

# ENVIRONMENT AUDIT REPORT

FOR

ABHILASHI UNIVERSITY

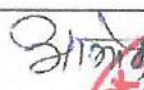






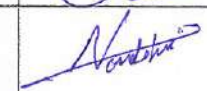


YEAR 2021

आनंद

**Committee for Environment Audit of Abhilashi University**

The following committee has been involved in planning, Mentoring, Surveying, Analyzing Report preparing and recommending the necessary changes related to the Environment Audit of Abhilashi University Campuses in 2021.

Committee Designation	Name , Designation& Institution	Signature
External/Expert	Dr. Alok Sagar Gautam Lead Auditor Environment Management System ( EMS)	 
Advisor/ Expert	Dr. Abhishek Soni Assistant Professor, School of Pharmacy Abhilashi University, Chail-Chowk H.P. 175028	
Team Leader	Dr. Mahinder Singh Kaith Assistant Professor, School of Basic Science Abhilashi University, Chail-Chowk H.P. 175028	
Members	Dr. <del>Rubha</del> <i>Rubha</i> Singh Assistant Professor, School Of Agriculture Abhilashi University, Chail-Chowk H.P. 175028	
	Er. Abhay Dhiman Assistant Professor, School of Engineering Abhilashi University, Chail-Chowk H.P. 175028	
	Mr. Mahinder Singh Verma, Pradhan, Gram Panchayat Chachyot	
	Ms. Nandini, student B.Sc. Agriculture, 4 <sup>th</sup> Semester School of Agriculture Abhilashi University, Chail-Chowk H.P. 175028	

## 1: Executive Summary

Educational institutions now a day are becoming more sensitive to environmental factors and more concepts are being introduced to make them eco-friendly. To preserve the environment within the campus, various viewpoints are applied by the several educational institutes to solve their environmental problems such as promotion of the energy savings, recycle of waste, water reduction, water harvesting etc... The activities pursued by the university can also create a variety of adverse environmental impacts. Environmental auditing is a process whereby an organization's environmental performance is tested against its environmental policies and objectives. environmental audit is defined as an official examination of the effects a University has on the environment. As a part of such practice, internal audit is conducted to evaluate the actual scenario at the campus.

The audit process involved in the Initial Data Collection, field survey and Site walk through the core. This was followed by staff and student interviews, collection of data, review of records, observation of practices and observable outcomes. The baseline data collected from Abhilashi University, were analyzed and conclusion were finalized.

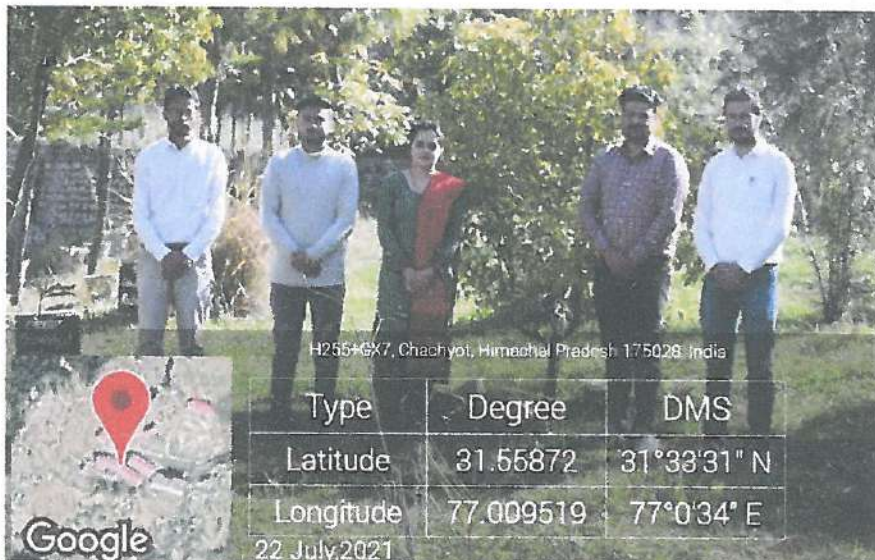
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## 2. Objectives of Environmental Audit

Environmental audit in the Abhilashi University were conducted to track the below mentioned objective

- (a) Determination of environmental management information systems and equipment.
- b) Determination the quality of water, air and soil.
- c) Verification of the compliance with the relevant national, local or other laws and regulations.
- d) Minimization of the human exposure to risks from environmental, health and safety problems.
  - To reduce waste,
  - To promote environmental awareness.
  - To improve production safety and health.
  - To place environmental information to public.

The Environment audit was initiated under the core committee from dated 22 July 2021.



आलोक





# ABHILASHI UNIVERSITY

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website: [www.abhilashiuniversity.in](http://www.abhilashiuniversity.in)

Ref. No. AU/Acad-118/2020-21/656

Dated: 01/07/2021

## NOTIFICATION

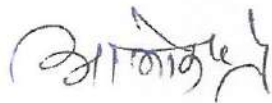
The Hon'ble Vice Chancellor is pleased to constitute "Environment Committee". The following persons have been nominated in this committee:

S.No.	Name	Designation/ School	Committee Designation
1.	Dr. Abhishek Soni,	Assistant Professor, School of Pharmacy	Chairman
2.	Mr. Mahinder Singh Verma	Pradhan, Gram Panchayat Chachyot	Member
3.	Dr. Reetika	Assistant Professor, School of Agriculture	Member
4.	Dr. Mohinder Singh Kaith	Assistant Professor, School of Basic Sciences	Member
5.	Er. Abhay Dhiman	Assistant Professor, School of Engineering	Member
6.	Arpit Sharma	Student, B. Pharmacy, 4 <sup>th</sup> Semester, School of Pharmacy	Student Member
7.	Ms. Nandini	Student, B. Agriculture, 4 <sup>th</sup> Semester School of Agriculture	Student Member

  
Registrar

### Copy to:

1. PA to Hon'ble Chancellor, Pro Chancellor and Vice Chancellor.
2. All the concerned.
3. Guard File.



### **3. Resource Management:**

The resources include air water, energy and other raw materials. The environmental Audit will provide data to the management on the efficient use of resources per unit production, and thereby, help reduce resource consumption and waste minimization.

