Swamy Vivekananda Vidya Samsthe (R), Shikaripura

ಕುಮದ್ವತಿ ಶಿಕ್ಷಣ ಮಹಾವಿದ್ಯಾಲಯ

KUMADVATHI COLLEGE OF EDUCATION

Aided, Permanently Affiliated to Kuvempu University, Recognised by NCTE & UGC Act 2(f), Section 12(B) & NAAC Accredited with B Grade (2.70 CGPA)

Shivamogga Road Shikaripura – 577 427 Shivamogga Dist

☎: 08187 – 222383, 222 E-Mail:kumadvathibed@gmail.com

Criterion - 07

Institutional Values and Best Practices

Criterion – 7.1

Institutional Values and Social Responsibilities

Item No: 7.1.1

Institution has a stated energy policy streamlining ways of energy conservation, use of alternate sources of energy for meeting its power requirements

7.1.1 Facilities for Alternate Sources of Energy and Energy Conservation Measure

Classrooms With Natural Light and Ventilation

Principal
Kumadvathi College of Education
Shikaripura

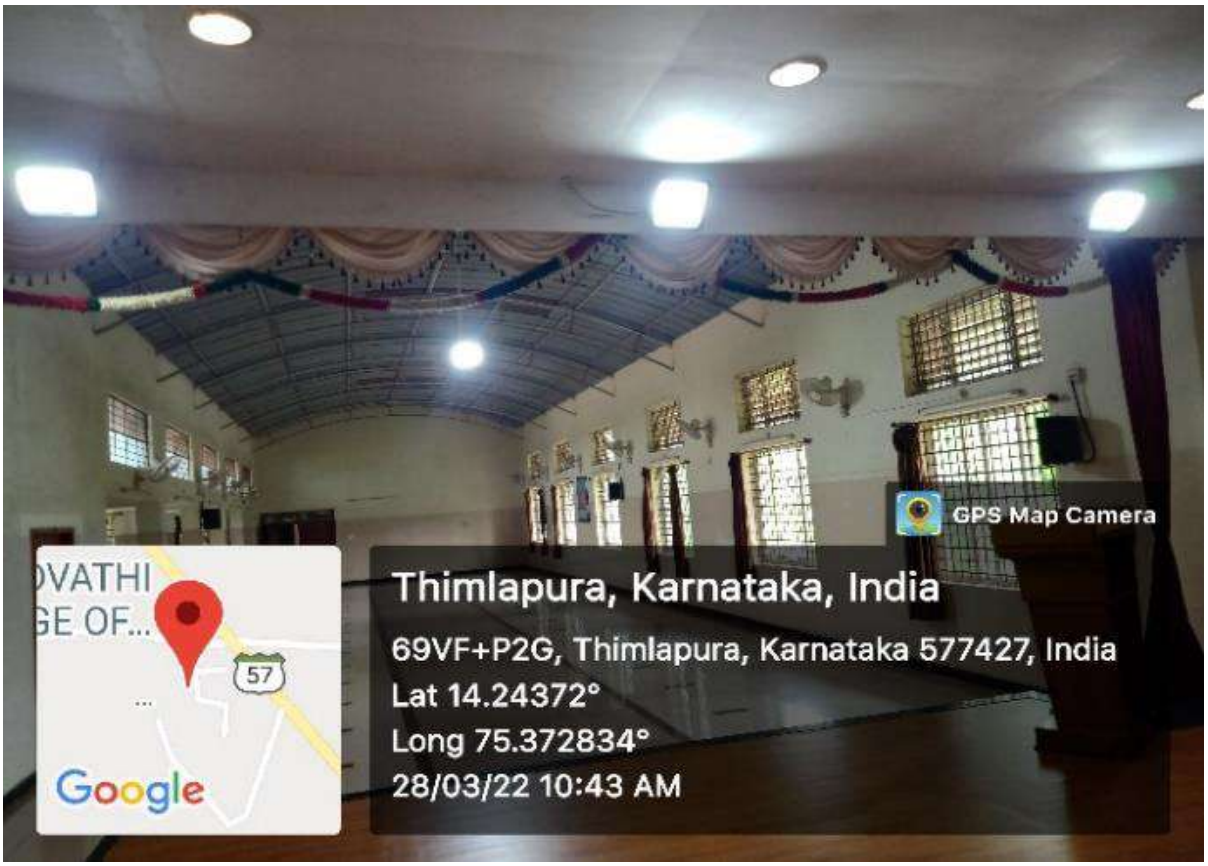
Auditorium With Natural Light and Ventilation

Principal
Kumadvathi College of Education
Shikaripura

Library With Natural Light and Ventilation

Principal
Kumadvathi College of Education
Shikaripura

Use of Cost-Effective Led Lights

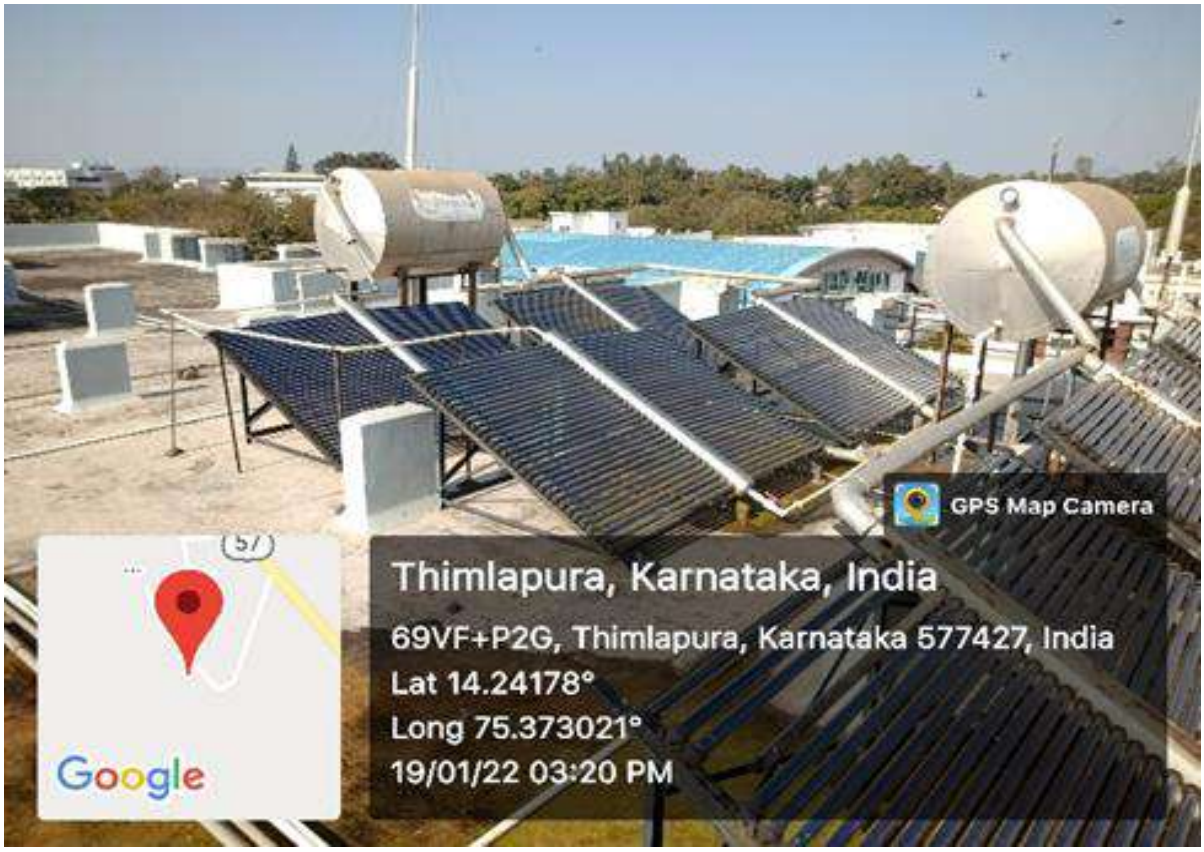


Principal
Kumadvathi College of Education
Shikaripura

Floor Wise Master Switches to Control Power Consumption

Principal
Kumadvathi College of Education
Shikaripura

Solar Panels Usage



Principal
Kumadvathi College of Education
Shikaripura

Low Power Led Monitors in Computer Lab

Principal
Kumadvathi College of Education
Shikaripura

Use of E-Vehicles and Bicycles

Principal
Kumadvathi College of Education
Shikaripura

Swamy Vivekananda Vidya Samsthe (R), Shikaripura

ಕುಮದ್ವತಿ ಶಿಕ್ಷಣ ಮಹಾವಿದ್ಯಾಲಯ

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☎: 08187 – 222383, 222 E-Mail:kumadvathibed@gmail.com

Environment Audit Report

Environment Audit Report

Index

Sl No	Title of the Documents	Year
1	Environment Audit Report	2020-21
2	Environment Audit Report	2019-20
3	Environment Audit Report	2018-19
4	Environment Audit Report	2017-18
5	Environment Audit Report	2016-17

Principal
Kumadvathi College of Education
Shikaripura

Swamy Vivekananda Vidya Samsthe (R), Shikaripura

ಕುಮದ್ವತಿ ಶಿಕ್ಷಣ ಮಹಾವಿದ್ಯಾಲಯ

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Shivamogga Road Shikaripura – 577 427 Shivamogga Dist

☎: 08187 – 222383, 222 E-Mail:kumadvathibed@gmail.com

Environment Audit Report 2020-21

ಸ್ವಾಮಿ ವಿವೇಕಾನಂದ ವಿದ್ಯಾಸಂಸ್ಥೆ (ರಿ)
ಶಿವಮೊಗ್ಗ ರಸ್ತೆ, ಶಿಕಾರಿಪುರ - 577 427 ಶಿವಮೊಗ್ಗ ಜಿಲ್ಲೆ, ಕರ್ನಾಟಕ
Swamy Vivekananda Vidya Samsthe (R)
Shivamogga Road, Shikaripura - 577 427 Shivamogga Dist. Karnataka
svvstrust@gmail.com

25

Date 10-03-2022

Ref No: SVVS/Envi.Cell/2021-22/21

To,
The Environmental Officer
Karnataka State Pollution Control Board,
Shivamogga.

Sub: Submission of Annual Audit Report.

With reference to the above subject we are herewith submitting two sets of Annual Audit report and form V for the year 2020-21 as desired.

Kindly acknowledge the receipt.

With regards

10/3

Administrative Co-ordinator
Swamy Vivekananda Vidya Samsthe (R)
Shikaripura-577427

11/03/2022

Principal
Kumadvathi College of Education
Shikaripura

MSV Analytical Laboratories

Recognition by MoEF under Environment (Protection) Act, 1986 and Accredited by NABL
(Certified by ISO 14001:2015,ISO 22000:2018, ISO 45001:2018,ISO 9001:2015)
C.M.C Ward No 18 & C.T.C W.No.16 T.S No. 695/A/32/B1, Block No 19 (1st & 2nd Floor)
Sanganakallu Road, KEB Circle, Ballari - 583103 Contact No : Mob : 94498 03895, (O) : 08392-255169,
E-mail : msv.lab01@gmail.com, labmsv@gmail.com, Website : www.msvalbellary.com

TC-7207

MSVAL/W/F/13/03

ANALYSIS REPORT OF WATER QUALITY

Test Report No: TC72072200000004953F **Issued Date: 22.02.2022**

1	Name of the Project	:	**M/s. Kumudwathi Resindential Central School, DED & ED College, Swamy Vivekananda trust(r), ThimlapuraVillage,Shikaripura(T).**
2	Sample Collected By	:	Client
3	Particulars of Sample	:	**Borewell water near site**
4	Description/sample Condition	:	Good/Satisfactory
5	Date of Sample Collection	:	17.02.2022
6	Analysis Starting Date	:	18.02.2022
7	Analysis Completion Date	:	22.02.2022

8 Sample Tested As Received

Sl. No.	Parameters	Unit	Result	Limits as per KSPCB	Protocol
1	Colour	Hazen	<5	5.5 to 9.0	IS 3025(P-4)-
2	Odour	---	Agreeable	Agreeable	IS 3025(P-5)
3	pH	-----	7.26	6 – 9	IS 3025 (P-11)
4	Turbidity	NTU	0.78	5	IS 3025 (P-110)
		Chemical parameters			
5	Chloride(Cl)	mg/l	46.9	1000	IS 3025 (P-32)
6	Sulphate as So_4	mg/l	3.2	400	IS 3025 (P-24)
7	Alkalinity		52.6	600	IS 3025 (P-23)
8	TDS	mg/l	82	2000	IS 3025 (P-16)
10	Total hardness as CaCo3	mg/l	32.4	600	IS 3025 (P-21)
11	Calcium	mg/l	18.6	200	IS 3025 (P-40)
12	Magnesium	mg/l	3.4	100	IS 3025 (P-46)
13	Nitrate as No3	mg/l	0.78	45	IS 3025 (P-34)
14	Iron as Fe	mg/l	0.01	0.3	IS 3025 (P-53)
15	Flouride as f	mg/l	0.14	1.0	IS 3025 (P-60)

INFERENCE	BDL-Below Detectable Limits. As per KSPCB Standards all The above parameters are well within the limits.

Verified By

MSV ANALYTICAL LABORATORIES BALLARI

Authorized Signature

Note : 1. The results listed only to the tested samples & applicable parameters.
2. Water samples will destroyed after 10days, Filter papers & Thimbles will be destroyed 3months from the date of issue of test certificate unless otherwise specified. ILC sample will be destroyed after 1 month from the date of test certificate issue.
3. This report is not to be reproduced wholly or in part & cannot be used as evidence in the court of law & should not be used in any advertising media without our special permission in writing.
4. Total liability of our laboratory is limited to the invoice amount. Any dispute arising out of this report is subject to Bellary Jurisdiction only.
5. Sampling is not done by us unless otherwise specified. 6. The tests and/or calibrations marked with an are not accredited by NABL.

ENVIRONMENT AUDIT AND STATEMENT REPORT

FORTHE YEAR 2020-21

M/s. KUMADVATHI RESIDENTIAL CENTRAL SCHOOL, KUMADVATHI COLLEGE OF EDUCATION, KUMADVATHI SCIENCE & COMMERCE PU COLLEGE & KUMADVATHI FIRST GRADE COLLEGE.,

SWAMY VIVEKANANDA VIDYA SAMSTHE (R)

Thimlapura Village,

Shikaripura TQ

~*~*~*~

PREPARED BY: PARISARA CONSULTANTS AN ISO-9001: 2015 CERTIFIED COMPANY

ENVIRONMENT AUDIT REPORT & FORM - 5
FOR THE YEAR 2020 - 2021

GENERAL INFORMATION:

1) ORGANZATION NAME	
M/s. KUMADVATHI RESIDENTIAL CENTRAL SCHOOL, KUMADVATHI COLLEGE OF EDUCATION, KUMADVATHI SCIENCE & COMMERCE PU COLLEGE & KUMADVATHI FIRST GRADE COLLEGE., SWAMY VIVEKANANDA VIDYA SAMSTHE (R).,	
Address	Thimlapura Village, Shikaripura Tq College
District	SHIMOGA
State	KARNATAKA
Phone	08187 – 222067
Fax	08187 – 222067
E-mail	svvstrst@yahoo.com
2) PRODUCT MANUFACTURED	
	Kumadvathi Residential Central School, Kumadvathi College of Education, Kumadvathi Science & Commerce PU College & Kumadvathi First Grade College.
3) OPERATION DURING THE PERIOD OF AUDIT	
a) Total No. of Working Days in this Year 2020 – 21	292 Days
b) Total No. of Working Days in a Week	6 Days
c) Total No. of Shifts	Three Shifts Hostel and General Shift School and College
d) WDA Value	Rs. 3.98 Cr
4) TOTAL NO. OF EMPLOYEES	
Total Employment & Students	1964 Members
5) CURRENT APPROVALS	
Consent details of Air Act and its validity	No.75 PCB/RO(SMG)/LG/2012-13/3033 Dated:27.12.12 Valid upto 31.12.2022
Consent details of Water Act and its validity	No.75 PCB/RO(SMG)/LG/2012-13/3033 Dated:27.12.12Valid upto 31.12.2022

6) SOLID WASTE GENERATION	
1) Solid degradable Wastes 95 Kgs/day	Disposed to Municipality Bins

INTRODUCTION

Industrial Pollution in our Country is an increase and is creating a high-risk environment. Various legislation's viz. The Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control) Act. 1981 and the Environment (Protection) Act, 1986 has come into force, organizations created to combat pollution. Gone are the days when industrialization meant profit making and environment was grossly neglected. It is being realized that industry and environment should go hand in hand so as to achieve sustained development. Also over the years awareness has bought in realization to consider environmental protection a bare necessity. Yet the investments for such a protection are still considered a liability by much environmental management. Consideration of environmental factors at par with production helps in minimizing material losses and also reduction of liabilities in the long run.

The growing environmental pollution and the complexity of this problem with increasing risks from the regulatory controls needs on effective management tools so as to prevent pollution and to make pollution control programs cost-effective and feasible.

Environmental Audit is a technique being introduced for integrating the interest of the industry and the environment, so that there could be mutually supportive. This technique is basically a part of industry's internal procedures in meeting their responsibilities towards better environment. Also the policy statement for abatement of pollution by the Government of India provides for submission of environmental statement by all concerned industries, which would subsequently evolve into an environmental audit. A notification under the Environment (Protection) Rules, 1986 as been issued on April 22, 1993 requiring industries to submit on Environmental Statement for the financial year ending on March 31 in form V to the concerned State Pollution Control Board on or before September 30 every year beginning 1993. The submission of environmental statement is applicable to the following.

1. Those who require consent under the Water (Prevention and Control of Pollution) Act. 1974.

2. Those who require consent under the Air (Prevention and Control of Pollution) Act. 1981.

3. Those who require authorization under Hazardous Waste (Management & Handling) Rules, 1989.

No new Large/Medium/Small (Red & Orange Category) industry generating effluents, and or emissions shall be permitted within city/municipal limits and residential areas.

The Karnataka Industrial Area Development Board (KIADB) or any other agency developing industrial area shall obtain Environmental clearance from the Department of Ecology and environment and clearance from the Karnataka State Pollution Control Board before establishing such area. Environmental Impact Assessment (EIA) and Environmental Management Plan (EMP) reports shall be submitted to the Karnataka State Pollution Control Board and obtain approval.

Distance for establishing new industries specified in ANNEXURE - I in certain special category areas shall be as follows : -

(a) Ecologically and/or otherwise sensitive areas :
At least 25 kms., depending on the geo-climatic conditions, the requisite distance shall have to be increased by the appropriate agency.

(b) Coastal Areas :
At least 1/2 km. from high tide line. The stipulations made by Ministry of Environment & forests Government of India in its vide Notification No. S0 114(E), dated 19.02.1991, by Government of India, Ministry of Environment and Forests, issued under the Environment (Protection) Rules, 1986, shall be strictly adhered to.

(c) Transport / Communication System :
At least 1/2 km. from National & State High-ways and Railway.

(d) Major Settlements (3,00,000 Population) :
Appropriate distance for establishment of major industries around the cities having more than 3,00,000 population shall be prescribed by Karnataka State Pollution Control Board. Wherever these distance cannot

be maintained and at the same time it is inevitable to locate the industry, measures for prevention of pollution due to effluents, noise, emissions, odour etc., shall be insisted by the Board

During last few decades the Government has brought in a series of laws and regulation to control the industrial pollution and to protect the environment. The Water (Prevention & Control of Pollution) Act. 1974, was first such legislation followed by Air (Prevention & Control of Pollution) Act 1981. The Government in 1986 to address the various environmental protection issues enacted the most comprehensive legislation Environment Protection Act.

NOTE :

Ecological and / or otherwise sensitive areas include

i) Religious and Historic Places
ii) Archeological Monuments
iii) Scenic Areas
iv) Hill Resorts
v) Beach Resorts
vi) Health Resorts
vii) Coastal Areas rich in Mangroves, Breeding Grounds of Specific Species
viii) Estuaries rich in Mangroves, Breeding Grounds of Specific Species
ix) Biosphere Reserves
x) National Parks and Sanctuaries
xi) Natural Lakes, Swamps
xii) Seismic Zones
xiii) Tribal Settlements
xiv) Areas of Scientific and Geological Interest
xv) Defence Installations, specially those of security importance and sensitive to pollution
xvi) Air Ports

No forest land shall be converted into non-forest activity for the sustenance of the industry.

Land acquired shall be sufficiently large to provide for appropriate treatment of waste water still left for treatment after maximum possible reuse and recycle. Reclaimed (treated waste) water shall be used to raise green belt and to create water body for aesthetics, recreation and if possible for aquaculture. The green

belt shall be sufficiently wide around the boundary limit of the industry. For industry having odour problem, it shall be minimum of 30 mtrs. wide.
Enough space should be provided for storage of solid waste, so that the same could be available for possible reuse.

BENEFITS OF ENVIRONMENTAL AUDIT

Environmental Auditing has for reaching benefits to the industry, to the society and the nation at large. The benefits of environmental audit are as follows.

1. Determines how well the process systems and pollution control systems are performing, and identify the operation of poor performances.

2. Identifies potential cost savings which can be implemented through reduction in raw material consumption by way of waste minimization, and adaptation of recycle / recovery / reduction of pollution load.

3. Increase in awareness of environmental requirement, policies and responsibilities.

4. Helps in understanding the technical capabilities and attitude of environmental organization in a company.

5. Provides up-to-date environmental database for use in plant modification, emergencies etc.

6. Unravels surprise-hidden liabilities due to which regulatory risks and expose to litigation can be reduced.

7. Ensures independent verification and identify matters needing attention, and provide timely warning to management on potential future problems.

