, geese and guineas. The Poultry Products Inspection Act states poultry and poultry products shall be exempt from the provisions of the FD&C Act to the extent they are covered by the PPIA. Mandatory Inspection of Ratites and Squab announced by USDA/FSIS April 2001</p>	<p>The Egg Products Inspection Act defines egg to mean the shell egg of domesticated chicken, turkey, duck, goose or guinea. Voluntary grading of shell eggs is done under USDA supervision. (FDA enforces labels/labeling of shell eggs.)</p>
<p>Products with 3% or less raw meat; less than 2% cooked meat or other portions of the carcass; or less than 30% fat, tallow or meat extract, alone or in combination. Products containing less than 2% cooked poultry meat; less than 10% cooked poultry skins, giblets, fat and poultry meat (limited to less than 2%) in any combination.* Closed-face sandwiches.</p>	<p>Products containing greater than 3% raw meat; 2% or more cooked meat or other portions of the carcass; or 30% or more fat, tallow or meat extract, alone or in combination.* Open-face sandwiches.</p>	<p>Products containing 2% or more cooked poultry; more than 10% cooked poultry skins, giblets, fat and poultry meat in any combination.*</p>	<p>Egg products processing plants (egg breaking and pasteurizing operations) are under USDA jurisdiction.</p>
<p>FDA is responsible for shell eggs and egg containing products that do not meet USDA’s definition of “egg product.” FDA also has jurisdiction in establishments not covered by USDA; e.g. restaurants, bakeries, cake mix plants, etc.</p> <p>Egg processing plants (egg washing, sorting, packing) are under FDA jurisdiction.</p>		<p>Products that meet USDA’s definition of “egg product” are under USDA jurisdiction. The definition includes dried, frozen, or liquid eggs, with or without added ingredients, but mentions many exceptions. The following products, among others, are exempted as not being egg products: freeze-dried products, imitation egg products, egg substitutes, dietary foods, dried no-bake custard mixes, egg nog mixes, acidic dressings, noodles, milk and egg dip, cake mixes, French toast, sandwiches containing eggs or egg products, and balut and other similar ethnic delicacies. Products that do not fall under the definition, such as egg substitutes and cooked products, are under FDA jurisdiction.</p>	
<p>Cheese pizza, onion and mushroom pizza, meat flavored spaghetti sauce (less than 3% red meat), meat flavored spaghetti sauce with mushrooms, (2% meat), pork and beans, sliced egg sandwich (closed-face), frozen fish dinner, rabbit stew, shrimp-flavored instant noodles, venison jerky, buffalo burgers, alligator nuggets, noodle soup chicken flavor</p>	<p>Pepperoni pizza, meat-lovers stuffed crust pizza, meat sauces (3% red meat or more), spaghetti sauce with meat balls, open-faced roast beef sandwich, hot dogs, corn dogs, beef/vegetable pot pie</p>	<p>Chicken sandwich (open face), chicken noodle soup</p>	<p>Homogeneous cheese and meat products, e.g., cheese balls with pepperoni, must contain more than 50 percent meat to be amenable to USDA inspection. Cheese products that contain 50 percent or less meat are considered products of the dairy food industry and, thus, are exempt from federal inspection. When cheese and meat are separate components in a package, the packaged product is amenable, provided, it contains 2 percent cooked meat.</p>

Product Tampering

Tampering, threat of tampering and false reporting of tampering of food products, over-the-counter drugs, or cosmetics is a federal crime. Whenever a report of possible or actual tampering is received, referral must be made to the U.S. Food & Drug Administration (FDA) via the Department of Health and Senior Services, Bureau of Environmental Health Services central office. Timely communication with FDA is important for purposes of coordination and investigation.

Frozen Dessert Program

The Department of Health and Senior Services (DHSS) and Local Public Health Agencies (LPHAs) regulate establishments that manufacture, sell, or serve frozen dessert products throughout the state. Under sections 196.851-.895, RSMo, DHSS is given the responsibility of assuring ice cream and related frozen dessert products are wholesome and pure; preventing confusion, fraud and deception in connection with their manufacturing and sale; and making unlawful the misbranding and adulteration of such products.

A frozen dessert establishment is defined as:

- A Frozen Dessert Plant, which is any place or premise when frozen desserts or mixes are processed, pasteurized, frozen, or packaged for distribution or sale;
- A Frozen Dessert Processor, which is any person who freezes any pasteurized mix into semisolid or solid form for retail distribution or sale as a frozen dessert; and
- A frozen dessert plant and those establishments processing products such as ice cream, soft-serve products, frozen yogurt, frozen custard, sherbets, water ice, and frozen novelties.

A frozen dessert license shall be obtained for each frozen dessert establishment. Most frequently this applies to restaurants, convenience stores, and other food establishments with a soft-serve ice cream machine. Licenses are issued to each manufacturer once a completed [frozen dessert application](#), a copy of an “approved for frozen dessert” health department inspection report dated within the last twelve (12) months, a certificate of no tax due dated within the last ninety (90) days, and appropriate license fee has been submitted to DHSS and processed by the Frozen Dessert Program. The license is valid for one year and must be renewed annually.

DHSS has determined the following establishments DO NOT require a frozen dessert license:

- Establishments manufacturing and/or freezing ice beverage products exclusively, such as ices, slurpies, and frozen cappuccinos; or
- Establishments serving hard hand-dipped ice cream manufactured in a licensed plant.

Inspection Procedures

A frozen dessert inspection is not a separate inspection of a retail food establishment, but merely a part of the routine inspection of the facility. A facility with a frozen dessert machine(s) must be inspected at least annually.

During the inspection the following criteria shall be observed and used to evaluate whether the frozen dessert machine is in compliance and should be approved for licensing:

1. Assure all mixes used for a frozen dessert are obtained from an approved source.
2. Determine if the facility is using rerun product. Rerun is the reuse of frozen dessert mix that was previously in the machine prior to machine disassembly.
3. If the facility uses rerun product, review the facility’s policy on its use to assure it is being handled and stored properly. Rerun product must be used in the machine at the beginning of the next day. If the rerun product is kept more than 24-hours it must be labeled and dated according to 3-501.17 of the Missouri Food Code. The cycle of using rerun product must be broken at least every four (4) days.

4. Assure that the machine is disassembled, cleaned, and sanitized in accordance with the manufacturer's specifications and frequencies. General guidance concerning cleaning frequency is noted below:
 - A. Machines not having a standby mode must be disassembled, cleaned, and sanitized nightly; and
 - B. Machines equipped with a standby mode must be disassembled, cleaned, and sanitized at least every four (4) days.
 - C. Machines with a nightly heat treatment or "pasteurization" cycle (example: Taylor® Heat Treatment units) must be disassembled for cleaning and sanitization at the frequency specified by the manufacturer.
5. Check the temperature of the mix in the machine hopper. The frozen dessert mix must be maintained at temperatures in compliance with the most current food code requirements (41°F or below). Record the temperature on the inspection sheet.
6. Most machines have a drip pan that should be inspected to assure there is no leakage of mix out of the rear main seal of the freezing cylinder.
7. Check the "Frozen Dessert" category on the inspection sheet and record the frozen dessert establishment number. This number can be found in the upper right hand corner of the posted license.
8. Lastly, note if the establishment should be approved or not approved for a frozen dessert license in the check box provided on the food inspection form. If the inspection form that is used by an agency with their own food ordinance, doesn't have a check box for frozen dessert license, be sure to clearly mark on the inspection sheet that the machine is approved or not approved for a frozen dessert license. The facility will need a form showing that the machine is compliant and approvable.

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Introduction to Commercial Lodging Program

The purpose of the commercial lodging program is to ensure public health and safety of visitors in Missouri by minimizing exposure to physical, chemical, and microbiological hazards associated with lodging establishments. While the primary intent of lodging licensing and inspection services is to protect public health, it has economic advantages as well. Seventeen tourism-related industries generated over \$16 billion dollars during the fiscal year 2017; providing 307,000 jobs in Missouri.

Authority

Every inspector should understand the statute and rule before they conduct an inspection. In order to know what they are inspecting, the inspector should start with a clear understanding of how the statute defines a lodging establishment. A lodging establishment is “any building, group of buildings, structure, facility, place or places of business where five or more guest rooms are provided, which is owned, maintained, or operated by any person and which is kept, used, maintained, advertised or held out to the public for hire which can be construed to be a hotel, motel, motor hotel, apartment hotel, tourist court, resort, cabins, tourist home, bunkhouse, dormitory, or other similar place by whatever name called, and includes all such accommodations operated for hire as lodging establishments for either transient guests, permanent guest, or both transient and permanent guests.” Length of stay is not a factor in determining whether a facility is a lodging establishment. The following items should be addressed before such determination is made: are services provided (clean bedding, housekeeping, etc.), how are they zoned, how are they licensed through the city or county, and how are they named/advertised (do the words motel, hotel, inn etc. appear).

Chapter 315, RSMo, assigns the Department of Health and Senior Services (DHSS) the responsibility of annually inspecting and licensing every lodging establishment in the state. Within DHSS, the licensing of these facilities is administered by the Bureau of Environmental Health Services (BEHS). 19 CSR 20-3.050, Sanitation and Safety Standards for Lodging Establishments establishes standards pertaining to food safety, life safety, fire safety, electrical wiring, fuel-burning appliances, plumbing and swimming pools/spas.

Lodging programs in jurisdictions without local lodging ordinances must inspect facilities based on guidance outlined in this manual. The lodging program/BEHS may audit programs in these jurisdictions without invitation. Jurisdictions with lodging ordinances are expected to manage their program to be in compliance with both their ordinance and 19 CSR 20-3.050.

Background

The lodging statute, unlike other Missouri public health statutes, has a provision allowing city and county ordinances to be used in lieu of the state’s standards in the areas listed below:

- Fire safety;
- Electrical wiring;
- Fuel burning appliances;
- Plumbing; and
- Swimming pools and spas.

Where local ordinances are present, if less stringent than the state requirement in the lodging rule, the local regulatory authority must:

- Perform annual inspections on new and existing lodging establishments;
- Provide the appropriate paperwork to the Local Public Health Agency (LPHA) or the owner of the facility; and
- Have the authority to enforce the local ordinance or regulation.

It is imperative that the inspecting LPHA staff doing lodging inspections be familiar with all local ordinances in their area and be knowledgeable about how local authorities enforce them. Ideally, the lodging inspection and fire or code inspection will be conducted at the same time so the various regulatory authorities can discuss items of mutual interest and concern. There is no allowance for a local food ordinance to be used in lieu of the Missouri Food Code. Therefore, food service operations should be evaluated for each lodging inspection. Some jurisdictions may do a separate food inspection at the same time as the lodging inspection, while others may do the food inspection several weeks or a month before the lodging inspection. A food inspection should be no older than six (6) months or the food service area should be inspected at the same time as the rest of the facility. Inspectors will need to determine what method works best based on compliance history and workload.

Lodging Sanitation and Safety Guidelines

Licensing

Annual licensing inspections are required in 317.037, RSMo, of all lodging establishments in the state. BEHS staff will conduct initial inspections along with LPHA staff for all newly constructed lodging facilities, facilities that re-open after having been closed for more than eighteen (18) months, and facilities that have added or constructed an addition to the existing structure. The statute further states no person can operate a lodging establishment without a license from DHSS. Only a person, who complies with the provisions of sections 315.005 to 315.065 RSMo, shall obtain a license. Compliance with the statute and rule is determined through the inspection process.

Once inspected and approved, the facility must submit the approved inspection report with the application material. Since annual inspections are required, each facility will be inspected at least once every twelve months. With licenses expiring on September 30th, initial inspections should be completed and submitted to the Lodging Program Manager by June 1st of the licensing year and all follow up inspections completed by August 31st of the licensing year. Inspections may be conducted beginning January 1st of the current licensing year. This allows the facility to make repairs or correct violations noted and will allow the inspector adequate time to conduct the initial inspection and any follow-up inspections needed. The inspector should consider the workload of their agency and whether seasonal duties may require scheduling inspections at another time of the year. For example, agencies that inspect public and semi-public pools may need to inspect all their lodging establishments before May. The inspector will also need to give consideration to whether the facility has an outdoor pool and should schedule the inspection when the pool is open for the season.

Prior to conducting annual inspections, the inspector needs to determine whether the facility is licensed for the current year. Lodging licenses should be displayed at the facility. An annual inspection should be conducted no matter the licensing status of the facility. Operating without a license is a class B misdemeanor which has a one year statute of limitations. Therefore, the Bureau of Environmental Health Services (BEHS) needs an inspection each licensing year to keep the referrals up to date. Having a consistent and complete inspection history allows for more success with prosecuting establishments that operate for multiple years without a license. Inspection priority should be given to inspected and approved facilities, and then approved but not licensed. When inspecting the facilities not approved, the violations noted from the previous year's inspection must be evaluated. If violations are still ongoing, note those violations as pending violations from the previous year and begin your inspection. If the violations have been corrected then an approved inspection for that licensing year should be completed and submitted; and then the inspector should conduct the next year's inspection. Local Public Health Agency (LPHA) staff are encouraged to work with the Public Health Environmental Supervisor (PHES) or the Lodging program, if they have questions about the licensing status of a facility.

Inspection Report Form

The inspector should inspect and evaluate the facility for compliance with 315.005 to 315.065, RSMo and 19 CSR 20-3.050 Sanitation and Safety Standards for Lodging Establishments. The inspection report form is a two page document and is obtained through the DHSS warehouse. The form numbers are E9.02 and E9.02A. Use a [DH-48](#) to order the inspection report.

For each facility, complete an E9.02, or page one. On this page, general facility information and a checklist review of the facility's compliance with the rule is provided. During the inspection the inspector will verify the facility information: owner, name of facility, number of rooms, etc. Every blank should be filled in and for each parameter the inspector should note if the item is "in compliance," "out of compliance," "not applicable" or "not observed." Inspection forms with blanks in sections A-H will not be accepted. The lodging program will contact the inspector about obtaining an amended report.

On this page, the inspector must mark whether the facility is "approved" or "not approved." Use the following criteria to determine the approval status of a lodging establishment during an inspection:

1. If no violations are found, the establishment is considered in compliance with the minimum safety and sanitation standards and should be marked APPROVED.
2. If a violation(s) is found, the establishment is not in compliance with the minimum safety and sanitation standards and should be marked NOT APPROVED. A correct-by-date or follow-up date shall be noted and the establishment notified to make the necessary corrections to come into compliance with 315.005-315.065, RSMo and 19 CSR 20-3.050. The follow-up date shall not extend beyond September 30th of that licensing year. Until the establishment has made all noted corrections and is found to be in compliance with all applicable minimum safety and sanitation standards, the establishment should remain not approved.
3. If the establishment has not met the minimum standards as outlined in a local ordinance or regulation pertaining to fire safety, electrical wiring, fuel-burning appliances, plumbing or swimming pools/spas, the establishment should be marked NOT APPROVED. The inspector should coordinate the correct-by-date or follow-up date with the local agency performing the inspection and assure the date is recorded on the lodging inspection form. The agreed upon date should allow the local agency time to assess their inspection issues and allow time for the establishment to make the necessary corrections to come into compliance. Ideally, the correct-by-date should not extend beyond September 30th of that licensing year. Until the establishment has made all noted corrections and is found to be in compliance with all applicable minimum safety and sanitation standards, the establishment should remain not approved.
4. If a violation(s) is found and corrected on-site, the violation(s) should be noted on page two along with the notation, corrected on-site (COS).

Also required on this page, is the signature of the inspector and a representative of the facility. If the representative of the facility refuses to sign in the portion marked "Received by", note their refusal. Within this signature block portion of the form, the inspector marks whether the facility is APPROVED to operate or NOT APPROVED and when the follow-up inspection will occur.

The inspector must record an actual date for the follow-up inspection rather than a generic term such as "two months" or "six weeks". This date can be discussed with the facility manager or owner at the time of the initial inspection. Once a date has been established, it is essential for the inspector to return for the follow-up inspection on that date to convey the significance of correcting the noted violations. If a scheduling conflict arises, the inspector shall notify the facility of the new follow-up date and the follow-up must be conducted on this new date.

The Licensing Year must be completed as well. Because the license expires in September, the licensing year is written as of October 1, through September 30. For example, an inspection conducted in January of 2015, for a

facility that is currently licensed; would have the licensing year marked as 2015/2016. The reason being is that the facility is currently licensed in January of 2015 which would mean that the inspection used for that license was from the 2014/2015 licensing year and any annual or routine inspection conducted after that date would be for the licensing year that would begin October 2015 and end in September of 2016.

Form E9.02A, or page two, is used to describe the violations in detail. There may be multiple E9.02A pages used to document the violations that are observed during the inspection. Violations should be written legibly, state what is observed, and include a corrective measure. Examples of correctly noted violations are as follows:

- E7: “No smoke detector in maintenance room. Smoke detectors shall be installed in all sleeping rooms, cooking areas/kitchens, hallways, laundry rooms, mechanical rooms, hazardous areas and where specifically stated in this rule.”
- C2: “Food debris, dust, and a sock behind chest of drawers and headboard. Clean and proper housekeeping shall be employed in guest rooms and related facilities.”

When completed the report should be mailed to BEHS within thirty (30) calendar days. All reports are reviewed and must be complete and legible, if not, the report may be returned to the LPHA. It is of the utmost importance to be timely in sending in your inspections as there have been several incidents of establishments altering their inspections. Some of what is reviewed and the criteria to be met is below:

- Completion of the report – Approved inspections with blanks in sections A-H will not be accepted. The lodging program will contact the inspector about obtaining an amended report.
- Inspection reports must be signed – Inspections must be signed by a representative of the facility or noted as “Refused to sign” unless the inspection is a desk approval. The lodging program may contact the inspector about obtaining an amended report/representative signature.

If there is a change in the “status” of a facility, such as, a new owner, name change, new establishment, no longer open, then a Change Order form, DH-50, is to be completed and mailed or emailed to BEHS. Accurate information is critical since legal action will be taken based on the information provided on the inspection report form, so clearly note the owner and general manager.

The inspection report shall be distributed as indicated on the form:

- White copy goes to the lodging facility owner or operator (regardless if signed by representative or not);
- Canary copy is mailed to BEHS; and
- Pink copy is retained by the LPHA.

Conducting Inspections

To attain a true picture of the lodging establishment, a variety of rooms should be inspected. Ask management to see handicap accessible, suite-style, king, double, Jacuzzi®, rooms on every floor and wing and even dirty rooms. When selecting rooms to inspect, do not let the establishment select the rooms. Ask for a list of all available rooms and make your selection from that list. Be sure to look at different rooms than those evaluated the previous year. Management may be apprehensive about selecting a few rooms that have yet to be cleaned,

however it is a convenient way to do a thorough inspection of mattresses and box springs for wear, cleanliness, and the presence of bedbugs without remaking beds. Generally an occupied room should not be inspected. However, it may be necessary to inspect a “leased” or rented room, especially at extended stay facilities or when rooms are almost permanently rented. When this is necessary it should always be done with an employee of the facility and preferably unoccupied or with the guests approval/permission.

Inspecting lodging facilities is a lengthy process. In order to do a thorough inspection all common areas (lobby, stairways, exercise rooms, pool rooms, hallways, etc.), hazardous and working areas (mechanical rooms, storerooms, laundry rooms, etc.), and a representative number of guest rooms are to be inspected. The following table gives the minimum number of guest rooms to be inspected during the routine inspection:

TOTAL NUMBER OF GUEST ROOMS	PERCENTAGE/NUMBER OF GUEST ROOMS TO INSPECT
5-20	50 % of the total number of guest rooms
21-200	10 guest rooms or 15 % of the total number of guest rooms, whichever is greatest
> 200	Minimum of 30 guest rooms, more if deemed necessary during inspection

Page one of the inspection sheet is arranged in a manner that allows the inspector to record the facility’s identifying information in the upper portion leaving the majority of the page as a checklist record for facility compliance. The various sections noted correspond to the sections in the rule. These sections have broad headings that pertain to many areas within a facility including water, wastewater, sanitation/housekeeping, food safety, life safety, fire safety, swimming pools/spas, plumbing/mechanical, heating and cooling, and all required 3rd party inspections. There is no substitute for knowing the rule, however; the items below attempt to discuss inspection items common in many facilities.

Lobby- Evaluate the lobby for general cleanliness, fire, and life safety measures. The inspector should check to ensure that smoke detectors, exit signs, and emergency lighting are all functioning correctly. The functionality of carbon monoxide detectors shall also be checked if they are required. Fire extinguishers need to be checked to ensure that they are charged, have a current tag, and are the correct size and type.

Food pantry, kitchen and dining area- Evaluate these areas for general cleanliness, food safety, food handling, and food protection. If potentially hazardous foods are present, then the dining area and food service area are inspected using the current Missouri Food Code and should be documented on a Retail Food Establishment Inspection Report. Also, in the dining area the smoke detectors, emergency lighting, and exit signs should be evaluated. Pay particular attention to food storage, environmental hazards, and pest control.

Exercise room-Evaluate for cleanliness, location of mirrors, emergency lighting, and exit signs.

Pool area- Evaluate pool/spa water chemistry, check records, deck safety items, lifesaving equipment, check for correct signage for pool/spa, depth markers, and that ladders are present and in good condition. The pool ventilation, pool recirculation equipment, make up air ventilation, and water heaters (may need state fire marshals’ inspection) need to be checked. Check to make sure chemicals are stored appropriately. Ensure that drains are anti-entrapment drains. Receptacles must be GFCI’s and need to be properly located. The pool

needs to have a fence or appropriate enclosure with a self-latching and self-closing gate/door. Smoke detectors, carbon monoxide detectors, exit signs, emergency lighting and sprinklers need to be checked.

If the pool is closed for the season, it will be required to have an approved cover. If the owner of the lodging establishment indicates the pool is closed permanently, the owner/general manager must ensure the pool and pool area do not create life safety or pest harborage issues. The pool should be covered and access to the pool area closed to the public. The inspector may recommend the pool be appropriately filled in if there are no plans to reopen the pool in the future.

Hallways and stairwells-Evaluate fire-rated doors, stair railing height, guard or baluster spacing, combustible storage, emergency lighting, exit signs, smoke detectors, unobstructed egress, and closing devices for doors that remain open.

Meeting rooms-Evaluate for cleanliness, egress, emergency lighting, exit signs, and smoke detectors.

Guest Rooms- Evaluate for cleanliness, general repair, presence of pests, and maintenance. Areas that require attention include bedding, mattresses, and box springs. Check for both hot and cold water, plumbing leaks, and the placement of the coffee pot, cups, ice bucket, and liner. Check the cleanliness of appliances. Also check that there is a correct evacuation route on or near doors. Check for proper wiring and grounding of electrical outlets. Also determine if GFCIs are installed where required and are working correctly. Determine if doors are fire-rated and self-closing. The placement and functioning of smoke detectors in all sleeping rooms and kitchenettes needs to be checked as well as the size, placement, and availability of a fire extinguisher where appropriate (ex. Kitchenettes).

Outdoor areas-Evaluate the exterior for pest harborage, over grown foliage, unused equipment, and back flow prevention on outside hydrants/faucets and the irrigation system.

Water-Collect a water sample if the supply is a private well or non-community source, evaluate well head construction and chlorinator if present, and for the Department of Natural Resources (DNR) regulated well ask to see the Permit to Dispense. Refer to the [Chapter 7.0 Drinking Water](#), of this manual, for additional information on inspections of wells and water testing. During the inspection the inspector will assure that the lodging facility has a safe water source and properly functioning wastewater disposal system. That will mean that at least an annual water sample will be collected for private and non-community water supplies. If a water sample is taken during an inspection the inspection should always be marked not approved even if no violations are found. On page 2 of the inspection the inspector should note approval pending water sample results. If the water sample comes back satisfactory then a desk approval can be done. Under no circumstances should the inspector write over the original inspection.

Onsite wastewater treatment-Evaluate treatment and dispersal area, look for signs of failure. For DNR regulated systems, ask to see their National Pollutant Discharge Elimination System (NPDES) permit or Exemption letter. Refer to [Chapter 5.0 Onsite Wastewater Treatment](#), of this manual, for inspection criteria.

Storage buildings- Evaluate for cleanliness, smoke detectors, fire extinguisher, emergency lighting, and exit signs. If gas appliances are in use then a carbon monoxide detector must be present and in working order. Check for appropriate equipment and chemical storage.

Laundry room(s)- Evaluate for a fire-rated door into the laundry room. The laundry chute door should be closed and be fire-rated. Smoke detector(s), carbon monoxide detector(s), emergency lights, and exit signs should be checked for functionality. Fire extinguishers should be checked to make sure they are charged and have a current inspection. The backflow prevention device/air gaps on washing machines, fill line, and drain lines should be checked. The GFCIs need to be placed appropriately and should test correctly. Chemical storage should be inspected. Ensure that there is adequate make up air for gas appliances as well as appropriate dryer ventilation. Check that the dryer filters are clean.

Storage rooms-Depending on what is stored in the room, evaluate cleanliness, smoke detectors, carbon monoxide detectors, and fire extinguishers.

Communications and electrical rooms-Evaluate these areas for smoke detectors, fire extinguisher, breaker labeling, and unobstructed access to the panels.

Mechanical equipment rooms-Depending on the equipment housed within, there are a lot of things to evaluate: if fuel fired equipment is present then look for carbon monoxide detectors; make-up or combustion air venting and sizing; fire extinguishers; smoke detectors; water heater size, pressure valve sizing and maintenance, discharge lines, shut off valves and/or switches; back flow prevention where necessary; sprinklers as required; emergency lighting, and exit sign when necessary; and Department of Public Safety, Division of Fire Safety (DPS-DFS) inspection of large hot water storage tanks and water heaters/boilers with output greater than 200,000 BTUs.

Pool filter, recirculation and heater rooms- Depending on the equipment housed within this area, evaluate: ventilation for fuel fired water heaters, DPS-DFS inspection for water heaters/boilers, chemical feed, chemical storage, smoke detectors and carbon monoxide detectors, sprinklers when required over gas appliances, fire extinguisher, ventilation, and GFCI receptacles.

Electrical and plumbing chases-Evaluate to assure that wall, floor, and ceiling penetrations are sealed.

Office and staff lounge areas-Evaluate for smoke detectors and cleanliness.

Follow-up Inspections

Follow-up inspections must be conducted on lodging facilities marked NOT APPROVED on initial inspections. The inspector will determine or assign the timeframes in which the facility is given to make the necessary corrections to violations found during the inspection. The following criteria should be used to determine an appropriate length of time to allow for corrections to be made:

1. The assigned date shall not exceed ninety (90) days from the initial inspection or occur past September 30th.

2. If violations that pose a direct imminent health and/or safety hazard are noted, the inspector shall set the correct-by-date. This correct-by-date shall be within an accelerated timeframe, such as, immediately, 24 hours, or a week.
3. If violations that pose an indirect health and/or safety hazard are noted, the inspector and the owner or manager may set a mutually agreed upon correct-by-date. This correct-by-date should be appropriate for the violation, such as, two weeks, one month, etc. but not to exceed three months.

The follow-up inspection should be conducted on the date indicated. If this is not possible, the facility needs to be informed and a new follow-up date set.

The follow-up inspection is to be documented on a new E9.02 and E9.02A form. Using the violations previously noted, re-evaluate whether these items have been corrected. When completing the first page, corrected violations will be marked in compliance and for items that were compliant on the initial inspection, these will be recorded as “not observed”.

During the follow-up inspection, violations that remain uncorrected will result in the inspection report being marked “not approved.” In this instance, on the E9.02A page of the inspection report, the inspector should comment “call for inspection” in the follow-up date field. The inspector needs to explain to the facility management they are responsible for correcting any remaining violations, notifying the inspector when the corrections have been made, and for requesting a follow-up inspection.

If, during the course of a re-inspection, substantial new violations are identified, the inspector should terminate the re-inspection. The inspection report shall be identified as “terminated” with a brief description as to why the inspection was terminated, such as “significant additional violations observed.” A new inspection report will be initiated and marked as an “Initial” inspection. All new violations will be noted on the new inspection report as well as any outstanding issues from the terminated inspection report. Assigning a new follow-up date will be done as previously discussed.

If a facility denies the inspector entry to conduct an inspection, complete the inspection report form and note “denied entry”.

A follow-up field visit may not be required for all outstanding violations. In some instances, the inspector may submit a “desk approval” inspection report. A “desk approval” can be done when the pending violations do not need the inspector to go to the location itself in order to confirm the violation has been corrected. Examples include water sample results coming back satisfactory or a copy of a third party inspection (local fire, boiler, etc) being sent to you. Complete page one of the inspection report form and where the facility would sign print: “Desk Approval”.

All violations must be corrected before an approved inspection is issued.

Some facilities may not receive an approved inspection after their follow-up inspection. If a facility fails to contact the Local Public Health Agency for a second follow-up inspection, BEHS will contact the facility, after the licensing year begins in September, to determine if the violations have been corrected. If the violations have been corrected, BEHS will ask the inspecting LPHA to conduct a follow-up inspection. If that inspection passes, the facility can be marked approved and continue through the licensing process.

If the violations have not been corrected, BEHS will take additional enforcement actions including but not limited to referring the lodging facility to the County Prosecuting Attorney.

Complaint Investigations

Every lodging complaint received should be investigated; some however warrant more immediate attention. For example, fire or storm damage would take priority over a complaint regarding limited hot water or unsanitary conditions. When speaking with the complainant, gather enough information to adequately investigate the complaint. Important information includes: their name and contact information, name of lodging facility and room number, when they stayed, and what they had issue with. Complaint investigations are generally unannounced or unscheduled, however; upon arriving at the facility the investigator must explain to the facility management that they are there to investigate a complaint. If the complainant's allegations are founded then a follow-up visit must be scheduled to verify that the violations have been corrected.

Complaint investigation information should be documented on a sanitation observation form or a complaint investigation form. The use of the inspection report form is discouraged but may be used. It is important to note that if the inspection report form is used, the approval status portion of the inspection report form must be crossed out and the complaint box, under type of inspection, checked. Copies of complaint inspection reports should be sent to the BEHS central office.

Violation Notice

As part of the enforcement process, BEHS staff will issue a Lodging Violation Notice form when a facility fails to comply with the lodging law and/or rule. Although the Violation Notice may duplicate information noted on inspection and/or a complaint investigation form(s) it is used to ensure the owner/general manager understands the serious nature of the ongoing violations, remedial actions or corrective measures, and the timeframes granted to come into compliance. It is the owner/general manager's responsibility to notify the BEHS PHES or the Lodging Program when violations have been corrected and they are ready for an inspection.

An example of a completed Violation Notice is provided in the EHOOG Appendix. The top portion of the form is for documenting the facility's information; the middle portion is for documenting the facility's violation(s), corrective measure(s), and timeframes for compliance; and the bottom portion is the inspector and representative of the facility signature block. It is important for the Regional BEHS PHES to send a copy of the violation notice to the Lodging Program as soon as possible.

Technical Points and Rule Interpretations

Previous technical bulletins issued by the Lodging Program should no longer be used for reference; as guidance from these documents is now incorporated in rule and/or incorporated into the body of text in this section of the EHO.

Statute

Section 315.019, RSMo, states that city and county ordinances may be used in lieu of Department of Health and Senior Services (DHSS) standards for fire safety, electrical wiring, fuel burning appliances, plumbing and swimming pools, spas and similar facilities. It also specifies that lodging establishments located within the jurisdiction of a city or county ordinances or regulations and which are erected and maintained in compliance with such will be accepted as complying with 315.019 (1-5) RSMo. There are three points to make:

- “Erected and maintained in compliance”, means that the city or county conducts an annual inspection and either the lodging establishment or the city or county provides a copy of the inspection to the LPHA or DHSS. An approved DHSS inspection report cannot be provided until the city or county inspection is “approved”, “passing”, or shows no violations.
- This section of statute only mentions city and county ordinances, it does not mention Fire Protection District ordinances. Since fire protection districts date back to 1947 and 315.019 was enacted in 1985, it is apparent that the Legislature intentionally omitted Fire Protection Districts. Fire Protection Districts are organized differently than cities and counties which may have been a contributing factor for not being included. Therefore an inspection from a Fire Protection District may not be used in lieu of the fire safety standards specified in 315.019. However, if a Fire Protection District conducts routine inspections, the lodging establishment needs to correct any/all violations noted by that inspecting entity prior to receiving an approved inspection by the LPHA or DHSS.
- A Compliance with Local Ordinances form, E9.03, or other program approved documentation must be signed by the city or county inspecting entity when using local ordinance standards in lieu of DHSS regulations. The E9.03 or other approved documentation only needs to be completed once unless the facility is remodeled.

Third Party Inspections

Third party inspection reports for fire alarms, sprinkler systems, fire, food, and/or pools should be requested and reviewed during routine lodging inspections. Third party inspections must be conducted on a routine basis and be conducted within the last twelve months. Fire alarm and/or sprinkler systems must be inspected by a qualified professional to assure they are functioning properly.

When an inspection is conducted prior to a third party inspection, the LPHA or BEHS PHES should inspect all areas of the lodging establishment. If issues are observed during the inspection in areas under ordinance, the violation(s) should be noted on a Compliance with Local Ordinance, E9.03 form and the Lodging Inspection form marked NOT APPROVED pending noncompliance with local ordinance. The lodging owner or general manager is responsible for assuring the third party receives this form; the third party must state the violation is

exempt under local ordinance or needs to be corrected. If corrections are required, the LPHA or BEHS PHES should follow-up with the lodging establishment to set a correct-by-date and follow up inspection.

Once the LPHA or BEHS PHES receives an approved third party inspection report with no violations and/or needed corrections and all other areas of the lodging establishment are in compliance with 19 CSR 20-3.050, the Lodging Inspection form should be marked APPROVED and submitted to the BEHS Lodging Program.

Definitions

Although defined in 315.005(4) and 315.065 RSMo, it may not always be clear if and when a business meets the definition of a lodging establishment. Factors that need to be considered and evaluated in making this decision are discussed below. This discussion does not address every situation that will be encountered; the lodging program and regional PHES will provide technical assistance upon request. Using the definition found in statute as a starting point, the following are criteria to consider:

- How many units or guest rooms does the establishment rent?
- How the accommodations are kept, used or advertised?
- Who owns the facility?

The statute defines a lodging establishment as: “any building, group of buildings, structure, facility, place, or places of business where five or more guest rooms are provided...” Therefore the first thing to determine is how many “guest rooms” are provided. If there are fewer than five guest rooms it is not a lodging establishment. Since the definition further states: “group of buildings, structure, facility, place or places of business...” this allows the “guest rooms” to be in a single structure or in multiple structures and in some situations even in a different locations. Ask questions to determine how many rooms are available for rent and if guest rooms are in a single structure or multiple structures.

Once you have determined the number of rooms available, consider how the accommodations are “kept, used, maintained, advertised or held out to the public for hire which can be construed to be a hotel, motel, motor hotel, apartment hotel, tourist court, resort, cabins, tourist home, bunkhouse, dormitory, or other similar place by whatever name called...” A facility referring to itself as a hotel, motel, inn; listed in the phone book as a hotel or the word hotel/motel is in its name; or the city has issued a business license as a lodging facility; the facility is advertising itself as a hotel. Contact the city or county to determine how the business is licensed or zoned (commercial or residential); valuable information can be obtained to help define the type of business. Ask questions about the accommodations provided, such as, are the accommodations or services such that the facility may be construed to be a hotel? Are basic services provided to the guests such as housekeeping, linens, furniture, and essential utilities (water, sewer, electricity, gas, etc.)? These services, if offered, can be construed to be services that a lodging establishment would offer. What confuses this interpretation is that some apartments come furnished or have utilities paid. However, remember the rest of the statute and in this instance specifically an apartment is not advertising as a hotel. In addition, an apartment is the tenant’s permanent residence.

Ownership is another important piece of information to use for determining if the facility is a lodging establishment. 315.065 RSMo, states “The provisions of sections 315.005 to 315.065 shall not apply to dormitories and other living or sleeping facilities owned or maintained by public or private schools, colleges,

universities, or churches unless made available to the general public and not used exclusively for students and faculty, school-sponsored events, baseball camps, conferences, dance camps, equitation camps, football camps, learned professional society meetings, music camps, retreats, seminars, soccer camps, swimming camps, track camps, youth leadership conferences, or church-sponsored events.” This exemption explains why dormitories, scout camps and church camps are not typically inspected; however, it is worthwhile to assure that the facility continues to operate in a manner consistent with the statute and is not available to the general public.

If five or more rooms, cabins or accommodations are available to the general public then the facility is a lodging establishment. Some examples include:

Condominiums, if a single entity owns five or more units that are available to be rented. If all of the units of a condo have been sold and belong to different individuals, even if a management company’s rental program manages more than five, it is not a lodging establishment. Often when a facility is built, as units are being sold, the owner will make unsold units available for rent, if there are more than five owned by the same entity they will need to be licensed.

Timeshare accommodations are typically not lodging establishments. If a timeshare operation has “unsold weeks” on a nightly rental program, the number of rooms and the individual rooms available could change weekly. It is impossible to apply the provisions of the lodging regulations under these circumstances and DHSS does not consider them to be lodging establishments. If a timeshare operation has a block of rooms that are available for rent for a substantial time, DHSS does consider them to be a lodging establishment and requires a license.

One criteria that is frequently misused in determining whether a facility is a lodging establishment is the length of stay. The statute clearly states: “all such accommodations operated for hire as lodging establishments for either transient guests, permanent guests, or for both transient and permanent guests...” Since the statute allows for permanent guests, the length of stay is not a factor.

Facilities challenge DHSS definitions and interpretations; one such type of facility that appears to meet the definition of lodging establishment are bunkhouses or cabins provided to hunters. There are sleeping accommodations available where linens are provided and housekeeping services included. These “hunting lodges” often are facilities where more than five rooms available and they do not meet the exemptions provided in 315.065 RSMo. In clarifying the interpretation that these accommodations are not lodging establishments, consider how this facility promotes their business. They are “selling” hunting packages and the accommodations are incidental. The facility does not advertise as a hotel. The accommodations provided are complimentary to the actual service. The hunters that stay in these facilities are paying for a packaged hunt; they are not renting a “guest room” in a lodging establishment. These facilities do not rent rooms without the purchase of a hunting package. A similar interpretation could be made for a health and fitness camp, the participants at the camp have purchased the service or activity and the accommodation/guest room is part of the package and not a room for hire as specified in the statute.

Since each situation may have nuances, when faced with challenging interpretations or if you are uncertain, contact your regional PHES or Lodging Program for assistance.

Requirements for Licensing

New Facilities

New lodging establishments are inspected by the Bureau of Environmental Health Services (BEHS) staff. A new lodging establishment is considered a facility that is recently constructed, an existing lodging establishment with a new addition, or an existing lodging establishment that is reopening after being closed for eighteen (18) months or more.

Water and Wastewater

Wastewater treatment systems serving regulated establishments shall provide for the sanitary treatment and dispersal of wastewater and be in compliance with state laws, regulations, and local ordinances. The PHES must evaluate the wastewater system as a part of each annual or routine inspection or if a complaint is received concerning proper treatment and dispersal. Municipal or other public treatment systems only need to be evaluated if there are pump tanks or other components under the control of the management of the establishment. Small community or multi-establishment systems should be evaluated when the owner of the establishment has a reasonable degree of control over the system and the ability to make corrections. A lodging establishment should not be marked approved if it has a failing wastewater treatment system. Additional guidance can be found in the Onsite Wastewater Treatment section of this manual.

Non-community and Private Water Systems

Water treatment systems serving regulated establishments shall provide potable water and be in compliance with state laws, regulations, and local ordinances. The PHES must evaluate a water system as a part of each annual or routine inspection. A private water sample should be collected per guidance found in this manual in the Drinking Water section. Follow the guidance provided in the Drinking Water section when laboratory results are obtained. Positive test results on a non-community water source must be reported to the appropriate Department of Natural Resources (DNR) regional office. A lodging establishment should not be marked approved until the sample has SATISFACTORY test results. When test results indicate the supply is unsafe or a boil water order/advisory is issued, guidance in the EHOG should be followed.

Sanitation/Housekeeping

Bedbug Complaint Investigations

Although bedbugs were once nearly eliminated in the United States they are making an impressive and troublesome comeback. Bedbug infestations are not just associated with filth and squalor, they are efficient “hitchhikers” that can move from one location to another on clothes, bedding and suitcases.

Although studies have shown bedbugs do not transmit communicable diseases, they are a nuisance issue and a person with bedbug bites may run the risk of a secondary infection. During routine inspections, pay particular attention for reddish brown spots, eggs, molted shells, or live/dead bedbugs on sheets, along mattress seams, bedding and areas around the headboard.

The lodging program tracks bedbug complaints. If a complaint is investigated, findings and follow-up activities must be forwarded the BEHS. Investigate bedbug complaints promptly.

If bedbugs are found in a room:

- The PHES should check rooms adjacent to, above, and below the affected room; and a random sampling of other rooms in the lodging establishment. This evaluation is a preliminary assessment and the pest management company should conduct a more thorough investigation before beginning treatment.
- Direct the owner/operator that the affected rooms must be taken out of service and only rented when cleared by the pest management company and the PHES.
- Explain to the owner/operator that a professional pest management company shall be employed to evaluate the entire facility and deal with the infestation. Bedbug control and elimination are not difficult for properly trained and equipped professionals, but the products and techniques used are specialized.
- Documentation or paperwork from the pest management company must be provided that “clears” the rooms where bedbugs were found. The establishment is responsible for cleaning up after the treatment. The PHES should remind the owner/operator that during the follow-up investigation if dead bedbugs are found then they will need to retreat since it will be difficult to determine if there is still an ongoing problem
- A re-inspection of the facility should occur once the pest management company clears the rooms and again in four (4) to six (6) weeks to assure that effective control measures are in place.