### **4. Methodology**

The purpose of the audit was to ensure that the practices followed in the campus are in accordance with the Green Policy adopted by the institution. The criteria, methods and recommendations used in the audit were based on the identified risks. The methodology includes: preparation and filling up of questionnaire, physical inspection of the campus, observation and review of the document, interviewing responsible persons and data analysis, measurements and recommendations. The methodology adopted for this audit was a three-step process comprising of:

Data Collection – In preliminary data collection phase, exhaustive data collection was performed using different tools such as observation, survey communicating with responsible persons and measurements.

Following steps were taken for data collection:

- Site Visit
- Data about the general information was collected by observation and interview.
- The power consumption of appliances was recorded by taking an average value in some cases.

*Signature*

Data Analysis - Detailed analysis of data collected include: calculation of energy consumption, analysis of latest electricity bill of the campus, Water consumption, Waste Generation and Greenery Management.

Recommendation – On the basis of results of data analysis and observations, some steps for reducing power and water consumption were recommended. Proper treatments for waste were also suggested. Use of fossil fuels has to be reduced for the sake of community health.

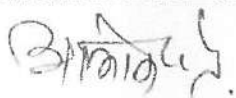
The above target areas particular to the University was evaluated through questionnaire circulated among the students for data collection.

The following data collected for the following areas during the assessment.

1. Water Management
2. Air quality Check
3. Waste Management

#### **5. Auditing for Water Management**

Water is a natural resource; all living matters depend on water. While freely available in many natural environments, in human settlements potable (drinkable) water is less readily available. We need to use water wisely to ensure that drinkable water is available for all, now and in the future. A small drip from a leaky tap can waste more than 180 litres of water to a day; that is a lot of water to waste - enough to flush the toilet eight times! Aquifer depletion and water contamination are taking place at unprecedented rates. It is therefore essential that any environmentally responsible institution should examine its water use practices. Water auditing is conducted for the evaluation of



facilities of raw water intake and determining the facilities for water treatment and reuse. The concerned auditor investigates the relevant method that can be adopted and implemented to balance the demand and supply of water. It is therefore essential that any environmentally responsible institution examine its water use practices.

### 5.1 Water Usage

S. No	Description	Girl's Hostel	Boy's Hostel	Depart mental	University Gen-campus
1	Water Consumption (in KL) – Drinking	318.7	277	105	200
<b>Per Person (in Liters)</b>		<b>20.6</b>	<b>20.7</b>	<b>7.8</b>	<b>23.8</b>

S. No	Description	Girl's Hostel	Boy's Hostel	Departme ntal	University Gen-campus
1	Water Consumption (in KL) – Domestic Usage	2873	2817	3559	7151
<b>Per Person (in Liters)</b>		<b>215</b>	<b>210</b>	<b>534</b>	<b>266</b>

3/1/2019



## **5.2. Quality Analysis of Water:**

Water testing is carried out to meet the regulatory requirements and adhere to the safety procedures that are needed for pollutant-free water. This is a broad concept that involves several procedures to analyze and evaluate the quality of water.

Everyone who is affected by the water industry must test water sources. This could be the governmental organizations trying to regulate the quality of water to protect us from the health risks involved with using chlorinated water or it could be homeowners trying to ensure that the water is suitable for consumption.

Water, whether it is meant for business purposes, agriculture, domestic purposes, or is used by public municipalities and private homeowners must be tested regularly in order to keep the source of water safe and free from environmental risks and potential health disorders.

## **5.3. Important to test the quality of water:**

In the whole world, a majority of the people rely on the private water supply. This includes ponds, dugouts, and wells. A superior quality of water is crucial to the economic, health, and social well-being of the people. Monitoring the quality of your water and testing it regularly is very important to maintain reliable and safe water sources and eliminate the potential health risks related to water contamination.

When the water is tested it offers the knowledge we require to address the problem that is currently involved with the water quality. It will also ensure that the water quality is protected from every potential cause of contamination and an appropriate approach is involved with the treatment system.

*Signature*

It is vital to check the suitability of the water quality before its use. It can be for irrigation, livestock watering, drinking, or spraying. It will also help you in making an informed decision about how to use the water and what should be done about its purity

Parameter	Unit	Test Remarks		
		girl's hostel	Boy's hostel	University Campus
Physical & Chemical				
☒ Colour	Pt. Co scale	3	15	Colorimetric
☒ pH	Pt. Co scale	6.50	6.5-8.5	Electrometric
☒ Turbidity	FTU	1	5	Turbidity
☒ Aluminum	mg/l	below 0.20	0.2	AAS
☒ Copper	mg/l	below 0.03	1.0	AAS
☒ Iron Total	mg/l	below 0.04	0.3	AAS
☒ Sodium	mg/l	96.93	200	AAS
☒ Zinc	mg/l	0.047	5	AAS
☒ Chloride	mg/l	140.41	250	Argentometric
☒ Flouride	mg/l	0.09	1.5	Colorimetric
☒ Nitrate	mg/l	below 0.11	10	Colorimetric
☒ Sulphate	mg/l	below 0.94	400	Turbidimetric
☒ Arsenic	mg/l	below 0.001	0.05	AAS

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☒ Cyanide	mg/l	below 0.01	0.1	Colorimetric
☒ Lead	mg/l	below 0.01	0.05	AAS
☒ Mercury	mg/l	below 0.001	0.001	AAS
<b>Bacteriological:</b>				
☒ Total Bacteria	per ml	$6.9 \times 10^2$	$1.0 \times 10^2$	Pour Plate
☒ E. Coli	per 100 ml	nil	nil	Filtration

#### 5.4 Recommendations:

As per above report of water analysis and recommendation of analysisist water of university campus were safe for drinking.