8. Helps to safe guard environment and assists in complying with local regional and national laws and regulations with company's policy and with the environmental standards.

OBJECTIVE OF ENVIRONMENTAL AUDITING

The Environmental Audit helps in pollution control, improved production, safety and health and conversation of natural resources and hence its overall objective can be achieving of sustainable developments. However, for conducting environmental audit, objectives are to be defined clearly or else the audit procedure will be subject to varying interpretation, which may shape differential approach there by influencing the end results. The objective of environmental audit in an industry is,

1. To determine the mass balance of various materials used and the performance of various process equipment so as to identify usage of materials in excess then required, to review the conversion efficiencies of process equipment / operation performing & minimization of wastes.

2. a) To identify the areas of water usage and waste water generation and determine the characteristics of wastewater.
   b) To determine the emissions, their sources, quantities and characteristics
   c) To determine the solid wastes and hazardous wastes generated their sources, quantities and characteristics.

3. To identifying the possibilities of wastes minimization and recovery and recycling of wastes.

4. To determine the performances of the existing waste treatment / control systems so as to modify OR install additional OR alternative control equipment accordingly.

5. To determine the impact on the surrounding environment (Ground Water, Stream, Residential Area, Agricultural Area, Sensitive Zone and Solid Waste from the industry and accordingly identify suitable preventive measures if necessary.)

6. To verify compliance with the standards and conditions prescribed by the regulatory bodies under the Water Act, the Air Act and the Environmental (Protection) Act.

7. To check the effectiveness of
   a) Organization set up of the industry for decision making and environmental management with special reference to their 'Technical' view point, 'Attitudinal' view point and training.

   b) Environmental Policy of the Company.

SCOPE OF ENVIRONMENTAL AUDIT

1. Verify the performance of Sulphur and particulate matter control measures adapted by the company to avoid the Sulphur and matter at source.

2. To critically examine the records of the production data of all the section / stages of power production.

3. Review of Water conservation measures that are adopted by the company.

4. Review of the Socio Economic environment before and after the establishment of the factory.

ABOUT THE INDUSTRY:

M/s. Kumadvathi Residential Central School, Kumadvathi College of Education, Kumadvathi Science & Commerce PU College & Kumadvathi First Grade College., have come into existence during the Year 2009. This School & College is situated at Thimlapura Village, Near Shikaripura Town, Shimoga District. The organization has got its own competent staff for handling Education Institution and for its Quality Standards.

The School and College has got total area of around 14 Acres and 27 Guntas with 89385 Sq Mtrs built up area

RAW MATERIALS CONSUMED FOR PRODUCTION:

Sl. No.	Material	Qty. in Tons/Month
01	Grocery	10 Tons/Month
02	Vegetables	05 Tons/Month

ENVIRONMENTAL CONTROL IN THE INDUSTRY

WATER POLLUTION CONTROL:

Waste water in the Residential School is from the Food Preparation for the Students staying in Hostel and Colleges activities.

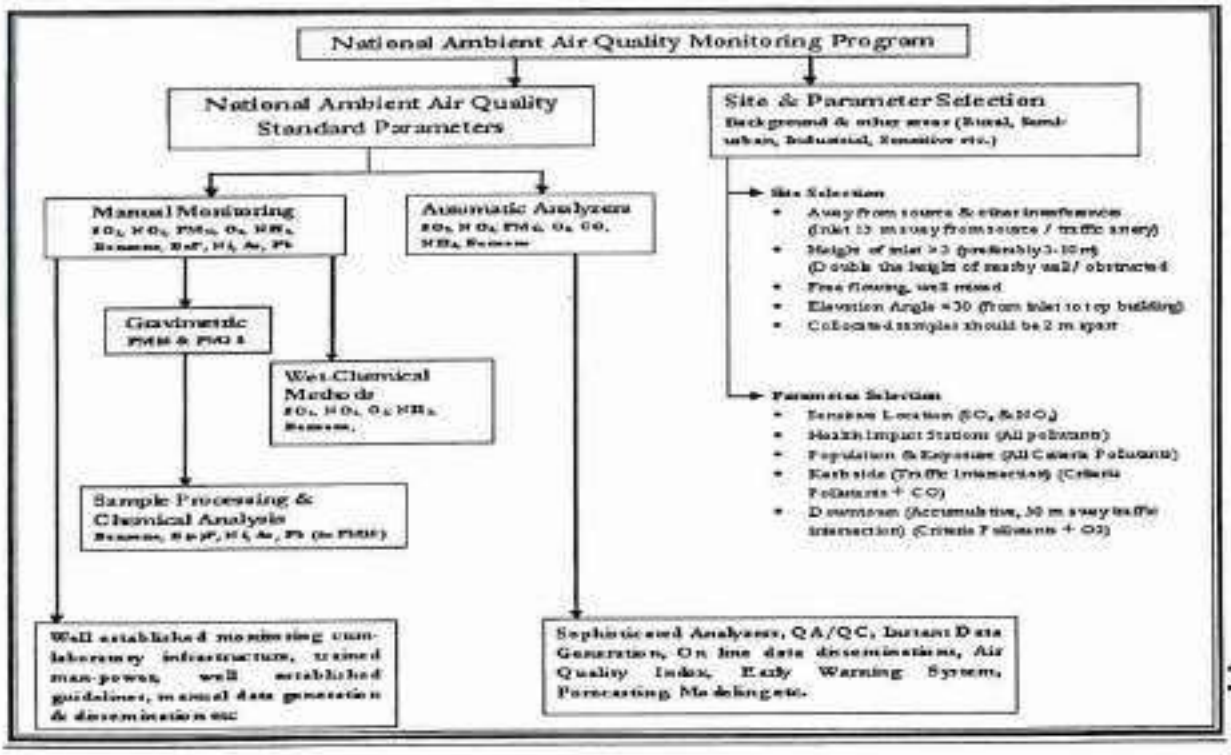
The Colleges activities include the usage of Washrooms, Canteen and Toilets. The Colleges waste is sent to a Municipality, Under Ground drainage and Septic Tank and Soak Pit for the process.

The daily requirement of fresh water is about 51000 Lts/Day. This unit has about 214 Staff and 1750 Students out of which 500 students are the occupants in Hostel, The consumption of Water for domestic purposes is about 51000 Lts/day including college and Hostel purpose.

AIR POLLUTION:

Sl. No.	Pollution Source	Capacity	Height of Chimney
01	D.G. Set	100 KVA	5 MTR ARL

D.G. Set – 1 No's, is the only source of Air Pollution. The height of the Chimney is provided as per KSPCB stipulations.



SOLID WASTES:

The Hostel is not significant from this angle as they are in running Educational Institution. The only Solid Waste generated is Bio degradable Solid Wastes generated during canteen activity. The solid waste is segregated like Bio-degradable solid waste and Non-degradable solid waste in separate bins and disposed to municipality.

NOISE POLLUTION:

Whereas the increasing ambient noise levels in public places from various sources, inter-alia, industrial activity, construction activity, fire crackers, sound producing instruments, generator sets, loud speakers, public address systems, music systems, vehicular horns and other mechanical devices have deleterious effects on human health and the psychological well being of the people; it is considered necessary to regulate and control noise producing and generating sources with the objective of maintaining the ambient air quality standards in respect of noise;

Whereas a draft of Noise Pollution (Control and Regulation) Rules, 1999 was published under the notification of the Government of India in the Ministry of Environment and Forests vide number S.O. 528 (E), dated the 28th June, 1999 inviting objections and suggestions from all the persons likely to be affected thereby, before the expiry of the period of sixty days from the date on which the copies of the Gazette containing the said notification are made available to the public;

And whereas copies of the said Gazette were made available to the public on the 1st day of July, 1999;

And whereas the objections and suggestions received from the public in respect of the said draft rules have been duly considered by the Central Government;

The School and College is not significant from this angle as they installed 1 DG Set with acoustic system. The noise level maintained within the limits as prescribed by KSPCB norms of Silent zone.

HAZARDOUS WASTE MANAGEMENT:

As per the Hazardous Waste Rules, there is no Hazardous Waste generated at **M/s. Kumadvathi Residential Central School, Kumadvathi College of Education, Kumadvathi Science & Commerce PU College & Kumadvathi First Grade College.** as they are running Educational Institution. The DG Set is operated, when there is a failure in electricity power the Hazardous Waste generated is only the waste Oil, it will be collected & stored in a leak proof container and disposed to KSPCB authorized re-processor.

List of Waste Oil Re-processer approved by KSPCB

1	M/s. S.M. Enterprises, No 4911. M.C. Road, Mandya.	4,200 KL/A	Used Oil Re-processor	Working
2	M/s. Special Oils, No 202/2, Kuruvinakoppa, Post B, Gudhihal - 581 204, Kalaghatgi Taluk, Dharwad.	1,440 KL/A	Used Oil Re-processor	Working
3	M/s. Nakoda Petro Chemicals, Plot no.8, KIADB Indl area, Sathyamangala, Tumkur.	1,800 KL/A	Used Oil Re-processor	Working
4	M/s. Shanthadurga Petrochemicals, No 701, Shedegalli Manturga Post, Khanapur Belgaum	1,800 KL/A	Used Oil Re-processor	Working
5	M/s. Jyothi Chemicals industries,(Used oil) Survey Nos: 29, 30/1 & 30/2, Jigani Industrial Area, Anekal Taluk, Bangalore.	1,020 KL/A	Used Oil Re-processor	Working
6	M/s. Lubetech Petro Chemicals, No. 1-54, KSSIDC, Veerasandra Industrial Area, Hosur Road, Bangalore-229.	1,440 KL/A	Used Oil Re-processor	Working
7	M/9s. Sri Balaji Refineries, B-5&6, Veerasandra Industrial Area, Anekal Taluk, Bangalore.	1,100 KL/A	Used Oil Re-processor	Working
8	M/s. SB Refineries, Plot No. 81, 4th phase, Bommasandra Link Road.	3,600 KL/A	Used Oil Re-processor	Working
9	Bharath Lubricants, B-36, KSSIDC Industrial Estate, Veerasandra, Hosur Road, Bangalore - 560 100.	9000 MT/A	Used Oil Re-processor	Working

10	M/s. Arun Industries, B-64, III Stage, PIE, Bangalore-58	360 KL/A	Used Oil Re-processor	Working
11	M/s. M.R. Industries, Plot no.14-G, 1st Cross 2nd main, Kumbalgod, Banglore-74	3,000 KL/A	Used Oil Re-processor	Working
12	M/s. Merlyn Hydrocarbons Pvt. Ltd, No 367, Hassan Growth Centre HN Pura Rd, Hassan.	4,500 KL/A	Used Oil Re-processor	Working
13	M/s. Sampath Refinery Pvt. Ltd, Plot No.64A-65D, KIADB Industrial Area, Tubinakere, Mandya Dist.	3,600 KL/A	Used Oil Re-processor	Working
14	M/s. K.M. Oils (P) Ltd., Plot No.75, 76 & 77A, (Part) II phase, Kapnoor Industrial area, Gulbarga – 585 104.	10,200 KL/A	Used Oil Re-processor	Working
15	M/s. Balaji Industries, Plot No.20/A, Machenahalli Industrial Area, Shimoga Tq, & Dist.	1200 KL/A	Used Oil Re-processor	Working
16	M/s. H.N Petrochem Industries, Plot No.29/2, Taj Sultanpur Industrial Area, Gulbarga.	3600 KL/A	Used Oil Re-processor	Working
17	M/s. Khawja Petroleums Pvt. Ltd, Plot No.3, KIADB Industrial Area, S.G. Kote, Dasarahalli, Bangalore-114.	1200 KL/A	Used Oil Re-processor	Working
18	M/s. Sri. V.B.S. Petro Chemicals, No.11 & 12, 3rd cross,2ns block, Peenya Industrial Area, Bangalore- 058.	2244 KL/A	Used Oil Re-processor	Working
19	M/s. Merit India Lubicants, Plot No.189, Bommasandra Industrial Area, 4th Phase, Anekal Tq. Bangalore	9000 KL/A	Used Oil Re-processor	Working
20	Lube Tech Petro Chemicals, No. C-76, KSSIDC, Veerasandra, Indsutrial Estate, Hosur Road, Bangalore - 560 100.	1498 KL/A	Used Oil Re-processor	Working

SUMMARY & CONCLUSIONS:

M/s. **Kumadvathi Residential Central School, Kumadvathi College of Education, Kumadvathi Science & Commerce PU College & Kumadvathi First Grade College.,** is always committed to the concept of re-cycling and re-uses with the objective of waste minimization techniques. In general M/s. **Kumadvathi Residential Central School, Kumadvathi College of Education, Kumadvathi Science & Commerce PU College & Kumadvathi First Grade College.,** as responsible corporate has a comprehensive and effective environmental control and protection program. The Companies endeavor has been to maximize the efficient use of energy and safe and responsible disposal of residual waste. The commitment by the industry in adhering to the statuary norms of the **KSPCB** right from its inception stage reflects its commitment to be always an environmental compatible unit.

ENVIRONMENTAL AUDIT STATEMENT EXTRACT

FOR THE YEAR
2020 - 2021
IN
FORM - V

FORM – V

Environmental Statement for the financial year ending the 31st March 2021

PART – A

1) Name & Address of the Owner / Occupier of the industry in Operation or Process:

Mr. B.Y. Raghavendra - Secretary.
M/s. Kumadvathi Residential Central School, D Ed and B Ed College,
Swamy Vivekananda Trust (R)
Thimlapura,
Shikaripura Tq
Shimoga Dt.

II) Industry category primary (STC Code) Secondary (SIC) Code

Kumadvathi Residential Central School, Kumadvathi College of Education, Kumadvathi Science & Commerce PU College & Kumadvathi First Grade College

III) Production Capacity per Month: Educational Institution

IV) Year of Establishment: 2009

PART – B

WATER AND RAW MATERIAL CONSUMPTION:

I. Water Consumption in KL / Day: 51,000 Lts per day.

Inserted by Rule 2 of the Environment (protection) Second Amendment Rule 1992 vide G.S.R. 329 (E) dated 13.03.1992.		
Name of Products	Water Consumption per day of Production	
Rough Castings	During the Previous financial Year 2019 – 20	During the Current financial Year 2020 – 21
1. Industrial (Residential School and College)	-----	-----
2. Domestic (Sanitary purpose)	51000 Lts / Day	51000 Lts / Day
3. Gardening	-----	-----

II. RAW MATERIAL CONSUMPTION:

Name of the Raw Material	Name of the Product	Consumption of Raw Material per Unit Output	
		During the Previous financial Year	During the Current financial Year
Grocery	**Food Products**	**120 Tons/Year**	**120 Tons/Year**
Vegetables		**60 Tons/Year**	**60 Tons/Year**

Note: The consumption of raw materials mentioned above is on average, it depends as per order.

PART – C

Pollution discharged to environment per unit of output parameters as specified in the consent issued.

WATER POLLUTION:

Source of Pollution	Pollutants	Quantity of Pollutants Discharged (Kg/Day)	Concentration of Pollutants Discharges (Mass/Volume)	Percentage of Variation from prescribed standards with reasons
Water	Discharged to UGD			

PART – D

AIR POLLUTION:

Source of Pollution	Pollutants	Quantity of Pollutants Discharged (Kg/day)	Concentration of Pollutants Discharged (Mass/Volume)	Percentage of Variation from prescribed Standards with reasons
D.G. Set : 100 KVA – 1 No.	NA			NA

PART – E

SOLID WASTES:

Solid Waste	Total Quantity (Kg)	
	During the Previous financial Year	During the Current financial Year
a) From Process	98 Kgs/Day	95 Kgs/Day
b) From Pollution Control Facility	NA	NA
c) 1. Quantity recycled or reused within the unit 2. Quantity Sold 3. Quantity disposed	Out of 98 Kgs of Solid waste around 89 Kgs of Bio-degradable solid waste and 9 Kgs of No-degradable waste will be segregated and disposed to Municipality for treatment.	Out of 95 Kgs of Solid waste around 89 Kgs of Bio-degradable solid waste and 6 Kgs of No-degradable waste will be segregated and disposed to Municipality for treatment.

PART – F

HAZARDOUS WASTES

(As specified under Hazardous Waste / Management & Handling Rules 1989)

Hazardous Waste	Total Quantity (Kg)	
	During the Previous financial Year	During the Current financial Year
a) From Process	Nil	Nil
b) From Pollution Control facilities	Nil	Nil

PART – G

Please specify the characterization (in terms of composition & quantum) of Hazardous as well as Solid Wastes indicate disposal practice adopted for both these categories of wastes.

Moulded Sand is the only Solid Waste generated; Moulded Sand is collected in separate yard and disposed at Karnataka State Reserve Police, 8th Battalion, Jayanthi Gram, Shimoga. Hazardous Waste is the only the Waste Oil, it will be Collected & Stored in leak proof container and disposed to KSPCB authorised re-processor.

PART – H

Impact of the pollution abatement measures taken on conservation of natural resources and on the cost of the production.

The industry doesn't have any impact on the environment. The only natural resource consumed is Water for Domestic and Industrial purposes. The domestic wastewater effluent is sent to septic tank and the industrial wastewater used for cooling is recycled. The recycled water will be used for gardening.

PART – I

Additional measures / investment proposal for environmental protection including abatement of pollution, prevention of pollution.

Environment protection and pollution controls have been the priority for the industry. Any suggestions or improvements made by the pollution control board will be implemented.

- Plant management should evolve its own code for washing equipment, where particular equipment is used for the manufacture of different products. Dry scrapping of equipment surface followed by mopping with wet cloth should be carried out before hosing operation. This will reduce the quantity of the contaminants and wastewater volume.
- All channels are fitted waste water measurement devices, half barrier for the separation floating immobile liquid and in-built separation per sedimentation basins for withholding settable particulate matters. This provision may be treated as compulsory for wastewater channels in the immediate vicinity of wastewater generating units.
- All water usage that does not come in contact with chemicals should have no opportunity to mix process water. Uncontaminated water should have separate outlets from the plant and recycled is not possible, should be drained out through separate channels, without any change of getting contaminated.
- These proposed layout codes recognize solid waste generated in the process of manufacturing must find a place within the factory premises. It will be stored on land / lagoon, which will be lined with compatible geo-textile material.
- The detoxification operation is to be carried out outside the main production plant and provision has to be kept for the same.
- Storm water drains should be segregated from process water drains. The former may be used for the removal of the cooling water and non-process water.

PART - J

Any other particulars for improving the quality of the environment.

Constant efforts will be made in making use of the updated technologies.

ENVIRONMENT SAFE CODE FOR MANUFACTURING UNITS

- An environmentally safe layout plan takes care of material loss, cost of collection, disposal, recycle and treatment which are part of the process itself, and consequently of the layout arrangement.
- This layout codes postulates that environment protection is a factor for designing any equipment reaction vessel, material transfer arrangement, storage tank and service support to operate the production system.
- All places of storage of solid and liquid materials are to be liked without drains. Any spillage is to be wiped out and cannot be washed out.
- As losses of materials take place during charging of the reaction vessels, discharging of produce and dripping of outlet valves, and as exercised to prevent the losses, if necessary by changing the charging, discharging and transfer devices.
- Corrosion – prone area and construction materials liable to atmosphere and process-induced corrosion should be given special attention for finding better replacement material and stricter preventive maintenance frequency.
- New units will build floors with expand metals slotted angles, steel grills, steel grates, prefabricated industrial floor grafting, and the like which floor washing redundant.

GUIDELINES TO MINIMISE THE RAW MATERIAL LOSSES

- Keep only an appropriate inventory of raw materials to ensure minimum material handling losses, evaporation losses etc.,
- Adopt mechanical handling of materials with proper monitoring facilities so as to do only predetermine quantities as per norms prescribed.
- Plant layout should be properly made so as to minimize transfer distance of materials between storage and process or between the units operation.
- There is a risk of cross contamination due to usage of some storage tanks for different materials depending on the batch product. Separate storage is to be provided.
- Separate process lines for separate production of separate equipment for each unit operation can minimize losses due to residues left out in the equipment which is usually washed out.
- Storage tank should be provided with dropper dip arrangements for exhaust, vents and insulation provided so as to reduce evaporation losses.
- Enclosed and covered material storage areas keep them secured and reduce losses due to carry over by wind and rain.
- Enclosures should be made to collect spills and overflow of materials at the material and sampling points. This if collected properly, can be recycled.
- Regular maintenance should be taken to check flange leaks, breaks / cracks , pump failures etc.,
- Raw material purity should be ensured. Viscous raw materials lead to losses due to residues in drums. Raw material should be easy to handle. Good house keeping should be followed.
- Norms for performance of various process operation fixed so that the material usage are minimized and hence the material losses.

GUIDELINES TO REDUCE WATER USAGE AND WASTE WATER GENERATION:

- Quantities required for each operation should be determined and water usage regulated strictly. Water usage reduces wastewater. Good house keeping practices reduces water usage.
- Spills of materials should be restricted to ensure constructed for these purposes. The floor washing can then be minimized at time totally avoided
- Wastewater may be stored and reused. The storage costs may be lower then wastewater treatment and disposal costs.
- Storm water drains should be kept separate and provisions should be made to collect only the rainfall of first few hours, which carries contaminants. This can be subsequently treated and disposed.
- The scrubbing of gaseous emissions with a suitable chemical can yield a useful by-product. Recycle or recovery of useful thus can avoid the discharge by byproducts.
- The wastewater is usually treated up to secondary treatment level to confirm to the required standards. By providing tertiary treatment by dual media filtration, columniation, activated carbon filtration etc., waste water can be reused for floor wash, gardening, Toilets etc.,

GUIDELINE FOR REDUCING EMISSION:

- The process operations where emissions arise should be provided with control equipment, condensers could collect certain emissions, which can be entirely reduced.
- The transfer of materials should be done through closed operation.
- The areas where fugitive emissions arise can be avoided should be enclosed and the air exhausted through induced draft and passed through control equipment before vetting off.
- The enclosed area should be provided with at least three air replacements per minute.
- Evaporation losses from storage tanks should be checked by proper insulation and putting the vents in suitable dip columns.
- Loading and unloading of materials from tankers leads to huge quantities of emissions. The materials transfers should be done through pipes / holes keeping the outlet of the tanker and the inlet of receiving tank covered. While loading the tanker, if the tanker inlet cannot be recovered, a hood can be provided over the inlet emissions collected through a ducting system and further controlled.