The following websites provide additional information about bedbugs and methods of control and elimination.

<http://www.cdc.gov/parasites/bedbugs/>

<https://extension.umn.edu/biting-insects-and-insect-relatives/bed-bugs>

<http://www.ca.uky.edu/entomology/entfacts/ef636.asp>

Death of a Patron in a Guest Room

In the event you are notified that an individual died during their stay at a lodging establishment, the following steps should be taken:

- In all cases, ensure that the lodging owner/operator has notified local law enforcement; and
- Tactfully and professionally inquire as to the cause of death.
- Since each death presents a unique situation, use of professional judgment is warranted.
- Request the sleeping room be placed “out-of-service” until further notice.

If the death was due to natural causes, there is little or no concern about bodily fluids, and no further action is required by law enforcement the room shall be:

- Cleaned according to the standards in 19 CSR 20-3.050 Sanitation and Safety Standards for Lodging Establishments;
- The area where the body was found should be washed and disinfected, including but not limited to, towels, carpeting, and furniture;
- Bedding that are not excessively soiled may continue to be used after they have been thoroughly washed and dried; and
- Mattresses, that are not excessively soiled or damaged, may continue to be used.
- Once the room has been properly cleaned and disinfected, the room may be rented.

If the death was not discovered in a timely manner or due to an accident, suicide, homicide or other cause requiring further action by law enforcement the owner/operator shall:

- Present to the Local Public Health Agency a signed documentation that the room shall remain “out-of-service” until released from law enforcement;
- Comply with law enforcement’s requests; and
- Provide to the Local Public Health Agency documentation that the room was cleaned by a professional cleaning company.
- Carpeting, furniture, bed linens, mattresses, etc. that were damaged, stained, or soiled beyond repair shall be discarded appropriately.
- Once the room has been properly cleaned and disinfected and the LPHA has been notified the room may be rented.

Donation of used Cosmetic Items

Lodging facilities may donate complimentary cosmetics (soap, shampoo, etc.) to shelters. While the Food and Drug Administration (FDA) does not consider used soap, shampoo, conditioner etc. as adulterated items the practice of donating these items is not recommended.

Installation of a Three-Compartment Sink

Lodging establishments that store, prepare, package, serve, vend or otherwise provide food(s), other than prepackaged non-potentially hazardous food shall be considered a food establishment and shall be in compliance with the requirements found in 19 CSR 20-1.025 Missouri Food Code or applicable local ordinance. Lodging establishments that offer only commercially prepared, individually portioned prepackaged foods that are non-potentially hazardous and/or whole-uncut fresh fruits and vegetables and/or only prepare coffee for guest use shall not be considered a food establishment, and shall comply provide a 3 compartment sink, a mechanical dishwasher, a clean-in-place, or other approved method to wash, rinse, and sanitize coffeemakers, coffeepots, and other equipment/utensils.

Section 4-401.11 of the Missouri Food Code clearly states, “Food, equipment, utensils, linens and single-service and single-use articles are not to be located in the same room as the mechanical clothes washer or dryer.” In new lodging establishments the three-compartment shall not be installed in the laundry room or in an area exposed to contamination. For existing facilities, where the three-compartment sink is installed in the laundry room or where exposed to contamination, the PHES must determine if there is a risk of contamination when equipment is washed, rinse, and sanitized. If there is, the owner/operator of the lodging establishment must eliminate the exposure to contamination, re-locate the three-compartment sink, or begin using an alternative method as allowed in rule. If an existing facility expands their food service, remodels, re-builds, or re-constructs the laundry room and the three-compartment sink is located in that room, the lodging establishment shall be required to relocate the sink to an area where it is not exposed to contamination.

Handsink

Lodging establishments that store, prepare, package, serve, vend or otherwise provide food(s) shall provide a properly located, designated hand sink for employees to wash their hands before and during handling of food and utensils.

Life Safety

Extension Cords Usage

Nearly all building and electrical codes prohibit the use of extension cords in place of fixed wiring. Ideally, an extension cord is used to power portable devices for immediate, temporary or short-term use. However, the rule does allow the use of extension cords under these conditions:

- The cord is no longer than six (6) feet,
- If longer than six (6) feet it is provided with over-current protection or rated with properly sized wire, and
- No more than two extension cords per room may be used.

Use of an extension cord also requires that the cord be properly sized for the appliance. Permanent wiring, receptacles, and breakers are rated for specific amperages. Typical receptacles and breakers are rated for 15 or 20 amps. If an appliance with a 20 amp draw rating is attached to a circuit with a 15 amp breaker or fuse, it will trip or “blow” cutting the power to the circuit preventing the wire from overheating. If an appliance that draws 20 amps is plugged into an extension cord that is rated for 15 amps, the wiring will over heat and could cause a fire. During the inspection it is necessary to evaluate the size of the extension cord, the amperage that the cord is rated to carry, and the appliances that are plugged into the cord. Surge protectors/bars are a form of extension cords and must meet these requirements.

Portable Luminaries with Convenience Outlets

Since there are requirements about extension cords, there have been some questions raised about table/desk lamps that offer additional outlets. Industry refers to these table/desk lamps as portable luminaries and the additional outlets as convenience outlets. These portable luminaries with the convenience outlets are found on desks, dressers and bed side tables in the guest rooms. They are intended to plug in small devices such as computers and cell phones.

The rule does not discuss portable luminaries with the convenience outlets. The statute, however, allows in 315.005 to reference other codes for guidance. In this instance NFPA 70 has incorporated the National Electric Code (NEC) and since the NEC states that once a piece of equipment has been identified as meeting the standards of an organization that is equipped to test and certify, that piece of equipment is subject to no further inspection that would result in conflicting results as to the suitability of the device.

Using this as guidance; provided these fixtures are certified by an entity such as Underwriters Laboratories (UL), they are acceptable for use in a lodging establishment. If no identifiable certification, then the lamp or convenience device is not acceptable. During the inspection it will be important to note how the lamps or the convenience device are being used and to remind staff at the facility that no permanent fixtures in the guest rooms should be plugged into these outlets. Additionally, the facility needs to be vigilant in reminding guests to monitor the usage of these outlets to assure that the devices that are plugged in do not exceed the lamp’s amperage rating.

Emergency Lighting Placement

Emergency lighting is required when guest room doors open to an interior corridor and when guest room doors open to the outside but not directly at grade level. The rule does not specifically recommend spacing for emergency lights. The installation of the emergency lighting is a building or fire code requirement and in

instances where the lodging rule does not state a requirement, guidance is found in their codes. According to NFPA 101, emergency lighting shall be arranged to provide initial illumination that is not less than an average of 1 ft-candle (10.8 lux) and, at any point not less than 0.1 ft-candle (1.1lux) measured along the path or egress at floor level. These lighting requirements shall be provided for a minimum of 1 ½ hours in the event of failure of normal lighting. Because there can be a variation in the size of bulbs and batteries, spacing recommendations are challenging. When there is no requirement the safest recommendation is to follow the manufacturer's requirements.

Tritium Exit Signs

Reference to the use of tritium exit signs is not found in the rule, but they meet the requirement for exit lighting in the lodging regulation. Tritium exit signs do not require electricity or batteries, and are commonly used in areas where it is difficult to install electric signs. They serve a safety function by remaining lit during power outages and emergencies.

The tritium gas is contained in sealed glass tubes. The insides of the tubes are lined with a phosphor. Low-energy Beta particles emitted by the tritium bombard the phosphor, causing it to glow.

There are a couple ways to determine whether an EXIT sign contains tritium. The device should contain a permanent warning label that mentions tritium (H-3), displays the three-bladed radiation warning symbol, and states "Caution-Radioactive Materials." If the label is not readily observable, try extinguishing all lights in the vicinity. If the word EXIT is green, the sign contains tritium. If all four letters in EXIT are fully lit, the sign is working properly. If not, the sign may be damaged.

Tritium emits low-energy beta radiation that cannot penetrate a sheet of paper or clothing. If inhaled, it leaves the body relatively quickly. Tritium gas is odorless, colorless and tasteless, and is lighter than air.

Tritium EXIT signs must NOT be disposed of as normal trash. To dispose of a sign properly, a general licensee must transfer the sign to a specific licensee. This would typically be a manufacturer, distributor, licensed radioactive waste broker, or a licensed low-level radioactive waste disposal facility. These facilities may charge a fee for this service.

As an inspector, since these signs have a life expectancy they will get progressively dimmer and will eventually need replacement. Determining the amount of illumination will be challenging in well-lighted areas.

Photo luminescent Exit Signs

Photo luminescent exit signs are popular since they require no additional energy. Where a traditional exit sign is lit by the building's electricity and then is powered by a battery when there is a power outage. This type of sign is of similar construction and design however, it illuminates when the surrounding area is dark. The photo luminescent sign is made with photo luminescent pigments that provide an infinite number of recharge-glow cycles. A nearby external light source "charges" the sign and when that light source goes out the sign glows. Proper installation includes a light source that provides a minimum of 5-foot candles of light at the surface of the exit sign. The same light source cannot be on a timer or a switch that would result in it being turned off. It must be on at all times. The signs must glow for a minimum of 90 minutes in the event of a power failure. The installation of these signs is allowed indoors only and manufacturer's installation instructions must be followed. The lodging facility should perform periodic visibility tests of the signs to assure that they glow when the

external lighting source is out. Since the code requires exit signs to be illuminated at all times, this type of sign meets that requirement.

Labeling of Cleaners and Chemicals

In 19 CSR 20-3.050 (D) 1. B.; toxics, corrosive, oxidizing or other hazardous materials are discussed. This section of the rule discusses proper use and storage: in order to properly use or store a cleaner or chemical it is important to know what the cleaner or chemical is. Therefore, if the cleaner or chemical has been removed from its original container and placed in another container the name of that product must be transferred to the new container.

Fire Safety

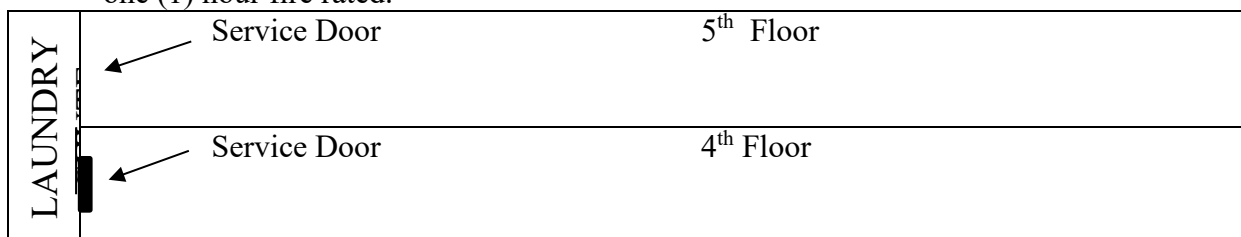
Balcony and Hand Rails-Egress Requirements

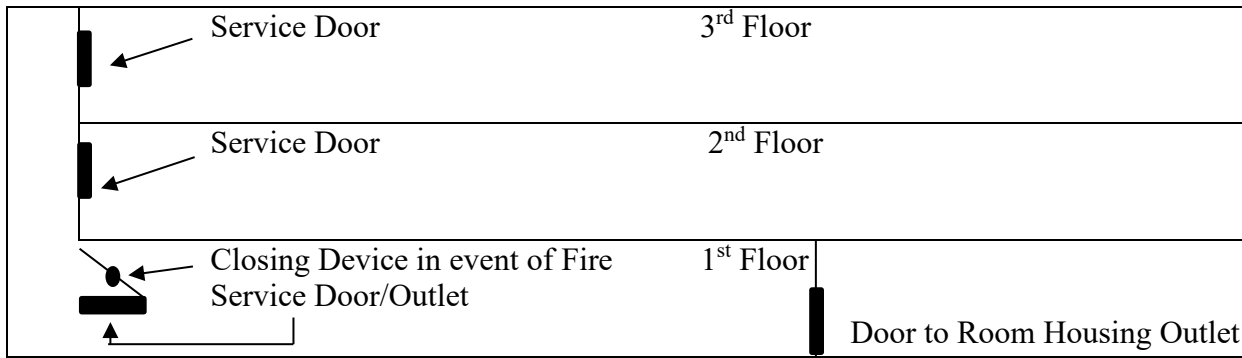
In 19 CSR 20-3.050(3) (E) 2 the requirements for balcony and stair railing heights and guard spacing can be found. Balusters or guards shall be spaced that a four (4) inch sphere cannot pass through them. Hand rails shall not be less than 34 inches and not more than 38 inches above the surface of the tread. Balcony rails shall not be less than 42 inches in height. These requirements only apply to balconies and stairs when they are a component in the means of egress. The same public health concerns would apply to all balconies but these standards would be recommendations for stairs and balconies if not part of the egress path. It is important to note that there is no definition in rule for what a balcony is or when protection of a balcony is warranted. According to NFPA 101 protection for open areas of a means of egress that exceed 30 inches above the floor or the finished ground level below warrants guards and railings.

This portion of the rule allows for the administrative authority to approve existing railings. Building codes in the past allowed for guards to be spaced no further apart than six (6) inches and railings for balconies at 36 inches. If existing guards or balcony railings meet this requirement they may be accepted but no greater guard spacing is allowed or no lower balcony railing height. If existing guards or railings are found that do not meet this standard then they will need to be modified to meet the requirement in the rule.

Laundry Chutes:

- All service doors and door assembly on the chute itself must be one (1) hour fire rated.
- All service doors should be self-closing and positive latching.
- All service doors except the one acting as outlet door must be kept closed unless in use.
- The service outlet door may be held open as it is in constant use, but it can only be held open by a device that allows the door to close in the event of a fire.
- The door(s) to the room housing the service outlet door for the laundry chute should be self-closing and one (1) hour fire rated.





Fire Extinguishers for Swimming Pool Chemical Storage Area

Currently the lodging rule requires a portable five pound, 2A-10BC fire extinguisher in all mechanical rooms, laundry areas, and other hazardous areas. Recent information indicates that this type of extinguisher is not appropriate for use in pool chemical storage areas; and using the wrong type of fire extinguisher on certain oxidizers (swimming pool chemicals) can cause an explosion. Currently the National Fire Protection Association 430: Code for the Storage of Liquid and Solid Oxidizers prohibits the use of class A:B:C extinguishers in areas where oxidizers are stored. The NFPA 10: Standard for Portable Fire Extinguishers recommends that only water-type extinguishers be installed in areas containing oxidizers, such as pool chemicals. When conducting routine lodging inspections please understand that extinguishers located in any area where swimming pool chemicals are stored or chlorinating equipment is located may be of either type. Facilities should not be made to replace their extinguishers; however, they should be made aware that the water type extinguisher poses fewer hazards in these areas. Lodging establishments should be made aware that when the current fire extinguisher needs to be replaced they should purchase the type appropriate for the pool area. The installation and placement of the water type extinguisher Class A shall follow the rest of the rule. Size should be determined by manufacturer's specifications.

Swimming Pools/Spas

Americans with Disability Act (ADA)-Standards for Accessible Design

The Americans with Disability Act (ADA) implemented [requirements](#) for pools that have a potential impact on lodging facilities. The 2010 Standards for Accessible Design, mandated specific changes to pools in order to make them accessible to everyone. These requirements pertain to public pools, wading pools, and spas in Title II (state and local government facilities) and Title III (public accommodations, private companies and commercial facilities including lodging establishments) facilities that are new or are being altered (remodeled/renovated). Pools that are located within residential dwellings, housing units, private residences, apartment complexes, condos, or homeowners associations do not need to comply with these rules if they limit the use of their pool to their residents. If these pools are open to anyone besides tenants or have no membership requirement, receive federal funds or have members where anyone can join, then these pools will also need to abide by the ADA requirements.

These requirements are an ADA requirement; they are not a requirement of 19 CSR 20-3.050. During the annual inspection compliance with this accessibility requirement is not to be evaluated. So if an establishment's

pool does not meet the ADA requirements, it is not to be marked as a violation on the inspection report. The U.S. Department of Justice regulates and enforces ADA requirements.

The Virginia Graeme Baker Pool and Spa Safety Act

The Virginia Graeme Baker Pool and Spa Safety Act **is a federal act** aimed at reducing deaths and injuries by setting forth requirements related to preventing possible suction from a pool or spa drain that could result in entrapping an individual under water or causing other related injuries. The act sets design and construction standards for swimming pool and spa main drain covers and provides for additional anti-entrapment devices to be installed on some swimming pools and spas. The provisions of this act apply to all public swimming pools and spas in the nation. The definition of ‘public pool’ in the act also encompasses what have been classified as semi-public pools in many swimming pool ordinances and includes swimming pools and spas at facilities like apartments, country clubs, and lodging facilities.

The information provided below pertains to pools and spas at lodging establishments. Jurisdictions with pool ordinances will need to determine for themselves if and how they will incorporate compliance with the Virginia Graeme Baker Pool and Spa Safety Act into their ordinance. Swimming pool and spa compliance with the Missouri Lodging standards will be different for existing and new pools or spas and are as follows:

Existing Pools and Spas

The Missouri lodging rule, 19 CSR 20-3.050 Sanitation and Safety Standards for Lodging Establishments, has had a requirement for anti-entrapment main drain grates since 2004. Section F.4.F states that, “Main drain grates shall be whole and openings shall not be over one-half inch (1/2”) wide. Main drain grates shall be in good repair, firmly affixed at all times and designed and maintained to prevent user entrapment”.

Therefore, all existing pools and spas located in lodging establishments throughout the state of Missouri should already have anti-entrapment drain covers. For these existing anti-entrapment drain covers, we are **not** going to verify that they comply with the Virginia Graeme Baker Pool and Spa Safety Act. This does not mean that the establishment is not responsible for complying with the act, but that for lodging establishment licensing purposes, we are not going to enforce this standard.

For any existing pool or spa that does not have an anti-entrapment drain cover or if the operator is replacing an existing anti-entrapment drain cover, we will require verification that the new drain cover complies with the Virginia Graeme Baker Pool and Spa Safety Act. This act requires anti entrapment drain covers to be designed and constructed meeting the standards set forth in ASME/ANSI A112.19.8-2007. These covers have been on the market since December 2008. These are identified by either the ASME symbol, “ASME/ANSI A112.19.8-2007” or a mark of “VGB 2008”. If you are unsure of the certification of the new pool drain cover, request the pool operator contact the manufacturer of the pool drain cover and obtain a copy of the compliance certificate.

If the pool or spa has an unusual size or configuration of drain, it is acceptable for the pool operator to have a drain cover fabricated in the field. In this instance, a Professional Engineer (PE) will need to write a letter certifying that the fabricated drain cover meets the ASME/ANSI A112.19.8-2007 requirement. This certification needs to be on hand for the inspector to verify.

New Pools and Spas

New pools or spas must be certified to be in compliance with a national swimming pool code. This will now include being fully compliant with the Virginia Graeme Baker Pool and Spa Safety Act. The facility must provide certification to BEHS, either from the architect, engineer or contractor that the pool and/or spa was designed and installed to comply both with a national swimming pool code and the Virginia Graeme Baker Pool and Spa Safety Act.

New Swimming Pool and Spa Certification

During the initial inspection of new lodging facilities or a facility doing major renovations, all new swimming pools and spas shall be designed by a professional engineer or architect. The design must comply with a national swimming pool standard. The rule does not specify which national standard, so most nationally recognized swimming pool standards are acceptable.

Closed or Unopened Pools

A pool must be open during the annual inspection. If there is an outdoor pool and not yet open for the season, a return visit must be made to evaluate the operation and maintenance of the pool. If the pool is closed for some other reason, a return visit is needed only if the pool will be open during the licensing year.

Fecal Accidents in Pools

Facilities that have fecal accidents, involving formed stool and diarrhea accidents, in pools or spas should be aware of the [guidance](#) provided by the Centers for Disease Control and Prevention (CDC). These recommendations are solely for management of fecal accidents in disinfected recreational water venues. The recommendations do not address use of other non-chlorine disinfectants because there is limited pathogen inactivation data for many of these compounds. Because improper handling of chlorinated disinfectants could cause injury, appropriate occupational safety and health requirements should be followed.

Swimming pool operators should check existing guidelines from local or state regulatory agencies before using these recommendations, because [CDC recommendations](#) do not replace existing state or local regulations or guidelines.

Death of a Patron in Swimming Pool/Spa

In the event you are notified that an individual died in the swimming pool or spa at a lodging establishment, the following steps should be taken:

- In all cases, ensure that the lodging owner/operator has notified local law enforcement; and
- Tactfully and professionally inquire as to the cause of death.
- Since each death presents a unique situation, use of professional judgment is warranted.
- Request the swimming pool/spa be placed “out-of-service” until the pool/spa is properly disinfected in accordance with local ordinances or Center for Disease Control and Prevention (CDC) guidelines for [vomit-blood-contamination](#) and [fecal incident response](#).

The [Model Aquatic Health Code](#) is a free resource provided by the CDC to improve health and safety in pools and spas. The guidelines address the design, construction, operation, maintenance, policies, and management of public pools and spas.

Plumbing/Mechanical

Relief valve discharge piping

Relief valve discharge pipes shall be made of rigid pipe approved for water distribution with a temperature rating of two hundred and ten degrees Fahrenheit (210°F) or other materials approved by the manufacturer to be used for this purpose. The CPVC piping found commonly as the discharge pipe is only rated for 180°F, which does not meet the temperature rating required in 19 CSR 20-3.050. After contacting several different companies that manufacture water heaters and boilers, piping and the relief valves, as well as the Division of Fire Safety, there was no consensus and only conflicting answers to whether CPVC piping is suitable for the relief valve discharge pipe. The lodging program has researched CPVC as an alternative relief valve discharge pipe material and has determined that use of CPVC for the relief valve discharge pipe does not comply with 19 CSR 20-3.050 and will not be allowed to be used in this manner. If CPVC has been used in the past, when the water heater is replaced or the relief valve fails or discharges and a repair is needed to the unit the piping shall be replaced.

Backflow Prevention for Sprinkler Heads over Gas Appliances in Non-Fire Resistant Rooms

After consulting with the Department of Natural Resources (DNR), the following interpretations have been made with regards to backflow prevention devices installed on “limited sprinkler systems” as they relate to private and public water supplies (community and non-community). A “limited sprinkler system” is a partial fire suppression system installed and designated for a specified area. This may be a single sprinkler head over a water heater or multiple sprinkler heads over a water heater and furnace within a designated area, such as, a mechanical room or water closet.

In order to determine what backflow measure is required, the inspector must determine what type of water system serves the facility. A private water system or domestic well is a private water supply well that is constructed to meet minimum standards and is equipped with a pump that does not have the capacity to produce more than seventy (70) gallons of water per minute and services three (3) or less service connections. A private domestic water supply well that produces less than seventy (70) gallons of water per minute regardless of the use is a domestic well.

A public water system is a system for the provision to the public of piped water for human consumption, if this system has at least fifteen (15) service connections or regularly serves an average of at least twenty-five (25) individuals daily at least sixty (60) days out of the year. This system includes collection, treatment, storage or distribution facilities used in connection with the system. A public water system is either a community water system, transient non-community water system or non-transient non-community water system. Any community or non-community public water supply well must be constructed according to Missouri Public Drinking Water rules.

- Community Water Systems are defined as a public water system, which serves at least fifteen (15) service connections or regularly serves an average of at least twenty-five (25) residents on a year-round basis.
- Transient Non-community Water Systems are defined as a public water system that is not a community water system which has at least fifteen (15) service connections or regularly serves an average of at least twenty-five (25) individuals daily on a year-round basis.

- Non-transient Non-community Water Systems are defined as a public water system that is not a community water system, which has at least fifteen (15) service connections or regularly serves an average of at least twenty-five (25) individuals daily at least sixty (60) days of the year.

Private Water Supplies

For a “limited sprinkler systems” or a single sprinkler head over a water heater or furnace, no backflow prevention is required. It may be recommended to the establishment, however, it shall not be required or considered a violation if the establishment chooses not to install a backflow prevention device.

Public Water Supplies-Community

The DNR regulates these supplies and is therefore the regulatory authority on community water supply systems. In many cases, a municipality or water district will be the administrative authority with regards to plumbing codes, which may include requirements for backflow prevention. Lodging establishments served by a community water supply shall be in compliance with DNR rules and regulations or local plumbing codes pertaining to backflow prevention. The following bullet points outline the level of backflow protection necessary for various fire suppression systems, as defined in 10 CSR 60-11.010 prevention of Backflow:

- Whole building fire suppression systems containing chemicals require a DNR-approved double check valve assembly.
- Limited area sprinkler systems served by a separate supply line within the domestic plumbing require a DNR-approved double check valve assembly.
- Limited area sprinkler systems with an individual head served from an active internal domestic water line do not require backflow prevention.

While conducting inspections of lodging establishments served by community water supply systems, be mindful of the above requirements. If you determine that the appropriate level of backflow prevention is not installed upon a community water supply systems, notify the DNR or municipality/water district to discuss what actions(s) should be taken.

Public Water Supplies-Non-Community (Transient and Non-transient)

For “limited sprinkler systems” or a single sprinkler head over a water heater or furnace, no backflow prevention is required. It may be recommended to the establishment, however, it shall not be required or considered a violation if the establishment chooses not to install a backflow prevention device.

Backflow Testing

According to rule all backflow devices used must meet 10 CSR 60-11.010. A requirement in 10 CSR 60-11.010 (6) is for annual testing of the devices used. Therefore the lodging establishment must present documentation that an annual inspection of the backflow device(s) has been done. The inspection must be done by an individual that meets the standards specified in 10 CSR 60-11.010.

Heating, Venting & Air Conditioning Equipment

Combustion Air Requirements

The combustion air requirements for mechanical rooms where either gas furnaces or gas water heaters are located can be found in 19 CSR 20-3.050(3) (H) 10. Every room or space containing a fuel-fired appliance shall be provided with combustion air. Some newer gas furnaces and gas water heaters do not draw their combustion air from inside the structure. Although the rule does not specifically discuss these types of appliances or equipment; direct vent fuel-fired appliances or equipment, that do not draw air from within the structure, are not to be considered in the determination of combustion air requirements. The combustion air requirements outlined in this section of the rule are to be used only when the appliance or equipment draws air from within the structure. When installed, a facility must have the installer provide documentation that the direct vent fuel-fired appliances were installed according to manufacturer's specifications.

Unvented Fireplaces

Standards for existing unvented fireplaces are found in 19 CSR 20-3.050(3) (H) 1 and 2. If a new establishment installs an unvented fireplace and the manufacturer will not state in writing that the unit is approved for commercial use, the lodging facility needs to remove the unit or disconnect the gas supply and effectively abandon its use.

The primary concern with these unvented fireplaces is oxygen depletion and carbon monoxide build-up. When considering these appliances in new facilities, if the manufacturer will not state that the unit is approved for commercial use; since the rule allows existing fireplaces to be used if they meet the four (4) criteria in 19 CSR 20-3.050(3) (H) 2, the use of these units will be allowed if the facility can meet these same four (4) criteria.

Whether these units are existing or in new lodging establishments, proper use by patrons should be the facility's priority. The patron should know that the fireplace should not be used for more than six (6) hours. The unit itself should be equipped with an Oxygen Depletion Sensor (ODS). The sensor detects levels of oxygen in the room containing the unvented or ventless fireplace. This sensor will disable the ventless fireplace prior to the room reaching any unhealthy levels of oxygen.

Past technical bulletins or informational releases that were not discussed above or incorporated in the text of this section are no longer relevant. The information provided within this section is current program policy. Any previous guidance documents must not be used as reference.

Enforcement Guidelines

Per section 315.041, RSMo, the Department of Health and Senior Services (DHSS) may refuse, revoke or deny a license any time a lodging establishment fails to comply with any portion of 315.005-315.065 RSMo, 19 CSR 20-3.050, and/or applicable local ordinances. Lodging establishments are subject to inspection at any reasonable time; therefore, it is not necessary to wait for the next annual inspection to conduct an inspection on an establishment with a poor compliance record. Inspections should be performed as necessary to assure compliance.

Enforcement occurs when a facility either fails to obtain a license after having obtained an approved inspection or fails to correct violations noted during an inspection and cannot obtain a license. The process for those two categories is discussed below:

For facilities that are approved but are operating without a current lodging license, (that is: the establishment has not submitted their application for renewal, associated forms, and/or fees) a letter or notice from BEHS will be mailed informing them of this deficiency. If the lodging establishment does not respond by submitting the required information, a letter of “Final Notice” will be sent. If there is still no response from the lodging establishment, the establishment will be referred to the local prosecuting attorney for further enforcement action.

A lodging establishment, who has received an initial and follow-up inspection and continues to operate without a current lodging license after October 1st, will receive a letter or notice of non-compliance from BEHS. If there is no attempt made by the owner/operator of the lodging establishment to make the necessary corrections, further enforcement action will be taken by BEHS.

Institutional Facilities

Complaints about, or requests to inspect, various correctional or institutional facilities may be received. These are not regulated facilities and fall outside the authority of the state and most Local Public Health Agencies (LPHAs). Routine inspections of these facilities are not conducted by BEHS or LPHA staff. If workloads permit an agency may offer the management of these facilities the benefits of our knowledge and expertise in public health. Field visits can be made and recommendations based on the science of public health found in the food code, lodging rule, onsite wastewater regulations, and the drinking water portion of this manual may be offered to assist these facilities. These field visits should be documented on a Sanitation Observation form (E6.07), not on any type of official inspection report.

It must be perfectly clear that these are recommendations to protect the health and safety of the inhabitants of the facility and not Department regulations. Other agencies may have ordinances or regulations that affect these facilities, and so be clear that these recommendations do not supercede the authority of building departments, housing authorities, fire marshals, or other authorities.

General reference may be made to the following rules: 19 CSR 20-3.050 Sanitation and Safety Standards for Lodging Establishments, 19 CSR 20-3.060 Minimum Construction Standards for On-Site Sewage Disposal Systems, 19 CSR 1.025 Missouri Food Code and the Drinking Water portion of this manual. These are only guidelines; not requirements.

Penal Centers

- Penal centers are shelters where occupants are confined or housed under some degree of restraint or security.
- State operated penal centers are administered by the Department of Corrections.
- County jails are administered by the county sheriff.
- City jails are administered by the local police department.

Inspections

- State and/or Local Public Health Agencies do not routinely perform inspections of penal centers.
- State and/or Local Public Health Agencies do not have the authority to conduct inspections of penal centers.
- However, state and/or Local Public Health Agencies may act as consultants upon receiving a request from the appropriate authority, such as, the Board of Visitors or a Circuit Judge.

Complaints

- When a complaint is received on a state-operated penal center the complaint shall be forwarded immediately to BEHS. The complaint will then be forwarded to the Department of Corrections.
- When a complaint is received on a city or county jail the complaint shall be forwarded immediately to the City Council/County Commission or the Circuit Court Judge/Board of Visitors.
- The state and/or Local Public Health Agencies may not participate in an investigation without the consent of the local sheriff or police department.

Institutional Housing

General reference may be made to the following rules: 19 CSR 20-3.050 Sanitation and Safety Standards for Lodging Establishments, 19 CSR 20-3.060 Minimum Construction Standards for On-Site Sewage Disposal Systems, 19 CSR 1.025 Sanitation of Food Establishments and the Drinking Water portion of this manual. These are only guidelines; not requirements.

Inspections

- State and/or Local Public Health Agencies do not routinely perform inspections of institutional housing.
- State and/or Local Public Health Agencies do not have the authority to conduct inspections of institutional housing.
- Some local jurisdictions having housing ordinances, which would include this area; however, Local Public Health Agencies do not normally become involved in the inspection process of these facilities.
- In the absence of local housing ordinances, the Local Public Health Agency may act as consultants upon receiving a request from the appropriate authority, such as, the Local Housing or Building Authority or Code Enforcement.

Complaints

When a complaint is received, the complaint shall be forwarded immediately to the local housing or building or code enforcement officials if the facility is located in an area covered by local ordinance.

Training and Resources

Websites:

1. [Missouri Lodging Statute and Rule](#)
2. [National Swimming Pool Foundation](#)
3. [Centers for Disease Control and Prevention](#)
4. [Missouri Division of Fire Safety](#)
5. [Missouri Department of Natural Resources](#)
6. [Missouri Food Code](#)
7. [Missouri Onsite Wastewater Treatment Program](#)
8. [Missouri Well Construction Code](#)
9. [Boiler and Pressure Vessel Safety](#)
10. [Americans with Disabilities Act](#)
11. [Missouri Hotel and Lodging Association](#)
12. [Bed and Breakfast Inns of Missouri](#)
13. [Professional Association of Innkeepers International](#)
14. [Bed Bugs](#)

Resources:

1. National Fire Protection Agency
 - Life Safety Code, NFPA 101
 - National Electric Code, NFPA 70
 - National Fuel Gas Code, NFPA 54
 - Standard for Portable Fire Extinguishers, NFPA 10
2. Building Officials and Code Administrators International
 - National Building Code
 - National Fire Prevention Code
 - National Plumbing Code
 - National Mechanical Code

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Communication between Department of Health and Senior Services and Local Public Health Agency

Emergency Response

One of the most fundamental functions of the Department of Health and Senior Services (DHSS) and Local Public Health Agencies (LPHAs) is to assure expeditious, proper response to environmental health emergencies, particularly those involving distressed foods. Many times our role in urgent situations is to respond to conditions where our food and/or water supply has been potentially compromised. Thus, this response role has priority over routine responsibilities.

Response to emergency events, such as natural disasters, fires, floods, transportation accidents, involving food/drugs or water supplies is critical to prevent adulterated food, drugs, or water from remaining in commerce. Failure to do so is more likely than other environmental health functions to result in public exposure to contaminants and increases the probability of illness and/or death.

Emergency Response Center and Missouri Information Analysis Center

The Emergency Response Center (ERC) serves as the coordination point for all DHSS responses to public health related emergencies, as well as, monitoring the day-to-day emergency preparedness of the public health and allied systems. In addition, the ERC can be quickly activated and fully staffed to function as a command and control center during an emergency.

SEMA's Missouri Information Analysis Center (MIAC) provides a public safety partnership consisting of local, state, and federal agencies, the public sector, and private entities. Together these groups collect, evaluate, analyze, and disseminate information to agencies tasked with Homeland Security responsibilities.

The ERC and MIAC work together to provide a single, seamless resource that collects information and notifies LPHAs of an environmental health related emergency. The ERC and MIAC differ only in location and hours of operation; therefore, for the purposes of a Public Health Environmental Specialist (PHES) they serve in the same capacity and should be considered one and the same.

It is important that LPHAs notify the ERC of changes in staff to ensure they have the most up-to-date contact information. The toll free number, (800) 392-0272, is answered 24 hours a day, seven days a week by the ERC or MIAC.

Preparedness

Preparedness is essential. From weather related disasters to train wrecks, it is critical for field staff to understand their roles before, during, and after an emergency. Contingency planning is a management tool which can help ensure timely and effective response when a disaster occurs. Developing a contingency plan involves making decisions in advance about the management of resources, coordination and communications procedures, and being aware of a range of technical and logistical responses. Time spent in contingency planning equals time saved when a disaster occurs.

1. Establish a working relationship with your local Dispatch, Emergency Response County Coordinator, Fire/Police, and tow companies.
2. Have a 'Go Kit' packed and ready. This includes:
 - A. Standard inspection equipment described in Chapter 1 Environmental Health Fundamentals;
 - B. Personal Protection Equipment including but not limited to a steel/composite toe boots, hard hat, hearing and eye protection, gloves, reflective safety vest, inclement weather gear, and a first aid kit;
 - C. Business and after-hours phone numbers for relevant agencies, supervisors, coworkers, tow companies, and waste disposal facilities;
 - D. Embargo paperwork, tags, seals, and tape.
3. Have on hand the appropriate documentation for responding to an emergency, including statutes and any regulations that may apply. Documentation must be thoroughly written and should relay the circumstances of the event, actions taken, and the final outcome.
4. Establish a [Family Emergency Plan](#). Everyone should have a plan – know what to do and when to do it during an emergency and have a fully-equipped emergency supply kit packed and ready-to-go.

Your safety is of our utmost concern. If your responsibilities include emergency response activities, it is recommended you attend the Missouri Department of Transportation's [TIM Responder Training Course](#).

Recommended Sites:

[Disaster and Emergency Planning](#)

[FEMA – Family Emergency Plan](#)

Distressed Foods

Section 196.030, RSMo mandates the Department of Health and Senior Services (DHSS) and its representatives to embargo foods, drugs, cosmetics, or medical devices that are involved in suspected adulteration or misbranding, transportation incidents, or other natural/manmade disasters. In these events, it is the responsibility of the environmental health personnel to assess the condition of any food, drug or cosmetic involved in such incidents and to make sound decisions based on public health policies and procedures.

Evaluations should be conducted, as soon as possible, after accidents, truck wrecks, train derailments, fires, floods, back-up of sewage in a facility, or when other natural/manmade disasters occur. Every effort shall be made to limit the amount of product destroyed, however; decisions to salvage or destroy must be based on public health food protection policies and procedures, not economic concerns.

Definitions:

Distressed – A food product is distressed when handled or held under abnormal conditions that potentially render the product unsafe. Distressed foods may or may not be reconditioned. A food product is distressed if it:

- Has the label missing, defaced, or obliterated;
- Is not readily marketable due to appearance, freshness, grade, surplus, or other considerations but has not been rendered unsafe or unsuitable for food use;
- Has been subjected to possible damage due to accident, fire, flood, adverse weather, or to any other similar cause; or
- Is suspected of having been rendered unsafe or unsuitable for food use.

Adulterated – A food product is adulterated when it meets one of the twelve conditions specified in 196.070 RSMo. In summary, food is adulterated if it:

- Contains any substance harmful to health;
- Contains any diseased, contaminated, filthy, putrid, or decomposed substance;
- Has been produced, prepared, packed or held under unsanitary conditions whereby it may have become contaminated with filth or whereby it may have been rendered diseased, unwholesome, or injurious to health;
- Is missing a valuable constituent;
- Contains any substance that has been substituted in whole or in part; or
- Contains any substance that has been added to increase its bulk or weight or make it appear of better quality or value than it is.

Misbranded – A food product is misbranded when it meets one of the eleven conditions specified in 196.075 RSMo. In summary, food is misbranded if it:

- Has labeling that is false or misleading;
- Is offered for sale under the name of another food;

- Has a container so made, formed, or filled as to be misleading;
- Does not conform to label declarations for weight, measure, or numerical count; or
- Is a food that does not conform to a prescribed definition and standard of identity.

Embargo - Goods held pending the decision whether to condemn the product or release the product to re-enter commerce as specified in 196.030 RSMo. Embargo should not be confused with destruction, as the product is only being held temporarily while a determination is being made as to its status.

Occasions for Issuing an Embargo

- When a transportation incident, fire, flood or other natural/manmade disaster occurs resulting in adulterated food, drugs, or cosmetics;
- When a product is deemed questionable based on observations during a sanitation and safety inspection;
- When a recall notice is received from the DHSS, Food and Drug Administration, Food Safety and Inspection Service of the U.S. Department of Agriculture or other reliable sources and is not voluntarily removed from sale;
- When notified of a possible tampering, misbranding or adulteration incident; and/or
- Other circumstances by which food has been held under unsanitary conditions and may have become adulterated.

Condemn shall be defined as goods found to be or believed to be unfit for human consumption which need to be denatured and disposed of or used for non-human product.

Release shall be defined as goods allowed to re-enter commerce.

Notification Process

In most instances, the Local Public Health Agency (LPHA) will be notified of an incident, such as a truck wreck, fire, flood, power outage, or other natural/manmade disaster involving consumable food products in one of two ways:

- The Emergency Response Center (ERC) or SEMA's Missouri Information Analysis Center (MIAC) will notify the on-call Bureau of Environmental Health Services (BEHS), Public Health Environmental Specialist (PHES). They will evaluate the circumstances and determine the appropriate response; or
- The Law Enforcement, Local 911 Center or Fire Department will notify the LPHA directly.

Regardless of the method in which the LPHA is notified, the response procedures shall remain the same.

Response Procedures: Initial Response, Assessment of Product, and Final Disposition

Initial Response:

1. Upon notification of an incident, complete the Emergency Response Information form. Record the type of food products involved; the location, date, and time the incident occurred; as well as, the name, agency, and phone number of who notified you of the incident.

2. Extreme hazards can be associated with traffic conditions, structural integrity of the building, wet or slippery conditions and/or toxic chemicals present in the air. Use caution, each incident is unique. Response time may be delayed when site conditions are hazardous or under investigation.
3. In cases typically involving inclement weather, an over-the-phone embargo may be utilized as an interim measure if access to the incident/scene is too hazardous. This method of embargo should not be used lightly, as it is difficult to track product inventory and 196.030 RSMo mandates a tag be affixed to embargoed product.
4. In cases involving power outages, a large number of food establishments may simultaneously be impacted.
 - A. Contact the utility company, county emergency operations center, or other appropriate agency to determine the boundaries of the power outage.
 - B. Contact the power company that covers the affected area to assess the anticipated duration of the outage. Ameren Missouri and many other electrical cooperatives have a website containing this information.
 - C. The water supply may be lost or placed under boil order restrictions when power is lost. Contact the water supply district, municipal water supply utility or county emergency operations center to determine the status of the water supply serving the area.

