ENVIRONMENTAL AUDIT STATEMENT FOR THE YEAR 2018-19

M/S .COROMANDEL SUGARS LIMITED,

MAKAVALLI-VILLAGE, K.R.PET TALUK,

MANDYA –DISTRICT -571426

CONTENTS

GENERAL INFORMATION

1. Name of the unit	: M/s. Coromandel Sugars limited, Makavalli- Village, K.R.Pet – Taluk Mandya –Distirct, 571426.
2. Telephone No	: 08230 260434
3. Fax No	: 08230 260456
4. Products manufactured	: White crystal Sugar & Co-generation.
5. Production capacity	: 4800 TCD and 30 MW Co-generation.
6. Year of establishment	: 24th May 1999
7. Operation during the period of Audit	
a. working days per week	: 06
b. No.of working shift/day	: 03
8. No.of Employees	: 490

OVERVIEW OF THE ENVIRONMENTAL AUDIT

With increased awareness of the need for environment protection, industry will need to rely increasingly on environmental audits. The need to carry out an environmental audit will vary depending upon the type of organization and the objectives of the audit. The principal aims are to identify and evaluate potential liabilities, risks and hazards. This , in turn, will assist in assessing the viability of operations after including the cost of reducing environmental risks and liability to acceptable levels.

Simply, an environmental audit assesses the environmental impact of an existing operation. A number of bodies such as the International chamber of Commerce and the International Organisation for Standardisation (ISO) have developed detailed definitions for environmental auditing. For its purposes the International Chamber of commerce defines an environmental audit as a management tool comprising a systematic , documented, periodic and objective evaluation of how well environmental organization, management and equipment are performing with the aim of helping to safeguard the environment by:

1. Facilitating management control of environmental practices.

2. Assessing compliance with company policies, which includes meeting regulatory requirements.

The international Organization for Standardization (ISO) defines environmental audit as a systematic , documented verification process of objectively obtaining and evaluating audit evidence (verifiable information, records or statements of fact) to determine whether specified environmental activities, events, conditions, management systems, or information about these matters conform with audit criteria (Policies, practicesm procedures or requirements against which the auditor compares collected audit evidence about the subject matter), and communicating the results of this process to the client (organization commissioning the audit).

This technique is basically a part of industry's internal procedures in meeting their responsibilities towards a better environment. Also the policy statement for abatement of pollution by the Government of India provides for the submission of Environmental Statement by all concerned industries, which would subsequently evolve into an environmental audit. The submission of an environmental statement is applicable to the following:

- Industries which requires consent order under the Water (prevention and control of Pollution) Act, 1974.
- Industries which require consent under the Air (prevention and control of Pollution) Act,1981.
- Industries which require authorization under hazardous wastes (Management and Handling) Rules,1989.

PURPOSE OF ENVIRONMENTAL AUDIT.

Environmental auditing is a systematic, documented, periodic and objective process in assessing an organization's activities and services in relation to:

1. Assessing compliance with relevant statutory and internal requirements

2. Facilitating management control of environmental practices.

3. Promoting good environmental management.

4. Maintaining credibility with the public.

5. Raising staff awareness and enforcing commitment to departmental policy.

6. Exploring improvement opportunities.

7. Establishing the performance baseline for developing an Environmental Management System (EMS).

Conducting an environmental audit is no longer an option but a sound precaution and a proactive measure in today's heavily regulated environment, Indeed, evidence suggests that EA have a valuable role to play, encouraging systematic incorporation of environmental perspectives into many aspects of an organisation's overall operation, helping trigger new awareness and new priorities in policies and practices.

Environmental Auditing can be viewed as a "Management tool" internally and "liaison" externally with the public regulatory bodies.

OBJECTIVES:

The Environmental Audit helps in pollution control, improved safety and health and conservation of natural resources and hence its overall objective can be stated as achieving of sustainable development.

The objective of Environmental Audit in an industry are:

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 than required, to review the conservation efficiencies of process equipment and according fix up norms for equipment/operation performance and minimization of the wastes.

2. a) To check and identify the areas of water usage and wastewater generation and determine the characteristics of the wastewater.

b) To check the emissions, their sources, quantities and characteristics.

c) To check the solid wastes and hazardous wastes generated, their sources, their quantities and characteristics.

3. To identify the possibilities of waste minimization and recovery and recycling of wastes.
4. To study the performance of existing waste water/ air treatment methods.
5. To control the system so as to modify or install additional control equipment accordingly.

INTRODUCTION OF THE INDUSTRY.

