

116

Date : 19TH NOV 2020

To

The Regional Office

Jharkhand State Pollution Control Board

Dhanbad, Jharkhand

Subject :- Submission of Environment Statement for 2019-2020.

Dear Sir,

Please find the attached here with Environment Statement for the period of 2019-2020.

Your good self is therefore requested kindly acknowledge the same in order.

Thanking you,

For Ankur Biochem (P) Ltd.
Ankur Biochem Pvt. Ltd.

Authorised Signatory

Authorized Signatory

CC – Member Secretary, Ranchi

Enclose:- Environment Statement along with Annexure

*Received by
Gay Singh*

झारखण्ड राज्य प्रदूषण नियंत्रण पंचद
क्षेत्रीय कार्यालय
धनबाद

ANKUR BIOCHEM PVT. LTD.

Tetulia More, Vill. & P. O. Dhubhi (Tetulia), P. S. Nirsa, Dist. Dhanbad 828205, Jharkhand. India
Corp. Office : 33, M B Lane, Asansol, Dist. Burdwan 713301, West Bengal, India
Tel: +91 341 2303649, E-mail : ankurbiochem@gmail.com, Web : www.ankurbiochem.com
CIN-U24100WB2008PTC128390

117

ENVIRONMENT STATEMENT

(2019-2020)



FOR

M/S. ANKUR BOICHEM PVT.LTD.

**AT:- TetuliaMore, Vill & P.O.- Dubhi, Nirsa, Dhanbad.
(Jharkhand)**

*******| Ankur Biochem Pvt. Ltd.**

[Handwritten Signature]
Authorized Signatory

118

CONTENTS

SI No.	PARTICULARS
1.	INTRODUCTION
2.	PART-A GENERALS STATEMENT
3.	PART-B WATER AND RAW MATERIAL CONSUMPTION
4.	PART-C POLLUTION DISCHARGE TO ENVIRONMENT
5.	PART-D HAZARDOUS WASTES
6.	PART-E SOLID WASTES
7.	PART-F CHARECTERIZATION
8.	PART-G IMPACT STATEMENT
9.	PART-H ADDITIONAL INVESTMENT PROPOSED
10.	PART-I MISCELLANEUS MEASURES FOR IMPROVEMENT

Ankur Biochem Pvt. Ltd.
Authorised Signatory

PREFACE

Anthropogenic activities including industrial activities have an impact on various attributes of the environment, the eco - system does not process unlimited capacity for absorbing such impact to avoid the adverse impacts on the eco- system due to such anthropogenic activities, it means of using the environmental resources by which the environment can be conserved and the resources can be optimally used, substantially.

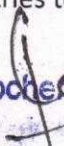
This has posed a significant challenge to the engineering profession and attitude. It has become necessary to know the behaviour of the environment, capacity of the territory and future development plans before implementation of any development activities in the country.

Development activities are aimed at the improvement and socio- economic growth of the society and nation but due to in appropriate unscientific handling of resources they are causing negative impacts on the environment. Thus a detailed environment statement is considered essential for assessment of the quantum of pollutants generated and discharged by the industry. This is also means of sound decision making tools for the plant management for the effective and efficient use of resources and for suitable planning to minimize the negative impacts.

REGULATORY FRAMEWORK

To ensure better environment conditions, Government of india has made it a statutory requirement for industries to submit Environment Statement as per notification from Ministry of Environment and Forests. Under the environment (Protection) Rules, 1986, all industries operations of processes requiring consent to operate under section 25 of water (Prevention and Control of Pollution) Act, 1974 and / or under section 21 of the Air (Prevention and Control of Pollution) Act 1981 and / or authorized under the Hazardous Waste (Management and Handling) Rules 1989 as amended from time to time under Environment (Protection) Act 1986.

Environment Statement is also a tool for the industries for making environmental self introspection and setting environmental goals. It provides an opportunity to select options for waste minimization, which in turn could even benefit the industry in economic terms. It is for the industries to utilize the tool effectively and efficiently.