Assessment of Product:

1. In cases involving an over-the-phone embargo, the LPHA should follow up and physically tag product within 24 hours or as soon as conditions permit.
2. In cases involving power outages or boil orders/advisories, the LPHA should begin an assessment of each establishment by telephone calls or site visits to confirm whether the establishment's electricity has been lost; water supply compromised, if they are operating; and their disposition of perishable foods, such as moving food to another location or using back-up generators.
 - A. Priority should be given to full scale grocery stores, high risk food establishments, and food establishments with poor compliance histories. If the scale of the event prevents the LPHA from addressing these types of facilities in a timely manner, contact your Regional PHES for assistance.
 - B. During telephone calls, safe food handling guidance should be discussed with the owner/operator. As time permits, site visits of each food establishment should be conducted.
 - C. During site visits, safe food handling guidance should be discussed, disposition of food products assessed, and if appropriate a Power Outage Notice and/or Boil Order Advisory provided.
 - D. Adulterated food products shall be embargoed or voluntarily disposed of appropriately.
3. For all emergency incidents, upon arrival, contact the owner/operator or their agent of the food product(s) and personnel in charge of the scene, such as, the sheriff, highway patrolman, or towing company.
4. Conduct a preliminary survey of the food and conditions at the site for environmental contamination factors, such as flood water, smoke, soot, heat, chemical, physical or impact

damage. Note the weather conditions, such as the temperature and precipitation and its potential effect on the food product at the scene.

- A. For generalized damage, such as a fire in a warehouse full of food product, it is not necessary to inventory each item. Instead, note on the Order of Embargo form that all food, drug or cosmetic products are under embargo. If there is a bill of lading, a copy can accompany the embargo form and subsequent forms, such as the Final Disposition of Embargoed Goods.
- B. For localized damage, such as a pallet of flour infested with bugs, an exact inventory of the damaged products should be noted on the Order of Embargo form and subsequent forms.
 - The embargoed product should be placed in a secured area and a DHSS warning tag and seal placed through the door latch.
 - If it is not possible to move the product to a secured place, a sufficient number of warning tags and “do not use” tape should be affixed to the embargoed product.
5. When possible, take photographs of visual observations of the establishment, embargoed products, and/or site to document evidence of the event and circumstances.
6. Notify the responsible party, using the Order of Embargo form, that the product involved in the incident is under ‘embargo’ and is not to be removed or disposed of until the DHSS, LPHA or court gives permission for removal or disposal. The responsible party should sign this document. If the responsible party refuses to sign the form, document the refusal, and contact your Regional Public Health Environmental Supervisor or BEHS on call PHES.
7. Affix an embargo tag to the product(s) suspected of being adulterated or misbranded warning all persons not to remove or dispose of the food products until permission for removal or disposal is given.
8. Inform the legal owner or his agent of his legal responsibility to secure the embargoed goods by posting guards or by other means necessary.
9. Section 196.030 RSMo, mandates evaluation of distressed food, drugs, and cosmetics. However, this section of statute does not grant authority over non-food items such as tobacco products, pet foods, cleaning chemicals, paper products or single service utensils. In case where single service paper products and/or utensils have been contaminated, request these products be disposed/encourage voluntary disposal.
10. Determine whether the food product at the site is salvageable or condemned as unfit for human consumption. Salvageable food should be separated from food that is condemned as unfit for human consumption. Section 4.4: Standards for Determining Food Safety provides in depth criteria for evaluating foods.
 - A. Meats and poultry products should be evaluated as any other perishable food item.
 - B. Alcoholic beverages should be evaluated as any other food item. It is recommended you contact your [local liquor control agent](#) to notify them of the incident. An agent may or may not be present on site.
 - C. Contact the Missouri Department of Agriculture, [State Milk Board](#), when bulk milk and other dairy products, such as cream being hauled in a tanker truck, are involved in a transportation accident. They have regulatory authority. DHSS and LPHAs should not respond to incidents involving only bulk milk and other bulk dairy products.

- D. Special consideration needs to be made when drugs are involved; see section 4.5: Distressed or Adulterated Drug and Pharmaceuticals.
11. If foods under embargo, are to be transported to another local or jurisdiction, you must notify and provide all available information to the regulatory agency in that jurisdiction prior to the embargoed foods being moved.
 - A. Conduct a preliminary survey and segregate product that is obviously damaged from those products that need further examination.
 - B. The food shall move under embargo with the vehicle sealed by securing the doors on the trailer or rail car with a DHSS seal. The seal must only be removed by the regulatory agency once the vehicle has arrived at its final destination.
 - C. Record the seal number on the Order of Embargo form.
 - D. Contact your Regional Public Health Environmental Supervisor or BEHS on call PHES prior to allowing embargoed products to leave the state. In most circumstances embargoed food should not leave the state.
 12. When food product is determined to be in sound condition, notify the responsible party in writing that the product is released to re-enter commerce using the Final Disposition of Embargoed Goods form. Product may be released from an embargo when:
 - A. The product has not been adulterated or misbranded; or
 - B. Ordered by the Court.
 13. When food product is determined not to be in sound condition, notify the responsible party in writing that the product is condemned as unfit for human consumption and must be destroyed or denatured. The responsible party must sign they are willingly surrendering the product for destruction or denaturing.
 - A. If the product is perishable and the responsible party refuses to sign the Final Disposition of Embargoed Goods form, serve the responsible party a written notice directing him/her to hold the product for a period not to exceed three (3) days. At the end of the three (3) day period either a final disposition agreement needs to be in place or a new notice will be issued.
 - B. If the product is not perishable and the responsible party refuses to sign the Final Disposition of Embargoed Goods form, serve the responsible party a written notice directing him/her to hold the product for an undetermined period.
 - C. Food declared as unfit for human consumption may be permitted for use in animal food pending approval by the Missouri Department of Agriculture or U.S. Food and Drug Administration.
 - D. Notify the Regional Public Health Environmental Supervisor or BEHS on call PHES.
 - E. Request assistance from the County Prosecuting Attorney if criminal violations occur.

Final Disposition:

1. Supervise the destruction of all condemned product, observing local ordinances. Do not permit distressed and/or unsalvageable food to be removed from your jurisdiction.
 - A. Destruction and/or denaturing can be accomplished by crushing the product with a compactor truck; crushing the product at a transfer station; burying the product in a landfill; or removing

any wrapper/container from the product, disposing of the product in a dumpster and denaturing by pouring bleach or other chemical over the product.

- B. Do not permit condemned food to be taken for personal use.
- C. Food intended for industrial use shall be denatured.
- D. Section 196.030, RSMo does not grant DHSS or LPHAs seizure authority. It is imperative that the health authority never take possession of food products for later disposal.

Standards for Determining Food Safety

Regardless of the incident, the following criteria should be used for evaluating foods:

1. Food Temperatures

- Refrigerated or frozen potentially hazardous foods must maintain a temperature of 41°F or below.
- Upon arrival at the scene, record the time and temperature of all perishable food products. Continue to regularly record the time and temperature of these foods until it is declared unfit for human consumption or released back into commerce. Caution should be exercised to minimize opening doors of malfunctioning refrigeration units. Opening refrigeration doors releases cold, conditioned air.
- Product temperatures should be taken randomly from each unit on the scene.
- Temperatures should be taken directly from the product/ package. If the product/ package is thick or large enough to allow for a variation in temperature, temperatures should be taken from an area one-inch below the outside edge of the product/ package.
- Cold-held potentially hazardous foods found to be above 45°F shall be marked for identification as unfit for human consumption. Exceptions may be provided on a limited basis for raw meat products subject to heat treatment and retail facilities that utilize an approved Emergency Action Plan as described in section 4 below.
- Once the truck/trailer is opened, temperatures shall be taken and recorded at the point nearest the entrance.
- Product temperatures should be taken from the outer edge of the load/cooler then progressively toward the center of the load/unit.
- Product temperatures should be taken around any hole or break in the truck.
- Prior to reloading salvageable foods, the ambient air temperature in the receiving trailer shall be 45°F or below. Every effort should be taken to maintain this temperature during loading operations.

2. Unsalvageable Items include:

- Fresh foods, such as produce and exposed foods subjected to floodwater, sewage, fire, smoke, soot, pesticides, fuel or other automotive fluids, or other contaminants.
- Heat-damaged food items regardless of packaging that are noticeably charred or were in the immediate proximity of the fire.
- Whether plastic, glass, cardboard or other type of packaging, products in containers with screw-caps, snap-lids, crimped-caps, twist-caps, flip-top, snap-open, corks and similar types closers subjected to floodwater, sewage, fire, smoke, soot, pesticides, fuel or other automotive fluids, or other contaminants.
- Glass containers subjected to impact conditions, such as the result of a truck wreck. Glass containers are subject to fractures and glass splintering; the extent of damage to the primary packaging cannot always be easily seen and/or identified.

- Food items exposed to extreme hot or cold temperatures that impact the package integrity such as a liquid freezing and rupturing its container.
- Cardboard packages having the following critical or major defects:
 - Cuts, punctures, rips or any other visible evidence of exposure of the product to contamination. Note that some products may have double packaging. For example, cereal is often packaged in a sealed inner bag within an outer cardboard box. The cereal may be salvaged if the inner bag has not been damaged or subjected to contamination.
 - Exposure to smoke and/or coated with a film of soot or chemicals. Most cardboard packages are permeable to these agents and depending on the condition can allow contaminants to travel through the packaging material. Additionally, these packaging materials can trap contaminants in seams and splits and are virtually impossible to clean.
 - Damaged by or exposed to floodwater, floor drain backup, water or chemicals used in firefighting, precipitation, fuel or other automotive fluids, smoke, pesticides or other contaminants.
 - Damaged by physical means, such as an explosion, severe weather, glass shards, etc.
- Canned foods having the following critical or major defects (with the exception of carbonated beverages and dry foods, such as ground coffee or powdered beverage mixes, provided the container is otherwise intact):
 - Bulges. This may indicate gas formation.
 - Bulging lids due to severe dents or buckles.
 - Holes or any visible evidence of product leakage. Stained labels may indicate leakage.
 - Obvious fractures or dents on the pull-top lid score lines or in the rivet area.
 - Rusting with any pits that show a danger or imminent perforation.
 - Crushed to the point where they cannot be stacked or opened with manual can openers.
 - Dented on the score or at the juncture of the side seam and end seam.
 - Cut or fractured through the metal on the end seam.
 - Flippers, springers, and/or swellers (see diagram at the end of this subsection).
 - Deep body dents where the can may be fractured.
- Flexible packages, such as pouches, bags, pur-paks, tetra-paks and plastic tubs constructed of plastic, cellophane, foil or other flexible materials having the following critical or major defects:
 - Bulges or swelling. This may indicate gas formation.
 - Abrasions, cuts, punctures, cracks, fractures or any other visible evidence of loss of hermetic seal.
 - Obvious fractures or dents on the pull-top lid scores lines or in the rivet area.
 - Exposure to smoke and/or coated with a film of soot or chemicals. Many plastics and cellophanes are partially permeable to these agents and depending on the condition can allow contaminants to travel through the packaging material. Additionally, these packaging materials can trap contaminants in seams and splits and are virtually impossible to clean.
 - Double seam end crushed to the extent the double seam is affected.

- Exposure to non-potable water such as floodwaters, fire extinguishers and rainwater. It is virtually impossible to remove dirt and to properly clean and sanitize these packages. Dirt has a tendency to collect in splits and at the seams.
 - Product held under unsecured conditions whereby product integrity may have been compromised by pests, unauthorized persons, or environmental conditions, such as:
 - A breeched or unlocked trailer left unsupervised at the scene of an accident.
 - A storm-damaged food establishment left unsupervised.
 - Uncovered product held overnight in a temporary food event tent.
3. Salvageable Items include:
- Foods in hermetically sealed cans that have been exposed to contamination may be salvageable for human consumption if the owner reconditions and re-labels the product. The labels must first be removed and the containers cleaned with hot soapy water; rinsed with clean water; sanitized by immersing the cans in a solution of an approved sanitizer; and air-dried. In most cases the can will need to be recoated to prevent the container from rusting. Finally, all cans must be re-labeled before entering back into commerce.
 - Information labels on all salvaged food containers must be legible and complete prior to entering back into commerce.
4. Emergency Action Plan. During times of disasters/incidents causing an interruption of electrical services, it may be beneficial to have temporary alternative processes in place to protect the public's health. The Conference for Food Protection, in response to growing demands, developed a model [Emergency Action Plan](#) (EAP) to assist retail food establishments in preparing for, responding to, and recovering from an emergency.

Responsibilities of the Owner/Representative

1. Provide necessary equipment and personnel to protect product from contamination.
2. If needed, provide necessary equipment and personnel to maintain safe product temperatures.
3. If needed, provide necessary equipment and personnel for removal and destruction of product.
4. Dispose of unfit product in a manner approved by the DHSS and LPHA.

Distressed or Adulterated Drugs and Pharmaceuticals

Section 196.015, RSMo, prohibits the manufacture, sale or delivery, holding or offering for sale any food, drug, device or cosmetic that is adulterated or misbranded. It is the responsibility of the Department of Health and Senior Services (DHSS) to evaluate these goods for adulteration.

Many of the processes and procedures to evaluate and handle adulterated drugs and pharmaceuticals are similar to those used to handle adulterated food. DHSS on-call and Regional Public Health Environmental Specialist (PHES) are available to assist with decision making processes on distressed drugs.

Definitions

Drugs fall into three categories: over-the-counter (OTC), prescription drugs, and controlled substances. These categories influence how drugs are evaluated and handled.

OTC drugs are purchased directly by the consumer from the store shelves and do not require a prescription. Aspirin, cold remedies, and vitamins are common examples.

A prescription drug is a medication that can be purchased or given only with a written instruction from a licensed health care provider. Birth control pills, blood pressure medicines, and antibiotics are common examples.

A controlled substance is a drug or other substance that comes under the jurisdiction of the Federal Controlled Substances Act of 1970. Narcotics, depressants, stimulants, hallucinogens and anabolic steroids are common examples.

Determination of Adulteration:

Drugs, regardless of the incident, should be evaluated for adulteration using the same criteria detailed in section [Standards for Determining Food Safety](#) in this manual with the exception of temperature. Although many drugs must be held in a narrow range of temperature and humidity, our evaluation for adulteration will not include these factors. No generalized temperature range has been established by which all drugs must be held. Therefore, during an incident, a visual inspection shall be conducted.

A visual inspection is used to assess physical changes to the product that could affect its strength, quality, and/or purity. This includes but is not limited to a lack of uniformity in the product's shape, color, or texture; excessive condensation within the product container; freezing/melting due to weather conditions at the scene; obvious changes in homogeneity; leaking; compromised seals; and breaks, cracks, or other impact issues to glass containers. If these physical changes are observed, the product should be considered adulterated in accordance with 196.095 RSMo.

Special Circumstances:

For incidents involving OTC drugs, the evaluation for adulteration should be conducted on scene or at the facility. When OTC drugs are determined to be adulterated, the owner must determine the method of disposal and arrange for secure holding and transport to the disposal site.

A higher level of security is needed when dealing with prescription drugs and controlled substances and for that reason the owner or his representative must be on scene prior to any evaluation of product.

In a fixed facility like a pharmacy, prescription drugs and controlled substances are typically held in a restricted area or in locked cabinets/storage inaccessible to the general public. Trucks transporting prescription drugs or controlled substances normally carry these products in sealed totes. These totes should not be opened on the scene of a transportation accident as adequate security cannot be assured. If conditions at the scene indicate these drugs may have been adulterated; then all of the involved product should be placed under embargo and arrangements made with the owner to evaluate the product at a secure site.

It is common for the owner to want the product moved out of the county or state where the incident occurred, without the involvement of the health authorities. DHSS embargo authority gives us the authority to deny these requests until an evaluation is complete. Individual circumstances will dictate the best course of action.

Companies may wish to have a representative on site during the evaluation and sorting, this should be welcomed. Companies may decide to dispose of product without an evaluation of adulteration. If so, the company's decision must be documented. It is still the LPHA's responsibility to oversee the disposal of the product.

Final Disposition of Adulterated Drugs:

It is DHSS' responsibility to assure that adulterated product is removed from commerce. It is the responsibility of the owner of these products to assure that proper drug disposal methods are used. This applies to all quantities and classes of drugs. In most instances, disposing of OTC drugs, prescription drugs or controlled substances in a landfill or flushed into wastewater treatment systems is unacceptable as they pose a groundwater contamination hazard.

Best practice for disposing of drugs is to send them to a "reverse distributor" or company that specializes in drug disposal. When a reverse distributor or drug disposal company is used, the product must be transported under embargo. The owner is responsible for providing DHSS or the LPHA written assurance that all of the adulterated drugs were received and disposed of appropriately.

Providing Potable Water under Emergency Conditions

Local Public Health Agencies (LPHAs) tend to be the first contact regarding the safety of drinking water during emergencies. Drinking water supplies become contaminated when any open part of the system is exposed to flood waters or the system loses pressure during the event. Flood waters can be contaminated with numerous hazardous agents including but not limited to infectious organisms, agricultural or industrial chemicals, gas/oil, and human excrement. Drinking water supplies exposed to any of these conditions should not be used for human consumption until properly disinfected or tested and found to be safe.

During emergencies, plans should be in place for providing potable water through emergency interconnections between public water systems, providing bottled water, using disinfection methods, or hauling in potable water. These options have proven effective in supplying communities with sufficient safe drinking water during past emergencies. The Missouri Department of Health and Senior Services (DHSS) and the Missouri Department of Natural Resources (DNR) recommend using emergency water treatment units as a last resort during catastrophic events.

- If the decision is made to purchase and use portable water treatment units, DHSS and DNR recommend following the [Guidelines on Selection and Use of Portable Water Treatment Units](#).
- If the decision is made to haul bulk water, DHSS recommends the following [Guidelines for Hauling Bulk Drinking Water for Emergency Distribution](#).

Boil Orders and Advisories

During some emergency situations, large geographical areas are impacted. The Department of Health and Senior Services (DHSS) depends on the Department of Natural Resources (DNR) to provide information on the condition of public water supplies. Environmental staff should be able to advise the public on the status of their system and precautions to take during a [boil order/boil advisory](#).

When a boil order/advisory is issued, LPHAs should notified the impacted regulated facilities about the potential for contamination and provide instructions on proper disinfection methods.

[Boil Water Orders and Boil Water Advisories Fact Sheet](#)

Making Water Safe for Human Consumption

If it is necessary to use a suspect water supply system for drinking, cooking, or brushing teeth, it must be properly disinfected in order to minimize microbiological risks. Cloudy, murky, or colored water is difficult to disinfect and should NOT be consumed. Clear water should be boiled for three (3) consecutive minutes in a clean container. Let cool and store in clean containers. The flat taste can be eliminated by shaking or pouring the water from one clean container to another.

Boiling the water will kill disease-producing organisms that may be present, but boiling large quantities of water is inconvenient and impractical. It is usually more practical to [disinfect a water supply](#) with an oxidizing agent such as chlorine.

Onsite Wastewater Treatment Systems Before, During, and After Flooding

Flooding of an onsite wastewater treatment system can lead to a hazardous situation for regulated facilities and homeowners. It may lead to back-up of sewage into the facility/home, contamination of drinking water, and/or lack of sanitation until the system can be repaired. While we cannot control the weather, there are measures that can be taken to ensure the system can better withstand the stresses of heavy rains or flooding.

Failure of an onsite wastewater treatment system can occur during heavy rains or flooding; as the system can no longer function properly once the ground becomes saturated. During this time, most systems will remain inoperable until the flood waters recede and the soil treatment area becomes somewhat dry. Signs that a system is not operating properly include, but are not limited to, sinks and toilets draining slowly; floor drains overflowing; and wastewater overflowing or surfacing outside the residence or regulated establishment.

Before an Emergency

If you are aware that heavy rains or flood waters are in the area, the following steps should be taken by the facility/homeowner to protect the onsite wastewater treatment system:

1. Assure the sewage tank is at least half full to prevent it from collapsing or floating out of the ground;
2. Seal the manhole and/or inspection ports to prevent excess water from entering the sewage tank;
3. Install a septic tank effluent filter to help prevent soil treatment system clogging; and
4. If the onsite wastewater treatment system requires electricity:
 - a. Turn off the electricity at the circuit box before the area floods, and
 - b. Waterproof all electrical connections to avoid electrical shock or damage to wiring, pumps, and the electrical system; and
5. Plug floor drains, if necessary, to minimize sewage backing up into the house.

During an Emergency

Severe flooding can put extreme stress on the onsite wastewater treatment system, as well as, the private drinking water well. Therefore:

1. Discontinue or limit water usage. Limit toilet flushing, dishwashing, washing clothes, and showering/bathing;
2. Discontinue drinking water from a private well. Drink only water from a safe source, such as, bottled water or water that has been appropriately disinfected; and
3. Avoid or minimize contact with standing flood water. Flood waters can be contaminated with bacteria and viruses, hazardous substances, and wastewater.

After an Emergency

Once floodwaters have receded, there are several things facility/homeowners should remember:

1. Continue to avoid or minimize contact with standing flood water;
2. Treat surfacing wastewater with hydrated lime or diluted household bleach. Wear gloves, handle chemicals with care, and follow all listed precautions;
3. Do not drink well water until it has been tested and shown to be safe;
4. Do not use the onsite wastewater treatment system until water in the soil treatment area has receded and the soil no longer appears saturated;
5. Check for missing septic tank or treatment system access covers. Secure openings with temporary covers;
6. Do not enter the sewage tank, as they contain hazardous fumes and gases that are potentially fatal;
7. If you suspect damage to the system, have it professionally inspected and serviced. Signs of damage include settling or inability to accept water. Most tanks are not damaged by flooding since they are below ground and completely covered. However, some septic tanks, pump chambers or absorption lines can become filled with silt and debris, requiring professional cleaning, repair, and/or replacement;
8. Have a seepage hauler pump the sewage tank(s) as soon as possible after the flood. Be sure to pump both the tank and lift station if any. This will remove silt and debris that may have washed into the system. Do not pump the tank during flooded or saturated soil conditions, as the tank may become buoyant or mud and silt may enter the tank and end up in the absorption lines.
9. Continue to limit water usage; flush toilets as little as possible or use a temporary toilet;
10. Reduce all nonessential water use (dishwashing, washing clothes, and showering/bathing);
11. Do not compact the soil over the soil treatment area by driving or operating equipment in the area. Saturated soil is especially susceptible to compaction, which can reduce the soil treatment area's ability to treat wastewater and lead to system failure;
12. Once dry, examine all electrical connections for damage before restoring electricity;
13. Assure the sewage tank manhole cover is secure and that inspection ports have not become blocked or damaged;
14. Check the vegetation over the septic tank and soil treatment area. Repair erosion damage and sod or reseed areas as needed;
15. If sewage has entered into the house, clean the area and disinfect with household bleach; and
16. Discard items contaminated with flood water that cannot be adequately cleaned and sanitized.
17. Individual lagoons that have silted in or have been physically damaged should be repaired as soon as possible before long-term use is resumed. Carefully remove debris from the lagoon and repair damaged berms and fences.

Wastewater Treatment System Abandonment

Some onsite wastewater treatment systems will be abandoned after a natural disaster. The following are recommendations to help ensure the former site used for wastewater treatment and dispersal is safe:

1. Disconnect power at the source to all electrical controls and remove controls and panels;
2. Have a septage hauler pump all the tanks within the system to remove wastewater and sludge;
3. Fill tanks with sand or gravel to prevent future collapse, remove the tanks or crush in place.
Backfill the excavation to a natural grade and establish a vegetative cover;
4. Remove all parts of the system on the ground surface such as valves, valve boxes, and risers.
Backfill the area to a natural grade and establish a vegetative cover;
5. Coat all surface areas exposed to wastewater with hydrated lime and establish a vegetation cover;
and
6. Wait at least eighteen (18) months before using the soil treatment area for gardening or construction.

Emergency Shelters and Mass Feeding Centers

During or following a disaster, homes and businesses may be inaccessible, destroyed or uninhabitable. Individuals forced to evacuate need a place to go until it is safe to return home. While a simple concept, providing essential human needs such as ample supplies of safe food and water in a secure environment can be a major challenge.

Because disasters affect communities, they require a community response. It is critical to develop partnerships, in advance, with the Emergency Management Director of the local jurisdiction, as well as fire and rescue, law and code enforcement, hospitals, American Red Cross, Salvation Army, local churches, health care providers, and service/civic groups. Emergency shelters and mass feeding sites provided during a disaster are often operated by private organizations. Partnering with these organizations provides vital insight in choosing a shelter site that meets the needs from their perspective, as well as, including public health, security, and life safety.

The Centers for Disease Control and Prevention has developed an [Environmental Health Shelter Assessment Tool](#) to be used by Public Health Environmental Specialist (PHES) in conducting a rapid assessment of shelter conditions during emergencies and disasters.

Emergency Shelters

Churches, schools, hotels, arenas, and community building generally contain the appropriate amenities to make them ideal for emergency shelters. However, the site is only one part of the equation; properly trained staff is also critical.

In regard to life safety, the emergency shelter site should provide:

- Accessibility to persons with disabilities;
- Enough sleeping space with provisions to provide separate spaces for families, single men, and single women;
- A main entrance with several remote emergency exits;
- Exits signs and emergency lighting;
- Fire detection;
- Accessible grounded outlets;
- Emergency electrical generator(s) or transfer switch hook-up;
- Ample parking;
- Compliance with applicable fire and safety codes; and
- Personal safety and security from on-site law enforcement.

While the shelter may not provide medical service to shelter residents, it is possible that some of the people who come to the shelter will be sick when they arrive. There could be illnesses ranging from a

common cold or stomach virus to more serious diseases such as hepatitis or tuberculosis. At a minimum the following should be considered:

1. Adequate hand-sink facilities with warm running water, soap and paper towels. Proper hand washing is critical to lowering the risk of disease transmission.
2. Ensure the site is well stocked with cleaning/disinfecting supplies.
3. Provide training for volunteers in proper cleaning and disinfection methods.
4. Provide separate, approved receptacles for medical waste, such as, sharps containers for syringes, and red trash bags for medical waste.

Mass Feeding Centers

Location

The ideal site for a mass feeding operation is a building already equipped with suitable food service equipment, including but not limited to, a school lunchroom, church, or club facility where a large number of meals can be safely prepared and served. Temporary structures, such as mess tents and mobile food units, may be an acceptable alternative when a permanent facility cannot be acquired.

The site should include adequate storage, adequate refrigeration equipment, equipment capable of maintaining hot foods hot and cold foods cold, hot and cold running water, large ranges, sufficient work surfaces, adequate dish washing areas, hand washing facilities, and staff/volunteers trained in safe food handling techniques.

Hand washing facilities shall be provided in food preparation areas and in restrooms. Hand washing facilities shall be provided with clean hot and cold running water, soap, paper towels or hand drying device and trash can. If plumbed hand washing facilities are not feasible, a temporary hand washing station may be provided.

Facility-Water

Safe drinking water is a critical necessity to human survival and one that is often directly affected by disasters. A safe water supply shall be provided. If the center's water source is a private or non-community water supply, the PHES should test the water for safety prior to the site beginning operations.

In situations where the water supply has been compromised, the center shall:

1. Provide bottled water;
2. Use a safe, approved alternative water supply; or
3. Boil/disinfect water in accordance with the Department of Natural Resources, [Boil Water Orders and Boil Water Advisories](#).

Facility-Waste

It is a fact that the basic processes of living create waste, including paper, plastic, food refuse, as well as human waste. Because waste is also a reality of shelter living, a plan must be in place to effectively handle facility waste while the shelter and/or mass feeding site is operating.

If the site is not served by a public wastewater system, one or more of the following shall be provided:

1. An onsite wastewater treatment system operating in accordance with Missouri's laws and regulations or applicable local ordinance. The PHES should evaluate the system prior to the site beginning operations;
2. In cases where no system is available, a temporary holding tank operated and maintained in accordance with Missouri's laws and regulations or applicable local ordinance; and/or
3. In cases where the system's capacity is limited, portable toilets or mobile bathrooms may be appropriate.

For other solid waste, an adequate number and size of garbage bins, trash cans, and trash bags must be provided. Trash and other solid waste shall be stored in a location away from food preparation, storage and service areas until trash collection service resume.

Personnel

All persons volunteering to work at the center should be properly oriented before they begin work.

Personal hygiene for food service workers includes:

1. Excluding people that are ill from working in a food service capacity.
2. Frequent hand washing, particularly after using the toilet and after handling materials or equipment that may be contaminated.
3. No bare hand contact with ready-to-eat foods.
4. Clean hands, body, hair and clothing.

Supervision

If possible, a mass feeding operation should be supervised by someone with substantial experience in food service operations. At a minimum, a person in charge should be designated.

Food

Added to issues of adequate food quality, quantity, and variety are the potentially serious risks of food-borne illness. Even for a temporary center, the following should be implemented:

1. All foods shall come from an approved source, in sound condition. No home canned or prepared goods, with the exception of baked cookies and cakes, etc. are allowed to be served.
2. All potentially hazardous foods must be cooked, held, reheated, and stored at temperatures in accordance with the Food Code requirements or applicable local ordinance. Centers shall have adequate refrigeration and hot/cold holding equipment.
3. Foods shall be stored six (6") inches off the floor, away from toxic chemicals/substances. Raw meats must be stored below ready-to-eat foods to prevent contamination.

4. Regular cleaning of the food preparation area and feeding area; including washing, rinsing, sanitizing and air-drying of food equipment and utensils.

Sanitation Guidelines for Child Care Providers in Power Outages or Natural Disasters

In addition to existing child care requirements, the following sanitation considerations apply to child care providers experiencing a power outage or natural disaster.

Cleaning/Personal Hygiene Recommendations

Water Supply: Providers must have hot and cold running water under pressure in order to maintain good hygienic practices.

- Providers without running water under pressure and/or those with a water heater with no power source must cease operations until the hot/cold water supply is restored.
- Properly-sized generators may be used to power well pumps and water heaters if the generators are operated in accordance with the Department of Public Safety's recommended procedures.
- Providers operating under a boil order/advisory must follow the Missouri Department of Health and Senior Services' "Guidelines for Food Establishments during a Boil Water Order."
- Providers with a well head or well pump immersed by flood waters, must cease operations until the facility finds an approved alternate source of potable water.
- Once waters recede, the well water must be sampled and treated as necessary to ensure a safe water supply.

Cleaning: Providers should maintain routine cleaning procedures during a power outage. Natural lighting or alternative artificial lighting must be provided to ensure proper cleaning.

Facility Operations

Wastewater Treatment: Some onsite wastewater treatment systems and community wastewater systems rely on pumps that require electricity to operate.

- Providers should identify their onsite system's electrical needs prior to a power outage in order to prevent potential sewage backup into the facility.
- Providers whose onsite wastewater treatment system is partly or completely immersed by water, must cease operations until the waters have receded.
- Once re-opened, children may have no contact with wet soil around the onsite wastewater treatment system; and
- It may be necessary to pump the tank.
- See Section [Onsite Wastewater Treatment Systems Before, During, and After Flooding](#) of this manual.

Structural Damage: Structural damage to a facility from a natural disaster shall be evaluated on a case-by-case basis.

- Providers whose facilities have extensive damage that directly affects the well-being of children in care must cease operations until repairs are made and approval to reopen is given by the Missouri Department of Health and Senior Services (DHSS).

Food Safety Recommendations

Use a Thermometer: Keep a thermometer in the refrigerator at all times to assure food is being stored at forty-one degrees Fahrenheit (41°F) or colder.

- The key to determining the safety of refrigerated and frozen foods is temperature.
- Most foodborne illnesses are caused by bacteria that multiply rapidly at temperatures above forty-five degrees Fahrenheit (45 °F).

Leave the Freezer Door Closed:

- A full freezer should keep food safe for about two days; a half-full freezer, about a day.
- Add bags of ice or dry ice to the freezer if it appears the power will be off for an extended period of time. You can safely refreeze thawed foods that still contain ice crystals.

Refrigerated Items: These foods should be safe as long as the power is out no more than about four (4) to six (6) hours.

- Discard any potentially hazardous (perishable) food that has been above forty-five degrees Fahrenheit (45 °F).
- Discard any food that has an unusual odor, color or texture.
- Leave the refrigerator door closed. Every time the door is opened, cold air escapes, causing the foods inside to reach unsafe temperatures.
- If it appears the power will be off more than six (6) hours, transfer refrigerated potentially hazardous (perishable) foods to an insulated cooler filled with ice or frozen gel packs.
- Keep a thermometer in the cooler to assure food stays at forty-one degrees Fahrenheit (41 °F) or below.
- Food items that have been transported to an uninspected location for storage such as an employee's home should not be reintroduced into child care.

Never Taste Food to Determine its Safety: Some foods may look and smell fine, but if it has been at room temperature longer than two (2) hours, bacteria that cause foodborne illnesses can begin to multiply very rapidly. Some types will produce toxins, which are not destroyed by cooking and can possibly cause illness.

Equipment Considerations:

- Small providers such as Family Homes and Group Homes temporarily without mechanical refrigeration can maintain foods below forty-one degrees Fahrenheit (41 °F) by utilizing ice chests.
- Ice levels must be carefully monitored and drained to prevent immersion of food items.
- Raw meats must be stored to prevent cross contamination and should not be stored in the same ice chest as ready-to-eat foods.
- Larger providers such as Centers that handle larger volumes of food should not prepare foods without mechanical refrigeration. Mechanical refrigeration units can be powered by generators that are operated in accordance with the Department of Public Safety's recommended procedures.

- Providers with limited or no power are encouraged to prepare meals that require a minimum amount of preparation and cooking, such as fresh fruits, sandwiches, and prepackaged items.
- Having foods catered from an approved source is an acceptable alternative to meal preparation. Check with your Local Public Health Agency to ensure your caterer is an approved source.

Sanitation Guidelines for Lodging Establishments in Power Outages or Natural Disasters

In addition to existing lodging requirements, the following sanitation considerations apply to lodging establishments experiencing a power outage or natural disaster.

Cleaning/Personal Hygiene Recommendations

Water Supply: Establishments must have hot and cold running water under pressure in order to maintain good hygienic practices.

- Establishments without running water under pressure and/or those with a water heater with no power source should cease operations until the hot/cold water supply is restored.
- Properly-sized generators may be used to power well pumps and water heaters if the generators are operated in accordance with the Department of Public Safety's recommended procedures.
- Providers operating under a boil order/advisory must follow the Missouri Department of Health and Senior Services' "Guidelines for Food Establishments during a Boil Water Order."
- Establishments with a well head or well pump immersed by flood waters, should cease operations until the facility finds an approved alternate source of potable water.
- Once waters recede, the well water must be sampled and treated as necessary to ensure a safe water supply.

Cleaning: Establishments should maintain routine cleaning procedures during a power outage. Natural lighting or alternative artificial lighting must be provided to ensure proper cleaning.

Facility Operations

Wastewater Treatment: Some onsite wastewater treatment systems and community wastewater systems rely on pumps that require electricity to operate.

- Establishments should identify their onsite system's electrical needs prior to a power outage in order to prevent potential sewage backup into the facility.
- Establishments whose onsite wastewater treatment system is partly or completely immersed by water, should cease operations until the waters have receded.
- Once re-opened, employees and customers may have no contact with wet soil around the onsite wastewater treatment system; and
- It may be necessary to pump the tank.
- See Section [Onsite Wastewater Treatment Systems Before, During, and After Flooding](#) of this manual.

Structural Damage: Structural damage to a facility from a natural disaster shall be evaluated on a case-by-case basis.

- Establishments whose facilities have extensive damage that directly affects the well-being of employees and customers should cease operations until the integrity of the structure and/or its electrical wiring is certified by a professional engineer.

Physical Facilities

- During a power outage, assure back-up electricity is provided for smoke detectors, fire alarms, sprinkler systems, and emergency lighting.
- Items in contact with flood waters must be washed, rinsed, and sanitized before re-use. If items including but not limited to carpeting, furniture, bedding, linens are too damaged to be properly cleaned, they must be discarded appropriately.

Food Safety Recommendations

Use a Thermometer: Keep a thermometer in the refrigerator at all times to assure food is being stored at forty-one degrees Fahrenheit (41°F) or colder.

- The key to determining the safety of refrigerated and frozen foods is temperature.
- Most foodborne illnesses are caused by bacteria that multiply rapidly at temperatures above forty-five degrees Fahrenheit (45 °F).

Leave the Freezer Door Closed:

- A full freezer should keep food safe for about two days; a half-full freezer, about a day.
- Add bags of ice or dry ice to the freezer if it appears the power will be off for an extended period of time. You can safely refreeze thawed foods that still contain ice crystals.

Refrigerated Items: These foods should be safe as long as the power is out no more than about four (4) to six (6) hours.

- Discard any potentially hazardous (perishable) food that has been above forty-five degrees Fahrenheit (45 °F).
- Discard any food that has an unusual odor, color or texture.
- Leave the refrigerator door closed. Every time the door is opened, cold air escapes, causing the foods inside to reach unsafe temperatures.
- If it appears the power will be off more than six (6) hours, transfer refrigerated potentially hazardous (perishable) foods to an insulated cooler filled with ice or frozen gel packs.
- Keep a thermometer in the cooler to assure food stays at forty-one degrees Fahrenheit (41 °F) or below.
- Food items that have been transported to an uninspected location for storage such as an employee's home shall not be reintroduced into the lodging establishment.

Never Taste Food to Determine its Safety: Some foods may look and smell fine, but if it has been at room temperature longer than two (2) hours, bacteria that cause foodborne illnesses can begin to multiply very rapidly. Some types will produce toxins, which are not destroyed by cooking and can possibly cause illness.

Equipment Considerations:

- Small lodging establishments temporarily without mechanical refrigeration can maintain foods below forty-one degrees Fahrenheit (41 °F) by utilizing ice chests.
- Ice levels must be carefully monitored and drained to prevent immersion of food items.

- Raw meats must be stored to prevent cross contamination and shall not be stored in the same ice chest as ready-to-eat foods.
- Lodging establishments that handle large volumes of food should not prepare foods without mechanical refrigeration. Mechanical refrigeration units can be powered by generators that are operated in accordance with the Department of Public Safety's recommended procedures.
- Lodging establishments with limited or no power are encouraged to prepare meals that require a minimum amount of preparation and cooking, such as fresh fruits, sandwiches, and prepackaged items.
- Having foods catered from an approved source is an acceptable alternative to meal preparation. Check with your Local Public Health Agency to ensure your caterer is an approved source.

Disaster Recovery

Disaster response and recovery are two separate but coordinated phases of disaster relief that may overlap.

Response - is typically conducted on a days to weeks timeframe for any large scale events and addresses immediate health and safety needs of the affected community.

Recovery - is a process that can last years and focuses on long-term restoration of places and communities affected by disaster.

Disaster Recovery Information Resources

Missouri Department of Health and Senior Services (DHSS): [A Public Health Guide to Safe Disaster Recovery](#) (PDF)

FEMA: [Recovering from Disaster Guide](#) (PDF)

FEMA: [National Disaster Recovery Framework: Strengthening Disaster Recovery for the Nation](#) (PDF)

DHHS [Environmental Health & Toxicology](#)

CDC: Natural Disasters and Severe Weather: [Response Worker Health and Safety](#)

OSHA: [Fact Sheet on Natural Disaster Recovery: Cleanup Hazard](#)

Training and Resources

[Missouri Local Public Health Agencies](#)

[Missouri Department of Health and Senior Services](#)

Division of Community and Public Health, (573) 751-6161

[Center for Emergency Response and Terrorism](#)

(573) 751-5152 or (800) 392-0272

Section for Disease Prevention

(573) 526-4780

Section for Environmental Public Health

(573) 751-6141

[Disaster Preparedness Toolkit for Environmental Health Specialists](#)

[Ready in 3](#)

[State Public Health Laboratory](#)

(573) 751-3334

[Missouri Department of Social Services](#)

Division of Financial and Administrative Services, Emergency Management Section

(573) 751-7533

[Missouri Department of Social Services Local Offices](#)

[Missouri Division of Fire Safety](#)

(573) 751-2930

[Missouri Department of Natural Resources](#)

[Natural Disaster Resources](#)

(800) 361-4827 or 573-751-3443

[State Emergency Management Agency \(SEMA\)](#)

[Staff Directory](#) (573) 526-9100

[Centers for Disease Control and Prevention](#)

[Preparedness and Response for Public Health Disasters](#)

U.S. Department of Agriculture Food Safety Hotline

(800) 535-4555

[Foodsafety.gov](#)

[American Red Cross](#)

[The Salvation Army](#)

[Humane Society of Missouri](#)

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Introduction

The purpose of the Onsite Wastewater Treatment Program (Onsite Program) is to implement Missouri Onsite Wastewater laws and rules to minimize the threat to the health and safety of Missouri's citizens and visitors due to improper treatment and dispersal of onsite wastewater.

Onsite systems are common in Missouri; roughly 25 percent of households use onsite wastewater treatment systems (OWTSs) or use cluster systems. Onsite systems, also known as septic systems, usually treat the wastewater from one residence or business on the site; while cluster systems or shared onsite systems, serve more than one residence and/or business. Like individual systems, cluster systems use technology and soil to treat and disperse wastewater onsite. As many as twelve (12) single-family residences can be served by a single cluster system so long as estimated flows do not exceed 3,000 gallons per day.

Conventional OWTSs consist of a septic tank that retains wastewater solids and a soil treatment area (absorption field) where septic tank effluent is distributed. In the soil treatment area, natural physical, chemical, and biological processes purify the wastewater as it moves through the soil. Conventional systems are most efficient on medium to large lots with deep, permeable soils. Lagoon systems may be an option on larger lots with slowly permeable soils. A variety of alternative OWTS designs are available to accommodate a range of difficult site and soil conditions. The most appropriate system depends on factors such as the permeability of the soil and depth to the water table or bedrock.

Domestic wastewater must be properly managed to avoid public health problems. Poorly sited, designed, installed, or maintained systems can result in surfacing effluent or bacterial and viral contamination of the soil surface, surface waters, or groundwater. Surfacing effluent and contamination of surface waters or groundwater is considered a health hazard and requires corrective action. A program of outreach and education can help ensure homeowners are properly informed to appropriately operate and maintain their onsite system.