Coromandel Sugars is an associate group of India Cements Limited. It is the only Sugar Factory of India Cements Limited Group, which is having '8' Cement Factories and One Sugar Factory.

The Factory is situated at Makavalli Village, which is 10 km away from K. R. Pet, Mandya District. It is a large scale industry working in three shifts per day with employees of 490. It has a crushing capacity of 4800 Tonnes per day and 30 MW Power generation. After captive power consumption, it can export about 20 to 23 MW power to KPTCL.

Coromandel Sugars manufactures " best quality sugar" which is having good demand in South Karnataka ,Tamilnadu and Kerala state.

Coromandel Sugars has a well upgraded Effluent Treatment plant capacity of 1.5 MLD and the treated water is stored in a polishing tank, and which is being utilized for irrigation of R & D Sugar cane farm, Process and Green belt area.

Coromandel Sugars limited also has a well maintained garden at the entrance and peripheral avenue plantation.

By- products are Molasses and Filter cake. Molasses are being sold to Distilleries and cattle feeds etc and Filter cake mixed with ash are given to riots using as manure as per suggestions of KSPCB, Bangalore.

COROMANDEL SUGARS LIMITED . MAKAVALLI.

SUGAR MANUFACTURING PROCESS

Cane is weighed at Weigh-bridge, CANE is delivered on Feeder Table, from where it is fed to cane carrier and is passed through cane PREPARATORY DEVICES (leveler, chopper, cutter and shredder). The prepared cane (cut into very small pieces) is passed through four MILLS in series, where juice is extracted and the residue, which is called BAGASSE, is sent to boilers. Bagasse is burnt in BOILERS to produce super heated steam. Using super heated steam, electricity is produced in POWER HOUSE in high pressure turbines, excess power is sold to Karnataka Electricity Board. The exhaust steam coming out of Turbine is sent to Boiling House where it is used in heat exchangers like Juice Heaters and Evaporators for evaporating the water content of juice.

The juice delivered from the Mills is weighed in FLOW METER and pumped to JUICE SULPHITER through PRIMARY JUICE HEATER , which heats the juice to 70^0 C. In juice sulphiter Milk of Lime and sulphur-di-oxide gas are added where the reaction takes place. Here the P^H is maintained at 7.1 to 7.2. the treated juice is again heated to 103^0C in SECONDARY JUICE HEATERS and sent to CLARIFIER for settling the precipitates. The clear juice got from Clarifier is pumped to QUINTAPLE EFFECT EVAPORATOR, where 75 to 80% of water is removed from the juice by evaporation and the thick syrup is sent to **Syrup clarification system** ,clear syrup pumped to SYRUP SULPHITER. In Syrup Sulphiter SO_2 gas is passed through the Syrup and its P^H is maintained around 5.0, is pumped to Syrup Storage Tanks at PAN FLOOR.

The Muddy juice coming out of clarifier is filtered by using VACUUM FILTERS, where we get FILTRATE JUICE and FILTER CAKE as by product. Filtrate juice is sent to **Filtrate clarification system** , clear filtrate taken back to process and Filter Cake is sold to farmers to use it as MANURE.

At Pan Floor the syrup is boiled in vacuum pans to produce Sugar Crystals. The material delivered from Pan is a mixture of Sugar Crystals and Mother Liquor, called as MASSECUITE. Massecuite is pumped to CRYSTALLISERS and then to

CENTRIFUGALS, where the Sugar Crystals and Mother Liquor are separated. The Mother Liquor which is called as MOLASSES, is taken back to Pan Floor for making low grade Massecuites. for better recovery of Sugar we are producing three grade of Massecuites called ‘A’ ‘B’ and ‘C’ Massecuites.

White crystal Sugar produced by centrifugation of ‘A’ Massecuite and is dried, graded and sent to Bins for bagging. Molasses getting by centrifugation of ‘C’ Massecuite is called Final Molasses, which is weighed and stored in Molasses Storage Tanks. The final molasses is sold to Manufacturers of Alcohol, Cattle Feeds etc.

The SUGAR bags are kept in damp proof GODOWN for Marketing.

FORM .V

ENVIRONMENTAL STATEMENT FOR THE FINANCIAL YEAR ENDING 31st MARCH 2019.

PART- A

1.	Name and address of the occupier	: Mr. T.S.Raghupathy, Coromandel Sugars Ltd., Makavalli(Post) , K.R.Pet (Taluk) Mandya – 571426.
2.	Industry category	: Large Red.
3.	Production capacity	: 4800 Qtls of White crystal Sugar and 30 MW co-generation .
4.	Year of Establishment	: 1999
5.	Date of the Last Environmental audit Report submitted	: 22.09.2018.