Ankur Biochem Pvt. Ltd.
Authorised Signatory

120

INTRODUCTION

The country demand for ethanol is going to increase every year as the demand for the potable industrial and fuel ethanol is increasing. Recently, Government of India has announced 5% blending of ethanol in petrol in the country. World over also the demand for ethanol is increasing sharply as many countries are adopting blending of ethanol with petrol.

Setting up to molasses based distilleries in Jharkhand is not possible as molasses in large quantity will not be available on long term basis as well because of stringent effluent disposal norms being enforced by CPCB for molasses based distilleries.

The **Model** exercise policy under consideration of the ministry of food processing. Government of India also recommends that in future all potable liquors should be produced using grain alcohol, not molasses alcohol.

Grain alcohol is supposed to be superior in quality for potable purpose as compared molasses alcohol.

Grain alcohol distilleries are "Grain Field" project without any process liquid effluent discharge and therefore environmental friendly.

Dry milling process for grain alcohol also results in the production of Distillers wet grains with soluble (DWGS) or Distillers dry grains with soluble (DDGS), which can be sold as high protein containing animal feed. This project would generate about 40500 MT of DWGS or 13500 MT DDGS per annum.

MANUFACTURING PROCESS

The distillery is utilized corn or rice as basic raw material to produce either parablr quality retified spirit (RS) or potable quality superfine Extra Neutral Alcohol (ENA). The distillery has capacity of 60 KLD production of ENA plus impure spirit. Along with animal feed called as Distillers Dried Grain with Solubles (DDGS) or Distillers Wet Grain with Solubles (DWGS) as By product. The whole intergrate approach and production of DDGS or DWGS will result in zero discharge or there will be no process effluent coming out of the distillery as in the case of conventional distilleries based on molasses. The process will be based on dry milling technology.

Grain handling and milling accepted the quality carnance grain is unloaded in to silos for storage before milling Grains are stored in the silos from there it is converted through screw conveyor to bucket elevator. Bucket elevator lifts the grains in approximately 18m height and then passes the grains through vibrating screen destoner and magnetic separator to remove dust and stones, the flow through this equipment are under gravity.

The cleaned grains are then again conveyed by bucket elevator to an intermediate hopper which are provided with the rotary air lock system for controlled flow in hammer

Ankur Biochem Pvt. Ltd.
Authorised Signatory

121

mill. In hammer mill the particle size is reduced as per required for the process. From hammer mill the flour is preautomatically conveyed to flower bin (Intermediate Storage for flour. From flour bin the flour is carried to premasher unit. In premasher flour is mixed with water and enzymes.

The propose of milling is to break up the order to facilitate subsequet penetration of water in the cooking process. The milling section of the plant has the necessary equipment for cleaning of the raw materials sand, stone, metallic particles & other undersired foreign material and screening the milled flour so as to get the desired particles size selected hammer mill mwill be able to mill either cornor rice. The distribution test of the meal is done regularly in order to as certain the mill setting and particle size distribution. The slurry of the milled raw material is prepared in water and then this slurry is then sent for liquefaction.

LIQUEFACTION

Liquefaction initiates the conversion of starch in to simple molecules of dextrin. It is divided into three sub processes i.e. (i) Pre Liquefaction (ii) Jet cooking (iii) Post Liquefaction: This involves partrial hydrolysis / liquefaction of starch in presence of enzyme amylase at a temperature much below the gelatinization temperature. Gelatinization results in education in viscosity of the mash. Gelatinization temperature various for the different grains i.e. for corn it is 62°C – 72°C and for sorghum, it is 68°C – 77°C part of the enzyme is added in this step after necessary adjustment of PH and Ca++ concentration.

Process water is added to premasher to make slurry. The mixed slurry is taken to the intitrial liquefaction tank where additional quantity of water is added as per requirement. Viscosity education enzyme and stabilizing enzyme are also added at this stage.

ETCOOKING

This step involves the cooking of the starch slurry with live steam so as to instantaneously raise its temperature. The slurry is cooked in the get cooker. This slurry is continuously pumped to a steam jet cooker where high pressure steam at 170°C rapidly raises the slurry temperature. The mixture of slurry and steam is then passed through the retention loop for desired retention time about 5 to 110 minutes at given flow rate. The cooked mash is discharged to a flash tank. The cooking process, accomplished in the above manner converts the slurry into a hydrated sterilized suspension (as starch molecule is solublized) and is therefore susceptible.