Principal
Kumadvathi College of Education
Shikaripura

Swamy Vivekananda Vidya Samsthe (R), Shikaripura

ಕುಮದ್ವತಿ ಶಿಕ್ಷಣ ಮಹಾವಿದ್ಯಾಲಯ

KUMADVATHI COLLEGE OF EDUCATION

Aided, Permanently Affiliated to Kuvempu University, Recognised by NCTE & UGC Act 2(f), Section 12(B) & NAAC Accredited with B Grade (2.70 CGPA)

Shivamogga Road Shikaripura – 577 427 Shivamogga Dist

☎: 08187 – 222383, 222 E-Mail:kumadvathibed@gmail.com

Environment Audit Report 2019-20

MSV Analytical Laboratories

Recognition by MoEF under Environment (Protection) Act, 1986 and Accredited by NABL
(Certified by ISO 14001:2015, ISO 22000:2018, ISO 45001:2018, ISO 9001:2015)
C.M.C Ward No 18 & C.T.C W.No.16 T.S No. 695/A/32/B1, Block No 19 (1st & 2nd Floor)
Sanganakallu Road, KEB Circle, Ballari - 583103 Contact No : Mob : 94498 03895, (O) : 08392 255169.
E-mail : msv.lab01@gmail.com, labmsv@gmail.com, Website : www.msvalbellary.com

TC-7207

MSVAL/W/F/13/03

ANALYSIS REPORT OF WATER QUALITY

Test Report No : TC720720000016139F Issued Date: 14.11.2020

1. Name of the Client : M/s. Kumudwathi Residential Central School, PUC, ED & B ED college, Swamy Vivekananda Trust(R) Thimplapura village, Shikaripura(T).
2. Sample Type : Bore well water near Site
3. Sample Collected By : MSV Analytical Laboratories, Bellary.
4. Sample Quantity : 2 Liters
5. Sample Description/condition : Good
6. Date of sample Receipt : 09.11.2020
7. Analysis Starting Date : 10.11.2020
8. Analysis Completion Date : 14.11.2020
9. Sample Tested as Received

S.No	Parameters	Protocol	Unit	Result	IS 10500-2012	
					Acceptable Limit	Permissible limit
		Physical parameters				
1	Color	IS : 3025(part-4)	Hazen	Colorless	5	15
2	Odor	IS : 3025(part-5)	---	Agreeable	Agreeable	Agreeable
3	pH	IS : 3025(part-11)	---	6.92	6.5	8.5
4	Turbidity	IS : 3025(part-10)	NTU	0.89	1	5
		Chemical parameters				
5	Alkalinity	IS : 3025(part-23)	mg/L	48	200	600
6	Total Dissolved Solids	IS : 3025(part-16)	mg/L	70	500	2000
7	Total Hardness as $CaCO_3$	IS : 3025(part-21)	mg/L	22.4	200	600
8	Calcium as Ca	IS : 3025(part-40)	mg/L	17.1	75	200
9	Magnesium as Mg	IS : 3025(part-46)	mg/L	4.9	30	100
10	Sulphate as SO_4	IS : 3025(part-24)	mg/L	2.6	200	400
11	Chloride as Cl	IS : 3025(part-32)	mg/L	34.2	250	1000
12	Nitrate as NO_3	IS : 3025(part-34)	mg/L	0.91	45	No Relaxation
13	Iron as Fe	IS : 3025(part-53)	mg/L	<0.01	0.3	No Relaxation
14	Fluoride as F	IS : 3025(part-60)	mg/L	0.12	1.0	1.5

INFERENCE	IS 10500 – 2012 Standards BDL – Below Detectable Limit Report Status: - The above parameters are within the prescribed Acceptable limits

Verified by

Authorized Signature

:- END OF REPORT :-

Note 1. The results listed only to the tested samples & applicable parameters.
2. Water samples will destroyed after 10days. Filter papers & Thimbles will be destroyed 3months from the date of issue of test certificate unless otherwise specified. ILC sample will be destroyed after 1 month from the date of test certificate issue.
3. This report is not to be reproduced wholly or in part & cannot be used as evidence in the court of law & should not be used in any advertising media without our special permission in writing.
4. Total liability of our laboratory is limited to the invoice amount. Any dispute arising out of this report is subject to Bellary Jurisdiction only.
5. Sampling is not done by us unless otherwise specified. 6. The tests and/or calibrations marked with an are not accredited by NABL.

☎ 08187-224130

ಸ್ವಾಮಿ ವಿವೇಕಾನಂದ ವಿದ್ಯಾ ಸಂಸ್ಥೆ (ರಿ.)

ಶಿವಮೊಗ್ಗ ರಸ್ತೆ, ಶಿಕಾರಿಪುರ - 577 427 ಶಿವಮೊಗ್ಗ ಜಿಲ್ಲೆ (ಕರ್ನಾಟಕ ರಾಜ್ಯ)

Swamy Vivekananda Vidya Samsthe (R.)

Shivamogga Road, SHIKARIPURA - 577 427 Shivamogga Dist (Karnataka State)

e-mail : svvstrst@yahoo.co.in

Ref No. SEO/KSPCB/Audit Report/2019-20/19

Date 09.12.2020

To,

The Enveronment Offier

Karnataka State Pollution Control Board

Shivamogga

Dear Sir

Sub: Submission of Annual Audit Report form V

****

With reference to the above subject we are here with submitting two sets of Annual Audit report and form V for the year 2019-20 as desired. Please

Kindly acknowledge the receipt

With regards

Yours sincerely

9/12/20

ಆಡಳಿತ ಸಮನ್ವಯಾಧಿಕಾರಿಗಳು
ಸ್ವಾಮಿ ವಿವೇಕಾನಂದ ವಿದ್ಯಾಸಂಸ್ಥೆ (ರಿ
ಶಿಕಾರಿಪುರ-577427

10/12/2020

ENVIRONMENT AUDIT AND STATEMENT REPORT

FORTHE YEAR 2019-20

M/s. KUMADVATHI RESIDENTIAL CENTRAL SCHOOL, KUMADVATHI COLLEGE OF EDUCATION, KUMADVATHI SCIENCE & COMMERCE PU COLLEGE & KUMADVATHI FIRST GRADE COLLEGE.,

SWAMY VIVEKANANDA VIDYA SAMSTHE (R)

Thimlapura Village,

Shikaripura TQ

~*~*~*~

PREPARED BY: PARISARA CONSULTANTS AN ISO-9001: 2015 CERTIFIED COMPANY

ENVIRONMENT AUDIT REPORT & FORM - 5
FOR THE YEAR 2019 - 2020

GENERAL INFORMATION:

1) ORGANZATION NAME	
M/s. KUMADVATHI RESIDENTIAL CENTRAL SCHOOL, KUMADVATHI COLLEGE OF EDUCATION, KUMADVATHI SCIENCE & COMMERCE PU COLLEGE & KUMADVATHI FIRST GRADE COLLEGE., SWAMY VIVEKANANDA VIDYA SAMSTHE (R).,	
Address	Thimlapura Village, Shikaripura Tq College
District	SHIMOGA
State	KARNATAKA
Phone	08187 – 222067
Fax	08187 – 222067
E-mail	svvstrst@yahoo.com
2) PRODUCT MANUFACTURED	
	Kumadvathi Residential Central School, Kumadvathi College of Education, Kumadvathi Science & Commerce PU College & Kumadvathi First Grade College.
3) OPERATION DURING THE PERIOD OF AUDIT	
a) Total No. of Working Days in this Year 2019 – 20	311 Days
b) Total No. of Working Days in a Week	6 Days
c) Total No. of Shifts	Three Shifts Hostel and General Shift School and College
d) WDA Value	Rs. 3.96 Cr
4) TOTAL NO. OF EMPLOYEES	
Total Employment & Students	2000 Members
5) CURRENT APPROVALS	
Consent details of Air Act and its validity	No.75 PCB/RO(SMG)/LG/2012-13/3033 Dated:27.12.12 Valid upto 31.12.2022
Consent details of Water Act and its validity	No.75 PCB/RO(SMG)/LG/2012-13/3033 Dated:27.12.12Valid upto 31.12.2022

6) SOLID WASTE GENERATION	
1) Solid degradable Wastes 98 Kgs/day	Disposed to Municipality Bins

INTRODUCTION

Industrial Pollution in our Country is an increase and is creating a high-risk environment. Various legislation's viz. The Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control) Act. 1981 and the Environment (Protection) Act, 1986 has come into force, organizations created to combat pollution. Gone are the days when industrialization meant profit making and environment was grossly neglected. It is being realized that industry and environment should go hand in hand so as to achieve sustained development. Also over the years awareness has bought in realization to consider environmental protection a bare necessity. Yet the investments for such a protection are still considered a liability by much environmental management. Consideration of environmental factors at par with production helps in minimizing material losses and also reduction of liabilities in the long run.

The growing environmental pollution and the complexity of this problem with increasing risks from the regulatory controls needs on effective management tools so as to prevent pollution and to make pollution control programs cost-effective and feasible.

Environmental Audit is a technique being introduced for integrating the interest of the industry and the environment, so that there could be mutually supportive. This technique is basically a part of industry's internal procedures in meeting their responsibilities towards better environment. Also the policy statement for abatement of pollution by the Government of India provides for submission of environmental statement by all concerned industries, which would subsequently evolve into an environmental audit. A notification under the Environment (Protection) Rules, 1986 as been issued on April 22, 1993 requiring industries to submit on Environmental Statement for the financial year ending on March 31 in form V to the concerned State Pollution Control Board on or before September 30 every year beginning 1993. The submission of environmental statement is applicable to the following.

1. Those who require consent under the Water (Prevention and Control of Pollution) Act. 1974.

2. Those who require consent under the Air (Prevention and Control of Pollution) Act. 1981.

3. Those who require authorization under Hazardous Waste (Management & Handling) Rules, 1989.

No new Large/Medium/Small (Red & Orange Category) industry generating effluents, and or emissions shall be permitted within city/municipal limits and residential areas.

The Karnataka Industrial Area Development Board (KIADB) or any other agency developing industrial area shall obtain Environmental clearance from the Department of Ecology and environment and clearance from the Karnataka State Pollution Control Board before establishing such area. Environmental Impact Assessment (EIA) and Environmental Management Plan (EMP) reports shall be submitted to the Karnataka State Pollution Control Board and obtain approval.

Distance for establishing new industries specified in ANNEXURE - 1 in certain special category areas shall be as follows : -

(a) Ecologically and/or otherwise sensitive areas :
At least 25 kms., depending on the geo-climatic conditions, the requisite distance shall have to be increased by the appropriate agency.

(b) Coastal Areas :
At least 1/2 km. from high tide line. The stipulations made by Ministry of Environment & forests Government of India in its vide Notification No. S0 114(E), dated 19.02.1991, by Government of India, Ministry of Environment and Forests, issued under the Environment (Protection) Rules, 1986, shall be strictly adhered to.

(c) Transport / Communication System :
At least 1/2 km. from National & State High-ways and Railway.

(d) Major Settlements (3,00,000 Population) :
Appropriate distance for establishment of major industries around the cities having more than 3,00,000 population shall be prescribed by Karnataka State Pollution Control Board. Wherever these distance cannot

be maintained and at the same time it is inevitable to locate the industry, measures for prevention of pollution due to effluents, noise, emissions, odour etc., shall be insisted by the Board

During last few decades the Government has brought in a series of laws and regulation to control the industrial pollution and to protect the environment. The Water (Prevention & Control of Pollution) Act. 1974, was first such legislation followed by Air (Prevention & Control of Pollution) Act 1981. The Government in 1986 to address the various environmental protection issues enacted the most comprehensive legislation Environment Protection Act.

NOTE :

Ecological and / or otherwise sensitive areas include

i) Religious and Historic Places
ii) Archeological Monuments
iii) Scenic Areas
iv) Hill Resorts
v) Beach Resorts
vi) Health Resorts
vii) Coastal Areas rich in Mangroves, Breeding Grounds of Specific Species
viii) Estuaries rich in Mangroves, Breeding Grounds of Specific Species
ix) Biosphere Reserves
x) National Parks and Sanctuaries
xi) Natural Lakes, Swamps
xii) Seismic Zones
xiii) Tribal Settlements
xiv) Areas of Scientific and Geological Interest
xv) Defence Installations, specially those of security importance and sensitive to pollution
xvi) Air Ports

No forest land shall be converted into non-forest activity for the sustenance of the industry.

Land acquired shall be sufficiently large to provide for appropriate treatment of waste water still left for treatment after maximum possible reuse and recycle. Reclaimed (treated waste) water shall be used to raise green belt and to create water body for aesthetics, recreation and if possible for aquaculture. The green

belt shall be sufficiently wide around the boundary limit of the industry. For industry having odour problem, it shall be minimum of 30 mtrs. wide.
Enough space should be provided for storage of solid waste, so that the same could be available for possible reuse.

BENEFITS OF ENVIRONMENTAL AUDIT

Environmental Auditing has for reaching benefits to the industry, to the society and the nation at large. The benefits of environmental audit are as follows.

1. Determines how well the process systems and pollution control systems are performing, and identify the operation of poor performances.

2. Identifies potential cost savings which can be implemented through reduction in raw material consumption by way of waste minimization, and adaptation of recycle / recovery / reduction of pollution load.

3. Increase in awareness of environmental requirement, policies and responsibilities.

4. Helps in understanding the technical capabilities and attitude of environmental organization in a company.

5. Provides up-to-date environmental database for use in plant modification, emergencies etc.

6. Unravels surprise-hidden liabilities due to which regulatory risks and expose to litigation can be reduced.

7. Ensures independent verification and identify matters needing attention, and provide timely warning to management on potential future problems.

8. Helps to safe guard environment and assists in complying with local regional and national laws and regulations with company's policy and with the environmental standards.

OBJECTIVE OF ENVIRONMENTAL AUDITING

The Environmental Audit helps in pollution control, improved production, safety and health and conversation of natural resources and hence its overall objective can be achieving of sustainable developments. However, for conducting environmental audit, objectives are to be defined clearly or else the audit procedure will be subject to varying interpretation, which may shape differential approach there by influencing the end results. The objective of environmental audit in an industry is,

1. To determine the mass balance of various materials used and the performance of various process equipment so as to identify usage of materials in excess then required, to review the conversion efficiencies of process equipment / operation performing & minimization of wastes.

2. a) To identify the areas of water usage and waste water generation and determine the characteristics of wastewater.
   b) To determine the emissions, their sources, quantities and characteristics
   c) To determine the solid wastes and hazardous wastes generated their sources, quantities and characteristics.

3. To identifying the possibilities of wastes minimization and recovery and recycling of wastes.

4. To determine the performances of the existing waste treatment / control systems so as to modify OR install additional OR alternative control equipment accordingly.

5. To determine the impact on the surrounding environment (Ground Water, Stream, Residential Area, Agricultural Area, Sensitive Zone and Solid Waste from the industry and accordingly identify suitable preventive measures if necessary.)

6. To verify compliance with the standards and conditions prescribed by the regulatory bodies under the Water Act, the Air Act and the Environmental (Protection) Act.

7. To check the effectiveness of
   a) Organization set up of the industry for decision making and environmental management with special reference to their 'Technical' view point, 'Attitudinal' view point and training.

   b) Environmental Policy of the Company.

SCOPE OF ENVIRONMENTAL AUDIT

1. Verify the performance of Sulphur and particulate matter control measures adapted by the company to avoid the Sulphur and matter at source.
2. To critically examine the records of the production data of all the section / stages of power production.
3. Review of Water conservation measures that are adopted by the company.
4. Review of the Socio Economic environment before and after the establishment of the factory.

ABOUT THE INDUSTRY:

M/s. Kumadvathi Residential Central School, Kumadvathi College of Education, Kumadvathi Science & Commerce PU College & Kumadvathi First Grade College., have come into existence during the Year 2009. This School & College is situated at Thimlapura Village, Near Shikaripura Town, Shimoga District. The organization has got its own competent staff for handling Education Institution and for its Quality Standards.

The School and College has got total area of around 14 Acres and 27 Guntas with 89385 Sq Mtrs built up area

RAW MATERIALS CONSUMED FOR PRODUCTION:

Sl. No.	Material	Qty. in Tons/Month
01	Grocery	10 Tons/Month
02	Vegetables	05 Tons/Month

ENVIRONMENTAL CONTROL IN THE INDUSTRY

WATER POLLUTION CONTROL:

Waste water in the Residential School is from the Food Preparation for the Students staying in Hostel and Colleges activities.

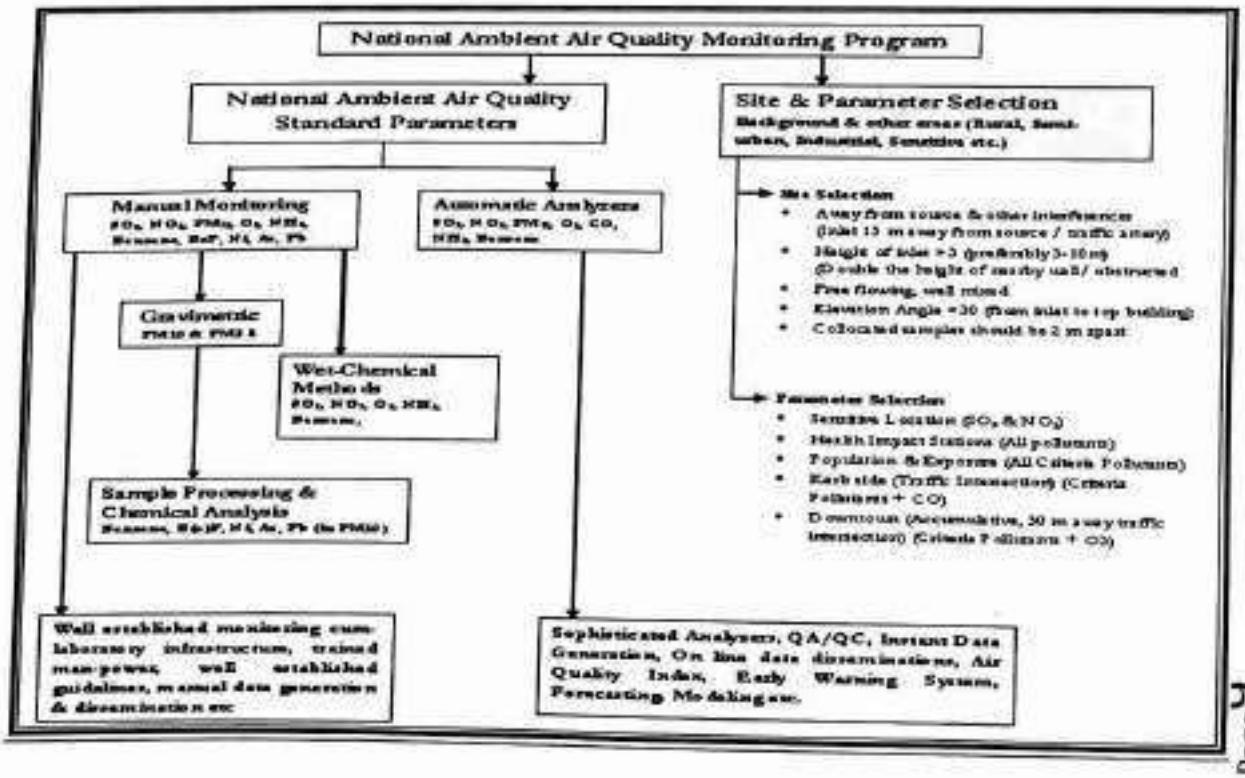
The Colleges activities include the usage of Washrooms, Canteen and Toilets. The Colleges waste is sent to a Municipality, Under Ground drainage and Septic Tank and Soak Pit for the process.

The daily requirement of fresh water is about 51000 Lts/Day. This unit has about 170 Staff and 1830 Students out of which 500 students are the occupants in Hostel, The consumption of Water for domestic purposes is about 51000 Lts/day including college and Hostel purpose.

AIR POLLUTION:

Sl. No.	Pollution Source	Capacity	Height of Chimney
01	D.G. Set	100 KVA	5 MTR ARL

D.G. Set – 1 No's, is the only source of Air Pollution. The height of the Chimney is provided as per KSPCB stipulations.



SOLID WASTES:

The Hostel is not significant from this angle as they are in running Educational Institution. The only Solid Waste generated is Bio degradable Solid Wastes generated during canteen activity. The solid waste is segregated like Bio-degradable solid waste and Non-degradable solid waste in separate bins and disposed to municipality.