##### 5.4.1 Common Recommendations- Water:

Drip irrigation for gardens to minimize water consumption.

Awareness programs on water conservation to be conducted.

Install display boards to control over wastage of water.

##### 5.4.2 Specific Recommendations:

The average Water consumption per person 404 liter/ per person/ Year. Steps to be implemented to reduce the water consumption.

#### 6. Auditing for air Quality:

Air quality standards are generally **health-based guidelines** which seek to establish the concentrations of air pollutants to which the public can be exposed throughout their lifetime without significant adverse effects at a population level.

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Pollutants	Concentration of air
CO	339.59 ppb
NO <sub>2</sub>	8.54 ppb
O <sub>3</sub>	35.35 ppb
SO <sub>2</sub>	2.29 ppb
PM <sub>10</sub>	38.91 ug/m <sup>3</sup>
PM <sub>2.5</sub>	19.73 ug/m <sup>3</sup>

#### 6.1 Recommendations:

As per above report of air quality, there are no limitations and air quality is best for outdoors.

#### 7. Auditing for Waste Management:

Waste management (or waste disposal) includes the processes and actions required to manage waste from its inception to its final disposal. This includes the collection, transport, treatment and disposal of waste, together with monitoring and regulation of the waste management process and waste-related laws, technologies, economic mechanisms.

Waste can be solid, liquid, or gaseous and each type has different methods of disposal and management. Waste management deals with all types of waste, including industrial, biological, household, municipal, organic, biomedical, radioactive wastes. In some cases, waste can pose a threat to human health. Health issues are associated throughout the

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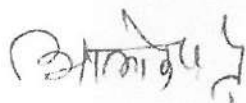


entire process of waste management. Health issues can also arise indirectly or directly. Directly, through the handling of solid waste, and indirectly through the consumption of water, soil and food. Waste is produced by human activity, for example, the extraction and processing of raw materials.<sup>[4]</sup> Waste management is intended to reduce adverse effects of waste on human health, the environment, planetary resources and aesthetics

### **7.1. Auditing for Waste Management**

Pollution from waste is aesthetically unpleasing and results in large amounts of litter in our communities which can cause health problems. Plastic bags and discarded ropes and strings can be very dangerous to birds and other animals. This indicator addresses waste production and disposal, plastic waste, paper waste, food waste, and recycling. Solid waste can be divided into two categories: general waste and hazardous waste. General wastes include what is usually thrown away in homes and schools such as garbage, paper, tins and glass bottles. Hazardous waste is waste that is likely to be a threat to health or the environment like cleaning chemicals and petrol. Unscientific landfills may contain harmful contaminants that leach into soil and water supplies, and produce greenhouse gases contributing to global climate change.

Furthermore, solid waste covering Bio Degradable, Non Bio Degradable and Bio Medical wastes. These wastes are either in to recycling or reuse or combination of both. Thus, the minimization of solid waste is essential to a sustainable University. The auditor diagnoses the prevailing waste disposal policies and suggests the best way to combat the problems. It is therefore essential that any environmentally responsible institution examine its waste processing practices.



## 8. Waste Generation

S. No	Description	Girl's Hostel	Girl's Hostel	Canteen	Hospital	Labs	Remarks
1	Bio Degradable- Other than Food (in kgs)	0.5	0.5	0.5	--	--	
2	Bio Degradable - Food Waste (in kgs)	5	5	2	--	--	

### Recommendations for Waste Management:

- Establishing environmental policy for the overall University
- Conduct more seminars and group discussions on environmental education / Conservation of Water
- Establish bio gas plant.
- Practice of waste segregation at source to be initiated.

3/10/2017

## PLANTATION DRIVE WITHIN CAMPUS



श्रीमती ५५



## BEYOND CAMPUS ENVIRONMENT PROMOTION ACTIVITIES



### स्वयं सेवकों ने की स्कूल और जलस्रोतों की साफ-सफाई



**स्कूल परिसर में सफाई करते एनएसएस के स्वयं सेवक।**

मुंबई-नाग, 3 जून (द्विपक्षीय) अभिलेखापी विश्वविद्यालय में परम्परागत के साथ दिवसीय शिविर का समापन प्रोफेसर एनएसएस द्वारा किया गया। एनएसएस के स्वयंसेवकों ने मुख्यतः विभिन्न जल स्रोतों की सफाई, जहाँ मुख्यतः विभिन्न जल स्रोतों के स्वयंसेवकों द्वारा साफ किया और स्वयंसेवकों की जल सफाई के लिए लोगों को जागरूक करने के लिए आह्वान किया। केसर एनएसएस कार्यकारी अभियन्त्री अभिषेक खन्ना ने बताया कि 7