POST LIQUEFACTION

The retention time in post-Liquefaction / flash chamber is 30 minutes, second part of L-amylase enzyme is added in post liquefaction. The jet-cooked slurry from the flash tank is again held at high temperature in present of enzyme to complete the process of a post

Ankur Biochem Pvt. Ltd.
Authorised Signatory

liquefaction. The L-amylase enzyme used will be able to break down the starch molecule at higher temperature.

PRE-SACCHARIFICATION

From the post liquefaction chamber, the mash is pumped through a heat exchanger to the cooled for saccharification is the formation of fermentable glucose and the process is carried out with a time of between 45 to 90 minutes. The quantity of glucose produced is monitored by measuring the Dextrose equivalent (DE) of the mash.

FERMENTATION

Partial saccharified slurry from pre-saccharification tank is pumped from pre-saccharification tank is fermenter and is diluted to appropriate into fermenter and is diluted to appropriate sugar concentration with process water. During fermentation process, saccharification progress further and release glucose required by yeast. Fermentation is initiated by inoculating with required quantity of yeast. The assimilable nitrogen is added in the medium in the form of Urea and DAP.

Temperature in the fermenter is maintained at 30°C with the help of external wide gape plate heat exchanger (PHE). The fermented mash is recirculated continuously through the PHE recirculation also help in proper mixing of fermented mash. At the end of the fermentation the alcohol concentration in the mash is 10.00 to 12.00% (V/V). This section have six fermenters as capacity given to hrs retention time. After completion of fermentation the mash completion of fermentation the mash is transferred to mash holding tank.

Distillation : - Ethanol is separated and concentration using principles of fractional distillation. This is based on difference in boiling points of volatile compounds in mixture.

The next stage in the manufacture of grain alcohol is separate alcohol from fermented wash and to concentrate it to 95% alcohol called as rectified spirit. For this purpose method of distillation is employed.

After distillation 95% alcohol gain and rest suspended solid out which is goes in decantation section.

Decantation Section : - The alcohol stripped whole stillage or spent mash or thick stillage coming out of distillation section is subjected to decantation by centrifugation to separate. The suspended fibrous mass called wet cake and the thin stillage wet cake has about 30% W/W solids as removed from the bottom of the decanter and can be directed loaded on the trolleys parked below. Wet cake is taken to the mingler for further processing for D.W.G.S

This slope is in liquid form form. It is 50% goes in slurry before liquification process and 50% goes in multiple effect evaporation section.

MULTIPLE EFFECT EVAPORATION SECTION :- The thin slope from decantation section is first taken in to a feed tank and then fed to the evaporation system through pre-heater first effect feed mode and it flows first to second to third to fourth to fifth effects.

Ankur Biochem Pvt. Ltd.
Authorised Signatory

123

The slope feed is concentrated from the initial concentration of 4% W/W TS to 28-30% WW TS as it travels through the multi effect evaporator.

The vapor evolved from the fifth effect are condensed in the surface condensers. Each effect is provided with re-circulation pump. The first effect steam condensate can be recycled back to boiler as it is a fresh steam condensate.

The condensate from second, third steam condensate. The condensate from second, third, fourth, fifth and surface condensers is collected in a condensate tank. The condensate are transferred to further treatment using a centrifugal pump.

The system operates under pressure and vacuum watering vacuum pumps are to maintain vacuum in the last effect. The last effect is at lowest temperature. Cooling water from cooling tower is used in the surface condensers from condensing the vapors from the last effect.

Mingler Section :- The concentrated syrup from the evaporation section at 28-30% WWTS and wet cake coming from the decanter bottom at 30 dig – 32dig. WWTS is further mixed thoroughly in an agitated mingler to produce DWGS containing 30% WW Solids.

DRYER SECTION :- DWGS is subjected to further drying in the dryer system to produce DDGS. This also requires additional steam. The steam tube dryer system operation consists of the following two stages.