NOISE POLLUTION:

Whereas the increasing ambient noise levels in public places from various sources, inter-alia, industrial activity, construction activity, fire crackers, sound producing instruments, generator sets, loud speakers, public address systems, music systems, vehicular horns and other mechanical devices have deleterious effects on human health and the psychological well being of the people; it is considered necessary to regulate and control noise producing and generating sources with the objective of maintaining the ambient air quality standards in respect of noise;

Whereas a draft of Noise Pollution (Control and Regulation) Rules, 1999 was published under the notification of the Government of India in the Ministry of Environment and Forests vide number S.O. 528 (E), dated the 28th June, 1999 inviting objections and suggestions from all the persons likely to be affected thereby, before the expiry of the period of sixty days from the date on which the copies of the Gazette containing the said notification are made available to the public;

And whereas copies of the said Gazette were made available to the public on the 1st day of July, 1999;

And whereas the objections and suggestions received from the public in respect of the said draft rules have been duly considered by the Central Government;

The School and College is not significant from this angle as they installed 1 DG Set with acoustic system. The noise level maintained within the limits as prescribed by KSPCB norms of Silent zone.

HAZARDOUS WASTE MANAGEMENT:

As per the Hazardous Waste Rules, there is no Hazardous Waste generated at **M/s. Kumadvathi Residential Central School, Kumadvathi College of Education, Kumadvathi Science & Commerce PU College & Kumadvathi First Grade College.** as they are running Educational Institution. The DG Set is operated, when there is a failure in electricity power the Hazardous Waste generated is only the waste Oil, it will be collected & stored in a leak proof container and disposed to KSPCB authorized re-processor.

List of Waste Oil Re-processer approved by KSPCB

1	M/s. S.M. Enterprises, No 4911. M.C. Road, Mandya.	4,200 KL/A	Used Oil Re-processor	Working
2	M/s. Special Oils, No 202/2, Kuruvinakoppa, Post B, Gudhihal - 581 204, Kalaghatgi Taluk, Dharwad.	1,440 KL/A	Used Oil Re-processor	Working
3	M/s. Nakoda Petro Chemicals, Plot no.8, KIADB Indl area, Sathyamangala, Tumkur.	1,800 KL/A	Used Oil Re-processor	Working
4	M/s. Shanthadurga Petrochemicals, No 701, Shedegalli Manturga Post, Khanapur Belgaum	1,800 KL/A	Used Oil Re-processor	Working
5	M/s. Jyothi Chemicals industries,(Used oil) Survey Nos: 29, 30/1 & 30/2, Jigani Industrial Area, Anekal Taluk, Bangalore.	1,020 KL/A	Used Oil Re-processor	Working
6	M/s. Lubetech Petro Chemicals, No. 1-54, KSSIDC, Veerasandra Industrial Area, Hosur Road, Bangalore-229.	1,440 KL/A	Used Oil Re-processor	Working
7	M/9s. Sri Balaji Refineries, B-5&6, Veerasandra Industrial Area, Anekal Taluk, Bangalore.	1,100 KL/A	Used Oil Re-processor	Working
8	M/s. SB Refineries, Plot No. 81, 4th phase, Bommasandra Link Road.	3,600 KL/A	Used Oil Re-processor	Working
9	Bharath Lubricants, B-36, KSSIDC Industrial Estate, Veerasandra, Hosur Road, Bangalore - 560 100.	9000 MT/A	Used Oil Re-processor	Working

10	M/s. Arun Industries, B-64, III Stage, PIE, Bangalore-58	360 KL/A	Used Oil Re-processor	Working
11	M/s. M.R. Industries, Plot no.14-G, 1st Cross 2nd main, Kumbalgod, Banglore-74	3,000 KL/A	Used Oil Re-processor	Working
12	M/s. Merlyn Hydrocarbons Pvt. Ltd, No 367, Hassan Growth Centre HN Pura Rd, Hassan.	4,500 KL/A	Used Oil Re-processor	Working
13	M/s. Sampath Refinery Pvt. Ltd, Plot No.64A-65D, KIADB Industrial Area, Tubinakere, Mandya Dist.	3,600 KL/A	Used Oil Re-processor	Working
14	M/s. K.M. Oils (P) Ltd., Plot No.75, 76 & 77A, (Part) II phase, Kapnoor Industrial area, Gulbarga – 585 104.	10,200 KL/A	Used Oil Re-processor	Working
15	M/s. Balaji Industries, Plot No.20/A, Machenahalli Industrial Area, Shimoga Tq, & Dist.	1200 KL/A	Used Oil Re-processor	Working
16	M/s. H.N Petrochem Industries, Plot No.29/2, Taj Sultanpur Industrial Area, Gulbarga.	3600 KL/A	Used Oil Re-processor	Working
17	M/s. Khawja Petroleums Pvt. Ltd, Plot No.3, KIADB Industrial Area, S.G. Kote, Dasarahalli, Bangalore-114.	1200 KL/A	Used Oil Re-processor	Working
18	M/s. Sri. V.B.S. Petro Chemicals, No.11 & 12, 3rd cross,2ns block, Peenya Industrial Area, Bangalore- 058.	2244 KL/A	Used Oil Re-processor	Working
19	M/s. Merit India Lubicants, Plot No.189, Bommasandra Industrial Area, 4th Phase, Anekal Tq. Bangalore	9000 KL/A	Used Oil Re-processor	Working
20	Lube Tech Petro Chemicals, No. C-76, KSSIDC, Veerasandra, Indsutrial Estate, Hosur Road, Bangalore - 560 100.	1498 KL/A	Used Oil Re-processor	Working

SUMMARY & CONCLUSIONS:

M/s. **Kumadvathi Residential Central School, Kumadvathi College of Education, Kumadvathi Science & Commerce PU College & Kumadvathi First Grade College.,** is always committed to the concept of re-cycling and re-uses with the objective of waste minimization techniques. In general M/s. **Kumadvathi Residential Central School, Kumadvathi College of Education, Kumadvathi Science & Commerce PU College & Kumadvathi First Grade College.,** as responsible corporate has a comprehensive and effective environmental control and protection program. The Companies endeavor has been to maximize the efficient use of energy and safe and responsible disposal of residual waste. The commitment by the industry in adhering to the statuary norms of the **KSPCB** right from its inception stage reflects its commitment to be always an environmental compatible unit.

ENVIRONMENTAL AUDIT STATEMENT EXTRACT

FOR THE YEAR
2019 - 2020
IN
FORM - V

FORM – V

Environmental Statement for the financial year ending the 31st March 2020

PART – A

1) Name & Address of the Owner / Occupier of the industry in Operation or Process:

Mr. B.Y. Raghavendra - Secretary.
M/s. Kumadvathi Residential Central School, D Ed and B Ed College,
Swamy Vivekananda Trust (R)
Thimlapura,
Shikaripura Tq
Shimoga Dt.

II) Industry category primary (STC Code) Secondary (SIC) Code

Kumadvathi Residential Central School, Kumadvathi College of Education, Kumadvathi Science & Commerce PU College & Kumadvathi First Grade College.

III) Production Capacity per Month: Educational Institution

IV) Year of Establishment: 2009

PART – B

WATER AND RAW MATERIAL CONSUMPTION:

I. Water Consumption in KL / Day: 51,000 Lts per day.

Inserted by Rule 2 of the Environment (protection) Second Amendment Rule 1992 vide G.S.R. 329 (E) dated 13.03.1992.		
Name of Products	Water Consumption per day of Production	
Rough Castings	During the Previous financial Year 2018 – 19	During the Current financial Year 2019 – 20
1. Industrial (Residential School and College)	-----	-----
2. Domestic (Sanitary purpose)	50000 Lts / Day	51000 Lts / Day
3. Gardening	-----	-----

II. RAW MATERIAL CONSUMPTION:

Name of the Raw Material	Name of the Product	Consumption of Raw Material per Unit Output	
		During the Previous financial Year	During the Current financial Year
Grocery	**Food Products**	**120 Tons/Year**	**120 Tons/Year**
Vegetables		**60 Tons/Year**	**60 Tons/Year**

Note: The consumption of raw materials mentioned above is on average, it depends as per order.

PART – C

Pollution discharged to environment per unit of output parameters as specified in the consent issued.

WATER POLLUTION:

Source of Pollution	Pollutants	Quantity of Pollutants Discharged (Kg/Day)	Concentration of Pollutants Discharges (Mass/Volume)	Percentage of Variation from prescribed standards with reasons
Water	Discharged to UGD			

PART – D

AIR POLLUTION:

Source of Pollution	Pollutants	Quantity of Pollutants Discharged (Kg/day)	Concentration of Pollutants Discharged (Mass/Volume)	Percentage of Variation from prescribed Standards with reasons
D.G. Set : **100 KVA** – 1 No.	**NA**			**NA**

PART – E

SOLID WASTES:

Solid Waste	Total Quantity (Kg)	
	During the Previous financial Year	During the Current financial Year
a) From Process	**100 Kgs/Day**	**98 Kgs/Day**
b) From Pollution Control Facility	**NA**	**NA**
c) 1. Quantity recycled or reused within the unit 2. Quantity Sold 3. Quantity disposed	**Out of 100 Kgs of Solid waste around 90 Kgs of Bio-degradable solid waste and 10 Kgs of No-degradable waste will be segregated and disposed to Municipality for treatment.**	**Out of 98 Kgs of Solid waste around 89 Kgs of Bio-degradable solid waste and 9 Kgs of No-degradable waste will be segregated and disposed to Municipality for treatment.**

PART – F

HAZARDOUS WASTES

(As specified under Hazardous Waste / Management & Handling Rules 1989)

Hazardous Waste	Total Quantity (Kg)	
	During the Previous financial Year	During the Current financial Year
a) From Process	**Nil**	**Nil**
b) From Pollution Control facilities	**Nil**	**Nil**

PART – G

Please specify the characterization (in terms of composition & quantum) of Hazardous as well as Solid Wastes indicate disposal practice adopted for both these categories of wastes.

Moulded Sand is the only Solid Waste generated; Moulded Sand is collected in separate yard and disposed at Karnataka State Reserve Police, 8th Battalion, Jayanthi Gram, Shimoga. Hazardous Waste is the only the Waste Oil, it will be Collected & Stored in leak proof container and disposed to KSPCB authorised re-processor.

PART – H

Impact of the pollution abatement measures taken on conservation of natural resources and on the cost of the production.

The industry doesn't have any impact on the environment. The only natural resource consumed is Water for Domestic and Industrial purposes. The domestic wastewater effluent is sent to septic tank and the industrial wastewater used for cooling is recycled. The recycled water will be used for gardening.

PART – I

Additional measures / investment proposal for environmental protection including abatement of pollution, prevention of pollution.

Environment protection and pollution controls have been the priority for the industry. Any suggestions or improvements made by the pollution control board will be implemented.

PART - I

Any other particulars for improving the quality of the environment.

Constant efforts will be made in making use of the updated technologies.

ENVIRONMENT SAFE CODE FOR MANUFACTURING UNITS

- An environmentally safe layout plan takes care of material loss, cost of collection, disposal, recycle and treatment which are part of the process itself, and consequently of the layout arrangement.
- This layout codes postulates that environment protection is a factor for designing any equipment reaction vessel, material transfer arrangement, storage tank and service support to operate the production system.
- All places of storage of solid and liquid materials are to be liked without drains. Any spillage is to be wiped out and cannot be washed out.
- As losses of materials take place during charging of the reaction vessels, discharging of produce and dripping of outlet valves, and as exercised to prevent the losses, if necessary by changing the charging, discharging and transfer devices.
- Corrosion – prone area and construction materials liable to atmosphere and process-induced corrosion should be given special attention for finding better replacement material and stricter preventive maintenance frequency.
- New units will build floors with expand metals slotted angles, steel grills, steel grates, prefabricated industrial floor grafting, and the like which floor washing redundant.

- Plant management should evolve its own code for washing equipment, where particular equipment is used for the manufacture of different products. Dry scrapping of equipment surface followed by mopping with wet cloth should be carried out before hosing operation. This will reduce the quantity of the contaminants and wastewater volume.
- All channels are fitted waste water measurement devices, half barrier for the separation floating immobile liquid and in-built separation per sedimentation basins for withholding settable particulate matters. This provision may be treated as compulsory for wastewater channels in the immediate vicinity of wastewater generating units.
- All water usage that does not come in contact with chemicals should have no opportunity to mix process water. Uncontaminated water should have separate outlets from the plant and recycled is not possible, should be drained out through separate channels, without any change of getting contaminated.
- These proposed layout codes recognize solid waste generated in the process of manufacturing must find a place within the factory premises. It will be stored on land / lagoon, which will be lined with compatible geo-textile material.
- The detoxification operation is to be carried out outside the main production plant and provision has to be kept for the same.
- Storm water drains should be segregated from process water drains. The former may be used for the removal of the cooling water and non-process water.

GUIDELINES TO MINIMISE THE RAW MATERIAL LOSSES

- Keep only an appropriate inventory of raw materials to ensure minimum material handling losses, evaporation losses etc.,
- Adopt mechanical handling of materials with proper monitoring facilities so as to do only predetermine quantities as per norms prescribed.
- Plant layout should be properly made so as to minimize transfer distance of materials between storage and process or between the units operation.
- There is a risk of cross contamination due to usage of some storage tanks for different materials depending on the batch product. Separate storage is to be provided.
- Separate process lines for separate production of separate equipment for each unit operation can minimize losses due to residues left out in the equipment which is usually washed out.
- Storage tank should be provided with dropper dip arrangements for exhaust, vents and insulation provided so as to reduce evaporation losses.
- Enclosed and covered material storage areas keep them secured and reduce losses due to carry over by wind and rain.
- Enclosures should be made to collect spills and overflow of materials at the material and sampling points. This if collected properly, can be recycled.
- Regular maintenance should be taken to check flange leaks, breaks / cracks , pump failures etc.,
- Raw material purity should be ensured. Viscous raw materials lead to losses due to residues in drums. Raw material should be easy to handle. Good house keeping should be followed.
- Norms for performance of various process operation fixed so that the material usage are minimized and hence the material losses.

GUIDELINES TO REDUCE WATER USAGE AND WASTE WATER GENERATION:

- Quantities required for each operation should be determined and water usage regulated strictly. Water usage reduces wastewater. Good house keeping practices reduces water usage.
- Spills of materials should be restricted to ensure constructed for these purposes. The floor washing can then be minimized at time totally avoided.
- Wastewater may be stored and reused. The storage costs may be lower then wastewater treatment and disposal costs.
- Storm water drains should be kept separate and provisions should be made to collect only the rainfall of first few hours, which carries contaminants. This can be subsequently treated and disposed.
- The scrubbing of gaseous emissions with a suitable chemical can yield a useful by-product. Recycle or recovery of useful thus can avoid the discharge by byproducts.
- The wastewater is usually treated up to secondary treatment level to confirm to the required standards. By providing tertiary treatment by dual media filtration, columniation, activated carbon filtration etc., waste water can be reused for floor wash, gardening, Toilets etc.,

GUIDELINE FOR REDUCING EMISSION:

- The process operations where emissions arise should be provided with control equipment, condensers could collect certain emissions, which can be entirely reduced.
- The transfer of materials should be done through closed operation.
- The areas where fugitive emissions arise can be avoided should be enclosed and the air exhausted through induced draft and passed through control equipment before vetting off.
- The enclosed area should be provided with at least three air replacements per minute.
- Evaporation losses from storage tanks should be checked by proper insulation and putting the vents in suitable dip columns.
- Loading and unloading of materials from tankers leads to huge quantities of emissions. The materials transfers should be done through pipes / holes keeping the outlet of the tanker and the inlet of receiving tank covered. While loading the tanker, if the tanker inlet cannot be recovered, a hood can be provided over the inlet emissions collected through a ducting system and further controlled.

Principal
Kumadvathi College of Education
Shikaripura

Swamy Vivekananda Vidya Samsthe (R), Shikaripura

ಕುಮದ್ವತಿ ಶಿಕ್ಷಣ ಮಹಾವಿದ್ಯಾಲಯ

KUMADVATHI COLLEGE OF EDUCATION

Aided, Permanently Affiliated to Kuvempu University, Recognised by NCTE & UGC Act 2(f), Section 12(B) & NAAC Accredited with B Grade (2.70 CGPA)

Shivamogga Road Shikaripura – 577 427 Shivamogga Dist

☎: 08187 – 222383, 222 E-Mail:kumadvathibed@gmail.com

Environment Audit Report 2018-19

Swamy Vivekananda Vidya Samsthe (R), Shikaripura.

Kumadvathi Residential Central School

Shivamogga Road, **SHIKARIPURA-577427** Shivamogga Dist.

(Affiliated to CBSE, New Delhi Vide No. : 830275)

☎ : 08187-222437, 222029, Mob : 9591263007

email : CBSE Correspondence : principalkrcs@gmail.com Office Correspondence : krcsoffice2009@gmail.com

Ref No. : SVVS/2018-19/KRCS/PCB/ Date 4th Jan. 2019.

TO:

The Environment Officer

Karnataka State Pollution Control Board

Shimoga.

Respected Sir,

Subject: **Submission of Annual Audit Report and Form V.**

With reference to the above subject, we are here with submitting two sets of "Annual Audit Report and Form V" for the year 2018-19 as desired, please.

Kindly acknowledge the receipt.

With Regards

Yours sincerely

Principal

Kumadvathi Residential Central School

Shikaripura

KUMADVATHI RESIDENTIAL CENTRAL SCHOOL

SHIKARIPURA

ENVIRONMENT AUDIT REPORT & FORM-5 FOR THE YEAR 2018-19

M/s. KUMADVATHI RESIDENTIAL CENTRAL SCHOOL, KUMADVATHI COLLEGE OF EDUCATION, KUMADVATHI SCIENCE & COMMERCE PU COLLEGE & KUMADVATHI FIRST GRADE COLLEGE.,

SWAMY VIVEKANANDA VIDYA SAMSTHE (R)

Thimlapura Village,

Shikaripura TQ

~*~*~*~

PREPARED BY: PARISARA CONSULTANTS AN ISO-9001: 2015 CERTIFIED COMPANY

ENVIRONMENT AUDIT REPORT & FORM-5 FOR THE YEAR 2018-19

GENERAL INFORMATION:

1) ORGANZATION NAME	
M/s. KUMADVATHI RESIDENTIAL CENTRAL SCHOOL, KUMADVATHI COLLEGE OF EDUCATION, KUMADVATHI SCIENCE & COMMERCE PU COLLEGE & KUMADVATHI FIRST GRADE COLLEGE., SWAMY VIVEKANANDA VIDYA SAMSTHE (R).,	
Address	Thimlapura Village, Shikaripura Tq College
District	SHIMOGA
State	KARNATAKA
Phone	08187 – 222067
Fax	08187 – 222067
E-mail	svvstrst@yahoo.com
2) PRODUCT MANUFACTURED	
	Kumadvathi Residential Central School, Kumadvathi College of Education, Kumadvathi Science & Commerce PU College & Kumadvathi First Grade College
3) OPERATION DURING THE PERIOD OF AUDIT	
a) Total No. of Working Days in this Year 2017 – 18	314 Days
b) Total No. of Working Days in a Week	6 Days
c) Total No. of Shifts	Three Shifts Hostel and General Shift School and College
d) WDA Value	Rs. 4.12 Cr
4) TOTAL NO. OF EMPLOYEES	
Total Employment & Students	2050 Members
5) CURRENT APPROVALS	
Consent details of Air Act and its validity	No.75 PCB/RO(SMG)/LG/2012-13/3033 Dated:27.12.12 Valid upto 31.12.2022
Consent details of Water Act and its validity	No.75 PCB/RO(SMG)/LG/2012-13/3033 Dated:27.12.12 Valid upto 31.12.2022
6) SOLID WASTE GENERATION	
1) Solid degradable Wastes 100 Kgs/day	Disposed to Municipality Bins

3. Those who require authorization under Hazardous Waste (Management & Handling) Rules, 1989.

No new Large/Medium/Small (Red & Orange Category) industry generating effluents, and or emissions shall be permitted within city/municipal limits and residential areas.

The Karnataka Industrial Area Development Board (KIADB) or any other agency developing industrial area shall obtain Environmental clearance from the Department of Ecology and environment and clearance from the Karnataka State Pollution Control Board before establishing such area. Environmental Impact Assessment (EIA) and Environmental Management Plan (EMP) reports shall be submitted to the Karnataka State Pollution Control Board and obtain approval.

Distance for establishing new industries specified in ANNEXURE - I in certain special category areas shall be as follows : -

(a) Ecologically and/or otherwise sensitive areas :

At least 25 kms., depending on the geo-climatic conditions, the requisite distance shall have to be increased by the appropriate agency.

(b) Coastal Areas :

At least 1/2 km. from high tide line. The stipulations made by Ministry of Environment & forests Government of India in its vide Notification No. S0 114(E), dated 19.02.1991, by Government of India, Ministry of Environment and Forests, issued under the Environment (Protection) Rules, 1986, shall be strictly adhered to.

(c) Transport / Communication System :

At least 1/2 km. from National & State High-ways and Railway.

(d) Major Settlements (3,00,000 Population) :

Appropriate distance for establishment of major industries around the cities having more than 3,00,000 population shall be prescribed by Karnataka State Pollution Control Board. Wherever these distance cannot be maintained and at the same time it is inevitable to locate the industry, measures for prevention of pollution due to effluents, noise, emissions, odour etc., shall be insisted by the Board

During last few decades the Government has brought in a series of laws and regulation to control the industrial pollution and to protect the environment. The Water (Prevention & Control of Pollution) Act. 1974, was first such legislation followed by Air (Prevention & Control of Pollution) Act 1981. The Government in 1986 to address the various environmental protection issues enacted the most comprehensive legislation Environment Protection Act.

