Iowa Green Brewery Certification

Iowa Waste Reduction Center | University of Northern Iowa

Environmental Plan

Facility Equipment and Process Lines, HVAC Ductwork and Plumbing Line Inspection Documentation

Purpose: By identifying and regularly inspecting equipment and process lines, HVAC ductwork and plumbing lines, inefficiencies or leaks can be identified and repaired. Documentation creates and increases employee awareness.

Process: The facility shall first identify and document equipment and process lines, HVAC ductwork and plumbing lines present at the facility (**Form 1**). Once this initial list is created, the facility shall follow the directions below to complete and document quarterly inspections (**Form 2**). Any repairs made to fix leaks or replace insulation should be recorded on the repair log (**Form 3**).

Quarterly Inspections:

1. Inspect HVAC equipment filters and coils. Clean debris from coils and replace filters per manufacturer specifications or as needed. Document inspections and filter changes.
2. Inspect facility plumbing (i.e., water, wastewater, sewage) and process lines (i.e., compressed air, CO2) for leaks. Process lines can be inspected using a leak detection spray at connections, fittings, elbows, etc. Document inspections and record any maintenance activities, including repairs.
3. Inspect refrigerant and facility process lines for proper insulation. Ensure all required lines are properly insulated and repair/replace any torn or missing insulation. Document inspections and any insulation repairs.
4. Inspect HVAC ductwork for leaks. Repair/replace any leaking or damaged ductwork. Document inspections and any ductwork repairs.

Form 1: Equipment and Process Lines, HVAC Ductwork and Plumbing Line Inventory

Identify and document equipment and process lines, HVAC ductwork and plumbing lines present at your facility.

List Facility Equipment and Process Lines to be Inspected	Location

Form 2: Quarterly Process Line, HVAC and Plumbing Inspection Form

Date:_____ **Inspector Name**:_____

This form may be copied and used each quarter.

HVAC Equipment Filters and Coils	**YES**	**NO**	**Repairs Made**
Are all coils clean and free of debris?			
Are all filters clean?			
Have any filters been replaced as a result of this inspection?			
Plumbing and Process Lines	**YES**	**NO**	**Repairs Made**
Are plumbing lines free of leaks (using leak detection spray)?			
Are process lines free of leaks (using leak detection spray)?			
Have any leaks been identified as a result of this inspections?			
Refrigerant and Process Lines	**YES**	**NO**	**Repairs Made**
Are all required process lines and plumbing properly insulated?			
Has any insulation been added or repaired as a result of this inspections?			
HVAC Ductwork	**YES**	**NO**	**Repairs Made**
Is the ductwork free of damage or leaks?			
Has any ductwork been repaired as a result of this inspections?			

Form 3: Repair Log

Date	Location of Equipment, Filter, Process Line, Plumbing or Ductwork	Description of Repairs Made

Operational Efficiencies Documentation and Procedures

Purpose: Implementing and using energy efficiency strategies for projects and equipment will allow the facility to reduce energy usage. Documentation creates and increases employee awareness of alternative efficiency opportunities.

Process: The facility shall first identify and document the following (as applicable) (**Form 4**).

- Energy efficient equipment (i.e., HVAC units, water heaters, appliances, electronics, TV's, etc.)
- CFL/LED lighting usage
- Heat recovery activities (i.e., reuse of hot water, use of heat exchangers, etc.)
- Protocols for turning off lights and/or the use of motion sensors or timers for lighting
- Protocols for shutting down equipment
- Use of renewable energy
- Energy efficient exterior windows and doors

Employees shall be trained on these processes and energy efficiency strategies. The list created by the facility (**Form 4**) shall be reviewed and updated on an annual basis.

Form 4: Energy Efficient Equipment and Process Log

Energy Efficient Equipment or Process	Location and Directions to Maintain Efficiency

Optimal Operating Temperatures

Purpose: Operating equipment at optimal temperatures will allow the facility to reduce energy usage. Documentation creates and increases employee awareness.

Process: List all equipment with temperature controls (thermostats, hot water heaters, boilers, etc.) and document the optimal operating temperatures (according to manufacturer's specifications or brewery process knowledge) (**Form 5**).