- (i) Feed Conditioning
- (ii) Drying

If feed as such. To temper this sticky character the feed to wet DDGS is mixed with part of the dry product. The resultant mixture is not sticky and can be handled in tabular dryer. The wet material is dozed and mixed with part of the dry product in a suitable paddle mixer.

ii) DRYING : In the steam tube dryer, the wet feed is continuously agitated and heated by means of a rotating shall type tubular dryer with steam heated tubes. The material gets dried during its passage across the dryer. The dried material is continuously discharged via the main rotary valve. Part of the dried material is sent to the paddle mixer via back mixing conveyor. The moisture which is evaporated during the drying operation is exhausted via an ID fan. The hot air is used as a carrier gas for exhausting the vapours. The final moisture content of DDGS is about 8.0 to 9.0%. The quantity of DDGS produced is around 330-335 kg per M.T. of corn / Rice processes. So we have considered production of DDGS of about 45 MT/day. This the integrated grain distillery with DDGS System becomes zero effluent discharge plant.

(Solid or Liquid)

SECONDARY EFFLUENT TREATMENT PLANT

The effluent treatment plant also includes the secondary effluent treatment plant section where various spentlees, CIP liquid, fermented water etc. are treated together in an upflow anaerobic sludge blanket digester to produce biogas to be used as fuel.

Ankur Biochem Pvt. Ltd.

Authorised Signatory

124

The pump & blower sealing water and boiler blow down etc. having lower COD values are taken directly to the secondary aerobic polishing reactor for final treatment.

The effluent coming out the UASB digester is further treatment in the polishing aerobic reactor to bring down the BOD as per the norms of pollution control board and then can be used for fertilization purpose.


Ankur Biochem Pvt. Ltd.
Authorised Signatory

125

PART A

GENERAL DETAILS

Name Of Industry	M/s Ankur Biochem Pvt Ltd.
Location Of Industry	Tetulia More, Vill & P.O- Dubhi, Nirsa, Dhanbad, Jharkhand – 828205.
Office Address Of Industry	33, Masjid Bari Lane, Asansol -713301, Dist- Pachim Burdwan (W.B)
Industry Category Primary (STC Code) Secondary (STC Code)	
Name of the Products	Grain Extra Neutral Alcohol
Total Production Capacity	60 KLPD
Year Of Establishment	2011-12
Date of Last Environmental Statement Submitted	18.12.2019


Ankur Biochem Pvt. Ltd.
Authorized Signatory

PART - B

WATER AND RAW MATERIAL CONSUMPTION

1. WATER CONSUMPTION

Water Consumption	Quantity cum/day (Previous Year) (2018-19)	Quantity cum/day (Current Year) (2019-20)
Process	227.78 m ³	207.87 m ³
Cooling Tower	137.45 m ³	125.44 m ³
Domestic	27.49 m ³	25.09 m ³

Name Of Product	Water Consumption During Previous Year (2018-2019)	Water Consumption During Current Year (2019-2020)
ENA, DDGS, DWGS, Co2 Liquid	6.07 m ³ /1 m ³ of Products.	6.15 m ³ /1 m ³ of Products,

2. RAW MATERIAL CONSUMPTION

Raw Material	Product	Raw Material Consumption During Previous Year (2018-2019)	Raw Material Consumption During Current Year (2019-2020)
Broken Rice	ENA (Grain Extra Neutral Alcohol)	59507.39 MT	67172.310 MT

Ankur Biochem Pvt. Ltd.

Authorised Signatory

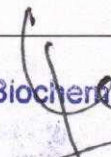
127

PART - C

LEVEL OF POLLUTANTS DISCHARGED

(Parameter as specified in the Consent issued)

Pollutants	Quality Of Pollutants Discharges (Mass / Day)	Concentration Of Pollutants in Discharges (Mass / Volume)
AIR	Analysis Report of Stack Emission was attached as Annexure - I	
WATER	Analysis Report of Effluent and Water was attached as Annexure - II.	