NOTE :

Ecological and / or otherwise sensitive areas include

i) Religious and Historic Places
ii) Archeological Monuments
iii) Scenic Areas
iv) Hill Resorts
v) Beach Resorts
vi) Health Resorts
vii) Coastal Areas rich in Mangroves, Breeding Grounds of Specific Species
viii) Estuaries rich in Mangroves, Breeding Grounds of Specific Species
ix) Biosphere Reserves
x) National Parks and Sanctuaries
xi) Natural Lakes, Swamps
xii) Seismic Zones
xiii) Tribal Settlements
xiv) Areas of Scientific and Geological Interest
xv) Defence Installations, specially those of security importance and sensitive to pollution
xvi) Air Ports

No forest land shall be converted into non-forest activity for the sustenance of the industry.

Land acquired shall be sufficiently large to provide for appropriate treatment of waste water still left for treatment after maximum possible reuse and recycle. Reclaimed (treated waste) water shall be used to raise green belt and to create water body for aesthetics, recreation and if possible for aquaculture. The green belt shall be sufficiently wide around the boundary limit of the industry. For industry having odour problem, it shall be minimum of 30 mtrs. wide.

Enough space should be provided for storage of solid waste, so that the same could be available for possible reuse.

BENEFITS OF ENVIRONMENTAL AUDIT

Environmental Auditing has for reaching benefits to the industry, to the society and the nation at large. The benefits of environmental audit are as follows.

1. Determines how well the process systems and pollution control systems are performing, and identify the operation of poor performances.

2. Identifies potential cost savings which can be implemented through reduction in raw material consumption by way of waste minimization, and adaptation of recycle / recovery / reduction of pollution load.

3. Increase in awareness of environmental requirement, policies and responsibilities.

4. Helps in understanding the technical capabilities and attitude of environmental organization in a company.

5. Provides up-to-date environmental database for use in plant modification, emergencies etc.

6. Unravels surprise-hidden liabilities due to which regulatory risks and expose to litigation can be reduced.

7. Ensures independent verification and identify matters needing attention, and provide timely warning to management on potential future problems.

8. Helps to safe guard environment and assists in complying with local regional and national laws and regulations with company's policy and with the environmental standards.

OBJECTIVE OF ENVIRONMENTAL AUDITING

The Environmental Audit helps in pollution control, improved production, safety and health and conversation of natural resources and hence its overall objective can be achieving of sustainable developments. However, for conducting environmental audit, objectives are to be defined clearly or else the audit procedure will be subject to varying interpretation, which may shape differential approach there by influencing the end results. The objective of environmental audit in an industry is,

1. To determine the mass balance of various materials used and the performance of various process equipment so as to identify usage of materials in excess then required, to review the conversion efficiencies of process equipment / operation performing & minimization of wastes.

2. a) To identify the areas of water usage and waste water generation and determine the characteristics of wastewater.
   b) To determine the emissions, their sources, quantities and characteristics
   c) To determine the solid wastes and hazardous wastes generated their sources, quantities and characteristics.

3. To identifying the possibilities of wastes minimization and recovery and recycling of wastes.

4. To determine the performances of the existing waste treatment / control systems so as to modify OR install additional OR alternative control equipment accordingly.

5. To determine the impact on the surrounding environment (Ground Water, Stream, Residential Area, Agricultural Area, Sensitive Zone and Solid Waste from the industry and accordingly identify suitable preventive measures if necessary.)

6. To verify compliance with the standards and conditions prescribed by the regulatory bodies under the Water Act, the Air Act and the Environmental (Protection) Act.

7. To check the effectiveness of
   a) Organization set up of the industry for decision making and environmental management with special reference to their 'Technical' view point, 'Attitudinal' view point and training.

   b) Environmental Policy of the Company.

SCOPE OF ENVIRONMENTAL AUDIT

1. Verify the performance of Sulphur and particulate matter control measures adapted by the company to avoid the Sulphur and matter at source.

2. To critically examine the records of the production data of all the section / stages of power production.

3. Review of Water conservation measures that are adopted by the company.

4. Review of the Socio Economic environment before and after the establishment of the factory.

ABOUT THE ORGANIZATION:

M/s. Kumadvathi Residential Central School, Kumadvathi College of Education, Kumadvathi Science & Commerce PU College & Kumadvathi First Grade College., have come into existence during the Year 2009. This School & College is situated at Thimlapura Village, Near Shikaripura Town, Shimoga District. The organization has got its own competent staff for handling Education Institution and for its Quality Standards.

The School and College has got total area of around 14 Acres and 27 Guntas with 59385 Sq Mtrs built up area

RAW MATERIALS CONSUMED FOR PRODUCTION:

Sl. No.	Material	Qty. in Tons/Month
01	Grocery	10 Tons/Month
02	Vegetables	05 Tons/Month

ENVIRONMENT AUDIT REPORT& FORM- 5
FOR THE YEAR 2018-19

ENVIRONMENTAL CONTROL
IN THE INDUSTRY

WATER POLLUTION CONTROL:

Waste water in the Residential School is from the Food Preparation for the Students staying in Hostel and Colleges activities.

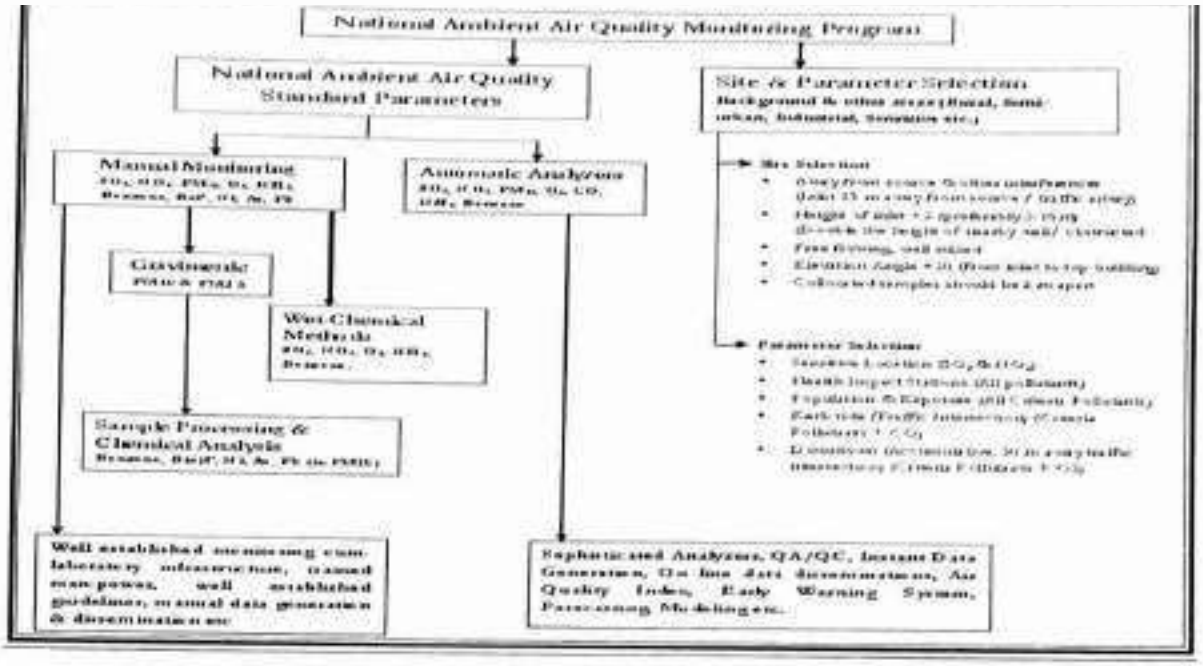
The Colleges activities include the usage of Washrooms, Canteen and Toilets. The Colleges waste is sent to a Municipality, Under Ground drainage and Septic Tank and Soak Pit for the process.

The daily requirement of fresh water is about 50000 Lts/Day. This unit has about 178 Staff and 1758 Students out of which 500 students are the occupants in Hostel, The consumption of Water for domestic purposes is about 50000 Lts/day including college and Hostel purpose.

AIR POLLUTION:

Sl. No.	Pollution Source	Capacity	Height of Chimney
01	D.G. Set	100 KVA	5 MTR ARL

D.G. Set – 1 No's, is the only source of Air Pollution. The height of the Chimney is provided as per KSPCB stipulations.



SOLID WASTES:

The Hostel is not significant from this angle as they are in running Educational Institution. The only Solid Waste generated is Bio degradable Solid Wastes generated during canteen activity. The solid waste is segregated like Bio-degradable solid waste and Non-degradable solid waste in separate bins and disposed to municipality.

NOISE POLLUTION:

Whereas the increasing ambient noise levels in public places from various sources, inter-alia, industrial activity, construction activity, fire crackers, sound producing instruments, generator sets, loud speakers, public address systems, music systems, vehicular horns and other mechanical devices have deleterious effects on human health and the psychological well being of the people; it is considered necessary to regulate and control noise producing and generating sources with the objective of maintaining the ambient air quality standards in respect of noise;

Whereas a draft of Noise Pollution (Control and Regulation) Rules, 1999 was published under the notification of the Government of India in the Ministry of Environment and Forests vide number S.O. 528 (E), dated the 28th June, 1999 inviting objections and suggestions from all the persons likely to be affected thereby, before the expiry of the period of sixty days from the date on which the copies of the Gazette containing the said notification are made available to the public;

And whereas copies of the said Gazette were made available to the public on the 1st day of July, 1999;

And whereas the objections and suggestions received from the public in respect of the said draft rules have been duly considered by the Central Government;

The School and College is not significant from this angle as they installed 1 DG Set with acoustic system. The noise level maintained within the limits as prescribed by KSPCB norms of Silent zone.

HAZARDOUS WASTE MANAGEMENT:

As per the Hazardous Waste Rules, there is no Hazardous Waste generated at **M/s. Kumadvathi Residential Central School, Kumadvathi College of Education, Kumadvathi Science & Commerce PU College & Kumadvathi First Grade College.** as they are running Educational Institution. The DG Set is operated, when there is a failure in electricity power the Hazardous Waste generated is only the waste Oil, it will be collected & stored in a leak proof container and disposed to KSPCB authorized re-processor.

List of Waste Oil Re-processer approved by KSPCB

1	M/s. S.M. Enterprises, No 4911, M.C. Road, Mandya.	4,200 KL/A	Used Oil Re-processor	Working
2	M/s. Special Oils, No 202/2, Kuruvinakoppa, Post B, Gudhihal - 581 204, Kalaghatgi Taluk, Dharwad.	1,440 KL/A	Used Oil Re-processor	Working
3	M/s. Nakoda Petro Chemicals, Plot no.8, KIADB Indl area, Sathyamangala, Tumkur.	1,800 KL/A	Used Oil Re-processor	Working
4	M/s. Shanthadurga Petrochemicals, No 701, Shedegalli Manturga Post, Khanapur Belgaum	1,800 KL/A	Used Oil Re-processor	Working
5	M/s. Jyothi Chemicals industries,(Used oil) Survey Nos: 29, 30/1 & 30/2, Jigani Industrial Area, Anekal Taluk, Bangalore.	1,020 KL/A	Used Oil Re-processor	Working
6	M/s. Lubetech Petro Chemicals, No. 1-54, KSSIDC, Veerasandra Industrial Area, Hosur Road, Bangalore-229.	1,440 KL/A	Used Oil Re-processor	Working
7	M/9s. Sri Balaji Refineries, B-5&6, Veerasandra Industrial Area, Anekal Taluk, Bangalore.	1,100 KL/A	Used Oil Re-processor	Working
8	M/s. SB Refineries, Plot No. 81, 4th phase, Bommasandra Link Road.	3,600 KL/A	Used Oil Re-processor	Working
9	Bharath Lubricants, B-36, KSSIDC Industrial Estate, Veerasandra, Hosur Road, Bangalore - 560 100.	9000 MT/A	Used Oil Re-processor	Working
10	M/s. Arun Industries, B-64, III Stage, PIE, Bangalore-58	360 KL/A	Used Oil Re-processor	Working
11	M/s. M.R. Industries, Plot no.14-G, 1st Cross 2nd main, Kumbalgod, Banglore-74	3,000 KL/A	Used Oil Re-processor	Working
12	M/s. Merlyn Hydrocarbons Pvt. Ltd, No 367, Hassan Growth Centre HN Pura Rd, Hassan.	4,500 KL/A	Used Oil Re-processor	Working
13	M/s. Sampath Refinery Pvt. Ltd, Plot No.64A-65D, KIADB Industrial Area, Tubinakere, Mandya Dist.	3,600 KL/A	Used Oil Re-processor	Working
14	M/s. K.M. Oils (P) Ltd., Plot No.75, 76 & 77A, (Part) II phase, Kapnoor Industrial area, Gulbarga – 585 104.	10,200 KL/A	Used Oil Re-processor	Working
15	M/s. Balaji Industries, Plot No.20/A, Machenahalli Industrial Area, Shimoga Tq, & Dist.	1200 KL/A	Used Oil Re-processor	Working

16	M/s. H.N Petrochem Industries, Plot No.29/2, Taj Sultanpur Industrial Area, Gulbarga.	3600 KL/A	Used Oil Re-processor	Working
17	M/s. Khawja Petroleums Pvt. Ltd, Plot No.3, KIADB Industrial Area, S.G. Kote, Dasarahalli, Bangalore-114.	1200 KL/A	Used Oil Re-processor	Working
18	M/s. Sri. V.B.S. Petro Chemicals, No.11 & 12, 3rd cross,2ns block, Peenya Industrial Area, Bangalore- 058.	2244 KL/A	Used Oil Re-processor	Working
19	M/s. Merit India Lubicants, Plot No.189, Bommasandra Industrial Area, 4th Phase, Anekal Tq. Bangalore	9000 KL/A	Used Oil Re-processor	Working
20	Lube Tech Petro Chemicals, No. C-76, KSSIDC, Veerasandra, Indsutrial Estate, Hosur Road, Bangalore - 560 100.	1498 KL/A	Used Oil Re-processor	Working

SUMMARY & CONCLUSIONS:

M/s. **Kumadvathi Residential Central School, Kumadvathi College of Education, Kumadvathi Science & Commerce PU College & Kumadvathi First Grade College.,** is always committed to the concept of re-cycling and re-uses with the objective of waste minimization techniques. In general M/s. **Kumadvathi Residential Central School, Kumadvathi College of Education, Kumadvathi Science & Commerce PU College & Kumadvathi First Grade College.,** as responsible corporate has a comprehensive and effective environmental control and protection program. The Companies endeavor has been to maximize the efficient use of energy and safe and responsible disposal of residual waste. The commitment by the industry in adhering to the statuary norms of the **KSPCB** right from its inception stage reflects its commitment to be always an environmental compatible unit.

ENVIRONMENTAL AUDIT STATEMENT EXTRACT

FOR THE YEAR
2018-19

IN
FORM - V

FORM – V

Environmental Statement for the financial year ending the
31 March 2019

PART – A

1) Name & Address of the Owner / Occupier of the industry in Operation or Process:

Mr. B.Y. Raghavendra - Secretary.
M/s. Kumadvathi Residential Central School, D Ed and B Ed College,
Swamy Vivekananda Trust (R)
Thimlapura,
Shikaripura Tq
Shimoga Dt.

II) Industry category primary (STC Code) Secondary (SIC) Code

Kumadvathi Residential Central School, Kumadvathi College of Education, Kumadvathi Science & Commerce PU College & Kumadvathi First Grade College

III) Production Capacity per Month: Educational Institution

IV) Year of Establishment: 2009

PART – B

WATER AND RAW MATERIAL CONSUMPTION:

I. Water Consumption in KL / Day: 50,000 Lts per day.

Inserted by Rule 2 of the Environment (protection) Second Amendment Rule 1992 vide G.S.R. 329 (E) dated 13.03.1992.		
Name of Products	Water Consumption per day of Production	
Rough Castings	During the Previous financial 2017-18	During the Current financial 2018-19
1. Industrial (Residential School and College)	-----	-----
2. Domestic (Sanitary purpose)	50000 Lts / Day	50000 Lts / Day
3. Gardening	-----	-----

II. RAW MATERIAL CONSUMPTION:

Name of the Raw Material	Name of the Product	Consumption of Raw Material per Unit Output	
		During the Previous financial Year	During the Current financial Year
Grocery	**Food Products**	**120 Tons/Year**	**120 Tons/Year**
Vegetables		**60 Tons/Year**	**60 Tons/Year**

Note: The consumption of raw materials mentioned above is on average, it depends as per order.

PART – C

Pollution discharged to environment per unit of output parameters as specified in the consent issued.

WATER POLLUTION:

Source of Pollution	Pollutants	Quantity of Pollutants Discharged (Kg/Day)	Concentration of Pollutants Discharges (Mass/Volume)	Percentage of Variation from prescribed standards with reasons
Water	Discharged to UGD			

PART – D

AIR POLLUTION:

Source of Pollution	Pollutants	Quantity of Pollutants Discharged (Kg/day)	Concentration of Pollutants Discharged (Mass/Volume)	Percentage of Variation from prescribed Standards with reasons
D.G. Set : 100 KVA – 1 No.	NA			NA

PART – E

SOLID WASTES:

Solid Waste	Total Quantity (Kg)	
	During the Previous financial Year	During the Current financial Year
a) From Process	**150 Kgs/Day**	**150 Kgs/Day**
b) From Pollution Control Facility	**NA**	**NA**
c) 1. Quantity recycled or reused within the unit 2. Quantity Sold 3. Quantity disposed	**Out of 150 Kgs of Solid waste around 125 Kgs of Bio-degradable solid waste and 25 Kgs of No-degradable waste will be segregated and disposed to Municipality for treatment.**	**Out of 150 Kgs of Solid waste around 125 Kgs of Bio-degradable solid waste and 25 Kgs of No-degradable waste will be segregated and disposed to Municipality for treatment.**

PART – F

HAZARDOUS WASTES

(As specified under Hazardous Waste / Management & Handling Rules 1989)

Hazardous Waste	Total Quantity (Kg)	
	During the Previous financial Year	During the Current financial Year
a) From Process	**Nil**	**Nil**
b) From Pollution Control facilities	**Nil**	**Nil**

PART – G

Please specify the characterization (in terms of composition & quantum) of Hazardous as well as Solid Wastes indicate disposal practice adopted for both these categories of wastes.

Municipal Solid Waste is the only Solid Waste generated; Solid Waste is collected in separate Bins based on Degradable and Non-degradable and disposed to Municipality. Hazardous Waste is the only the Waste Oil, it will be Collected & Stored in leak proof container and disposed to KSPCB authorised re-processor.

PART – H

Impact of the pollution abatement measures taken on conservation of natural resources and on the cost of the production.

The Organization doesn't have any impact on the environment. The only natural resource consumed is Water for Domestic purposes. The domestic wastewater effluent is sent to STP and it is recycled and re-sued for garden purpose.

PART – I

Additional measures / investment proposal for environmental protection including abatement of pollution, prevention of pollution.

Environment protection and pollution controls have been the priority for the Organization. Any suggestions or improvements made by the pollution control board will be implemented.

PART – J

Any other particulars for improving the quality of the environment.

Constant efforts will be made in making use of the updated technologies.

ENVIRONMENT SAFE CODE FOR MANUFACTURING UNITS

- An environmentally safe layout plan takes care of material loss, cost of collection, disposal, recycle and treatment which are part of the process itself, and consequently of the layout arrangement.
- This layout codes postulates that environment protection is a factor for designing any equipment reaction vessel, material transfer arrangement, storage tank and service support to operate the production system.
- All places of storage of solid and liquid materials are to be liked without drains. Any spillage is to be wiped out and cannot be washed out.
- As losses of materials take place during charging of the reaction vessels, discharging of produce and dripping of outlet valves, and as exercised to prevent the losses, if necessary by changing the charging, discharging and transfer devices.
- Corrosion – prone area and construction materials liable to atmosphere and process-induced corrosion should be given special attention for finding better replacement material and stricter preventive maintenance frequency.
- New units will build floors with expand metals slotted angles, steel grills, steel grates, prefabricated industrial floor grafting, and the like which floor washing redundant.

- Plant management should evolve its own code for washing equipment, where particular equipment is used for the manufacture of different products. Dry scrapping of equipment surface followed by mopping with wet cloth should be carried out before hosing operation. This will reduce the quantity of the contaminants and wastewater volume.
- All channels are fitted waste water measurement devices, half barrier for the separation floating immobile liquid and in-built separation per sedimentation basins for withholding settable particulate matters. This provision may be treated as compulsory for wastewater channels in the immediate vicinity of wastewater generating units.
- All water usage that does not come in contact with chemicals should have no opportunity to mix process water. Uncontaminated water should have separate outlets from the plant and recycled is not possible, should be drained out through separate channels, without any change of getting contaminated.
- These proposed layout codes recognize solid waste generated in the process of manufacturing must find a place within the factory premises. It will be stored on land / lagoon, which will be lined with compatible geo-textile material.
- The detoxification operation is to be carried out outside the main production plant and provision has to be kept for the same.
- Storm water drains should be segregated from process water drains. The former may be used for the removal of the cooling water and non-process water.

GUIDELINES TO MINIMISE THE RAW MATERIAL LOSSES

- Keep only an appropriate inventory of raw materials to ensure minimum material handling losses, evaporation losses etc.,
- Adopt mechanical handling of materials with proper monitoring facilities so as to do only predetermine quantities as per norms prescribed.
- Plant layout should be properly made so as to minimize transfer distance of materials between storage and process or between the units operation.
- There is a risk of cross contamination due to usage of some storage tanks for different materials depending on the batch product. Separate storage is to be provided.
- Separate process lines for separate production of separate equipment for each unit operation can minimize losses due to residues left out in the equipment which is usually washed out.
- Storage tank should be provided with dropper dip arrangements for exhaust, vents and insulation provided so as to reduce evaporation losses.
- Enclosed and covered material storage areas keep them secured and reduce losses due to carry over by wind and rain.
- Enclosures should be made to collect spills and overflow of materials at the material and sampling points. This if collected properly, can be recycled.
- Regular maintenance should be taken to check flange leaks, breaks / cracks , pump failures etc.,
- Raw material purity should be ensured. Viscous raw materials lead to losses due to residues in drums. Raw material should be easy to handle. Good house keeping should be followed.
- Norms for performance of various process operation fixed so that the material usage are minimized and hence the material losses.