Jurisdiction

Jurisdiction over wastewater treatment systems in Missouri is divided between the Department of Health and Senior Services (DHSS) and the Missouri Department of Natural Resources (DNR). Conventional and alternative soil based treatment systems that treat up to 3,000 gallons per day of domestic wastewater are within the scope of DHSS laws and rules governing onsite systems as are lagoons serving single-family residences.

All other lagoons, systems with permitted discharges, soil treatment systems with actual or design daily flows of more than 3,000 gallons per day, and systems treating non-domestic wastewater are under the authority of DNR. In addition, approval of the method of wastewater treatment in residential housing developments is under DNR jurisdiction. Developers must obtain approval from DNR for the use of

onsite systems in new developments with 7 or more units or 3 additional units in existing developments. DNR regulations require existing developments to have been exempted or approved for the use of onsite systems before the developer or lot owner begins construction or applies for an OWTS construction permit. Commercial and industrial facilities and developers should be referred to DNR; the Minimum Construction Standards require these facilities and developers to contact DNR concerning compliance with the Missouri Clean Water Law and Regulations before applying for a DHSS OWTS construction permit. Authority for DNR regulations is provided by Chapter 644, RSMo, also known as the Missouri Clean Water Law.

DNR is also responsible for the federal Underground Injection Control (UIC) Program in Missouri and maintains an inventory of underground injection wells. By definition, any soil treatment system that serves multiple residences or any non-residence establishment with the capacity to serve 20 or more people per day is a large-capacity septic system and is considered a Class V underground injection well. The owner or operator of a large-capacity septic system is responsible for providing inventory information to the state UIC Program.

Authority

Authority to regulate OWTSs comes from the Revised Statutes of Missouri 701.025 to 701.059, and the Code of State Regulations 19 CSR 20-3.060, 3.070, and 3.080. Together these can be found in the reference manual [DHSS Green Book](#). Local OWTS permitting authority can take one of three forms:

1. **Local ordinance.** Many counties and some municipalities have their own ordinance. Under local ordinances, the administrative authority is often the county health department, but may be a building department, planning and zoning commission, or other agency. Regulation under a local ordinance must be as stringent as, but may be more stringent than, state minimum regulations.
2. **Participation Agreements.** DHSS offers Participation Agreements to Local Public Health Agencies (LPHAs).

Where there is no local ordinance or in a few counties where the ordinance does not cover all areas of the county, the DHSS and LPHA may enter into a 3 year Onsite Construction Review Participation Agreement (PA). Some multi-county PAs are executed.

The PA establishes basic terms and conditions between DHSS and the LPHA. LPHAs must comply with the [terms of the PA](#).

DHSS provides funding, technical support, training, forms (see subsection 5.11 of this chapter) and regulations for LPHA inspectors reviewing construction permit applications, issuing construction permits and conducting inspections of OWTSs. In addition, DHSS reviews documentation submitted to ensure the terms of the PA are met.

For reimbursement, the LPHA is to use form DH 38 and submit an invoice quarterly no later than the last business day of the month following the quarter in which review/inspections were completed. Documentation for each permit to be reimbursed must include a copy of:

- The completed construction permit application form;
- The completed and signed construction permit/final inspection form; and,
- If applicable, the completed and signed certification without onsite inspection form;

- If applicable, a UIC inventory form for Class V wells; or,
- The Violation Notice for installations that cannot be brought into compliance.

The LPHA may request reimbursement for permitted projects that are incomplete by providing documentation that the project has been abandoned or the construction permit has expired.

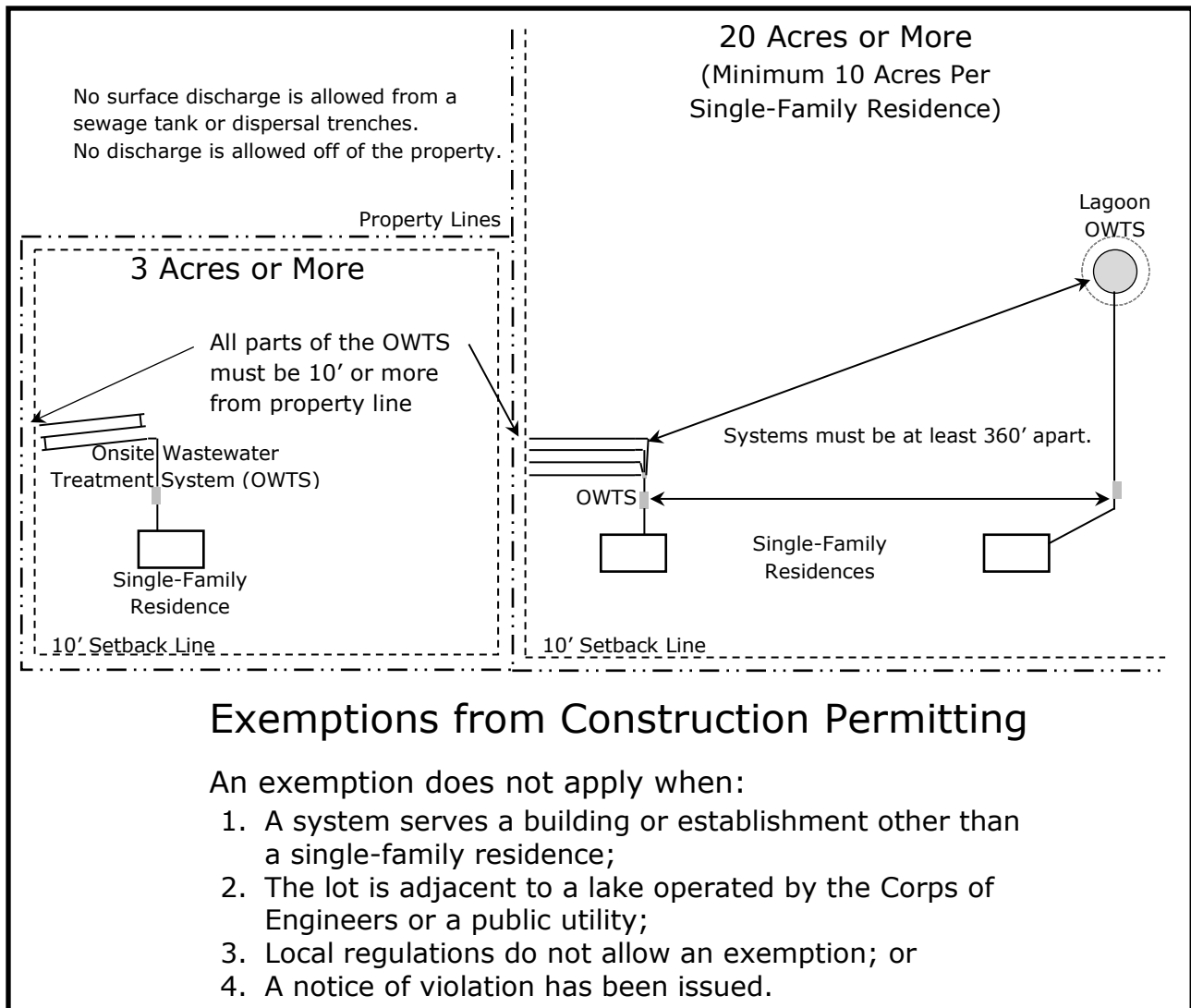
3. **Neither.** Where neither an ordinance nor Participation Agreement is in place, **DHSS staff permits OWTS.**

A Missouri map showing the type of [onsite permitting authority](#) by county is available on the DHSS webpage.

Applicability

Property owners of all buildings where people live, work, or assemble shall provide for the sanitary disposal of all domestic waste. Sewage and waste from such buildings shall be disposed of by discharging into a sewer system regulated under Chapter 644, RSMo or by discharging into an OWTS operated as defined by rule promulgated under sections 701.025 to 701.059, RSMo.

The owner of a single family residence lot consisting of three (3) acres or more, or the owner of a residential lot consisting of twenty (20) acres or more with no single-family residence onsite system located within three hundred sixty feet of any other onsite system and no more than one single-family residence per each ten acres in the aggregate are excluded from Missouri regulations unless the lot is adjacent to a lake operated by the Corps of Engineers or by a public utility.



To be exempt, these property owners cannot contaminate surface waters or groundwater, create a nuisance or public health hazard, install any part of the system closer than ten (10) feet from their property line, or discharge wastewater off of their property.

Owners of non-residential establishments, regardless of acreage, and multi-family residential lots not excluded as noted in the paragraph above, must comply with all provisions of section 701.025 to 701.059, RSMo and all rules promulgated thereunder, or the more stringent local regulations if applicable.

Application Review and Permitting Process

This section covers guidelines for processing an onsite wastewater treatment system (OWTS) construction permit application under DHSS authority. Forms and processes will differ in areas under the authority of local ordinances.

Issuing Applications

When an application to construct an OWTS is requested, a packet should be sent to the person making the request.

The packet should include:

- A construction permit application;
- A list of Registered Onsite Soil Evaluators;
- A list of Registered Installers;
- A Permit Fee form; and
- Instructions for submitting permit fee and completed application.

The packet documents can be accessed on the internet at

<http://health.mo.gov/living/environment/onsite/permitappforms.php>.

Contact information for ordinance counties can be accessed on the internet at:

<http://health.mo.gov/living/environment/onsite/permitprocess.php>

Tracking Applications

The Onsite Program or the local administrative authority will assign an application number when an application is issued or when first contacted regarding a downloaded application. The application number will consist of a ten character alphanumeric number. For example D-###-15-0001 or L-###-15-0001

- The first character is the letter D or L where D is DHSS, and L is the local administrative authority, issued number;
- The next three characters are the county number where the system will be installed, for example 073 is Gasconade County;
- The next two characters indicate the year the application is issued;
- The last four characters are a consecutive sequence, which starts over January 1st of each year at 0001, 0002, 0003, and so forth.

Remember the application number **IS NOT** the same as the permit number. The Onsite Program support staff provides the permit number to the local administrative authority only after verification of receipt of the permit application fee. Also, the permit number **IS NOT** a permit. A permit is issued to the property owner only after completion of the application and plan review process and a pre-construction site inspection if the proposed system complies with minimum standards.

A log should be maintained to track the applications and the status of each permit application processed. The information in the log should include the application number, name and address of the property owner, name and address the application was issued to, if different, address and directions to the construction site, date the application was sent and returned, date the permit was issued, the permit number, and any pertinent notes to allow quick reference if questions arise. A computer database is recommended for quick searches.

The completed application must be returned to the office that issued the application. The permit fee and permit application fee form must be sent to DHSS Fee Receipts. The property owner needs to be made aware that the completed application and permit fee should not be submitted together. The contract LPHA should not collect the permit fee; the property owner or agent must send it to DHSS Fee Receipts. A copy of the fee form may be retained or given as a receipt; note that occasionally an applicant confuses this receipt with a permit and it may be necessary to clarify this with persons unfamiliar with the process.

Applications should be tracked as closely as possible to assure timely return and to avoid delays in system planning and construction. Construction permits should be dated to expire one year from the date issued. If someone requests an application and does not return it in a reasonable amount of time or if a permit has been issued and the expiration date is close at hand, the property owner should be contacted to check on the status of the project. Below is a suggested time line to check the status of an installation. The time line may vary with workload and individual situations.

- 3 months to return an application;
- 1 month to return a plan if revisions were needed;
- 3 months without notification after a permit has been issued.

Examples of letters that may be used to contact the homeowner and/or the installer are provided in the EHO Appendix. The [Onsite Wastewater Treatment System Application Form](#), [Application for Variance Form](#), and the [Permit Fee Form](#) are also available from the Onsite Program. These forms are only for use in areas where OWTSS are permitted by DHSS or by local agencies that have an Onsite Wastewater Treatment System Construction Review Participation Agreement with DHSS.

Onsite Wastewater Treatment System Application Review

It is important to log the receipt of an application and review as soon as possible. It is ill-advised to accept a completed application by fax, as facsimile copies are often illegible. Original signatures are preferred on the complete document. A file folder should be used to keep all information related to an application together. It is recommended that an [Application Process Form](#) be attached to each file. This process form provides a way to consistently document the review process, record notes regarding the plan, document telephone calls and other conversations regarding the application, and provide a time line of activities leading to issuing a permit and approving construction. It is important to keep the process well documented to show your actions are within rules and operational guidelines.

The plan review includes reviewing the application for completeness and appropriate information. Correct addresses and telephone numbers are essential in the event the owner or agent needs to be contacted. If there is missing information, contact the applicant to obtain the missing information. If the information can be obtained over the telephone, document the call and proceed with the review. Otherwise, the missing information must be submitted by the homeowner or agent before the review can proceed. If a new plan needs to be drawn, the new drawing should be signed or initialed by the homeowner or agent. The PHES should never draw plans on the submitted application.

As you begin a review, assure that the file contains:

1. The permit application;
2. A soil morphology report or percolation test;
3. An engineer's report, if applicable;
4. A variance request, if applicable; and
5. A copy of the paid permit application Fee Receipt Form.

See subsection 5.3 of this chapter for information on interpreting soil reports. An engineered design is required for alternative onsite systems described in Section (6) of the Minimum Construction Standards, except for lagoons, holding tanks, and privies. See subsection 5.4 of this chapter for variance guidelines. Following the [OWTS Application Checklist](#) can help to ensure all areas of the application are completed as required.

Check that Section 13 of the application, site diagram, is complete including all that apply:

- Slope diagram;
- Location of any lakes, pond, streams, rock outcrops, and sinkholes;
- Setbacks to water supplies, property lines, etc.;
- Easements and underground utilities;
- Area for a replacement field when required;
- Location of home site or dwelling;
- Cultural features such as roads, streets and surfaces that influence water runoff;
- Location of sewage and pump tanks;
- Trench length;
- Trench depth and width; and
- Curtain drain and water control structures.

NOTE: If an engineered plan is submitted, it can replace Section 13 of the application but the engineered plan must be checked for the above items.

Plan Review

The purpose of an application and plan review is to assure that the system, as designed, does not violate onsite wastewater laws or rules. When reviewing, the Minimum Construction Standards are used to

determine compliance. Adequate information must be provided in the plans and application to make this determination. When a permit is issued, it should confirm that the system design and site layout are in compliance with Missouri law and rules. No additional requirements may be placed on a system after the permit is issued.

When reviewing a plan, an [Application Process Form](#) and the following can be used as a guide:

1. A site/soil evaluation can be either an onsite soil morphology evaluation or a percolation test. The administrative authority will determine which method is to be used. For more soil interpretations see subsection 5.3 of this chapter.
 - All site evaluations
 - Confirm the proposed system is in the area evaluated by the soil evaluator or percolation tester;
 - Consider whether groundwater contamination potential is an issue;
 - Check that relevant cultural features have been noted;
 - Check the location of easements and underground utilities for future references;
 - Percolation (perc) test reports;
 - Check that the perc test procedure was followed correctly;
 - Check calculations;
 - Confirm proposed trench depth is the depth of percolation test holes;
 - Check that the perc tester has given depth(s) to restrictive layer or ground water;
 - Onsite soil morphology evaluation reports, note limiting features and suitability for;
 - Topography and landscape position (slopes, existence of lowlands, local surface depressions, rock out crops, sink holes, etc);
 - Texture (presence and depth of high shrink/swell clay or high percentages of coarse fragments);
 - Structure (presence and depth of platy, massive structure, or weak structure);
 - Drainage classification (surface water issues, presence and depth of perched or apparent water tables; is control of surface/subsurface water movement needed?);
 - Soil thickness (depth to bedrock if observed);
 - Restrictive horizons (depth and thickness if present);
 - Available space (confirm the proposed system is in the area represented by the soil evaluation report);
 - Overall suitability (based on most limiting site feature);
 - Confirm proposed trench/absorption system depth complies with vertical separation requirements (see discussion and table in subsection 5.3 of this chapter);
2. Daily flow (note proposed design flow and confirm compliance based on the number of bedrooms or appropriate calculations using Table 2A, Quantities of Domestic Sewage Flows from the Minimum Construction Standards);
3. Treatment size (note size and type of primary tank, lagoon, and/or advanced pretreatment system proposed and confirm compliance);

4. Loading rate (note the design loading rate or percolation rate and check that it is consistent with the site/soil report);
5. Field size (note proposed absorption field size and confirm it meets or exceeds requirements);
6. Elevations/contours (check relative elevations to confirm gravity flow or to confirm pump calculations);
7. Tank/field or lagoon setbacks (confirm setbacks shown on the application and plan comply with requirements or have been addressed by variance request noted below);
8. Variances requested (note written variance requests; see discussion of variances in EHOG Subsection 5.4);
9. Notes (note any site limitations that have not been addressed by the system design, check calculations including the appropriate equivalency for gravelless systems and note any that are incorrect, note any items from the application or design that are not in compliance with the minimum standards, and note any issues that need to be checked during the pre-construction site inspection).

Document all discrepancies in the plan as submitted. Contact the applicant to inform them of the discrepancies and discuss options to correct the problems. They should resubmit a plan with the discrepancies corrected. For minor changes, a revised application is not necessary. The new plan should be signed or initialed, dated and labeled as a revised plan to assure the corrected plan is permitted and followed during installation.

Alternative or engineered systems are often more involved than conventional systems reviews. When reviewing engineered systems such as low pressure pipe (LPP), drip irrigation, sand filters, etc., the general guidelines are the same. Use the Minimum Construction Standards section 6(C), 6(H), 6(G), etc. and any manufacturer's requirements, to determine if the engineer has used the correct parameters to design the system.

1. Note the site and soil suitability;
2. Confirm that the design considered site/soil limitations and overcomes provisionally suitable or unsuitable classifications;
3. Check absorption system depth (vertical separation to restrictive layers-see table in EHOG Subsection 5.3);
4. Check engineer's calculations for use of appropriate loading rate;
5. Check the LPP systems for gravel specifications, hole size and spacing, dose volume and pump calculations showing flow capacity and total dynamic head capacity requirements;
6. Check drip systems for emitter rates, dose volume and pump calculations showing flow capacity and total dynamic head capacity requirements for normal operations and for system flushing.

Pre-Construction Site Inspection

Before a permit is issued there must be a pre-construction site review. When the application and plan review is completed, and the paper work appears to be in compliance with the rule, contact the

homeowner and/or the installer to arrange a site review. The installer is the most appropriate person to attend this review; however, the homeowner, engineer, or other agent may also attend.

The system layout must be marked on the site, according to the approved application and design plans, to indicate the location of tanks, dispersal trenches and other components of the system. Usually the installer or the system designer would layout the system. The site review is to determine whether the approved plans as shown on paper will actually fit the site location. The inspector will check for all required setback distances, elevations shown on the system design, and any cultural or landscape features that may not have been identified on the plans.

Check the site for the following:

1. Site elevations: there is adequate fall for a gravity system or the rise in a pumped system is consistent with the static head used in calculations of the pump capacity;
2. Setbacks: the staked system meets the setbacks as shown in the plan;
3. Obstacles or site conditions that require special treatment: are there trees, piles of trash or other debris, or stockpiled soil, which could be detrimental to the soil in the proposed soil treatment area. If conditions require removal, it must be done carefully with minimal traffic on the soil treatment area;
4. Check for other environmentally sensitive features or areas that were not identified by the plan, such as a neighbor's well, sink holes, streams, road ditches, surface runoff that may affect the system etc.;
5. Look for existing utilities and check that the system does not interfere with a power line, gas line, waterline, etc.

Provided the site inspection finds the system and layout comply with the approved application, issue the permit on the combined [OWTS Construction Permit/Final Inspection](#) form (also available from Onsite Program staff). Most information on the form can be taken from the approved permit application. Complete the site information and the left side of the form under the construction permit heading, including the site latitude and longitude if it is available.

Fill in all boxes that apply to the system. A few items are explained here. The box for system repair should be marked if construction would expand a system or reuse a significant part of a previous system. Mark the box for replacement system if a new system is substituted for the former one. Note if the proposed system is related to a Section 701 Notice of Violation. Note if the system serves more than one residence or one business (a cluster system). Under business, the number/units generally will be from Table 2A; for example, 15 employees (at 25 gallons per employee), or 120 seats (at 5 gallons per seat). Enter the 5 digit soil tester and installer ID numbers. The form should make clear exactly what system is permitted. It is also important for the form to be as complete as possible to allow DHSS to better track systems and components.

When you have made the pre-construction site inspection and are ready to issue the permit, fill in the permit and expiration dates and sign the form. One copy (the back page) of this permit is given to the installer or property owner, and should be posted or available on the site during construction of the OWTS. The back of this form has information, including the homeowner's responsibilities and the installer's notification requirements, which should be brought to their attention. The installer notification and final inspection sections on the right side of the form will be blank on this copy. Retain the other three copies until the system is completed.

Changes in the plans may be necessary as an installer proceeds with the construction. However, if a change is necessary, the installer must notify the administrative authority before the change is made to assure that the minimum standards are not violated. If the change is in an engineered system, the engineer must also be notified of the need to make a change and be allowed to adjust the system design.

Final Inspection

Registered installers must notify the administrative authority no later than 9:00 a.m. one day prior to completion of the system, and must leave the system in a condition that allows for inspection until 3:00 p.m. the next day following notification. Unregistered homeowner installers must notify the administrative authority no later than 9:00 a.m. two days prior to completion of the system and must leave the system uncovered until 3:00 p.m. on the second day following notification. If the installer fails to notify the administrative authority prior to completion of the system, you may attempt to gain the installer's cooperation after the first instance. The installer should expose enough of the system to allow for final inspection and verification of compliance with the standards. If the system cannot be brought into compliance, or for persistent failure to notify, document the case and refer it to Onsite Program staff and the local prosecuting attorney. Refer to subsection 5.7 of this chapter for more information.

All systems must be inspected or have a Certification of System without Onsite Inspection form completed (certification is not allowed for unregistered homeowner installers). After notification, when a system installed by a registered installer will not be inspected, send a certification form. An example of this form and cover letter is available in subsection 5.11 of this chapter. Send the form with appropriate application and permit numbers entered. Do not sign the certification prior to sending it to the installer. The installer must sign the form to certify that they followed the permitted plans and return it to the administrative authority that issued it (the LPHA, Onsite Program or other DHSS staff). After receiving the completed certification from the installer, the PHES should sign the form unless the installer documented that the system did not comply with the permit conditions. If a certification form is accepted from a registered installer, mark the Final Inspection approved "yes" box, mark the check-box directly above it to show that installer certification was accepted, and attach copies of the certification form to the final inspection forms.

When the system is inspected, the administrative authority determines at what stage(s) of construction to make the inspection(s). However, you must be able to determine that in your judgment the system was

installed according to the permitted plan. When making a final inspection, fill out the right side of the remaining copies of the Permit/Final Inspection form to document the final inspection results. During a final inspection, use the check boxes and spaces to the right of each system component. Mark the box if the component is installed as permitted. If the system is not installed as permitted, list any deficiencies in the space provided or on additional pages and mark the “no” box under final inspection approved. Refer to EHO Subsection 5.6. When required corrections are made, a re-inspection must be conducted.

After the installation is approved by final inspection or by accepting a certification form, sign the completed copies of the permit/final inspection form. One copy must be sent to the owner to meet the requirements of 701.050 RSMO; one copy is for LPHA records; and one copy should be attached to a form [DH-38](#) and sent to DHSS quarterly. Photocopies may be made if additional copies are needed. If additional copies are distributed, the notices on the back of the form should be copied as well.

Sewage Tank-Only Replacement

Sewage tank replacement is considered a major repair or modification of an existing system. Therefore, under normal conditions, a permit is required before construction can begin. Permits may be issued for the tank replacement provided construction will not include any work on the absorption system and there are no signs of discharge or absorption system malfunction. However, the approval of the tank installation does not include approval of the existing absorption field. This must be made clear to the property owner. If the field should malfunction in the future, a new permit will be needed to repair or replace that portion of the system, and there is no assurance that soil and space limitations would not require higher pretreatment than a septic tank. Following is a summary of the tank-only process.

1. Issue application as previously discussed in this section of the EHO;
2. Receipt of a permit number from Onsite Program staff will confirm the application fee has been paid;
3. Require the completed application to include a diagram showing the location of the old and the new sewage tank and relevant setback distances;
4. Review to verify the replacement sewage tank’s size, construction, and setbacks comply with minimum standards;
5. A soil report is not necessary except as noted in the next item;
6. Make a pre-construction site inspection. Do not issue a permit if the site review observes evidence that effluent is surfacing over the existing field, the absorption system presents a nuisance or health hazard, or if you determine there is a surface discharge pipe. If there is evidence of any soil treatment system malfunction, require a site/soil evaluation and an application to repair or replace the entire system;
7. If the site review is acceptable, issue permit using [OWTS Construction Permit/Final Inspection – Tank Only](#) form;
8. Make a final inspection of the installation or require a Certification of System without Onsite Inspection Form as discussed previously in this section.

When an emergency modification or repair is made to relieve an imminent health hazard, such as immediately replacing a collapsed tank, a construction permit is not required before construction can begin. However, an application must be submitted to the administrative authority indicating the type, size, and location of the tank installed. Ensure that the owner or their agent, normally the installer, signs the application. It is the administrative authority that determines whether an emergency existed. Requirements are detailed in 701.052.7 RSMo.

Holding Tanks

Permits for the installation of holding tanks are generally limited to temporary use situations where a public sewer will be available or where an approved onsite system will be installed within one year. The long-term use of a holding tank should only be considered and approved as a system of last resort. Thorough review of an application and specific site conditions must be made prior to permit approval. Use [OWTS Construction Permit/Final Inspection – Tank Only](#) form for issuing permit and final inspection of a holding tank. Before permitting a holding tank, other alternative solutions must be considered. Generally the best solution would be connection to a Department of Natural Resources (DNR) regulated community sewer, where one is available, or where it would be possible to obtain permits to construct and operate a centralized system or a decentralized cluster system. If those are not practical options, all possible onsite options should be considered, including advanced treatment systems and systems requiring site modifications or variances.

Management is critical for these systems because treatment and disposal do not actually take place on site. There is a potential for tanks to leak or overflow, for spills during pumping and hauling operations, and for illicit discharge or disposal of untreated waste at sites other than a (DNR) permitted treatment facility. For these reasons approval of a permit for a holding tank should not be routine.

If poor soil conditions seem to indicate an onsite system is not an option for a site, this must be verified by a soil morphology evaluation. Consideration should be given to nearby areas, which might be suitable for a soil treatment system and for which an easement may be obtained or which may be purchased. The use of gray water systems with a holding tank for black water only or with waterless toilets would qualify for a reduced absorption field area. Use of a holding tank may be considered temporary when a system design including site modifications, such as the placement and stabilization of suitable fill, could overcome limitations and eventually allow construction of an acceptable OWTS. Where these other options are not practical, the administrative authority may approve the installation of a holding tank on a case-by case basis and require stipulations in a signed agreement regarding its use and the length of time for its use.

If a holding tank system is to be approved, it must be predicated on compliance with all requirements of 19 CSR 20-3.060(6)(F). The potential for holding tank floatation must be considered, and after the tank is placed onsite, it should be watertight tested. A high water level indicator or alarm system should be

required when piped water is available. The administrative authority must have the ability to monitor system operation and management to ensure compliance and protect public health. Unless the required setback distances for a sewage tank cannot be met, variances will not be required.

A Holding Tank Agreement, provided in the EHOG Appendix, specifies conditions to help ensure compliance. Other conditions may be added if necessary for a specific site or local situation (e.g. water conservation measures or limit water used for laundry). The proposal for a holding tank must comply with the standards and the property owner must agree to the written stipulations before a permit is issued. Renewal of an agreement would depend on the particular situation and upon compliance with standards then in effect. Noncompliance with the stipulations of a signed agreement, for the use of a holding tank according to 19 CSR 20-3.060, would be considered a violation of 701.029 and 701.031, in addition to any other violations that may be substantiated during a complaint investigation.

Interpreting Site/Soil Evaluation Reports

Proper selection, design and installation of an onsite wastewater treatment system (OWTS) require an accurate site/soil evaluation. DHSS rules mandate that a site/soil evaluation be conducted for every permitted OWTS. There are currently two types of soil evaluations allowed: soil morphology evaluations and percolation tests. Both evaluations must be done by registered individuals. These evaluations are site specific. This section will present these site/soil evaluation methods and provide guidance for interpretation of the information included in the reports.

Soil Morphology Reports

Only registered persons may perform soil morphology evaluations for the purpose of design and construction of an OWTS. A list of Registered [Onsite Soil Evaluators](#) (OSE) is available on the DHSS webpage. If the OSE is not on the list available online, contact the Onsite Wastewater Treatment Program (Onsite Program) to verify their status. **The soil evaluator must be registered or the report cannot be accepted. An evaluator cannot allow another individual to do a site evaluation and sign-off on the project as if they did the work themselves.**

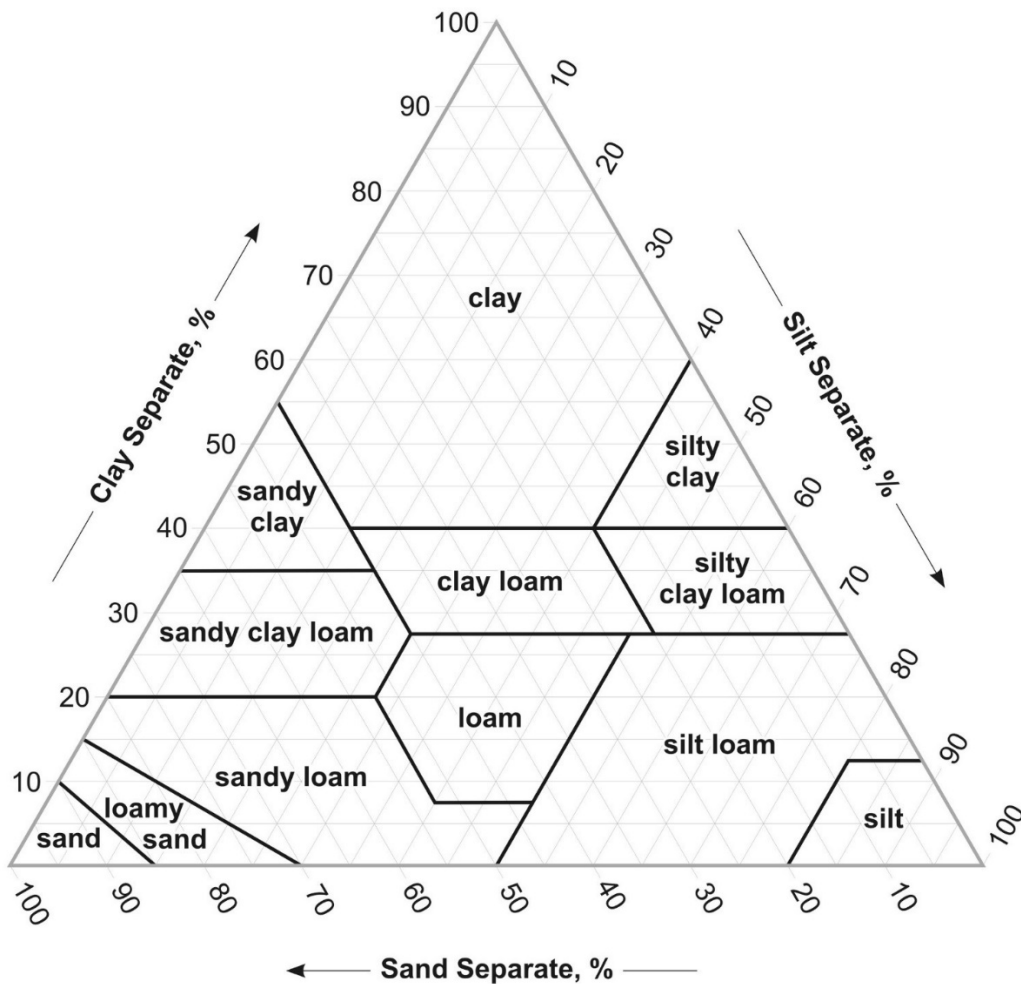
Although standard [Soil Morphology Evaluation Report](#) forms are available, the rule does not require its use. It only requires certain information be provided. The evaluation report consists of a site diagram, one or more profile descriptions, the site classification and general comments or recommendations. The site diagram should depict the lot or parcel of land and include setback distances, slope, location of dwelling or buildings, utility easements, rock outcrops, and sinkholes. There are nine (9) items detailed in 19 CSR 20-3.060(2)(A) 2 - 10, that the OSE needs to evaluate and include on the site diagram or in the report. On the profile description the OSE describes various physical properties that will be presented later in this section and assigns a loading rate for each horizon that is not classified as unsuitable. The six factors detailed in 19 CSR 20-3.060(7)(C) are rated by the OSE and presented on the site classification page. Each of the six factors from subsection (7)(C) must be classified *as suitable*, *provisionally suitable*, or *unsuitable* for a conventional system. The parameters for these ratings are prescribed in section (7). If any required information, IS NOT provided with the site/soil evaluation and is needed to determine whether a proposed system complies with the Minimum Construction Standards; the report SHOULD NOT BE ACCEPTED until a complete report is provided.

Profile Descriptions

The profile description part of a soil morphology evaluation report describes the physical properties present in the soil. Because the report contains important information about the site and soil suitability for OWTS, it is important to have an understanding of the terminology used. When reviewing an application that is based on a soil morphology evaluation, the Public Health Environmental Specialist (PHES) must be able to read and interpret the report to determine if the system design, as proposed by the installer or engineer, complies with the rule.

The following properties are described by the OSE and need to be understood by the PHES: texture, structure, porosity, soil color, drainage, restrictive horizon, and soil depth. **Soil texture** is a term used to represent the percentages of sand, silt and clay soil material. It is determined by estimating these fractions in a field test where a sample of the soil material is moistened and then rubbed. There are 12 soil textures in the textural classification system used. Soil texture may be a “pure” clay, silt or sand. Or, it may be a combination of these and may include the term loam; for example: silty clay loam, silt loam, or sandy loam. Loam is a combination of the three particle sizes where each has equal influence. It is important to understand the influence that texture has with respect to wastewater movement and treatment. In general terms, wastewater moves quickly through sandy soils and slowly in clayey soils. When wastewater moves quickly, it receives little treatment from the soil and could pose a threat to public health and the environment. In clayey soils, there is more surface area on the soil particles for better treatment, unfortunately the better treatment could be negatively impacted by the slower movement of the wastewater. If wastewater cannot move either laterally or downward, it is possible for an OWTS to overload the site resulting in surfacing wastewater. Since loamy soils have equal influence of the three particle sizes, it is reasonable to expect that loamy soils would have better properties for both wastewater movement and treatment. The textural triangle shown graphically represents the 12 soils texture classes.

Soil Textural Triangle

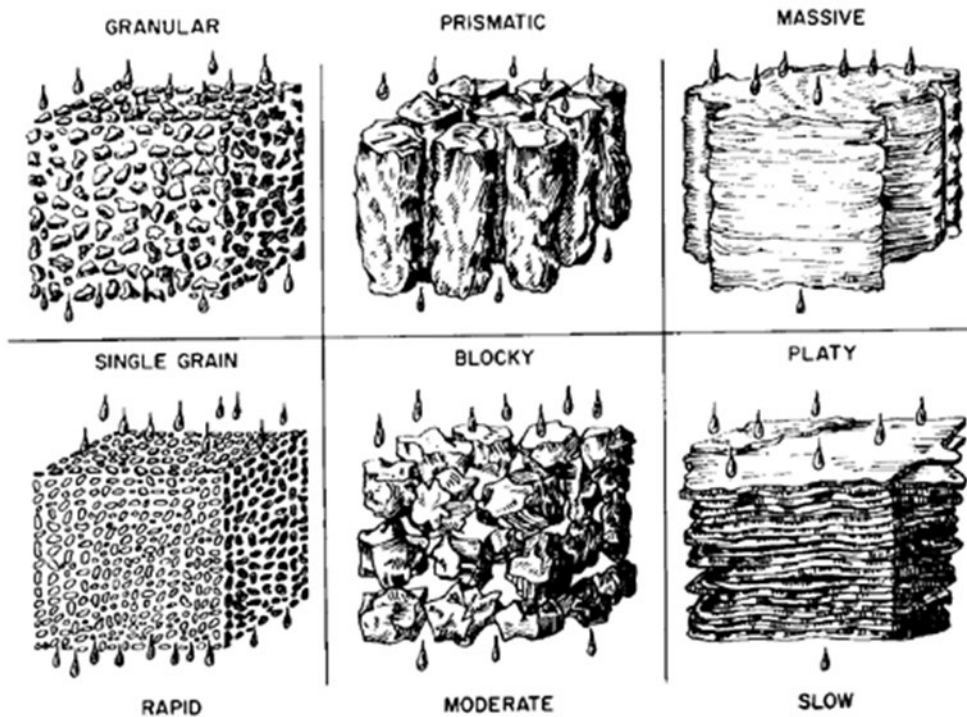


The Munsell Soil Color Charts are the standard system used to describe **soil color**. An OSE uses Munsell notation to describe the dominant matrix color as well as mottle colors and redoximorphic features. The Munsell notation includes a hue, value and chroma. An example of a soil color is 10YR 5/2. In this example 10YR is the hue, 5 is the value and 2 is the chroma. The chroma is an important quality to recognize and interpret. Generally, when the chroma is 2 or less, it indicates the presence of moisture and lack of oxygen for extended periods of time. These conditions result in dull, grayish colors. The soil may be saturated seasonally resulting in a seasonal high water table or it may be wet throughout the year. The presence of water results in an absence of air and poor wastewater treatment. For ideal wastewater treatment, bright soil colors are important. These colors will have high values and high chromas. When the soil chroma is low (less than or equal to 2), values may be low as well, since dark soil colors often mask wet conditions. However, be careful in assuming that all soils with low values are wet soils, some low value colors may also be associated with more organic matter, especially

when the color is described near the surface of the soil profile. Soil color should be discussed with the OSE if it appears to indicate that wastewater treatment could be impacted.

The shape that the aggregation of sand, silt and clay particles forms is known as **structure**. As these particles stick together they form specific shapes, and between and within these shapes there are voids or pores. This pore space is described as **porosity** and is where air and water move. Three properties are used to describe structure: grade, class and type. Grade, describes how easily the pieces of soil break out into the structural elements. Commonly used terms for grade include: structureless (single-grained or massive), weak, moderate and strong. Class, describes the size of the structure and common terms are: very fine, fine, medium, coarse, and very coarse. Type, is the most important structural property described. Prismatic, columnar, granular, platy and blocky are structural types. The type determines the size and the amount of pore space and ultimately how water moves. The graphic below shows some of the structural types and depicts water movement with rain drops on the surface and drops below the structure. The relationship between the number of drops on the surface to the number below represents how effectively the water moves through the soil.

Types of Soil Structure



Structure is not the only characteristic affecting water movement. Porosity also affects the amount of water a soil will hold and how rapidly the water moves. Careless use of equipment, compaction caused by traffic or working with the soil when wet or too moist will negatively affect wastewater movement

and treatment. Remember that porosity and soil structure are easily destroyed. In clayey soils, a backhoe bucket can easily smear the trench sidewalls resulting in damage to both soil structure and porosity.

The OSE will use the texture and soil structure to determine the soil group and what loading or application rate to assign to each horizon. Tables 13 and 14 in 19 CSR 20-3.060 (7) are used to assign the loading rate based on soil group. There are five (5) **soil groups** which are noted with roman numerals. General remarks about the groups are as follows: soil groups I and II are sandy soils; soil group III are fine loamy soils that include silt loam, clay loam, sandy clay loam and silty clay loam textures; soil group IV is predominantly clayey textured soils and is divided into two subgroups, IVa and IVb (this subclass recognizes the high shrink-swell clayey soils); and soil group V which can be any texture when the soil also contains more than 35 percent coarse/rock fragments. Rapid movement of wastewater can increase with increasing coarse fragment content and there is a corresponding reduction in treatment with this increase. The OSE must report a **loading rate** within the ranges provided for the soil groups. Note that soil groups II, III, and IVa are further divided and different load rate ranges are specified based on the soil structure type and size. The soil loading rate represents the amount of effluent in gallons per day per square foot that can be applied to the soil. Use the tables to confirm the reported rate is within the range specified. A more conservative rate, based on the OSE's observations would be allowable. However, a more liberal rate (outside the range) must have adequate justification. Because wastewater movement and treatment are strongly influenced by texture, it is possible to make quick assumptions about soil groups, but it is important not to "stereotype" soils based on the soil group alone. There are other properties such as restrictive horizons and soil depth that will strongly influence system selection and design that are not recognized as part of the soil group designation.

Site Evaluation and Classification

The six factors detailed in 19 CSR 20-3.060(7)(C) are rated by the OSE and reported as the site evaluation or classification. Each of the six factors from subsection (7)(C) must be classified as suitable, provisionally suitable, or unsuitable for a conventional system. Having an understanding of what these features represent with respect to an OWTS is important.

The OSE will rate soil texture/soil group and structure. The importance of these characteristics was discussed earlier. They will also rate soil drainage, thickness and restrictive horizons. The emphasis being on the depth to these characteristics since vertical separation is essential to achieve adequate wastewater treatment. Vertical separation or the distance between the dispersal trench bottom or the drip emitters and a seasonal high water table, bedrock or a restrictive horizon, is important to the proper functioning of an OWTS. Provided sufficient vertical separation is maintained with suitable or provisionally suitable unsaturated soil, the effluent will be adequately treated before it is recycled to ground or surface waters. The specific vertical separation requirements for all OWTS are summarized in a table later in this section.

Soil drainage is rated on the depth to a water table. The range is as follows: 24 inches or less – unsuitable; between 24 and 48 inches – provisionally suitable; and suitable when greater than 48 inches to the water table. Drainage problems can be a result of internal causes including the amount of clay, the structure and porosity, or a restrictive horizon. External drainage issues can be related to **topography**. Topographic positions that will negatively impact an OWTS’s function are a floodplain, depression, and foot slope or toe slope.