PART – B,

WATER AND RAW MATERIAL CONSUMPTION:

1.WATER CONSUMPTION IN m^3/DAY:

S.no	Purpose	Qty in m^3/day	Discharge in m^3/day
1.	Domestic	65.00	47.32
2.	Gardening	124.85	-
	Total	189.85	47.32
3.	Industrial		
a	Process	185.97	128.69
b	Washing	24.58	24.58
c	Bolier feed	164.88	20.08
d	DM/RO plant back wash/regeneration	61.60	61.60
e	Cooling tower hold up tank make up at start up	6.76	6.76
f	Spray pond make up water at start up	22.52	275.80
g	Cooling tower	401.42	28.62
h	Fire fighting	-	-
	Total	867.73	526.05

Note:1. Considering the actual water consumption and discharge of water for the financial year 2018-19.

2. ETP treated water 378.287 m^3 /day used for sugar and Co- gen plant. Hence 478.436 m^3/day water taken from River.

2. PROCESS WATER CONSUMPTION PER UNIT OF PRODUCT OUTPUT (M^3/MT of product):

Name of the Product	Consumption of Water per unit output of product	
	During the last financial Year 2017-18	During the Current Financial Year 2018-19
Sugar	0.83	0.66

3. RAW MATERIAL CONSUMPTION IN MT/MT OF PRODUCT:

Name of the products	Name of the Raw Material	Consumption of Raw Material per unit output of Product (MT)	
		During the last Financial year 2017-18	During the Current Financial Year 2018-19
White crystal Sugar	Sugar cane	10.702	10.221

PART – C

POLLUTION DISCHARGED TO ENVIRONMENT PER UNIT OF OUTPUT
(PARAMETERS AS SPECIFIED IN THE CONSENT ISSUED)

1. WATER ENVIRONMENT:

Polllutants	Quantity of pollutants generated		Percentage variation from prescribed standards with reasons
	Last year 2017-18	This year 2018-19	
1.Water (KL/MT) a. Process b. Sewage	1.00 KL/MT 0.104KL/MT	1.00 KL/MT 0.104KL/MT	NA

2.Solids (MT/MT cane). a) Pressmud	0.04 MT/MT cane	0.04 MT/MT cane	NA
b) Boiler bottom/fly ash	0.005 MT/MT cane	0.005 MT/MT cane	
c) Ash from ESP	0.008 MT/MT cane	0.008 MT/MT cane	
d) Sludge from CETP	0.00003MT/MT cane.	0.00003MT/MT cane.	
f) Lime grit	0.0002 MT/MT cane.	0.0002 MT/MT cane.	

A full fledged Effluent Treatment Plant is working very efficiently and the results after treatment are confirming to KSPCB prescribed norms.

2. AIR ENVIRONMENT.

Sl.no	Chimney attached to	Minimum chimney height to be provided above ground level/roof level (AGL/ARL)	Rate of emission Nm3 /Hr	Constituents to be controlled in the emission	Tolerance limits mg/Nm3	Air pollution control equipment to be installed in addition to chimney as per col(3).
1	2	3	4	5	6	7
1	DG sets 1000 KVA	13m AGL	-	Nox (as NO_2) NMHC PM CO	710 100 75 150	Acoustic enclosure
2	DG set 500 KVA	7m ARL	-	-	-	Acoustic enclosure
3	DG sets 250 KVA	5m ARL	-	-	-	Acoustic enclosure
4	DG sets 250 KVA	5m ARL	-	-	-	Acoustic enclosure
5	140 TPH Boiler	90m AGL	-	PM	50	Electro static precipitator

All the emissions parameters are well within the pollution control boards limits. As stipulated, control equipment is installed in the air pollution sources.

PART-D

HAZARDOUS WASTE:

(As specified under the hazardous wastes/Management and handling rules, 1989).

Hazardous Wastes	Total Quantity	
	Financial year 2018-19 Permitted	Results
Used spent oil	0.48 KL/Annum	0.326 KL/Annum

Note:

1. Collected spent oil is mixed with bagasse and used as fuel for boilers and is also for lubricating purposes inside the factory.