दिवसीय वार्षिक शिविर में 60 स्वयंसेवकों ने भाग लिया। स्वयंसेवकों द्वारा इस शिविर में प्राकृतिक जल स्रोतों की सफाई, स्कूल, अस्पताल, कैम्पस, कक्षा एवं प्रयोगशाला की सफाई, भ्रम दान, स्थानीय लोगों के साथ विस्तारी का अदान-प्रदान, निजकला प्रतियोगिता, निम्न निम्न प्रतियोगिता के साथ-साथ विभिन्न विषयों पर व्याख्यान भी किया गया। समापन समारोह में स्वयंसेवकों और आयोजक समिति की प्रस्तुति भी की गई।








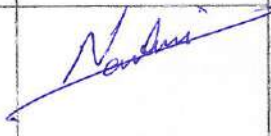
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## Conclusion

The environment audit assists in the process of monitoring and verifying the performance in the environmental arena and is fast becoming an indispensable aid to decision making in the environment. Audit reports assist in the process of attaining an eco-friendly approach to the sustainable development of the University. Hope that the results presented in the green auditing report will serve as an opportunity to improving the environment related practices and resource usage at the university as well as new activities and innovative practices. A few recommendations are added to the waste management using eco- friendly and scientific techniques. This may lead to the prosperous future in context of Green Campus and thus sustainable environment and community development. It has been shown frequently that the practical suggestions, alternatives, and observations that have resulted from audits have added positive value to the audited organization. An outside view, perspective and opinion often helps staff who have been too close to problems or methods to see the value of alternative approaches. An environment audit report is a very powerful and valuable communications tool to use when working with various stakeholders who need to be convinced that things are running smoothly and systems and procedures are coping with natural changes and modifications that occur.

*Signature*

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Advisor/ Expert	Dr. Abhishek Soni Assistant Professor, School of Pharmacy Abhilashi University, Chail-Chowk H.P. 175028	
Team Leader	Dr. Mohinder Singh Kaith Assistant Professor, School of Basic Science Abhilashi University, Chail-Chowk H.P. 175028	
Members	Dr. Ritika Singh Assistant Professor, School Of Agriculture Abhilashi University, Chail-Chowk H.P. 175028	
	Er. Abhay Dhiman Assistant Professor, School of Engineering Abhilashi University, Chail-Chowk H.P. 175028	
	Mr. Mahinder Singh Verma, Pradhan, Gram Panchayat Chachyot	
	Ms. Nandini, student B.Sc. Agriculture, 4 <sup>th</sup> Semester School of Agriculture Abhilashi University, Chail-Chowk H.P. 175028	

# GREEN AUDIT REPORT

FOR

## ABHILASHI UNIVERSITY







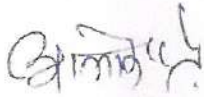
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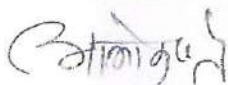
**Committee for Green Audit of Abhilashi University**

The following committee were involved in planning, Mentoring, Surveying, Analyzing Report preparing and recommending the necessary changes related to the Green Audit of Abhilashi University Campuses in the year 2021.

<b>Dr. Alok Sagar Gautam</b>	<b>Dr. Vinod Katoch</b> Assistant Professor School of Ayurveda 	<b>Dr. Jyoti Sondhi</b> Assistant Professor School of Management 	<b>Dr. Abhishek Soni</b> Assistant Professor School of Pharmacy 	<b>Ms. Pallavi Kumari</b> Student, 4 <sup>th</sup> Sem. School of Pharmacy 
<b>Lead Auditor Environment Management System ( EMS) External</b>	<b>Expert- Internal</b>	<b>Internal Leader</b>	<b>Member-1</b>	<b>Member-2</b>









## 1.0 INTRODUCTION:

Green Audit is the process of assessing the impact of an organization, process, and project on environment. Green Audit is a process of systematic identification, quantification, recording, reporting and analysis of components of environmental diversity of institute.

Abhilashi University recognizes the need to function all year round in a manner which minimizes its harmful environmental impact. University has already implemented the Green Policy which is based on three pillars.

- a) Environmental sustainability: The Green Policy must ensure sustainability of the environment.
- b) Economic viability: Economic viability options should be considered in the implementation of the Green Policy.
- c) Social acceptance: Social acceptance is a key to the success of the Green Policy and therefore, the social context of the community, faculty and students must be taken into consideration in the Green Policy.

It aims to analyze environmental practices within and outside of the concerned place, which will have an impact on the eco-friendly atmosphere. Green audit is a valuable means for a college to determine how and where they are using the most energy or water or other resources; the college can then consider how to implement changes and make savings. It can create health consciousness and promote environmental awareness, values and ethics. It provides staff and students better understanding of Green impact on campus. If self-enquiry is a natural and necessary outgrowth of a quality education, it could also be stated that institutional self-enquiry is a natural and

3/10/2024

necessary outgrowth of a quality educational institution. Thus, it is imperative that the college evaluate its own contributions toward a sustainable future. As environmental sustainability is becoming an increasingly important issue for the nation, the role of higher educational institutions in relation to environmental sustainability is more prevalent. The rapid urbanization and economic development at local, regional and global level has led to several environmental and ecological crises. On this background, it becomes essential to adopt the system of the Green Campus for the institutes, which will lead for sustainable development and at the same time, reduce a sizable amount of atmospheric CO<sub>2</sub> from the environment. Moreover, it is part of Corporate Social Responsibility of the Higher Educational Institutions to ensure that they contribute towards the reduction of global warming through carbon footprint reduction measures.