GUIDELINES TO REDUCE WATER USAGE AND WASTE WATER GENERATION:

- Quantities required for each operation should be determined and water usage regulated strictly. Water usage reduces wastewater. Good house keeping practices reduces water usage.
- Spills of materials should be restricted to ensure constructed for these purposes. The floor washing can then be minimized at time totally avoided.
- Wastewater may be stored and reused. The storage costs may be lower then wastewater treatment and disposal costs.
- Storm water drains should be kept separate and provisions should be made to collect only the rainfall of first few hours, which carries contaminants. This can be subsequently treated and disposed.
- The scrubbing of gaseous emissions with a suitable chemical can yield a useful by-product. Recycle or recovery of useful thus can avoid the discharge by byproducts.
- The wastewater is usually treated up to secondary treatment level to confirm to the required standards. By providing tertiary treatment by dual media filtration, columniation, activated carbon filtration etc., waste water can be reused for floor wash, gardening, Toilets etc.,

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Principal
Kumadvathi College of Education
Shikaripura

GUIDELINE FOR REDUCING EMISSION:

- The process operations where emissions arise should be provided with control equipment, condensers could collect certain emissions, which can be entirely reduced.
- The transfer of materials should be done through closed operation.
- The areas where fugitive emissions arise can be avoided should be enclosed and the air exhausted through induced draft and passed through control equipment before vetting off.
- The enclosed area should be provided with at least three air replacements per minute.
- Evaporation losses from storage tanks should be checked by proper insulation and putting the vents in suitable dip columns.
- Loading and unloading of materials from tankers leads to huge quantities of emissions. The materials transfers should be done through pipes / holes keeping the outlet of the tanker and the inlet of receiving tank covered. While loading the tanker, if the tanker inlet cannot be recovered, a hood can be provided over the inlet emissions collected through a ducting system and further controlled.

Principal
Kumadvathi College of Education
Shikaripura

Swamy Vivekananda Vidya Samsthe (R), Shikaripura

ಕುಮದ್ವತಿ ಶಿಕ್ಷಣ ಮಹಾವಿದ್ಯಾಲಯ

KUMADVATHI COLLEGE OF EDUCATION

Aided, Permanently Affiliated to Kuvempu University, Recognised by NCTE & UGC Act 2(f), Section 12(B) & NAAC Accredited with B Grade (2.70 CGPA)

Shivamogga Road Shikaripura – 577 427 Shivamogga Dist

☎: 08187 – 222383, 222 E-Mail:kumadvathibed@gmail.com

Environment Audit Report 2017-18

Swamy Vivekananda Vidya Samsthe (R), Shikaripura.

Kumadvathi Residential Central School

Shivamogga Road, **SHIKARIPURA-577427** Shivamogga Dist.

(Affiliated to CBSE, New Delhi Vide No. : 830275)

☎ : 08187-222437, 222029, Mob : 9591263007

email : CBSE Correspondence : principalkrcs@gmail.com Office Correspondence : krcsoffice2009@gmail.com

Ref No. : SVVS/2018-19/KRCS/PCB/

Date 14th Jan. 2019.

TO:

The Environment Officer

Karnataka State Pollution Control Board

Shimoga.

Respected Sir,

Subject: **Submission of Annual Audit Report and Form V.**

With reference to the above subject, we are here with submitting two sets of "**Annual Audit Report and Form V**" for the year 2017-18 as desired, please.

Kindly acknowledge the receipt.

With Regards

Yours sincerely

Principal

Kumadvathi Residential Central School

Shikaripura

KUMADVATHI RESIDENTIAL CENTRAL SCHOOL

SHIKARIPURA

ENVIRONMENT AUDIT AND STATEMENT REPORT

FORTHE YEAR 2017-18

M/s. KUMADVATHI RESIDENTIAL CENTRAL SCHOOL, KUMADVATHI COLLEGE OF EDUCATION, KUMADVATHI SCIENCE & COMMERCE PU COLLEGE & KUMADVATHI FIRST GRADE COLLEGE.,

SWAMY VIVEKANANDA VIDYA SAMSTHE (R)

Thimlapura Village,

Shikaripura TQ

~*~*~*~

PREPARED BY: PARISARA CONSULTANTS AN ISO-9001: 2015 CERTIFIED COMPANY

ENVIRONMENT AUDIT REPORT & FORM – 5
FOR THE YEAR 2017 – 2018

GENERAL INFORMATION:

1) ORGANZATION NAME	
M/s. KUMADVATHI RESIDENTIAL CENTRAL SCHOOL, KUMADVATHI COLLEGE OF EDUCATION, KUMADVATHI SCIENCE & COMMERCE PU COLLEGE & KUMADVATHI FIRST GRADE COLLEGE., SWAMY VIVEKANANDA VIDYA SAMSTHE (R).,	
Address	Thimlapura Village, Shikaripura Tq College
District	SHIMOGA
State	KARNATAKA
Phone	08187 – 222067
Fax	08187 – 222067
E-mail	svvstrst@yahoo.com
2) PRODUCT MANUFACTURED	
	Kumadvathi Residential Central School, Kumadvathi College of Education, Kumadvathi Science & Commerce PU College & Kumadvathi First Grade College
3) OPERATION DURING THE PERIOD OF AUDIT	
a) Total No. of Working Days in this Year 2017 – 18	314 Days
b) Total No. of Working Days in a Week	6 Days
c) Total No. of Shifts	Three Shifts Hostel and General Shift School and College
d) WDA Value	Rs. 4.12 Cr
4) TOTAL NO. OF EMPLOYEES	
Total Employment & Students	2050 Members
5) CURRENT APPROVALS	
Consent details of Air Act and its validity	No.75 PCB/RO(SMG)/LG/2012-13/3033 Dated:27.12.12 Valid upto 31.12.2022
Consent details of Water Act and its validity	No.75 PCB/RO(SMG)/LG/2012-13/3033 Dated:27.12.12 Valid upto 31.12.2022
6) SOLID WASTE GENERATION	
1) Solid degradable Wastes 100 Kgs/day	Disposed to Municipality Bins

INTRODUCTION

Industrial Pollution in our Country is an increase and is creating a high-risk environment. Various legislation's viz. The Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control) Act. 1981 and the Environment (Protection) Act, 1986 has come into force, organizations created to combat pollution. Gone are the days when industrialization meant profit making and environment was grossly neglected. It is being realized that industry and environment should go hand in hand so as to achieve sustained development. Also over the years awareness has bought in realization to consider environmental protection a bare necessity. Yet the investments for such a protection are still considered a liability by much environmental management. Consideration of environmental factors at par with production helps in minimizing material losses and also reduction of liabilities in the long run.

The growing environmental pollution and the complexity of this problem with increasing risks from the regulatory controls needs on effective management tools so as to prevent pollution and to make pollution control programs cost-effective and feasible.

Environmental Audit is a technique being introduced for integrating the interest of the industry and the environment, so that there could be mutually supportive. This technique is basically a part of industry's internal procedures in meeting their responsibilities towards better environment. Also the policy statement for abatement of pollution by the Government of India provides for submission of environmental statement by all concerned industries, which would subsequently evolve into an environmental audit. A notification under the Environment (Protection) Rules, 1986 as been issued on April 22, 1993 requiring industries to submit on Environmental Statement for the financial year ending on March 31 in form V to the concerned State Pollution Control Board on or before September 30 every year beginning 1993. The submission of environmental statement is applicable to the following.

1. Those who require consent under the Water (Prevention and Control of Pollution) Act. 1974.
2. Those who require consent under the Air (Prevention and Control of Pollution) Act. 1981.

3. Those who require authorization under Hazardous Waste (Management & Handling) Rules, 1989.

No new Large/Medium/Small (Red & Orange Category) industry generating effluents, and or emissions shall be permitted within city/municipal limits and residential areas.

The Karnataka Industrial Area Development Board (KIADB) or any other agency developing industrial area shall obtain Environmental clearance from the Department of Ecology and environment and clearance from the Karnataka State Pollution Control Board before establishing such area. Environmental Impact Assessment (EIA) and Environmental Management Plan (EMP) reports shall be submitted to the Karnataka State Pollution Control Board and obtain approval.

Distance for establishing new industries specified in ANNEXURE - I in certain special category areas shall be as follows : -

(a) Ecologically and/or otherwise sensitive areas :
At least 25 kms., depending on the geo-climatic conditions, the requisite distance shall have to be increased by the appropriate agency.

(b) Coastal Areas :
At least 1/2 km. from high tide line. The stipulations made by Ministry of Environment & forests Government of India in its vide Notification No. S0 114(E), dated 19.02.1991, by Government of India, Ministry of Environment and Forests, issued under the Environment (Protection) Rules, 1986, shall be strictly adhered to.

(c) Transport / Communication System :
At least 1/2 km. from National & State High-ways and Railway.

(d) Major Settlements (3,00,000 Population) :
Appropriate distance for establishment of major industries around the cities having more than 3,00,000 population shall be prescribed by Karnataka State Pollution Control Board. Wherever these distance cannot be maintained and at the same time it is inevitable to locate the industry, measures for prevention of pollution due to effluents, noise, emissions, odour etc., shall be insisted by the Board

During last few decades the Government has brought in a series of laws and regulation to control the industrial pollution and to protect the environment. The Water (Prevention & Control of Pollution) Act. 1974, was first such legislation followed by Air (Prevention & Control of Pollution) Act 1981. The Government in 1986 to address the various environmental protection issues enacted the most comprehensive legislation Environment Protection Act.

NOTE :

Ecological and / or otherwise sensitive areas include

i) Religious and Historic Places
ii) Archeological Monuments
iii) Scenic Areas
iv) Hill Resorts
v) Beach Resorts
vi) Health Resorts
vii) Coastal Areas rich in Mangroves, Breeding Grounds of Specific Species
viii) Estuaries rich in Mangroves, Breeding Grounds of Specific Species
ix) Biosphere Reserves
x) National Parks and Sanctuaries
xi) Natural Lakes, Swamps
xii) Seismic Zones
xiii) Tribal Settlements
xiv) Areas of Scientific and Geological Interest
xv) Defence Installations, specially those of security importance and sensitive to pollution
xvi) Air Ports

No forest land shall be converted into non-forest activity for the sustenance of the industry.

Land acquired shall be sufficiently large to provide for appropriate treatment of waste water still left for treatment after maximum possible reuse and recycle. Reclaimed (treated waste) water shall be used to raise green belt and to create water body for aesthetics, recreation and if possible for aquaculture. The green belt shall be sufficiently wide around the boundary limit of the industry. For industry having odour problem, it shall be minimum of 30 mtrs. wide.

Enough space should be provided for storage of solid waste, so that the same could be available for possible reuse.

BENEFITS OF ENVIRONMENTAL AUDIT

Environmental Auditing has for reaching benefits to the industry, to the society and the nation at large. The benefits of environmental audit are as follows.

1. Determines how well the process systems and pollution control systems are performing, and identify the operation of poor performances.

2. Identifies potential cost savings which can be implemented through reduction in raw material consumption by way of waste minimization, and adaptation of recycle / recovery / reduction of pollution load.

3. Increase in awareness of environmental requirement, policies and responsibilities.

4. Helps in understanding the technical capabilities and attitude of environmental organization in a company.

5. Provides up-to-date environmental database for use in plant modification, emergencies etc.

6. Unravels surprise-hidden liabilities due to which regulatory risks and expose to litigation can be reduced.

7. Ensures independent verification and identify matters needing attention, and provide timely warning to management on potential future problems.

8. Helps to safe guard environment and assists in complying with local regional and national laws and regulations with company's policy and with the environmental standards.

OBJECTIVE OF ENVIRONMENTAL AUDITING

The Environmental Audit helps in pollution control, improved production, safety and health and conversation of natural resources and hence its overall objective can be achieving of sustainable developments. However, for conducting environmental audit, objectives are to be defined clearly or else the audit procedure will be subject to varying interpretation, which may shape differential approach there by influencing the end results. The objective of environmental audit in an industry is,

1. To determine the mass balance of various materials used and the performance of various process equipment so as to identify usage of materials in excess then required, to review the conversion efficiencies of process equipment / operation performing & minimization of wastes.

2. a) To identify the areas of water usage and waste water generation and determine the characteristics of wastewater.
   b) To determine the emissions, their sources, quantities and characteristics
   c) To determine the solid wastes and hazardous wastes generated their sources, quantities and characteristics.

3. To identifying the possibilities of wastes minimization and recovery and recycling of wastes.

4. To determine the performances of the existing waste treatment / control systems so as to modify OR install additional OR alternative control equipment accordingly.

5. To determine the impact on the surrounding environment (Ground Water, Stream, Residential Area, Agricultural Area, Sensitive Zone and Solid Waste from the industry and accordingly identify suitable preventive measures if necessary.)

6. To verify compliance with the standards and conditions prescribed by the regulatory bodies under the Water Act, the Air Act and the Environmental (Protection) Act.

7. To check the effectiveness of
   a) Organization set up of the industry for decision making and environmental management with special reference to their 'Technical' view point, 'Attitudinal' view point and training.

   b) Environmental Policy of the Company.

SCOPE OF ENVIRONMENTAL AUDIT

1. Verify the performance of Sulphur and particulate matter control measures adapted by the company to avoid the Sulphur and matter at source.

2. To critically examine the records of the production data of all the section / stages of power production.

3. Review of Water conservation measures that are adopted by the company.

4. Review of the Socio Economic environment before and after the establishment of the factory.

ABOUT THE ORGANIZATION:

M/s. Kumadvathi Residential Central School, Kumadvathi College of Education, Kumadvathi Science & Commerce PU College & Kumadvathi First Grade College., have come into existence during the Year 2009. This School & College is situated at Thimlapura Village, Near Shikaripura Town, Shimoga District. The organization has got its own competent staff for handling Education Institution and for its Quality Standards.

The School and College has got total area of around 14 Acres and 27 Guntas with 59385 Sq Mtrs built up area

RAW MATERIALS CONSUMED FOR PRODUCTION:

Sl. No.	Material	Qty. in Tons/Month
01	Grocery	10 Tons/Month
02	Vegetables	05 Tons/Month

ENVIRONMENTAL CONTROL IN THE INDUSTRY

WATER POLLUTION CONTROL:

Waste water in the Residential School is from the Food Preparation for the Students staying in Hostel and Colleges activities.

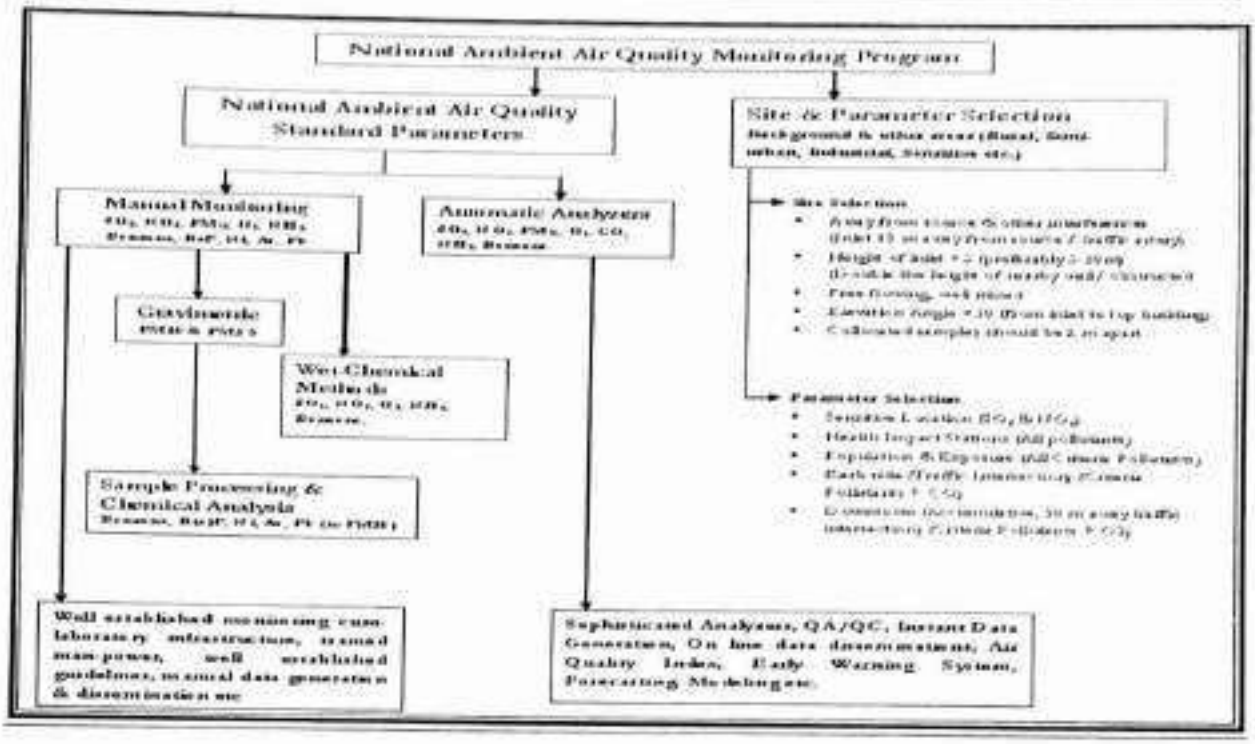
The Colleges activities include the usage of Washrooms, Canteen and Toilets. The Colleges waste is sent to a Municipality, Under Ground drainage and Septic Tank and Soak Pit for the process.

The daily requirement of fresh water is about 50000 Lts/Day. This unit has about 178 Staff and 1758 Students out of which 500 students are the occupants in Hostel, The consumption of Water for domestic purposes is about 50000 Lts/day including college and Hostel purpose.

AIR POLLUTION:

Sl. No.	Pollution Source	Capacity	Height of Chimney
01	D.G. Set	100 KVA	5 MTR ARL

D.G. Set – 1 No's, is the only source of Air Pollution. The height of the Chimney is provided as per KSPCB stipulations.



SOLID WASTES:

The Hostel is not significant from this angle as they are in running Educational Institution. The only Solid Waste generated is Bio degradable Solid Wastes generated during canteen activity. The solid waste is segregated like Bio-degradable solid waste and Non-degradable solid waste in separate bins and disposed to municipality.

NOISE POLLUTION:

Whereas the increasing ambient noise levels in public places from various sources, inter-alia, industrial activity, construction activity, fire crackers, sound producing instruments, generator sets, loud speakers, public address systems, music systems, vehicular horns and other mechanical devices have deleterious effects on human health and the psychological well being of the people; it is considered necessary to regulate and control noise producing and generating sources with the objective of maintaining the ambient air quality standards in respect of noise;

Whereas a draft of Noise Pollution (Control and Regulation) Rules, 1999 was published under the notification of the Government of India in the Ministry of Environment and Forests vide number S.O. 528 (E), dated the 28th June, 1999 inviting objections and suggestions from all the persons likely to be affected thereby, before the expiry of the period of sixty days from the date on which the copies of the Gazette containing the said notification are made available to the public;

And whereas copies of the said Gazette were made available to the public on the 1st day of July, 1999;

And whereas the objections and suggestions received from the public in respect of the said draft rules have been duly considered by the Central Government;

The School and College is not significant from this angle as they installed 1 DG Set with acoustic system. The noise level maintained within the limits as prescribed by KSPCB norms of Silent zone.

HAZARDOUS WASTE MANAGEMENT:

As per the Hazardous Waste Rules, there is no Hazardous Waste generated at **M/s. Kumadvathi Residential Central School, Kumadvathi College of Education, Kumadvathi Science & Commerce PU College & Kumadvathi First Grade College.** as they are running Educational Institution. The DG Set is operated, when there is a failure in electricity power the Hazardous Waste generated is only the waste Oil, it will be collected & stored in a leak proof container and disposed to KSPCB authorized re-processor.