Soil thickness is the depth of soil material above bedrock. When the soil material is 36 inches or less thick, the soil is rated as unsuitable. If between 36 and 48 inches the soil is provisionally suitable and when bedrock is deeper than 48 inches the rating is suitable.

Restrictive horizons can be recognized by their apparent resistance to excavation. There are two restrictive horizons recognized in rule: fragipan and claypan. A fragipan is a genetic soil horizon that perches water and limits root penetration. It is brittle and has a high bulk density. On the profile description it is noted in the horizon designation column with a lowercase ‘x’. A claypan is a horizon that has a minimum of 25 percent more clay than the horizon above. It often has a high shrink-swell potential and tends to perch water at its boundary and may be related to a somewhat poorly or poorly drained soil. The depth ranges and suitability ratings are the same as those for soil drainage.

Site Suitability

The above features must be classified as suitable, provisionally suitable, or unsuitable. If all criteria are classified the same, that classification prevails; however where there is variation in the classifications, the lowest uncorrectable characteristic will determine the overall site classification. Conditions described in 19 CSR 20-3.060 (7)(K) can be used to reclassify a site to a more useable level. Overall site classification is further described below:

Suitable: There are only slight limitations. A well designed and installed conventional OWTS would be expected to function properly.

Provisionally Suitable: There are moderate limitations. The characteristics that are rated as provisionally suitable must be considered when designing the OWTS. Careful planning, design, and installation are necessary for a soil treatment system to function. Some site or system design modifications or an alternative system may be required to overcome limitations.

Unsuitable: There are considerable limitations and a conventional OWTS generally can’t be installed. The site must be reclassified as provisionally suitable before approving an OWTS design. Reclassification may be based on site modifications such as terracing, curtain drains to improve vertical separation, or surface water diversion; or it may be based on an engineered design of a shallow alternative OWTS. If an engineered design, soil study and/or hydrogeologic study provide adequate substantiating data and reasonable assurance of the performance of a system, the site may be reclassified provisionally suitable on the basis of 19 CSR 20-3.060 (6)(K).

Percolation Tests

Only registered persons may perform percolation (perc) tests for the purpose of designing and construction of an OWTS. A list of Registered Percolation Testers is available by contacting the Onsite Program. Subsection 19 CSR 20-3.060(2)(D) allows the administrative authority to determine which method of site evaluation is used. Compared to a soil morphology evaluation, which can provide superior information for system design on any type of soil, a perc test has some inherent limitations. A critical limitation of a perc test is its inability to detect a seasonal high water table. This can result in an indication that a soil is better suited to a soil treatment system than it actually is. Since perc tests have limits, the use of a soil morphology evaluation should to be advocated as it can provide more detailed information. However, if a perc test is submitted, it must be determined whether it can be used as the site/soil evaluation for the proposed OWTS. The reviewing PHES should look up the site in the Natural Resource Conservation Service county soil survey report or online at:

<http://websoilsurvey.nrcs.usda.gov/app/>. If the sanitary facilities or engineering interpretation tables indicate that the site would have moderate or severe limitations or has a provisionally suitable or unsuitable rating, a soil morphology evaluation should be required.

Although a standard [Percolation Test Report form](#) is available for use, the rule does not require its use; it only requires specific information be provided. The perc test consists of a site diagram, the test results and calculations for four test holes, and remarks about the depth to bedrock or restrictive layers when known to occur at depths less than ten (10) feet. The perc test should also evaluate the nine site conditions detailed in 19 CSR 20-3.060 (2)(A). **The perc test must be conducted by a registered individual, not an “apprentice” or the report cannot be accepted.**

Test Procedure

The most important factor in obtaining accurate perc test results is following the proper procedure. This procedure is detailed in 19 CSR 20-3.060(2)(D). A perc test review must verify that the test results and information provided meet the rule requirements. The steps to verify include:

- ✓ 4 holes that were either 6 or 8 inches in diameter were evaluated;
- ✓ Holes were dug 18 to 30 inches deep and to the depth of the proposed trenches;
- ✓ The proper 24 hours soak and swell process was used;
- ✓ The test was conducted so that the water level was measured from a fixed reference point and the hole was refilled between measurements;
- ✓ Measurements were recorded to the nearest one-eighth (1/8) inch and readings were taken at about 30 minute intervals;
- ✓ The test continued until a stabilized rate was reached. That is the test continued until 3 consecutive percolation rate measurements varied by a range of no more than 10 percent;

It is important to check the math on a perc test report. To determine the perc rate, divide the time interval in minutes by the drop in water level in inches. This yields the perc rate in minutes per inch. To check that the perc rate for each hole has stabilized, divide one perc rate by another (for example divide the second rate by the fourth rate if four measurements were made). The result for any two of the last three rates must be between 0.90 and 1.10, to assure the measurements did not vary by more than 10%.

If your review of the math finds errors, inform the perc tester and require a corrected report or a new test.

By rule the slowest perc rate is used to size the system. Where the slowest perc rate varies by more than 20 minutes per inch from the other rates and an average of the perc rates is proposed as the basis for a system design, a detailed soil morphology evaluation must be conducted. If a soil morphology evaluation is conducted, the PHES should require the size of the system be based upon the soils evaluation that produces the most conservative system design. Once verified the perc rate can then be used to calculate the size of the soil treatment area, by using Table 5 or 7 in 19 CSR 20-3.060(5)(A) and (6)(C). These tables also contain footnotes that require additional information or special design criteria for certain conditions.

System Selection

Probably the most difficult aspect in interpreting the soil site information is how the information relates to system selection for the site. The DHSS rules separate OWTS into two categories: basic or conventional systems which rely on limited pretreatment with a septic tank and gravity distribution in the soil treatment system; and advanced or alternative systems that involve highly treated effluent and/or pressure distribution in the soil treatment system. The rule provides limited guidance for determining which system to install given specific site or soil conditions. So how should one choose the best system for a site? The installer and the PHES need to know what the perc rate implies and the soil group, soil suitability, and soil loading rate mean, as well as have an understanding of OWTS specifications and functions.

One piece of site information to consider when using either a perc test or soil morphology is vertical separation. **Vertical separation** is defined as the distance between the dispersal trench bottom and a limiting condition, such as a seasonal high water table, bedrock or a restrictive horizon. Vertical separation requirements are in place to assure a zone of unsaturated soils that can adequately treat the applied wastewater before it is recycled into groundwater or surface waters. Both site/soil evaluation methods must report the depth to the limiting conditions, if they are present. The following table shows the minimum vertical separation distances required.

TYPE of SYSTEM	SITE/SOIL LIMITATION or CHARACTERISTIC	VERTICAL SEPARATION (FEET)
CONVENTIONAL		2
	Rapid percolation	4
	Cherty clays in areas of concern for groundwater	4
Serial		3
Dosed D-box		2
Shallow placement		2
LPP	Areas of concern for groundwater	1
		4
DRIP		1
SAND MOUND	Groundwater contamination potential	2
		4
LAGOON	Crevice bedrock	3
	Or a minimum clay liner thickness of:	1

The minimum vertical separation required for a conventional OWTS is 2 feet, although there are several site conditions or systems where the rule specifically requires 2, 3 or 4 of vertical separation. In two sections of the rule, 1 foot of vertical separation is mentioned. Subsection (5)(A) Absorption Systems, states in paragraph 2: “The vertical separation between the bottom of the absorption trench and limiting layer or seasonal high water table shall be no less than one foot (1’).” This paragraph also states “The absorption trench shall be located on the property to maximize the vertical separation...,” and “Greater vertical separation may be required where water-bearing formations are in danger of contamination.” And in subsection 7(G) Soil Drainage, the rule states: “soils with a seasonally high water table less than forty-eight inches (48”) and more than twenty-four inches (24”) below the naturally occurring surface shall be considered provisionally suitable for soil drainage, provided there remains at least twelve inches (12”) of soil between the proposed trench bottom and the seasonally high water table. With these two sections in mind, 1 foot should be considered the absolute minimum vertical separation for conventional OWTS, not the standard. Variances may be considered to reduce the vertical separation below the 2 to 4

feet shown in the table above. If vertical separation is reduced, and there is a concern for groundwater contamination, the site should be investigated by a registered geologist to determine if the site has severe geologic limitations. The Onsite Program may be contacted for assistance.

Subsection 7(G) refers to seasonal high water, not bedrock or either type of restrictive horizon. If a typical twenty-four inch depth dispersal trench were assumed, the requirement of forty-eight inches between the soil surface and a seasonal high water table for a suitable classification would provide at least two-feet of vertical separation. Site conditions where the vertical separation would be between two-feet, which is suitable; the one-foot minimum would result in a provisionally suitable classification. When a factor is classified as provisionally suitable, then site or system design modifications must overcome the limitations or a variance may be considered.

The most common site modification used to lower a seasonal high water table and increase vertical separation is a curtain drain. When the OSE indicates that a seasonal high water table is caused by lateral movement of water through the soil profile or from surface run-on to the area, a properly designed curtain drain is appropriate. This is most often on a sideslope and can be a significant distance from the top (summit) or break of the slope. Occasionally plans propose using a curtain drain on level sites or near the top of a slope. In these cases the seasonal high water table may be caused by poor surface drainage or ponding of water on a restrictive horizon, and not by lateral movement of water. A curtain drain would not adequately lower the water table in these cases.

The depth of a curtain drain is another issue. It cannot be assumed that the water table will be lowered to the bottom of the curtain drain trench and maintained at that depth under the soil treatment system, especially as the number of trenches placed on a slope increases. Water mounding under the distribution system can reduce the vertical separation gains expected from the installation of a curtain drain. When there is a restrictive horizon or other slowly permeable horizon, the curtain drain bottom should be keyed into it at least 4 to 6 inches. If no such horizon is present, an experienced OSE, designer or PHES may be consulted.

If site modifications cannot maintain the minimum required vertical separation it may be possible to overcome limitations with system modifications, such as shallow placement, sand lined trenches or through the use of an alternative system design. Shallow placement modifications and sand lined trenches are detailed in 19 CSR 20-3.060(5)(B). If the minimum vertical separation requirements cannot be met it may be possible to reduce the vertical separation through the variance process, discussed in this subsection 5.4. System design modifications may include higher pretreatment, dosing or other requirements and at a minimum, one foot of vertical separation must be maintained between the soil treatment system and the seasonal high water table.

Conventional Soil Treatment Systems

A common **conventional soil treatment system** consists of a system of trenches separated from each other and each containing a distribution pipe. Distribution is generally by gravity. Historically, this type of system consisted of trenches with rock and perforated pipe backfilled with native soils. Now various gravelless systems are also common. Gravelless systems are considered conventional and can generally be used only where a gravel and pipe system could be used. A conventional system should be used wherever practical. Conventional soil treatment systems are described in detail in 19 CSR 20-2.060(5).

A conventional system can generally be installed when perc rates are less (faster) than 60 minutes per inch. If there is a restrictive horizon noted on the perc test report, minimum vertical separation must be maintained between the trench bottom and the restrictive horizon. The slowest perc rate for the four test holes is used to design the system. Soils with a perc rate of 31 to 45 minutes per inch are considered ideal for a conventional OWTs. When perc rates are less than 10 minutes per inch, effective treatment becomes a concern because the wastewater moves through the soil too quickly. With faster perc rates, dosing the system may be a design modification that allows the soil to work more effectively.

Additional points to note about perc tests, system selection and design involve trench depth and width. The trench can be no deeper than the depth of the perc test holes. When perc rates are greater than 45 minutes per inch, trenches 36 inches wide should not be used. (This design requirement has been interpreted to also prohibit the 36 inch wide trench when the soil loading rate is less than 0.45 gallons per day per square foot.) Footnotes to Table 5 of the minimum standards detail additional limitations based on perc rates above 45 minutes per inch.

When a soil morphology evaluation is used, the OSE indicates potential limitations by classifying site factors as suitable, provisionally suitable, or unsuitable. A suitable overall site classification generally indicates a conventional soil treatment system can be installed. Suitable ratings can be noted in soil groups I, II, and V. Many sites with soil groups III and IVa which are provisionally suitable, can be used for conventional systems. Landscape position, topography, drainage, thickness and restrictive horizons could impose different system design requirements if not rated as suitable.

Requirements for **lagoons** are detailed in 19 CSR 20-3.060(6)(D), Alternative Systems. Although lagoons are discussed in that section of the minimum standards, they are considered basic OWTs. Lagoons are best suited to soils with slow perc rates, such as greater than 120 minutes per inch and groups IVa and IVb. Provided the lagoon is properly constructed and is not allowed to dry out and crack, expansive clay soils make a good seal against leaking. Lagoons may be constructed in soils with perc rates between 61 to 120 minutes per inch or in group IVa soils provided the clay material is well worked and sealed. If an artificial liner or bentonite is used, a lagoon can be constructed in any soil group. However, it is important to note that other physical restrictions may limit the use of lagoons. These limitations include: topography/ landscape position, drainage, restrictive horizons, soil depth, and

slope. Sites rated as unsuitable for conventional systems are not always well suited for lagoons. Highly permeable or gravelly soils are generally not suited for lagoon construction, slopes steeper than 8% to 12% make lagoon construction a challenge, expensive, or impractical and sites with shallow bedrock are generally not suited for lagoon construction. Severe geologic limitations and setback requirements must be considered for sites where a lagoon is proposed. (Note, the setback requirements to residences specified in subsection (6)(D) of the minimum standards take precedence over setback distances listed in Table 1 for a building foundation or basement.)

Alternative Soil Treatment Systems

When a conventional soil treatment system or a lagoon cannot be installed or is not the most suitable method of treatment due to limiting soil conditions, an alternative (advanced) system should be considered. The term “alternative” does not imply the system design is untested or experimental. These systems involve alternative components to a septic tank and gravity dispersal trenches including more advanced pretreatment and/or a pressurized distribution network. Requirements for alternative systems are detailed in 19 CSR 20-3.060(6).

The soils on site might affect the selection of pretreatment components if rocky soils or seasonal saturation, etc. limit effective soil treatment. In addition, extremely rocky soils, a high water table, steep slopes, and shallow bedrock may affect the selection of the material: i.e. fiberglass or polyethylene or concrete and how the tank is installed. There is one instance below where perc tests are mentioned in alternative system design standards, otherwise perc tests cannot be used to design an alternative system. The paragraphs below discuss alternative distribution methods and soil limitations that need to be considered.

Low Pressure Pipe (LPP) systems are described in 19 CSR 20-3.060(6)(C). Site limitations, such as steep slopes, slowly permeable soil conditions, shallow soils, or inadequate vertical separation, may be overcome by an LPP system. An LPP system can be designed to accomplish uniform distribution on sites with steep slopes, although construction difficulties may be more challenging than the soil. LPP systems use dosing and resting cycles to maintain aerobic conditions and shallow placement of dispersal trenches to utilize the more permeable upper horizons.

A perc test, if used to size an LPP system, must comply with the requirements in the Minimum Standards and Table 7. An LPP system can be installed in all soil groups except soil group IVb. When a soil morphology evaluation is used, the LPP loading rates that are reported by the OSE are from Table 14 in the rule. If an OSE only provides the loading rate from Table 13 for conventional systems, it is possible to compare the two tables and select a corresponding loading rate; however, it is often best to contact the OSE and have them provide the loading rate.

There are some minimum site requirements to remember when considering an LPP system. Two (2) feet of suitable or provisionally suitable soil is needed above the limiting condition and a minimum of

one (1) foot of vertical separation is required. Where highly permeable, cherty clay soils or severe geologic limitations are present; four (4) feet of vertical separation is needed.

A **drip irrigation** soil dispersal system design can overcome limitations similar to or more severe than an LPP system. Drip irrigation systems may be installed on sites with high shrink/swell, IVb clay soils. Drip irrigation lines are also the only dispersal system that DHSS permits in unstabilized fill material.

Requirements for drip irrigation systems are detailed in 19 CSR 20-3.060(6)(H) and the installer manual. The soil treatment area for a drip system is based on the same loading rate as an LPP system, except that a maximum rate of 0.05 to 0.1 gallons per day per square foot is allowed for IVb soils. A minimum vertical separation distance of one (1) foot is also required. One difference between the LPP and drip system is that drip lines are typically installed at six (6) to ten (10) inches deep.

The **sand mound** is both a treatment component as well as a distribution component. It consists of layered sand and gravel materials that are raised above the natural soil surface. Final dispersal occurs as the effluent moves through the gravel and sand layers into the native soil below. Requirements are described in 19 CSR 20-3.060(6)(E). A sand mound can be installed in all soil groups except soil group IVb. There must be at least two (2) feet of vertical separation between the bottom of the mound (the native soil surface) and the limiting condition. Sites with high water table limitations in permeable soils would be better suited for mounds than sites with underlying slowly permeable soil horizons. In areas where there is a significant groundwater contamination potential, there must be four (4) feet of soil over bedrock. In addition, down slope setback requirements are increased for mound systems.

Advanced Pretreatment Systems

Other alternative treatment systems are the **constructed wetland** and the **sand filter**. The requirements for these systems design are in 19 CSR 20-3.060(6)(I) and (6)(G) respectively. New technology has introduced various **bio-filters** with different filter media such as foam, textile, and peat that treat the effluent to qualities that are similar to the sand filter. All of these pretreatment devices must be followed by a soil treatment system. Typically when one of the alternative treatment devices is needed because of poor soils, an alternative method of distribution is also required. The design of these and other systems not specifically included in the minimum standards must comply with the requirements of 19 CSR 20-3.060(6)(K).

System Sizing

The OSE should report a conventional system soil loading rate obtained from the ranges provided in Table 13, of the Minimum Standards. This rate is used to calculate the minimum conventional soil treatment system trench bottom area. Usually the lowest reported loading rate between the soil surface and one foot below the trench bottom is used, because hydraulically overloading the soil has the potential for creating saturated conditions and reducing the soil's treatment capacity. Trench bottom area in square feet is calculated as the design daily flow in gallons divided by the soil loading rate in

gallons per day per square foot. If using a perc test and Table 5, the size is determined by the number of bedrooms multiplied by the appropriate value based on the perc rate in the column labeled “Absorption Loading Area” or the method described for soil morphology evaluations can be used where the daily flow is divided by the corresponding loading rate found in Table 5.

The minimum trench length is determined by dividing the required trench bottom area by the proposed trench width. The length of gravelless systems is determined by dividing the required trench bottom area by the equivalent widths detailed in 19 CSR 20-3.060(5)(A)15A or E. The equivalent width for expanded polystyrene bundles is not currently in rule and has been addressed in an Onsite Program informational release. In the case of chamber systems, an additional reduction of not more than 25 percent may be allowed, provided a soil morphology evaluation indicates good soil with no limiting conditions. To use Table 6, the soil group and loading rate must be known. The loading rate at the installation depth must be within the ranges given in Table 6 of the DHSS rules. Many Missouri soils will not support this reduction and it is not available for systems designed from a perc test.

When a soil evaluation classifies a site characteristic as provisionally suitable or unsuitable, a site or system design modification or a variance may be employed to reclassify the site, overcome the limitations or use the site for system installation. A curtain drain is the most common site modification used to lower a seasonal high water table and increase vertical separation.

Most onsite soil treatment systems are sized based on septic tank quality effluent. Since highly treated effluent does not promote the development of a biomat as septic tank quality effluent does, soils may have a higher long-term acceptance rate when receiving effluent produced by an alternative treatment system. In addition, if a system which provides higher treatment is installed and maintained the soil is not required to provide as much treatment. When higher pretreatment is proposed, higher proposed loading rates – still within the ranges given by Tables 13 and 14 for a soil’s texture and structure – may be accepted with caution. Proper operation and maintenance are essential to the long-term performance of a system. Also, reduced soil treatment areas may be considered following alternative pretreatment systems. Except for a one-third (1/3) reduction for soil treatment areas following sand filters, which is allowed by the rule, variances are required for a reduction for other higher pretreatment systems.

Variance Guidelines

Variations may be considered when either the system being repaired existed prior to January 1, 1996 or the property it is to serve was platted prior to January 1, 1996. As specified in 19 CSR 20-3.060(6)(L), variations may be allowed for the following three types of requirements: minimum horizontal setback distances; vertical separation distances; and minimum areas for infiltrative surfaces. Where OWTS construction is permitted under a Participation Agreement, the Onsite Program will review variance requests. The local agency will submit a copy of the construction permit application, site/soil evaluation, OWTS design, and other pertinent information with any recommendations for Onsite Program staff to review.

Variations

Minimum horizontal setback distances and minimum absorption areas are clearly stated in the construction standards, while the requirements for vertical separation are not as clear. The minimum standards require absorption trenches to be located to maximize the vertical separation distance to the seasonal high groundwater table, bedrock or other limiting layer. Provided a site is otherwise classified as suitable or provisionally suitable for the type of system proposed, the table in subsection 5.3 of this chapter may be used to determine the minimum vertical separation required. The vertical separation requirements are generally to any limiting condition. However, where there is significant potential for groundwater contamination the required vertical separation to bedrock may be greater than to seasonal perched groundwater, restrictive horizons or slowly permeable layers.

Except for lagoons, most horizontal setback requirements are based on septic tank effluent and conventional soil treatment systems. Requirements for vertical separation distances and minimum dispersal areas are generally based on the type of system.

Variations are considered on a case-by-case basis, and not routinely granted. A variance may be granted based on the site/soil conditions together with the proposed use of filters, higher pretreatment, alternative distribution systems, reduced loading rates, or other system improvements or a combination of improvements. When it is determined that the system would adequately protect surface and ground waters and prevent nuisance conditions or negative impacts on public health, a variance may be granted. Any necessary variance(s) for a simpler system should be considered against the increased operation and maintenance requirements for an alternative system design that might not require a variance.

Provided a site is eligible for variations, a written [Application for Variance](#) form request will be considered if it is submitted with all required information for a completed OWTS construction application.

Variance Guidance

Although variations are granted on a case-by-case basis, following is some general guidance:

- A sewage tank must be proven watertight as a condition of granting a variance to the tank's setback requirements;
- Variances must not be granted based solely on the lack of space or the site/soil limitations;
- Higher pretreatment should be required for approval of a reduction in infiltrative area;
- A variance should not be granted to reduce the infiltrative area unless the design provides for as much absorption area as practically possible;
- Higher pretreatment, pressure distribution, and/or more than the minimum area should be required for approval of a reduction in vertical separation;
- Restrictive horizons and slowly permeable clay horizons of sufficient thickness below the soil dispersal system may be considered as protective of groundwater and of wells that are located upslope from the absorption field;
- Caution should be used when considering variances to well setbacks. If there are concerns about significant groundwater contamination potential, such as in karst areas, an evaluation by a registered geologist may be needed;
- Seldom should variances be granted for a combination of horizontal setbacks, vertical separation and minimum infiltrative area. If a combination of variances is to be considered, a high level of pretreatment should be required;
- When granting a variance is based in part on the higher pretreatment provided by a maintenance intensive treatment component, the variance should be conditioned on the property owner keeping a maintenance contract in force as long as the system is in use;
- Timer dosing controls may be required for pressured dosed systems to equalize flows over time, to improve distribution and to allow better flow management; and
- A septic tank should be required to precede a lagoon as a condition for approval of any lagoon setback variance.

Innovative and Experimental (I & E) Systems

Missouri law, 701.037.1.(4) RSMo., established the power and duty of the Department of Health and Senior Services (DHSS) to authorize the trial or experimental use of innovative systems for onsite wastewater treatment systems (OWTS) upon such conditions as the department may set.

An experimental OWTS is any system that uses components, processes, or sizing different than described in the Minimum Construction Standards, which cannot be approved under an innovative system protocol. Construction permits for experimental systems may be approved as a part of an approved experimental protocol, research, or testing program. An approved experimental system protocol must be designed to yield data and experience about system performance. While an OWTS is experimental, the system owners must be informed of the experimental status and should be involved in the selection of their system. Under an experimental approval, at least 25 OWTS must be installed and a maximum of 50 systems may be installed prior to submittal of the third party system/product evaluation for a minimum period of two years.

An innovative OWTS protocol trial may be proposed for any conventional or alternative system or any system with components not specifically described in the Minimum Construction Standards and for which performance data has been submitted. The data and innovative system protocol must be designed to demonstrate the innovative treatment and dispersal system would perform equal to or superior to a system described in the minimum standards. When reduced sizing is proposed for an innovative OWTS protocol trial, prior successful completion of an approved experimental protocol is required with at least 50 experimental OWTS installed in Missouri. Construction permits for innovative systems may be approved as a part of an approved innovative system protocol trial program. An approved innovative system protocol must be designed to yield data and experience about system performance. System owners must be informed of the innovative demonstration status of the system and should be involved in the selection of their system. Under an innovative OWTS approval, at least 200 systems must be installed and a maximum of 500 systems may be installed over two to five years prior to submittal of the third party system/product evaluation.

A manufacturer or a design engineer may seek general acceptance of an innovative OWTS or component after successful completion of an approved innovative system protocol with at least 200 systems installed in Missouri. It is not necessary for an engineer to follow this process for a site specific OWTS design and application in accordance with subsection 19 CSR 20-3.060(6) (K).

Application

For experimental or innovative system approval or for general acceptance, the manufacturer or engineer should submit a complete application. A complete application must provide all information required by DHSS and administrative authority including, but not limited to:

1. Type of approval requested, experimental, innovative or general;
2. Product name;
3. Name of manufacturer/designer;
4. Contact person and information;
5. Proprietary, trade-secret, patent, and/or copyright information and any restrictions placed on the use of this technology by the manufacturer;

6. Summary of any pertinent literature, previous research or testing, and field performance experience in Missouri or other states;
7. Proposed experimental protocol or innovative protocol objectives, methods and duration;
8. Identity and qualifications of proposed third-party research or testing organization;
9. A detailed description and design of the system or component including:
 - a. Applicable standards and any lab testing of components/materials;
 - b. How the proposed system or component functions; and
 - c. The expected performance of the system;
10. Proposed siting criteria, soil requirements and limitations, slope limitations, etc.;
 - a. For conventional systems on suitable sites, only a general engineered system or component design is necessary; and
 - b. For unsuitable sites requiring engineered designs or alternative systems, site-specific engineered designs are required;
11. Installation procedures and training requirements for installers;
12. Inspection criteria that should be used to assure proper installation;
13. Operation and maintenance requirements and procedures
14. Expected design life of system or component;
15. Procedures for malfunctioning system repair, replacement and possible termination of the protocol; and
16. Warranty information.

Experimental System Protocol

Approval of an experimental or innovative protocol by the DHSS Onsite Program will include:

1. Site selection criteria and permit conditions;
 - a. The limit on the number of systems to be permitted in Missouri;
 - b. Site/soil requirements and limitations;
 - c. Requirement for engineered design if applicable; and
 - d. Property owner notification;
2. Setback guidelines;
3. Minimum system sizing requirements;
4. System operation and maintenance requirements;
5. Third party protocol monitoring and evaluation requirements; and
6. Malfunctioning system repairs or replacement.

Any proposed modifications to the experimental or innovative system design or sizing of the protocol must be reviewed and receive approval before being implemented. Failure of an experimental system may require the manufacturer, supplier, designer, and/or installer to repair the system or install a backup replacement system.

General Acceptance

After verification of the successful completion of an approved innovative system protocol with at least 200 systems installed in Missouri and upon request by the manufacturer or design engineer responsible for the protocol, the DHSS Onsite Program will review the innovative system for general acceptance. When evaluation of an innovative system protocol and data demonstrate the performance of the system is equal to or superior to a system described in the Minimum Construction Standards, guidelines for general approval of the systems will be developed. Guidelines will include, but are not limited to:

1. Site selection criteria and permit conditions;
 - a. Site/soil requirements and limitations; and
 - b. Requirements for engineered design if applicable;
2. Setback guidelines;
3. Minimum system sizing requirements; and
4. System operation and maintenance requirements.

An experimental or an innovative system protocol may be terminated early or general acceptance may be withdrawn, if justified by system malfunctions or other unsatisfactory field performance.

Complaints and Malfunctioning Systems

Complaints and investigations of malfunctioning wastewater treatment systems are either governed by local ordinances or by state laws and rules. Where a jurisdiction has established a system for regulating onsite systems that is at least equal to state regulations the local ordinance will apply. Where a local ordinance has not been established and where an ordinance does not address complaints, 701.025 to 701.059 RSMo and the rules of the Department of Health and Senior Services (DHSS) will apply.

Below are guidelines for handling complaints and investigations relating to existing onsite wastewater treatment systems (OWTS) under Missouri laws and rules. Agencies working under a local ordinance must look closely at the wording of their ordinance; many ordinances give the agency the authority to issue Violation Notices. If that is the case, the agency should have, or should develop, operational guidelines for investigating complaints, issuing Violation Notices, and an appeals process. In these jurisdictions, DHSS would not be involved with hearings, appeals, or enforcement. Use of this guideline is appropriate if the agency officially adopts it as their ordinance/standard operating procedures.

Complaints do not have to be in writing and the complainant does not have to identify themselves. However, the investigator must determine that an adjoining property owner or an aggrieved party made the complaint or otherwise determine probable cause. For example, a party may be aggrieved by the presence of a health hazard, such as surfacing effluent accessible to children and/or pets; a nuisance, such as odors or the potential for breeding of flies and mosquitoes; or possible economic impact, such as difficulty selling property as a result of effluent flowing into an adjacent stream or lake.

Whenever a complaint is received it is the responsibility of the administrative authority to establish the facts relating to the complaint and to take appropriate action. After receipt of a complaint, the investigation process includes documenting the complaint interview, determining whether the complaint is from an aggrieved party or adjoining property owner, conducting any other interviews, and conducting a site investigation. Through each step the investigator should gather evidence and document all facts to determine whether the investigation should continue. Generally, facts gathered and interviews conducted should systematically answer questions of who, what, when, where, and how they relate to the possible violation. When the investigation is completed, if the evidence shows reasonable grounds to believe there is a violation of law, a [Violation Notice](#), also known as a Notice of Violation should be issued. If compliance cannot be obtained within a reasonable time of thirty (30) to sixty (60) days, the case should be referred to the county prosecuting attorney and must include a statement of probable cause (See guidance regarding Compliance/Non-Compliance found in this subsection).

Investigating Malfunctioning OWTS

Onsite system complaints can be received in person or by phone, email or mail. It is necessary to record all complaints and include the details that are provided about the situation. A [Complaint Investigation](#)

[Record](#), or other standard format should be used for recording the complainant's information as well as the system owner's information. The form used for this information should also provide room for recording the investigation findings, action taken, follow-up with the complainant and final disposition of the complaint.

Assess Information

1. Upon receipt of a complaint regarding a possible malfunctioning OWTS or other wastewater nuisance, record information on a complaint form. If provided, include name, address and phone number of complainant. In addition, obtain information including:
 - a. The property owner(s) name and site address;
 - b. The owner's mailing address if different;
 - c. The occupant's name if different;
 - d. Approximate date the nuisance or problem began. The length of time the problem has existed could assist you in determining whether the complaint should be handled as an emergency; and
 - e. A description of the problem with as much detail as possible about the location, extent, and frequency; and
2. Explain to the complainant the investigation process and that information relating to an investigation of a malfunctioning OWTS may reveal who the complainant is and any information provided will become public record;
3. If you become aware of a possible malfunctioning OWTS or nuisance violation without a complaint, record all information on a Sanitation Observation form E6.07; and
4. If the complainant is not an adjoining property owner or, in your judgment, an aggrieved party, then the complaint is not considered valid. Other probable cause must be established before you proceed with a site investigation.

It is important to be consistent in determining whether a complaint is valid. When the complaint is received from an adjoining property owner, generally there is not a problem in determining ownership of adjoining property based on the county assessor's records. Whether a party is aggrieved can be more difficult to determine. Using your professional judgment, you might determine that a parent is aggrieved if his or her child must wait at a bus stop near wastewater ponded in the road ditch, whereas you might determine that someone driving past the same site is not aggrieved.

It is also important to be consistent in determining whether you have probable cause before making an investigation without a valid complaint. If the results of an investigation by another agency or department alleging a violation of 701.025 to 701.059 RSMo are referred to you, that may be considered probable cause, whereas you may consider a complaint that is referred by another agency with no investigation and no information showing an aggrieved party to be insufficient probable cause. Consult with DHSS field staff regarding probable cause questions in unusual circumstances.

Complaints Not Related to Onsite Systems

Occasionally complaints allege problems in areas served by public or private sewer systems that are regulated by the Department of Natural Resources (DNR). Complaints regarding nuisance conditions created by these treatment or sewer collection systems should be referred, with a description of the

public health concerns, to the operator of the system, local community authorities and the DNR Regional Office. There is no authority under 710.025 through 701.059 RSMo regarding operation of systems under DNR authority.

Complaints regarding surfacing sewage at an individual facility or residence that is connected to a system regulated by DNR should also be referred to the system operator, community and DNR. However, if the nuisance and health concerns are not addressed, the facility/building owner could be in violation of 701.031 RSMo, which requires that “Owners of all buildings where people live, work or assemble shall provide for the sanitary disposal of all domestic sewage.” The required remedial action should be to connect, repair the connection, or maintain the connection, to the available sewer service to abate the nuisance or health hazard. If the sewer service provider disconnected the service in an attempt to collect sewer fees, the sewer service provider and owner should cooperate to solve the issues and to reconnect the building to abate the nuisance; a Violation Notice would not be effective and should not be used as a bill collection tool.

Conducting an Investigation

After receiving a legitimate complaint and/or otherwise determining probable cause, an investigation should be conducted to determine whether the allegations can be substantiated and whether there are reasonable grounds to believe a violation of the onsite systems law exists. Once you enter the property of concern, the investigation should proceed until it is completed. Withdrawal of the complaint or finding that the degree of nuisance is not the same as reported should have no effect on the investigation or determination of whether a Violation Notice will be issued.

If possible, investigate when weather conditions are favorable and will not interfere with your findings. Follow any recommendations provided by the County Prosecuting Attorney as to what evidence should be gathered and use the appropriate steps below when investigating an alleged malfunctioning OWTS.

1. It may be possible to complete the investigation without entering the property where the alleged malfunctioning system is located. Contact the complainant, if an adjoining property owner, to inform them of your intent to conduct an investigation. Ask for permission to enter their property to conduct the investigation. The complainant should be able to indicate where the nuisance or problem is located.
2. If necessary, call the property owner prior to investigating the property where the violation is alleged. Visit the residence or establishment and identify yourself to the property owner before walking around on the property. Your official identification card will be adequate; however, you may also wear identifying clothing such as a department hat or jacket. Again, explain that you have received a complaint that their OWTS is potentially in violation of the law and ask for their cooperation and permission to investigate. If the property owner is uncooperative and refuses to allow access for investigation, leave the property. If you are unable to complete the investigation without entering the property, contact the local law enforcement office for assistance. After you

have contacted the authorities return to the site with them and conduct the investigation. Refer to 701.033.1.(3) RSMo, which allows entry for investigation.

3. If contact with the property owner cannot be made, either by phone or during the initial site visit, notify the property owner in writing stating that you have received a complaint regarding their onsite system, it is potentially in violation of the law, and it may be necessary to enter the property when conducting the investigation. Inform the owner of the date and approximate time you will investigate the site and ask for their cooperation with the investigation and in remedying the situation, if necessary.
4. Interview the owner or occupant; document any statements related to the operation and function of their system, the cause(s) and extent of a malfunction and potential ways to abate and correct the problem(s).
5. Use visual observation and smell in determining if a sewage tank, soil treatment system, or lagoon is malfunctioning. Document what is observed at the site.

Evidence of a violation related to a sewage tank and soil treatment system may include:

- a. Surfacing effluent, wastewater discharge pipe or relief line;
- b. Tall weeds or areas of bare soil crusted with a black mat; and/or
- c. The presence of septic odors near a soil treatment area.

Evidence of a violation related to a lagoon may include:

- a. The presence of bad septic odors from a lagoon. (Occasional odors may be expected from a properly functioning lagoon. However, continuous bad odors in addition to other observations may be indications of a malfunction);
- b. Dark colored water;
- c. Inadequate water depth;
- d. Leaking berm (might be damaged by animals, roots, erosion, etc.); and/or
- e. Effluent discharging from the property.

The addition of water and/or water tracing dye may provide evidence confirming the source of a wastewater nuisance. Refer to Investigation/Dye Testing at the end of this section for considerations regarding water tracing methods.

6. Look for other possible sources or causes of discharging or surfacing water including, but not limited to, roof gutters, foundation drains, or curtain drains.
7. If possible, take photographs of visual observations of the site to document any evidence of violation (see the photo documentation template under OWTS Forms and References).
 - a. Ensure that pictures are taken using the standard picture format;
 - b. Capture the same angles at various distances. (Use of the zoom or other enhancing features may create distortion);
 - c. Use the date/time feature, if possible, to label pictures; and
 - d. Describe what each photograph represents.
8. Draw a diagram of the site indicating:
 - a. The location of evidence of malfunction or nuisance conditions observed;
 - b. The direction North;

- c. GPS coordinates, if available; and
 - d. Distances from buildings, property lines, and other features.
9. Maintain control and accountability of all records and evidence collected. Store in a place suitable for case files.

Evaluation of Evidence

An existing system would not be considered in violation based solely on a finding that it does not meet the size, setbacks, or other requirements of the current construction standards. Alleged violations of the law would include:

- Conditions that present a nuisance or health hazard;
 - Contamination of surface waters; or
 - Contamination of groundwater.
1. If there is not enough evidence to substantiate a violation, document the investigation and conclusion(s) for the file. Inform the complainant and end the investigation. An investigation may be reopened only if additional information is provided.
 2. If evidence supports reasonable grounds to believe that one or more violations exist, summarize the facts for the file and issue a [Violation Notice](#), form E3.10 (or local form when authority is under a local ordinance), to the property owner and/or other persons implicated. An example of a completed Violation Notice is included in subsection Training and Resources within this chapter. The form is an example only; when completing a notice, check the violations that apply and complete the Remedial Action(s) Indicated and Compliance Schedule sections as appropriate based on your investigation of the alleged violation(s). Based on 701.037 RSMO, Notice of Violations shall:
 - a. Be in writing;
 - b. Include a statement of the reasons for issuance of the notice;
 - c. Allow a reasonable time for correction;
 - d. Be served to the owner of the property, and/or operator of the system, by certified mail or in person; and
 - e. Contain an outline of remedial action necessary to effect compliance.

It is important for the local administrative authority handling complaints under Missouri laws and rules, to send a copy of the notice of violation to the DHSS Onsite Program as soon as possible in case the individual receiving the notice requests a hearing.

Attaining Compliance

Often, the remedial action required to attain compliance is for the property owner to complete the application process for a permit to repair or replace the onsite system. When this action is appropriate, write a compliance schedule requiring the property owner to contact the OWTS administrative authority, obtain a construction permit, and repair or replace the system within thirty (30) days.

It may be apparent that lack of maintenance or neglect of proper operation created the problems. Sometimes maintenance or repairs can be made without a permit; these may include, but are not limited to, cleaning filters, replacing a pump, or performing service that has been neglected.

If a public sewer system is available, connection to the sewer could abate the nuisance and achieve compliance.

In some situations it may be appropriate for the compliance schedule to require more immediate remedial action, such as reduce water use or pumping waste from the system and hauling it to a DNR permitted treatment facility, to abate the nuisance while additional time is allowed for completing needed repairs.

Within the allotted time, the property owner may make a written proposal of an alternate method to abate the nuisance and bring their system into compliance. If the property owner is unable to obtain repair service, an extension may be granted to repair the system and abate the nuisance. Any request(s) for extensions must be in writing prior to the deadline and include adequate justification.

Request for a Hearing

Within ten (10) days of the date of receipt of a Violation Notice, the aggrieved person (property owner and/or occupant/renter who received the NOV) may submit a request for a hearing in writing to the DHSS Onsite Program in Jefferson City. When a timely request for a hearing is received, the time frame for compliance with the requirements of the notice will be suspended until the decision of the hearing officer is rendered. A hearing is for the purpose of reviewing the appropriateness of the remedial action. A hearing will be held within twenty (20) days from the date the property owner received the notice of violation, if possible. The hearing officer will notify the property owner by certified mail of the date, time, and location of the hearing. A copy of the letter will be sent to the LPHA that issued the Violation Notice and to the Onsite Program. The investigator must be available during the time of the hearing if they are required to testify.

Compliance/Non-Compliance

To comply, the property owner or operator must carry out the actions outlined in the notice of violation. Once the remedial action has been completed, and the nuisance is abated, finalize records for the file and retain for ten (10) years. Send a letter to the complainant stating that the onsite system is no longer in violation with a copy of the letter to the Onsite Program.

If the owner or operator does not comply within the allotted time (including extensions if allowed) and every feasible option to gain compliance was offered, it may be necessary to work with the county prosecutor to enforce compliance. Copies of documentation and evidence of a violation should be referred to the prosecutor and must be attached to a statement of probable cause. The prosecutor in a county may suggest a format, or have a form, for your use when submitting a probable cause statement. A statement of probable cause must be in writing and must:

1. State the name of the accused or, if not known, designate the accused by any name or description by which the accused can be identified with reasonable certainty;

2. State the date and place of the crime as definitely as can be done;
3. State the facts that support a finding of probable cause to believe a crime was committed and that the accused committed it;
4. State that the facts contained therein are true; and
5. Be signed and on a form bearing notice that false statements made therein are punishable by law.

If prosecution is necessary, it should compel the owner or operator to abate the nuisance and bring the system into compliance.

Emergency Guidelines

When it is determined that an emergency exists, as detailed in 701.037.6 RSMo, a [Violation Notice](#), should be issued as in other situations. However, the required remedial action should include measures to abate the health hazards without delay, such as pumping out sewage tanks or installing a holding tank, and the reasonable time for correction can be lengthened.