Ankur Biochem Pvt. Ltd.
Authorised Signatory

128

PART - D

HAZARDOUS WASTE STATEMENT

As per the condition under Hazardous (management & handling) rules 1989 and amendment rules 2000 & 2003

Generation	Use	Remarks
DG Set Waste/ Spent Oil.	Spent Oil was use for Greasing and Oiling Machinery for Maintenance purpose.	Generation of Spent Oil is very minor Since D.G Set used very rarely during total Power failure.

Some very small quantities of spent oil & lubricants are generated from DG set and machineries.

PART - E

SOLID WASTE MANAGEMENT

Generation	Use	Remarks
Boiler Ash	Totally used for land filling within own Premises.	

Ankur Biochem Pvt. Ltd.

Authorised Signatory

129

Solid Waste Utilisation / Disposal

Solid Wastes	During Previous Financial Yr (Qty. In MT) (2018-2019)	During Current Financial Year (Qty. In MT) (2019-2020)
Quantity Recycled Or Reutilized Within The Unit	DWGS → Nil DDGS → 12299.79 MT	DWGS → 8.000 MT DDG → 481.470 MT DDGS → 12147.190 MT
Quantity Sold	DWGS → Nil DDGS → 12245.38 MT	DWGS → 8.850 MT DDG → 401.690 MT DDGS → 12229.590 MT
Quantity Otherwise Disposed	N.A	N.A.
Total		

PART - F

CHARACTERIZATION OF SOLID WASTES

1	Solid Waste Generation in Process	Solid waste from the process of steam generation in coal fired boiler. <i>used as land filling in Own Premises</i>
2	Solid waste from control facility	Fly Ash generated in ESP system. Sludge generated in ETP. <i>Fly Ash.</i>

Ankur Biochem Pvt. Ltd.

Authorised Signatory

130

PART – G

IMPACT STATEMENT

WATER	Water required in the process is for cooling, Refining and for steam generation. Hence the quality of water with respect to inlet characteristic is changed. A part of used water is continuously recycled to the system, and the part of water used in process is as effluent.
AIR	Coal fire boiler generates air pollution in form of particulate matter. Coal in Jharkhand has low sulphur content and emission of sulphur dioxide concentration is also generally low. Heat is also utilized for preheating of feed water. The emission levels in such units get controlled to within desirable limits. However for reliable performance, and to take care of variation in the quality of coal, it is advisable that a suitable pollution control device has been installed and operated.
NOISE	Industrial operation activity is well controlled by lubricant and regular maintenance. Here there is very negligible generation of noise which crosses the threshold limit. Noise levels at the boundary of plant are within permissible standards. Also plantation shielding helps in controlling works environment noise, if any.
HAZARDOUS WASTE	As mentioned earlier, there is inactive nickel catalyst generated which is hazardous waste and sold to registered vendors.
SOCIO ECONOMY	There is example employment generation. Hence increased living standards of the people. Indirect employment is also generated to a good extent. All basic facilities such as medical benefits are provided.

Ankur Biochem Pvt. Ltd.

Authorised Signatory

181

PART - H

ADDITIONAL MEASURES PROPOSED & INVESTMENT FOR PROTECTION OF ENVIRONMENT

The plant management is conscious of its responsibility towards the society and its moral obligations and statutory requirements for protection of environment. The following Budget is proposed for environment management.

Activity	Budget (Rupees)
Operation & Maintenance of pollution control equipment	3,65,00,000.00
Green Belts Development	29,70,000.00
Rain Water Harvesting	12,50,000.00
Environment Monitoring	28,50,000.00
Other Allied Activities	40,00,000.00
Total	4,75,70,000.00

Ankur Biochem Pvt. Ltd.
Authorised Signatory

132

PART - I

MISCELLANEOUS

(ANY OTHER PARTICULARS FOR IMPROVING THE QUALITY OF THE ENVIRONMENT)

POLLUTION CONTROL: Pollution control system for the stack is already installed. The efficiency of the system is to be regularly ascertained.

WATER RESOURCES MAINTENANCE:- In order to prevent the depletion of ground water source, it is advised to complete a suitable rain water harvesting plan as prescribed by CPCB. This will also be helpful in preventing the run-off water during rainy season or accidental spillage from flowing out of the plant premises. Rain water harvesting is also useful in meeting part of need for water for process on cooling.