## 2.0 OBJECTIVES

In recent time, the Green Audit of an institution has been becoming a paramount important for self-assessment of the institution which reflects the role of the institution in mitigating the present environmental problems. The college has been putting efforts to keep our environment clean since its inception. Therefore, the purpose of the present green audit is to identify, quantify, describe, and prioritize framework of Environment Sustainability in compliance with the applicable regulations, policies, and standards.

### **The main objectives of carrying out Green Audit are:**

- To map the Geographical Location of the college.
- To document the floral and faunal diversity of the college.
- To record the meteorological parameter of Chailchowk where college is situated.

*Signature*

- To document the waste disposal system.
- To estimate the Energy requirements of the college.
- To report the expenditure on green initiatives during the last five years.

### 3.0 GREEN AUDITING

The Abhilashi University (AU) has adopted the 'Green Campus' system for environmental conservation and sustainability. There are main three pillars i.e. zero environmental foot print, positive impact on occupant health and performance and 100% graduates demonstrating environmental literacy. The goal is to reduce CO2 emission, energy and water use, while creating atmosphere where students can learn and be healthy. To verify the above mentioned objective, the constituted committee has initiated the Green Audit from dated 28 Oct 2021.



### 3.1 LAND USE PATTERN

Land use refers to man's activities and the various uses, which are carried on and derived from land. Viewing the earth from space, it is now very crucial in man's activities on natural resource. In situations of rapid changes in land use, observations of the Earth from space give the information of human activities and utilization of the landscape. Remote sensing and GIS techniques are now providing new tools for advanced land use mapping and planning. The collection of remotely sensed data facilitates the synoptic analyses of earth system, functions, patterning, and change in the local, regional as well as at global scales over time. Satellite imagery particularly is a valuable tool for generating land use map.

To take care about the Green Audit of the AU campus and also to assist the external Auditor following team were constituted :

3/10/19





# ABHILASHI UNIVERSITY

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website: www.abhilashiuniversity.in

Ref. No. AU/Acad-119/2020-21/664

Dated: 05/07/2021

## NOTIFICATION

The Hon'ble Vice Chancellor is pleased to constitute "Green Committee". The following persons have been nominated in this committee:

S.No.	Name	Designation/ School	Committee Designation
1.	Dr. Vinod Katoch	Associate Professor, School of Ayurveda	Chairman
2.	Dr. Jyoti Sondhi	Associate Professor, School of Management	Member
3.	Dr. Abhishek Soni	Assistant Professor, School of Pharmacy	Member
4.	Ms. Pallavi Kumari	Student, 4 <sup>th</sup> Semester, School of Pharmacy	Student Member
5.	Mr. Lokender	Student, 4 <sup>th</sup> Semester, School of Agriculture	Student Member

  
Registrar

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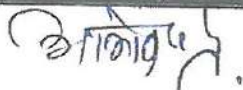
## 4.0 METHODOLOGY ADOPTED FOR LAND USE MAPPING

Three types of data that are GPS points, field survey data and Google earth data for Geo referencing have been used for the Green Audit work of Abhilashi University. Land use map of the study area have been prepared using the above three types of data with the help of Arc Gis Pro software.

## 5.0 DATA PROCESSING AND ANALYSIS

### 5.1 Land use map preparation is executed through the following steps:

Acquisition of data (Location: 31°34' 04N 77°01'15"E), Geo-coding and Geo referencing of satellite imageries by extracting the ground control points. Supervised classification was carried out with the aid of ground truth data collected during field survey. Scanning



and digitization of maps and editing of all the Geo referenced maps were done using GIS. Data manipulation and analysis and linking the spatial data with the attribute data for creation of topology was carried out using GIS software. Creation of GIS output in the form of land use map showing various land use have been prepared.

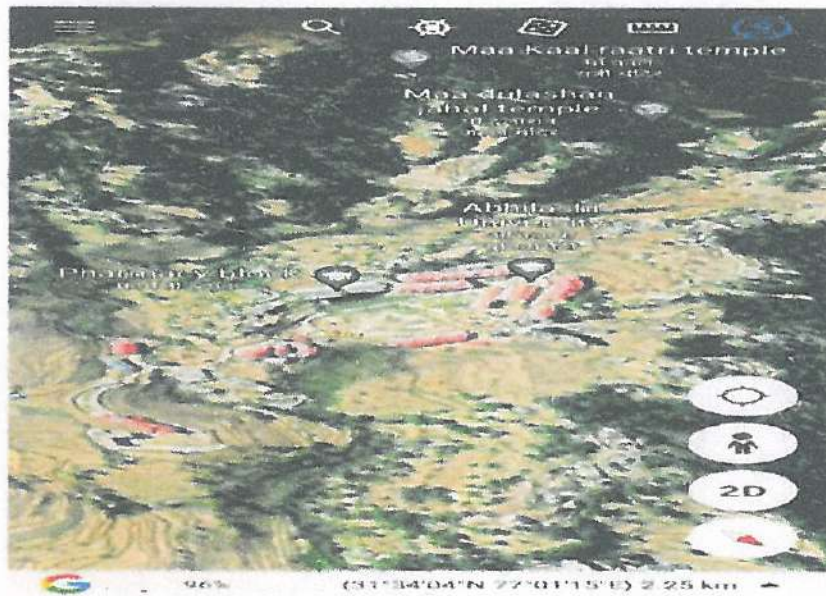


Photo-1: Aerial View Of College Campus Part-1(Source: Google Earth)



Photo - 2 : Aerial View Of College Campus Part-1(Source: Google Earth)