If the property owner does not abate the conditions as required or as soon as practical, prepare a summary of the case in chronological order, describing the conditions that warrant immediate actions to protect the health and welfare of the public. Forward the summary and other pertinent material, to the Regional Public Health Environmental Supervisor and Onsite Program staff. If DHSS supports the emergency status, DHSS will request that the county prosecutor file a restraining order and temporary injunction. When hazardous conditions are corrected and the imminent health hazard no longer exists, then a request must be made to dissolve the temporary restraining order and injunction. Once the order is dissolved, continue with the normal process to attain compliance.

Investigation/Dye Testing

Any person engaged in groundwater or surface water tracing, for any purpose, must register with the Missouri Department of Natural Resources, [Geological Survey Program](#) (573-368-2146) and comply with any applicable requirements.

With the property owner's permission, an investigation may include a procedure where water is added and/or a water tracing dye is introduced into the OWTS in question. Note that 19 CSR 20-3.015(6) states "All owners and operators of on-site sewage disposal systems shall permit department staff and staff of the Missouri Department of Natural Resources to inject dyes or other tracers into their on-site sewage disposal systems during normal business hours for the purpose of tracing the discharge."

During the investigation/dye test, the investigator should be able to examine the plumbing configuration in a home and have access to all fixtures that use water. An increase in surfacing water flow or dye observed after adding a limited volume of water to the system would be evidence that the soil absorption system is malfunctioning as well as evidence of the source. The purpose of this procedure is to establish a hydraulic connection between the OWTS and surfacing water, not to determine whether the system can handle a certain water volume. Use only as much water as necessary for the investigation.

For a gravity distribution system, dye may be introduced with a minimal water volume. However, with normal water usage, more time will be necessary for dye to be recovered. Revisit the site as necessary.

Access to the septic tank may not be available and cannot be required as part of the investigation. However, if access is available, it may be helpful in determining the effect of water usage on the tank and whether the tank is leaking or otherwise malfunctioning.

For dosed alternative treatment and alternative soil absorption systems, a smaller water volume should be used. Generally the volume should be limited to one dose cycle. If a dosed absorption field is believed to be malfunctioning and dye is introduced, it should be introduced into the dosing tank to reduce the time needed for recovery.

From the time dye is introduced, it may take a few hours to a day or two before dye is recovered. The method of dye testing relies on visual observation of the dye, so if the dye is diluted and never surfaces the test may result in an erroneous assumption. For a majority of investigations, the use of dye is not necessary. Therefore, carefully consider the use of dye.

Illegal and Non-compliant Installations

Unless a property is exempt, any construction of a new onsite wastewater treatment system (OWTS) or major modification or repair to an existing onsite system without a permit is considered an illegal installation. An investigation into an illegal installation may begin after excavation of an area is observed or a PHES receives information or a complaint about an illegal OWTS installation from another contractor, a neighbor, a property owner, or other concerned person. It is not necessary to receive a complaint; however, the PHES must determine probable cause to investigate an illegal installation. It is vitally important to document the reason(s) for initiating an investigation.

Construction permits are issued in property owner's name(s) and they are ultimately responsible for the system. However, the registered installer is responsible for insuring the installation of the system is in compliance with Chapter 701.025 through 701.059 RSMo, and 19 CSR 20-3.060, Minimum Construction Standards. The installation of the system must be in accordance with the approved application and permit. The installer must notify the administrative authority before construction on a system is completed and then maintain the system in a condition, which allows for inspection as detailed in 701.050 RSMo.

If the homeowner is installing the system, they are responsible for insuring the system installation is in compliance with Chapter 701, RSMo and 19 CSR 20-3.060.

Investigating Illegal Installations

An investigation is the systematic collection and examination of relevant facts. It is the responsibility of the investigator to determine whether the information supports the issuance of a Notice of Violation. If, after evaluating the facts, a violation can be substantiated, the investigator must be confident that a probable cause statement can be submitted to the county prosecuting attorney for enforcement if necessary. Following are guidelines for investigating a possible illegal installation or a major modification or repair of an OWTS.

Assess Information

1. Upon receipt of information regarding a possible unpermitted/illegal installation or repair, record the name; address; and telephone number of the individual calling on a complaint form. In addition, obtain information regarding the onsite system in question:
 - a. The name of the property owner,
 - b. Location of the system,
 - c. The actual or approximate date of the installation or repair,
 - d. The name of the contractor involved, and
 - e. Whether witness(es) saw the installation or repair or saw evidence of work on the system.

2. Investigators that become aware of a possible illegal installation without a complaint should record all available information on a Sanitation Observation form E6.07, including but not limited to, date, location, and site conditions.
3. After documenting the basics, determine whether the property owner was exempt from obtaining a permit. If the property owner is not exempt (see exemptions under Applicability in subsection 5.1) based on the lot/parcel acreage for a single family residence(s) or because the owner was under a notice of violation for a malfunctioning system, continue the investigation. Non-residential establishments are not exempt regardless of acreage.

Conducting an Investigation

The law provides right of entry onto the property for the investigation of a possible illegal installation or repair when probable cause is determined. However, it is advisable to contact the property owner prior to visiting the site or to view the property from the roadway, driveway or walkway to the front door, or from adjacent property. Document information obtained and observations at the site:

1. Contact and interview the owner and document any statements about the installation or repair.
2. Observe original documents and request copies of these documents from the property owner as evidence. This would include such items as, invoices; bids; and cancelled checks.
3. Interview the installer implicated, inquiring of their involvement and what they know of the site and the system. Determine if the installer is registered with DHSS. Document all responses given by the installer.
4. Gather statements from witnesses, if any, of the installation/repair. Witness statements should be taken as soon as possible to ensure details are reported as accurately as possible.
5. If possible, take photographs to document evidence of violations (see the photo documentation template under OWTS Forms and References).
 - a. Photograph recently disturbed soil and other supporting evidence;
 - b. Ensure that pictures are taken using the standard picture format;
 - c. Capture the same angles at various distances (use of the zoom or other enhancing features may create distortion); and
 - d. Describe what each photograph represents.
6. Draw a diagram of the site indicating:
 - a. The location and layout of all parts of the system;
 - b. The direction North;
 - c. GPS coordinates, if available; and
 - d. Distances from buildings, property lines, and other features.
7. Maintain control and accountability of all records and evidence collected. Store in a place suitable for case files.

Evaluation of Evidence

Does the evidence show that an OWTS was installed and that a permit was not obtained when one was required? Remember, a permit is required for new system construction and major modifications or repairs unless the owner is exempt based on their parcel size, and a permit may be required regardless of the parcel size if the owner was issued a notice of violation for a malfunctioning system.

1. If you are unable to substantiate that an illegal installation occurred, do not issue a Violation Notice. The investigation may be reopened if additional information becomes available.
2. If evidence supports reasonable grounds to believe that an illegal installation, modification, or repair has occurred, issue a [Violation Notice](#), form E3.10 (or local form when authority is under a local ordinance), to the property owner. Notice of Violations shall:
 - a. Be in writing;
 - b. Include a statement of the reasons for issuance of notice;
 - c. Allow a reasonable amount of time for compliance;
 - d. Be served to the property owner by certified mail, in person, or as allowed by 701.037, RSMo;
 - e. Contain an outline of action necessary to effect compliance.
3. If the investigation resulted in a Violation Notice to the property owner and evidence implicates an installer, issue a notice of violation to the installer using the same form.

It is important for local authorities that handle complaints under Missouri Laws and rules, to send a copy of the notice(s) of violation to the DHSS Onsite Program as soon as possible in case the individual receiving the notice requests a hearing.

Attaining Compliance

1. To attain compliance, the property owner must carry out the actions outlined in the notice of violation, and typically should be required to work with a registered installer to:
 - a. Obtain an application,
 - b. Submit the permit application fee,
 - c. Submit the completed application with a site/soil evaluation, and
 - d. Cooperate with the administrative authority to obtain a permit and bring the system into compliance with minimum standards.

Note that portions of an illegally installed system may need to be uncovered to confirm whether it was installed in accordance with the minimum standards, application, and a permit if one can be issued. If the illegally installed system cannot be brought into compliance, a replacement system may need to be designed and installed.

2. If the property owner, and/or installer if applicable, does not comply within the allotted time, it may be necessary to refer the case to the county prosecutor to gain compliance. However, the investigator may use judgment in determining whether to refer the owner to the prosecutor for enforcement. Conditions necessary to forego prosecution include but are not limited to:

- a. An application has been submitted with as-built system specifications;
- b. The system is not creating a nuisance or health hazard;
- c. There is minimal risk of contaminating groundwater or nearby surface water bodies; and
- d. There are no other illegal installations on record.

Also, note that if the evidence shows that the installation occurred more than twelve months before a notice of violation was issued, a prosecutor is less likely to act on the case. Any decision not to refer a case to the prosecutor cannot be considered as approval of the system. Noncompliance must be documented in the OWTS application file and in written form to the owner by denying the permit application or documenting that the construction was not approved. This must be a matter of record in the event of future malfunction or that may be disclosed during a property transfer.

3. If referred to the county prosecutor, he or she may send a warning letter and/or file charges. The statement of probable cause, provided in the EHOAG Appendix, may be modified to correspond to the facts in the case. Submit the case file including the notice of violation, all relevant documentation, photographs of the site, diagrams, and descriptive notes to the county prosecuting attorney.
4. If prosecution is necessary, it should seek to compel the owner and/or installer to bring the system into compliance. If found guilty, an installer would be required to post a performance bond or letter of credit as detailed 701.052 RSMo.

Whenever evidence of an illegal installation implicates an installer, submit a [professional complaint record](#), to the Onsite Program. Attach copies of the notice of violation and other documentation for consideration of administrative action against the installer's registration or for the Onsite Program to also refer an unregistered installer for prosecution.

It is important to provide the Onsite Program with any information relating to court actions taken by the county prosecutor and any findings of guilt. An installer who is found guilty or who pleaded guilty can be required to provide a performance bond.

Non-compliant Installations

During any site visit and inspection, including the final inspection, it may be determined that the OWTS is not being installed as approved. Remember, the installer is required to comply with minimum standards and the approved application and plans for the permitted system. The installer or designer must submit any proposed changes in the approved plans for review by the administrative authority before making the changes. If the system was designed by an engineer, the engineer must first specify any proposed changes to the plans, before the administrative authority can approve them. If the OWTS is not installed as approved, post a Notice ([OWTS Construction Stop Order](#)) prominently on the site and deliver a copy in person or by certified mail to the property owner and installer.

Indicate the problems with the installation on the form, and make clear what is necessary to bring the system into compliance. Any changes must be submitted for approval as noted above. If the installed portion of the system cannot be brought into compliance with minimum standards, the installer should submit a modified design that will comply. Once the design changes are approved, the permit should be amended if needed, the Notice should be removed, and construction may continue. Construction of the onsite system should be disapproved if compliance is not achieved.

If the installer is uncooperative in correcting a non-compliant installation or if in the judgment of the PHES, the non-compliance issues are egregious or persistent, a notice of violation should be issued to the installer. In other cases of non-compliance – failure to provide notice of system completion, misrepresentation as a registered installer, and failure to file a performance bond or letter of credit when required – a notice of violation letter should be issued to the installer. List the specific sections of 701.025 to 701.059 RSMo that have been violated. Refer the case to the county prosecutor and work with the prosecutor to file charges against the installer, if necessary to gain compliance. As with illegal installations, send a copy of the notice of violation to the Onsite Program with a professional complaint record and copies of all documentation.

Generally, legal action is focused on the OWTS installer or other professional. However, construction permits are issued in a property owner's name. It is ultimately the owner's responsibility to have the system constructed in compliance with the minimum standards before it is placed in operation. Rarely, it may be necessary to issue a [Violation Notice](#) to the property owner and refer the violation to the county prosecutor to attain compliance.

A range of administrative actions are available to DHSS and are discussed later in this chapter.

Registration/Licensing of Onsite Wastewater Treatment Industry Professionals

DHSS has the responsibility to register or license private individuals as **Registered Basic Installers** or **Registered Advanced Installers** of onsite wastewater treatment systems (OWTS), **Registered Onsite Soil Evaluators**, **Registered Percolation Testers**, and **Licensed OWTS Inspectors**. The responsibility includes administering or monitoring training and testing of these professionals, publishing lists of active as well as suspended or revoked individuals, monitoring their activities, and taking appropriate administrative action, when necessary, up to and including suspension or revocation of their registration or license. DHSS may audit the work of registered or licensed individuals.

Registered Installers

Contractors who install OWTS must be registered with DHSS as Registered Basic Installers or Registered Advanced Installers. Basic OWTS Installers are required to attend a course and pass an examination provided by, or approved by, DHSS. This course covers the basic concepts of the law and rules governing onsite sewage, basic soil science, health and safety precautions, applying for permits, and technical information on the components of onsite wastewater treatment systems. Advanced OWTS Installers are required to attend an additional course and pass an examination provided by, or approved by, DHSS. The advanced course covers, soil water movement, use of soil fill material, advanced pretreatment systems, pressure distribution, low-pressure pipe distribution systems, and drip irrigation dispersal systems. Upon successful completion of the class(es), individual's names are placed on a list that is published on the Internet and distributed in paper form upon request. 19 CSR 20-3.080 details the requirements and responsibilities of registered installers.

Registered Percolation Testers

This registration allows individuals to perform percolation tests to determine soil permeability and sizing for OWTS. Individuals allowed to perform this test include: 1) soil scientists, 2) registered geologists or licensed engineers that have completed the DHSS registration process and 3) other individuals that have been registered through completion of an approved training course and passing an examination. Successful applicants are then placed on a list of Registered Percolation Testers to be distributed upon request.

Persons registered as Percolation Testers are required to prepare reports that meet the OWTS construction standards and that are specific for the proposed site. 19 CSR 20-3.080 details the qualifications, duties, and responsibilities of percolation testers.

Registered Onsite Soil Evaluators

This registration allows individuals to perform onsite soil morphology evaluations, to determine the suitability of a site and the sizing for an OWTS. To qualify to perform soil morphology evaluations, first individuals must either 1) have completed fifteen college credit hours of soils science course work,

three (3) of which are in soil morphology and interpretations or 2) be a registered geologist or licensed engineer with ten college credit hours of soils science coursework, three (3) of which are in soil morphology and interpretations. Individuals must then successfully pass a written and a field exam. Successful applicant's names are placed on a list that is published on the Internet and distributed in paper form upon request.

Persons registered as Onsite Soil Evaluators are required to prepare reports that meet the OWTS construction standards and that are specific for the proposed site. 19 CSR 20-3.080 details the qualifications and responsibilities of onsite soil evaluators.

Licensed Onsite Wastewater Treatment System Inspectors (real estate transaction related OWTS inspections)

DHSS, certain local governmental agencies, and licensed private individuals may inspect or evaluate existing OWTS upon a request from a lending institution, realtor, real estate broker, property owner and/or potential buyer. Inspections and evaluations make identical inspections of the private water supply if applicable. While both inspections and evaluations are conducted to determine if an OWTS is malfunctioning or otherwise meeting minimum standards, they differ in respect to their thoroughness. Inspections identify both the components and functionality of a system. Inspections are valuable to consumers wanting to receive a more complete assessment of the current condition of the onsite system. Evaluations solely determine if the onsite system shows signs of malfunctioning. More detail about inspections and evaluations is available at <http://health.mo.gov/living/environment/onsite/pdf/InspEvalfactsheet.pdf>.

DHSS has chosen not to have staff inspect or evaluate systems, and instead licenses private individuals to conduct the assessments. City or county governmental agencies may inspect or evaluate onsite systems related to real estate transactions provided staff have completed the training course discussed below and maintain a license from DHSS. Fees for inspections or evaluations conducted by local agencies must be established by local ordinance.

The license allows an individual to conduct real estate related inspections or evaluations. Applicants are required to successfully complete the registered basic OWTS installer course as a prerequisite, attend a training course and pass an examination provided by or approved by, DHSS. Upon successful completion of the course and examination, individual's names are placed on a list that is published on the Internet and distributed in paper form upon request.

Persons licensed as OWTS Inspectors are required to prepare reports that comply with the OWTS inspection criteria. 19 CSR 20-3.070 details the requirements and responsibilities of licensed inspectors. Private licensed inspectors cannot state in their inspection or evaluation report that a system is in violation of law. Regulatory or complaint investigations and the issuance of notices of violation of

Chapter 701.025 to 701.059, RSMo, can only be made by DHSS or a local administrative authority, independently or jointly with the Department of Natural Resources.

Onsite Program Administrative Action Regarding an OWTS Professionals. Because an individual may violate standards in more than one local jurisdiction, it is important for jurisdictions to report non-compliance to the Onsite Program. A [professional complaint record](#), should be used and copies of any available evidence and documentation should be attached. A thorough investigation and documentation of any violation is essential to support administrative action. The Onsite Program will review all professional complaint records and documentation submitted and search records for any previous documentation of non-compliance or administrative actions regarding the professional. More information or further investigation may be needed and the Onsite Program may conduct an audit of the professional.

A range of administrative actions may be taken based on the seriousness of the violation, the strength of the evidence and documentation, and any previous records and actions. NOTE: administrative actions involve an individual's registration or license and are not a substitute for issuing an NOV or referring the case to the county prosecutor for enforcement when appropriate as discussed in subsection 5.7.

Administrative action options include:

- Notice of complaint or concern;
- Letter of noncompliance requesting a noncompliance meeting;
- Letter of warning;
- An announced or unannounced audit;
- A settlement agreement with possible probation;
- Suspension;
- Revocation; and/or
- Denial.

Wastewater Treatment for Regulated Establishments

Sanitary wastewater treatment is important for establishments that are regulated by DHSS, such as food service, lodging, and childcare establishments. Sometimes, inspection and enforcement activities cover the wastewater treatment systems when the wastewater system regulatory authority is the Department of Natural Resources (DNR). Wastewater treatment systems that serve regulated establishments must provide for the sanitary treatment of wastewater and be in compliance with state laws, regulations, and local ordinances.

The following guidance and accompanying decision tree (see Figure 1 below) has been developed to provide clarification on the criteria for system evaluation and action when necessary. In some cases, there are too many variables involved for a single policy to apply to all situations. Also, consult the guidance provided for other environmental programs also. If there is any doubt what the proper action is, contact DHSS for technical assistance.

Evaluation of Systems

Public Health Environmental Specialists (PHEs) must evaluate the wastewater treatment system as a part of each annual or routine inspection. Municipal or other public treatment systems only need to be evaluated if there are pump tanks or other components under the control of the management of the establishment. Small community or multi-establishment systems should be evaluated when the owner of the establishment has a reasonable degree of control over the system and the ability to make corrections.

Evaluation Criteria

1. Lagoons, evaluate possible problems:
 - A. Not holding water;
 - B. Septic color/odor;
 - C. Excessive weeds/woody vegetation;
 - D. Excessive shading;
 - E. Fencing does not prevent entrance of children and small domesticated animals;
 - F. Discharging untreated effluent;
 - G. Floating grease balls or other visible solids;
 - H. Erosion of the berm; and
 - I. Seepage through the berm.

If the berm of the lagoon is washed out and waste is flowing down the hill, or there are other clear and obvious issues that constitute a health hazard, mark a wastewater violation on the inspection report and contact the DNR regional office. If there are less serious issues, which are not considered a violation, like shading over the lagoon or erosion of the berm that is not currently leaking, notify the appropriate DNR regional office. Lagoons serving small in-home businesses, such as licensed family home

childcare facilities and small food processors, are not regulated by DNR when the business generates less than 50% of flow. Therefore, do not contact DNR in these cases.

2. Subsurface treatment systems, evaluate possible problems:
 - A. Surfacing or discharging wastewater;
 - B. Evidence of prior surfacing or signs of intermittent failure.

Mark a violation on the inspection report when wastewater is discharging or exposed on the ground surface. When there are signs of past system malfunctions, use judgment and discretion to evaluate the likelihood of future failure and health hazard. In many cases, subsurface treatment systems will be under the authority of the state/local health department. However, DNR has jurisdiction over systems with flows greater than 3,000 gallons per day. DNR must be contacted when these larger systems are observed to be malfunctioning.

3. Discharging wastewater treatment systems, evaluate possible problems:
 - A. Broken pipes or other signs of mechanical failure;
 - B. The presence of standing water or excessive weeds on sand filters;
 - C. Unusual appearance or odor of the discharge;
 - D. Aeration motors/pumps malfunctioning; and
 - E. Alarms sounding or warning lights on.

If there is evidence of untreated or grossly undertreated wastewater discharging, mark a violation on the inspection report. If any of the above are observed, contact the DNR regional office.

Risk Categorization of Violations

All violations should be categorized as an imminent, serious, or a minimal health hazard. Imminent hazards are where there is a substantial ongoing risk of human illness because of the situation. This would include direct contamination of a drinking water supply; wastewater backed up on the floor of a regulated establishment or in a play area of a childcare facility; or sewage backed up where employees or guests must walk through it. Serious violations will include wastewater entering a lake, stream, or public access areas, including adjacent to outdoor play areas. Minimal risk violations include low volume or intermittent surfacing of wastewater in areas not mentioned above.

Interim Controls, Corrective Actions, and Timeframes

Interim controls are temporary measures that do not require major modifications or repairs, but reduce or eliminate health hazards while permanent corrections are being planned and implemented. Examples of interim controls would be pumping and hauling of wastewater or ceasing operations. This may include installing holding tanks that will be pumped routinely. See subsection 5.2 of this chapter for more details on holding tanks.

Corrective actions are repairs to existing systems or replacement of failing systems. Direction for corrective actions of DNR regulated systems will come from that agency. Most corrective actions for regulated establishments with systems under the jurisdiction of the health departments will require a permit. Exceptions include minor repairs that may be considered maintenance, like replacing an effluent pump. A construction permit is always required for a major repair or modification of any system for which a Notice of Violation (NOV) has been issued.

Timeframes

If the wastewater issue constitutes an imminent health hazard for any establishment, interim controls or corrective actions must be put in place immediately. Otherwise, proceed directly to enforcement actions: work order, immediate closure, and/or referring the establishment to the prosecuting attorney. Jurisdictions enforcing state regulations (counties without food ordinances, all childcare, and lodging) must contact their regional PHES for assistance in proceeding with enforcement actions.

Once interim measures are put in place, timeframes must be established for permanent corrective actions.

1. Systems regulated by the health department:

After the initial inspection where a wastewater treatment violation is noted, establish a reasonable timeframe for corrections. Common timeframes are sixty days to obtain a soil evaluation and submit a permit application and sixty days to complete construction after a permit is issued. If extenuating circumstances exist, time extensions may be considered. If these timeframes are not met, an NOV and work order will be issued.

2. Systems regulated by the Department of Natural Resources:

If DNR issues an NOV on a wastewater system serving a regulated establishment, the PHES will evaluate the NOV and work with DNR and DHSS to evaluate any health hazards associated with the system. In most instances, it will be necessary to perform an onsite evaluation of the system.

- A. No action will be taken if there is no perceivable threat to public health (e.g. no dechlorination or no warning signs).
- B. Action will be taken if the NOV is related to a public health hazard (e.g. system failure or inadequate treatment). Document the violation in accordance with the regulations relevant to the establishment. Advise the operator that they are to comply with DNR-established timeframes, and conduct follow-up inspections as necessary to determine compliance with DNR timeframes. If the timeframes are not met, a work order or other equivalent enforcement action will be taken.

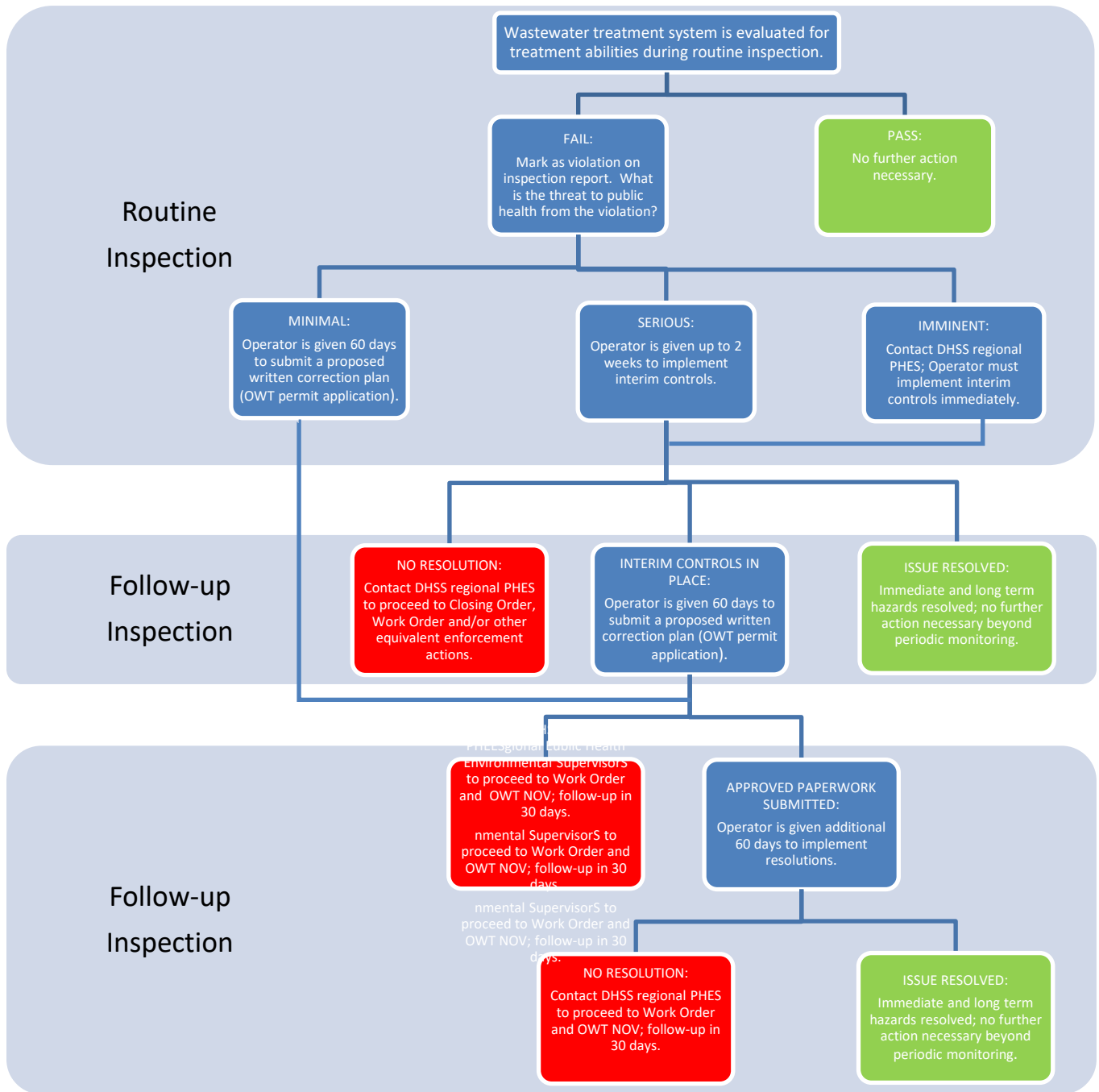
Note that correction timeframes should not include time necessary for DNR to review the application and issue the permit. As such, separate corrective timeframes are usually established for submitting a

permit application and for final construction after the construction permit is issued. If a DNR regulated system is in violation and DNR does not issue a NOV in a reasonable time, contact your PHES for assistance.

Establishing Jurisdiction

DHSS and LPHAs regulate subsurface wastewater treatment systems with flow rates of 3,000 gallons per day or less. DNR regulates subsurface wastewater treatment systems with over 3,000 gallons per day, centralized wastewater collection and treatment systems and other discharging systems, and lagoons other than single family residences. Daily flow rates are determined by the values in 19 CSR 20-3.060 Table 2A.

Figure 1: Decision tree for wastewater treatment systems serving regulated establishments.



Closure or Abandonment of an Onsite Wastewater Treatment System

Wastewater Treatment System Abandonment

Some onsite wastewater treatment systems may be abandoned or replaced by another onsite system or connection to a cluster system or central sewer system. The following are recommendations to help ensure the former site used for wastewater treatment and dispersal is safe:

Sewage Tanks

1. Disconnect power at the source to all electrical controls and remove controls and panels;
2. Have a septage hauler pump all the tanks within the system to remove wastewater and sludge;
3. Fill tanks with sand or gravel to prevent future collapse and remove risers, remove the tanks, or crush tanks in place. Backfill the excavation to a natural grade and establish a vegetative cover.
4. Coat any surface areas exposed to wastewater with hydrated lime; and
5. Wait at least eighteen (18) months before using the soil treatment area for gardening or construction.

Dispersal Systems

1. Remove all parts of the system on the ground surface such as valves, valve boxes, and risers. Backfill the area to a natural grade and establish a vegetative cover;
2. Coat any surface areas exposed to wastewater with hydrated lime; and
3. Wait at least eighteen (18) months before using the soil treatment area for gardening or construction.

Single-Family Lagoons

DHSS has limited authority regarding lagoon closure. However, the closure of a single-family lagoon is not exempt from the federal sludge regulations. Based on guidance from the Environmental Protection Agency (EPA) and Missouri Department of Natural Resources (DNR), the following are recommendations to help homeowners comply with federal sludge regulations under Title 40 Code of Federal Regulations Part 503 (40 CFR 503).

1. Prior to disposing of sludge from a lagoon, the liquid must be properly disposed. Wastewater must not be discharged by breaking through the berm of the lagoon. Proper methods of disposal could vary depending on the location of the lagoon, weather conditions, and the time frame for closure. A municipal treatment facility might accept the effluent, especially if individual residential lagoons are being replaced by a municipal facility. The DNR approved facility plans might include a lagoon closure plan, which must be followed. Wastewater in the lagoon could be allowed to evaporate, if time and weather conditions are favorable. Land application of the wastewater can be an acceptable method of disposal. The lagoon owner should consult a septage pumper/hauler who can dispose of

the waste under a land application permit from DNR. Sufficient area must be available to maintain the wastewater on the property where it is applied following best management practices for land application.

After the liquid is properly disposed, the remaining material should be treated and the lagoon closed. Residuals, or sludge, in a residential wastewater lagoon is considered septage. DNR's standard permit conditions include closure requirements, for lagoons with a design capacity equal to or less than 150 persons, that allow up to 100 dry tons of sludge per acre to be left in place. Therefore, to determine if the sludge may be left in place, an estimate is needed of the amount of sludge that has been produced. Sludge production of 0.015 dry tons per person per year is typical in a lagoon, and should be used for calculation purposes. If the age of the lagoon and average number of persons served is known or can be estimated, then the sludge production can be calculated. For example, the calculated sludge production in a 20-year old lagoon serving 4 persons would be:

$$0.015 \text{ dry tons per person per year} \times 4 \text{ persons} \times 20 \text{ years} = 1.2 \text{ dry tons of sludge}$$

Then to determine the amount of sludge per acre, divide the calculated sludge production by the lagoon area in acres. Continuing the example, if the sludge would cover an area of 25 feet x 25 feet, the area and sludge per acre would be:

$$25 \text{ feet} \times 25 \text{ feet} = 625 \text{ square feet}$$

$$625 \text{ square feet} / 43,560 \text{ sq. ft. per acre} = 0.014 \text{ acres}$$

$$1.2 \text{ dry tons} / 0.014 \text{ acres} = 86 \text{ dry tons per acre}$$

In this example, since the amount of sludge is less than 100 dry tons per acre, it may be left in the lagoon basin. However, if a lagoon had been in service for a long time or if it is undersized for the population served, an area larger than the lagoon may be needed to dispose of the sludge. This is only an example. The calculations should be run for each lagoon to determine whether the sludge can be left in place. It could be necessary to contract with a septage hauler to dispose of a portion of the sludge under a DNR land application permit or at a DNR permitted treatment facility.

2. Sludge left in the lagoon should be treated for pathogen reduction by mixing with hydrated lime at a rate of 50 lbs. of lime to 1,000 gallons (134 cubic feet) of sludge. Mix the treated residual sludge with soil on at least a 1 to 1 ratio;
3. Demolish the berm, and grade the site to prevent erosion or ponding of storm water. Establish a vegetative cover.

By following the recommendations above, a property owner should be able to comply with the state and federal requirements for sludge treatment and disposal.

Trench Equivalencies

Product	Trench-Width Equivalency
18 inch wide trench of pipe and gravel	1.5 feet
24 inch wide trench of pipe and gravel	2 feet
12 inch polystyrene wrapped gravelless pipe	2 feet
15 inch chamber	2 feet
10 inch geotextile wrapped gravelless pipe	2.1 feet
22 inch chamber	3 feet
36 inch wide trench of pipe and gravel	3 feet
2-12 inch polystyrene wrapped gravelless pipe bundles	3 feet
34 inch chamber	3.5 feet

Training and Resources

Available Onsite Wastewater Treatment System Training

Basic Installer Course
Advanced Installer Course
Onsite Regulators Soil Training
Onsite Regulator Field Training

These courses are available to local onsite administrative authority staff and all onsite system inspectors are encouraged to attend the courses. In addition, the Onsite Program offers or participates in continuing education courses when possible.

Onsite Wastewater Treatment Program
P.O. Box 570
Jefferson City, MO 65102
Phone (573) 751-6095
Fax (573) 526-7377

Acronyms:

ATU:	Aerobic Treatment Unit
BEHS:	Bureau of Environmental Health Services
BOD:	Biochemical oxygen demand
CFR:	Code of Federal Regulations
CSR:	Code of State Regulations
DHSS:	Department of Health and Senior Services
DNR:	Department of Natural Resources
E&I:	Experimental and Innovative
EHOg:	Environmental Health Operational Guidelines
GSP:	Geological Survey Program (DNR)
LPHA:	Local Public Health Agency
LPP:	Low-pressure pipe
NOV:	Notice of Violation or Violation Notice
OSE:	Onsite soil evaluator
OWTP:	Onsite Wastewater Treatment Program
OWTS:	Onsite wastewater treatment system
PHES:	Public Health Environmental Specialist
RSMo:	Revised Statutes of Missouri
STA:	Soil treatment area
TSS:	Total Suspended Solids
WQ:	Water Quality

Onsite Wastewater Treatment Online Resources:

The Onsite Website, <http://health.mo.gov/living/environment/onsite/index.php> has links to Chapter 701.025 – 701.029, RSMo, the onsite wastewater laws; 19 CSR 20-3.060, the “Minimum Construction Standards for On-site Sewage Disposal Systems;” and registered OWTS professionals’ lists

[An Onsite Wastewater Treatment System Owner’s Manual: Recommended Guidelines for Operation and Maintenance](#)

DNR Water Information: <http://www.dnr.mo.gov/water.htm>

University of Missouri Agricultural Extension Service: <http://muextension.missouri.edu>

University of Missouri interactive mapping with soils information available: <http://www.cares.missouri.edu/>

Web Soil Survey: <http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm>

Topography maps: <http://www.topozone.com/>

Sinkholes in Missouri:
<http://www.dnr.mo.gov/env/wrc/sinkholes.htm>

US Environmental Protection Agency onsite wastewater:
<http://water.epa.gov/infrastructure/septic/index.cfm>

US Environmental Protection Agency Constructed Wetlands:
<http://www.epa.gov/owow/wetlands/watersheds/cwetlands.html>

National Environmental Services Center & National Small Flows Organization:
<http://www.nesc.wvu.edu/wastewater.cfm>

Missouri Smallflows organization: <http://www.mosmallflows.org/>

National Onsite Wastewater Recycling Association: <http://www.nowra.org/>

NSF Standards wastewater product certification: <http://www.nsf.org/Certified/Wastewater/>

The Consortium of Institutes for Decentralized Wastewater Treatment:
<http://www.onsiteconsortium.org/>

Onsite wastewater treatment industry publication: <http://www.onsiteinstaller.com/>

Liquid waste trade publication: <http://www.pumper.com/>

**Onsite Wastewater Treatment Program Informational Releases can be found in the EHO
Appendix**

- IR-S3-15 Innovative System Sizing Approval for Infiltrator Water Technologies, LLC, Quick4 Plus EQ36 LP and Quick4 EQ36 Chamber Systems
- IR-S2-15 Design Sizing for AES Wastewater Treatment Systems
- IR-S2-12 Experimental Protocol for Quick4 EQ36, Quick4 Plus EQ36 LP, and Quick4 Plus Standard LP Chambers (4/12)
- IR-S3-12 Innovative System Approval for EZflow by Infiltrator
- IR-S4-12 Experimental Protocol for the Aero-Stream Remediation system
- IR-S1-08 Innovative ATU Protocol (6/08)

Deleted Informational Releases – Delete the following from your records:

- IR-S1-12 Experimental Protocol for AES Wastewater Treatment Systems
- IR-S1-15 Design Sizing for AES Wastewater Treatment Systems

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Introduction
Environmental Child Care

The Missouri Department of Health and Senior Services (DHSS) provide regulatory oversight of child care providers. Providers are classified as licensed, license-exempt, or are non-regulated. Although there are some exceptions, providers that care for more than four unrelated children are most likely licensed or license-exempt, and are subject to routine sanitation, fire safety, and licensing inspections.

Licensed Child Care Facilities: Required By Statute to Be Licensed

Facility Type	Number of Children in Care
Family Homes	5 – 10 children
Group Homes	11 – 20 children
Child Care Centers	21 or more children

Licensed-Exempt Child Care Facilities: Exempt From Licensure, but Required By Statute to Be Inspected

Facility Type	Description of Facility
Religious Organizations	A child care facility that operates under the exclusive control of a religious organization.
Nursery Schools	A program for preschool children that is operated for no more than four (4) hours per child, per day, and is not under the exclusive control of a religious organization.

Non-Regulated: Exempt From Any Statewide Regulation or Inspection

Child care facilities operated by Private and Public School systems
Business for convenience of customers (no child care for employees' children)
Religious Organization Academic Preschools, exclusively for 4 and 5 year olds
Vacation Bible Schools
Summer Camps
Child care facilities caring for four (4) or fewer children
Registered Providers

NOTE: Child care facility category type is evaluated and determined by DHSS Section for Child Care Regulation based on information submitted by the licensee.

Authority

DHSS authority to conduct child care sanitation inspections is derived from Chapter 210, RSMo.

- 210.252. 1. All buildings and premises used by a child-care facility to care for more than six children except those exempted from the licensing provisions of the department of health and senior services pursuant to subdivisions (1), (2), (3), and (5) of section 210.211, shall be inspected annually for fire and safety by the state fire marshal, the marshal's designee or officials of a local fire district and for health and sanitation by the department of health and senior services or officials of the local health department. Evidence of compliance with the inspections required by this section shall be kept on file and available to parents of children enrolling in the child-care facility.
2. Local inspection of child-care facilities may be accomplished if the standards employed by local personnel are substantially equivalent to state standards and local personnel are available for enforcement of such standards.
 3. Any child-care facility may request a variance from a rule or regulation promulgated pursuant to this section. The request for a variance shall be made in writing to the department of health and senior services and shall include the reasons the facility is requesting the variance. The department shall approve any variance request that does not endanger the health or safety of the children served by the facility. The burden of proof at any appeal of a disapproval of a variance application shall be with the department of health and senior services.
 4. The department of health and senior services shall administer the provisions of sections 210.252 to 210.256, with the cooperation of the state fire marshal, local fire departments and local health agencies.
 5. The department of health and senior services shall promulgate rules and regulations to implement and administer the provisions of sections 210.252 to 210.256. Such rules and regulations shall provide for the protection of children in all child-care facilities whether or not such facility is subject to the licensing provisions of sections 210.201 to 210.245.
 6. Any rule or portion of a rule, as that term is defined in section 536.010, that is created under the authority delegated in sections 210.252 to 210.256 shall become effective only if it complies with and is subject to all of the provisions of chapter 536 and, if applicable, section 536.028. All rulemaking authority delegated prior to August 28, 1999, is of no force and effect and repealed. Nothing in this section shall be interpreted to repeal or affect the validity of any rule filed or adopted prior to August 28, 1999, if it fully complied with all applicable provisions of law. This section and chapter 536 are nonseverable and if any of the powers vested with the general assembly pursuant to chapter 536 to review, to delay the effective date or to disapprove and annul a rule are subsequently held unconstitutional, then the grant of rulemaking authority and any rule proposed or adopted after August 28, 1999, shall be invalid and void.

210.254. 1. Child-care facilities operated by religious organizations pursuant to the exempt status recognized in subdivision (4) of subsection 1 of section 210.211 shall upon enrollment of any child provide the parent or guardian enrolling the child two copies of a notice of parental responsibility, one copy of which shall be retained in the files of the facility after the enrolling parent acknowledges, by signature, having read and accepted the information contained therein.

2. The notice of parental responsibility shall include the following:

- (1) Notification that the child-care facility is exempt as a religious organization from state licensing and therefore not inspected or supervised by the department of health and senior services other than as provided herein and that the facility has been inspected by those designated in section [210.252](#) and is complying with the fire, health and sanitation requirements of sections [210.252](#) to [210.257](#);
 - (2) The names, addresses and telephone numbers of agencies and authorities which inspect the facility for fire, health and safety and the date of the most recent inspection by each;
 - (3) The staff/child ratios for enrolled children under two years of age, for children ages two to four and for those five years of age and older as required by the department of health and senior services regulations in licensed facilities, the standard ratio of staff to number of children for each age level maintained in the exempt facility, and the total number of children to be enrolled by the facility;
 - (4) Notification that background checks have been conducted under the provisions of section [210.1080](#);
 - (5) The disciplinary philosophy and policies of the child-care facility; and
 - (6) The educational philosophy and policies of the child-care facility.
3. A copy of notice of parental responsibility, signed by the principal operating officer of the exempt child-care facility and the individual primarily responsible for the religious organization conducting the child-care facility and copies of the annual fire and safety inspections shall be filed annually during the month of August with the department of health and senior services.