Employees shall be trained on the optimal operating procedures and temperatures. The list created (**Form 5**) by the facility shall be reviewed and updated on an annual basis.

Form 5: Optimal Operating Temperature Log

Equipment Temperature Control Description	Location	Optimal Temperature

Process Water and Wastewater Management Practices

Purpose: Reusing or recycling of process water reduces the overall water usage by the facility. Eliminating solids from the wastewater stream lessens the burden on the wastewater treatment facilities and decreases the facilities environmental footprint.

Process: The facility shall identify and document processes or projects to reuse and recycle process water (i.e., cleaning, watering, etc.) (**Form 6**) and procedures used to reduce solids (yeast, grain, hops, etc.) in the wastewater discharge (i.e., steeping/filtering, hand removal/cleaning, destroying yeast by temperature control, use of grease trap, etc.) (**Form 7**).

Employees shall be trained on the reuse and recycling of process water and solids reduction efforts. The lists created (**Form 6 and 7**) by the facility shall be reviewed and updated on an annual basis.

Form 6: Process Water Reuse/Recycling Procedures

List any procedures in place to reuse process water.

Procedure	Description	Estimated % or Volume Reused or Recycled

Form 7: Policies/Procedures to Reduce Solids in Wastewater Discharge

List any policies or procedures used to reduce the amount of solids in the wastewater discharge.

Procedure	Description	Estimated % or Volume Reused or Recycled

Solid Waste Management and Recycling Plan

Purpose: Documentation and monitoring of solid waste and reduction/management/diversion efforts will allow facilities to reduce their impact or footprint in landfills. Documentation creates and increases employee awareness of diversion options and strategies.

Process: Create, implement and document a recycling plan for traditional recyclable materials (i.e., paper, cardboard, plastics, metal (aluminum or steel cans), glass, etc.), non-traditional recyclable materials (i.e., pallets, ink cartridges, drums/totes, etc.) (**Form 8**) and for spent grain (**Form 9**). Additional efforts made to reduce the amount of material being disposed of in the landfill (including the use of reclaimed materials) should be documented in **Form 10.**

Employees shall be trained on recycling and solid waste management procedures. The lists created (**Form 8 and 9**) by the facility shall be reviewed and updated on an annual basis.

Form 8: Traditional and Non-Traditional Materials Recycling Plan

List all traditional or non-traditional materials that are being recycled and the process for doing so (i.e., storage, disposal management, etc.).

Material	Recycling Process

Form 9: Spent Grain Diversion Plan

List the procedures and protocols in place for spent grain diversion from landfill.

Hauler or Disposal Method	Frequency of Pickups	Quantity	How It Is Used	Special Considerations

Form 10: Solid Waste Management/Reduction Processes or Projects

Date	Description of Solid Waste Management or Reduction Process or Project	Estimated Reduction in Pounds

Annual Waste Audit

Purpose: A waste audit helps a facility estimate the type and amount of waste generated as well as examine current waste management practices and costs. Information gained from the audit can help a facility implement new or change current waste reduction or recycling efforts.

Process: A waste audit should be conducted annually to evaluate and review current policies and procedures related to the various waste streams at the facility.

A waste audit may include but is not limited to:

- Determining the types of waste and the amounts being generated at your facility
- Determining the effectiveness of current waste management strategies
- Evaluating product inventory
- Reviewing water usage/efficiency strategies
- Reviewing current employee training procedures related to waste management efforts
- Tracking cost savings and revenue generation
- Creating goals for the year

Documentation of Annual Waste Audits

Date	Conducted by	Findings

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Each brewery that was provided with an environmental audit and recommendations to improve efficiencies and lessen overall environmental footprint can record improvements and updates on the following log. Certification lasts for two years unless a brewery requests additional services. Please let the IWRC know of improvements and/or updates that have been made to strengthen Iowa Green Brewery Certification scoring.

- **Bronze Level - 65-75 points**
- **Silver Level - 76 - 85 points**
- **Gold Level - 86+ points**

Improvements and Updates Log

Description of Improvements or Updates	Date

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