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List of Waste Oil Re-processer approved by KSPCB

1	M/s. S.M. Enterprises, No 4911. M.C. Road, Mandya.	4,200 KL/A	Used Oil Re-processor	Working
2	M/s. Special Oils, No 202/2, Kuruvinakoppa, Post B, Gudhihal - 581 204, Kalaghatgi Taluk, Dharwad.	1,440 KL/A	Used Oil Re-processor	Working
3	M/s. Nakoda Petro Chemicals, Plot no.8, KIADB Indl area, Sathyamangala, Tumkur.	1,800 KL/A	Used Oil Re-processor	Working
4	M/s. Shanthadurga Petrochemicals, No 701, Shedegalli Manturga Post, Khanapur Belgaum	1,800 KL/A	Used Oil Re-processor	Working
5	M/s. Jyothi Chemicals industries,(Used oil) Survey Nos: 29, 30/1 & 30/2, Jigani Industrial Area, Anekal Taluk, Bangalore.	1,020 KL/A	Used Oil Re-processor	Working
6	M/s. Lubetech Petro Chemicals, No. 1-54, KSSIDC, Veerasandra Industrial Area, Hosur Road, Bangalore-229.	1,440 KL/A	Used Oil Re-processor	Working
7	M/9s. Sri Balaji Refineries, B-5&6, Veerasandra Industrial Area, Anekal Taluk, Bangalore.	1,100 KL/A	Used Oil Re-processor	Working
8	M/s. SB Refineries, Plot No. 81, 4th phase, Bommasandra Link Road.	3,600 KL/A	Used Oil Re-processor	Working
9	Bharath Lubricants, B-36, KSSIDC Industrial Estate, Veerasandra, Hosur Road, Bangalore - 560 100.	9000 MT/A	Used Oil Re-processor	Working
10	M/s. Arun Industries, B-64, III Stage, PIE, Bangalore-58	360 KL/A	Used Oil Re-processor	Working
11	M/s. M.R. Industries, Plot no.14-G, 1st Cross 2nd main, Kumbalgod, Banglore-74	3,000 KL/A	Used Oil Re-processor	Working
12	M/s. Merlyn Hydrocarbons Pvt. Ltd, No 367, Hassan Growth Centre HN Pura Rd, Hassan.	4,500 KL/A	Used Oil Re-processor	Working
13	M/s. Sampath Refinery Pvt. Ltd, Plot No.64A-65D, KIADB Industrial Area, Tubinakere, Mandya Dist.	3,600 KL/A	Used Oil Re-processor	Working
14	M/s. K.M. Oils (P) Ltd., Plot No.75, 76 & 77A, (Part) II phase, Kapnoor Industrial area, Gulbarga – 585 104.	10,200 KL/A	Used Oil Re-processor	Working
15	M/s. Balaji Industries, Plot No.20/A, Machenahalli Industrial Area, Shimoga Tq, & Dist.	1200 KL/A	Used Oil Re-processor	Working

16	M/s. H.N Petrochem Industries, Plot No.29/2, Taj Sultanpur Industrial Area, Gulbarga.	3600 KL/A	Used Oil Re-processor	Working
17	M/s. Khawja Petroleums Pvt. Ltd, Plot No.3, KIADB Industrial Area, S.G. Kote, Dasarahalli, Bangalore-114.	1200 KL/A	Used Oil Re-processor	Working
18	M/s. Sri. V.B.S. Petro Chemicals, No.11 & 12, 3rd cross,2ns block, Peenya Industrial Area, Bangalore- 058.	2244 KL/A	Used Oil Re-processor	Working
19	M/s. Merit India Lubicants, Plot No.189, Bommasandra Industrial Area, 4th Phase, Anekal Tq. Bangalore	9000 KL/A	Used Oil Re-processor	Working
20	Lube Tech Petro Chemicals, No. C-76, KSSIDC, Veerasandra, Indsutrial Estate, Hosur Road, Bangalore - 560 100.	1498 KL/A	Used Oil Re-processor	Working

SUMMARY & CONCLUSIONS:

M/s. **Kumadvathi Residential Central School, Kumadvathi College of Education, Kumadvathi Science & Commerce PU College & Kumadvathi First Grade College.,** is always committed to the concept of re-cycling and re-uses with the objective of waste minimization techniques. In general M/s. **Kumadvathi Residential Central School, Kumadvathi College of Education, Kumadvathi Science & Commerce PU College & Kumadvathi First Grade College.,** as responsible corporate has a comprehensive and effective environmental control and protection program. The Companies endeavor has been to maximize the efficient use of energy and safe and responsible disposal of residual waste. The commitment by the industry in adhering to the statuary norms of the **KSPCB** right from its inception stage reflects its commitment to be always an environmental compatible unit.

ENVIRONMENTAL AUDIT STATEMENT EXTRACT

FOR THE YEAR
2017 - 2018
IN
FORM - V

FORM – V

Environmental Statement for the financial year ending the 31st March 2018

PART – A

1) Name & Address of the Owner / Occupier of the industry in Operation or Process:

Mr. B.Y. Raghavendra - Secretary.
M/s. Kumadvathi Residential Central School, D Ed and B Ed College,
Swamy Vivekananda Trust (R)
Thimlapura,
Shikaripura Tq
Shimoga Dt.

II) Industry category primary (STC Code) Secondary (SIC) Code

Kumadvathi Residential Central School, Kumadvathi College of Education, Kumadvathi Science & Commerce PU College & Kumadvathi First Grade College

III) Production Capacity per Month: Educational Institution

IV) Year of Establishment: 2009

PART – B

WATER AND RAW MATERIAL CONSUMPTION:

I. Water Consumption in KL / Day: 50,000 Lts per day.

Inserted by Rule 2 of the Environment (protection) Second Amendment Rule 1992 vide G.S.R. 329 (E) dated 13.03.1992.		
Name of Products	Water Consumption per day of Production	
Rough Castings	During the Previous financial Year 2016 – 17	During the Current financial Year 2017 – 18
1. Industrial (Residential School and College)	-----	-----
2. Domestic (Sanitary purpose)	50000 Lts / Day	50000 Lts / Day
3. Gardening	-----	-----

II. RAW MATERIAL CONSUMPTION:

Name of the Raw Material	Name of the Product	Consumption of Raw Material per Unit Output	
		During the Previous financial Year	During the Current financial Year
Grocery	**Food Products**	**120 Tons/Year**	**120 Tons/Year**
Vegetables		**60 Tons/Year**	**60 Tons/Year**

Note: The consumption of raw materials mentioned above is on average, it depends as per order.

PART – C

Pollution discharged to environment per unit of output parameters as specified in the consent issued.

WATER POLLUTION:

Source of Pollution	Pollutants	Quantity of Pollutants Discharged (Kg/Day)	Concentration of Pollutants Discharges (Mass/Volume)	Percentage of Variation from prescribed standards with reasons
Water	Discharged to UGD			

PART – D

AIR POLLUTION:

Source of Pollution	Pollutants	Quantity of Pollutants Discharged (Kg/day)	Concentration of Pollutants Discharged (Mass/Volume)	Percentage of Variation from prescribed Standards with reasons
D.G. Set : **100 KVA** – 1 No.	**NA**			**NA**

PART – E

SOLID WASTES:

Solid Waste	Total Quantity (Kg)	
	During the Previous financial Year	During the Current financial Year
a) From Process	**150 Kgs/Day**	**150 Kgs/Day**
b) From Pollution Control Facility	**NA**	**NA**
c) 1. Quantity recycled or reused within the unit 2. Quantity Sold 3. Quantity disposed	**Out of 150 Kgs of Solid waste around 125 Kgs of Bio-degradable solid waste and 25 Kgs of No-degradable waste will be segregated and disposed to Municipality for treatment.**	**Out of 150 Kgs of Solid waste around 125 Kgs of Bio-degradable solid waste and 25 Kgs of No-degradable waste will be segregated and disposed to Municipality for treatment.**

PART – F

HAZARDOUS WASTES

(As specified under Hazardous Waste / Management & Handling Rules 1989)

Hazardous Waste	Total Quantity (Kg)	
	During the Previous financial Year	During the Current financial Year
a) From Process	**Nil**	**Nil**
b) From Pollution Control facilities	**Nil**	**Nil**

PART – G

Please specify the characterization (in terms of composition & quantum) of Hazardous as well as Solid Wastes indicate disposal practice adopted for both these categories of wastes.

Municipal Solid Waste is the only Solid Waste generated; Solid Waste is collected in separate Bins based on Degradable and Non-degradable and disposed to Municipality. Hazardous Waste is the only the Waste Oil, it will be Collected & Stored in leak proof container and disposed to KSPCB authorised re-processor.

PART – H

Impact of the pollution abatement measures taken on conservation of natural resources and on the cost of the production.

The Organization doesn't have any impact on the environment. The only natural resource consumed is Water for Domestic purposes. The domestic wastewater effluent is sent to STP and it is recycled and re-sued for garden purpose.

PART – I

Additional measures / investment proposal for environmental protection including abatement of pollution, prevention of pollution.

Environment protection and pollution controls have been the priority for the Organization. Any suggestions or improvements made by the pollution control board will be implemented.

PART – J

Any other particulars for improving the quality of the environment.

Constant efforts will be made in making use of the updated technologies.

ENVIRONMENT SAFE CODE FOR MANUFACTURING UNITS

- An environmentally safe layout plan takes care of material loss, cost of collection, disposal, recycle and treatment which are part of the process itself, and consequently of the layout arrangement.
- This layout codes postulates that environment protection is a factor for designing any equipment reaction vessel, material transfer arrangement, storage tank and service support to operate the production system.
- All places of storage of solid and liquid materials are to be liked without drains. Any spillage is to be wiped out and cannot be washed out.
- As losses of materials take place during charging of the reaction vessels, discharging of produce and dripping of outlet valves, and as exercised to prevent the losses, if necessary by changing the charging, discharging and transfer devices.
- Corrosion – prone area and construction materials liable to atmosphere and process-induced corrosion should be given special attention for finding better replacement material and stricter preventive maintenance frequency.
- New units will build floors with expand metals slotted angles, steel grills, steel grates, prefabricated industrial floor grafting, and the like which floor washing redundant.

- Plant management should evolve its own code for washing equipment, where particular equipment is used for the manufacture of different products. Dry scrapping of equipment surface followed by mopping with wet cloth should be carried out before hosing operation. This will reduce the quantity of the contaminants and wastewater volume.
- All channels are fitted waste water measurement devices, half barrier for the separation floating immobile liquid and in-built separation per sedimentation basins for withholding settable particulate matters. This provision may be treated as compulsory for wastewater channels in the immediate vicinity of wastewater generating units.
- All water usage that does not come in contact with chemicals should have no opportunity to mix process water. Uncontaminated water should have separate outlets from the plant and recycled is not possible, should be drained out through separate channels, without any change of getting contaminated.
- These proposed layout codes recognize solid waste generated in the process of manufacturing must find a place within the factory premises. It will be stored on land / lagoon, which will be lined with compatible geo-textile material.
- The detoxification operation is to be carried out outside the main production plant and provision has to be kept for the same.
- Storm water drains should be segregated from process water drains. The former may be used for the removal of the cooling water and non-process water.

GUIDELINES TO MINIMISE THE RAW MATERIAL LOSSES

- Keep only an appropriate inventory of raw materials to ensure minimum material handling losses, evaporation losses etc.,
- Adopt mechanical handling of materials with proper monitoring facilities so as to do only predetermine quantities as per norms prescribed.
- Plant layout should be properly made so as to minimize transfer distance of materials between storage and process or between the units operation.
- There is a risk of cross contamination due to usage of some storage tanks for different materials depending on the batch product. Separate storage is to be provided.
- Separate process lines for separate production of separate equipment for each unit operation can minimize losses due to residues left out in the equipment which is usually washed out.
- Storage tank should be provided with dropper dip arrangements for exhaust, vents and insulation provided so as to reduce evaporation losses.
- Enclosed and covered material storage areas keep them secured and reduce losses due to carry over by wind and rain.
- Enclosures should be made to collect spills and overflow of materials at the material and sampling points. This if collected properly, can be recycled.
- Regular maintenance should be taken to check flange leaks, breaks / cracks , pump failures etc.,
- Raw material purity should be ensured. Viscous raw materials lead to losses due to residues in drums. Raw material should be easy to handle. Good house keeping should be followed.
- Norms for performance of various process operation fixed so that the material usage are minimized and hence the material losses.

GUIDELINES TO REDUCE WATER USAGE AND WASTE WATER GENERATION:

- Quantities required for each operation should be determined and water usage regulated strictly. Water usage reduces wastewater. Good house keeping practices reduces water usage.
- Spills of materials should be restricted to ensure constructed for these purposes. The floor washing can then be minimized at time totally avoided.
- Wastewater may be stored and reused. The storage costs may be lower then wastewater treatment and disposal costs.
- Storm water drains should be kept separate and provisions should be made to collect only the rainfall of first few hours, which carries contaminants. This can be subsequently treated and disposed.
- The scrubbing of gaseous emissions with a suitable chemical can yield a useful by-product. Recycle or recovery of useful thus can avoid the discharge by byproducts.
- The wastewater is usually treated up to secondary treatment level to confirm to the required standards. By providing tertiary treatment by dual media filtration, columniation, activated carbon filtration etc., waste water can be reused for floor wash, gardening, Toilets etc.,

Principal
Kumadvathi College of Education
Shikaripura

Swamy Vivekananda Vidya Samsthe (R), Shikaripura

ಕುಮದ್ವತಿ ಶಿಕ್ಷಣ ಮಹಾವಿದ್ಯಾಲಯ

KUMADVATHI COLLEGE OF EDUCATION

Aided, Permanently Affiliated to Kuvempu University, Recognised by NCTE & UGC Act 2(f), Section 12(B) & NAAC Accredited with B Grade (2.70 CGPA)

Shivamogga Road Shikaripura – 577 427 Shivamogga Dist

☎: 08187 – 222383, 222 E-Mail:kumadvathibed@gmail.com

Environment Audit Report 2016-17

ENVIRONMENT AUDIT AND STATEMENT REPORT

FORTHE YEAR 2016-17

M/s. KUMADVATHI RESIDENTIAL CENTRAL SCHOOL, KUMADVATHI COLLEGE OF EDUCATION, KUMADVATHI SCIENCE & COMMERCE PU COLLEGE & KUMADVATHI FIRST GRADE COLLEGE.,

SWAMY VIVEKANANDA VIDYA SAMSTHE (R)

Thimlapura Village,

Shikaripura TQ

~*~*~*~

PREPARED BY: PARISARA CONSULTANTS AN ISO-9001: 2015 CERTIFIED COMPANY

ENVIRONMENT AUDIT REPORT & FORM – 5
FOR THE YEAR 2016 – 2017

GENERAL INFORMATION:	
1) ORGANZATION NAME	**M/s. KUMADVATHI RESIDENTIAL CENTRAL SCHOOL, KUMADVATHI COLLEGE OF EDUCATION, KUMADVATHI SCIENCE & COMMERCE PU COLLEGE & KUMADVATHI FIRST GRADE COLLEGE, SWAMY VIVEKANANDA VIDYA SAMSTHE (R).,**
Address	Thimlapura Village, Shikaripura Tq College
District	SHIMOGA
State	KARNATAKA
Phone	08187 – 222067
Fax	08187 – 222067
E-mail	svvstrst@yahoo.com
2) PRODUCT MANUFACTURED	
	Kumadvathi Residential Central School, Kumadvathi College of Education, Kumadvathi Science & Commerce PU College & Kumadvathi First Grade College
3) OPERATION DURING THE PERIOD OF AUDIT	
a) Total No. of Working Days in this Year 2016 – 17	314 Days
b) Total No. of Working Days in a Week	6 Days
c) Total No. of Shifts	Three Shifts Hostel and General Shift School and College
d) WDA Value	Rs. 4.12 Cr
4) TOTAL NO. OF EMPLOYEES	
Total Employment & Students	2050 Members
5) CURRENT APPROVALS	
Consent details of Air Act and its validity	No.75 PCB/RO(SMG)/LG/2012-13/3033 Dated:27.12.12 Valid upto 31.12.2022
Consent details of Water Act and its validity	No.75 PCB/RO(SMG)/LG/2012-13/3033 Dated:27.12.12

Secretary
Swamy Vivekananda Vidya Samsthe (R)
Shikaripura

	Valid upto 31.12.2022
6) SOLID WASTE GENERATION	
1) Solid degradable Wastes 100 Kgs/day	Disposed to Municipality Bins

INTRODUCTION

Industrial Pollution in our Country is an increase and is creating a high-risk environment. Various legislation's viz. The Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control) Act, 1981 and the Environment (Protection) Act, 1986 has come into force, organizations created to combat pollution. Gone are the days when industrialization meant profit making and environment was grossly neglected. It is being realized that industry and environment should go hand in hand so as to achieve sustained development. Also over the years awareness has bought in realization to consider environmental protection a bare necessity. Yet the investments for such a protection are still considered a liability by much environmental management. Consideration of environmental factors at par with production helps in minimizing material losses and also reduction of liabilities in the long run.

The growing environmental pollution and the complexity of this problem with increasing risks from the regulatory controls needs on effective management tools so as to prevent pollution and to make pollution control programs cost-effective and feasible.

Environmental Audit is a technique being introduced for integrating the interest of the industry and the environment, so that there could be mutually supportive. This technique is basically a part of industry's internal procedures in meeting their responsibilities towards better environment. Also the policy statement for abatement of pollution by the Government of India provides for submission of environmental statement by all concerned industries, which would subsequently evolve into an environmental audit. A notification under the Environment (Protection) Rules, 1986 as been issued on April 22, 1993 requiring industries to submit on Environmental Statement for the financial year ending on March 31 in form V to the concerned State Pollution Control Board on or before September 30 every year beginning 1993. The submission of environmental statement is applicable to the following.

1. Those who require consent under the Water (Prevention and Control of Pollution) Act, 1974.

2. Those who require consent under the Air (Prevention and Control of Pollution) Act, 1981.

3. Those who require authorization under Hazardous Waste (Management & Handling) Rules, 1989.

No new Large/Medium/Small (Red & Orange Category) industry generating effluents, and or emissions shall be permitted within city/municipal limits and residential areas.

The Karnataka Industrial Area Development Board (KIADB) or any other agency developing industrial area shall obtain Environmental clearance from the Department of Ecology and environment and clearance from the Karnataka State Pollution Control Board before establishing such area. Environmental Impact Assessment (EIA) and Environmental Management Plan (EMP) reports shall be submitted to the Karnataka State Pollution Control Board and obtain approval.

Distance for establishing new industries specified in ANNEXURE - I in certain special category areas shall be as follows : -

(a) Ecologically and/or otherwise sensitive areas :

At least 25 kms., depending on the geo-climatic conditions, the requisite distance shall have to be increased by the appropriate agency.

(b) Coastal Areas :

At least 1/2 km. from high tide line. The stipulations made by Ministry of Environment & forests Government of India in its vide Notification No. S0 114(E), dated 19.02.1991, by Government of India, Ministry of Environment and Forests, issued under the Environment (Protection) Rules, 1986, shall be strictly adhered to.

(c) Transport / Communication System :

At least 1/2 km. from National & State High-ways and Railway.

(d) Major Settlements (3,00,000 Population) :

Appropriate distance for establishment of major industries around the cities having more than 3,00,000 population shall be prescribed by Karnataka State Pollution Control Board. Wherever these distance cannot

be maintained and at the same time it is inevitable to locate the industry, measures for prevention of pollution due to effluents, noise, emissions, odour etc., shall be insisted by the Board

During last few decades the Government has brought in a series of laws and regulation to control the industrial pollution and to protect the environment. The Water (Prevention & Control of Pollution) Act. 1974, was first such legislation followed by Air (Prevention & Control of Pollution) Act 1981. The Government in 1986 to address the various environmental protection issues enacted the most comprehensive legislation Environment Protection Act.

NOTE :

Ecological and / or otherwise sensitive areas include

i) Religious and Historic Places
ii) Archeological Monuments
iii) Scenic Areas
iv) Hill Resorts
v) Beach Resorts
vi) Health Resorts
vii) Coastal Areas rich in Mangroves, Breeding Grounds of Specific Species
viii) Estuaries rich in Mangroves, Breeding Grounds of Specific Species
ix) Biosphere Reserves
x) National Parks and Sanctuaries
xi) Natural Lakes, Swamps
xii) Seismic Zones
xiii) Tribal Settlements
xiv) Areas of Scientific and Geological Interest
xv) Defence Installations, specially those of security importance and sensitive to pollution
xvi) Air Ports

No forest land shall be converted into non-forest activity for the sustenance of the industry.

Land acquired shall be sufficiently large to provide for appropriate treatment of waste water still left for treatment after maximum possible reuse and recycle. Reclaimed (treated waste) water shall be used to raise green belt and to create water body for aesthetics, recreation and if possible for aquaculture. The green

belt shall be sufficiently wide around the boundary limit of the industry. For industry having odour problem, it shall be minimum of 30 mtrs. wide.
Enough space should be provided for storage of solid waste; so that the same could be available for possible reuse.

BENEFITS OF ENVIRONMENTAL AUDIT

Environmental Auditing has far reaching benefits to the industry, to the society and the nation at large. The benefits of environmental audit are as follows.

1. Determines how well the process systems and pollution control systems are performing, and identify the operation of poor performances.

2. Identifies potential cost savings which can be implemented through reduction in raw material consumption by way of waste minimization, and adaptation of recycle / recovery / reduction of pollution load.

3. Increase in awareness of environmental requirement, policies and responsibilities.

4. Helps in understanding the technical capabilities and attitude of environmental organization in a company.

5. Provides up-to-date environmental database for use in plant modification, emergencies etc.

6. Unravels surprise-hidden liabilities due to which regulatory risks and expose to litigation can be reduced.

7. Ensures independent verification and identify matters needing attention, and provide timely warning to management on potential future problems.

8. Helps to safe guard environment and assists in complying with local regional and national laws and regulations with company's policy and with the environmental standards.

OBJECTIVE OF ENVIRONMENTAL AUDITING

The Environmental Audit helps in pollution control, improved production, safety and health and conversation of natural resources and hence its overall objective can be achieving of sustainable developments. However, for conducting environmental audit, objectives are to be defined clearly or else the audit procedure will be subject to varying interpretation, which may shape differential approach there by influencing the end results. The objective of environmental audit in an industry is,

1. To determine the mass balance of various materials used and the performance of various process equipment so as to identify usage of materials in excess then required, to review the conversion efficiencies of process equipment / operation performing & minimization of wastes.

2. a) To identify the areas of water usage and waste water generation and determine the characteristics of wastewater.
   b) To determine the emissions, their sources, quantities and characteristics
   c) To determine the solid wastes and hazardous wastes generated their sources, quantities and characteristics.

3. To identifying the possibilities of wastes minimization and recovery and recycling of wastes.

4. To determine the performances of the existing waste treatment / control systems so as to modify OR install additional OR alternative control equipment accordingly.

