



ENVIRONMENTAL POLICIES AND MANAGEMENT 2024



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**PHOENIX COLOR IMPLEMENTS A
COMPREHENSIVE ENVIRONMENTAL PLAN IN AN
ONGOING EFFORT TO REDUCE CONSUMPTION OF
RESOURCES AND CONDENSE OUR OVERALL
ENVIRONMENTAL FOOTPRINT.**



Phoenix Color

A Division of Lakeside Book Company

INVESTMENTS IN UV/LED PRINTING

- Converted UV Presses in both facilities to UV/LED to further reduce VOC emissions and use significantly less energy
- Installed Paper Sheeting capabilities at Terre Haute, IN plant; on-site sheeting and the close proximity of Terre Haute to major book binderies reduces trucking miles by over 130,000 per year.
- Estimated Annual Savings of 1,092,862.53 kWh between both facilities, as outlined below:

DATE	PROJECT	ANNUAL ENERGY SAVINGS (kWh/yr.)
3/12/19	Replaced old CD-4 UV Press with new 640-2 LED Press	96,226.85
3/12/19	Installed new 440-1 Press, which prints on smaller sheet	260,022.68
3/12/19	Replaced old HID curing system on 240-1 Press with more efficient UV/IR curing system	212,700.00
4/5/19	Replaced old CD-5 UV Press with new 640-1 LED Press	99,170.50
1/4/21	Replaced old 840-3 UV Press with new 840-3 LED Press	414,357.20
11/17/21	Replaced old Casemaker with New Casemaker	13,763.60
11/29/22	Replaced old Casing-In Line with new Casing-In Line	2,621.70
TOTAL ENERGY SAVINGS/yr.		1,092,862.53 kWh

LIGHTING SYSTEMS

- T-5 lights replaced the Metal Halide lights
- When the bindery was built, we continued the practice of daylight harvesting through skylights and windows. Not only do the LED lights in the bindery have smart motion sensors, they are also equipped with photo sensors that detect daylight from above that prevent the light from turning on unnecessarily.
- 100% of street and parking lights (Metal Halide & HPS) converted to LED
- 100% of t8 fluorescent office fixtures converted to LED (approx. 3,600 lamps)
- 100% of T-5 high bay fluorescent fixtures replaced with high bay LED fixtures
- Fluorescent to LED typically yields about a 70-75% energy savings

CHILLED WATER PLANT WITH COOLING TOWERS

- Installation of 800 ton centrifugal chiller and large heat exchanger giving us "free cooling" capacity in the cooler months
- Installing VFDs on all 5 Air Handler Units as well as the eight (8) chilled water and two (2) boiler pumps. The outdated pneumatic control system was replaced with a Trane BAS (Building Automation System). The custom efficiency BAS program took control of the entire system.
- Integration of much of our process cooling load. Instead of operating and maintaining many individual split system refrigeration units at the presses, we installed heat exchangers at the presses and use the more efficient Chilled Water Plant to provide this cooling load and we continue this process today with each press install.
- Install of a new Trane 400 ton air cooled chiller. The 800 ton water cooled chiller is efficient with large loads associated with warmer temps. When comfort and process cooling needs and ambient temps fall, the air cooled chiller is more efficient. The BAS programming was then updated to automatically choose between 4 different cooling modes to produce the most energy efficient result based on cooling load and ambient weather conditions. Modes are; Water Cooled, Air Cooled, Free Cooled, and Mechanical Assist.
- In-house audits to our house compressed air system for leaks and efficiency
- Installation of controls that activate/deactivate air compressors based on efficiency and demand



ENERGY REDUCTION CONT'D.

HVAC

We conduct annual HVAC tune-ups on all rooftop cooling units. Tune-ups include cleaning the evaporator and condenser coils, correcting refrigerant and replacing filters, as needed and verifying improvements for maximum efficiency, airflow and performance. Phoenix Color is able to save in energy costs each year, while still meeting production demand. These tune-ups also contribute to a boost in employee comfort throughout the plant.

