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Facilities Management
Indoor Air Quality Standard Operating Procedures

SOP #:	EHS-019	Revision: 2
Dept:	Environmental Health and Safety	Date: 04/16/19
Approval:		Date: 04/16/19

1. PURPOSE

Colorado State University-Pueblo is actively concerned with the safety of all faculty, staff, students and guests on the CSU-Pueblo campus. Safety can only be effectively achieved with the cooperation of the entire campus community. The following standard operating procedures is designed to improve indoor air quality at CSU-Pueblo and reduce time required for resolutions.

Complaints about Indoor Air Quality (IAQ) range from simple complaints of comfort issues (too hot/cold/drafty) and odd smells, to more serious perceived and actual health hazards, where the air quality may be suspected of causing illness and lost work time. It may not be easy to identify a single reason for IAQ complaints because of the number and variety of possible sources, causes, and varying individual sensitivities. Nevertheless, CSU-Pueblo is committed to providing its students, employees, and visitors an indoor air free of unhealthful contaminants.

2. RESPONSIBILITIES

2.A. Environmental Health and Safety (EHS) will be responsible for:

2.A.1. Communicating with building occupants concerning IAQ issues or problems.

2.A.2. Maintaining a procedure for documenting and responding to IAQ complaints or concerns.

2.A.3. Maintaining IAQ records such as complaints, resolutions, and documentation of any maintenance.

2.B. All Facilities Department staff will be responsible for:

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2.B.1. Maintaining equipment properly in order to follow the Indoor Air Quality SOP in their respective areas.

2.C. All Colorado State University-Pueblo staff and faculty will be responsible for:

2.C.1. Utilizing the Indoor Air Quality SOP in their respective areas.

2.C.2. Filing IAQ complaints with the Physical Plant and EHS.

3. DEFINITIONS

3.A. AIR QUALITY – A measurement of the pollutants in the air; a description of the healthiness and safety of the atmosphere.

4. PROCEDURES

4.A. If you have an IAQ complaint, but do not have related health symptoms, call the Physical Plant at 549-2211 and report the problem.

4.B. If you have an IAQ complaint and suffer related health symptoms, call Environmental Health and Safety (EHS) at 549-2747 or email david.herman@csupueblo.edu and report the problem.

4.C. Report all water intrusion events IMMEDIATELY to the Physical Plant. To the extent known, include information on the source and approximate quantity, affected areas, water-damaged materials, and whether the source has been controlled. Clean water left for more than 24-48 hours can lead to mold growth. Events involving sewage backflows are very serious. Report the problem IMMEDIATELY and do not attempt to clean or remove affected materials. The Physical Plant and Facilities Department will manage the response.

4.C.1. **Caution:** Electrical shock hazard may exist during water/sewage releases.

4.D. IAQ Investigation and Remediation

4.D.1. In general, investigation and remediation is a joint effort between Facilities, EHS, and the person(s) reporting the problem. If the problem is strictly intrusion of clean water with no other complaints, the remediation will usually be limited to quick and thorough drying of the impacted area. If sewage or contaminated water was involved, some removal activities (i.e., removal of wet carpets, drywall, etc.) may also be implemented to prevent later problems with biological growth.

4.D.2. When a health-related complaint is received, EHS and/or Facilities will conduct an investigation. An IAQ investigation may consist of occupant interviews, on-site physical

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inspection, and non-destructive testing. These steps assist in determining whether the problem is biological or non-biological, building or non-building related, transient or chronic, etc., and in establishing an appropriate remediation strategy.

4.D.3. Most IAQ problems or complaints can be remedied quickly. However, in complex situations (e.g., large areas of fungal growth, multiple causative agents, transient complaints, etc.), it may take more time to reach a resolution. In any case, EHS will make it a point to keep building occupants informed of progress in addressing the situation.

4.E. Possible Non-Biological Causes

4.E.1. Dusts and odors (i.e., paint, tar, etc.) from renovation projects

4.E.2. Pet dander carried on clothing

4.E.3. Animal or bird droppings or insect parts

4.E.4. Off-gassing from new furnishings, carpets, etc.

4.E.5. Dry sewage drain traps that allow sewer gasses to escape (see Preventing Odors from Dry Sink Traps SOP for prevention guidance)

4.E.6. Re-entrainment of vehicle exhaust through building openings

4.E.7. Migration of odors or fumes from other work locations within the building

4.E.8. Inadequate temperature control (outside range of 68-76° F)

4.E.9. Inadequate humidity control (outside range of 20%-60%)

4.E.10. Inadequate air distribution leading to drafty/stuffy rooms

4.E.11. Inadequate lighting or glare

4.E.12. Crowded rooms

4.E.13. Noise and vibration

4.E.14. High concentration of office equipment (i.e., copiers, fax machines, printers, etc.) in small or poorly ventilated work areas

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4.E.16. Personal factors, such as stress at work or home, allergies, etc.

4.F. Biological Growth (Molds and Bacteria)

4.F.1. Molds and their spores are ubiquitous- they are found in all indoor and outdoor environments. They tend to thrive, however, only when there is an available food source and when placed in a warm and moist environment. Mold growth indoors is usually preceded by a water-intrusion event (e.g., broken pipe, infiltration of rain or melting snow, sewer backup, etc.). Porous building surfaces (e.g., carpeting, drywall, ceiling tiles, etc.) and other non-structural material (i.e., paper, books, cardboard, etc.) provide a food source in the form of cellulose.

4.F.2. Fungi in buildings may cause or exacerbate symptoms of allergies, especially in persons who have a history of allergic diseases (such as asthma and rhinitis), immuno-compromised individuals, infants, and the elderly. However, the presence of fungi indoors does not necessarily mean that people will be exposed or exhibit health effects. In order for humans to be exposed indoors, fungal spores, fragments, or metabolites must be released into the air and inhaled, physically contacted (dermal exposure), or ingested. Whether symptoms develop in people exposed to fungi depends on the nature of the fungal material (e.g., allergenic, toxic, or infectious), the amount of exposure, and the susceptibility of exposed persons. Susceptibility varies with genetic predisposition (e.g., allergic reactions do not always occur in all individuals), age, state of health, and concurrent exposures. For these reasons, and because measurements of exposure are not standardized and biological markers of exposure to fungi are largely unknown, it is not possible to determine "safe" or "unsafe" levels of exposure for people in general.

4.G. You can help to avoid IAQ problems in your work area by observing the following tips:

4.G.1. Do not block or shut vents or building returns.

4.G.2. Observe CSU-Pueblo’s Smoking and Tobacco Policy

4.G.3. Do not dispose of food waste or food wrappers in your work area. Dispose of contaminated waste in receptacles that are emptied daily.

4.G.4. Do not over water plants. Remove dead leaves. Break up dirt around the plant to avoid mold overgrowth in the dirt.

4.G.5. Clean-up water spills immediately.

4.G.6. Report water intrusion and sewage problems IMMEDIATELY to the Physical Plant (549-2211).

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4.G.7. Minimize accumulations of paper, cardboard, and other cellulose-based materials.

4.G.8. Clean your work area routinely. Remember, Custodial Services does not clean horizontal surfaces.

4.G.9. When possible, avoid concentrating electronic office equipment within offices or other small or unventilated locations.

4.G.10. Limit scent-producing materials in the work area.

4.G.11. Avoid portable humidifiers.

4.G.12. Contact the Physical Plant to remediate any insect or rodent infestations.