5. To determine the impact on the surrounding environment (Ground Water, Stream, Residential Area, Agricultural Area, Sensitive Zone and Solid Waste from the industry and accordingly identify suitable preventive measures if necessary.)

6. To verify compliance with the standards and conditions prescribed by the regulatory bodies under the Water Act, the Air Act and the Environmental (Protection) Act.

7. To check the effectiveness of
   a) Organization set up of the industry for decision making and environmental management with special reference to their 'Technical' view point, 'Attitudinal' view point and training.

   b) Environmental Policy of the Company.

SCOPE OF ENVIRONMENTAL AUDIT

1. Verify the performance of Sulphur and particulate matter control measures adapted by the company to avoid the Sulphur and matter at source.

2. To critically examine the records of the production data of all the section / stages of power production.

3. Review of Water conservation measures that are adopted by the company.

4. Review of the Socio Economic environment before and after the establishment of the factory.

ABOUT THE INDUSTRY:

M/s. Kumadvathi Residential Central School, Kumadvathi College of Education, Kumadvathi Science & Commerce PU College & Kumadvathi First Grade College., have come into existence during the Year 2009. This School & College is situated at Thimlapura Village, Near Shikaripura Town, Shimoga District. The organization has got its own competent staff for handling Education Institution and for its Quality Standards.

The School and College has got total area of around 14 Acres and 27 Guntas with 59385 Sq Mtrs built up area

RAW MATERIALS CONSUMED FOR PRODUCTION:

Sl. No.	Material	Qty. in Tons/Month
01	Grocery	10 Tons/Month
02	Vegetables	05 Tons/Month

ENVIRONMENTAL CONTROL IN THE INDUSTRY

WATER POLLUTION CONTROL:

Waste water in the Residential School is from the Food Preparation for the Students staying in Hostel and Colleges activities.

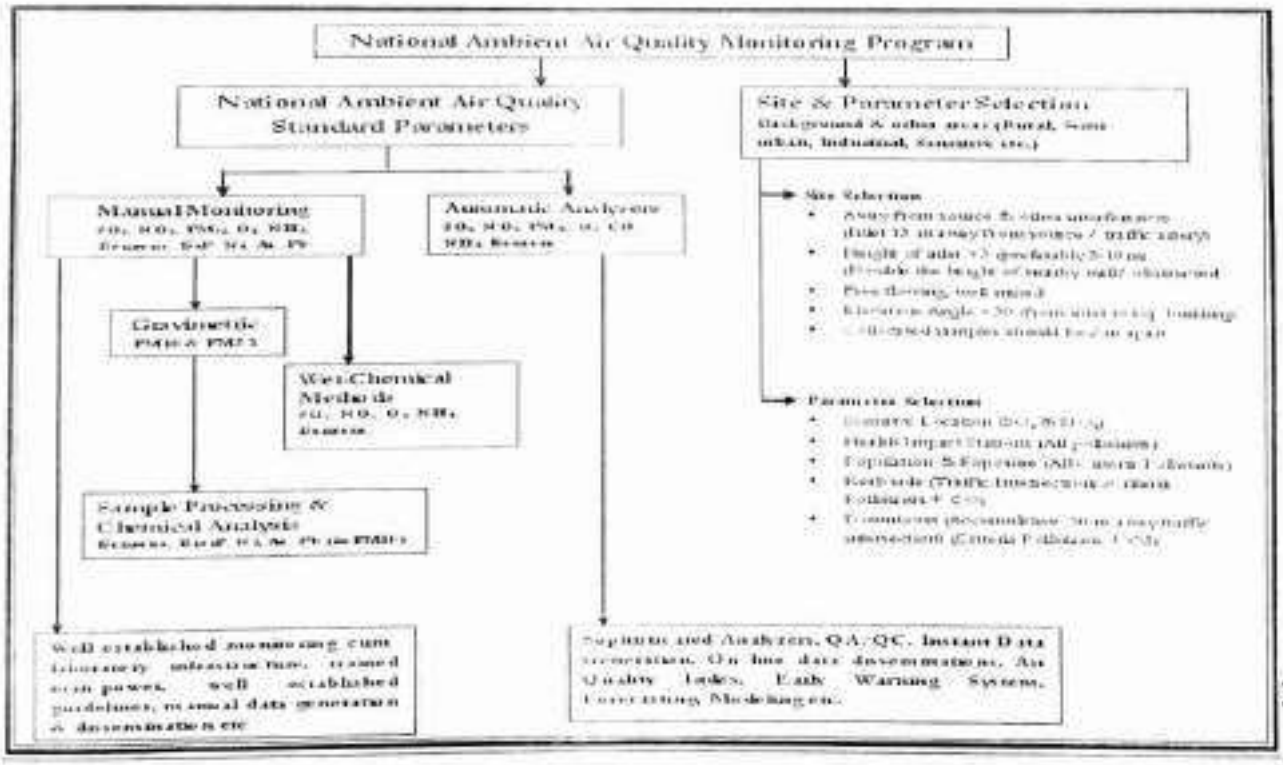
The Colleges activities include the usage of Washrooms, Canteen and Toilets. The Colleges waste is sent to a Municipality, Under Ground drainage and Septic Tank and Soak Pit for the process.

The daily requirement of fresh water is about 50000 Lts/Day. This unit has about 178 Staff and 1758 Students out of which 500 students are the occupants in Hostel. The consumption of Water for domestic purposes is about 50000 Lts/day including college and Hostel purpose.

AIR POLLUTION:

Sl. No.	Pollution Source	Capacity	Height of Chimney
01	D.G. Set	100 KVA	5 MTR ARL

D.G. Set – 1 No's, is the only source of Air Pollution. The height of the Chimney is provided as per KSPCB stipulations.



SOLID WASTES:

The Hostel is not significant from this angle as they are in running Educational Institution. The only Solid Waste generated is Bio degradable Solid Wastes generated during canteen activity. The solid waste is segregated like Bio-degradable solid waste and Non-degradable solid waste in separate bins and disposed to municipality.

NOISE POLLUTION:

Whereas the increasing ambient noise levels in public places from various sources, inter-alia, industrial activity, construction activity, fire crackers, sound producing instruments, generator sets, loud speakers, public address systems, music systems, vehicular horns and other mechanical devices have deleterious effects on human health and the psychological well being of the people; it is considered necessary to regulate and control noise producing and generating sources with the objective of maintaining the ambient air quality standards in respect of noise;

Whereas a draft of Noise Pollution (Control and Regulation) Rules, 1999 was published under the notification of the Government of India in the Ministry of Environment and Forests vide number S.O. 528 (E), dated the 28th June, 1999 inviting objections and suggestions from all the persons likely to be affected thereby, before the expiry of the period of sixty days from the date on which the copies of the Gazette containing the said notification are made available to the public;

And whereas copies of the said Gazette were made available to the public on the 1st day of July, 1999;

And whereas the objections and suggestions received from the public in respect of the said draft rules have been duly considered by the Central Government;

The School and College is not significant from this angle as they installed 1 DG Set with acoustic system. The noise level maintained within the limits as prescribed by KSPCB norms of Silent zone.

HAZARDOUS WASTE MANAGEMENT:

As per the Hazardous Waste Rules, there is no Hazardous Waste generated at **M/s. Kumadvathi Residential Central School, Kumadvathi College of Education, Kumadvathi Science & Commerce PU College & Kumadvathi First Grade College.** as they are running Educational Institution. The DG Set is operated, when there is a failure in electricity power the Hazardous Waste generated is only the waste Oil, it will be collected & stored in a leak proof container and disposed to KSPCB authorized re-processor.

List of Waste Oil Re-processer approved by KSPCB

1	M/s. S.M. Enterprises, No 4911, M.C. Road, Mandya.	4,200 KL/A	Used Oil Re-processor	Working
2	M/s. Special Oils, No 202/2, Kuruvinakoppa, Post B. Gudhihal - 581 204, Kalaghatgi Taluk, Dharwad.	1,440 KL/A	Used Oil Re-processor	Working
3	M/s. Nakoda Petro Chemicals, Plot no.8, KIADB Indl area, Sathyamangala, Tumkur.	1,800 KL/A	Used Oil Re-processor	Working
4	M/s. Shanthadurga Petrochemicals, No 701, Shedegalli Manturga Post, Khanapur Belgaum	1,800 KL/A	Used Oil Re-processor	Working
5	M/s. Jyothi Chemicals industries,(Used oil) Survey Nos: 29, 30/1 & 30/2, Jigani Industrial Area, Anekal Taluk, Bangalore.	1,020 KL/A	Used Oil Re-processor	Working
6	M/s. Lubetech Petro Chemicals, No. 1-54, KSSIDC, Veerasandra Industrial Area, Hosur Road, Bangalore-229.	1,440 KL/A	Used Oil Re-processor	Working
7	M/9s. Sri Balaji Refineries, B-5&6, Veerasandra Industrial Area, Anekal Taluk, Bangalore.	1,100 KL/A	Used Oil Re-processor	Working
8	M/s. SB Refineries, Plot No. 81, 4th phase, Bommasandra Link Road.	3,600 KL/A	Used Oil Re-processor	Working
9	Bharath Lubricants, B-36, KSSIDC Industrial Estate, Veerasandra, Hosur Road, Bangalore - 560 100.	9000 MT/A	Used Oil Re-processor	Working

10	M/s. Arun Industries, B-64, III Stage, PIE, Bangalore-58	360 KL/A	Used Oil Re-processor	Working
11	M/s. M.R. Industries, Plot no.14-G, 1st Cross 2nd main, Kumbalgod, Banglore-74	3,000 KL/A	Used Oil Re-processor	Working
12	M/s. Merlyn Hydrocarbons Pvt. Ltd, No 367, Hassan Growth Centre HN Pura Rd, Hassan.	4,500 KL/A	Used Oil Re-processor	Working
13	M/s. Sampath Refinery Pvt. Ltd, Plot No.64A-65D, KIADB Industrial Area, Tubinakere, Mandya Dist.	3,600 KL/A	Used Oil Re-processor	Working
14	M/s. K.M. Oils (P) Ltd., Plot No.75, 76 & 77A, (Part) II phase, Kapnoor Industrial area, Gulbarga – 585 104.	10,200 KL/A	Used Oil Re-processor	Working
15	M/s. Balaji Industries, Plot No.20/A, Machenahalli Industrial Area, Shimoga Tq, & Dist.	1200 KL/A	Used Oil Re-processor	Working
16	M/s. H.N Petrochem Industries, Plot No.29/2, Taj Sultanpur Industrial Area, Gulbarga.	3600 KL/A	Used Oil Re-processor	Working
17	M/s. Khawja Petroleums Pvt. Ltd, Plot No.3, KIADB Industrial Area, S.G. Kote, Dasarahalli, Bangalore-114.	1200 KL/A	Used Oil Re-processor	Working
18	M/s. Sri. V.B.S. Petro Chemicals, No.11 & 12, 3rd cross,2ns block, Peenya Industrial Area, Bangalore- 058.	2244 KL/A	Used Oil Re-processor	Working
19	M/s. Merit India Lubicants, Plot No.189, Bommasandra Industrial Area, 4th Phase, Anekal Tq. Bangalore	9000 KL/A	Used Oil Re-processor	Working
20	Lube Tech Petro Chemicals, No. C-76, KSSIDC, Veerasandra, Indsutrial Estate, Hosur Road, Bangalore - 560 100.	1498 KL/A	Used Oil Re-processor	Working

SUMMARY & CONCLUSIONS:

M/s. **Kumadvathi Residential Central School, Kumadvathi College of Education, Kumadvathi Science & Commerce PU College & Kumadvathi First Grade College.,** is always committed to the concept of re-cycling and re-uses with the objective of waste minimization techniques. In general M/s. **Kumadvathi Residential Central School, Kumadvathi College of Education, Kumadvathi Science & Commerce PU College & Kumadvathi First Grade College.,** as responsible corporate has a comprehensive and effective environmental control and protection program. The Companies endeavor has been to maximize the efficient use of energy and safe and responsible disposal of residual waste. The commitment by the industry in adhering to the statuary norms of the **KSPCB** right from its inception stage reflects its commitment to be always an environmental compatible unit.

ENVIRONMENTAL AUDIT STATEMENT EXTRACT

FOR THE YEAR
2016 - 2017
IN
FORM - V

FORM – V

Environmental Statement for the financial year ending the 31st March 2017

PART – A

I) Name & Address of the Owner / Occupier of the industry in Operation or Process:

Mr. B.Y. Raghavendra - Secretary.
M/s. Kumadvathi Residential Central School, D Ed and B Ed College,
Swamy Vivekananda Trust (R)
Thimlapura,
Shikaripura Tq
Shimoga Dt.

II) Industry category primary (STC Code) Secondary (SIC) Code

Kumadvathi Residential Central School, Kumadvathi College of Education, Kumadvathi Science & Commerce PU College & Kumadvathi First Grade College

III) Production Capacity per Month: Educational Institution

IV) Year of Establishment: 2009

PART – B

WATER AND RAW MATERIAL CONSUMPTION:

I. Water Consumption in KL / Day: 50,000 Lts per day.

Inserted by Rule 2 of the Environment (protection) Second Amendment Rule 1992 vide G.S.R. 329 (E) dated 13.03.1992.		
Name of Products	Water Consumption per day of Production	
Rough Castings	During the Previous financial Year 2015 – 16	During the Current financial Year 2016 – 17
1. Industrial (Residential School and College)	----	----
2. Domestic (Sanitary purpose)	50000 Lts / Day	50000 Lts / Day
3. Gardening	----	----

II. RAW MATERIAL CONSUMPTION:

Name of the Raw Material	Name of the Product	Consumption of Raw Material per Unit Output	
		During the Previous financial Year	During the Current financial Year
Grocery	**Food Products**	**120 Tons/Year**	**120 Tons/Year**
Vegetables		**60 Tons/Year**	**60 Tons/Year**

Note: The consumption of raw materials mentioned above is on average, it depends as per order.

PART – C

Pollution discharged to environment per unit of output parameters as specified in the consent issued.

WATER POLLUTION:

Source of Pollution	Pollutants	Quantity of Pollutants Discharged (Kg/Day)	Concentration of Pollutants Discharges (Mass/Volume)	Percentage of Variation from prescribed standards with reasons
Water	Discharged to UGD			

PART – D

AIR POLLUTION:

Source of Pollution	Pollutants	Quantity of Pollutants Discharged (Kg/day)	Concentration of Pollutants Discharged (Mass/Volume)	Percentage of Variation from prescribed Standards with reasons
D.G. Set : 100 KVA – 1 No.	NA			NA

PART – E

SOLID WASTES:

Solid Waste	Total Quantity (Kg)	
	During the Previous financial Year	During the Current financial Year
a) From Process	150 Kgs/Day	100 Kgs/Day
b) From Pollution Control Facility	NA	NA
c) 1. Quantity recycled or reused within the unit 2. Quantity Sold 3. Quantity disposed	Out of 150 Kgs of Solid waste around 125 Kgs of Bio-degradable solid waste and 25 Kgs of No-degradable waste will be segregated and disposed to Municipality for treatment.	Out of 100 Kgs of Solid waste around 90 Kgs of Bio-degradable solid waste and 10 Kgs of No-degradable waste will be segregated and disposed to Municipality for treatment.

PART – F

HAZARDOUS WASTES

(As specified under Hazardous Waste / Management & Handling Rules 1989)

Hazardous Waste	Total Quantity (Kg)	
	During the Previous financial Year	During the Current financial Year
a) From Process	Nil	Nil
b) From Pollution Control facilities	Nil	Nil

PART – G

Please specify the characterization (in terms of composition & quantum) of Hazardous as well as Solid Wastes indicate disposal practice adopted for both these categories of wastes.

Moulded Sand is the only Solid Waste generated; Moulded Sand is collected in separate yard and disposed at Karnataka State Reserve Police, 8th Battalion, Jayanthi Gram, Shimoga. Hazardous Waste is the only the Waste Oil, it will be Collected & Stored in leak proof container and disposed to KSPCB authorised re-processor.

PART – H

Impact of the pollution abatement measures taken on conservation of natural resources and on the cost of the production.

The industry doesn't have any impact on the environment. The only natural resource consumed is Water for Domestic and Industrial purposes. The domestic wastewater effluent is sent to septic tank and the industrial wastewater used for cooling is recycled. The recycled water will be used for gardening.

PART – I

Additional measures / investment proposal for environmental protection including abatement of pollution, prevention of pollution.

Environment protection and pollution controls have been the priority for the industry. Any suggestions or improvements made by the pollution control board will be implemented.

PART – J

Any other particulars for improving the quality of the environment.

Constant efforts will be made in making use of the updated technologies.

ENVIRONMENT SAFE CODE FOR MANUFACTURING UNITS

- An environmentally safe layout plan takes care of material loss, cost of collection, disposal, recycle and treatment which are part of the process itself, and consequently of the layout arrangement.
- This layout codes postulates that environment protection is a factor for designing any equipment reaction vessel, material transfer arrangement, storage tank and service support to operate the production system.
- All places of storage of solid and liquid materials are to be liked without drains. Any spillage is to be wiped out and cannot be washed out.
- As losses of materials take place during charging of the reaction vessels, discharging of produce and dripping of outlet valves, and as exercised to prevent the losses, if necessary by changing the charging, discharging and transfer devices.
- Corrosion – prone area and construction materials liable to atmosphere and process-induced corrosion should be given special attention for finding better replacement material and stricter preventive maintenance frequency.
- New units will build floors with expand metals slotted angles, steel grills, steel grates, prefabricated industrial floor grafting, and the like which floor washing redundant.

- Plant management should evolve its own code for washing equipment, where particular equipment is used for the manufacture of different products. Dry scrapping of equipment surface followed by mopping with wet cloth should be carried out before hosing operation. This will reduce the quantity of the contaminants and wastewater volume.
- All channels are fitted waste water measurement devices, half barrier for the separation floating immobile liquid and in-built separation per sedimentation basins for withholding settable particulate matters. This provision may be treated as compulsory for wastewater channels in the immediate vicinity of wastewater generating units.
- All water usage that does not come in contact with chemicals should have no opportunity to mix process water. Uncontaminated water should have separate outlets from the plant and recycled is not possible, should be drained out through separate channels, without any change of getting contaminated.
- These proposed layout codes recognize solid waste generated in the process of manufacturing must find a place within the factory premises. It will be stored on land / lagoon, which will be lined with compatible geo-textile material.
- The detoxification operation is to be carried out outside the main production plant and provision has to be kept for the same.
- Storm water drains should be segregated from process water drains. The former may be used for the removal of the cooling water and non-process water.

GUIDELINES TO MINIMISE THE RAW MATERIAL LOSSES

- Keep only an appropriate inventory of raw materials to ensure minimum material handling losses, evaporation losses etc.,
- Adopt mechanical handling of materials with proper monitoring facilities so as to do only predetermine quantities as per norms prescribed
- Plant layout should be properly made so as to minimize transfer distance of materials between storage and process or between the units operation.
- There is a risk of cross contamination due to usage of some storage tanks for different materials depending on the batch product. Separate storage is to be provided.
- Separate process lines for separate production of separate equipment for each unit operation can minimize losses due to residues left out in the equipment which is usually washed out.
- Storage tank should be provided with dropper dip arrangements for exhaust, vents and insulation provided so as to reduce evaporation losses.
- Enclosed and covered material storage areas keep them secured and reduce losses due to carry over by wind and rain.
- Enclosures should be made to collect spills and overflow of materials at the material and sampling points. This if collected properly, can be recycled.
- Regular maintenance should be taken to check flange leaks, breaks / cracks , pump failures etc.,
- Raw material purity should be ensured. Viscous raw material- lead to losses due to residues in drums. Raw material should be easy to handle. Good house keeping should be followed.
- Norms for performance of various process operation fixed so that the material usage are minimized and hence the material losses.

GUIDELINES TO REDUCE WATER USAGE AND WASTE WATER GENERATION:

- Quantities required for each operation should be determined and water usage regulated strictly. Water usage reduces wastewater. Good house keeping practices reduces water usage.
- Spills of materials should be restricted to ensure constructed for these purposes. The floor washing can then be minimized at time totally avoided.
- Wastewater may be stored and reused. The storage costs may be lower then wastewater treatment and disposal costs.
- Storm water drains should be kept separate and provisions should be made to collect only the rainfall of first few hours, which carries contaminants. This can be subsequently treated and disposed.
- The scrubbing of gaseous emissions with a suitable chemical can yield a useful by-product. Recycle or recovery of useful thus can avoid the discharge by byproducts.
- The wastewater is usually treated up to secondary treatment level to confirm to the required standards. By providing tertiary treatment by dual media filtration, columniation, activated carbon filtration etc., waste water can be reused for floor wash, gardening, Toilets etc.,

GUIDELINE FOR REDUCING EMISSION:

- The process operations where emissions arise should be provided with control equipment, condensers could collect certain emissions, which can be entirely reduced.
- The transfer of materials should be done through closed operation.
- The areas where fugitive emissions arise can be avoided should be enclosed and the air exhausted through induced draft and passed through control equipment before vetting off.
- The enclosed area should be provided with at least three air replacements per minute.
- Evaporation losses from storage tanks should be checked by proper insulation and putting the vents in suitable dip columns.
- Loading and unloading of materials from tankers leads to huge quantities of emissions. The materials transfers should be done through pipes / holes keeping the outlet of the tanker and the inlet of receiving tank covered. While loading the tanker, if the tanker inlet cannot be recovered, a hood can be provided over the inlet emissions collected through a ducting system and further controlled.

Principal
Kumadvathi College of Education
Shikaripura