DATE	PROJECT	ANNUAL ENERGY SAVINGS (kWh/yr.)
ANNUALLY	HVAC tune-up	11,474.00
	TOTAL ENERGY SAVINGS/yr.	11,474.00 kWh

Phoenix Color implements a comprehensive recycling program for all waste from nearly every material used in the manufacturing process. As a result of our aggressive recycling program, we have succeeded in reducing the amount of non-recycled materials by 75% in the last five years. Approximately 98% of all waste that leaves our facilities is recycled. We maintain ongoing efforts to reduce the amount of waste generated throughout the manufacturing process. In 2023, we recycled approximately 8,000 lbs of electronics and 450lbs of lightbulbs, alone. The chart below shows recycled waste from both Pressrooms, year-over-year from 2022-present:

PRESSROOM RECYCLING TONNAGE BY MONTH – MARCH 2022 TO PRESENT				
MONTH	2022	2023	2024	TOTAL
JANUARY	N/A	482.50	445.06	927.56
FEBURARY	N/A	391.80	412.34	804.14
MARCH	339.40	526.3	430.68	1,296.47
APRIL	487.79	379.58	461.78	1,329.15
MAY	708.24	397.54		1,105.78
JUNE	511.93	373.19		882.12
JULY	492.60	385.17		877.77
AUGUST	486.46	485.47		971.93
SEPTEMBER	469.85	428.15		898.00
OCTOBER	483.90	413.51		897.41
NOVEMBER	426.99	315.05		742.04
DECEMBER	381.79	354.37		736.16
TOTAL	4,788.95	4,932.72		11,471.53

WASTE WATER POLICY AND MANAGEMENT

Phoenix Color discharges waste water to the Hagerstown Wastewater Treatment Plant known as the POTW (publicly owned treatment works) and by doing so is required to operate within its Industrial Wastewater Discharge Permit; permit # 021-4.

PERMIT PROHIBITIVE STANDARDS

The following pollutants shall not be introduced into the POTW:

- Pollutants which create a fire or explosion hazard in the POTW, including but not limited to, waste streams with closed cup flashpoint of less than 140°F using the test methods specified in 40 CFR 261.21;
- Pollutants which will cause corrosive structural damage to the POTW, and discharges with pH lower than 5.5 or greater than 10.0
- Solid or viscous pollutants in amounts which will cause obstruction to the flow in the POTW resulting in interference. Such pollutants include, but may not be limited to, ashes, cinders, mud, straw, shavings, metal, glass, rags, feathers, tar, plastic, wood, paunch, or manure;
- Any pollutants, including oxygen demanding pollutants (BOD, etc.) released in a discharge flow rate and/or pollutant concentration that will cause interference with POTW;
- Heat in amounts that will inhibit biological activity in the POTW resulting in interference, but in no case heat such quantities that the temperature at the POTW Treatment Plant exceeds 40°C;
- Toxic pollutants which may interfere with any wastewater treatment process, constitute a hazard to humans or animals, pass-through the POTW and pollute waters of the State, or contaminate the sludge so as to restrict the disposal option(s) selected by the POTW;
- Petroleum oil, non-biodegradable cutting oil, or products of mineral oil origin in amounts that will cause interference or pass through; and
- Pollutants which result in the presence of toxic gases, vapors, or fumes within the POTW in a quantity that may cause acute worker health and safety problems.



WASTE WATER POLICY AND MANAGEMENT CONT'D.

Phoenix Color is required to sample waste water twice/year and forward the test results to the COH (City of Hagerstown) Wastewater Division. These samples are collected by Fredericktowne Labs during the 2nd and 4th quarter of each year. This data will be reviewed by the EHS Supervisor.

WASTE WATER SOURCES

Waste water comes from the following processes at the facilities:

- Film Lamination
- Die-making
- Screen cleaning
- Sanitary Waste (restroom, employee showers, cafeteria, etc.)
- RO Backwash
- Air Compressor Condensate
- Non-Contact Cooling Water

STORM WATER MANAGEMENT

Phoenix Color operates under a “No Exposure Certification” that allows Phoenix Color to be excluded from Storm water Permitting. This means that under no circumstance should materials enter the storm drains outside of the facility.

WATER USAGE CONTROL

Phoenix Color has installed a well to offset the amount of city water that is consumed on a daily basis so that additional water usage charges are not incurred.

TRAINING

Phoenix Color employees receive training on wastewater during their pre-employment orientation, throughout the year via toolbox talks and also during their annual OSHA/RCRA trainings.

This policy will be reviewed annually by the EHS Supervisor.

AUTO COUNT SYSTEM

Installation of an Auto Count System, manufactured by EFI, allows us to track and report all manufacturing waste and efficiencies, significantly increasing materials accountability throughout the printing process. Over time, this investment has allowed us to reduce the amount of materials input into the manufacturing process, further reducing our carbon footprint.

AIR EMISSIONS POLICY AND MANAGEMENT

AIR EMISSIONS POLICY

Phoenix Color operates within its State of Maryland Department of the Environment Operating Permit; permit #043-0344 regulations by assessing chemicals that are allowed into the facility and by continually monitoring emissions through our rolling 12 month Emissions Tracking System. As part of the annual TAP certification requirements, Phoenix Color performs annual TAP (toxic air pollutant) analysis, which demonstrates HAP (hazardous air pollutants) /TAP emission rates are compliant with MDE standards.