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**5.2 LAND USE DATA OF AUM, CHAILCHOWK, MANDI, HIMACHAL PRADESH**

Categories of Land Use	Area
Land with the University(Total Land)	2003760m <sup>2</sup>
Ownership	50-04-18 Bighas
Lease	180-01-11
Built up area	24424 m <sup>2</sup>
Cultivation area for crops	1576872 m <sup>2</sup>
Herbal Garden for medicinal plants	5000 m <sup>2</sup>

**5.3 LAND USE (BUILT UP AREA) ANALYSIS:**

S. No.	Name Of Building/Block	Number of floors	Area sq. m.
1.	EXISTING(G+3) AYURVEDIC HOSPITAL AND ADMINISTRATIVE BLOCK---BLOCK-A	4	3100.00
2.	EXISTING (G+2) BLOCK-----BLOCK-B	3	2860.00
3.	EXISTING(G+2) AYURVEDIC COLLEGE AND RESEARCH CENTRE.....BLOCK---C	3	3850.00
4.	EXISTING ENGINEERING & TECHNOLOGY AND MANAGEMENT STUDIES BLOCK (G+2) & BLOCK-D	3	4290.00
5.	EXISTING (G+2) ENGINEERING & TECHNOLOGY..... BLOCK-E	3	1080.00
6.	EXISTING BLOCK PANCHAKARMA..... BLOCK-F	4	640.00
7.	EXISTING SCHOOL OF PHARMACY & SCIENCE DEPARTMENT..... BLOCK-G	4	4075.00
8.	EXISTING BLOCK BOYS	4	2360.00

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	HOSTEL..... BLOCK-H		
9.	EXISTING BLOCK GIRLS HOSTEL.....BLOCK-I	4	1781.00
10.	EXISTING BLOCK STAFF RESIDENCE.....BLOCK-J	4	388.00
TOTAL COVERED AREA OF EXISTING BUILDINGS/BLOCKS			24424

Built Up areas of Abhilashi University is 24424 m<sup>2</sup>.

## 6.0 FINDINGS

The Land use analysis Report is prepared by Er. Devender Sharma, Civil Engineering Department, Faculty of of Civil Engineering, AU Chailchowk, Mandi, Himachal Pradesh.

Abhilashi University is situated in a place which is rich in its biodiversity containing many herbal plants, trees, shrubs as well as small herbs also. Periodic plantation was also carried out time to time including their preservation and maintenance. Usage of land in AU is like that 78.69% of total area is occupied by agricultural land and plantation that generates a better and sustainable campus environment.

## 6.1 TREE DIVERSITY OF AU, CHAILCHOWK, MANDI, HIMACHAL PRADESH

AU is within the geo-position between latitude 31°34'04N and longitude 77°01'15"E in Chailchowk Distt-Mandi Himachal Pradesh. It encompasses an area of 92 Acres. The area is rich in its biodiversity containing many species of trees which are useful in many ways medicinal as well as biological point of view. Most of trees species are planted time to time through various programs such as World Environment day, World Forestry Day, Earth Day etc..

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Few of the plants are found to be available in the AU Campus.

S.No	Sanskrit name	Botanical name	Family	Qty
1.	Haritaki	<i>Terminalia chebula</i>	Combretaceae	1
2.	Vibhitaki	<i>Terminalia bellirica</i>	Combretaceae	4
3.	Jalvetas	<i>Salix tetrasperma</i>	Salicaceae	4
4.	Karpur	<i>Cinnamomum camphora</i>	Lauraceae	7
5.	Balamkhira	<i>Kigelia africana</i>	Bignoniaceae	1
6.	Lokat	<i>Eriobotrya japonica</i>	Rosaceae	7
7.	Nirgundi	<i>Vitex negundo</i>	Verbinaceae	5
8.	Dadima	<i>Punica granatum</i>	Punicaceae	46
9.	Oak tree	<i>Quercus glauca</i>	Fagaceae	2
10.	Talispatra	<i>Taxus baccata</i>	Taxaceae	1
11.	Kanchnara	<i>Bauhinia variegata</i>	Fabaceae	6
12.	Devadaru	<i>Cedrus deodara</i>	Pinaceae	18
13.	Amalaki	<i>Phyllanthus emblica</i>	Phyllanthaceae	3
14.	Daru haridra	<i>Berberis lycium</i>	Berberidaceae	4

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15.	Padmaka	<i>Prunus cerasoides</i>	Rosaceae	9
16.	Nimbuka	<i>Citrus limon</i>	Rutaceae	3
17.	Tailaparni	<i>Eucalyptus globules</i>	Myrtaceae	3
18.	Sinchitaka	<i>Malus domestica</i>	Rosaceae	3
19.	Tuda	<i>Morus alba</i>	Moraceae	3
20.	Karanja	<i>Pongamiapinnata</i>	Fabaceae	1
21.	Japakushum	<i>Hibiscus rasa sinensis</i>	Malvaceae	2
22.	Arjuna	<i>Terminalia arjuna</i>	Combretaceae	4
23.	Jambu	<i>Syzygiumcumini</i>	Myrtaceae	13
24.	Vansha	<i>Bambusaarundinaceae</i>	Poaceae	1
25.	Shirsha	<i>Albizialabbeck</i>	Mimosaceae	1
26.	Paravat	<i>Psidium guajava</i>	Myrtaceae	3
27.	Kadali	<i>Musa paradisiacal</i>	Musaceae	1
28.	Aksotaka	<i>Juglans regia</i>	Juglandaceae	3
29.	Phalgu	<i>Ficuspalmata</i>	Moraceae	4
30.	Aruk	<i>Prunus persica</i>	Rosaceae	1
31.	Shalmali	<i>Salmaliamalabarica</i>	Malvaceae	1
32.	Curry patta	<i>Murrayakoenigii</i>	Rutaceae	1