2. Used DG set oil is collected and used as a lubricant for bagasse carriers and cane carriers.

PART - E

Solid Waste:

Solid Wastes	Total Quanttity	
	During the last Financial year 2017-18	During the Financial year 2018-19
From Process	A) 6841.5 MT/Annum of boiler ash and fly ash mixed with filter cake and used as manure, and also used for brick industry. b) 21200 MT /Annum of filter cake is produced and used as manure.	A) 5886.4 MT/Annum of boiler ash and fly ash mixed with filter cake and used as manure, and also used for brick industry. b) 22200 MT /Annum of filter cake is produced and used as manure.
From Pollution control facility. (ETP)	140 kg/day of sludge is produced and is used as manure in the Cane farm	140 kg/day of sludge is produced and is used as manure in the Cane farm

PART - F

Please specify the characterization (in terms of composition and quantum) of hazardous waste as well as solid wastes and indicate disposal practice adopted for both these categories of wastes.

a) Bagasse collected at bar screen is used as fuel for boiler manually.

b) The oil skimmed from oil skimmer is mixed with bagasse and used as fuel.

c) The solid waste (sludge) from effluent treatment plant is collected manually and used as manure.

d) Hazardous waste oil of about 326 ltrs /annum is collected and used as a lubricant for bagasse carriers, pumps and cane carriers.

PART - G

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

Water :

The treated effluent water is used on land for irrigation to irrigate R & D cane farm. Also, the treated effluent water is used for watering Eucalyptus, Teak wood, Silver oak, Hercules, Neem, jack fruit, Mango, Sapota, Ashok trees, Mahagani and Hebbavu trees in Factory and colony area and also used for process.

Air :

Air Pollution measures :

1. Electrostatic precipitator is provided to minimize particulate matter levels as per KSPCB norms (Four fields)
2. Height of Chimney – 90 mtrs maintained as per KSPCB norms.
3. KSPCB approved laboratory is engaged for analyzing the quality of stacks/ ambient air monitoring on periodically basis.
4. Samples collected by KSPCB , Mandya are analysed at KSPCB lab, Mysore.

THE INDUSTRY DOES NOT PRODUCE ANY IMPACT ON THE ENVIRONMENT.

PART - H

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

1. Masonry pits are made near all juice and molasses pumps and the leaky sugar materials are returned back to the process using ejectors, process drain water is reused thereby reducing the load on effluent treatment plant.

2. Hygienic conditions are maintained by close follow up in cleaning etc.

3. Spillage of Oils and other scrap materials are cleaned then and there.

4. Steps are taken for reuse of cooling water from mills, boiling house, and centrifugal sections etc.

5. Adequate steps are being taken on supervision and follow up actions.

6. Excess condensate is being cooled using as fan-less cooling tower, used for Spray pond/cooling tower make up water.

7. Continuous blow down water of boiler is used for ash quenching and dust suppression, hence avoiding the usage of fresh water for the same.

8. Spray pond and Cooling tower blow down effluent is being taken to the upgraded ETP for further treatment to enhance the efficiency of plant. And treated trade effluent is used for irrigation after confirming the KSPCB norms.

Constant efforts are being made in making use of the updated technologies.

ASSESSMENT AND RECOMMENDATIONS

1. After auditing the overall environment conditions in and around the factory is found to be satisfactory.

2. Rain water harvesting proposal was executed and harvested water is being utilized for tree plantation inside the premises.

3. Drinking water facility, health camps, Roads, drainage, Sanitation program, tailoring training, honoring the highest marks obtained students, sport kits to schools and sports events are conducted in the surrounding areas & green nurturing program as a part of CSR activities.

4. Steps being taken to reduce the raw water consumption from river to the maximum extent.

TREATED EFFLUENT CHARACTERSTICS:

The treated effluent from ETP shall meets the following characteristics as per the KSPCB norms:

- pH : 6.0 to 8.5
- Total dissolved Solids in mg/l : 2100
- Bio-chemical Oxygen Demand in mg/l : 100
- Oil and Grease in mg/l : 10
- Total Suspended Solids in mg/l : 100

All efforts made to remove colour and unpleasant odour as far as practicable.

ANNEXURE -1

WATER ANALYSIS REPORTS

REPORTS FOR THE YEAR 2018-19

ANNEXURE -2

STACK MONITORING REPORTS

REPORTS FOR THE YEAR 2018-19

ANNEXURE -3

AMBIENT AIR QUALITY

REPORTS FOR THE YEAR 2018-19

ANNEXURE -4

NOISE REPORTS

REPORTS FOR THE YEAR 2018-19

ANNEXURE -5

EFFLUENT TREATMENT PLANT 1500 M^3

ANNEXURE -6

Consent for Operation

Authorization of Hazardous waste