AIR EMISSIONS SOURCES

The leading sources of emissions at the Phoenix Color facilities are sheet fed presses, silk screen printing presses and boilers. Phoenix Color currently operates 12 sheet-fed presses, 4 silk screen machines and 2 boilers. The following chemicals contribute to air emissions:

- UV Ink
- UV Coating
- Fountain Solution
- Alcohol Substitute
- Blanket Wash
- Cleaning Solution

AIR EMISSIONS MANAGEMENT

Phoenix Color intends to continue purchasing state-of-the-art UV and LED platform presses which reduce emissions from the facility. We also strive to reduce chemical waste from our UV coatings, ink, fountain solution and cleaning solution. We work closely with our vendors to ensure substitution of those with a lower VOC output, whenever they become available. Emissions data will be reviewed quarterly by the Phoenix Color EHS Supervisor and the results will be communicated to employees.

To ensure that all new equipment and expansions are permitted properly, all capital purchases which will impact the facilities air emissions are reviewed and signed off on by the environmental coordinator first.

TRAINING

Phoenix Color employees receive training on chemicals and air emissions during their pre-employment orientation, throughout the year via toolbox talks and also during their annual OSHA/RCRA trainings.

This policy will be reviewed annually by the EHS Supervisor.



MOLD PREVENTION POLICY AND MANAGEMENT

Phoenix Color prevents mold by keeping the facility clean, eliminating excess moisture and conducting mold testing annually.

Controlling moisture in our facility is essential. This means finding and fixing any sources of moisture, be it broken pipes, leaking toilets or high humidity.

Relative humidity (RH) is a measure of the amount of moisture in the air relative to the maximum amount the air can hold at that temperature.

Relative humidity should be between 30% and 50%.

TIPS FOR CONTROLLING MOISTURE

There are several things we can do every day to reduce moisture, prevent mold and improve indoor air quality:

- Maintain indoor humidity levels (RH) between 30% and 50%
- Use dehumidifiers (or reduce our use of humidifiers)
- Promptly repair leaky roofs, pipes and soffits
- Have any water damage attended to immediately
- Ensure that all bathroom exhaust fans are clean and that they vent directly outside of the facilities
- Add mold inhibitors to paint or use anti-fungal paint
- Ensure a properly functioning ventilation system and sufficient air flow to minimize moisture

HOW AIR EXCHANGE AND REGULAR CLEANING PREVENT MOLD

Indoor air contains a high concentration of contaminants, so it's necessary we work to keep a sufficient air exchange rate with the outdoors.

An efficient ventilation system will reduce the concentration of contaminants and ensure a healthier, mold-free indoor environment for our workers and our guests.

In addition, getting rid of dirt, debris and other sediment and ensuring a clean facility can significantly reduce our chances of developing a mold problem.

By cleaning regularly, we will also more likely to notice signs of mold growth such as wall and ceiling tile discoloration, black spots and water stains (see more below).



MOLD PREVENTION POLICY AND MANAGEMENT CONT'D

COMMON SIGNS OF MOLD

We can catch mold problems in their earliest stages by watching for the following signs:

- Black spots on walls
- Musty, earthy odors
- Water stains
- Discoloration of walls, floors or ceilings
- Peeling, bubbling, or cracking of paint
- Condensation on windows, walls or pipes
- Rotting

MOLD TESTING

Phoenix Color conducts mold and air quality testing annually to ensure that there are no signs of mold or other air quality issues within the facility.

REMEDIATION

In the event that mold is detected in the facility, it shall be reported to the Maintenance Department and the appropriate actions will be taken to remediate the issue.

This policy will be reviewed annually by the EHS Supervisor.

CERTIFICATIONS AND PRODUCT TESTING

SFI CERTIFICATION

Phoenix Color is SFI® (Sustainable Forestry Initiative) certified. This certification was obtained in 2007 and is subject to annual audits to ensure compliance.



FSC CERTIFICATION

Phoenix Color is FSC® (Forestry Stewardship Council) certified. This certification was obtained in 2007 and is subject to annual audits to ensure compliance.



CPSIA

Phoenix Color requires all of our suppliers to provide documentation that raw material conforms to CPSIA (The Consumer Product Safety Improvement Act) regulations for lead and phthalate content. In addition, we regularly test finished products, the results of which easily meet all CPSIA standards for children's books.