NOTE: The full statutes are available at [Missouri Revisor of Statutes](#)

Regulations

Sanitation inspections of child care facilities are conducted in accordance with the following:

1. “Sanitation Inspection Guidelines for Licensed Group Child Care Homes, Licensed Child Care Centers, and License-Exempt child Care Facilities”
2. “Sanitation Inspection Guidelines for Family Child Care Homes”

All PHES’ that conduct child care sanitation inspections must be knowledgeable of these documents, as they provide sanitation requirement explanations and rationales. Downloadable copies are available at <http://health.mo.gov/safety/childcare/lawsregs.php>. The sanitation inspection guidelines are based on the child care licensing rules, Missouri Food Code, onsite sewage rules and laws, and “Caring for Our Children” by the American Public Health Association. Local ordinances may be more stringent than state regulations.

Environmental Child Care Guidelines

Department of Elementary and Secondary Education (DESE) – Office of Childhood

As of August 28, 2021, the DHSS Section for Child Care Regulation (SCCR) will be renamed the Office of Childhood and will be located within DESE. The Office of Childhood will continue to be the lead regulatory agency regarding child care and is responsible for evaluating the licensing status of child care providers. The Office of Childhood issues licenses to providers, requests inspections for sanitation and fire safety from other agencies, conducts licensing inspections, and is responsible for pursuing any legal actions that may be necessary against a child care provider.

DHSS Bureau of Environmental Health Services (BEHS) and Local Public Health Agencies (LPHAs)

DHSS partners with LPHAs through Participation Agreements. The Participation Agreement establishes basic terms and conditions between the two agencies. Through this three year agreement most annual child care sanitation inspections are conducted at the local level.

In addition, DHSS provides funding, technical support, training, forms, and regulations for LPHA inspectors conducting child care sanitation inspections. DHSS may conduct periodic quality control monitoring to ensure the terms of the Participation Agreement are met.

DHSS- BEHS

The DHSS BEHS Environmental Child Care (ECC) Program is responsible for ensuring sanitation inspections are conducted at least annually but as often as needed in licensed and license-exempt child care facilities. The ECC Public Health Environmental Specialists (PHESs) housed in regional offices throughout the state conduct initial inspections, special circumstance inspections, and otherwise ensure child care sanitation inspections are completed in their jurisdictions as necessary. The Training and Resource section at the end of this chapter contains the latest Environmental Child Care staff regional map. If you need assistance and your regional PHES is not available, please contact the DHSS central office at (573) 751-6095.

Missouri Department of Public Safety

The Missouri Department of Public Safety, Division of Fire Safety is responsible for conducting fire safety inspections in child care facilities.

Child and Adult Care Food Program

Providers that choose to participate in DHSS nutritional assistance programs may have additional regulatory obligations through the DHSS Child and Adult Care Food Program.

Types of Inspections

Initial: Initial inspections are conducted by DHSS program staff.

Annual/Renewal: Annual sanitation inspections are required, by statute, for regulated child care facilities and are usually conducted by the LPHA. A renewal inspection is an annual inspection that must be completed by the given due date to avoid expiration of a provider's approval to operate. Licensed facilities have a two-year license period that requires an annual inspection and a renewal inspection to be performed according to assigned time frames to maintain the license. License-exempt facilities require a renewal inspection every year according to assigned time frames to maintain their approval to operate.

Annual inspections should be conducted as soon as possible after the request is received. The inspection must be completed by the due date on the request.

Re-inspections: A re-inspection is necessary when non-compliances are not corrected during the annual inspection. During a re-inspection, only items previously documented as violations are evaluated. If the PHES determines that facility conditions have deteriorated since the original inspection, it may be necessary to restart the inspection process. An additional request for inspection is not needed to conduct one re-inspection. Most re-inspections should occur within thirty (30) days of the annual inspection. However, all re-inspections must be conducted no later than thirty (30) days after the due date on the request for inspection. If additional inspections are necessary, the LPHA should obtain approval from the ECC Program prior to conducting additional re-inspections.

Special Circumstances: Occasionally there may be a situation in which a sanitation inspection is needed that does not fit into the other types of routine inspections. Examples include complaints, disease interventions, emergency situations such as flooding or sewage backup, and when facilities are not in compliance after one re-inspection. In order to be reimbursed for a special circumstance inspection, the LPHA PHES must contact ECC program staff for approval before conducting the inspection.

Desk Approvals: When a noncompliance correction can be verified by means of submission of documentation such as a laboratory report, purchase receipt, or photo, a desk approval may be used in lieu of a re-inspection. Desk approvals are not appropriate for all types of corrections and the PHES must ensure the submitted documentation provides reasonable proof of correction. For a desk approval to be completed, an inspection report must be filled out to document the correction and sanitation approval of the facility. Desk approvals are not reimbursable.

Lead: Lead inspections are conducted by DHSS program staff. However, the LPHA PHES should screen for potential lead hazards during annual inspections—LeadCheck® and D-Lead® test kits may be used to assist the inspector. If the LPHA PHES identifies suspected lead hazards during an annual inspection, they are to contact DHSS program staff for assistance.

Complaints

The DHSS Section for Child Care Regulation tracks complaints of child care facilities. DHSS Section for Child Care Regulation should be notified of any complaints regarding child care received by other offices, regardless of the nature of the complaint. Complaints should be followed up on as requested in accordance with Chapter 1, subsection 1.10 of this manual.

Required Qualifications and Training

In order to conduct child care sanitation inspections, an inspector must comply with DHSS personnel policies and the Environmental Child Care Sanitation Inspections Participation Agreement and complete the following required training:

1. All inspectors shall complete initial child care sanitation training prior to conducting child care sanitation inspections. Trainings include, but are not limited to, distance learning, classroom, and in-field training.
2. All inspectors shall attend annual Environmental Child Care training by the Department.
Per section 12 of the Environmental Child Care Sanitation Inspections Participation Agreement - Any inspector not attending annual Environmental Child Care training provided by the Department shall attend additional training with Department staff.
3. New inspectors or inspectors who have not participated in child care inspections for two (2) years shall conduct a minimum of six (6) joint sanitation inspections with Department staff.

Conducting Inspections

1. DHSS will first notify LPHAs of the need for an inspection through a Request for Child Care Inspection form. Inspections should occur as soon as possible after the request is received but no later than the due date printed on the Request for Child Care Inspection.
2. Annual inspections shall be made during normal business hours of the child care facility. Inspections during periods of food service are encouraged; inspections during nap time (typically 1:00-3:00 pm) are discouraged. Annual inspection shall be unannounced. Exceptions to unannounced inspections may occur for other visits such as re-inspections.
3. A thorough evaluation of the entire premises should be made, with an obvious emphasis on licensed child care space. The inspection should stress the importance of handwashing, food safety, diapering procedures, and proper bathroom equipment. An emphasis on drinking water is necessary for facilities with private or non-community drinking water supplies; wastewater must be examined closely for facilities with onsite wastewater treatment systems; and facilities constructed prior to 1978 must be examined closely for potential lead hazards.
4. The PHES can use the inspection report while the inspection is made to determine and document compliance with the requirements. Each requirement on the form is to be evaluated and the box next to it marked with the appropriate code. Codes at the top right of the inspection report form (DC 34 or 35) are used to indicate the status of each requirement.

- a. No code in the space to the right of the requirement indicates the requirement was met.
 - b. An **X** indicates the requirement was not met.
 - c. **N.O.** (Not Observed) is used during an inspection to indicate the scope of the inspection did not include items with that requirement. As annual inspections require an evaluation of the entire premises, this code is generally used only during re-inspections or special circumstance inspections.
 - d. **N.A.** (Not Applicable) indicates that a specific requirement does not apply to the facility being inspected.
 - e. An * (asterisk) is used to denote requirements were discussed with the provider. The report items are discussed in detail to educate providers or to give the provider an opportunity to demonstrate knowledge of the application of requirements in specific situations.
5. The observations page of the inspection report is used to record specific noncompliance issues in detail. The specific noncompliant observation is to be clearly written and the corresponding requirement is to be stated. Additional discussion points should also be listed on the observations page to document what information was shared with the provider. If there are no violations, a comment stating this is required on the observations page. Inspectors must remember that a copy of this legal document will be placed in the facility's permanent file maintained by the Section for Child Care Regulation for possible review by anyone requesting information.
 6. All observed violations shall be documented at the time of inspection. Violations that are corrected during the inspection are to be marked as corrected on site. The PHES shall write a correction time frame on the observation page for violations not corrected during the inspection. The provider must know how long they have to correct violations before a re-inspection is made. Input from the provider on re-inspection time frames can be considered. However, all re-inspections must be conducted no later than thirty (30) days after the due date on the request for inspection.

NOTE: Violations that present an imminent health hazard to children in care shall be corrected immediately or arrangements made to correct no later than by the end of that day. Arrangements shall be documented on the inspection report.

7. The PHES must indicate whether the facility **Does or Does Not Conform** to the inspection standards by marking the correct check box in the section above the PHES' signature box on the observations page. If there are any unresolved violations, the PHES must mark that the facility "Does Not Conform" with the sanitation requirements.

8. An exit interview is conducted with the provider/person in charge at the end of the inspection. The results of the inspection are to be reviewed at this time. Correction time frames must be discussed and documented.
9. Ensure all parts of the inspection report are complete. For the report to be considered complete, signatures of both the PHES and the provider are necessary. A legible copy of the report is to be left with the provider/person in charge at the completion of the exit interview. Should the provider refuse to sign the inspection, a copy of the inspection report should be mailed to the provider via USPS Certified Mail.
10. The completed sanitation inspection report and Request for Child Care Inspection must be emailed or faxed to the appropriate Section for Child Care Regulation office within ten (10) working days of the inspection. If a re-inspection is required, a copy of the Request for Child Care Inspection is needed to send with the re-inspection also.
11. Any unresolved violations will require a re-inspection. All re-inspections must be conducted no later than thirty (30) days after the due date on the request for inspection. Re-inspections may be conducted by appointment (announced). Contact the ECC Program if the facility is not in compliance with sanitation requirements after one re-inspection.

Notifying the DHSS ECC Program

The following are instances where the LPHA PHES will need to consult with the ECC program staff before proceeding:

1. Before being approved by DHSS staff to conduct reimbursable child care sanitation inspections;
2. If, after one re-inspection, the provider still does not meet sanitation requirements;
3. If suspected lead hazards are identified on any inspection;
4. If the PHES believes an issue at the facility presents an imminent health hazard to children in care, whether or not it is sanitation related;
5. Before recommending closure of a child care facility;
6. Before conducting special circumstance inspections;
7. If a potential conflict of interest exists between the PHES and the provider, e.g. the provider cares for the children of the PHES;
8. If the PHES identifies an excessive number of violations or highly unsanitary conditions during an inspection;
9. If facility staff deny the PHES entry for inspection; and
10. If facility is inactive and not caring for children.

If you need assistance and your regional PHES is not available, please contact the DHSS central office at (573) 751-6095.

Program Forms

All necessary forms are available to LPHAs through the DHSS Warehouse or electronically at the end of this chapter. Pertinent forms are:

BCC (or DC) 34-1 and 2: Carbon copy forms for inspecting Family Home Providers. These forms are available through the DHSS Warehouse at <http://dhssnet/Warehouse/i-forms.html>

BCC (or DC) 35-1, 2, and 3: Carbon copy forms for inspecting Group Family Home, Licensed Centers, and License-Exempt Providers. These forms are available through the DHSS warehouse at <http://dhssnet/Warehouse/i-forms.html>

DC 38: Reimbursement Request for Child Care Sanitation Inspections. This form is submitted monthly by LPHAs to DHSS to request reimbursement for inspections conducted and is available at the end of this chapter under “Training and Resources.”

DH 38: DHSS Vendor Request for Payment. This form is submitted with the DC 38 forms to request reimbursement for inspections conducted and is available at the end of this chapter under “Training and Resources.”

DC-39: Late Inspection Reimbursement Request. This form is submitted to request payment for any inspections not conducted within the required time frames and is available at the end of this chapter under “Training and Resources.”

Request for Child Care Inspection: This document provides the basic identifying information of the child care facility to the PHES. This document is typically emailed to the LPHA from the DHSS Section for Child Care Regulation to indicate when a sanitation inspection is needed.

Technical Points and Interpretations

Other Regulatory Authorities

Although a thorough assessment needs to be done at each inspection some issues are regulated by other agencies. Fire safety issues are inspected by the Department of Public Safety's Division of Fire Safety. The Department of Health and Senior Services (DHSS) Section for Child Care Regulation regulates safety, supervision, and nutrition issues. If questions or concerns regarding these issues arise during a sanitation inspection, document these issues on a Sanitation Observation form and mail, email, or fax to the Section for Child Care Regulation. If you observe an issue that may present an immediate threat to the health or safety of a child, please contact Environmental Child Care Program staff or Section for Child Care Regulation staff immediately.

Inspection of Premises

Licensing rules require that the premises be inspected annually and requires providers to permit DHSS access to the facility and its premises. 'Premises' is defined in rule as "a house(s), dwelling(s) or building(s) and its adjoining land."

At each annual inspection a thorough evaluation of the entire premises should be made with an obvious emphasis on approved child care space. Non-child care areas that can potentially affect child care space should also be evaluated for sanitation issues. For example, basements and extra bedrooms should be examined for pest harborage, evidence of mold, lead hazards, sewage backup, storage of children's items, etc. Non-child care areas need not be scrutinized to the same extent as approved child care space.

Because of the sensitive nature of this issue, each inspector must utilize discretion. Occasionally there are situations in which evaluating non-child care space extends beyond the scope of work or is not practical for that particular inspection. For example, it is not recommended the inspector evaluate a non-child care bedroom in a Family/Group Home if the provider indicates a family member is sleeping there at the time of inspection and there are no indications of sanitation issues within the bedroom. Document the reason the room was not evaluated during the inspection and proceed with the rest of the inspection. Likewise, the inspection may be limited in scope for multi-use buildings such as schools, strip malls, hospitals, community centers, etc.

Guidance on Disinfectant Use in Child Care Facilities

The Bureau of Environmental Health Services (BEHS) will accept disinfection of diapering tables if discovered during routine annual/renewal inspections. Providers shall follow the manufacturer's label directions for appropriate use. Local Public Health Agencies (LPHAs) performing annual/renewal sanitation inspections of child care facilities shall ensure that all chemicals being used in the child care facilities are used per manufacturer's label. Test kits to check proper concentration of the disinfecting agent(s) may not be available or required. LPHAs shall cite any improper storage of chemicals within the facility. If you have any questions or are in need of additional guidance or clarification concerning disinfection practices, please contact your BEHS regional Public Health Environmental Specialist or the

Environmental Child Care Program. If you have questions or are in need of additional guidance concerning inspection of the premises, please contact your DHSS Regional PHES.

Urgent and Non-Urgent Special Circumstance Inspection Procedures

Occasionally there are situations in which a sanitation inspection is needed that do not fit into a routine inspection category. This type of sanitation inspection, an urgent special circumstance inspection, includes emergency situations such as, but not limited to, disease interventions; floods; structural damage; no running water; no electricity; and sewer issues.

In order to be reimbursed for a special circumstance inspection, the Local Public Health Agency (LPHA) Public Health Environmental Specialist (PHES) must contact the Department of Health and Senior Services (DHSS) program staff for approval before conducting the inspection. These requests are given the highest priority by the Environmental Child Care (ECC) program.

Requesting an Urgent Special Circumstance

1. When requesting an urgent special circumstance, the LPHA should send an email to: eccprogram.lphas@health.mo.gov
2. The email subject line should say: URGENT Request for Special – (LPHA Name). It is important to list the subject line as ‘URGENT’ to avoid any delays.
3. In the body of the email, explain the urgent situation and request that a special circumstance be issued.
4. Call the ECC Program at 573-526-4679 and inform them that a request has been sent for an urgent special and approval is needed as soon as possible. It is very important to call about the special circumstance request after the email is sent to avoid delays.

Requesting a Non-Urgent Special Circumstance

1. When requesting a special circumstance due to a failed re-inspection, the LPHA should send an email to: eccprogram.lphas@health.mo.gov
2. The email subject line should say: Request for Special – (LPHA Name)
3. Include copies of the failed inspection and re-inspection for review.
4. In the body of the email, explain the current situation and why a 2nd re-inspection is needed and when the 2nd re-inspection will be conducted.

ECC Program Response

The ECC Program will reply to a special circumstance request by one of the following:

1. ECC may issue a special circumstance request to the LPHA to conduct the inspection as soon as possible. This approved inspection would be payable at a rate of \$30 per hour.
2. ECC may issue a special circumstance request to the LPHA with the requirement that a regional PHES accompany the LPHA on the inspection. This approved inspection would be payable at a rate of \$30 per hour.
3. Depending on the nature of the request; the ECC program reserves the right to conduct the inspection without LPHA accompaniment.

Billing – Urgent Special Circumstance

1. Return a copy of the completed urgent special circumstance inspection to the ECC Program within 10 days of completion –
 - Email at eccprogram.lphas@health.mo.gov using the subject line: Completed SC Inspection – (LPHA Name); or
 - Fax (573) 526-7377 Attn: ECC.
2. Include copies of the urgent special circumstance approval with your billing for reimbursement.

Billing – Non-Urgent Special Circumstance

1. Return a copy of the completed non-urgent special circumstance inspection to the ECC Program with your monthly billing for reimbursement -
 - Email at eccprogram.lphas@health.mo.gov using the subject line: (Month/Year) Billing – (LPHA Name);
 - Fax (573) 526-7377 Attn: ECC – Billing; or
 - Mail to: Missouri Department of Health & Senior Services
Bureau of Environmental Health Services – ECC Program
PO Box 570
Jefferson City, MO 65102

Reimbursement

For reimbursement, Local Public Health Agencies shall submit a copy of the inspection reports, a copy of the Request for Inspection, a completed Vendor Request for Payment (DH-38) and a Reimbursement Request for Child Care Sanitation Inspections (DC-38) for each month of the year in which an inspection occurred or was attempted. The Participant shall indicate the invoice number on each Vendor Request for Payment (DH-38) submitted to the Department of Health and Senior Services (DHSS) for payment in the following format: CCSImmyy. The Participant shall submit the completed forms to the ECC Program in one of the following ways:

- Missouri Department of Health and Senior Services
Bureau of Environmental Health Services
930 Wildwood, PO Box 570
Jefferson City, MO 65102
- Email: eccprogram.lphas@health.mo.gov
- Fax: 573-526-7377

The Participant may not submit more than one (1) invoice per month and all reimbursement requests shall be submitted within thirty (30) days of the month end date, with the exception of September. Each fiscal year ends on September 30th and funding changes at that time. Therefore, September billings must be submitted no later than October 15th.

Invoices received after the required deadline may be ineligible for payment. Incomplete invoices received shall be returned to the Participant for completion, which will delay the reimbursement process. Billing/invoicing inquiries should be directed to Environmental Child Care, Health Program Representative I/II, Department of Health and Senior Services at (573) 751-2678 or eccprogram.lphas@health.mo.gov.

In some instances it may be necessary to conduct an inspection that does not meet the required time frames. Late inspections that do not meet the required times must be accompanied by a “Late Inspection Reimbursement Request” when submitting the request for reimbursement. DHSS has sole discretion when considering payment for late inspections. If a request is denied, the Department will send written notice explaining the reason for denial and the adjusted reimbursement amount.

Reimbursement Rates (as identified in the Participation Agreement)

\$120.00 per annual inspection

\$70.00 per re-inspection

\$30.00 per hour for special circumstance inspections. Prior written approval from the ECC Program is required in order to be eligible for reimbursement for a special circumstance inspection.

\$25.00 per attempt. The appropriate Request for Child Care Inspection and a completed Sanitation Inspection Report indicating the facility was closed must be submitted for payment. DHSS will reimburse for up to two (2) attempts.

Reimbursement Rates for Inspections Outside Home County (requires prior approval as identified in the Participation Agreement)

\$130.00 per annual inspection

\$80.00 per re-inspection

\$35.00 per hour for special circumstance inspections. Prior written approval from the ECC Program is required in order to be eligible for reimbursement for a special circumstance inspection.

\$30.00 per attempt. The appropriate Request for Child Care Inspection and a completed Sanitation Inspection Report indicating the facility was closed must be submitted for payment. DHSS will reimburse for up to two (2) attempts.

Shigellosis: What Is It?

Shigellosis is an infectious disease caused by a group of bacteria called *Shigella*. Every year, about 14,000 cases of shigellosis are reported in the United States. Because many milder cases are not diagnosed or reported, the actual number of infections may be much greater. Shigellosis is particularly common and causes recurrent problems in settings where basic hygiene and handwashing habits are inadequate. It is more common in summer than winter. Children, especially toddlers aged 2 – 4, are the most likely to get shigellosis. Several cases are related to the spread of illness in child care settings, and many are the result of the spread of the illness between family members, caregivers, and playmates.

However, anyone can get shigellosis. Most *Shigella* infections are the result of the bacterium passing from stools usually via inadequately washed hands of one person to the mouth of another person. *Shigella* bacteria are present in the diarrheal stools of infected persons and can generally be excreted in feces for one (1) to four (4) weeks, in person without treatment. *Shigella* infections may also be acquired from eating contaminated food; drinking contaminated water; or swimming/playing in contaminated water, such as splash tables, untreated wading pools, or shallow play fountains used in child care settings.

Most individuals who are infected with *Shigella* develop diarrhea, headache, dehydration, fever, cramps, and mucous and blood in the stool which usually resolves in five (5) to seven (7) days. Some persons who are infected may have no symptoms at all, but may still pass the *Shigella* bacteria to others. Antibiotics are sometimes used to treat severe cases or to shorten the duration of the illness. A physician should determine the best method of treatment for a *Shigella* infection.

Currently, there is no vaccine to prevent shigellosis. However, the spread of *Shigella* from an infected person to others can be stopped by frequent and thorough handwashing with soap and warm running water after using the bathroom; changing diapers; and before preparing food, beverages; or caring for children or patients. In addition, implementing the following general control measures can further reduce and/or eliminate the spread of shigellosis:

- Supervise handwashing of toddlers and small children after they use the toilet.
- Dispose of soiled diapers in a covered diaper container.
- Wash, rinse, and sanitize and/or disinfect diaper changing areas after use.
- Keep children with diarrhea out of child care settings.
- Exclude persons ill with diarrhea from food handling. These individuals shall not prepare food or drinks for others or provide care or services to children or patients that pose significant risk of transmission until diarrhea ceases and appropriate medical documentation is provided showing the person is free of *Shigella* infection based on test results.
- Avoid swallowing water from ponds, lakes, or untreated pools.

- Refrain from recreational water venues (e.g. swimming pools, water parks) for one (1) week after symptoms resolve.

Due to the potential for rapid spread in the child care setting, additional precautions are recommended when shigellosis is diagnosed in an attendee or employee of a child care facility. *Shigella* outbreaks involving groups of young children, especially those who are not yet toilet trained, can be difficult to control. The following procedures incorporate glove use as an additional barrier and heightened awareness to reduce the likelihood of contamination of hands and environment.

Diapering Procedures:

- Collect all necessary supplies. Put on a clean pair of single-use, tight fitting gloves.
- Handle the child and clothing to prevent contamination.
- Remove soiled diaper and clean child. (Remember children cannot be left unattended while on the diapering table).
- Remove gloves by inverting each glove one-at-a-time over the bundled diaper, containing the soiled wipes. Discard in a diaper pail.
- Place a clean diaper on the child and then put the outer clothing back on the child.
- Immediately wash your hands and the child's hands, using soap and warm running water. Return the child to a supervised area.
- Clean the diapering surface and any other contaminated surfaces using soapy water and disposable towels.
- Remove soap residue with clear water.
- Sanitize and/or disinfect the contaminated areas with an approved sanitizing or disinfecting solution and allow surface to air dry.
- Wash your hands before returning to other duties.

Cleaning Procedures:

- Collect all necessary supplies. Put on a clean pair of single-use, tight fitting gloves.
- Remove as much bodily fluids as possible using disposable towels.
- Clean with your preferred cleaning agent.
- Rinse with plain water.
- Disinfect affected area. Using a more powerful disinfectant instead of a sanitizer in these instances is recommended due to the nature of the accident. A disinfectant must be used according to the manufacturer's instructions.
- Remove gloves and dispose of gloves and other used materials in a sealed plastic trash bag. Place the trash bag in a covered trash receptacle outside of child care space.
- Wash your hands using soap and warm running water.
- Allow the affected surface to air dry, restricting children's access to the area in the interim if possible. Children should not have contact with areas that remain wet from a disinfectant.

Supervision:

- Ensure appropriate staff are familiar with proper handwashing procedures, diapering procedures, and illness policies. Ensure staff are trained on how to respond to accidents involving diarrhea and vomit.
- Increase surveillance within the child care facility to identify others with diarrheal illness.
- Eliminate access to water-play areas.

Attendance:

- Children and child care staff with diarrhea should be excluded from day care until they are well. Shigellosis is transmitted easily and can be severe, so all symptomatic persons (employees and children) should be excluded from the child care setting in which *Shigella* infection has been identified, until diarrhea has ceased for 24 hours; and one (1) stool culture is free of *Shigella*. Samples should not be obtained earlier than 48 hours after discontinuation of antibiotics.
- Because *Shigella* can spread most quickly as a foodborne illness, excluded food employees should be reinstated only with written medical documentation showing the food employee is free of *Shigella* infection based on test results showing two (2) consecutive negative stool cultures that are taken at least 24 hours after diarrhea ceases.
- Symptomatic employees, children, and family members should seek medical attention. Antibiotics are sometimes used to treat severe cases or to shorten the time during which the germ can be spread. A physician will determine the best method of treatment for a *Shigella* infection.
- Child care facilities should avoid new admissions when *Shigella* infections have been identified and transmission has been epidemiologically linked to the facility.

Employee Assignments:

- Emphasize handwashing. Because good hand hygiene is the best preventive measure, supervised handwashing after visiting the bathroom and before eating is necessary for all children. Verify all child care staff are familiar with handwashing requirements. Waterless hand sanitizers may also be helpful as an adjunct to washing hands with soap.
- Surfaces and objects should be decontaminated regularly; daily during an outbreak of shigellosis. Utilize the wash, rinse, and sanitize or disinfect procedure to ensure surfaces are free of contamination.
- Staff changing diapers should incorporate the use of disposable gloves into the diapering process.
- Staff preparing food should refrain from changing diapers or assisting children in using the toilet.
- Staff preparing food should not handle ready-to-eat foods with their bare hands.

Training and Resources

Websites:

1. Section for Child Care Regulation: www.health.mo.gov/safety/childcare/
Provides general information to the public regarding child care licensing, as well as, licensing rules for regulated child care.
2. Department of Public Safety's Division of Fire Safety:
<http://dfs.dps.mo.gov/programs/inspections/childcare.php>
Agency responsible for fire safety inspections of child care facilities.
3. Centers for Disease Control and Prevention: www.cdc.gov
Provides information and handouts on healthy swimming, diseases, etc.
4. Environmental Protection Agency: www.epa.gov
Provides information on drinking water quality, lead renovation/repair/painting, etc.
5. Prevention and Control of Communicable Diseases:
https://health.mo.gov/living/families/schoolhealth/pdf/Communicable_Disease.pdf

Acronyms:

BEHS:	Bureau of Environmental Health Services
CACFP:	Child and Adult Care Food Program
DHSS:	Department of Health and Senior Services
ECC:	Environmental Child Care
EHOG:	Environmental Health Operational Guidelines
LPHA:	Local Public Health Agency
PHES:	Public Health Environmental Specialist

Resources:

1. Participation Agreement
2. Sanitation Inspection Guidelines for Licensed Group Child Care Homes, Licensed Child Care Center, and License-Exempt Child Care Facilities
3. Sanitation Inspection Guidelines for Family Child Care Homes
4. Memo for new PHES training
5. Inspection forms
6. Billing forms ([DH 38](#), [DC 38](#), [Late Inspection Reimbursement Request](#))
7. Information Release C1-15 and Educational Handouts are provided in the EHOG Appendix

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Introduction

The Department of Health and Senior Services (DHSS) provides technical assistance to homeowners and Local Public Health Agencies (LPHAs) regarding water sample results and treatment as well as regulates water supplies serving lodging, child care, food establishments, and other facilities under our jurisdiction. Sampling of private and non-community water supplies is an essential part of routine inspections, complaint response, and illness investigations.

Public Health Implications

Specific epidemiologic data for illnesses and injury associated with water supplies in Missouri is not readily available. Historically private water supplies have been associated with the following hazards:

- Microbial: bacteria including shigella, campylobacter, *E. coli*, and salmonella
- Viruses including hepatitis A
- Nitrates
- Heavy metals including arsenic, antimony, cadmium, chromium, and lead
- Organic chemicals from petroleum products, pesticides, and industrial contaminants
- Other chemical contaminants including radionuclides and excess naturally occurring fluoride

A large well water survey conducted in Missouri in the mid 1990's found a correlation between private water supplies with unsatisfactory results and recent diarrheal illnesses. The survey further identified a correlation between improper wellhead construction and unsatisfactory results.

Microbial:

Coliform bacteria occur naturally in soil, on vegetation, and in surface waters such as lakes or streams. They can also be found in the intestines of humans and other animals. The majority of coliform bacteria is not harmful and is used as an "indicator bacteria" in drinking water. If present, contamination of the water has occurred and other disease causing bacteria may be present in the water supply.

E. coli is a member of the coliform group of bacteria and is found only in humans and other warm-blooded animals. *E. coli* in drinking water indicates that it has been recently contaminated with human or animal wastes.

Supplies testing positive for the presence of Coliform bacteria or *Escherichia coli* (*E. coli*) are considered unacceptable for drinking use.

Chemical

The Environmental Protection Agency (EPA) has established and maintains a list of drinking water contaminants and a corresponding Maximum Contaminant Level (MCL). The list is divided into primary and secondary standards. The primary standards include contaminants with substantial public health risks; these maximum contaminant levels are enforceable standards that apply to public drinking water systems. Secondary standards are non-enforceable guidelines that regulate contaminants that may

have adverse cosmetic or aesthetic effects. EPA recommends compliance with both sets of standards, but only enforces the primary standards. Department of Natural Resources and DHSS utilize EPA's maximum contaminant levels as well as risk assessments to evaluate drinking water risks to individuals and the public. DHSS-regulated facilities that operate public or private drinking water sources that exceed EPA's primary drinking water Maximum Contaminate Levels are required to take appropriate actions in order to meet EPA standards. EPA primary and secondary standards can be found at <http://water.epa.gov/drink/contaminants/index.cfm>

Water Supply Types

Department of Natural Resources (DNR) regulations determine if a water supply is considered public or private and the type of well construction required for a particular use. Wells producing water for human consumption are either private domestic wells, multiple family wells, non-community public water supply wells, or community public water supply wells. The determination as to which type of well is required is based on the number of service connections, the number of people served, and the length of time the population is served within a year.

The majority of water samples collected by Department of Health and Senior Services (DHSS) from regulated establishments will be private and non-community water systems.

Public Water System

A public water system is defined as a system with at least fifteen (15) service connections or regularly serves an average of at least twenty-five (25) individuals daily at least sixty (60) days out of the year. This system includes any collection, treatment, storage or distribution facilities used in connection with the system.

A public water system is either a community water system, transient non-community water system or non-transient non-community water system. Any community or non-community public water supply well must be constructed according to Missouri Public Drinking Water rules.

- A Community Water System is defined as a public water system which serves at least fifteen (15) service connections or regularly serves an average of at least twenty-five (25) residents on a year-round basis.
- A Transient Non-community Water System is defined as a public water system that is not a community water system which has at least fifteen (15) service connections or regularly serves an average of at least twenty-five (25) individuals daily on a year-round basis.
- A Non-transient Non-community Water System is defined as a public water system that is not a community water system, which has at least fifteen (15) service connections or regularly serves an average of at least twenty-five (25) individuals daily at least sixty (60) days of the year.

The vast majority of regulated facilities in Missouri utilize public water supplies; either a community supply (city water or rural water) or a non-community supply where a DNR regulated well is on site. Small rural regulated facilities may utilize private water supplies.

Private Wells

Private water supplies are supplies that do not meet the definition of a public water supply. Private water supplies may include individual private wells, multi-family wells, and wells serving small businesses. Private water supplies also include a number of alternative water supplies including roof water cisterns, springs, dug and bored wells and surface water (pond, lake, river).

A Domestic Well is defined as a private water supply well that is constructed to meet minimum standards, is equipped with a pump that does not have the capacity to produce more than seventy (70) gallons of water per minute, and has three (3) or less service connections. A private domestic water supply well producing less than seventy (70) gallons of water per minute regardless of the use is a domestic well.

A Multiple Family Well is defined as a private water supply well constructed for the purpose of serving more than three (3) dwellings, but having less than fifteen (15) service connections and serving less than twenty-five (25) individuals daily at least sixty (60) days out of the year.

Well Drilling Regulations

Well construction has been regulated in the state since 1985 when the *Missouri Water Well Drillers Act*, Sections 256.600 to 256.640 *RSMo* became law establishing well construction standards aimed at protecting Missouri's groundwater. This statute applies to both private and public wells and is administered by DNR.

Prior to installing a private well, the property owner needs to contact a DNR licensed well driller. The well driller provides DNR the location of the proposed well and DNR provides the well driller with an estimated total depth of the well to hit a suitable aquifer and a minimum casing depth. When completed, the well driller is responsible for submitting a drilling report to DNR. Missouri requires private well water sampling for households only during well installation.

Well Construction

Most drinking water wells in Missouri have a heavy pipe, called the casing that lines the well to prevent groundwater from being contaminated by surface or shallow groundwater. The casing is usually six (6") inches in diameter and should extend at least twelve (12") inches above ground level. DNR determines the depth of casing based on the location of the well; in areas with stable consolidated bedrock the depth is generally around eighty (80') feet while in areas with less favorable bedrock the casing depth may be as deep as one hundred twenty five (125') feet. In some areas of the state the casing is required to extend the entire depth of the well.

When a well is being drilled, the hole is dug wider than the casing; typically eight (8") inches for a six (6") inch casing. This void is then filled with cement or bentonite to prevent contamination from traveling down along the casing. Newer wells often have pitless adapters where the discharge pipe from a submerged pump exits through the well casing below ground level deeper than the frost line. This eliminates the need for an insulated or heated well house. The pitless adapter has a watertight seal where it goes through the casing to prevent contamination of the well.

Wells with pitless adapters should have caps on the top of the casing with a tight fitting rubber seal. Other wells have split seal well caps constructed with heavy steel top and bottom plates with a thick rubber gasket in between and a hole for the water line to exit through the top of the well casing. Bolts

in the cap are tightened to compress the gasket and form a watertight seal between the well cap and casing and around the water pipe.

Split seal well caps have openings for the pump power line and vent. The power line should be sealed where it goes through the well cap. The vent pipe should be curved or elbowed to point downward and be protected with a 16 mesh per inch or finer screen. The ground around drilled wells should be graded to slope away from the well with no pooled water near the well.

Sand point or driven wells are common in Southeast Missouri. These are small two (2") inch diameter pipes driven into the ground and are relatively shallow with a common depth of thirty to fifty (30-50') feet and a maximum depth of eighty (80') feet.

A bored well is constructed by using a rotating auger to bore into unconsolidated material such as sand, clay or silt. Their diameter ranges from two to four (2-4') feet and are typically no more than fifty (50') feet deep. Bored wells are usually lined with a concrete casing, which is lowered down the hole in segments. Bored wells are the modern counterpart to hand dug wells and do not consistently produce safe water without treatment.

Private Drinking Water Testing

The Missouri State Public Health Laboratories (MSPHL) tests approximately 7,000 private water samples for bacteria annually. Property owners may submit samples from private wells or other drinking water sources for bacterial testing. Samples must be submitted in collection kits provided by the MSPHL. These kits are available through the Local Public Health Agency or State Regional Health Offices. The ten dollar (\$10) handling fee must be included with the sample or testing will not be performed. This fee is waived for samples collected by public health officials.

[Private Water Sampling Instructions](#)

[Private Drinking Water Bacteriological Form](#)

Bacteriological Analysis

Since it is too costly to test water samples for every possible organism that may cause disease, the coliform group of bacteria are used as an indicator of water quality and to determine suitability for drinking water purposes. Coliforms are a group of bacteria found in the intestines of humans and other animals. Coliforms also occur naturally in the environment, including in soil, on vegetation and in surface waters such as lakes, rivers and streams. Most members of the coliform group do not cause disease. When found in drinking water, coliform bacteria indicate that contamination of the drinking water supply has occurred, and that other disease causing bacteria could also get into the water supply.

Escherichia coli (*E. coli*) is a member of the coliform group of bacteria and is found only in the intestines of warm-blooded animals, including humans. When found in drinking water, *E. coli* indicates the water has been contaminated with human or animal feces. Possible sources of contamination include malfunctioning septic systems, surface water leaking into structural defects in the well's casing or pipes to the house, and runoff from agricultural lots.

Explanation of Possible Laboratory Results

The explanations below describe each of the possible results for the drinking water test and provide an interpretation with regards to the suitability for drinking water purposes:

- Total Coliform and *E. coli* **ABSENT**: Coliform and *E. coli* bacteria were not detected in the sample tested. Sample is considered SATISFACTORY for drinking water purposes.
- Total Coliform **PRESENT**: Coliform bacteria were detected in the sample tested. Sample is considered UNSATSIFACTORY for drinking water purposes.
- *E. coli* **PRESENT**: *E. coli* bacteria were also detected in the sample tested. Sample is considered UNSATISFACTORY for drinking water purposes. Presence of *E. coli* bacteria indicates fecal contamination of the water supply has occurred. An increased risk to the health of those consuming the water may exist, as other disease causing bacteria from feces may have entered the water supply.
- **UNSATISFACTORY FOR TESTING**: Each sample is considered on its own merits. Examples of samples that have to be rejected for analysis include samples that have been collected in improper containers, samples that exceed the holding time (public water supply samples that are received in the laboratory more than 30 hours after collection, or private well samples that are received in the laboratory more than 48 hours after collection), samples that have detectable chlorine present, samples with insufficient quantity (must be 100 ml), inaccurate or incomplete information (such as missing date or time collected) on the accompanying sample information form, or a sample collected from a source other than a drinking water supply. If standard methodology for sample collection and maintaining sample integrity is not followed as explained on the sample collection instruction form, the sample may be deemed unacceptable for testing.
- **INDETERMINANT**: The laboratory technician was unable to determine your sample's test results. This may be due to chemicals or other contaminants in your water sample that interfere with the test. In this case, you are asked to collect and submit another sample for testing.

Chemical Analysis

The Department of Health and Senior Services, State Public Health Laboratory, Chemistry Unit, provides testing for private water supplies in circumstances where public health is threatened. Typically, a New Well Series, Nutrients and Minerals in Water, and Metals in Water are requested.

New Well Series

When a New Well Series is requested the following tests will be performed: pH, Fluoride, Nitrate/Nitrogen, Chloride, Sulfate, Iron, Manganese, and Lead. Water samples must be collected and submitted by a DHSS Public Health Environmental Specialist (PHES) or LPHA PHES for all drinking water supply analysis.

Nutrients and Minerals in Water

When a Nutrients and Minerals in Water is requested the following tests will be performed: pH, Fluoride, Nitrate/Nitrogen, Chloride, Sulfate, and Total Dissolved Solids (TDS). Water samples must be collected and submitted by a DHSS PHES or LPHA PHES for all drinking water supply analysis.

Metals in Water

When a Metals in Water is requested the following tests will be performed: Iron, Manganese, Zinc, Copper, Lead, Cadmium, Chromium, Cobalt, Nickel, Aluminum, Arsenic, Barium, Mercury, Beryllium, Vanadium, Molybdenum, Antimony, Thallium, Thorium, Uranium, Strontium, Tin, Selenium, Titanium, and Lithium. Water samples must be collected and submitted by a DHSS PHES or LPHA PHES for all drinking water supply analysis.

[Chemical Water Sample Collection Instructions](#)

[Chemical Water Testing Form](#)

In instances where private drinking water supply testing is requested but public health is not impacted, testing should be conducted by private laboratories. For a list of private laboratories that are certified by DNR to conduct drinking water analysis, please contact the [DNR Public Drinking Water Branch](#).

Domestic Water Supplies

Domestic water supplies may be public or private supplies. Domestic water supplies serve individuals and families at their homes for drinking, cooking, bathing, and other household uses.

The Department of Health and Senior Services (DHSS) recommends individuals utilizing public water supplies for domestic needs:

- Do not collect or submit water samples for testing. The public water supplier conducts testing of the source and distribution system on a routine basis.
- Follow any and all boil order/advisories issued by the Department of Natural Resources (DNR) or public water supplier.

DHSS recommends individuals utilizing private water supplies for domestic needs:

- Collect and submit water samples annually for microbial testing.
- Assure wellhead construction is in accordance with construction standards for regulated facilities.
- For supplies that are, or may be influenced by surface or shallow groundwater, such as lakes, streams, springs, bored and dug wells, provide microfiltration and continuous disinfection in accordance with standards for regulated facilities.
- If laboratory results are UNSATISFACTORY, shock chlorinate the well and distribution system and do not use water for drinking or cooking purposes until subsequent sampling is SATISFACTORY.
- For supplies with a pattern or history of UNSATISFACTORY laboratory results, provide continuous disinfection.

Some households rely on hauled water as a domestic water supply. These utilize a cistern or tank filled by a tanker truck. The source of water is typically a municipal water supply. Extreme care must be taken to avoid contamination in these systems. The transport truck, onsite storage tank, hoses and fittings must all be sanitized periodically and protected from contamination. The water in these systems should contain at least 0.5 parts per million (ppm) chlorine during transit and storage.