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33.	Arishtaka	<i>Sapindustrifoliatus</i>	Sapindaceae	2
34.	Cycas	<i>Cycas rumphii</i>	Cycadaceae	7
35.	Rubber plant	<i>Ficus elastic</i>	Moraceae	1
36.	Changeri	<i>Oxalis corniculata</i>	Oxalidaceae	13
37.	Dhanvan	<i>Grewiatiliifolia</i>	Tiliaceae	1
38.	Erand	<i>Ricinus communis</i>	Euphorbiaceae	2
39.	Rudraksha	<i>Elaeocarpus ganitrus</i>	Elaeocarpaceae	1
40.	Vat	<i>Ficus benghalensis</i>	Moraceae	1
41.	Tejovati	<i>Zanthoxylum armatum</i>	Rutaceae	1
42.	Japaniphal	<i>Diospyros kaki</i>	Ebenaceae	1
43.	Karkatshringi	<i>Pistacia integerrima</i>	Anacardiaceae	1
44.	Plum	<i>Prunus domestica</i>	Rosaceae	9
45.	Amra	<i>Mangifera indica</i>	Anacardiaceae	1
46.	Aragvadha	<i>Cassia fistula</i>	Fabaceae	3
47.	Neem	<i>Azadirachta indica</i>	Meliaceae	1
48.	Khadira	<i>Acacia catechu</i>	Mimosaceae	1
49.	Asvattha	<i>Ficus religiosa</i>	Moraceae	1

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50.	Maidenhair	<i>Ginkgo biloba</i>	Ginkgoaceae	1
51.	Araucaria	<i>Araucaria heterophylla</i>	Araucariaceae	7
52.	Bottlebrush	<i>Callistemon citrinus</i>	Myrtaceae	10
53.	Silver oak	<i>Grevillea robusta</i>	Proteaceae	10
54.	Poplar	<i>Populus alba</i>	Salicaceae	5
	TOTAL			246



Pic-1



Pic-2



3/1/2024



Pic-3



Pic-4



Pic-5



Pic-6



Pic-7



Pic-8



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Pic-9



Pic-10



Pic-11



Pic-12



Pic-13

Pic-14

आम्र की





Pic16



Pic 17



Pic-19



Pic-21



Pic-22



Pic-23

Chachiyot





Pic-24



Pic-25



Pic-26



Pic-27



Pic-28



Indian Bull Frog (*Hoplobatrachus tigerinus*)

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7.0 SAMPLE WATER ANALYSIS REPORT - PORT TAP WATER (2021)

During the Audit, the water sample test has also been carried out to check the availability of the harmful chemical. The chemical testing report is enclosed herewith:

Signature

SAMPLE COLLECTED FROM GIRLS HOSTEL

Lab: Pharmaceutical Analysis

Harmful bacteria, parasites, and viruses are invisible to the naked eye, so water which looks and tastes good may not necessarily be safe to drink. These microbes can exist in surface and groundwater supplies, and can cause immediate sickness in humans if not properly treated.

Certain chemical contaminants that are sometimes found in a water source can cause long term health problems that take years to develop. Frequent water testing will identify unsafe water and ensure that the treatment system is treating the water to a satisfactory level.

Parameter	Unit	Test Remarks	Requirement	Methods
<b>Physical &amp; Chemical :</b>				
• Colour	Pt Co scale	3	15	Colorimetric
• pH	Pt Co scale	6.50	6.5-8.5	Electrometric
• Turbidity	FTU	1	5	Turbidity
• Aluminium	mg/l	below 0.20	0.2	AAS
• Copper	mg/l	below 0.03	1.0	AAS
• Iron Total	mg/l	below 0.04	0.3	AAS
• Sodium	mg/l	96.93	200	AAS
• Zinc	mg/l	0.047	5	AAS
• Chloride	mg/l	140.41	250	Argentometric
• Fluoride	mg/l	0.09	1.5	Colorimetric
• Nitrate	mg/l	below 0.11	10	Colorimetric
• Sulphate	mg/l	below 0.94	400	Turbidimetric
• Arsenic	mg/l	below 0.001	0.05	AAS
• Cyanide	mg/l	below 0.01	0.1	Colorimetric
• Lead	mg/l	below 0.01	0.05	AAS
• Mercury	mg/l	below 0.001	0.001	AAS
• Total Hardness	mg CaCO <sub>3</sub>	95.49	500	AAS
<b>Bacteriological:</b>				
• Total Bacteri	per ml	$8.8 \times 10^6$	$1.0 \times 10^6$	Pour Plate
• Coliform	per 100 ml	nil	nil	Filtration
• E. Coli	per 100 ml	nil	nil	Filtration
• Salmonella sp	per 100 ml	negative	negative	Filtration

Dean  
 Subhrajit  
 Andhra Pradesh  
 Telangana, Dist. 12-12-2019

Subhrajit



# SAMPLE WATER ANALYSIS REPORT - PORT TAP WATER (2021)

## SAMPLE WATER ANALYSIS REPORT - PORT TAP WATER (2021)


SAMPLE COLLECTED FROM BOY'S HOSTEL

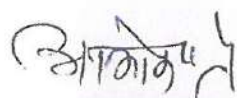
Lab: Pharmaceutical Analysis

Harmful bacteria, parasites, and viruses are invisible to the naked eye. No water which looks and tastes good may not necessarily be safe to drink. These microbes can exist in surface and groundwater supplies, and can cause immediate sickness in humans if not properly treated.