FUGITIVE EMISSIONS:- Fugitive emissions are generally low in such plants. However care to be taken to ascertain that in case of increase of fugitive emission suitable system must be incorporated to control the same.

NOISE ENVIRONMENT :- To control level within the plant, following initiative measures may be considered:

- Proper Maintenance – Reduction of noise at source
- Provision for Silencers where possible.
- Isolation of Noise generation equipment
- Provision for Acoustic Lagging
- Provision for ear plugs and minimum exposure.
- Green belt development would also dampen noise effects.

GREEN BELT DEVELOPMENT:- Green belt development has great environment advantages. It acts as noise barriers, prevents the suspended particles blowing and also adds to the beautification of the plant thus creating a better working condition.

Development of planned green belt in the industry is done with following objective.

- a) To act as wind shelter and prevent air pollution in surrounding area.
- b) To act as a natural sink to absorb dust and sequester carbon.
- c) To act as a medium to absorb noise energy and reduce noise.
- d) Plantations absorb air born dust.
- e) Plantation provide shade.

ROADS:- All roads in the plant site are to be made pucca. This will prevent the spreading of dust during movement of vehicles in the premises.

Ankur Biochem Pvt. Ltd.
[Signature]
Authorised Signatory



GEMS PROJECTS PVT.LTD.

(ENVIRONMENTAL LABORATORY DIVISION)

APPROVED BY JHARKHAND STATE POLLUTION CONTROL BOARD, GOVT OF JHARKHAND

138

Annexure-1

STACK MONITORING TEST REPORT

Sampling Date	02-06-2020	Sample Description	Stack Emission
Name of Industry	M/s Ankur Biochem Pvt. Ltd At-Dhubi, P.O- Nirsa, Dist-Dhanbad, Jharkhand	Type of Industry	Total Spirit Mfg. Unit
		Sampling Location	Power Plant Stack
		Pollution Control System	ESP
		Shape of Stack	Circular
Report ID	G/DB/200602/STACK/01	Weather Condition	Clear
Report Release Date	10-06-2020	Sample collection by	Mukesh & Team
General Information			
Stack No. if any			One
Height of Stack from ground	in metre		43
Diameter of stack	in metre		1.20
Height of porthole from ground	in metre		15.0

Fuel Characteristic Report & Oven Description	
Type of Fuel	Coal
Fuel Consumption	135TPD
Production Capacity	5MT/hr
Total No. of Oven
Ovens were in running

Result of Analysis	unit	Result	Method
Ambient temperature	in °C	38	IS 11255 : part(1)
Stack gas temperature	in °C	106	IS 11255 : part(1)
Stack gas velocity	in m/s	5.45	IS 11255 : part(3)
Volumetric flow rate	in Nm ³ /hr	17432.29	IS 11255 : part(3)
Concentration of Particulate Matter	in mg/Nm ³	52.92	IS 11255 : part(1)
Concentration of Sulphur dioxide	in mg/Nm ³	93.46	IS11255 : part(2)
Concentration of Oxides of Nitrogen	in mg/Nm ³	41.85	CPCB Method

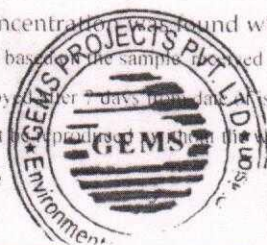
Emission Rate	Unit	Result
Dust	kg/hr	0.92
Sulphure dioxide	kg/hr	1.62
Nitrogen Dioxide	kg/hr	0.72

***** END of REPORT *****

Remarks : Dust Concentration was found within the prescribed limit.

- 1) Test values are reported based on the sample analysed.
- 2) Sample shall be destroyed after 7 days from date of issues of the report and test report. The test report shall not be produced without the written approval of the authority.

For
Prem Kumar
10/06/20
Section In-Charge
(Air section)



Prem Kumar
10/06/20
Tested by

Ankur Biochem Pvt. Ltd.

Authorised Signatory

10/06/20
Lab In-Charge

Lab In-Charge

Gems Projects Pvt. Ltd.