Private water supplies used for domestic purposes are not regulated by DHSS or Local Public Health Agencies (LPHAs). However, DHSS and LPHAs can provide recommendations and technical assistance to individuals using private water supplies in order to promote public health. If a private water supply is linked to or identified as the source of a disease outbreak, DHSS can use [19 CSR 20-20 Communicable Diseases](#) to order the water supply out of service.

Regulated Facilities Utilizing Public Water Supplies

Community water supplies, often called city water or rural water, are routinely tested and assumed to be safe until the Department of Natural Resources (DNR) or water supply company issues a boil order/advisory. The Department of Health and Senior Services (DHSS) does not sample or test community public water supplies.

What is a boil water order?

A boil water order is issued by DNR or DHSS to public water systems when a threat to the public health exists, or is likely to exist, that boiling the water will remedy.

What is a boil water advisory?

A boil water advisory is issued by the water supply company when there is concern that a problem with drinking water may exist, but it has not yet been confirmed. These are most commonly issued for major water main breaks or other low-pressure events where the possibility of contamination intrusion exists.

Boil order/advisories may be issued for the following reasons:

- **Microbiological Contamination.** The imminent threat of or the presence of total or fecal coliform in a water supply as indicated by an UNSATISFACTORY laboratory analysis and/or epidemiologic association of the water with human illness.
- **Low Water Pressure.** Water pressure below 20 psi in any part of the distribution system signals the existence of conditions that could allow contamination of the water supply through backflow.
- **Turbidity.** In excess of 5 turbidity units in any one confirmed unit interferes with the disinfection process.
- **Other Physical Findings.** Some physical findings indicate imminent potential for bacteriological contamination of the water supply.

Water purveyors' may issue a boil water advisory. Boil water advisories shall be treated the same as a boil order issued by DNR and/or DHSS with the same procedures followed. The Bureau of Environmental Health Services (BEHS) shall provide technical assistance and consultation as needed.

DNR will notify BEHS staff when a boil water order is issued and/or lifted. BEHS staff will notify Local Public Health Agencies (LPHAs) and Regional BEHS staff by email. LPHAs should contact all water purveyors in their jurisdiction to assure they have been notified of the order/advisory as well as to assure the water purveyor has notified impacted regulated facilities.

It is recommended that LPHAs develop a process to notify regulated facilities and others of boil orders/advisories and what procedures to follow to assure safe drinking water. Spot checks should be conducted to assure compliance.

Procedures for Treating Water during Boil Order/Advisory

When a boil order/advisory is issued, water may be used for potable uses after boiling or disinfection.

- Boiling. Water shall be boiled vigorously for three (3) minutes prior to use for cooking or drinking; or
- Disinfection. Water shall be chlorinated, retained for thirty minutes and tested to assure a residual of one half to four parts per million free available chlorine.

End of the line chlorinators are prohibited from use to address water disinfection unless specifically approved by DHSS on a case by case basis.

Boil Order/Advisory Procedures for Food Establishments

The owner/operator shall:

1. Voluntary cease operations until the water has been declared acceptable by DNR or DHSS; or
2. Obtain an alternate supply of potable water and/or ice, plus satisfactory methods for handwashing, food preparation, equipment cleaning, and sanitation.
 - A. Handwashing for Food Handlers and/or Public.
 - (1) Standard handwashing policies should be implemented; followed by applying an approved hand sanitizer to clean hands.
 - (2) Use potable water from an approved alternative source or water that has been properly boiled and handled.
 - B. Food Preparation.
 - (1) Produce.
 - (A) Use pre-washed packaged produce.
 - (B) Use produce washed prior to boil order/advisory.
 - (C) Use frozen/canned produce.
 - (D) Wash fresh produce with potable water from an approved alternative source or water that has been properly boiled and handled.
 - (2) Preparation and cooking requiring water, including any reconstitution of liquid concentrates and dried foods.
 - (A) Use only food that was prepared prior to the boil order/advisory.
 - (B) Discontinue sale of prepared foods requiring water.
 - (C) Obtain prepared foods from approved alternate source.
 - (D) Use potable water from approved alternative source or water that has been properly boiled and handled.
 - C. Carbonated and Other Beverages and Ice.
 - (1) For fountain soda, substitute with bottled or canned beverages and turn off water lines to beverage dispensers. Such dispensers shall be completely flushed and sanitized before being returned to service after the boil order/advisory has been lifted.
 - (2) For ice tea, lemonade, and other beverages, use potable water from approved alternate source or water that has been properly boiled and handled.
 - (3) Coffee machines that are directly connected to the water system can be used if the water reaches a boiling temperature for one (1) minute. Otherwise, bottled water from an approved alternative source or other previously boiled water must be used.
 - (4) Discard ice that may have been made with contaminated water. Ice machines must be cleaned and sanitized before being put back in service.
 - D. Utensils and Food Contact Equipment.

- (1) A properly operated manual dishwashing arrangement or properly operating and maintained mechanical temperature or chemical dishwashing machine is satisfactory for cleaning and sanitizing utensils during a boil water order. Facilities may also choose to implement the following:
 - a. Use only single-service tableware and kitchenware.
 - b. Take items to commissary for cleaning.
 - c. Use water from approved alternate source.
 - d. Use waterless cleaning or non-potable water for floors and other non-food contact surfaces.
- E. Garbage Grinders - no change
- F. Toilets - no change, if water pressure is available.
 - (1) If no water pressure is available, use adjacent facilities if possible or provide chemical toilets, such as porta-johns.

Boil Order/Advisory Procedures for Lodging Establishments:

The owner/operator shall:

1. Notify lodging establishment guests, verbally and by written notice prominently placed in each rented guest room, that the plumbed water is not potable and should not be used for drinking and/or brushing of teeth. Additional restrictions for water use may be required by DHSS.
2. Discard ice made from or exposed to contaminated water.
3. Obtain a temporary, alternate supply of potable water using one of the following practices:
 - A. Provide commercially bottled water in each rented guest room and provide additional bottled water to guests upon request;
 - B. Provide bulk water containers, acceptable to DHSS, which are filled from a source acceptable to the DHSS or DNR. Such water shall be treated with an appropriate concentration of residual disinfectant of 0.5-4.0 ppm chlorine to effectively counteract potential contamination that may be introduced between the filling of the container(s) and the dispensing of the water. This water shall be transported and handled in a safe and sanitary manner, which prevents contamination; or
 - C. Other methods approved by DHSS or DNR.

If the owner/operator refuses or fails to follow the procedures referenced above, notification with detailed information shall be made to the DHSS regional staff, which in turn will notify Central Office. DHSS regional staff will evaluate the situation for enforcement actions.

Lifting of Boil Order

When DHSS identifies the water supply may have been contaminated as a result from a minor repair in the system or other incident, DHSS can conclude that permanent measures are not required. In these cases, if the owner/operator disinfects the well and distribution system producing satisfactory sampling results in two (2) subsequent water samples taken at least five (5) days apart, DHSS can lift the Boil Water Order with no further measures required by the owner/operator.

When permanent measures are required to provide a safe drinking water supply, the owner/operator must comply with one of the options below and produce satisfactory sampling results in two (2) subsequent water samples taken at least five (5) days apart before DHSS will lift a Boil Water Order on private water supplies. The owner/operator shall:

1. Provide permanent corrective measure(s) as authorized by DHSS. *Examples include, but are not limited to, drilling a new well, reline an existing well, or removal of dead end water lines;*
2. Provide continuous disinfection that complies with DHSS requirements; or
3. Provide an alternate connection to an adjacent plumbing source of water acceptable to the DHSS and/or DNR, which is protected from contamination and capable of supplying a sufficient quantity of water.

After a Boil Order is Lifted

1. Flush the building water lines and clean faucet screens, water line strainers on mechanical dishwashing machines etc.
2. Purge all water using fixtures and appliances, such as ice machines, beverage makers, produce and seafood misting devices, hot water heaters etc. Clean and sanitize all fixtures, sinks and equipment connected to waterlines.
3. Follow the manufacturer's recommended procedures for:
 - A. Disinfecting water softeners, prior to putting back on line;
 - B. Disinfecting filters or replacing media in small filters on ice machines, water treatment systems, beverage vending machines; and
 - C. Replacing carbon filters or carbon media in filters.

Do Not Drink/Use Orders

Do Not Drink/Use Orders may be issued by DNR or DHSS for the following reasons:

- Chemical or radiological contamination. Chemical or radiological contamination exceeding or the expectation of exceeding the maximum contamination level (MCL) of any constituent as identified in [10 CSR 60-4.010](#) that may pose an acute risk to human health and/or epidemiologic association of the water with human illness.
- Other physical findings. Some physical findings indicate imminent potential for chemical and/or radiological contamination of the water system.

Procedures for Treating Water during a Do Not Drink/Use Order

Due to the nature of a Do Not Drink/Use Order, action and/or corrective procedures will be issued by DNR or DHSS on a case-by-case basis.

Lifting of Do Not Drink/Use Order

Due to the nature of a Do Not Drink/Use Order, actions for lifting the order will be issued by DNR or DHSS on a case-by-case basis.

Regulated Facilities Utilizing Non-community Public Water Supplies

Regulated facilities utilizing non-community public water supplies usually have a well on site that serves the business. Owners of these regulated facilities are required by the Department of Natural Resources (DNR) to collect and submit monthly water samples for bacteriological testing. In addition, the regulatory authority will submit an annual water sample for testing, this is often collected during the routine facility inspection.

If the results of the water sample collected by the regulatory authority is found to be UNSATISFACTORY, the regulatory authority shall report their findings to the [Regional DNR](#) Public Drinking Water Program. DNR has authority over regulated facilities using non-community water supplies, therefore the Department of Health and Senior Services and/or Local Public Health Agencies shall not issue boil orders or recommend chlorinating the well.

Regulated Facilities Utilizing Private Water Supplies

Private water supplies that serve regulated establishments must provide safe drinking water. Bacteriological, chemical and radiological contaminants must be within levels acceptable to the regulatory authority. Supplies deemed unsafe by the Department of Health and Senior Services (DHSS) must not be used as a potable water supply.

Well Construction

Private water supplies are regulated under the jurisdiction of DHSS and must be constructed and located according to the “Missouri Well Construction Rules,” 10 CSR 23-3.010 through 10 CSR 23-3.110 with the following above ground construction components verified by inspection:

1. Well casing must extend a minimum of twelve (12”) inches above grade; and
2. The top of the well casing must be free of openings, which may allow the entry of contaminants.

Well Inspection

The regulatory authority should inspect the private water well, during the routine inspection, but at least annually, for the following:

1. Check well cap and casing for any visible signs of damage, cracking or tampering. Older wells may show signs of corrosion and deterioration. The well cap should be firmly attached to the casing.
2. Observe that the ground surface is graded to drain water away from wellhead. Look for any evidence that water has been pooling around well.
3. Check the space between the well hole and the well casing, this is known as the annular seal, if sealant has shrunk, this could provide a pathway for surface waters to flow downward.
4. Check to see that the vent pipe is elbowed downward and the opening covered with a 16 mesh screen or finer.
5. Assure unprotected openings are sealed. In above ground connections, the electric wire hole, the drop pipe hole and the vent pipe hole may not be adequately sealed, therefore, caulking may be used to caulk around gaps.
6. Assure separation distances from common sources of contamination are maintained.

Private water supplies that are surface water or shallow ground water or are determined by the regulatory authority to be potentially influenced by surface water or shallow groundwater, such as springs, bored and dug wells must be equipped with a treatment system that includes:

- Microfiltration using a filter with a one (1) micron absolute or smaller pore size; and
- An approved continuous disinfection system.

Sampling

1. The regulatory authority shall collect during each inspection, but no less than annually, a bacteriological water sample to be analyzed for the presence of coliform bacteria.
2. When a continuous disinfection system is present, the regulatory authority shall collect at least annually and when deemed necessary a water sample to be analyzed for nitrates. Wells

exceeding nitrate levels of ten (10) ppm must not be used for drinking water; a permanent alternative water supply must be provided.

3. Any water supply may be sampled by the regulatory authority and tested for bacteriological, chemical, or radiological contaminants whenever the regulatory authority believes there is a need for such tests.

Sample Collection Instructions

Response to UNSATISFACTORY Results

In response to an UNSATISFACTORY laboratory result due to total coliform and/or *E. coli*, the regulatory authority shall:

1. Notify the owner/operator and issue a Boil Water Order/Advisory. This shall be done within twenty four (24) hours of receipt of sampling result for total coliform and immediately for results that are unsatisfactory for *E. coli*.
2. Prescribe corrective measures. Additional guidance on water usage for facilities serving highly susceptible populations should be provided.
3. Require the owner/operator to disinfect the well and distribution system.
4. Collect and submit subsequent water samples after the system has been disinfected and chlorine is no longer present in the system.

In response to an UNSATISFACTORY laboratory result, the owner/operator shall:

1. Follow DHSS guidelines on [disinfecting the well](#) and distribution system.
2. Follow any corrective measures given by the regulatory authority.
3. Follow [Boil Order](#) procedures within this manual.
4. Contact the regulatory authority to sample the system after disinfection.

Facilities with a chronic history of UNSATISFACTORY sample results shall be required to implement permanent corrective measures acceptable to DHSS.

If two water samples, collected by the regulatory authority within a twelve (12) month period, separated by at least thirty (30) days, are *E. coli* positive, the well shall be deemed unsafe by DHSS, unless immediate corrective actions can be taken to provide safe drinking water. These corrective actions must be approved by the DHSS.

Disinfection of Private Water Supplies

There are two distinctly different kinds of disinfection; one time shock chlorination to remove contamination from a distribution system and continuous disinfection used to treat supplies that have been determined to be microbially unsafe.

Shock Chlorination of Drilled Wells

Shock chlorination should be done any time a well is newly constructed or repair work is done or if the water testing indicates UNSATISFACTORY results due to the presence of coliform and/or *E. coli* or iron bacteria.

Shock chlorination is not considered a permanent correction method for water sources continually exposed to bacteriological contamination.

Shock Chlorination Procedure:

1. Remove the well cap or vent pipe to allow access to well water.
2. Introduce the [prescribed amount of chlorine](#) down the well casing.
3. Turn on outside hose and rinse down the sides of the well to help circulate the water. Run hose until you smell chlorine, this often takes thirty to forty (30-40) minutes.
4. Open every water outlet in the system, including faucets, sinks, showers, outdoor hydrants, until chlorine is detected.
5. Let chlorine stand in system at least four (4) hours; preferably overnight.
6. Turn on outside hose and run water until the smell of chlorine is gone. This method will keep the septic system from becoming overloaded and from adding too much chlorine to the system.
7. Open all faucets and allow the water to run until no chlorine odor is detected.

Water produced by the well will continue to be considered UNSATISFACTORY for drinking and food preparation until two consecutive samples taken at least five (5) days apart are determined to be SATISFACTORY.

Continuous Disinfection

In cases where a private water supply serving a regulated facility has been deemed unsafe by the regulatory authority, a continuous disinfection system shall be installed. A system may be deemed unsafe due to a pattern of UNSATISFACTORY laboratory results or as a result of being influenced by surface or shallow groundwater.

For many years the only form of continuous disinfection allowed for regulated facilities was chlorination; DHSS will now allow the use of properly designed and operated ultraviolet disinfection units. The design of any regulatory authority required continuous disinfection system shall be approved by the regulatory authority or DHSS prior to installation.

Chlorination

Regulated facilities required to have continuous disinfection that choose chlorination must have systems:

- With a positive displacement pump that injects liquid chlorine into a water line; and
- A retention tank that allows thirty (30) minutes of contact with the chlorine before the water is used.

The pumps are often peristaltic pumps where an impellor with rollers squeeze a flexible tubing. As the pump turns it draws chlorine from a container and injects it through a one way valve into a water line. The pumps are wired with the well pump; when the well pump runs the chlorine injection pump runs. The pumps are adjustable to add more or less chlorine. These systems must deliver water with between 0.5 and 4 parts per million chlorine at all times. One PPM is a good target for pump adjustment.

The retention tanks are sized based on the effective well pump capacity. They are sized to give thirty (30) minutes of contact. Systems that operate with higher flow rates must have larger retention tanks to achieve this contact time. The flow rate of a system (how many gallons per minute of flow would occur

if all water outlets were opened simultaneously) is determined by the pump size and how high the pump must lift water. Submersible pumps used in residential wells are usually between one half and one and one half horsepower and have nominal flow rates between five (5) and twenty-five (25) gallons per minute (GPM). The depth below ground surface of standing water in a well at rest can vary tremendously; from thirty to four hundred (30-400') feet. The same one horsepower well pump will deliver much more water from a well where the static water level is shallow than it will from a well where it must raise the water a greater height. Often when designing chlorination systems the size of the well pump or the static height of water in the well is not known. Measuring maximum flow rate from a water system is difficult (measuring flow from one hydrant or faucet is of no value). The best solution is to install a flow restrictor that will limit flow through the system to ten (10) or fifteen (15) GPM. Once a maximum flow rate is established, the retention tank sizing is determined by multiplying the flow rate times thirty (30). Thus a system with a flow rate of ten (10) GPM will require a 300 gallon retention tank and a system with a fifteen (15) GPM flow rate will need a 450 gallon tank. Retention tanks must be plumbed to fill from the bottom and empty out of the top of the tank. This prevents the tank from operating partly full of air which would reduce holding times.

Regulated facilities with chlorinators will be tested for appropriate chlorine levels weekly by the owner/operator and results should be logged. The supply will be tested for chlorine levels by the regulatory authority during each routine inspection.

Ultraviolet light

The reason the Department has not accepted UV disinfection in the past is because of reliability issues. The bulbs stop emitting the proper amount of UV light before they burn out; the bulbs must be replaced at a set frequency. Also much of Missouri has hard water. If scale builds up inside the glass tube, the UV light passing through it will not be effective. The technology and controls of UV disinfection systems has improved through the years. Systems now have UV light sensors, if the system is not delivering the proper amount of UV light through the water an alarm will sound and it will disable the well pump preventing the delivery of inadequately treated water.

All UV light disinfection systems used for regulated facilities that are required to have continuous disinfection shall comply with NSF/ANSI 55 class A. Systems meeting this standard will be capable of producing at least 40 milliJoules/cm² and have controls that monitor throughput and UV dose delivered. The standard states that the UV sensor must be connected to an alarm, which provides visual and audible indication that the system is not performing and/or terminates the discharge of treated water. The standard of the Department for regulated systems is that both an alarm and termination of the water supply will be present.

These systems will require a level of monitoring and maintenance. Cleaning the sleeve and replacing the lamp on time is essential. Replace the sleeve about every five years and the power supply about every ten years is necessary. The installer will be required to certify that the system and its installation (including prefiltration) complies with NSF/ANSI 55 class A standard.

Training and Resources

[Basic Groundwater Information](#)

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Community Health Assessments

The field of environmental health is broad and covers numerous areas that involve multiple Bureaus and Offices in DHSS as well as other state and federal agencies. Some issues that arise will simply need to be referred to another agency; while others, such as recreational water, vector control, animal bites, and healthy indoor environments may not be addressed by statewide regulation but impact public health.

Local jurisdictions should strive to create comprehensive risk-based environmental health programs in order to best protect public health, to serve the needs of the public, and to meet the objectives of the Ten Essential Environmental Health Services. While some needs may be obvious or mandated by the County Commission, Board of Health, or City Council, the best way for a local jurisdiction to be aware of public health needs is to regularly conduct community assessments. The Bureau of Environmental Health Services (BEHS) highly recommends that local agencies complete an environmental health assessment at least once every three years. A community assessment is mandated for any agency seeking accreditation. Community assessments:

- Identify how quality improvement efforts can address program strengths and gaps.
- Establish optimal standards and measures to provide benchmarks for environmental public health practice improvements.
- Educate participants about environmental public health and the range of services and partners needed to improve public health.
- Increase collaboration and coordination with others in the environmental public health system.
- Identify information and data to document community environmental public health status and resource needs.
- Increase accountability, credibility, and public confidence.
- Educate and orient new or current staff members who are unfamiliar with environmental public health or the Essential Environmental Public Health Services.

BEHS can assist with these surveys and has conducted assessments focused on county wide private water well surveys, failing onsite systems, and food surveys. In addition, BEHS can also conduct community or county wide surveys and provide a community environmental health profile detailing such factors as general demographics, disease trends, water and wastewater infrastructure, recreational uses and specific program function and performance, including evaluating staffing levels and training.

National resources such as the Center for Disease Control and Prevention National Center for Environmental Health (CDCNCEH) and the National Association of City and County Health Officials (NACCHO) are available to local jurisdictions wanting to conduct a self-assessment.

In addition, data is available through the [Environmental Health Data Collection Portal](#) to assist in creating the community environmental health profile and conducting the assessment.

A rather comprehensive survey instrument, which is a product of collaboration between CDCNCEH and NACCHO, is the [Protocol for Assessing Community Excellence in Environmental Health \(PACE-EH\)](#).

[Guidance](#), a self-assessment form, and [complete toolkit](#) utilizing the [Environmental Health Performance Standards](#) as tied into the Ten Essential Environmental Health Services is also available through CDCNCEH.

Healthy Indoor Environments

Healthy indoor environments have become a critical part of overall health in today's society. Missourians on average spend 90% of their time indoors, at home, at work, and at play. While being inside has traditionally been thought of as a safe haven, recent studies have shown that pollutant levels indoors are often much higher than those outside. Recent technology has created more energy efficient buildings, which while good, has also served to trap a wide variety of pollutants in homes, schools, and office spaces with too little fresh air. A heavy reliance on strong chemical cleaners, solvents, and pesticides has increased possible pollutant exposure levels, while improper construction can trap moisture leading to a build-up of biological pollutants such as dust mites, bacteria, or mold. Health effects from these indoor pollutants, ranging from asthma to headaches, to increased cancer risks to death from chemical poisoning, can result. Increasing the risk is the fact that our most vulnerable citizens to disease, children and the elderly, often spend the most time indoors.

For more information on healthy indoor environments consult with your Regional PHES or visit our website for additional information regarding [indoor air](#).

Recreational Waters

Missouri is rich with water. With that wealth comes a multitude of water recreation activities for Missouri citizens and visitors to take advantage. From multi-million gallon water parks with wave pools and slides, to scenic natural rivers and everything in between, there is a water recreation outlet for everyone who lives in or visits Missouri. Though innumerable hours of fun can be had on the various water recreation areas in Missouri, you should be aware that hazards also lurk in the water. Recreational waters can be classified into two general categories; natural waters such as streams, lakes and reservoirs; and controlled areas such as public and semipublic pools, spas and water parks. Each has their own environmental public health and safety concerns. These include:

- **Drowning.** Drowning is a leading cause of unintentional injury-related death for children ages 1–14 years. Non-fatal drowning can cause brain damage resulting in learning disabilities or even permanent loss of basic functioning.
- **Injuries and emergency department (ED) visits.** Injuries linked to pool chemicals accounts for 3,000–5,000 emergency department visits each year. Almost half of the patients are under 18 years of age.
- **Waterborne illness outbreaks.** Nearly 500 disease outbreaks linked to pools, hot tubs/spas, and water playgrounds occurred from 2000 to 2014. The leading cause of these outbreaks is *Cryptosporidium*, a chlorine tolerant parasite.
- **Public pool and hot tub/spa closings because of public health hazards.** A recent study found that 11.8% (1 out of 8) of public pool and 15.1% (1 out of 7) of public hot tub/spa inspections resulted in immediate closure because of at least one identified violation that represented a serious threat to public health.
- **Evidence of pool water contamination.** Sampling of public pool filter water found 59% (95/161) of samples contained *Pseudomonas aeruginosa* and 58% (93/161) of samples contained *E. coli*, an indicator of contamination by feces. Another study of pool filter water found 8.1% (13/161) of samples contained *Cryptosporidium*, *Giardia*, or both.

In addition, an emerging concern with both natural waters and controlled areas is from *Legionella*. Missouri investigates several cases each year related to water exposures. Some facts about *Legionella*:

- *Legionella* can cause Legionnaires' disease or Pontiac fever, collectively known as legionellosis.
- Scientists named the bacterium after an outbreak in Philadelphia in 1976. During that outbreak, many people who went to an American Legion convention got sick with pneumonia (lung infection).

- Health departments reported about 6,100 cases of Legionnaires' disease in the United States in 2016.¹ However, because Legionnaires' disease is likely underdiagnosed, this number may underestimate the true incidence.
- About 1 in 10 people who get sick from Legionnaires' disease will die.²
- People can get Legionnaires' disease or Pontiac fever when they breathe in small droplets of water in the air that contain *Legionella*.
- In general, people do not spread Legionnaires' disease to other people. However, this may be possible under rare circumstances.³
- *Legionella* occurs naturally in fresh water environments, like lakes and streams. It can become a health concern when it grows and spreads in human-made building water systems.

Keeping *Legionella* out of water systems in buildings is key to preventing infection.

The Department of Health and Senior Services has been granted the authority to assure public bathing places meet sanitary conditions and that water quality is satisfactory for bathing purposes under 192.092, RSMo and 19 CSR 20-3.020 *Sanitation of Public Bathing Places*. However, the Bureau of Environmental Health Services has limited resources, therefore no staff are currently designated to this program, though the regional representative is available to assist with questions and concerns and should be consulted during water-borne gastrointestinal or *Legionella* outbreaks.

Public swimming pools and spas associated with lodging establishments are regulated under Chapter 315, RSMo and 19 CSR 20-3.050 *Sanitation and Safety Standards for Lodging Establishments*.

Child care swimming pools are regulated under the *Sanitation Guidelines for Family Homes*, the *Sanitation Guidelines for Group Homes, Centers, and License Exempt facilities*, and by the Section for Child Care Regulation's licensing rules.

Additional guidance on recreational waters can be found at <https://health.mo.gov/safety/recreationalwater/index.php> , www.cdc.gov/healthyswimming/ and www.poolsafely.gov. Other resources include the most recent version of the Model Aquatic Health Code (<https://www.cdc.gov/mahc/index.html>) and Legionella investigation and reference materials (<https://www.cdc.gov/legionella/index.html>).

Local agencies wanting to adopt a local aquatic code or start up a natural water testing program are encouraged to consult with their Regional Public Health Environmental Supervisor for additional guidance.

Vector Control

Local Public Health Environmental Specialist (PHES) staff will likely receive inquiries and complaints related to pests and vectors, including but not limited to rodents, birds, fleas, cockroaches, flies, mosquitoes and bedbugs. Some of these vectors are responsible for millions of deaths and illnesses, therefore a PHES should be familiar with their identification and control methods. Unless pests and/or vectors are infesting a regulated facility, [statewide authority](#) to manage these complaints is extremely limited. In these situations, unless local ordinances apply, a PHES is limited to education and recommended guidance.

Local staff should consult with their Regional PHES if they have questions or concerns on how to manage a situation involving pests/vectors.

Bed Bugs

[Bed bugs](#) are a common pest throughout Missouri, the United States, and many parts of the world. They are excellent hitchhikers and can easily move from place to place on personal belongings such as bags, coats, and other items. Because bed bugs can be picked up so easily, they can be found in private homes, hotels or motels, movie theaters, schools, and many other places within the community.

Although bed bugs are not a new pest, reports and complaints of bed bugs have been increasing. This increase is likely the result of more frequent travel, lack of knowledge about bed bugs and preventative steps, and pesticide resistance of bed bugs. While bed bugs are an inconvenient pest to encounter, the good news is that they do not transmit diseases.

Mosquitos

The mosquito is a highly effective and deadly vector for human disease. This tiny insect has played a powerful role in spreading such communicable diseases as malaria, encephalitis, dengue fever, and, more recently, [West Nile virus and Zika](#). Public health has been a partner with others involved in insect control because mosquitoes may be a nuisance, but they may also be a killer. Mosquito control activities are conducted for economics, agricultural productivity, recreational enjoyment, and livestock health and safety reasons. None of these reasons can trump the most important one of protecting the human population from death and disability from mosquito-borne diseases.

Ticks

In the United States, [ticks](#) are responsible for more human disease than any other insect. Tick-borne diseases are also known as zoonotic diseases. A zoonotic disease is an infectious disease that can be transmitted between animals and humans. Ticks are very effective transmitters of disease because most ticks take blood from a large variety of small and large mammals, reptiles and even birds. In general, ticks must ingest a blood meal before they can molt and move to the next stage in their life cycle. Ticks become infected with a disease-causing agent by feeding on infected mammals or birds. For example, a tick can pick up Lyme disease from a field mouse, and later in its life transmit bacteria to a deer, dog or human.

Many tick-borne diseases have been reported in Missouri: Rocky Mountain spotted fever, ehrlichiosis, tularemia, Heartland virus, Bourbon virus, Lyme or a lyme-like disease and the southern tick-associated rash illness.

Tick-borne diseases are a type of emerging disease, many of them first recognized in the last 30 years. Human case numbers per year for tick-borne diseases are generally on the rise. This upward trend is due to better recognition and disease reporting, but is also a reflection of changes in the environment that fosters increased exposure and transmission to humans. Fortunately, not all ticks are infected, so a tick bite does not necessarily mean you will get a disease.

Animal Bites

[Rabies](#) is a viral disease of mammals and is transmitted primarily through bites. Annually, 7,000 to 8,000 rabid animals are detected in the United States, with more than 90 percent of the cases in wild animals. Rabies is found naturally in Missouri, occurring primarily in bats and skunks, although other animals are also found rabid each year, including domestic species such as dogs, cats, horses, and cattle. The annual number of rabid animals reported in Missouri during the ten-year period 1995 through 2004 ranged from 26 to 59 (average of 40 cases per year). Although rabies is transmitted to humans almost entirely through bites from rabid animals, contamination of open wounds or mucous membranes with saliva or nervous tissue from a rabid animal could potentially constitute an exposure. Rabies in humans is almost invariably fatal. Fortunately, human deaths in the United States have become relatively rare because: (1) effective vaccinations have been available for dogs and cats since the 1950s, (2) public health practices such as animal quarantine and testing are aggressively pursued, and (3) improved anti-rabies shots have been developed for persons exposed to rabies. Many Missourians receive the anti-rabies series of shots each year. The Centers for Disease Control and Prevention (CDC) estimates that 40,000 persons in the United States receive the anti-rabies series of shots annually. Rabies in both animals and humans in Missouri is reportable to the Missouri Department of Health and Senior Services. Tragically, in 2008, a human rabies fatality occurred in Missouri in an individual who did not seek medical advice or treatment following a bat bite. Before this, the last human rabies infection in the state was reported in 1959.

Animals that bite or otherwise potentially expose a human or pet to rabies may be tested for this disease. Testing an animal for rabies requires that it be euthanized, since sections of the brain must be examined for the presence of the rabies virus. LPHA staff should contact the State Public Health Veterinarian or State Public Health Laboratory for more information and testing related to rabies.

Mattresses and Other Bedding

Chapters 421.005-421.038 RSMo provides authority for the Department of Health and Senior Services (DHSS) to regulate the manufacture, renovation, sanitization, labelling and sale of mattresses and other bedding materials, such as sleeping bags, comforters, and pillows. Specifically, the public health concern is that secondhand materials will be used to renovate bedding articles without proper sanitization or labelling and that infectious microorganisms or pests will be transferred to an unwitting buyer. The law is specific that bedding made from secondhand materials be conspicuously labelled with a yellow tag stating “SECONDHAND MATERIALS” with such label not to be removed under penalty of law, except by the consumer.

While unusual, the Department does investigate illegal bedding material manufacturing. A recent example involved a mattress refurbishing firm using renovated materials to make sleeping mats without properly sanitizing or labelling the mats. The Department may embargo such articles of bedding and violation of the law is a Class A misdemeanor.

The law does not prohibit the sale or giving away of used mattresses or bedding materials at garage sales, flea markets, or other second-hand stores. However, various locales around the country have taken steps to prevent these sales, or give-away, of mattresses if sufficient public health cause exists to limit the spread of bed bugs or infectious organisms, and these steps should be considered if necessary through local ordinances. Education to such purveyors may be sufficient. In particular, awareness of disposal of bed-bug infested bedding materials should be taken into consideration at lodging facilities and it is recommended that such materials be kept secured until disposal, denatured, or otherwise tagged or marked to prevent the further spread of bed bugs into the community.

Questions regarding the sell or manufacturing of mattresses within Missouri may be referred to the Bureau of Environmental Health Services and local public health staff should consult with their Regional PHES for further investigation and inquiries into illegal bedding material renovation or labelling.

Frequently Asked Questions/Nuisance Complaints

The frequently asked questions discussed in this section are those in which the Department of Health and Senior Services (DHSS) has no laws or rules granting the authority to regulate. There may be cases, however, where a local ordinance would grant a county, municipality, or another local governmental agency the authority to regulate in these situations. It is essential to be familiar with local ordinances in your jurisdiction to successfully and appropriately answer and/or respond to these frequently asked questions.

1. I am interested in opening a new child care facility or home, who should I contact?

The Missouri Department of Health and Senior Services' [Section for Child Care Regulation](#) will assist potential child care providers in getting started with the initial licensing process. Once the prospective provider has completed an application for licensure, the Section for Child Care Regulation will notify the Division of Fire Safety and Environmental Child Care Program of the provider's need for initial inspections.

2. I am going to open a new lodging establishment, who should I contact? (What do I do?)

If you are planning on opening a new lodging establishment please [contact us](#). There are plans that you will have to submit and an initial inspection will have to be conducted by the DHSS before you open the lodging establishment. DHSS will need to know the name, address information, contact person, and phone number for the establishment.

3. Tenant is complaining about conditions in their dwelling; such as the landlord is not spraying for insects, they have rodent problems, or have no water or other utilities.

Check to see if the county or city has laws they can enforce; DHSS does not have any statutes or rules it enforces concerning this issue. If no local ordinances are available, you can provide the tenant some sound public health advice, talk with the landlord about the complaint, and/or refer the tenant to the Attorney Generals' Office under the Landlord/Tenant Law. That telephone number is (573) 751-3321.

In addition, the Attorney Generals' Office publishes a consumer guide on the Landlord/Tenant Law. This guide can be accessed at <http://www.ago.mo.gov/publications/landlordtenant.pdf>.

4. Citizen is complaining that the house next door is abandoned and ready to collapse; can the health department come out and condemn the house?

Check to see if the county or city has an ordinance allowing another governing body, such as the building department to have inspection and/or condemnation authority; DHSS does not have any statutes or rules it enforces concerning this issue. If no local ordinances are available, you are limited to only providing some sound public health advice.

5. Citizen is complaining about neighboring properties having a buildup of cars, debris and “trash” on his property.

Again, check to see if the county or city has laws they can enforce; DHSS does not have any statutes or rules concerning this issue. If no local ordinances are available, you can provide assistance to encourage the owner to perform appropriate property maintenance. Additionally, if there are issues with rodents and insects in the area as a result of the build-up of debris, you could consider sending the property owner a letter informing them of the rodent and insect harborage conditions that are being created by the build-up of debris and direct them to clean up the property.

6. Citizen is complaining about dogs running loose throughout the neighborhood.

Check to see if there is a county and/or city leash law; DHSS does not have any statutes or rules it enforces concerning this issue. You could also suggest that they call the Humane Society or County Sherriff’s Office in their community.

7. Citizen is complaining about neighbor using/applying herbicides and/or pesticides.

The Missouri Department of Agriculture (MDA), Pesticide Program administers the Missouri Pesticide Use Act and the Missouri Pesticide Registration Act and can respond to complaints related to pesticide use. Missouri Department of Agriculture Pesticide Program can be accessed at <http://agriculture.mo.gov/plants/pesticides/> or (573) 751-5504.

8. Citizen is complaining about an individual improperly disposing of dead animals on private or public property.

The MDA, Animal Health Division responds to reports of dead livestock that have not been properly disposed. The MDA does not dispose of the animals, but will attempt to locate those responsible and see that they properly dispose of the carcasses in a timely manner as required by the Disposal of Dead Animal law. The Division of Animal Health only investigates animals raised for commercial purposes. The Division of Animal Health can be accessed at <http://agriculture.mo.gov/animals/health/deadanimal.php> or (573) 751-4259.

The Division of Animal Health does not respond to reports of dead animals under the Wildlife Code, such as deer or coyotes, or pets, whether confined or stray. If it is a dead wild animal the caller can be referred to their local [Missouri Department of Conversation](#) agent.

9. Citizen is complaining about the neighbor’s dog kennels.

The MDA, Animal Health Division licenses animal care facilities, performs inspections and responds to complaints related to animal care facilities. The MDA, Animal Health Division can be accessed at <http://agriculture.mo.gov/animals/ACFA/> or (573) 751-3377.

10. I want to sell farm fresh eggs. How do I obtain an egg license?

The MDA, Weights and Measures Division, licenses egg producers, dealers, and retailers and also inspects eggs sold in Missouri for quality. Anyone who buys eggs from producers or other dealers or sells eggs must be licensed and renew that license annually. The MDA, Weights and Measures Division can be accessed at <http://agriculture.mo.gov/weights/device/egglic.php> or (573) 751-5639.

11. I want to process meat and/or make beef jerky in Missouri. What are the requirements?

The MDA, Meat and Poultry Inspection Program has jurisdiction over Missouri meat processors. Owners or operators who want to process meat and poultry products including making beef jerky, within the state (intrastate) should contact the Missouri Meat and Poultry Inspection Program at <http://agriculture.mo.gov/animals/health/inspections/> or (573) 751-3377.

Individuals who want to ship meat and meat products across state lines (interstate) should contact the USDA Food Safety Inspection Service in Lawrence, Kansas at (785) 841-5600.

12. I want to process and sell cheese and milk in Missouri. What are the requirements?

The MDA, State Milk Board has regulatory oversight of the manufacturing and grading of dairy products, enforces sanitation and quality standards for manufactured dairy products and provides market testing of all milk at the first point of sale. The State Milk Board licenses milk procurers, manufacturing plants, field superintendents, testers, grades, samplers, bulk milk truck operators and market-testing laboratories. The MDA, State Milk Board can be accessed at <http://agriculture.mo.gov/animals/milk/> or (573) 751-3830.

13. I want to open a tattoo/body piercing/branding parlor. What are the requirements?

Check to see if a local ordinance requiring the inspection and licensing of tattoo/body piercing/branding parlors. If so, follow the requirements of your ordinance. In addition, the Missouri Department of Economic Development, Division of Professional Registration requires licensing of tattoo/body piercing/branding parlors and performs a preopening inspection of the facility as well as random inspections throughout the year.

If you receive a complaint about a tattoo/body piercing/branding parlor contact the Division of Professional Registration, Office of Tattooing, Body Piercing and Branding at <http://pr.mo.gov/tattooing.asp> or (573) 526-8288.

14. I want to open a massage parlor. What are the requirements?

Check to see if you have a local ordinance requiring the inspection and licensing of massage parlors. If so, follow the requirements of the ordinance.

In addition, the Missouri Department of Economic Development, Division of Professional Registration requires licensing of massage parlors and performs a pre-opening inspection of the facility as well as random inspections throughout the year.

If you receive a complaint about a massage parlor contact the Division of Professional Registration Massage Therapy Program at <http://pr.mo.gov/massage.asp> or (573) 751-9268.

15. I want to open a business. Do I need to make the restrooms handicap accessible?

Check to see if you have a local ordinance requiring building permits, construction permits, etc. and refer the individual to the appropriate county/city agency; DHSS does not have any statutes or rules it enforces concerning this issue. Otherwise, the Missouri Governor's Council on Disability may be able to assist the caller. The Missouri Governor's Council on Disability can be accessed at <http://disability.mo.gov/gcd/> or (573) 751-2600. At the federal level, the Department of Justice is responsible for enforcing Americans with Disabilities Act (ADA) requirements and can be accessed at www.ada.gov.

16. Citizen is complaining about the nursing home that their mother is staying in.

The DHSS, Section for Long Term Care Regulation inspects, regulates and licenses long-term care facilities like nursing homes. The Section for Long Term Care Regulation can be accessed at <http://health.mo.gov/seniors/nursinghomes/> or (800) 392-0210.

The phone number to report a complaint is the elder abuse hotline at (800) 392-0210. This number is operational 24 hours per day, 365 days per year.

Lead

Today at least 4 million households have children living in them that are being exposed to lead. There are approximately half a million U.S. children ages 1-5 with blood lead levels above 5 micrograms per deciliter ($\mu\text{g}/\text{dL}$), the reference level at which CDC recommends public health actions be initiated. According to 2012 Missouri blood lead testing data, 4,672 children under the age of 6 who were tested had blood lead levels between 5 and 9.9 $\mu\text{g}/\text{dL}$. 728 children under the age of 6 had blood lead levels equal or greater to 10 $\mu\text{g}/\text{dL}$, CDC's previous level of concern.

In order to evaluate for the presence of lead, conduct lead abatement, provide lead training, or establish lead abatement plans, the appropriate license must first be obtained from the Department of Health and Senior Services (DHSS). Public Health Environmental Specialists that provide professional lead poisoning prevention public health services typically do so as a DHSS-licensed lead risk assessor. To become a lead risk assessor, an individual must have the appropriate background, successfully complete required training, complete an application, and pass a DHSS-administered test. More information is available at www.health.mo.gov/safety/leadlicensing/index.php

DHSS administers the lead licensing program with the Bureau of Environmental Epidemiology. In addition, a lead poisoning prevention program is administered by DHSS with the Bureau of Environmental Epidemiology. Additional information about lead poisoning prevention is available at <http://health.mo.gov/living/environment/lead/index.php>

Revision Dates

Date Revision Posted	Chapter(s) Revised
12/2019	Original Posting
2/2020	Chapter 3
	Chapter 5 and Chapter 6
8/2021	Updated District Map, replaced EPHS with PHES, replaced SCCR with Office of Childhood, and updated telephone numbers throughout EHOG