Certain chemical contaminants that are sometimes found in a water source can cause long term health problems that take years to develop. Frequent water testing will identify unsafe water and ensure that the treatment system is treating the water to a satisfactory level.

Parameter	Unit	Test Remarks	Requirement	Methods
<b>Physical &amp; Chemical</b>				
• Colour	Pt Co scale	5	15	Colorimetric
• pH	Pt Co scale	5.50	6.5-8.5	Electrometric
• Turbidity	FTU	2	5	Turbidity
• Aluminium	mg/l	below 0.10	0.2	AAS
• Copper	mg/l	below 0.05	1.0	AAS
• Iron-Total	mg/l	below 0.06	0.3	AAS
• Sodium	mg/l	94.93	200	AAS
• Zinc	mg/l	0.040	5	AAS
• Chloride	mg/l	148.41	250	Argentometric
• Fluoride	mg/l	0.07	1.5	Colorimetric
• Nitrate	mg/l	below 0.13	10	Colorimetric
• Sulphate	mg/l	below 0.93	400	Turbidimetric
• Arsenic	mg/l	below 0.002	0.05	AAS
• Cyanide	mg/l	below 0.03	0.1	Colorimetric
• Lead	mg/l	below 0.04	0.05	AAS
• Mercury	mg/l	below 0.001	0.001	AAS
• Total Hardness	mg CaCO <sub>3</sub>	99.49	500	AAS
<b>Bacteriological</b>				
• Total Bacteria	per ml	6.0 x 10 <sup>6</sup>	1.0 x 10 <sup>6</sup>	Pour Plate
• Coliform	per 100 ml	nil	nil	Filtration
• E. Coli	per 100 ml	nil	nil	Filtration
• Salmonella sp	per 100 ml	negative	negative	Filtration

  
 Dr. S. S. Phule  
 School of Pharmacy,  
 Ashwini University, Nashik, Maharashtra  
 Tel: 0253201, Dist: Nashik-422 007



## University Campus

### SAMPLE WATER ANALYSIS REPORT - PORT TAP WATER (2021)

SAMPLE COLLECTED FROM University Campus

Lab: Pharmaceutical Analysis

Harmful bacteria, parasites, and viruses are invisible to the naked eye, so water which looks and tastes good may not necessarily be safe to drink. These microbes can exist in surface and groundwater supplies, and can cause immediate sickness in humans if not properly treated.

Certain chemical contaminants that are sometimes found in a water source can cause long term health problems that take years to develop. Frequent water testing will identify unsafe water and ensure that the treatment system is treating the water to a satisfactory level.

Parameter	Unit	Test Remarks	Requirement	Methods
<b>Physical &amp; Chemical</b>				
• Colour	Pt. Co scale	5	15	Colorimetric
• pH	Pt. Co scale	4.50	6.5-8.5	Electrometric
• Turbidity	FTU	3	5	Turbidity
• Aluminium	mg/l	below 0.10	0.3	AAS
• Copper	mg/l	below 0.03	1.0	AAS
• Iron Total	mg/l	below 0.3	0.3	AAS
• Sodium	mg/l	91.93	200	AAS
• Zinc	mg/l	0.037	5	AAS
• Chloride	mg/l	149.41	250	Argentometric
• Fluoride	mg/l	0.07	1.5	Colorimetric
• Nitrate	mg/l	below 0.13	10	Colorimetric
• Sulphate	mg/l	below 0.92	400	Turbidimetric
• Arsenic	mg/l	below 0.002	0.05	AAS
• Cyanide	mg/l	below 0.05	0.1	Colorimetric
• Lead	mg/l	below 0.03	0.05	AAS
• Mercury	mg/l	below 0.001	0.001	AAS
• Total Hardness	mg CaCO <sub>3</sub>	99	500	AAS
<b>Bacteriological:</b>				
• Total Bacteria	per ml	6.9 x 10 <sup>6</sup>	1.0 x 10 <sup>6</sup>	Pour Plate
• Coliform	per 100 ml	Nil	Nil	Filtration
• E. Coli	per 100 ml	Nil	Nil	Filtration
• Salmonella sp	per 100 ml	negative	negative	Filtration

  
 Dear Signature  
 School of Pharmacy  
 A. U. of Technology  
 Tel. 011-26104000, 011-26104001

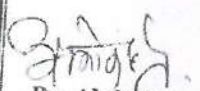
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## Recommendation:

Following recommendation were given for the further improvement:

- (a) Maximize the proportion of waste that is recycled & minimize the quantity of non-recyclable refuse.
- (b) Reduce energy consumption, especially of energy derived from fossil fuels, in all university property.
- (c) Minimize consumption of water.
- (d) minimize the use of chemical pollutants both in university by students and staff, and in university grounds by gardeners.
- (e) Ensure that the students and faculties are encouraged to plant trees in the campus.
- (f) Ensure that the buildings conform to green standards.

  
Dr. Alok Sagar  
Gautam

  
Dr. Vinod  
Katoch

  
Dr. Jyoti  
Sondhi

  
Dr. Abhishek  
Soni

  
Ms. Pallavi  
Kumari

Assistant Professor  
School of Ayurveda

Assistant  
Professor School  
of Management

Assistant  
Professor School  
of Pharmacy

Student, 4<sup>th</sup>  
Sem. School of  
Pharmacy

Lead Auditor  
Environment  
Management  
System

Expert-Internal

Internal  
Leader

Member-1

Member-2

