St. Aloysius' College Jabalpur

Environment Audit Report

2024-2025

Environmental Audit

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The Environmental Audit Report for St. Aloysius College for the academic year 2024-25 is prepared by Dr. Laxmikant Pandey (Head of Biotechnology), Dr. Priyanka Sinha (Head of Zoology), and Dr. Smarika Lawrence (Head of Chemistry). The report details the college 's environmental initiatives and protocols , focusing on water purity , air quality , microbial evaluations , and hazardous waste management . It demonstrates the college's compliance with environmental safety standards and its commitment to a sustainable academic environment . The audit has been submitted to Awaneesh Nema and Associates for review.

DR. FR. J. BEN ANTON ROSE
PRINCIPAL
St. Aloysius College (Autonomous)
JABALPUR - 482001 (M.P.)
INDIA

HEAD
Department of Biotechnology
St Aloysius (Autonomus) College
Jabalpur (M. P.)

HEAD
Department of Zoology
St. Aloysius Autonomous College
JABALPUR (M. P.)

Head of the Deptt. of Chemistry
St. Aloysius' College,
JABALPUR.

ENVIRONMENTAL AUDIT REPORT

The ecosystem, comprising flora, fauna, and humans, forms an intricate web of interdependencies, ensuring mutual survival. This balance is threatened by global warming, a consequence of escalating temperatures. Such climatic shifts can induce severe environmental modifications, directly influencing human health. These changes encompass rising sea levels, altered precipitation patterns, heightened drought and flood risks, and biodiversity threats. Notably, nations least responsible for global warming face the gravest health and livelihood repercussions.

"Environmental audit" is a comprehensive assessment targeting systemic environmental compliance shortcomings, offering rectification strategies. This audit scrutinizes both internal and external environmental policies, gauging their impact on fostering an eco-friendly milieu. Such audits are instrumental in pinpointing energy and water consumption patterns, facilitating resource optimization and cost-saving. Additionally, they aid in waste management by identifying waste types and volumes, thereby enhancing waste reduction or recycling initiatives.

Recognizing the urgency of addressing environmental challenges, St. Aloysius College has proactively engaged in environmental conservation endeavors. As a premier academic and research institution, the college's foundational strategies revolve around addressing on-campus environmental issues. This commitment is evident in their preliminary environmental assessment, which serves as a precursor to broader sustainability initiatives. Following a rigorous self-assessment, the college has identified key environmental focus areas, ensuring a sustainable campus for future academic cohorts.

St. Aloysius‟ College has orchestrated several environmental activities, emphasizing sustainable practices and awareness:

Solid Waste Management via Vermicomposting:

- Two vermicomposting pits (4' x 3') were utilized.
- 110 kg of organic waste was processed, yielding 55 kg of vermicompost in 2024-25.
- An internship training on “Vermicomposting as Sustainable Practice for Solid Waste Management in Jabalpur city” was conducted from January 5th to April 5th, 2025.

Environmental Awareness and Plantation Initiatives:

- A rose plantation event, involving UG, PG students, and faculty, resulted in the planting of over 80 rose plants on September 29, 2024.
- NSS organized a tree plantation involving 25 students on Environmental Day, June 5, 2025.
- Parthenium awareness programme by nature club on 22 august 2024.

Eco Fest :

- Organized on January 21, 2024, focusing on the theme 'Science and Environment', it included poster making and waste repurposing competitions.

Water Pollution Awareness:

- A certificate course in water quality monitoring by department of Microbiology from the first week of August 2024.

NSS Initiatives:

- NSS Day was celebrated with a college campus clean-up on September 24, 2024.
- Swachata rally on 23rd September 2024 for proper waste management awareness.

Educational and Awareness Sessions:

- A guest lecture on Water Analysis and Water Testing" was held on February 4, 2025.
- On 1st march 2025 the department of Zoology organized an educational visit for PG students to Dumna Nature Reserve, Jabalpur.

Wildlife and Biodiversity Conservation:

- The department of Zoology hosted Zoo carnival 2024 as part of the wild life week celebration from 1st October 2024 to 7th October 2024.

Community Engagement:

- A skit on cleanliness and tree plantation was organized in Bargi Village, promoting environmental management.

Creative Environmental Advocacy:

1. A collage competition themed „Only one Earth" was held on October 8, 2024.
2. World Earth Day was commemorated with a plantation program on April 22, 2025.

3. Poster making, essay writing, and plantation were organized on World Environment Day, June 5, 2025.

Protocol for Hazardous Waste Management in Laboratories

1. Biological Waste Management:

a. **Management of Liquids with Biohazardous Agents:**

- Liquids are collected in containers that are leak-proof, such as specialized flasks or bottles.
- For steam sterilization, containers resistant to autoclaving temperatures are employed.

b. Management of Solid Biohazardous Waste:

- Non-sharp, solid waste (e.g., used plastic cell culture flasks, petri dishes, tubes, gloves) potentially contaminated with viable biological agents is accumulated in designated waste plastic bags.
- Laboratories producing significant volumes of agar gel in disposable containers use specific waste plastics. Autoclavable bags containing such waste can leak during and post-sterilization.
- Post-autoclaving in the college, waste is double-bagged and sealed securely for appropriate disposal.

a) Chemical waste Management

1. The effluent water from the departmental outlet is treated for sedimentation by alum and then decanted
   to treat with baking soda.
2. All requirements in Volumetric/Physical/ Organic experiments have been downscaled to minimum
   usage of reagents.
3. Many experiments have been replaced by Green Methods or steps to prevent environmental pollution.
4. The department has been promoting micro level reagent usage in Inorganic/ Organic Mixture Analysis
   to minimize the effluent output from the department.
5. Inflammable reagents and chemicals have been replaced by less hazardous ones in the laboratory.
6. Inflammable/ Expensive reagents are collected in separate containers and then are distilled and purified for reuse.
7. Stress is laid on preparation of non toxic products in experiments.

This protocol ensures the safe and efficient management of hazardous waste in laboratory settings, minimizing risks and environmental impact.

Air Quality Microbial Assessment at St. Aloysius College, Jabalpur

In the controlled laboratory environments of St. Aloysius College, Jabalpur, a comprehensive "Air Quality Microbial Assessment" was undertaken. The primary objective was to ascertain the presence and diversity of airborne microorganisms, particularly fungi, which can pose potential health hazards. Air, being a significant reservoir for various microorganisms, requires consistent monitoring to ensure the safety and health of the individuals working within these environments. The assessment revealed the presence of diverse fungal species. Each species was meticulously isolated, identified, and categorized based on its morphology and potential pathogenicity. While the presence of multiple fungal species underscores the need for regular air quality checks, it was reassuring to note that none of the isolated fungi were identified as pathogenic. However, continuous monitoring is imperative to preemptively address any potential hazards and ensure a safe working environment.

Rain Water Harvesting

The department of Chemistry has set up Rainwater harvesting on the terrace since more than 25 years. Rainwater is collected during the rainy season and stored in 1000 liters overhead tanks. The collected rain water is tested for presence of ions and has been repeatedly found as negligible. The collected water is used as distil water for reagent preparation at the UG level. This rain water collection has helped in saving 10% electricity in the department.